IDEM

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

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Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
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Via Electronic Mail October 26, 2011

Wendell Carter, General Manager
ArcelorMittal Indiana Harbor, LLC
3001 Dickey Road
East Chicago, Indiana 46312

Dear Mr. Carter:

Re: NPDES Permit No. IN0063711
ArcelorMittal Indiana Harbor, LLC –
Central Wastewater Treatment Plant
East Chicago, Indiana
Lake County

Your application for a National Pollutant Discharge Elimination System (NPDES) permit for authorization to discharge into the waters of the State of Indiana has been processed in accordance with Section 402 and 405 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251, et seq.), and IC 13-15, IDEM's permitting authority. All discharges from this facility shall be consistent with the terms and conditions of this permit.

One condition of your permit requires periodic reporting of several effluent parameters. These forms are available on the internet at the following web site:

http://www.in.gov/idem/5104.htm

Additionally, you will soon be receiving a supply of the computer generated preprinted federal NPDES DMR forms. Both the state and federal forms need to be completed and submitted on a routine basis. If you do not receive the preprinted DMR forms in a timely manner, please call this office at 317-232-8670.

Another condition which needs to be clearly understood concerns violation of the effluent limitations in the permit. Exceeding the limitations constitutes a violation of the permit and may subject the permittee to criminal or civil penalties. (See Part II A.2.) It is therefore urged that your office and treatment operator understand this part of the permit.

A response to the comments received pertaining to the draft NPDES permit is contained in the Post Public Notice Addendum. The Post Public Notice Addendum is located at the end of the Fact Sheet.

It should also be noted that any appeal must be filed under procedures outlined in IC 13-15-6, IC 4-21.5, and the enclosed Public Notice. The appeal must be initiated by filing a petition for administrative review with the Office of Environmental Adjudication (OEA) within eighteen (18) days of the mailing of this letter by filing at the following address:

Office of Environmental Adjudication
Indiana Government Center North
100 North Senate Avenue, Room 501
Indianapolis, IN 46204

Please send a copy of any written appeal to me at the IDEM, Office of Water Quality - Mail Code 65-42, 100 North Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions concerning the permit, please contact Richard Hamblin at 317/232-8696. Questions concerning appeal procedures should be directed to the Office of Environmental Adjudication, at 317/232-8591.

Sincerely,

Bruno Pigott
Assistant Commissioner
Office of Water Quality

Enclosures
cc: U.S. EPA, Region V
Lake County Health Department
IDEM Northwest Regional Office

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for
ArcelorMittal Indiana Harbor Central Wastewater Treatment Plant NPDES Permit IN0063711

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STATE OF INDIANA

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq., the "Act"), and IDEM's authority under IC13-15,

ARCELORMITTAL INDIANA HARBOR LLC – CENTRAL WASTEWATER TREATMENT PLANT

is authorized to discharge from the steel mill that is located at 3001 Dickey Road, East Chicago, Indiana, to receiving waters named Indiana Harbor Ship Canal in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, and III hereof. This permit may be revoked for the nonpayment of applicable fees in accordance with IC 13-18-20.

Effective Date: December 1, 2011

Expiration Date: November 30, 2016

In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit such information and forms as are required by the Indiana Department of Environmental Management no later than 180 days prior to the date of expiration.

Signed on October 26, 2011 for the Indiana Department of Environmental Management.

Bruno Pigott
Assistant Commissioner
Office of Water Quality

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 001. The discharge is limited to treated wastewater from the Centralized Wastewater Treatment Plant (Internal Outfall 101), non-contact cooling water, site storm water, and groundwater from basement sumps. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into the Indiana Harbor Ship Canal during dry weather periods. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS[1][2][3][15][18]

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.[4]
TSS	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
TRC[6][10][17]	0.87	2.1[11]	lbs/day	0.016[7]	0.038[9]	mg/l	5 X Weekly[8]	Grab
Zinc[5]	11	22	lbs/day	210	410	ug/l	2 X Weekly	24-Hr. Comp.
Lead[5]	5.0	9.8	lbs/day	92	180	ug/l	2 X Weekly	24-Hr. Comp.
Copper[5]	1.6	2.8	lbs/day	0.030	0.052	mg/l	2 X Weekly	24-Hr. Comp.
Silver[5][6][17]	0.023	0.040	lbs/day	0.00042[7]	0.00073	mg/l	2 X Weekly	24-Hr. Comp.
Mercury[5][6][14]								
Interim	Report	Report	lbs/day	Report	Report	ng/l	6 X Yearly[12]	Grab
Final	0.000071	0.00017	lbs/day	1.3	3.2	ng/l	6 X Yearly[12]	Grab
Free Cyanide[6]	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.
Temperature[16]								
Intake	-------	--------	------	Report	Report	°F	2 X Weekly	Grab
Outfall	-------	--------	------	Report	Report	°F	2 X Weekly	Grab
Thermal								
Discharge	Report	Report	MBTU/Hr.	-------	--------	----	2 X Weekly	Report
Whole Effluent Toxicity Tests[13]								

Table 2

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

[1] See Part I.B. of the permit for the Narrative Water Quality Standards.

[2] 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 the additive to Outfall 001, the permittee shall notify the Indiana Department of Environmental Management as required in Part II.C.1 of this permit. The use of any new or changed water treatment additives 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.

[3] The Non-Numeric Effluent Conditions and Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Parts I.D. and I.E of this permit.

[4] A minimum of two (2) grab samples shall be collected at equally spaced time intervals (at a minimum of 6 hours apart) for the duration of the discharge within a twenty-four (24) hour period. Each sample shall be analyzed individually, and the arithmetic mean of the concentrations reported as the value for the twenty-four (24) hour period.

[5] The permittee shall measure and report the identified metals as <u>total recoverable metals.</u>

[6] The following EPA test methods and/or Standard Methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Alternative methods may be used if first approved by IDEM.

Parameter	EPA Method	LOD	LOQ
Chlorine	4500-Cl-D,E or 4500-Cl-G	0.02 mg/l	0.06 mg/l
Silver	200.8	0.2 ug/l	0.64 ug/l
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l
Cyanide	4500-CN-G	5 ug/l	16 ug/l
Cyanide	1677	0.5 ug/l	1.6 ug/l

Sample preservation procedures and maximum allowable holding times for total cyanide, or available (free) cyanide are prescribed in Table II of 40 CFR Part 136. Note the footnotes specific to cyanide. Preservation and holding time information in Table II takes precedence over information in specific methods or elsewhere.

[7] The monthly average water quality based effluent limits (WQBEL) for chlorine and silver is less than the limit of quantitation (LOQ) as specified above. Compliance with the monthly average limit will be demonstrated if the monthly average effluent level is less than or equal to the monthly average WQBEL. Daily effluent values that are less than the LOQ, used to determine the monthly average effluent levels less than the LOQ, may be assigned a value of zero (0), unless, after considering the number of monitoring results that are greater than the

limit of detection (LOD), and applying appropriate statistical techniques, a value other than zero (0) is warranted.

[8] 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.

[9] The daily maximum WQBEL for chlorine is greater than or equal to the LOD but less than the LOQ as specified below. Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ.

[10] Case-Specific LOD/LOQ
The permittee may determine a case-specific LOD or LOQ using the analytical method specified above, or any other test method which is approved by the Commissioner prior to use. The LOD shall be derived by the procedure specified for method detection limits contained in 40 CFR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD. Other methods may be used if first approved by the Commissioner.

[11] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 3.25 lbs/day.

[12] Mercury monitoring shall be conducted bi-monthly in the months of February, April, June, August, October, and December of each year for the term of the permit using EPA Test Method 1631, Revision E.

[13] The permittee shall initiate a biomonitoring program for Outfall 001 using the procedures contained under Part I.I. of this permit.

[14] The permittee has a 54 month schedule of compliance as outlined in Part I.F in which to meet the final effluent limitations for Mercury.

[15] ArcelorMittal shall install the equipment necessary to accurately measure the discharge flow from Outfall 001 and to facilitate taking samples that are representative of the discharge within one year after the effective date of this permit. During the period of time before the necessary equipment is installed, ArcelorMittal may estimate the 24 Hour total flow volume from Outfall 001.

[16] See Part III of this permit for additional requirements.

[17] See Part I.H for the Pollutant Minimization Program requirements.

2. The permittee is authorized to discharge from the outfall listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Internal Outfall 101. The discharge is limited to treated wastewater from the Centralized Wastewater Treatment Plant. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to comingling with other water streams. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS[6]

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	-------	---------	------	----------	24 Hour Total
O + G	542	813	lbs/day	Report	Report	mg/l	2 X Weekly	2 Grabs/24-Hr.[2]
TSS	1,198	2,604	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Cadmium[3]	3.8	10	lbs/day	Report	Report	mg/l	[7]	----------
Zinc[3]	Report	Report	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
T. Chromium[3]	24.7	40.0	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Hex. Chromium[8]	Report	Report	lbs/day	Report	Report	mg/l	2 X Yearly	Grab
Lead[3]	Report	Report	lbs/day	Report	Report	ug/l	2 X Weekly	24-Hr. Comp.
Nickel[3]	34.3	57.4	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Copper[3][4]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
Silver[3][4]	Report	Report	lbs/day	Report	Report	mg/l	2 X Weekly	24-Hr. Comp.
T. Cyanide[3]	9.4	17.3	lbs/day	Report	Report	mg/l	2 X Weekly	Grab
Naphthalene[4]	Report	0.158	lbs/day	Report	Report	mg/l	1 X Weekly	24-Hr. Comp.
TCE[4]	Report	0.236	lbs/day	Report	Report	mg/l	1 X Weekly	Grab
TTO[4][5]	-------	30.7	lbs/day	------	Report	mg/l	1 X Quarterly[1]	24-Hr. Comp.

[1] Samples shall be taken once at any time during each of the four annual quarters:

(A) January-February-March;
(B) April-May-June;
(C) July-August-September; and
(D) October-November-December.

For quarterly monitoring, in the first quarter for example, the permittee may conduct sampling within the month of January, February or March. The result from this reporting timeframe shall be reported on the March DMR, regardless of which of the months within the quarter the sample was taken.

[2] A minimum of two (2) grab samples shall be collected at equally spaced time intervals (at a minimum of 6 hours apart) for the duration of the discharge within a twenty-four (24) hour period. Each sample shall be analyzed individually, and

the arithmetic mean of the concentrations reported as the value for the twenty-four (24) hour period.

[3] The permittee shall measure and report the identified metals as total recoverable metals.

[4] At the end of a twelve month sampling period, the permittee may request, in writing, a review of these monitoring requirements. Upon review by IDEM, the permit may be modified, after public notice and opportunity for hearing, to reduce or delete the monitoring requirements.

[5] The limitation for TTO (Total Toxic Organics) applies to the summation of all quantifiable values greater than 0.01 mg/l for all toxic organics listed under 40 CFR 433.11(e) which are reasonably expected to be present. This is a federal effluent guideline based limitation and is not an authorization to discharge toxic organic compounds at levels which cause or may cause water quality violations. The discharge of organic compounds at levels which cause or may cause water quality violations is prohibited. The intent of this limitation is to assure that any solvent or other products in use at the plant, which contain any of the listed toxic organic compounds, are disposed of properly, and not dumped, spilled, discharged or leaked.

Certification Statement

In lieu of quarterly monitoring for TTO, the party responsible for signing the monthly discharge monitoring report (DMR) forms may make the following statement, as part of the DMR: "Based on my inquiry of the persons directly responsible for managing compliance with the permit limitations for TTO, I certify that, to the best of my knowledge and belief, no disposal of concentrated toxic organics into the wastewaters has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the Toxic Organic Pollutant Management Plan submitted to the Compliance Data Section of the Office of Water Quality, as required by this permit." The Certification Statement may not be used until completion of the Toxic Organic Pollutant Management Plan required by Part I.G of this permit.

If the above mentioned responsible party is unable to make the above Certification Statement because of discharge or spills of any TTO compounds, the Permittee is required to notify IDEM in accordance with Part II.C.3 of this permit.

Initial GC-MS Scan for TTO's

The Certification Statement does not eliminate the requirement for a complete initial GC/MS (Gas Chromatograph/Mass Spectrophotometer) scan as part of the permit application or Toxic Organic Pollutant Management Plan. At least two (2) grab samples for volatile pollutants and either an eight (8) hour or twenty-four (24) hour composite sample for acid and base/neutral pollutants shall be obtained.

Wastewater samples shall be prepared and analyzed by GC/MS in accordance with U.S. EPA Analytical Methods 624 and 625 (40 CFR 136), or subsequently approved methods.

In addition to the quantitative analysis for the priority pollutants, a diligent attempt shall be made to identify and quantify any additional substances indicated to be present in the extracts by peaks on the reconstructed gas chromatographs (total ion plots) more than 10 times higher than the peak-to-peak background noise. Identification shall be by reference to the EPA/NIH computerized library of mass spectra, with visual confirmation by an experienced analyst. Quantification may be an order of magnitude estimate based upon comparison with an internal standard.

[6] The permittee shall not discharge spent hexavalent chromium solutions from the Hot Dip Galvanizing Line into the wastewater collection and treatment systems. Such solutions shall be disposed of off-site.

[7] A monitoring waiver per 40 CFR 122.44 has been granted for this parameter for the term of this permit. IDEM shall be notified if any changes occur at this facility that would require the conditions that this waiver was granted to be reviewed.

[8] Hexavalent Chromium shall be measured and reported as <u>dissolved</u> metal. The Hexavalent Chromium sample type shall be grab method. The maximum holding time for a Hexavalent Chromium sample is 24 hours (40 CFR 136.3 Table IB). Therefore, the grab sample must be analyzed within 24 hours.

B. NARRATIVE WATER QUALITY STANDARDS

At all times the discharge from any and all point sources specified within this permit shall not cause receiving waters:

1. including the mixing zone, to contain substances, materials, floating debris, oil, scum, or other pollutants:

    a. that will settle to form putrescent or otherwise objectionable deposits;

    b. that are in amounts sufficient to be unsightly or deleterious;

    c. that produce color, visible oil sheen, odor, or other conditions in such degree as to create a nuisance;

d. which are in amounts sufficient to be acutely toxic to , or to otherwise severely injure or kill aquatic life, other animals, plants, or humans;

e. which are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such a degree as to create a nuisance, be unsightly, or otherwise impair the designated uses.

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.

C. MONITORING AND REPORTING

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the discharge.

2. Discharge Monitoring Reports

a. For parameters with monthly average water quality based effluent limitations (WQBELs) below the LOQ, daily effluent values that are less than the limit of quantitation (LOQ) may be assigned a value of zero (0).

b. For all other parameters for which the monthly average WQBEL is equal to or greater than the LOQ, calculations that require averaging of measurements of daily values (both concentration and mass) shall use an arithmetic mean. When a daily discharge value is below the LOQ, a value of zero (0) shall be used for that value in the calculation to determine the monthly average unless otherwise specified or approved by the Commissioner.

c. Effluent concentrations less than the LOD shall be reported on the Discharge Monitoring Report (DMR) forms as < (less than) the value of the LOD. For example, if a substance is not detected at a concentration of 0.1 μg/l, report the value as <0.1 μg/l.

d. Effluent concentrations greater than or equal to the LOD and less than the LOQ that are reported on a DMR shall be reported as the actual value and annotated on the DMR to indicate that the value is not quantifiable.

e. Mass discharge values which are calculated from concentrations reported as less than the value of the limit of detection shall be reported as less than the corresponding mass discharge value.

f. Mass discharge values that are calculated from effluent concentrations greater than the limit of detection shall be reported as the calculated value.

The permittee shall submit federal and state discharge monitoring reports to the Indiana Department of Environmental Management containing results obtained during the previous month which shall be postmarked no later than the 28th day of the month following each completed monitoring period. The first report shall be submitted by the 28th day of the month following the month in which the permit becomes effective.

The Regional Administrator may request the permittee to submit monitoring reports to the Environmental Protection Agency if it is deemed necessary to assure compliance with the permit.

3. Definitions

a. Monthly Average

(1) Mass Basis - The "monthly average" discharge means the total mass discharge during a calendar month divided by the number of days in the month that the production or commercial facility was discharging. Where less than daily samples is required by this permit, the monthly average discharge shall be determined by the summation of the measured daily mass discharges divided by the number of days during the calendar month when the measurements were made.

(2) Concentration Basis - The "monthly average" concentration means the arithmetic average of all daily determinations of concentration made during a calendar month. When grab samples are used, the daily determination of concentration shall be the arithmetic average (weighted by flow value) of all the samples collected during the calendar day.

b. "Daily Discharge"

(1) Mass Basis – The "daily discharge" means the total mass discharge by weight during any calendar day.

(2) Concentration Basis – The "daily discharge" means the average concentration over the calendar day or any twenty-four (24) hour period that reasonably represents the calendar day for the purposes of sampling.

c. "Daily Maximum"

(1) Mass Basis – The "daily maximum" means the maximum daily discharge mass value for any calendar day.

(2) Concentration Basis – The "daily maximum" means the maximum daily discharge value for any calendar day.

(3) Temperature Basis – The "daily maximum" means the highest temperature value measured for any calendar day.

d. A 24-hour composite sample consists of at least 3 individual flow-proportioned samples of wastewater, taken by the grab sample method or by an automatic sampler, which are taken at approximately either equally spaced time intervals or time intervals between samples proportional to stream flow for the duration of the discharge within a 24-hour period and which are combined prior to analysis. A flow-proportioned composite sample may be obtained by:

(1) recording the discharge flow rate at the time each individual sample is taken,

(2) adding together the discharge flow rates recorded from each individuals sampling time to formulate the "total flow" value,

(3) the discharge flow rate of each individual sampling time is divided by the total flow value to determine its percentage of the total flow value,

(4) then multiply the volume of the total composite sample by each individual sample's percentage to determine the volume of that individual sample which will be included in the total composite sample.

e. Concentration -The weight of any given material present in a unit volume of liquid. Unless otherwise indicated in this permit,

concentration values shall be expressed in milligrams per liter (mg/l).

f. The "Regional Administrator" is defined as the Region V Administrator, U.S. EPA, located at 77 West Jackson Boulevard, Chicago, Illinois 60604.

g. The "Commissioner" is defined as the Commissioner of the Indiana Department of Environmental Management, which is located at the following address: 100 North Senate Avenue, Indianapolis, Indiana 46204.

h. "Limit of Detection" or "LOD" means a measurement of the concentration of a substance that can be measured and reported with ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) for a particular analytical method and sample matrix. The LOD is equivalent to the method detection level or MDL.

i. "Limit of Quantitation" or "LOQ" means a measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calibrated at a specified concentration above the method detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant. This term is also sometimes called limit quantification or quantification level.

j. "Method Detection Level" or "MDL" means the minimum concentration of an analyte (substance) that can be measured and reported with a ninety-nine percent (99%) confidence that the analyte concentration is greater than zero (0) as determined by procedure set forth in 40 CFR 136, Appendix B. The method detection level or MDL is equivalent to the LOD.

4. Test Procedures

The analytical and sampling methods used shall conform to the current version of 40 CFR 136. Multiple editions of Standard Methods for the Examination of Water and Wastewater are currently approved for most methods, however, 40 CFR Part 136 should be checked to ascertain if a particular method is approved for a particular analyte. The approved methods may be included in the texts listed below. However, different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency.

a. Standard Methods for the Examination of Water and Wastewater 18th, 19th, or 20th Editions, 1992, 1995, or 1998, American Public Health Association, Washington, D.C. 20005.

b. A.S.T.M. Standards, Parts 23, Water; Atmosphere Analysis 1972 American Society for Testing and Materials, Philadelphia, PA 19103.

c. Methods for Chemical Analysis of Water and Wastes June 1974, Revised, March 1983, Environmental Protection Agency, Water Quality Office, Analytical Quality Control Laboratory, 1014 Broadway, Cincinnati, OH 45202.

5. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record and maintain records of all monitoring information and monitoring activities under this permit, including the following information:

a. The exact place, date, and time of sampling;

b. The person(s) who performed the sampling or measurements;

c. The dates the analyses were performed;

d The person(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of all required analyses and measurements.

6. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of this monitoring shall be included in the calculation and reporting of the values required in the monthly Discharge Monitoring Report (DMR). Such increased frequency shall also be indicated. Other monitoring data not specifically required in this permit (such as internal process or internal waste stream data) which is collected by or for the permittee need not be submitted unless requested by the Commissioner.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for a minimum of three (3) years. In cases where the original records are kept at another location, a copy of all such records shall be kept at the permitted facility. The three years shall be extended:

a. automatically during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or regarding promulgated effluent guidelines applicable to the permittee; or

b. as requested by the Regional Administrator or the Indiana Department of Environmental Management.

D. STORM WATER MONITORING AND NON-NUMERIC CONDITIONS

1. Within eighteen (18) months of the effective date of this permit ArcelorMittal shall implement the non-numeric permit conditions in Part I.D. of this permit for the entire site as it relates to storm water associated with industrial activity regardless which outfall the storm water is discharged from.

2. Control Measures and Effluent Limits

In the technology-based limits included in Part I.D.3-5., the term "minimize" means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice.

3. Control Measures

Select, design, install, and implement control measures (including best management practices) to address the selection and design considerations in Part I.D.4 to meet the non-numeric effluent limits in Part I.D.5. The selection, design, installation, and implementation of these control measures must be in accordance with good engineering practices and manufacturer's specifications. Any deviation from the manufacturer's specifications shall be documented. If the control measures are not achieving their intended effect in minimizing pollutant discharges, the control measures must be modified as expeditiously as practicable. Regulated storm water discharges from the facility include storm water

run-on that commingles with storm water discharges associated with industrial activity at the facility.

4. Control Measure Selection and Design Considerations

When selecting and designing control measures consider the following:

a. preventing storm water from coming into contact with polluting materials is generally more effective, and cost-effective, than trying to remove pollutants from storm water;

b. use of control measures in combination is more effective than use of control measures in isolation for minimizing pollutants in storm water discharge;

c. assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures that will achieve the limits in this permit;

d. minimizing impervious areas at your facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches), can reduce runoff and improve ground water recharge and stream base flows in local streams, although care must be taken to avoid ground water contamination;

e. flow can be attenuated by use of open vegetated swales and natural depressions;

f. conservation and/or restoration of riparian buffers will help protect streams from storm water runoff and improve water quality; and

g. use of treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

5. Technology-Based Effluent Limits (BPT/BAT/BCT): Non-Numeric Effluent Limits

a. <u>Minimize Exposure</u>

Minimize the exposure of raw, final, or waste materials to rain, snow, snowmelt, and runoff. To the extent technologically available and economically practicable and achievable, either locate industrial materials and activities inside or protect them with

storm resistant coverings in order to minimize exposure to rain, snow, snowmelt, and runoff (although significant enlargement of impervious surface area is not recommended). In minimizing exposure, pay particular attention to the following areas:

Loading and unloading areas: locate in roofed or covered areas where feasible; use grading, berming, or curbing around the loading area to divert run-on; locate the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems.

Material storage areas: locate indoors, or in roofed or covered areas where feasible; install berms/dikes around these areas; use dry cleanup methods.

Note: Industrial materials do not need to be enclosed or covered if storm water runoff from affected areas will not be discharged to receiving waters.

b. Good Housekeeping

Keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping at regular intervals, keeping materials orderly and labeled, and stowing materials in appropriate containers.

As part of the developed good housekeeping program, include a cleaning and maintenance program for all impervious areas of the facility where particulate matter, dust, or debris may accumulate, especially areas where material loading and unloading, storage, handling, and processing occur; and where practicable, the paving of areas where vehicle traffic or material storage occur but where vegetative or other stabilization methods are not practicable (institute a sweeping program in these areas too). For unstabilized areas where sweeping is not practicable, consider using stormwater management devices such as sediment traps, vegetative buffer strips, filter fabric fence, sediment filtering boom, gravel outlet protection, or other equivalent measures that effectively trap or remove sediment.

c. Maintenance

Maintain all control measures which are used to achieve the effluent limits required by this permit in effective operating

condition. Nonstructural control measures must also be diligently maintained (e.g., spill response supplies available, personnel appropriately trained). If control measures need to be replaced or repaired, make the necessary repairs or modifications as expeditiously as practicable.

d. Spill Prevention and Response Procedures

You must 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. At a minimum, you must implement:

(1) Procedures for plainly labeling containers (e.g., "Used Oil", "Spent Solvents", "Fertilizers and Pesticides", etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;

(2) Preventive measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;

(3) Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of your storm water pollution prevention team; and

(4) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies. State or local requirements may necessitate reporting spills or discharges to local emergency response, public health, or drinking water supply agencies. Contact information must be in locations that are readily accessible and available.

(5) Procedures for documenting where potential spills and leaks could occur that could contribute pollutants to storm water discharges, and the corresponding outfalls that would be affected by such spills and leaks.

(6) A procedure for documenting all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a storm water conveyance.

e. Erosion and Sediment Controls

Through the use of structural and/or non-structural control measures stabilize, and contain runoff from, exposed areas to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions to meet this limit, place flow velocity dissipation devices at discharge locations and within outfall channels where necessary to reduce erosion and/or settle out pollutants. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to check out information from both the State and EPA websites. The following two websites are given as information sources: http://www.in.gov/idem/4899.htm and http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm

f. Management of Runoff

Divert, infiltrate, reuse, contain or otherwise reduce storm water runoff, to minimize pollutants in the discharge.

g. Salt Storage Piles or Piles Containing Salt

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. You must implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile. Piles do not need to be enclosed or covered if storm water runoff from the piles is not discharged.

h. Waste, Garbage, and Floatable Debris

Ensure that waste, garbage, and floatable debris are not discharge to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged.

i. Employee Training

Train all employees who work in areas where industrial material 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. Training must cover the specific control measures used to achieve the effluent limits in this part, and monitoring, inspection, planning, reporting, and documentation requirements in other parts of this permit

j. Non-Storm Water Discharges

You must determine if any non-storm water discharges not authorized by an NPDES permit exist. Any non-storm water discharges discovered must either be eliminated or modified into this permit.

The following non-storm water discharges are authorized and should be documented when they occur in accordance with Part I.E.2.c. of the permit:

Discharges from fire-fighting activities;
Fire Hydrant flushings;
Potable water, including water line flushings;
Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
Irrigation drainage;
Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
Pavement wash water where no detergents are used and no spills or leaks of toxic or hazardous material have occurred (unless all spilled material has been removed);
Routine external building washdown that does not use detergents;
Uncontaminated ground water or spring water;

k. Dust Generation and Vehicle Tracking of Industrial Materials

You must minimize generation of dust and off-site tracking of raw, final, or waste materials.

6. Annual Review

At least once every 12 months, you must review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limitations in this permit. You must document the results of your review in a report that shall be retained within the SWPPP. You must also submit the report to the Industrial NPDES Permit Section on an annual basis.

7. Corrective Actions – Conditions Requiring Review

a. If any of the following conditions occur, you must review and revise the selection, design, installation, and implementation of your control measures to ensure that the condition is eliminated and will not be repeated:

(1) an unauthorized release or discharge (e.g., spill, leak, or discharge of non-storm water not authorized by this NPDES permit) occurs at this facility;

(2) it is determined that your control measures are not stringent enough for the discharge to meet applicable water quality standards;

(3) it is determined in your routine facility inspection, an inspection by EPA or IDEM, comprehensive site evaluation, or the Annual Review required in Part I.D.6 that modifications to the control measures are necessary to meet the effluent limits in this permit or that your control measures are not being properly operated and maintained; or

(4) Upon written notice by the Commissioner that the control measures prove to be ineffective in controlling pollutants in storm water discharges exposed to industrial activity.

b. If any of the following conditions occur, you must review and revise the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the effluent limits in this permit:

(1) construction or a change in design, operation, or maintenance at your facility that significantly changes the nature of pollutants discharged in storm water from your facility, or significantly increases the quantity of pollutants discharge.

8. Corrective Action Deadlines

You must document your discovery of any of the conditions listed in Part I.D.7 within thirty (30) days of making such discovery. Subsequently, within one-hundred and twenty (120) days of such discovery, you must document any corrective action(s) to be taken to eliminate or further investigate the deficiency or if no corrective action is needed, the basis for that determination. Specific documentation required within 30 and 120 days is detailed below. If you determine that changes to your control measures are necessary following your review, any modifications to your control measures must be made before the next storm event if possible, or as soon as practicable following that storm event. These time intervals are not grace periods, but schedules considered reasonable for the documenting of your findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely.

9. Corrective Action Report

Within 30 days of a discovery of any condition listed in Part I.D.7, you must document the following information:

a. Brief description of the condition triggering corrective action;

b. Date condition identified; and

c. How deficiency identified.

Within 120 days of discovery of any condition listed in Part I.D.7, you must document the following information:

a. Summary of corrective action taken or to be taken (or, for triggering events identified in Part I.D.7.b.1, where you determine that corrective action is not necessary, the basis for this determination)

b. Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;

c. Date corrective action initiated; and

d. Date corrective action completed or expected to be completed.

10. Inspections

The inspections in this part must be conducted at this facility.

a. At a minimum, quarterly inspections of the storm water management measures and storm water run-off conveyances. The routine inspections must be performed by qualified personnel with at least one member of your storm water pollution prevention team. Inspections must be documented and either contained in, or have the on-site record keeping location referenced in, the SWPPP.

b. Routine Facility Inspection Documentation – You must document the findings of each routine facility inspection performed and maintain this documentation with your SWPPP or have the on-site record keeping location referenced in the SWPPP. At a minimum, your documentation must include:

(1) The inspection date and time;

(2) The name(s) and signature(s) of the inspectors;

(3) Weather information and a description of any discharges occurring at the time of the inspection;

(4) Any previously unidentified discharges of pollutants from the site;

(5) Any control measures needing maintenance or repairs;

(6) Any failed control measures that need replacement;

(7) Any incidents of noncompliance observed; and

(8) Any additional control measures needed to comply with the permit requirements.

Any corrective action required as a result of a routine facility inspection must be performed consistent with Part I.D.7 of this permit.

c. Comprehensive Site Compliance Evaluation – Qualified personnel shall conduct a comprehensive site compliance evaluation, at least once per year, to confirm the accuracy of the description of potential pollution sources contained in the plan, determine the effectiveness of the plan, and assess compliance with the permit. Such evaluations shall provide:

(1) Areas contributing to a storm water discharge associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measure, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

As part of the routine inspections, address all potential sources of pollutants, including (if applicable) air pollution control equipment (e.g., baghouses, electrostatic precipitator, scrubbers, and cyclones), for any signs of degradation (e.g., leaks, corrosion, or improper operation) that could limit their efficiency and lead to excessive emissions. Considering monitoring air flow at inlets and outlets (or use equivalent measures) to check for leaks (e.g., particulate deposition) or blockage in ducts. Also inspect all process and material handling equipment (e.g., conveyors, cranes, and vehicles) for leaks, drips, or the potential loss of material; and material storage areas (e.g., piles, bins, or hoppers for storing coke, coal, scrap, or slag, as well as chemicals stored in tanks and drums) for signs of material loss due to wind or storm water runoff.

(2) Based on the results of the evaluation, the description of potential pollutant sources identified in the plan in accordance with Part I.E.2.b of this permit and pollution prevention measures and controls identified in the plan in accordance with Part I.D.5. of this permit shall be revised as appropriate within the timeframes contained in Part I.D.9 of this permit.

(3) A report summarizing the scope of the evaluation, personnel making the evaluation, the date(s) of the evaluation, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with the above paragraph must be documented and either contained in, or have on-site record keeping location referenced in, the

SWPPP at least 3 years after the date of the evaluation. The report shall identify any incidents of noncompliance. Where a report does not identify any incidents of noncompliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with the signatory requirements of Part II.C.6 of this permit.

(4) Where compliance evaluation schedules overlap the inspections required under Part I.D.10.a, the compliance evaluation may be conducted in place of one such inspection.

E. STORM WATER POLLUTION PREVENTION PLAN

1. Development of Plan

Within eighteen (18) months from the effective date of this permit, the permittee is required to develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the permitted facility. The plan shall at a minimum include the following:

a. Identify potential sources of pollution, which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. Storm water associated with industrial activity (defined in 40 CFR 122.26(b)) includes, but is not limited to, the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or materials storage areas at an industrial plant;

b. Describe practices and measure to be used in reducing the potential for pollutants to be exposed to storm water; and

c. Assure compliance with the terms and conditions of this permit.

2. Contents

The plan shall include, at a minimum, the following items:

a. Pollution Prevention Team -The plan shall list, by position title, the member or members of the facility organization as members of a storm water Pollution Prevention Team who are responsible for developing the storm water pollution prevention plan (SWPPP)

and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each storm water pollution prevention team member. Each member of the storm water pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit and your SWPPP.

b. Description of Potential Pollutant Sources – The plan shall provide a description of areas at the site exposed to industrial activity and have a reasonable potential for storm water to be exposed to pollutants. The plan shall identify all activities and significant materials (defined in 40 CFR 122.26(b)), which may potentially be significant pollutant sources. As a minimum, the plan shall contain the following:

(1) A soils map indicating the types of soils found on the facility property and showing the boundaries of the facility property.

(2) A graphical representation, such as an aerial photograph or site layout maps, drawn to an appropriate scale, which contains a legend and compass coordinates, indicating, at a minimum, the following:

(A) All on-site storm water drainage and discharge conveyances, which may include pipes, ditches, swales, and erosion channels, related to a storm water discharge.

(B) Known adjacent property drainage and discharge conveyances, if directly associated with run-off from the facility.

(C) All on-site and known adjacent property water bodies, including wetlands and springs.

(D) An outline of the drainage area for each outfall.

(E) An outline of the facility property, indicating directional flows, via arrows, of surface drainage patterns.

(F) An outline of impervious surfaces, which includes pavement and buildings, and an estimate of the impervious and pervious surface square footage for each drainage area placed in a map legend.

(G) On-site injection wells, as applicable.

(H) On-site wells used as potable water sources, as applicable.

(I) All existing major structural control measures to reduce pollutants in storm water run-off.

(J) All existing and historical underground or aboveground storage tank locations, as applicable.

(K) All permanently designated plowed or dumped snow storage locations.

(L) All loading and unloading areas for solid and liquid bulk materials.

(M) All existing and historical outdoor storage areas for raw materials, intermediary products, final products, and waste materials. Include materials handled at the site that potentially may be exposed to precipitation or runoff, areas where deposition of particulate matter from process air emissions or losses during material-handling activities.

(N) All existing or historical outdoor storage areas for fuels, processing equipment, and other containerized materials, for example, in drums and totes.

(O) Outdoor processing areas.

(P) Dust or particulate generating process areas.

(Q) Outdoor assigned waste storage or disposal areas.

(R) Pesticide or herbicide application areas.

(S) Vehicular access roads.

(T) Identify any storage or disposal of wastes such as spent solvents and baths, sand, slag and dross; liquid storage tanks and drums; processing areas including pollution control equipment (e.g.,

baghouses); and storage areas of raw material such as coal, coke, scrap, sand, fluxes, refractories, or metal in any form. In addition, indicate where an accumulation of significant amounts of particulate matter could occur from such sources as furnace or oven emissions, losses from coal and coke handling operation, etc., and could result in a discharge of pollutants.

The mapping of historical locations is only required if the historical locations have a reasonable potential for stormwater exposure to historical pollutants.

(3) An area site map that indicates:

(A) The topographic relief or similar elevations to determine surface drainage patterns;

(B) The facility boundaries;

(C) All receiving waters; and

(D) All known drinking water wells; and

Includes at a minimum, the features in clauses (A), (C), and (D) within a one-fourth (1/4) mile radius beyond the property boundaries of the facility. This map must be to scale and include a legend and compass coordinates.

(4) A narrative description of areas that generate storm water discharges exposed to industrial activity including descriptions for any existing or historical areas listed in subdivision 2.b.(2)(J) through (S) of this Part, and any other areas thought to generate storm water discharges exposed to industrial activity. The narrative descriptions for each identified area must include the following:

(A) Type and typical quantity of materials present in the area.

(B) Methods of storage, including presence of any secondary containment measures.

(C) Any remedial actions undertaken in the area to eliminate pollutant sources or exposure of storm

water to those sources. If a corrective action plan was developed, the type of remedial action and plan date shall be referenced.

(D) Any significant release or spill history dating back a period of three (3) years from the effective date of this permit, in the identified area, for materials spilled outside of secondary containment structures and impervious surfaces in excess of their reportable quantity, including the following:

i. The date and type of material released or spilled.

ii. The estimated volume released or spilled.

iii. A description of the remedial actions undertaken, including disposal or treatment.

Depending on the adequacy or completeness of the remedial actions, the spill history shall be used to determine additional pollutant sources that may be exposed to storm water. In subsequent permit terms, the history shall date back for a period of five (5) years from the date of the permit renewal application.

(E) Where the chemicals or materials have the potential to be exposed to storm water discharges, the descriptions for each identified area must include a risk identification analysis of chemicals or materials stored or used within the area. The analysis must include the following:

i. Toxicity data of chemicals or materials used within the area, referencing appropriate material safety data sheet information locations.

ii. The frequency and typical quantity of listed chemicals or materials to be stored within the area.

iii. Potential ways in which storm water discharges may be exposed to listed

chemicals and materials.

iv. The likelihood of the listed chemicals and materials to come into contact with water.

(5) A narrative description of existing and planned management practices and measures to improve the quality of storm water run-off entering a water of the state. Descriptions must be created for existing or historical areas listed in subdivision 2.b.(2)(J) through (S) and any other areas thought to generate storm water discharges exposed to industrial activity. The description must include the following:

(A) Any existing or planned structural and nonstructural control practices and measures.

(B) Any treatment the storm water receives prior to leaving the facility property or entering a water of the state.

(C) The ultimate disposal of any solid or fluid wastes collected in structural control measures other than by discharge.

(D) Describe areas that due to topography, activities, or other factors have a high potential for significant soil erosion.

(E) Document the location of any storage piles containing salt used for deicing.

(F) Information or other documentation required under subsection (d) of this plan.

(6) The results of storm water monitoring. The monitoring data must include completed field data sheets, chain-of-custody forms, and laboratory results. If the monitoring data are not placed into the facility's SWPPP, the on-site location for storage of the information must be reference in the SWPPP.

c. Non-Stormwater Discharges – You must document that you have evaluated for the presence of non-storm water discharges not

authorized by an NPDES. Any non-storm water discharges have either been eliminated or incorporated into this permit. Documentation of non-storm water discharges shall include a written non-storm water assessment, including the following:

(1) A certification letter stating that storm water discharges entering a water of the state have been evaluated for the presence of illicit discharges and non-storm water contributions.

(2) Detergent or solvent-based washing of equipment or vehicles that would allow washwater additives to enter any storm water only drainage system shall not be allowed at this facility unless appropriately permitted under this NPDES permit.

(3) All interior maintenance area floor drains with the potential for maintenance fluids or other materials to enter storm water only storm sewers must be either sealed, connected to a sanitary sewer with prior authorization, or appropriately permitted under this NPDES permit. The sealing, sanitary sewer connecting, or permitting of drains under this item must be documented in the written non-storm water assessment program.

(4) The certification shall include a description of the method used, the date of any testing, and the on-site drainage points that were directly observed during the test.

d. General Requirements – The SWPPP must meet the following general requirements:

(1) The plan shall be certified by a qualified professional. The term qualified professional means an individual who is trained and experienced in water treatment techniques and related fields as may be demonstrated by state registration, professional certification, or completion of course work that enable the individual to make sound, professional judgments regarding storm water control/treatment and monitoring, pollutant fate and transport, and drainage planning.

(2) The plan shall be retained at the facility and be available for review by a representative of the Commissioner upon request.

IDEM may provide access to portions of your SWPPP to the public.

(3) The plan must be revised and updated as required. Revised and updated versions of the plan must be implemented on or before three hundred sixty-five (365) days from the effective date of this permit. The Commissioner may grant an extension of this time frame based on a request by the person showing reasonable cause.

(4) If the permittee has other written plans, required under applicable federal or state law, such as operation and maintenance, spill prevention control and countermeasures (SPCC), or risk contingency plans, which fulfill certain requirements of an SWPPP, these plans may be referenced, at the permittee's discretion, in the appropriate sections of the SWPPP to meet those section requirements.

(5) The permittee may combine the requirements of the SWPPP with another written plan if:

(A) The plan is retained at the facility and available for review;

(B) All the requirements of the SWPPP are contained within the plan; and

(C) A separate, labeled section is utilized in the plan for the SWPPP requirements.

F. SCHEDULE OF COMPLIANCE – Outfall 001 for Mercury

The permittee shall achieve compliance with the effluent limitations specified for Mercury at Outfall 001 as soon as possible but no later than Fifty-four (54) months from the effective date of this permit in accordance with the following schedule:

1. The permittee shall submit a written Quality Assurance Project Plan (QAPP) to identify the sources of Mercury to the Compliance Data Section of the Office of Water Quality (OWQ) no later than three (3) months from the effective date of this permit. IDEM will provide any comments within 30 days of receipt of the QAPP. If comments are made, IDEM will provide the permittee with the opportunity to discuss any comments prior to implementation of the QAPP. If IDEM does not comment within 30 days of its receipt of the QAPP, the permittee may

proceed with implementation as set forth in the QAPP. The QAPP shall include a description of the method(s) selected for identifying the sources of Mercury in addition to any other relevant information. The QAPP shall include a specific time line specifying when each of the steps will be taken. The new effluent limits for Mercury are deferred for the term of this compliance schedule, unless the effluent limits can be met at an earlier date. The permittee shall notify the Compliance Data Section of OWQ as soon as the effluent limits for Mercury can be met at Outfall 001. Upon receipt of such notification by OWQ, the final limits for Mercury will become effective, but no later than Fifty-four (54) months from the effective date of this permit. Monitoring and reporting of the effluent at Outfall 001 for this parameter is required during the interim period. The QAPP shall address, at a minimum, the following:

a. Identification of the sampling locations that will be utilized to evaluate potential sources of Mercury to Outfall 001 (current and historic).
b. Development of a sampling plan to identify sources of Mercury.
c. Assessment of the potential pollution prevention activities for Mercury at the facility. The assessment should include a methodology for determining the feasibility of eliminating or reducing Mercury from the internal wastestreams identified for inclusion in the sampling plan.

2. The permittee shall submit a report to the Compliance Data Section of OWQ no later than Fifteen (15) months from the effective date of this permit. This report shall include detailed information on:

   a. All sampling conducted during the previous 12 months for Mercury including all analytical results obtained up to the time of the report.
   b. A description of any pollution prevention activities implemented as a result of the sampling results (such as replacement of raw or intermediate products containing excessive quantities of Mercury) that reduce or eliminate the addition of Mercury into Outfall 001.

3. The permittee shall submit a QAPP report to the Compliance Data Section of OWQ no later than 27 months from the effective date of this permit. This report shall include detailed information on:

   a. The results of all sampling performed during the previous 24 months to evaluate potential sources of Mercury to Outfall 001.
   b. The evaluation of short-term and long-term control measures, including, but not limited to, best management practices, pollution prevention activities and treatment technologies that will reduce the concentration of Mercury in the effluent from Outfall 001.

c. A description of any control measures that were identified and implemented during the previous 24 months.
d. Any proposed or actual construction of additional treatment technology to reduce the concentration of Mercury in the effluent from Outfall 001.
e. The anticipated date when the permittee will submit the Final Plan for Compliance (FPC) for the final effluent limits for Mercury.

3. The permittee shall submit a proposed Final Plan for Compliance (FPC) containing the source identification report for Mercury and the plan for implementing pollution prevention or installing treatment where feasible to achieve compliance with the final limits for Mercury no later than thirty (30) months after the effective date of this permit. IDEM will provide any comments within 30 days of receipt of the FPC. If comments are made, IDEM will provide the permittee with the opportunity to discuss the comments prior to implementation. If IDEM does not comment within 30 days of its receipt of the FPC, the permittee may proceed with implementation as set forth in the FPC.

4. The permittee shall submit a report to the Compliance Data Section of OWQ no later than Thirty-Nine (39) months from the effective date of this permit. This report shall include detailed information on:

   a. The implementation of pollution prevention activities such as replacement of raw or intermediate products containing excessive quantities of Mercury; or production practices that reduce or eliminate the addition of Mercury into the wastewater.
   b. The construction of treatment technology identified in the FPC for the reduction of Mercury in the effluent from Outfall 001.
   c. the achievement of milestones identified in the FPC.
   d. the anticipated date when the discharge from Outfall 001 can achieve compliance with the final effluent limits for Mercury.

5. The permittee shall submit a progress report to the Compliance Data Section of OWQ no later than Forty-Eight (48) months from the effective date of this permit. This report shall include detailed information on:

   a. The implementation of pollution prevention activities such as replacement of raw or intermediate products containing excessive quantities of Mercury; or production practices that reduce or eliminate the addition of Mercury into the wastewater.

b. The construction of treatment technology identified in the FPC for the reduction of Mercury in the effluent from Outfall 001.
c. the achievement of milestones identified in the FPC.
d. the anticipated date when the discharge from Outfall 001 can achieve compliance with the final effluent limits for Mercury.

6. Within thirty (30) days of completion of any additional pollutant control equipment, the permittee shall file with the Industrial NPDES Permits Section of OWQ a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

7. The permittee shall comply with the final effluent limitations for Mercury at Outfall 001 no later than Fifty-four (54) months from the effective date of this permit.

8. If the permittee fails to comply with any deadline contained in the foregoing schedule, the permittee shall, within fourteen (14) days following the missed deadline, submit a written notice of noncompliance to the OWQ stating the cause of noncompliance, and remedial action taken or planned, and the probability of meeting the date fixed for compliance with final effluent limitations.

G. TOXIC ORGANIC POLLUTANT MANAGEMENT PLAN

In order to use the Certification Statement for Total Toxic Organics in Part I.A.2 of this permit, the Permittee is required to submit a management plan for toxic organic pollutants. The Toxic Organic Pollutant Management Plan is to be submitted to the Compliance Data Section of the Office of Water Quality within ninety (90) days of the effective date of this permit, and is to include a listing of toxic organic compounds used, the method of disposal, and procedure for ensuring that these compounds do not routinely spill or leak into the process wastewater, noncontact cooling water, groundwater, stormwater, or other surface waters.

H. POLLUTANT MINIMIZATION PROGRAM

This permit contains water quality-based effluent limits (WQBEL) for total residual chlorine and silver that are less than the LOQ. The permittee is required to develop and conduct a pollutant minimization program (PMP).

a. The goal of the pollutant minimization program shall be to maintain the effluent at or below the WQBEL. The pollutant minimization program shall include, but is not limited to, the following:

(1) Submit a control strategy designed to proceed toward the goal within 180 days of the effective date of this permit.

(2) Implementation of appropriate cost-effective control measures, consistent with the control strategy within 365 days of the effective date of this permit.

(3) Monitor as necessary to record the progress toward the goal.

(4) Submit an annual status to the Commissioner at the address listed in Part I.C.3.g. to the attention of the Office of Water Quality, Compliance Data Section, by January 31 of each year that includes the following information:

(i) All minimization program monitoring results for the previous year.

(ii) A list of potential sources of the pollutant.

(iii) A summary of all actions taken to reduce or eliminate the identified sources of the pollutant.

(5) A pollutant minimization program may include the submittal of pollution prevention strategies that use changes in production process technology, materials, processes, operations, or procedures to reduce or eliminate the source of the pollutant.

b. No pollutant minimization program is required if the permittee demonstrates that the discharge of a pollutant with a WQBEL below the LOQ is reasonably expected to be in compliance with the WQBEL at the point of discharge into the receiving water. This demonstration may include, but is not limited to, the following:

(1) Treatment information, including information derived from modeling the destruction of removal of the pollutant in the treatment process.

(2) Mass balance information.

(3) Fish tissue studies or other biological studies.

c. In determining appropriate cost-effective control measures to be implemented in a pollutant minimization program, the following factors may be considered:

(1) Significance of sources.

(2) Economic and technical feasibility.

(3) Treatability.

I. CHRONIC BIOMONITORING PROGRAM REQUIREMENTS

The 1977 Clean Water Act explicitly states, in Section 101(3) that it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited. In support of this policy the U.S. EPA in 1995 amended 40 CFR 136.3 (Tables IA and II) by adding testing method for measuring acute and short-term chronic toxicity of whole effluents and receiving waters. To adequately assess the character of the effluent, and the effects of the effluent on aquatic life, the permittee shall conduct Whole Effluent Toxicity Testing. Part I.I.1 describes the testing procedures, Part I.I.2 describes the Toxicity Reduction Evaluation which is only required if the effluent demonstrated toxicity, as described in Part I.I.1.f.

1. Whole Effluent Toxicity Tests

Within 90 days of the effective date of the permit, the permittee shall initiate the series of bioassay tests described below to monitor the toxicity of the discharge from Outfall 001. If toxicity is demonstrated as defined under Part I.I.f below, the permittee is required to conduct a toxicity reduction evaluation (TRE).

a. Bioassay Test Procedures and Data Analysis

(1) All test organisms, test procedures and quality assurance criteria used shall be in accordance with the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms; Fourth Edition Section 13, Cladoceran (*Ceriodaphnia dubia*) Survival and Reproduction Test Method 1002.0; and Section 11, Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test Method, (1000.0) EPA 821-R-02-013, October 2002, or most recent update.

(2) Any circumstances not covered by the above methods, or that required deviation from the specified methods shall first be approved by the IDEM's NPDES Permits Branch.

(3) The determination of effluent toxicity shall be made in accordance with the Data Analysis general procedures for chronic toxicity endpoints as outlined in Section 9, and in Sections 11 and 13 of the respective Test Method (1000.0 and 1002.0) of Short-term Methods of Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms (EPA-821-R-02-013), Fourth Edition, October 2002, or most recent update.

b. Types of Bioassay Tests

The permittee shall conduct 7-day Daphnid (*Ceriodaphnia dubia*) Survival and Reproduction Test and a 7-day Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test on samples of final effluent. All tests will be conducted on 24-hour composite samples of final effluent. All test solutions shall be renewed daily. On days three and five fresh 24-hour composite samples of the effluent collected on alternate days shall be used to renew the test solutions.

If, in any control, more than 10% of the test organisms die in 96 hours, or more than 20% of the test organisms die in 7 days, that test shall be repeated. In addition, if in the *Ceriodaphnia* test control the number of newborns produced per surviving female is less than 15, or if 60% of surviving control females have less than three broods; and in the fathead minnow test if the mean dry weight of 7-day old surviving fish in the control group is less than 0.25 mg, that test shall also be repeated. Such testing will determine whether the effluent affects the survival, reproduction, and/or growth of the test organisms. Results of all tests regardless of completion must be reported to IDEM.

c. Effluent Sample Collection and Chemical Analysis

(1) Samples taken for the purposes of Whole Effluent Toxicity Testing will be taken at a point that is representative of the discharge, but prior to discharge. The maximum holding time for whole effluent is 36 hours for a 24 hour composite sample. Bioassay tests must be started within 36 hours after termination of the 24 hour composite sample collection. Bioassay of effluent sampling may be coordinated with other permit sampling requirements as appropriate to avoid duplication.

(2) Chemical analysis must accompany each effluent sample taken for bioassay test, especially the sample taken for the repeat or confirmation test as outlined in Part I.I.1.f.3. below. The analysis detailed under Part I.A.1 and Part I.A.2 should be conducted for the effluent sample. Chemical analysis must comply with approved EPA test methods.

d. Testing Frequency and Duration

The chronic toxicity test specified in Part I.I.1.b. above shall be conducted monthly for three (3) months initially and thereafter at least once every quarter for the duration of the permit. After three tests have been completed, that indicate no toxicity as defined in section f. below, the permittee may reduce the number of species tested to only include the most sensitive to the toxicity in the effluent. In the absence of toxicity with either species in the monthly testing for three (3) months in the current tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the immediate past.

If toxicity is demonstrated as defined in Part I.I.1.f., the permittee is required to conduct a toxicity reduction evaluation (TRE) as specified in Part I.I.2.

e. Reporting

(1) Results shall be reported according to EPA 821-R-02-013, October 2002, Section 10 (Report Preparation). Two copies of the completed report for each test shall be submitted to the Compliance Data Section, Office of Water Quality of the IDEM no later than sixty days after completion of the test.

(2) For quality control, the report shall include the results of appropriate standard reference toxic pollutant tests for chronic endpoints and historical reference toxic pollutant data with mean values and appropriate ranges for the respective test species *Ceriodaphnia dubia* and *Pimephales promelas*. Biomonitoring reports must also include copies of Chain-of-Custody Records and Laboratory raw data sheets.

(3) Statistical procedures used to analyze and interpret toxicity data including critical values of significance to evaluate each point of toxicity should be described and included as part of the biomonitoring report.

f. Demonstration of Toxicity

(1) Acute toxicity will be demonstrated if the effluent is observed to have exceeded 1.0 TU_a (acute toxic units) based on 100% effluent for the test organism in 48 and 96 hours for *Ceriodaphnia dubia* or *Pimephales promelas*, respectively.

(2) Chronic toxicity will be demonstrated if the effluent is observed to have exceeded 9.8 $\mathbf{TU_c}$ (chronic toxic units) for *Ceriodaphnia dubia* or *Pimephales promelas.*

(3) If toxicity is found in any of the tests as specified above, a confirmation toxicity test using the specified methodology and same test species shall be conducted within two weeks of the completion of the failed test to confirm results. During the sampling for any confirmation test the permittee shall also collect and preserve sufficient effluent samples for use in any Toxicity Identification Evaluation (TIE) and/or Toxicity Reduction Evaluation (TRE), if necessary. If any two (2) consecutive tests, including any and all confirmation tests, indicate the presence of toxicity, the permittee must begin the implementation of a Toxicity Reduction Evaluation (TRE) as described below. The whole effluent toxicity tests required above may be suspended (upon approval from IDEM) while the TRE/TIE are being conducted.

g. Definitions

(1) TU_c is defined as 100/NOEC or $100/IC_{25}$, where the NOEC or IC_{25} are expressed as a percent effluent in the test medium.

(2) TU_a is defined as $100/LC_{50}$ where the LC_{50} is expressed as a percent effluent in the test medium of an acute whole effluent toxicity (WET) test that is statistically or graphically estimated to be lethal to fifty percent (50%) of the test organisms.

(3) "Inhibition concentration 25" or "IC_{25}" means the toxicant (effluent) concentration that would cause a twenty-five percent (25%) reduction in a nonquantal biological measurement for the test population. For example, the IC_{25} is the concentration of toxicant (effluent) that would cause a twenty-five percent (25%) reduction in mean young per female or in growth for the test population.

(4) "No observed effect concentration" or "NOEC" is the highest concentration of toxicant (effluent) to which organisms are exposed in a full life cycle or partial life cycle (short term) test, that causes no observable adverse effects on the test organisms, that is, the highest concentration of toxicant (effluent) in which the values for the observed responses are not statistically significantly different from the controls.

2. Toxicity Reduction Evaluation (TRE) Schedule of Compliance

The development and implementation of a TRE (including any post-TRE biomonitoring requirements) is only required if toxicity is demonstrated as defined in Part I.I.1.f. above.

a. Development of TRE Plan

Within 90 days of determination of toxicity, the permittee shall submit plans for an effluent toxicity reduction evaluation (TRE) to the Compliance Data Section, Office of Water Quality of the IDEM. The TRE plan shall include appropriate measures to characterize the causative toxicants and the variability associated with these compounds. Guidance on conducting effluent toxicity reduction evaluations is available from EPA and from the EPA publications list below:

(1) Methods for Aquatic Toxicity Identification Evaluations:

Phase I Toxicity Characteristics Procedures, Second Edition (EPA/600/6-91/003, February 1991.

Phase II Toxicity Identification Procedures (EPA 600/R-92/080), September 1993.

Phase III Toxicity Confirmation Procedures (EPA 600/R-92/081), September 1993.

(2) Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I. EPA/600/6-91/005F, May 1992.

(3) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs), (EPA/600/2-88/070), April 1989.

(4) Toxicity Reduction Evaluation Protocol for Municipal Wastewater Treatments Plants (EPA/833-B-99-022) August 1999.

b. Conduct the Plan

Within 30 days after the submission of the TRE plan to IDEM, the permittee must initiate an effluent TRE consistent with the TRE plan. Progress reports shall be submitted every 90 days to the Compliance Data Section, Office of Water Quality of the IDEM beginning 90 days after initiation of the TRE study.

c. Reporting

Within 90 days of the TRE study completion, the permittee shall submit to the Compliance Data Section, Office of Water Quality of the IDEM, the final study results and a schedule for reducing the toxicity to acceptable levels through control of the toxicant source or treatment of whole effluent.

d. Compliance Date

The permittee shall complete items a, b, and c from Part I.I.2. above and reduce the toxicity to acceptable levels as soon as possible, but <u>no later than three years after the date of determination of toxicity</u>.

e. Post-TRE Biomonitoring Requirements (Only Required After Completion of a TRE)

After the TRE, the permittee shall conduct monthly toxicity tests with 2 or more species for a period of three months. Should three consecutive monthly tests demonstrate no toxicity, the permittee may reduce the number of species tested to only include the species demonstrated to be most sensitive to the toxicity in the effluent, (see Part I.I.1.d. above for more specifics on this topic), <u>and conduct chronic tests quarterly for the duration of the permit</u>.

If toxicity is demonstrated, as defined in Part I.I.1.f. above, after the initial three month period, testing must revert to a TRE as described in Part I.I.2 (TRE) above.

J. REOPENING CLAUSES

This permit may be modified, or alternately, revoked and reissued, after public notice and opportunity for hearing:

1. to comply with any applicable effluent limitation or standard issued or approved under 301(b)(2)(C),(D) and (E), 304 (b)(2), and 307(a)(2) of the Clean Water Act, if the effluent limitation or standard so issued or approved:

   a. contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

   b. controls any pollutant not limited in the permit.

2. to incorporate any of the reopening clause provisions cited at 327 IAC 5-2-16.

3. to include a case-specific Limit of Detection (LOD) and/or Limit of Quantitation (LOQ). The permittee must demonstrate that such action is warranted in accordance with the procedures specified under Appendix B, 40 CFR Part 136, using the most sensitive analytical methods approved by EPA under 40 CFR Part 136, or approved by the Commissioner.

4. to comply with any applicable standards, regulations and requirements issued or approved under section 316(b) of the Clean Water Act, if the standards, regulations and requirement so issued or approved contains different conditions than those in the permit.

5. this permit may be modified or revoked and reissued after public notice and opportunity for hearing to revise or remove the requirements of the pollutant minimization program, if supported by information generated as a result of the program.

6. to specify the use of a different analytical method if a more sensitive analytical method has been specified in or approved under 40 CFR 136 or approved by the Commissioner to monitor for the presence and amount in the effluent of the pollutant for which the WQBEL is established. The permit shall specify, in accordance with 327 IAC 5-2-11.6(h)(2)(B), the

LOD and LOQ that can be achieved by use of the specified analytical method.

7. to review the monitoring requirements pursuant to 40 CFR 122.44(a)(2). The permittee may request, in writing, a review of categorical monitoring requirements. Upon review by IDEM, the permit may be modified, to reduce or delete the monitoring requirements.

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

A. GENERAL CONDITIONS

1. Duty to Comply

The permittee shall comply with all terms and conditions of this permit in accordance with 327 IAC 5-2-8(1) and all other requirements of 327 IAC 5-2-8. Any permit noncompliance constitutes a violation of the Clean Water Act and IC 13 and is grounds for enforcement action or permit termination, revocation and reissuance, modification, or denial of a permit renewal application.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.

2. Duty to Mitigate

In accordance with 327 IAC 5-2-8(3), the permittee shall take all reasonable steps to minimize or correct any adverse impact to the environment resulting from noncompliance with this permit. During periods of noncompliance, the permittee shall conduct such accelerated or additional monitoring for the affected parameters, as appropriate or as requested by IDEM, to determine the nature and impact of the noncompliance.

3. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must obtain and submit an application for renewal of this permit in accordance with 327 IAC 5-2-8(2). It is the permittee's responsibility to obtain and submit the application. In accordance with 327 IAC 5-2-3(c), the owner of the facility or operation from which a discharge of pollutants occurs is responsible for applying for and obtaining the NPDES permit, except where the facility or operation is operated by a person other than an employee of the owner in which case it is the operator's responsibility to apply for and obtain the permit. Pursuant to 327 IAC 5-3-2(a)(2), the application must be submitted at least 180 days before the expiration date of this permit. This deadline may be extended if:

a. permission is requested in writing before such deadline;

b. IDEM grants permission to submit the application after the deadline; and

c. the application is received no later than the permit expiration date.

4. Permit Transfers

In accordance with 327 IAC 5-2-8(4)(D), this permit is nontransferable to any person except in accordance with 327 IAC 5-2-6(c). This permit may be transferred to another person by the permittee, without modification or revocation and reissuance being required under 327 IAC 5-2-16(c)(1) or 16(e)(4), if the following occurs:

a. the current permittee notified the Commissioner at least thirty (30) days in advance of the proposed transfer date.

b. a written agreement containing a specific date of transfer of permit responsibility and coverage between the current permittee and the transferee (including acknowledgment that the existing permittee is liable for violations up to that date, and the transferee is liable for violations from that date on) is submitted to the Commissioner.

c. the transferee certifies in writing to the Commissioner their intent to operate the facility without making such material and substantial alterations or additions to the facility as would significantly change the nature or quantities of pollutants discharged and thus constitute cause for permit modification under 327 IAC 5-2-16(d). However, the Commissioner may allow a temporary transfer of the permit without permit modification for good cause, e.g., to enable the transferee to purge and empty the facility's treatment system prior to making alterations, despite the transferee's intent to make such material and substantial alterations or additions to the facility.

d. the Commissioner, within thirty (30) days, does not notify the current permittee and the transferee of the intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

The Commissioner may require modification or revocation and reissuance of the permit to identify the new permittee and incorporate such other requirements as may be necessary under the Clean Water Act or state law.

5. Permit Actions

In accordance with 327 IAC 5-2-16(b) and 327 IAC 5-2-8(4), this permit may be modified, revoked and reissued, or terminated for cause, including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;

b. Failure of the permittee to disclose fully all relevant facts or misrepresentation of any relevant facts in the application, or during the permit issuance process; or

c. A change in any condition that requires either a temporary or a permanent reduction or elimination of any discharge controlled by the permit, e.g., plant closure, termination of discharge by connection to a POTW, a change in state law that requires the reduction or elimination of the discharge, or information indicating that the permitted discharge poses a substantial threat to human health or welfare.

Filing of either of the following items does not stay or suspend any permit condition: (1) a request by the permittee for a permit modification, revocation and reissuance, or termination, or (2) submittal of information specified in Part II.A.3 of the permit including planned changes or anticipated noncompliance.

The permittee shall submit any information that the permittee knows or has reason to believe would constitute cause for modification or revocation and reissuance of the permit at the earliest time such information becomes available, such as plans for physical alterations or additions to the permitted facility that:

1. could significantly change the nature of, or increase the quantity of pollutants discharged; or
2. the commissioner may request to evaluate whether such cause exists.

In accordance with 327 IAC 5-1-3(a)(5), the permittee must also provide any information reasonably requested by the Commissioner.

6. Property Rights

Pursuant to 327 IAC 5-2-8(6) and 327 IAC 5-2-5(b), the issuance of this permit does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to persons or private property or invasion of other private rights, any infringement of federal, state, or local laws or regulations. The issuance of the permit also does not preempt any duty to obtain any other state, or local assent required by law for the discharge or for the construction or operation of the facility from which a discharge is made.

7. Severability

In accordance with 327 IAC 1-1-3, the provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any person or circumstance is held invalid, the invalidity shall not affect any other

provisions or applications of the permit which can be given effect without the invalid provision or application.

8. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 of the Clean Water Act.

9. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act or state law.

10. Penalties for Violation of Permit Conditions

Pursuant to IC 13-30-4, a person who violates any provision of this permit, the water pollution control laws; environmental management laws; or a rule or standard adopted by the Water Pollution Control Board is liable for a civil penalty not to exceed twenty-five thousand dollars ($25,000) per day of any violation.

Pursuant to IC 13-30-5, a person who obstructs, delays, resists, prevents, or interferes with (1) the department; or (2) the department's personnel or designated agent in the performance of an inspection or investigation performed under IC 13-14-2-2 commits a class C infraction.

Pursuant to IC 13-30-10-1.5(k), a person who willfully or recklessly violates any NPDES permit condition or filing requirement, any applicable standards or limitations of IC 13-18-3-2.4, IC 13-18-4-5, IC 13-18-8, IC 13-18-9, IC 13-18-10, IC 13-18-12, IC 13-18-14, IC 13-18-15, or IC 13-18-16, or who knowingly makes any false material statement, representation, or certification in any NPDES form, notice, or report commits a Class C misdemeanor.

An offense under IC 13-30-10-1.5(l) is a Class D felony if the offense results in damage to the environment that renders the environment unfit for human or vertebrate animal life. An offense under IC 13-30-10-1.5(k) is a Class C felony if the offense results in the death of another person.

11. Penalties for Tampering or Falsification

In accordance with 327 IAC 5-2-8(9), the permittee shall comply with monitoring, recording, and reporting requirements of this permit. The Clean Water Act, as well as IC 13-30-10-1, provides that any person who knowingly or

intentionally (a) destroys, alters, conceals, or falsely certifies a record that is required to be maintained under the terms of a permit issued by the department; and may be used to determine the status of compliance, (b) renders inaccurate or inoperative a recording device or a monitoring device required to be maintained by a permit issued by the department, or (c) falsifies testing or monitoring data required by a permit issued by the department commits a Class B misdemeanor.

12. Toxic Pollutants

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act for a toxic pollutant injurious to human health, and that standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit shall be modified or revoked and reissued to conform to the toxic effluent standard or prohibition in accordance with 327 IAC 5-2-8(5). Effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants injurious to human health are effective and must be complied with, if applicable to the permittee, within the time provided in the implementing regulations, even absent permit modification.

13. Wastewater treatment plant and certified operators

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. In order to operate a wastewater treatment plant the operator shall have qualifications as established in 327 IAC 5-22-7.

327 IAC 5-22-10.5(a) provides that a certified operator may be designated as being in responsible charge of more than one (1) wastewater treatment plant, if it can be shown that he will give adequate supervision to all units involved. Adequate supervision means that sufficient time is spent at the plant on a regular basis to assure that the certified operator is knowledgeable of the actual operations and that test reports and results are representative of the actual operations conditions. In accordance with 327 IAC 5-22-3(11), "responsible charge operator" means the person responsible for the overall daily operation, supervision, or management of a wastewater facility.

Pursuant to 327 IAC 5-22-10(4), the permittee shall notify IDEM when there is a change of the person serving as the certified operator in responsible charge of the wastewater treatment facility. The notification shall be made no later than thirty (30) days after a change in the operator.

14. Construction Permit

In accordance with IC 13-14-8-11.6, a discharger is not required to obtain a state permit for the modification or construction of a water pollution treatment or control facility if the discharger has an effective NPDES permit.

If the discharger modifies their existing water pollution treatment or control facility or constructs a new water pollution treatment or control facility for the treatment or control of any new influent pollutant or increased levels of any existing pollutant, then, within thirty (30) days after commencement of operation, the discharger shall file with the Department of Environment Management a notice of installation for the additional pollutant control equipment and a design summary of any modifications.

> The notice and design summary shall be sent to the Office of Water Quality - Mail Code 65-42, Industrial NPDES Permits Section, 100 North Senate Avenue, Indianapolis, IN 46204-2251.

15. Inspection and Entry

In accordance with 327 IAC 5-2-8(7), the permittee shall allow the Commissioner, or an authorized representative, (including an authorized contractor acting as a representative of the Commissioner) upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the permittee's premises where a point source, regulated facility, or activity is located or conducted, or where records must be kept pursuant to the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this permit;

c. Inspect at reasonable times any facilities, equipment or methods (including monitoring and control equipment), practices, or operations regulated or required pursuant to this permit; and

d. Sample or monitor at reasonable times, any discharge of pollutants or internal wastestreams for the purposes of evaluating compliance with the permit or as otherwise authorized.

16. New or Increased Discharge of Pollutants

This permit prohibits the permittee 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 pollutant parameter that is

not a BCC unless one of the following is completed prior to the commencement of the action:

a. Information is submitted to the Commissioner demonstrating that the proposed new or increased discharges will not cause a significant lowering of water quality as defined under 327 IAC 5-2-11.3(b)(1). Upon review of this information, the Commissioner may request additional information or may determine that the proposed increase is a significant lowering of water quality and require the submittal of an antidegradation demonstration.

b. An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 5-2-11.3(b)(3) through (6).

B. MANAGEMENT REQUIREMENTS

1. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for the collection and treatment which are installed or used by the permittee and which are necessary for achieving compliance with the terms and conditions of this permit in accordance with 327 IAC 5-2-8(8).

Neither 327 IAC 5-2-8(8), nor this provision, shall be construed to require the operation of installed treatment facilities that are unnecessary for achieving compliance with the terms and conditions of the permit.

2. Bypass of Treatment Facilities

Pursuant to 327 IAC 5-2-8(11):

a. Terms as defined in 327 IAC 5-2-8(11)(A):

(1) "Bypass" means the intentional diversion of a waste stream from any portion of a treatment facility.

(2) "Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. The permittee may allow a bypass to occur that does not cause a violation of the effluent limitations in the permit, but only if it is also for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.B.2.c., e, and f of this permit.

c. Bypasses, as defined in (a) above, are prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless the following occur:

(1) The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, as defined above;

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance; and

(3) The permittee submitted notices as required under Part II.B.2.e; or

(4) The condition under Part II.B.2.b above is met.

d. Bypasses that result in death or acute injury or illness to animals or humans must be reported in accordance with the "Spill Response and Reporting Requirements" in 327 IAC 2-6.1, including calling 888/233-7745 as soon as possible, but within two (2) hours of discovery.

e. The permittee must provide the Commissioner with the following notice:

(1) If the permittee knows or should have known in advance of the need for a bypass (anticipated bypass), it shall submit prior written notice. If possible, such notice shall be provided at least ten (10) days before the date of the bypass for approval by the Commissioner.

(2) The permittee shall orally report an unanticipated bypass that exceeds any effluent limitations in the permit within 24 hours of becoming aware of the bypass noncompliance. The permittee must also provide a written report within five (5) days of the time the permittee becomes aware of the bypass event. The written report must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; if the cause of noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the bypass event.

f. The Commissioner may approve an anticipated bypass, after considering its adverse effects, if the Commissioner determines that it will meet the conditions listed above in Part II.B.2.c. The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(12):

a. "Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

b. An upset shall constitute an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Paragraph c of this section, are met.

c. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence, that:

(1) An upset occurred and the permittee has identified the specific cause(s) of the upset, if possible;

(2) The permitted facility was at the time being operated in compliance with proper operation and maintenance procedures;

(3) The permittee complied with any remedial measures required under Part II.A.2; and

(4) The permittee submitted notice of the upset as required in the "Twenty-Four Hour Reporting Requirements," Part II.C.3, or 327 IAC 2-6.1, whichever is applicable.

4. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed from or resulting from treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutant from such materials from entering waters of the State and to be in compliance with all Indiana statutes and regulations relative to liquid and/or solid waste disposal. The discharge of pollutants in treated wastewater is allowed in compliance with the applicable effluent limitations in Part I. of this permit.

C. REPORTING REQUIREMENTS

1. Planned Changes in Facility or Discharge

Pursuant to 327 IAC 5-2-8(10)(F), the permittee shall give notice to the Commissioner as soon as possible of any planned physical alterations or additions to the permitted facility. In this context, permitted facility refers to a point source discharge, not a wastewater treatment facility. Notice is required only when either of the following applies:

a. The alteration or addition may meet one of the criteria for determining whether the facility is a new source as defined in 327 IAC 5-1.5.

b. The alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in Part I.A. nor to notification requirements in Part II.C.9. of this permit.

Following such notice, the permit may be modified to revise existing pollutant limitations and/or to specify and limit any pollutants not previously limited.

2. Monitoring Reports

Pursuant to 327 IAC 5-2-8(9) and 327 IAC 5-2-13 through 15, monitoring results shall be reported at the intervals and in the form specified in "Monitoring Reports", Part I.C.2.

3. Twenty-Four Hour Reporting Requirements

Pursuant to 327 IAC 5-2-8(10)(C), the permittee shall orally report to the Commissioner information on the following types of noncompliance within 24 hours from the time permittee becomes aware of such noncompliance. If the noncompliance meets the requirements of item b (Part II.C.3.b) or 327 IAC 2-6.1, then the report shall be made within those prescribed time frames.

a. Any unanticipated bypass which exceeds any effluent limitation in the permit;

b. Any noncompliance which may pose a significant danger to human health or the environment. Reports under this item shall be made as soon as the permittee becomes aware of the noncomplying circumstances;

c. Any upset (as defined in Part II.B.3 above) that causes an exceedance of any effluent limitation in the permit;

The permittee can make the oral reports by calling (317)232-8670 during regular business hours or by calling (317) 233-7745 ((888)233-7745 toll free in Indiana) during non-business hours. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce and eliminate the noncompliance and prevent its recurrence. The Commissioner may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. Alternatively the permittee may submit a "Bypass Fax Report" or a "Noncompliance Notification Report", whichever is appropriate, to IDEM at (317) 232-8637. If a complete fax submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then the fax report will satisfy both the oral and written reporting requirements.

4. Other Noncompliance

Pursuant to 327 IAC 5-2-8(10)(D), the permittee shall report any instance of noncompliance not reported under the "Twenty-Four Hour Reporting Requirements" in Part II.C.3, or any compliance schedules at the time the pertinent Discharge Monitoring Report is submitted. The report shall contain the information specified in Part II.C.3.

5. Other Information

Pursuant to 327 IAC 5-2-8(10)(E), where the permittee becomes aware of a failure to submit any relevant facts or submitted incorrect information in a permit application or in any report, the permittee shall promptly submit such facts or corrected information to the Commissioner.

6. Signatory Requirements

Pursuant to 327 IAC 5-2-22 and 327 IAC 5-2-8(14):

a. All reports required by the permit and other information requested by the Commissioner shall be signed and certified by a person described below or by a duly authorized representative of that person:

(1) For a corporation: by a responsible corporate officer defined as a president, secretary, treasurer, any vice-president of the corporation in charge of a principal business function, or any other person who performs similar policymaking or decision making functions for the corporation or the manager of one or more manufacturing, production or operating facilities employing more than two hundred fifty (250) persons or having the gross annual sales or expenditures exceeding twenty-five million dollars ($25,000,000) (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(2) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

(3) For a Federal, State, or local government body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.

b. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above.

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, or a position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

(3) The authorization is submitted to the Commissioner.

c. Certification. Any person signing a document identified under Part II.C.6. shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

7. Availability of Reports

Except for data determined to be confidential under 327 IAC 12.1, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Indiana Department of Environmental Management and the Regional Administrator. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

8. Penalties for Falsification of Reports

IC 13-30 and 327 IAC 5-2-8(14) provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance, shall, upon

conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 180 days per violation, or by both.

9. Changes in Discharge of Toxic Substances

Pursuant to 327 IAC 5-2-9, the permittee shall notify the Commissioner as soon as it knows or has reason to believe:

a. That any activity has occurred or will occur which would result in the discharge of any pollutant identified as toxic, pursuant to Section 307(a) of the Clean Water Act which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels."

(1) One hundred micrograms per liter (100μg/l);

(2) Two hundred micrograms per liter (200 μg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500μg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitophenol; and one milligram per liter (1mg/l) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR 122.21(g)(7); or

(4) A notification level established by the Commissioner on a case-by-case basis, either at his own initiative or upon a petition by the permittee. This notification level may exceed the level specified in subdivisions (1), (2), or (3) but may not exceed the level which can be achieved by the technology-based treatment requirements applicable to the permittee under the CWA (see 327 IAC 5-5-2).

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred micrograms per liter (500 μg/l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten (10) times the maximum concentration value

reported for that pollutant in the permit application in accordance with Sec. 122.21(g)(7).

(4) A notification level established by the Commissioner on a case-by-case basis, either at his own initiative or upon a petition by the permittee. This notification level may exceed the level specified in subdivisions (1), (2), or (3) but may not exceed the level which can be achieved by the technology-based treatment requirements applicable to the permittee under the CWA (see 327 IAC 5-5-2).

c. That it has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant which was not reported in the permit application under 40 CFR 122.21(g)(9).

PART III
Other Requirements

A. Thermal Effluent Requirements

The thermal discharge shall be calculated for Outfall 001. Such discharge shall be monitored by the permittee as specified below.

a. Flow and temperature values used in thermal discharge calculations shall be taken from the same day of monitoring.

b. The thermal discharge shall be computed as follows:

Thermal Discharge (MBTU/Hr.) = Q x (To – Ti) x 0.3477

where,

-MBTU/Hr. = million Btu/Hr.
Q = 24 hour discharge flow, MGD
To = effluent temperature, °F
Ti = influent temperature, °F
0.3477 = conversion factor

c. 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.

B. Intake Structures

This facility obtains its intake water from the ArcelorMittal West Facility that is permitted as IN0000205 and whose CWIS is in compliance with the CWA Section 316(b) as noted in its permit. This permit will also be in compliance with Section 316(b) as long as the CWIS regulated under Permit IN0000205 is in compliance. The holder of this permit shall notify IDEM if the ArcelorMittal West Facility that supplies the water to this facility no longer holds an NPDES permit that regulates the CWISs.

C. Biocides Concentration

The permittee must receive written permission from the IDEM if they desire to use any biocide or molluscicide other than chlorine. ArcelorMittal currently uses Sodium Hypochlorite (bleach/chlorine) for the control of zebra mussels. ArcelorMittal removes chlorine prior to discharge by using Sodium Bisulfate. Total Residual Chlorine (TRC) is limited at each of the affected final outfalls during periods of chlorination. The use of any biocide containing tributyl tin oxide in any closed or open cooling system is prohibited.

D. Intake Screen Wash

The 316(b) requirements for this facility are covered under NPDES Permit No. IN0000205.

E. Polychlorinated Biphenyl

There shall be no discharge of polychlorinated biphenyl (PCBs) compounds such as those commonly used for transformer fluid.

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

PUBLIC NOTICE NO: 2011 – 10G- F

DATE OF NOTICE: OCTOBER 26, 2011

The Office of Water Quality is issuing the NPDES permit renewal for ArcelorMittal Indiana Harbor, LLC – Indiana Harbor West, Permit No. IN0000205, and is issuing a new permit for the ArcelorMittal Indiana Harbor LLC-Central Wastewater Treatment Plant, Permit No. IN0063711. The Indiana Harbor West permit has been administratively extended since the permit's expiration date of September 29, 1991. During the renewal process ArcelorMittal requested that IDEM split the permit into two separate permits.

MAJOR – NEW

ARCELORMITTAL INDIANA HARBOR, LLC –CENTRAL WASTEWATER TREATMENT PLANT, Permit No. IN0063711, LAKE COUNTY, 3001 Dickey Rd, East Chicago, IN. This industrial facility manufactures steel. Operations at this facility consist of pickling operations, cold rolling, galvanizing temper mill, alkaline cleaning, hot dip galvanizing and tin and chrome electroplating operations. Outfalls 001 and Internal Outfall 101 have been removed from the IN0000205 permit at the permittee's request for inclusion in this new NPDES permit. Outfall 001 discharges to the Indiana Harbor Ship Canal. Permit Writer: Richard Hamblin, 317/232-8696, Rhamblin@idem.in.gov.

APPEAL PROCEDURES FOR FINAL PERMITS

The Final Permits are available for review & copies at IDEM, Indiana Government Center, North Bldg, 100 N Senate Ave, Indianapolis, IN, Room 1203, Office of Water Quality/NPDES Permit Section, from 9 – 4, M - F (copies 10¢ per page). Copies of the Final Permits are also available at the IDEM Northwest Regional Office, the Lake County Health Department, and on IDEM's website at http://www.in.gov/idem/5338.htm. Please tell others you think would be interested in this matter. Regarding your rights and responsibilities pertaining to the Public Notice process and timeframes, please refer to IDEM websites: http://www.in.gov/idem/5474.htm and IDEM Permit Guide (Public Participation): http://www.in.gov/idem/4172.htm.

Appeal Procedure: Any person affected by the issuance of the Final Permit may appeal by filing a Petition for Administrative Review with the Office of Environmental Adjudication **within** eighteen (18) days of the date of this Public Notice. Any appeal request must be filed in accordance with IC 4-21.5-3-7 and must include facts demonstrating that the party requesting appeal is the applicant; a person aggrieved or adversely affected or is otherwise entitled to review by law.

Timely filing: The Petition for Administrative Review must be received by the Office of Environmental Adjudication (OEA) **within** 18 days of the date of this Public Notice; either by U.S. Mail postmark or by private carrier with dated receipt. This Petition for Administrative Review represents a request for an Adjudicatory Hearing, therefore must:

- state the name and address of the person making the request;
- identify the interest of the person making the request;
- identify any persons represented by the person making the request;
- state specifically the reasons for the request;
- state specifically the issues proposed for consideration at the hearing;
- identify the Final Permit terms and conditions which, in the judgment of the person making the request, would be appropriate to satisfy the requirements of the law governing the NPDES Permit(s).

If the person filing the Petition for Administrative Review desires any part of the NPDES Final Permit(s) to be stayed pending the outcome of the appeal, a Petition for Stay must be included in the appeal request, identifying those parts to be stayed. Both Petitions shall be mailed or delivered to the address here:

Environmental Law Judge
Office of Environmental Adjudication
IGC – North Building- Room 501
100 N. Senate Avenue
Indianapolis, IN 46204
Phone: 317/232-8591.

Stay Time frame: If the Petition (s) is filed **within** eighteen (18) days of the mailing of this Public Notice, the effective date of any part of the permit, within the scope of the Petition for Stay is suspended for fifteen (15) days. The Permit will become effective again upon expiration of the fifteen (15) days, unless or until an Environmental Law Judge stays the permit action in whole or in part.

Hearing Notification: Pursuant to Indiana Code, when a written request is submitted, the OEA will provide the petitioner or any person wanting notification, with the Notice of pre-hearing conferences, preliminary hearings, hearing stays or orders disposing of the Petition for Administrative Review. Petition for Administrative Review must be filed in compliance with the procedures and time frames outlined above. Procedural or scheduling questions should be directed to the OEA at the phone listed above.

National Pollutant Discharge Elimination System
FACT SHEET
for
ArcelorMittal Indiana Harbor, LLC – Central Wastewater Treatment Plant
October 2011

Indiana Department of Environmental Management

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

Permittee:	ArcelorMittal Indiana Harbor, LLC - Central Wastewater Treatment Plant 3001 Dickey Road East Chicago, Indiana 46312
Existing Permit Information:	This is a New NPDES Permit
Source Contact:	Wendell Carter (219)391-2834
Source Location:	Indiana Harbor West 3001 Dickey Road East Chicago, Indiana Lake County
Receiving Stream:	Indiana Harbor Ship Canal
Proposed Action:	New Permit: IN0063711 Date Application Received: June 4, 2009
Source Category	NPDES Major – Industrial
Permit Writer:	Richard Hamblin (317)232-8696 or rhamblin@idem.in.gov

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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 ArcelorMittal on March 29, 1991. The discharge covered by this NPDES permit was previously covered under an existing permit (IN0000205) that was issued on September 30, 1986, and was subsequently modified on June 21, 1990, and September 26, 1991. The existing permit, IN0000205, expired on September 29, 1991. Since the facility filed a timely renewal application, the permit is considered to be administratively extended in accordance with 327 IAC 5-2-6(b). During the renewal process, the permittee requested to split permit number IN0000205 into two (2) NPDES permits. This permit is the new NPDES permit. The application was last updated in June 2009. 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 Statute 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 124.6, as well is Indiana Administrative Code (IAC) 327 Section 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 West is classified under Standard Industrial Classification (SIC) Code 3312 – Steel Mill. The permittee is a large integrated steel mill. Intermediate and final products include sinter, iron, raw steel, cast steel, hot strip, cold rolled strip, hot dip galvanized strip, and chromium and tin plated strip.

The ArcelorMittal – Indiana Harbor West (AM West) currently holds NPDES permit number IN0000205. The discharges associated with this new NPDES permit were previously covered under IN0000205. The facility, however, has requested that the discharge from Outfall 001 and Internal Outfall 101 be separated from IN0000205 and incorporated into this NPDES permit. These outfalls contain wastewater from some U.S. Steel operations as well as AM West operations. However, this permit for the discharge of such wastewaters is applied to AM West as they are the owner and operator of the Central Treatment Plant (CTP). The wastestreams from U.S. Steel were considered while determining effluent limitations for this permit.

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

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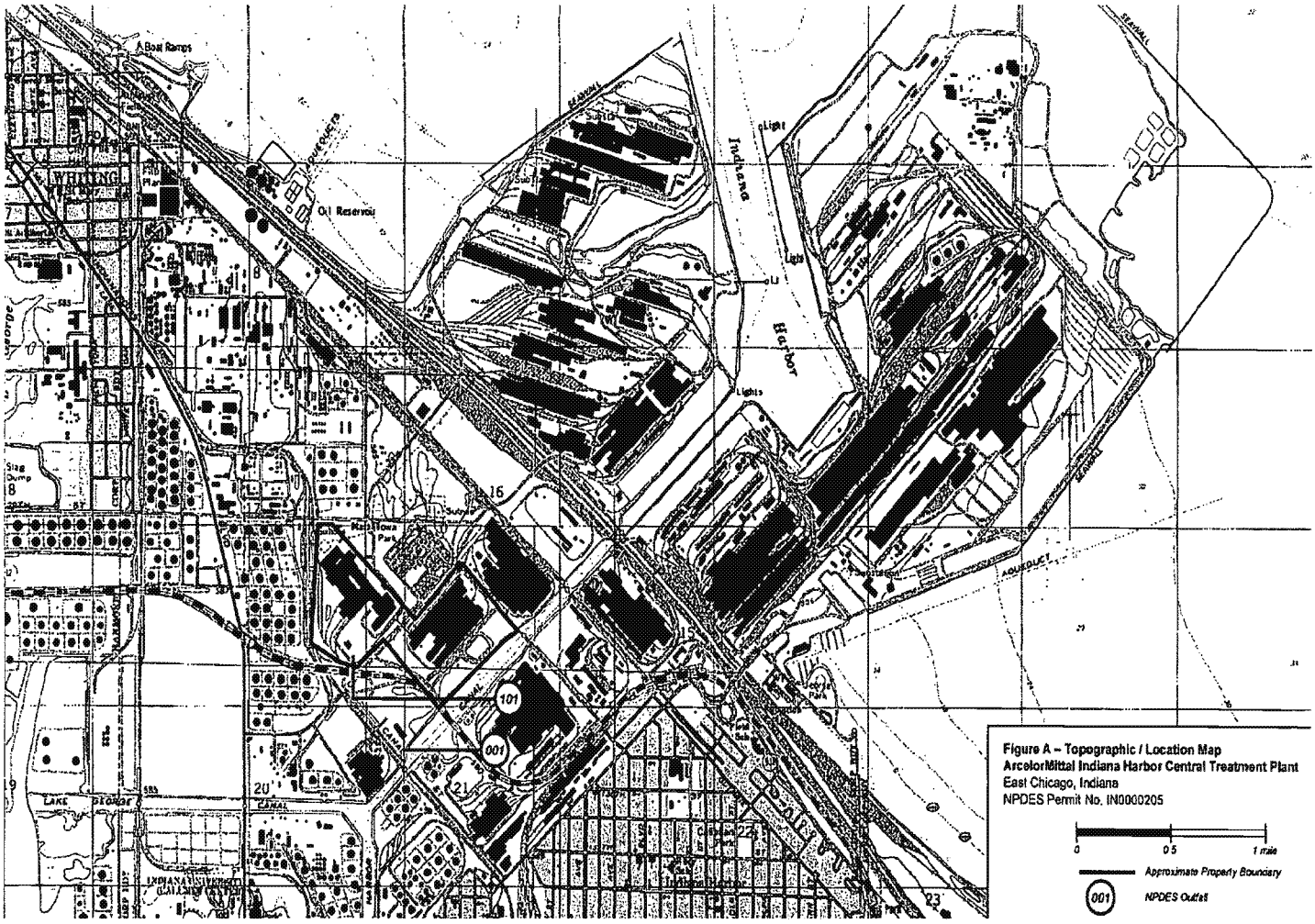

Figure 1: Facility Location
Lake County

2.2 Outfall Locations

OUTFALL 001	Latitude:	41° 38' 55"
	Longitude:	87° 23' 05"

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 from basement sumps. The discharge from Outfall 001 has an average discharge of approximately 6.5 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; 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 and No. 2 galvanizing lines and; USS tin and chromium line electroplating operations.

In the NPDES permit application, AM West proposed altering the wastestreams that are sent to the CWTP. However, in a letter dated August 17, 2010, the permittee indicated that it would be

preferred to keep the CWTP as it is currently and any changes would be handled in a permit modification when needed.

The discharge from Internal Outfall 101 has an average discharge of approximately 5.66 MGD. A Flow Diagram of current operations has been included as Figure 2.

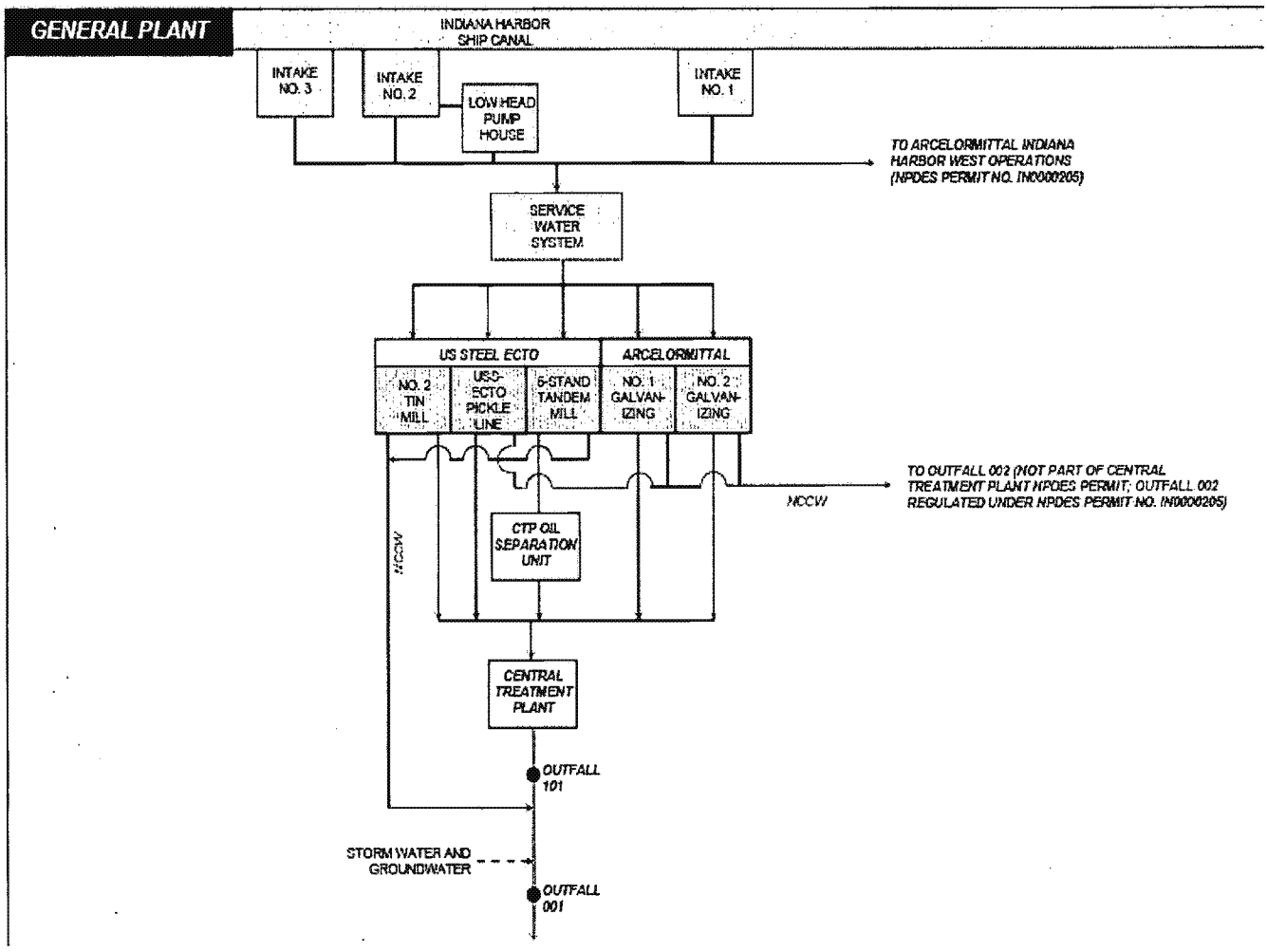

Figure 2: Flow Diagram

Treatment technologies utilized in the CWTP include flotation, flocculation, sedimentation, chemical precipitation, coagulation, and neutralization. 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. The facility's treatment plant is currently, and will remain, a Class D industrial wastewater treatment plant classification.

2.4 Changes in Operation

The wastewater discharge covered under this NPDES permit was previously covered under permit IN0000205. The facility, however, has requested that the discharge from Outfall 001 and Internal Outfall 101 be separated from IN0000205 and incorporated into this new NPDES permit.

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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 COMPLIANCE HISTORY

This is a new permit and thus has not created a compliance history. However, Outfall 001 and Internal Outfall 101 were previously permitted under NPDES Permit No. IN0000205. A review of the computerized database for tracking permit compliance in regards to the previous permit found two effluent violations for Chronic Whole Effluent Toxicity Testing [7/08; 7/09] at Outfall 001 and one violation for Oil and Grease [2/09] at Outfall 101. There are no current or pending enforcement actions regarding NPDES permits at this facility.

4.0 RECEIVING WATER

The Indiana Harbor Ship Canal originates at the confluence of the East and West Branches of the Grand Calumet River. It runs north for two miles where it is joined by the Lake George Canal. The Indiana Harbor Ship Canal then runs two miles northeast to the Indiana Harbor. The Indiana Harbor runs one mile to the north before emptying into the open waters of Lake Michigan. The receiving stream for Outfall 001 is the Indiana Harbor Ship Canal downstream of the Lake George Canal. The $Q_{7.10}$ low flow value of the Indiana Harbor Ship Canal is 352 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 high quality water of the state within the Great Lakes system. The Indiana Harbor Ship Canal is a tributary to the Indiana portion of the open waters of Lake Michigan. The Indiana portion of the open waters of Lake Michigan is designated in 327 IAC 2-1.5-19(b)(2) as an Outstanding State Resource Water (OSRW). Discharges to tributaries of OSRWs are subject to the antidegradation implementation procedure for OSRWs in 327 IAC 5-2-11.7(a)(2).

In addition to OSRW antidegradation implementation procedures, the Indiana Harbor Ship Canal 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 through 327 IAC 5-2-11.6. These rules address water quality standards applicable to dischargers within the Great Lakes system and reasonable potential to exceed water quality standards procedures.

As required by 327 IAC 5-2-11.3(b)(2), 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

The Indiana Harbor Ship Canal is listed on Indiana's 2010 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.

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5.0 PERMIT LIMITATIONS

Two categories of effluent limitations exist for NPDES permits: 1) Technology-Based Effluent Limitations (TBELs), and 2) Water Quality-Based Effluent Limitations (WQBELs). Technology-Based Effluent Limits are developed by applying the national effluent limitation guidelines (ELGs) established by EPA for specific industrial categories. TBELs were established to require a minimum level of treatment for industrial or municipal sources using available technology. In the absence of federally promulgated guidelines, effluent limits can also be based upon BPJ. TBELs are the primary mechanism of control and enforcement of water pollution under the CWA. Technology based treatment requirements under section 301(b) of the CWA represent the minimum level of control that must be imposed in a section 402 permit [40 CFR 125.3(a)]. 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 for BPT, BAT and BCT have all passed, compliance schedules are also not allowed.

Water quality based effluent limits are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology. The need for WQBELs is determined by application of the reasonable potential procedures contained in 327 IAC 5-2-11.5. WQBELs are developed using the water quality criteria in 327 IAC 2-1.5, the wasteload allocation procedures in 327 IAC 5-2-11.4 and the procedures for converting wasteload allocations into WQBELs in 327 IAC 5-2-11.6. In addition to numeric WQBELs, the narrative water quality criteria contained in 327 IAC 2-1.5-8 have been included in this permit to ensure that the narrative water quality criteria are met.

According to 40 CFR 122.44 and 327 IAC 5, NPDES permit limits are based on either technology-based limitations, where applicable, best professional judgment (BPJ), or Indiana Water Quality-Based Effluent Limitations, whichever is most stringent.

5.1 Existing Permit Limits (IN0000205)

Outfall 001

Parameter	Monthly Average	Daily Maximum	Units
Flow	Report	Report	MGD
Oil and Grease	Report	Report	mg/l
Cadmium	0.002	0.003	mg/l
Total Residual Oxidants	N/A	0.05	mg/l
Total Residual Chlorine	0.02	0.04	mg/l

Parameter	Daily Minimum	Daily Maximum	Units
pH	6.0	9.5	Std Units

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Internal Outfall 101

Parameter	Monthly Average	Daily Maximum	Units
Flow	Report	Report	MGD
Total Suspended Solids	1,821	3,786	lbs/day
Oil and Grease	Report	1,250	lbs/day
Tin	Report	Report	lbs/day & mg/l
Zinc	35.55	62.69	lbs/day
Chromium	41.2	66.9	lbs/day
Lead	10.32	16.57	lbs/day
Cadmium	Report	Report	mg/l
Iron	Report	Report	mg/l

Parameter	Daily Minimum	Daily Maximum	Units
pH	6.0	9.5	Std Units

5.2 Technology-Based Effluent Limits

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.

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	2,520 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	4,870 tons/day
40 CFR 420.110 Subpart K – Alkaline Cleaning Subcategory	Discharges in which steel products are immersed in alkaline cleaning baths to remove mineral and animal fats or oils	645 tons/day
40 CFR 420.120 Subpart L – Hot Coating Subcategory	Discharges from operations in which steel is coated by the hot dip process	2,625 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

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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(a) 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(a) 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)	2,520 Tons/Day	0.0350 lbs/1000lbs	176[1]	0.0818 lbs/1000lbs	412
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)	3,828 Tons/Day	0.00313 lbs/1000lbs	24.0	0.00626 lbs/1000lbs	47.9
420.103(a)(2) (BAT)		-------	---------	--------	--------
420.102(a)(4) (BPT)	1,042 Tons/Day	0.0113 lbs/1000lbs	23.5	0.0225 lbs/1000lbs	46.9
420.103(a)(4) (BAT)		-------	---------	--------	--------
420.112(b) (BPT)	645 Tons/Day	0.0438 lbs/1000lbs	56.5	0.102 lbs/1000lbs	132
420.113 (BAT)		-------	---------	--------	--------
420.122(a)(1) (BPT)	2,625 Tons/Day	0.0751 lbs/1000lbs	394	0.175 lbs/1000lbs	919
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		1,198 lbs/day		2,604 lbs/day	

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

$$\text{TSS Average Monthly Limit} = 2{,}520\frac{tons}{day} \times 2000\frac{lb}{ton} \times 0.035\frac{lb}{1000lb} = 176\frac{lb}{day}$$

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

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

[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)	2,520 Tons/Day	0.0117 lbs/1000lbs	59.0	0.0350 lbs/1000lbs	176
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)	3,828 Tons/Day	0.00104 lbs/1000lbs	7.96	0.00261 lbs/1000lbs	20.0
420.103(a)(2) (BAT)		-------	---------	--------	--------
420.102(a)(4) (BPT)	1,042 Tons/Day	0.00376 lbs/1000lbs	7.84	0.00939 lbs/1000lbs	19.6
420.103(a)(4) (BAT)		-------	---------	--------	--------
420.112(b) (BPT)	645 Tons/Day	0.0146 lbs/1000lbs	18.8	0.0438 lbs/1000lbs	56.5
420.113 (BAT)		-------	---------	--------	--------
420.122(a)(1) (BPT)	2,625 Tons/Day	0.0250 lbs/1000lbs	131	0.0751 lbs/1000lbs	394
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		625 lbs/day		1,493 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)	2,520 Tons/Day	0.000175 lbs/1000lbs	0.882	0.000526 lbs/1000lbs	2.65
420.93(b)(2) (BAT)		0.000175 lbs/1000lbs	0.882	0.000526 lbs/1000lbs	2.65
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)	3,828 Tons/Day	0.0000156 lbs/1000lbs	0.119	0.0000469 lbs/1000lbs	0.359
420.103(a)(2) (BAT)		0.0000156 lbs/1000lbs	0.119	0.0000469 lbs/1000lbs	0.359
420.102(a)(4) (BPT)	1,042 Tons/Day	0.0000563 lbs/1000lbs	0.117	0.000169 lbs/1000lbs	0.352
420.103(a)(4) (BAT)		0.0000563 lbs/1000lbs	0.117	0.000169 lbs/1000lbs	0.352
420.112(b) (BPT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.113 (BAT)					
420.122(a)(1) (BPT)	2,625 Tons/Day	0.000376 lbs/1000lbs	1.97	0.00113 lbs/1000lbs	5.93
420.123(a)(1) (BAT)		0.000376 lbs/1000lbs	1.97	0.00113 lbs/1000lbs	5.93
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		9.37 lbs/day		19.5 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)	2,520 Tons/Day	0.000234 lbs/1000lbs	1.18	0.000701 lbs/1000lbs	3.53
420.93(b)(2) (BAT)		0.000234 lbs/1000lbs	1.18	0.000701 lbs/1000lbs	3.53
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)	3,828 Tons/Day	0.0000104 lbs/1000lbs	0.0796	0.0000313 lbs/1000lbs	0.240
420.103(a)(2) (BAT)		0.0000104 lbs/1000lbs	0.0796	0.0000313 lbs/1000lbs	0.240
420.102(a)(4) (BPT)	1,042 Tons/Day	0.0000376 lbs/1000lbs	0.0784	0.000113 lbs/1000lbs	0.235
420.103(a)(4) (BAT)		0.0000376 lbs/1000lbs	0.0784	0.000113 lbs/1000lbs	0.235
420.112(b) (BPT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.113 (BAT)					
420.122(a)(1) (BPT)	2,625 Tons/Day	0.000500 lbs/1000lbs	2.63	0.00150 lbs/1000lbs	7.88
420.123(a)(1) (BAT)		0.000500 lbs/1000lbs	2.63	0.00150 lbs/1000lbs	7.88
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		25.5 lbs/day		49.9 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)	2,520 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.93(b)(2) (BAT)					
420.92(b)(4) (BPT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.93(b)(4) (BAT)					
420.102(a)(2) (BPT)	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.			
420.103(a)(2) (BAT)					
420.102(a)(4) (BPT)	1,042 Tons/Day	COLD ROLLING WASTEWATERS ARE NOT TREATED WITH DESCALING OR COMBINATION ACID PICKLING WASTEWATERS. THEREFORE, CHROMIUM LIMITATIONS ARE NOT APPLICABLE FROM THIS CATEGORY.			
420.103(a)(4) (BAT)					
420.112(b) (BPT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.113 (BAT)					
420.122(a)(1) (BPT)	2,625 Tons/Day	FACILITY DOES NOT DISCHARGE CHROMATE RINSE FROM GALVANIZING OPERATIONS. THEREFORE, HEXAVALENT CHROMIUM LIMITATIONS ARE NOT APPLICABLE			
420.123(a)(1) (BAT)					
420.122(c) (BPT)	2 Scrubbers	FACILITY DOES NOT DISCHARGE CHROMATE RINSE FROM GALVANIZING OPERATIONS. THEREFORE, HEXAVALENT CHROMIUM LIMITATIONS ARE NOT APPLICABLE			
420.123(c) (BAT)					
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	

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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.			
420.102(a)(4) (BPT) 420.103(a)(4) (BAT)	1,042 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)	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)	3,828 Tons/Day	---------	----------	0.0000104 lbs/1000lbs	0.0796
420.103(a)(2) (BAT)		---------	---------	0.0000104 lbs/1000lbs	0.0796
420.102(a)(4) (BPT)	1,042 Tons/Day	---------	---------	0.0000376 lbs/1000lbs	0.0784
420.103(a)(4) (BAT)		---------	---------	0.0000376 lbs/1000lbs	0.0784
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) 433.14(a) (BAT)	1.73 MGD	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
Total Naphthalene Limitation		Report lbs/day		0.158 lbs/day	

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Tetrachloroethylene					
40 CFR	Production	Monthly Average		Daily Maximum	
		Categorical Limitation	Subtotal (lbs/day)	Categorical Limitation	Subtotal (lbs/day)
420.92(b)(2) (BPT)	2,520 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.93(b)(2) (BAT)					
420.92(b)(4) (BPT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.93(b)(4) (BAT)					
420.102(a)(2) (BPT)	3,828 Tons/Day	---------	----------	0.0000156 lbs/1000lbs	0.119
420.103(a)(2) (BAT)		---------	---------	0.0000156 lbs/1000lbs	0.119
420.102(a)(4) (BPT)	1,042 Tons/Day	---------	---------	0.0000563 lbs/1000lbs	0.117
420.103(a)(4) (BAT)		---------	---------	0.0000563 lbs/1000lbs	0.117
420.112(b) (BPT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.113 (BAT)					
420.122(a)(1) (BPT)	2,625 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.123(a)(1) (BAT)					
420.122(c) (BPT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.123(c) (BAT)					
433.13(a) (BPT)	1.73 MGD	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
433.14(a) (BAT)					
Total Tetrachloroethylene Limitation		Report lbs/day		0.236 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)	2,520 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.93(b)(2) (BAT)					
420.92(b)(4) (BPT)	1 Scrubber	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.93(b)(4) (BAT)					
420.102(a)(2) (BPT)	3,828 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.103(a)(2) (BAT)					
420.102(a)(4) (BPT)	1,042 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.103(a)(4) (BAT)					
420.112(b) (BPT)	645 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.113 (BAT)					
420.122(a)(1) (BPT)	2,625 Tons/Day	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.123(a)(1) (BAT)					
420.122(c) (BPT)	2 Scrubbers	PARAMETER NOT IDENTIFIED IN THIS CATEGORY			
420.123(c) (BAT)					
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
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, Nickel, Naphthalene and Tetrachloroethylene (TCE)

  The above mentioned parameters have TBELs that are more stringent than the Water Quality-Based Effluent Limitations (WQBELs), were applicable, or are not limited by 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 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 6.5 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 542 lbs/day Monthly Average and 813 lbs/day Daily Maximum.

- Copper, Lead, Silver, and Zinc

  The WQBELs for the above mentioned parameters are more stringent than the TBELs calculated in the table above. Therefore, these parameters have been identified as 'Report' at Internal Outfall 101 and the final Water Quality-Based Effluent limit for these parameters will apply at Outfall 001.

- Cadmium

  The facility requested, in a June 2011 letter, a monitoring waiver for cadmium at Outfall 101 pursuant to 40 CFR 122.44(a)(2). 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 cadmium, 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 has been added to the final permit in response to comment 15 found in section 6.6 of this Fact Sheet.

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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. Further discussion concerning water-quality based effluent derivation has been included as Attachment A of this Fact Sheet.

- Flow

  The permittee's flow is to be monitored in accordance with 327 IAC 5-2-13(a)2. Flow monitoring requirements apply at Outfall 001 and Internal Outfall 101..

- pH

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

- Copper, Lead, Silver, and Zinc

  The above mentioned parameters are identified in the federally promulgated guidelines. However, the TBELs calculated for these parameters are less stringent than the WQBELs. Therefore, the effluent limits for the above mentioned parameters apply at Outfall 001. The daily maximum and monthly average WQBELs for these parameters are identified below.

Parameter	Monthly Average	Daily Maximum	Units
Copper	1.6 (0.03)	2.8 (0.052)	lbs/day (mg/l)
Lead	5.0 (0.092)	9.8 (0.18)	lbs/day (mg/l)
Silver	0.023 (0.00042)	0.04 (0.00073)	lbs/day (mg/l)
Zinc	11 (0.21)	22 (0.41)	lbs/day (mg/l)

- Cadmium

  A monitoring waiver for cadmium at Outfall 101, pursuant to 40 CFR 122.44(a)(2), has been granted. All recent samples for cadmium have been <1 ug/l at both Internal Outfall 101 and Outfall 001. Therefore, reporting requirements at Outfall 001 are not required.

- Oil and Grease

  Oil and Grease limitations are based upon 327 IAC 5-5-2(h)(2) and are 15.0 mg/l Daily Maximum and 10.0 mg/l Monthly Average. Also, these limits are 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.

- Total Residual Chlorine (TRC)

  The TRC effluent limit was calculated in the WLA and is 0.016 mg/l for monthly average and 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). 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.

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- Mercury

  Mercury was identified in the permittee's application in quantities that 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 0.000071 lbs/day (1.3 ng/l) and the daily maximum as 0.00017 lbs/day (3.2 ng/l). A fifty-four (54) month schedule of compliance has been incorporated into this permit for this parameter.

- Free Cyanide and Fluoride

  Monitoring requirements for the above mentioned parameters is included to determine if a Reasonable Potential to Exceed (RPE) Indiana WQBELs exists.

- Temperature and Thermal Discharge Report

  Based on the results of instream sampling and a multi-discharger thermal model, the discharges from AM West 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 and thermal discharge is added to this outfall.

5.4 Whole Effluent Toxicity

The Indiana Water Quality Standards require that a discharge shall not cause acute toxicity, as measured by Whole Effluent Toxicity Tests (WETT), at any point in the water body and that a discharge shall not cause chronic toxicity, as measured by whole effluent toxicity tests, outside of the applicable mixing zone. Per Indiana Rule 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. Please refer to Attachment A of this Fact Sheet for a further analysis regarding WETT.

Therefore, the permittee is required to conduct WETT to determine the toxicity of the water treatment additives and process wastestreams that may be used at this site. This does not negate the necessity to submit Water Treatment Additive (WTA) approval worksheets for the additives proposed at this site.

5.5 Antibacksliding

Pursuant to 327 IAC 5-2-10(11) a permit may not be renewed, reissued or modified which contain effluent limitations that are less stringent than the comparable effluent limitation in the previous permit. Antibacksliding is not an issue in this NPDES permit.

5.6 Antidegradation

The Indiana Harbor Ship Canal is a high quality water of the Great Lakes Basin, as defined in 327 IAC 2-1.5-4. The Indiana Harbor Ship Canal is also a tributary to Lake Michigan, which is designated as an Outstanding State Resource Water (OSRW). According to 327 IAC 5-2-11.7(a)(2), for a new or increased discharge of a pollutant or pollutant parameter from a new or existing Great Lakes discharger into a tributary of an OSRW for which a new or increased permit limit would be required, the following apply:

(1) 5-2-11.3(a) and 5-2-11.3(b) apply to the new or increased discharge; and

(2) the discharge shall not cause a significant lowering of water quality in the OSRW.

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An Antidegradation Review was performed for this discharge. Based on the antidegradation review, the Department determined the proposed discharges comply with the IDEM Antidegradation Policy found in 327 IAC 2 and an antidegradation demonstration is not required. For further information about the antidegradation review, please refer to Attachment A of this Fact Sheet.

New mass limits for total residual chlorine were calculated for Outfall 001. The previous permit only has concentration limits for this parameter. The existing flow was used to calculate more stringent WQBELs so the new mass limits will not result in a calculated concentration increase outside of the mixing zone. Therefore, new mass limits for total residual chlorine do not cause a significant lowering of water quality for the Indiana Harbor Canal.

New mass and concentration limits for mercury were calculated for Outfall 001. As shown in Attachment A, these limits were determined to not cause a significant lowering of water quality in the Indiana Harbor Ship Canal under 5-2-11.3(b)(1)(C)(ii).

New mass-based and concentration-based WQBELs for copper and silver are required at Outfall 001 due to a reasonable potential to exceed analysis because the calculated mass-based WQBELs for these parameters were more stringent than the TBELs at the internal monitoring location. IDEM believes that the new limits for copper and silver are authorized under the previous permit and are therefore authorized under the renewal permit and antidegradation does not apply. According to 327 IAC 5-2-11.7(a)(2)(C)(i), the requirements of 5-2-11.7(a)(2) will be considered to have been met when one or more of the items listed in 5-2-11.3(b)(1)(C)(ii) apply. Under 327 IAC 5-2-11.3(b)(1)(C)(ii)(DD), the new application of effluent limitation guidelines does not constitute a significant lowering of water quality. Therefore, the new limits for copper, and silver at Outfall 001 do not cause a significant lowering of water quality in the receiving stream.

New mass-based and concentration-based WQBELs for lead and zinc are required at Outfall 001 due to a reasonable potential to exceed analysis because the calculated mass-based WQBELs for these parameters were more stringent than the TBELs at the internal monitoring location. Under 5-2-11.3(b)(1)(C)(ii)(CC), new or modified water quality criteria does not constitute a significant lowering of water quality. Therefore, the new limits for lead and zinc at Outfall 001 do not cause a significant lowering of water quality in the receiving stream.

New TBELs for nickel, naphthalene, tetrachloroethylene, and total toxic organics are required at Internal Outfall 101. These are new pollutants to be monitored in the NPDES permit. However, like copper and silver mentioned above, this is due to the new application of effluent limitation guidelines and falls under the exemption found in 327 IAC 5-2-11.3(b)(1)(C)(ii)(DD).

Furthermore, it should be noted that the discharge covered in this new NPDES permit is not a new or increased discharge from the facility. As indicated earlier, the discharge in this NPDES permit has been previously authorized in Permit No. IN0000205.

In accordance with 327 IAC 2.2-11.7(a)(2)(B), a new or increased discharge to a tributary of an OSRW may not cause a significant lowering of water quality in the downstream OSRW. 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 pollutant or pollutant parameter that is not a BCC unless one of the following is completed prior to the commencement of the action; (i) Information is submitted to the commissioner demonstrating that the proposed new or increased discharge will not cause a

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significant lowering of water quality; (ii) An antidegradation demonstration submitted and approved in accordance 327 IAC 5-2-11.3.

5.7 Stormwater

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 – Steel Mill, 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 BPT/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.

The technology-based effluent limitations 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 practicable and 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 your 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.5, the permit requires ArcelorMittal West to select control measures (including best management practices) to address the selection and design considerations in Part I.D.4.

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.

"Term and Condition" to Provide Information in a SWPPP

Distinct from the effluent limitation provisions in the permit, the permit requires the discharger to prepare a Storm water Pollution Prevention Plan (SWPPP) for its 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 whenever necessary to reflect any changes in control measures that were found to be necessary to meet the effluent limitations in this 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 updated is no different than other information collection conditions, as authorized by section 402(a)(2), in other permits.

IDEM's Non-Numeric Effluent Limitations and SWPPP language was modeled from and is consistent with the EPA's Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity, issued on September 29, 2008. It should be noted that EPA has developed a guidance document, "Storm Water Management for Industrial Activities: Developing Pollution Prevention Plans and Best Management Practices", 1992 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 its 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 including dosage rates and concentrations contributing to Outfall 001, the permittee shall notify the Indiana Department of Environmental Management as required by Part II.C. 1. of this permit. The permittee must provide the acute and chronic aquatic toxicity information on any new or changed water treatment additives. The following water treatment additives have been approved at the Central Wastewater Treatment Plant: 7763, Bleach, Sulfuric Acid, Caustic, and Hydrated Lime.

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During the public notice period, the facility requested the use of freeze protection agents. Due to the variability of which waters would be treated and discharged, toxicity information could not be identified at this time. This fact sheet hereby identifies the use freeze protection agents at the facility. However, it should be noted that the facility must submit the toxicological information, and receive approval from IDEM, prior to discharge of such waters.

6.0 PERMIT DRAFT DISCUSSION

6.1 Discharge Limitations

The permittee discharges to a waterbody that has been identified as a water of the state within the Great Lakes system. 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 through 327 IAC 5-2-11.6. These rules address water quality standards applicable to dischargers within the Great Lakes system and reasonable potential to exceed water quality standards procedures.

As required by 327 IAC 5-2-11.3(b)(2), Part II.A.16. of the renewal 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.

The tables below contain the proposed effluent limitations.

Outfall 001

Parameter	Monthly Average	Daily Maximum	Units
Flow	Report	Report	MGD
Oil and Grease	Report (10)	Report (15)	lbs/day (mg/l)
Total Suspended Solids	Report	Report	lbs/day (mg/l)
Total Residual Chlorine	0.87 (0.02)	2.1 (0.04)	lbs/day (mg/l)
Zinc	11 (210)	22 (410)	lbs/day (ug/l)
Lead	5.0 (92)	9.8 (180)	lbs/day (ug/l)
Copper	1.6 (0.03)	2.8 (0.052)	lbs/day (mg/l)
Silver	0.023 (0.00042)	0.04 (0.00073)	lbs/day (mg/l)
Mercury			
Interim	Report	Report	lbs/day (ng/l)
Final	0.000071 (1.3)	0.00017 (3.2)	lbs/day (ng/l)
Free Cyanide	Report	Report	lbs/day (mg/l)
Fluoride	Report	Report	lbs/day (mg/l)
Temperature	Report	Report	°F
Thermal Discharge	Report	Report	MBTU/Hr.
Whole Effluent Toxicity Tests			

Parameter	Daily Minimum	Daily Maximum	Units
pH	6.0	9.0	Std Units

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Internal Outfall 101

Parameter	Monthly Average	Daily Maximum	Units
Flow	Report	Report	MGD
Oil and Grease	542	813	lbs/day
Total Suspended Solids	1,198	2,604	lbs/day
Cadmium	3.8	10	lbs/day
Zinc	Report	Report	lbs/day
Total Chromium	24.7	40.0	lbs/day
Hexavalent Chromium	Report	Report	lbs/day
Lead	Report	Report	lbs/day
Nickel	34.3	57.4	lbs/day
Copper	Report	Report	lbs/day
Silver	Report	Report	lbs/day
Total Cyanide	9.4	17.3	lbs/day
Naphthalene	Report	0.158	lbs/day
Tetrachloroethylene	Report	0.236	lbs/day
Total Toxic Organics	N/A	30.7	lbs/day

6.2 Monitoring Conditions

Outfall 001

Parameter	Minimum Frequency	Type of Sample
Flow	Daily	Continuous
Oil and Grease	2/Week	3 Grabs/24 hrs
Total Suspended Solids	2/Week	24-hour composite
Total Residual Chlorine	5/Week	Grab
Zinc	2/Week	24-hour composite
Lead	2/Week	24-hour composite
Copper	2/Week	24-hour composite
Silver	2/Week	24-hour composite
Mercury	6/Year	Grab
Free Cyanide	2/Month	Grab
Fluoride	2/Month	24-hour composite
Temperature	2/Week	Grab
Thermal Discharge	2/Week	Report
Whole Effluent Toxicity Tests	See Part I.I of Permit	Report
pH	2/Week	Grab

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Internal Outfall 101

Parameter	Minimum Frequency	Type of Sample
Flow	Daily	Continuous
Oil and Grease	2/Week	3 Grabs/24 hrs
Total Suspended Solids	2/Week	24-hour composite
Cadmium	[1]	----------
Zinc	2/Week	24-hour composite
Total Chromium	2/Week	24-hour composite
Hexavalent Chromium	2/Year	Grab
Lead	2/Week	24-hour composite
Nickel	2/Week	24-hour composite
Copper	2/Week	24-hour composite
Silver	2/Week	24-hour composite
Total Cyanide	2/Week	Grab
Naphthalene	1/Week	24-hour composite
Tetrachloroethylene	1/Week	Grab
Total Toxic Organics	1/Quarter	24-hour composite

[1

[1] A monitoring waiver per 40 CFR 122.44 has been granted for this parameter for the term of this permit. IDEM shall be notified if any changes occur at this facility that would require the conditions that this waiver was granted to be reviewed.

6.3 Schedule of Compliance

A fifty-four (54) month Schedule of Compliance has been incorporated into this NPDES Permit for mercury.

6.4 Special Conditions

- Pollutant Minimization Program

  The permittee is required to develop and conduct a Pollutant Minimization Program (PMP) for each pollutant with a WQBEL below the LOQ. The requirements for the PMP can be found in Part I.H of the permit.

- Thermal Requirements

  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.

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The thermal discharge shall be calculated for Outfall 001. Such discharge shall be limited and monitored by the permittee as specified below.

a. Flow and temperature values used in thermal discharge calculations shall be taken from the same day of monitoring.

b. The thermal discharge shall be computed as follows:

Thermal Discharge (MBTU/Hr.) = Q x (To – Ti) x 0.3477

where,

-MBTU/Hr. = million Btu/Hr.
Q = 24 hour discharge flow, MGD
To = effluent temperature, °F
Ti = influent temperature, °F
0.3477 = conversion factor

c. 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.

- 316(b)

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.

6.5 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.c. and Part II.C.3. of the NPDES

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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/Post Public Notice Addendum

The draft NPDES permit for the ArcelorMittal Indiana Harbor, LLC – Central Wastewater Treatment Plant was made available for public comment from August 15, 2011, through September 30, 2011, as part of Public Notice No. 2011-8F-RD/PH. In addition, a public hearing was held in Gary, Indiana, on September 15, 2011. During the comment period and at the public hearing, comments were received concerning the draft permit. Comments received at the hearing and/or submitted via email, and this Office's corresponding responses, are summarized below. Any changes to the permit and/or fact sheet are so noted below.

Mr. Kevin Doyle, Environmental Manager, ArcelorMittal USA LLC submitted the following comments

Comment 1: **WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)**

ArcelorMittal understands that IDEM used the procedures at 327 IAC 5-2-11.4 and 11.6 to calculate Water Quality Based Effluent Limits for ArcelorMittal outfalls discharging to the Indiana Harbor Ship Canal (IHSC) and constructed a multi-discharger Waste Load Allocation model to ensure that water quality standards are maintained throughout the IHSC and as the IHSC meets Lake Michigan.

IDEM failed to use readily available, reliable site-specific data as part of the Waste Load Allocation model development and this can significantly impact calculation of the WQBELs. Specifically, IDEM failed to use background water-quality data at Dickey Road, and site-specific dissolved and total metals data for calculation of site-specific dissolved metals translators (DMTs). All of these data have historically been collected by IDEM and the failure to use current, scientifically sound site-specific data is unexplainable. Further discussion is presented below.

Background Water Quality

In its water quality assessment and development of WQBELs, IDEM determined background water quality using the cumulative allocated loadings from the upstream outfalls in the applicable study area. This is an overly conservative approach that ignores more than ten years of actual in-stream data. Those data reflect the cumulative and collective discharges of all dischargers upstream of Dickey Road. Actual in-stream data for the IHSC were developed by IDEM and are available for the IHC-2 monitoring station at Dickey Road. These data can be used to re-establish background water quality for the ArcelorMittal Indiana Harbor permits based on actual conditions. These data were summarized by

ArcelorMittal and previously presented to IDEM.[1] Unexplainably, IDEM did not use these data to establish background water quality for the draft Indiana Harbor permits. Instead, IDEM used the cumulative allocated loadings upstream of this location to determine background water quality for the stream segment downstream of Dickey Road. This approach is impractical because it is not realistic to presume that all upstream dischargers would be discharging at or near their permitted mass loadings simultaneously. Using the actual in-stream data is more appropriate because the data represent actual conditions instead of projected concentrations based upon the presumption of discharges at allocated loadings. IDEM's choice not to use Dickey Road data to establish background concentrations is confusing in light of its comments contained in the supplemental documentation supporting the WLA analysis for the ArcelorMittal Indiana Harbor permits:

> *"Developing background concentrations based on actual instream data is consistent with the regulations and accounts for the wastewater treatment that is occurring upstream of the subwatershed. Otherwise, overly conservative requirements can be placed on downstream dischargers." (pg 17)*

These comments appear to demonstrate that IDEM not only supports, but prefers, the use of actual instream data to establish background water quality, where available. Accordingly, the Dickey Road data must be used to 're-establish' background water quality at the appropriate location in the IHSC for IDEM's water quality assessment and calculation of WQBELs. A comparison of the concentrations used by IDEM at Dickey Road and the actual IHSC concentrations at Dickey Road are presented below for fluoride, lead and zinc.

Comparison of IDEM Predicted Concentrations at Dickey Road to Actual Concentrations		
	IDEM Predicted Concentration at Dickey Road	Actual Concentration at Dickey Road*
Fluoride, mg/l	0.63	0.49
Lead, Total, ug/l	8.5	4.0
Zinc, Total, ug/l	36	25
* Geometric mean of IHC-2 fixed monitoring station data January 2005 to December 2009		

Using Dickey Road data as background concentrations leads to significantly less stringent preliminary WQBELs for lead and zinc. ArcelorMittal's requested effluent limits based on the Dickey Road background data, and other factors, are presented throughout these comments.

Dissolved Metals Translators

Total and dissolved data for copper, lead and zinc collected by IDEM from the Indiana Harbor Ship Canal at fixed monitoring stations IHC-2 (Dickey Road) and IHC-0 should be used to calculate site-specific dissolved metals translators (DMTs). These DMTs should be used in the calculation of preliminary water-quality based effluent limits for the Central Treatment Plant (CTP) Outfall 001, and Indiana Harbor East Outfall 014. Data collected by IDEM over a period of several years for these metals demonstrate that the majority of the copper, lead

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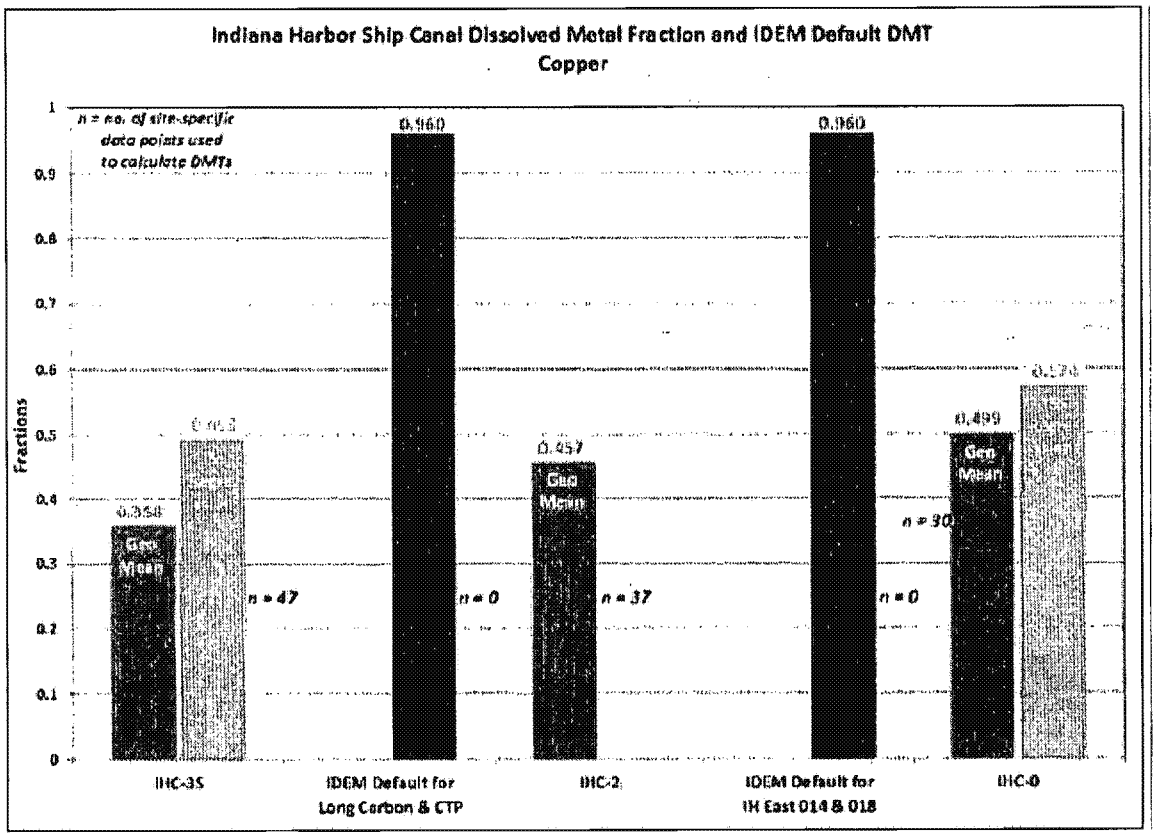
and zinc present is associated with particulate in the water column and is not in the dissolved form. Dissolved metals more closely approximate the bioavailable fraction in the water column than do total or total recoverable metals. Consequently, use of site-specific DMTs is well suited for the IHSC. The Dickey Road fixed monitoring station, located downstream of CTP Outfall 001, serves as an appropriate data set for calculating DMTs for development of WQBELs for CTP Outfall 001. IDEM should consider the Dickey Road data representative of conditions in the IHSC and reliable because IDEM used the lead and zinc data collected at Dickey Road for another purpose in the NPDES permit renewal process for the ArcelorMittal facilities (*i.e.,* Dickey Road data were use to project the effluent quality from Indiana Harbor West Outfall 007 in IDEM's multi-discharger WLA). The IHC-0 fixed monitoring station is located downstream of Indiana Harbor East Outfall 014.

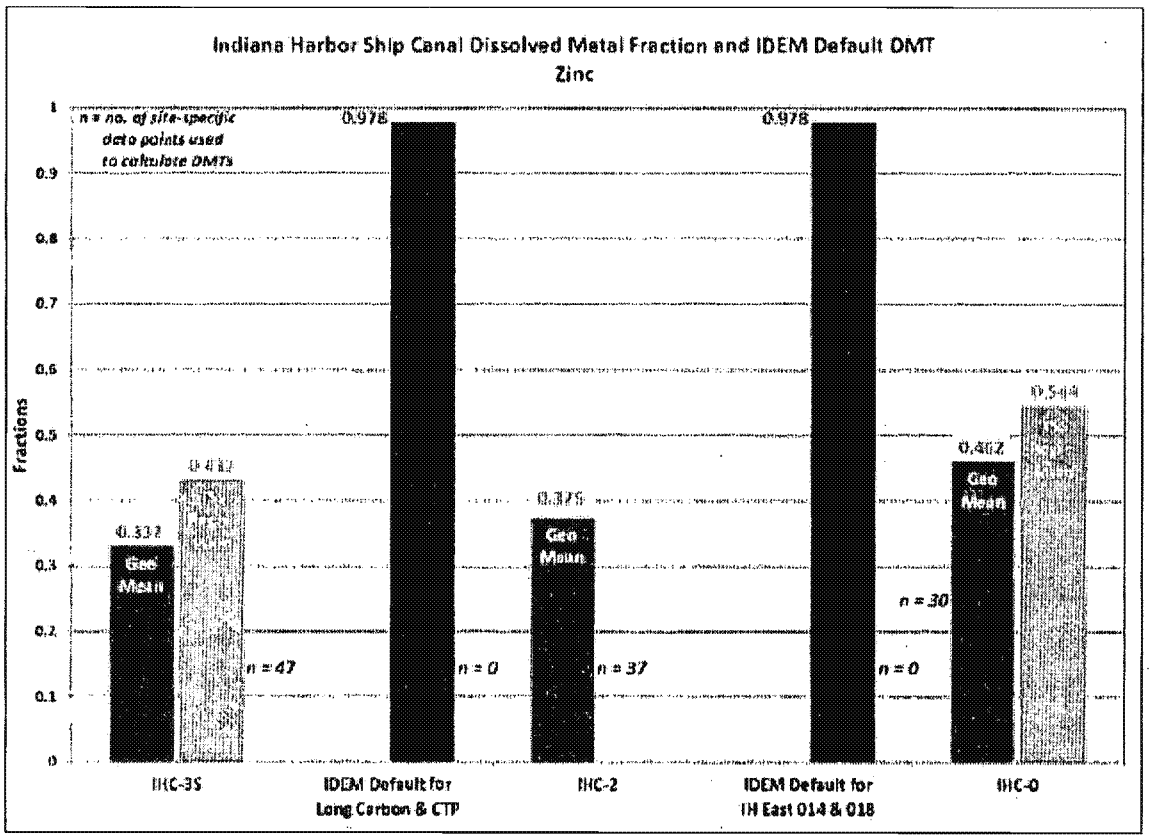
Per EPA guidance[2], DMTs can be calculated as the dissolved to total metal fraction, and can be calculated from a correlation of the dissolved fraction to receiving stream TSS concentration. Following that guidance, DMTs for copper, lead and zinc were calculated from the Dickey Road and IHC-0 data and are summarized below. The dissolved and total metals data used in the DMT calculations are attached (see Attachment IHC-1). For comparison, IDEM's default translators that were used in the development of the proposed permit limits, and DMT's calculated from data collected by IDEM at fixed Station IHC-3S are also shown.

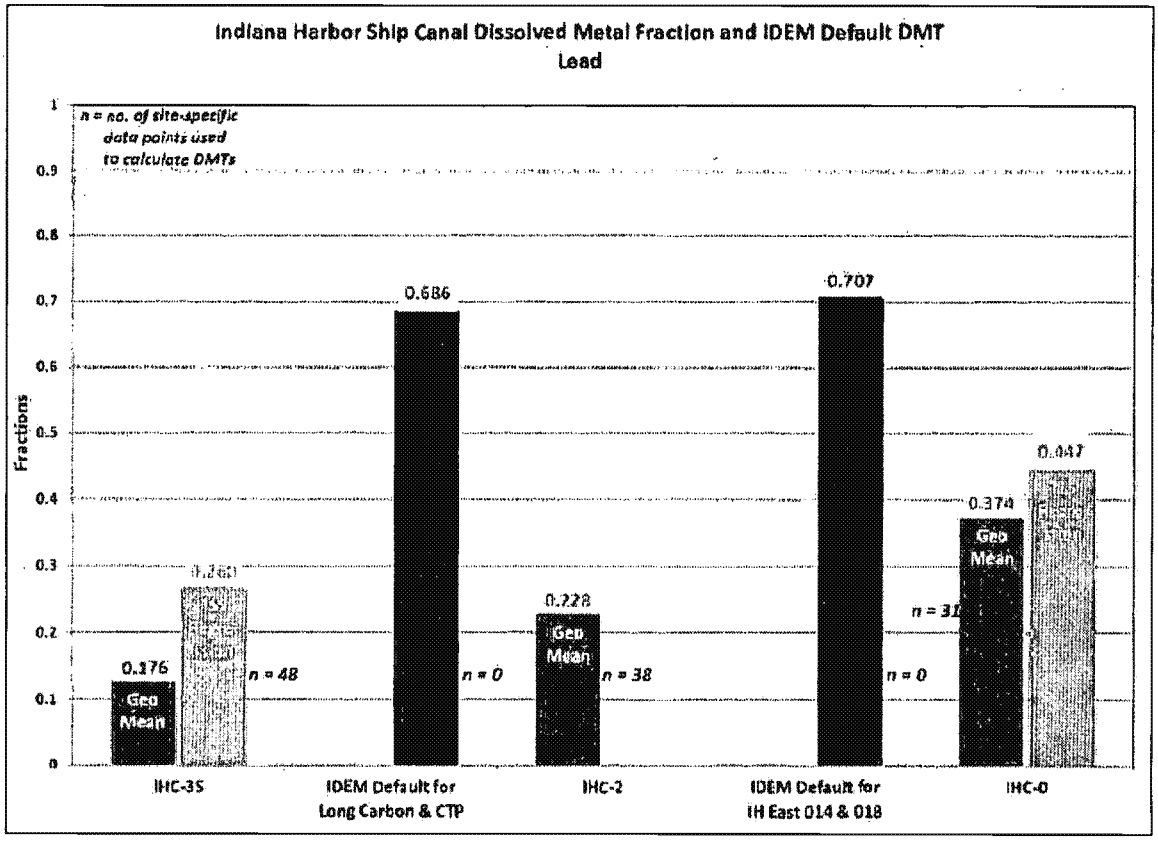
Comparison of Indiana Harbor Ship Canal Dissolved Metal Fractions to IDEM Default Translators

	IHC-3S (Columbus Drive)	IDEM Default Translators for IHLC and CTP	IHC-2 (Dickey Road)	IDEM Default Translators for IH East 014 and 018	IHC-0
	1/04 to 6/09	NA	1/04 to 1/08	NA	1/04 to 10/06
Copper					
N	47	0	37	0	30
Geometric Mean	0.358		0.457		0.499
DMT by TSS Regression (TSS = 4 mg/l)	0.493	0.960	NA	0.960	0.574
95th Percentile	0.716		0.629		0.743
Lead					
N	48	0	38	0	31
Geometric Mean	0.176		0.228		0.374
DMT by TSS Regression (TSS = 4 mg/l)	0.268	0.686	NA	0.707	0.447
95th Percentile	0.472		0.415		0.645
Zinc					
N	47	0	37	0	30
Geometric Mean	0.332		0.375		0.462
DMT by TSS Regression (TSS = 4 mg/l)	0.432	0.978	NA	0.978	0.544
95th Percentile	0.635		0.574		0.774

IDEM's default DMTs, which rely on no data specific to the IHSC, are clearly inaccurate for the ArcelorMittal permits and overestimate the dissolved copper, lead and zinc fractions in the IHSC by significant amounts. For example, the default translators are 2.1, 3.0 and 2.6 times greater than the calculated geometric mean of the dissolved fractions for copper, lead and zinc, respectively, at IHC-2. Even the 95th percentiles of the dissolved fractions for all metals at all locations are significantly below IDEM's default translators. As shown, the DMTs calculated at IHC-3S, IHC-2 and IHC-0 are considerably lower than IDEM's default DMTs used in the calculation of WQBELs. Graphs of the geometric mean dissolved fractions, TSS-regression developed DMTs, and IDEMs default DMTs are presented below.




Indiana Harbor Ship Canal Dissolved Metal Fraction and IDEM Default DMT
Zinc
n = no. of site-specific data points used to calculate DMTs
Fractions
0.978
0.978
0.332
0.412
0.375
0.462
0.544
Geo Mean
Geo Mean
Geo Mean
n = 47
n = 0
n = 37
n = 0
n = 30
IHC-3S
IDEM Default for Long Carbon & CTP
IHC-2
IDEM Default for IH East 014 & 018
IHC-0


Indiana Harbor Ship Canal Dissolved Metal Fraction and IDEM Default DMT
Lead
n = no. of site-specific data points used to calculate DMTs
Fractions
0.686
0.707
0.260
0.228
0.374
0.447
0.176
Geo Mean
Geo Mean
Geo Mean
n = 48
n = 0
n = 38
n = 0
n = 31
IHC-3S
IDEM Default for Long Carbon & CTP
IHC-2
IDEM Default for IH East 014 & 018
IHC-0

Given the data presented in the table and graphs above, it is not reasonable to assume, as IDEM has done through use of the default DMTs, that the dissolved metal fraction in the water column somehow increases dramatically in between the fixed monitoring stations. ArcelorMittal's requested effluent limits, based upon site-specific DMTs derived from the IDEM fixed monitoring station data and other factors, are presented below.

ArcelorMittal Requested Effluent Limits for IH Central Treatment Plant (Copper, Lead and Zinc)								
	Requested Outfall 001 Permit Limits				Requested Outfall 101 Permit Limits			
	Concentration (ug/l)		Mass (lbs/day)		Concentration (ug/l)		Mass (lbs/day)	
Pollutant	Monthly Average	Daily Max.	Monthly Average	Daily Max.	Monthly Average	Daily Max.	Monthly Average	Daily Max.
Copper	47	81	2.5	4.4	Report only	Report Only	Report Only	Report Only
Lead	Report Only	Report Only	Report Only	Report Only	Report Only	Report Only	9.4	19
Zinc	360	720	20	39	Report Only	Report Only	Report Only	Report Only

ArcelorMittal Requested Effluent Limits for IH East Outfall 014 (Lead and Zinc)				
	Requested Outfall 014 Permit Limits			
	Concentration (ug/l)		Mass (lbs/day)	
Pollutant	Monthly Average	Daily Max.	Monthly Average	Daily Max.
Lead	120	240	11.5	23
Zinc	Report only	Report Only	14.91	44.69

Comments on Multi-discharger Wasteload Allocation Model

IDEM constructed a multi-discharger wasteload allocation model for ammonia, total residual chlorine, fluoride, sulfate, lead and zinc to ensure that water quality standards are maintained throughout the IHSC and as the IHSC meets Lake Michigan. Comments specific to lead, zinc and fluoride are presented below.

Lead and Zinc

At the 'end' of IDEM's multi-discharger WLA model (i.e., the end of the IHSC and the beginning of Lake Michigan) IDEM shows a lead concentration of 9.9 ug/l, which is essentially equivalent to the chronic aquatic life water quality criterion. This 'end-result' creates the false impression that essentially all assimilative capacity in the IHSC has been consumed. Using more reasonable

projected loadings from outfalls at which no WQBELs are warranted in conjunction with "re-establishing" background water quality at Dickey Road and accounting for the requested effluent limits throughout these comments shows that assimilative capacity remains in the IHSC, even when making the unrealistic assumption that all dischargers downstream of Dickey Road are simultaneously discharging at their maximum permitted levels. It is important that IDEM recognize this fact going forward, to avoid the false impression that essentially all assimilative capacity for lead in the IHSC has been consumed. This position could make future permitting of new discharges or expansion at existing dischargers a more difficult task than necessary.

In addition, IDEM significantly overestimated the pollutant loadings from certain ArcelorMittal outfalls in its multi-discharger WLA model. We understand that a WLA for an outfall derived from preliminary effluent limits serves as the input to the model to ensure that water quality standards are maintained. However, where no WQBEL exists, or where none is warranted, IDEM has overestimated pollutant loadings.

For Indiana Harbor Long Carbon, where the draft permit contains no WQBELs for lead and zinc, IDEM estimated discharges of 1.68 lbs/day of lead and 2.94 lbs/day of zinc based upon its default projected effluent quality (PEQ) procedure. However, implementing the projected effluent quality (PEQ) procedures at 327 IAC 5-2-11.5(b)(1)(B)(V), and considering the technology-based effluent limits at Outfall 602, allows for model input wasteload allocation discharges of 0.42 lbs/day lead and 1.38 lbs/day zinc. These wasteload allocations result in preliminary effluent limits which are greater than the PEQs derived from 327 IAC 5-2-11.5(b)(1)(B)(V), and the Outfall 602 TBELs, and therefore adequately characterize the discharge from Indiana Harbor Long Carbon Outfall 001.

For Indiana Harbor East Outfall 018, IDEM estimated discharges of 6.24 lbs/day of lead based upon WQBELs derived pursuant to 327 IAC 5-2-11.4 and 11.6. However, as stated elsewhere in these comments, there is no reasonable potential to exceed these limits, and they should not be included in the renewal NPDES permit. Implementing the projected effluent quality (PEQ) procedures at 327 IAC 5-2-11.5(b)(1)(B)(V), and considering the technology-based effluent limits at Outfalls 518 and 618, allows a model input discharge of 5.31 lbs/day lead. This wasteload allocation results in preliminary effluent limits of 4.3 lbs/day (monthly average) and 9.0 lbs/day (daily maximum) lead. These values are greater than the PEQs derived from 327 IAC 5-2-11.5(b)(1)(B)(V) and the sum of the Outfall 518 and 618 TBELs, and therefore adequately characterize the discharge from Indiana Harbor East Outfall 018.

Printouts of IDEM's multi-discharger WLA model for lead and zinc that was modified to include Dickey Road data as background, the more accurate discharges from Indiana Harbor Long Carbon Outfall 001 and Indiana Harbor East Outfall 018, and ArcelorMittal's requested effluent limits are attached (see Attachment IHC-2). The results show remaining assimilative capacity throughout the IHSC and at Lake Michigan for lead and zinc.

Fluoride

IDEM made the same general errors for fluoride in its multi-discharger WLA model, as it did for lead and zinc. Namely, the discharges from certain

ArcelorMittal outfalls are overestimated and IDEM did not 'reestablish" background fluoride concentrations at Dickey Road. A simplified mass balance accounting for Dickey Road data and discharges from Indiana Harbor East and West is presented in other comments. The results show minimal effect on the concentration of fluoride where the IHSC meets Lake Michigan.

[1] *Grand Calumet River, Indiana Harbor Water Quality Assessment, Lake Michigan Potable Intake Water Quality and Potential Impacts of ArcelorMittal Indiana Harbor East and West Plants.* Prepared for ArcelorMittal USA, Environmental Affairs, Richfield, Ohio, prepared by Amendola Engineering, Inc., Lakewood, Ohio. June 6, 2008, Water Quality Update April 2, 2009.
[2] *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion, USEPA, June 1996*

Response 1: **Water Quality-Based Effluent Limitations**

Background Water Quality

An explanation of the development of wasteload allocations including the calculation of background concentrations is included in the Fact Sheet of each permit. IDEM has historically developed wasteload allocations in the Grand Calumet River watershed by assigning wasteload allocations to point source discharges and using these wasteload allocations in the calculation of background concentrations for downstream dischargers. In the current modeling effort, IDEM decided to divide the Grand Calumet River watershed into three subwatersheds for the development of wasteload allocations. The ArcelorMittal discharges are located in the Indiana Harbor Canal/Lake George Canal/Indiana Harbor subwatershed which has as its headwaters the combined flow of the East Branch and West Branch subwatersheds. The background concentrations for the Indiana Harbor Canal/Lake George Canal/Indiana Harbor subwatershed were not based on the accumulated wasteload allocations of the East Branch and West Branch subwatershed discharges, but were re-established using data collected at IDEM fixed station IHC-3S on the Indiana Harbor Canal at Columbus Avenue which is upstream of all point source discharges in the subwatershed. The Indiana Harbor Canal is subject to reverse flows as documented by U.S. Geological Survey (USGS) stream flow gage 04092750 at Canal Street. IDEM fixed station IHC-2 at Dickey Road is located about 0.6 miles downstream of the USGS gage at Canal Street and is more susceptible to reverse flows and dilution by Lake Michigan waters than IDEM fixed station IHC-3S which is located about 0.7 miles upstream of Canal Street. Under 327 IAC 5-2-11.4(a)(8), IDEM is required to use best professional judgment when determining what available data are acceptable for determining background. IDEM does not believe that it is acceptable to use data collected at fixed station IHC-2 to re-establish the background concentration at Dickey Road due to the documented reverse flows at Canal Street and the potential for samples collected at fixed station IHC-2 to be of downstream waters flowing upstream.

Dissolved Metals Translators

Indiana regulation under 327 IAC 5-2-11.4(c)(8) specifies the procedure for calculating wasteload allocations for metals with aquatic life criteria expressed in the form of dissolved metal. Under this regulation, unless a site-specific metals translator is developed, the metals translator is set equal to the default metals translator listed in the rule which is the criteria conversion factor used to derive the dissolved metal criterion. Default metals translators are established in this

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regulation for copper and zinc which also have aquatic life criteria established under 327 IAC 2-1.5-8. Default metals translators for lead are not established under 5-2-11.4(a)(8) because aquatic life criteria for lead were derived using the methodologies under 2-1.5-11 after 2-1.5-8 was promulgated. To be consistent with 5-2-11.4(c)(8), IDEM also applied the criteria conversion factor as the default metals translator for lead. Under 5-2-11.4(c)(8), a discharger may request the use of an alternate metals translator using site-specific data. The discharger must conduct a site-specific study to identify the ratio of the dissolved fraction to the total recoverable fraction outside the mixing zone and submit the study to IDEM to determine if it is acceptable. ArcelorMittal did request in letters dated June 6, 2011 and June 28, 2011 that IDEM use dissolved and total recoverable data collected by IDEM at Dickey Road (fixed station IHC-2) to develop metals translators for lead and zinc. However, a site-specific study conducted by ArcelorMittal was not submitted prior to the public notice of the draft permit. In their comments on the draft permit, ArcelorMittal submitted summarized total recoverable and dissolved metal data collected at IDEM fixed stations IHC-2 and IHC-0 for copper, lead and zinc along with metals translators calculated using the data. IDEM fixed station IHC-0 is in the vicinity of ArcelorMittal West Outfall 011 and may be within the mixing zone of this outfall which would make data collected at this location unacceptable for developing a metals translator under 5-2-11.4(c)(8). IDEM data collected at fixed station IHC-2 may be acceptable for developing metals translators and could be utilized as part of a site-specific study. Regardless, IDEM did not receive a site-specific study from ArcelorMittal and proceeded to calculate wasteload allocations for copper, lead and zinc using default metals translators as required under 5-2-11.4(a)(8).

Multi-discharger Wasteload Allocation Model:

Lead and Zinc

Lake Michigan water quality criteria must be met at the interface of the Indiana Harbor and Lake Michigan. Therefore, wasteload allocations for discharges in the Indiana Harbor Canal/Lake George Canal/ Indiana Harbor subwatershed must be allocated in a manner to ensure that Lake Michigan criteria are met at the end of the subwatershed. The multi-discharger model provides a means to ensure that Lake Michigan criteria are met during critical stream conditions for conservative pollutants. The model can be refined in the future based on revised outfall allocations, discharge flows and background concentrations. If a site-specific metals translator study is conducted and approved, it may be possible to increase the water quality targets (the applicable dissolved metal criteria divided by the metals translator) for lead and zinc in the subwatershed and in Lake Michigan, providing more assimilative capacity.

As noted in a prior response, IDEM does not believe it is acceptable to re-establish background at Dickey Road and has not received a site-specific metals translator study so the current multi-discharger model was not revised. IDEM did look at the impact of lowering the ArcelorMittal Long Carbon allocation, as requested, and did not find a significant impact on the calculation of downstream WQBELs. For future wasteload allocation considerations, a site-specific metals translator along with more refined effluent concentration characteristics will provide the greatest means of showing that more assimilative capacity is available than currently modeled.

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Comment 2: **COMPLIANCE SCHEDULES FOR NEW WATER QUALITY-BASED EFFLUENT LIMITS**

The draft NPDES permits for each of ArcelorMittal's Indiana Harbor plants contain new water quality based effluent limits for mercury and other pollutants. There are only limited available intake and effluent data that suggest the intake and effluent concentrations at each facility are within the same range, meaning process wastewater and non-cooling water discharges may not be sources or not significant sources of these pollutants. In addition, additional monitoring in all cases is required in order to capture the variability in discharges of these pollutants in order to evaluate compliance with the proposed limits. As a result, ArcelorMittal requests 54-month compliance schedules for every new WQBEL in each permit. This will provide sufficient time to develop statistically significant databases, determine if there are any controllable sources and implement best management practices or other control strategies. ArcelorMittal requests that the 54-month compliance schedule provisions included in the ArcelorMittal Burns Harbor NPDES Permit (No. IN0000175) be used as a guide. We believe the limited available intake and effluent data for these facilities are not sufficient to establish WQBELs, to determine that the Indiana Harbor facilities are actual sources, or to advise facility management on whether the proposed new WQBELs can be achieved on a consistent basis. If one or more outfalls are determined to not be in compliance with one or more of the new WQBELs, then a 54-month compliance schedule will be necessary to evaluate potential options to address the source(s).

Response 2: 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 corresponding final outfall. The WQBELs were set equal to the applicable PELs from the multi-discharger model or the outfall specific spreadsheet. The mass-based WQBELs were then compared to the calculated 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 that pollutant at the final outfall. Except for mercury, this was the case for each WQBEL applied at a final outfall. Therefore, WQBELs are required for these pollutants regardless of the results of the reasonable potential statistical procedure. However, the results of the reasonable potential statistical procedure were used to help establish the monitoring frequency.

Using the EPA memo dated May 10, 2007 on Compliance Schedules for Water Quality Based Effluent Limits in NPDES Permits as guidance, in order to grant a compliance schedule in an NPDES permit, the permitting authority has to make a reasonable finding, adequately supported by the administrative record, that the discharger cannot immediately comply with the WQBEL upon the effective date of the permit [40 CFR § 122.47, 122.47(a)(1)]. In considering ArcelorMittal's request, IDEM reviewed previously submitted data for the new water quality based effluent limits, RPE analyses, and internal technology based effluent limits as noted above. Based on that review, it was determined that in instances where the permittee appears to be capable of meeting new water quality based effluent limits upon permit issuance, the permittee is not eligible for schedules of compliance for those parameters at that outfall.

Comment 3: **MONITORING WAIVERS NAPHTHALENE AND TETRACHLOROETHYLENE**

The draft NPDES permits for Indiana Harbor West (Outfall 211, p. 19 of 77) and Indiana Harbor Central Treatment Plant (Outfall 101, p. 6 of 59) contain the following footnote regarding ArcelorMittal's request for monitoring waivers for naphthalene and tetrachloroethylene under 40 CFR §122.44(a)(2):

> *At the end of a twelve month sampling period, the permittee may request in writing, a review of these monitoring requirements. Upon review by IDEM, the permit may be modified, after public notice and for hearing, to reduce or delete the monitoring requirements.*

ArcelorMittal requests the respective footnotes for Indiana Harbor West and Indiana Central Treatment Plant be modified as follows, and that the following footnote be added for the proposed naphthalene and tetrachloroethylene monitoring requirements for Outfall 014 at Indiana Harbor East:

> *At the end of a twelve month sampling period, the permittee may request in writing, a review of these monitoring requirements pursuant to 40 CFR §122.44(a)(2). Upon review by IDEM, the permit may be modified, after public notice and for hearing, to reduce or delete the monitoring requirements.*

Response 3: IDEM agrees to the above request. However, this provision is being moved to the reopening provisions identified in Part I.J.7 of the permit. The additional reference to 40 CFR 122.44(a)(2) has been added in the Indiana Harbor West and Indiana Harbor Central Treatment Plant. The reopening provisions now states:

> ...to review the monitoring requirements pursuant to 40 CFR 122.44(a)(2). The permittee may request, in writing, a review of categorical monitoring requirements. Upon review by IDEM, the permit may be modified, to reduce or delete the monitoring requirements.

Comment 4: **INTAKE 316(b) REQUIREMENTS**

Indiana Harbor Long Carbon and Indiana Harbor Central Treatment Plant Part III.D (Cooling Water Intake Structures) of the draft Indiana Harbor Long Carbon NPDES permit (p. 60 of 60) and Part III.B. of the draft Indiana Harbor Central Treatment Plant (CTP) NPDES permit (p. 58 of 59) require quarterly reporting by Indiana Harbor Long Carbon and by Indiana Harbor CTP that Indiana Harbor East and Indiana Harbor West, respectively, either are in or out of compliance with CWA Section 316(b). Neither facility has a cooling water intake structure and there is no regulatory basis to impose any CWA Section 316(b) reporting requirements on these facilities. In addition, holding these permitees accountable based on whether the water supplier is in compliance is inappropriate when the compliance condition is beyond the control of the permitee. This reporting is also duplicative because IDEM will receive such reporting from the primary facilities with cooling water intake structures. Accordingly, ArcelorMittal requests the above referenced sections of the Indiana Harbor Long Carbon and Indiana Harbor CTP permits be replaced with the following statements:

Indiana Harbor Long Carbon (Part III.D.)

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Indiana Harbor Central Treatment Plant (Part III.B.)

The facility obtains its intake water from the ArcelorMittal Indiana Harbor East facility that is permitted as IN0000094 and whose CWIS is in compliance with the CWA Section 316(b) as noted in its permit. [substitute "Indiana Harbor West facility" for the Indiana Harbor CTP permit]. All monitoring and reporting requirements related to CWA Section 316(b) are contained in the above referenced NPDES permit for the Indiana Harbor East facility [substitute "Indiana Harbor West facility" for the Indiana Harbor CTP permit].

Response 4: The above mentioned language, and the existing language in the permit, has been modified to read:

This facility obtains its intake water from the ArcelorMittal West Facility that is permitted as IN0000205 and whose CWIS is in compliance with the CWA Section 316(b) as noted in its permit. This permit will also be in compliance with Section 316(b) as long as the CWIS regulated under Permit IN0000205 is in compliance. The holder of this permit shall notify IDEM if the ArcelorMittal West Facility that supplies the water to this facility no longer holds an NPDES permit that regulates the CWISs. ~~On a quarterly basis, this facility will verify its compliance with Section 316(b) by reporting whether the water supplier (ArcelorMittal East IN0000094) "has been" or "has not been" in compliance with Section 316(b) of the CWA for that period. This will be reported by letter to be submitted with the March, June, September, and December DMRs.~~

Comment 5: **TEMPERATURE AND THERMAL LOAD MONITORING AND REPORTING**

The draft NPDES permits for ArcelorMittal's Indiana Harbor plants: IH East, IH Long Carbon, IH West and IH Central Treatment Plant, contain twice per week temperature monitoring requirements and associated net thermal discharge loading reporting requirements for external outfalls discharging to the Indiana Harbor Ship Canal and Indiana Harbor. In the Fact Sheets for the NPDES permits, IDEM acknowledges that thermal discharges from the Indiana Harbor Plants do not pose a reasonable potential to exceed water quality standards for temperature. The reasonable potential evaluation is based on the results of instream sampling and a multi-discharger thermal model (see, for example, p. 32 of the Fact Sheet and pages 14 and 15 of Appendix A of the Fact Sheet for the draft IH West permit). The model results have been confirmed by studies that were conducted by Inland Steel and Ispat-Inland during 1997 and 1998 (see Attachment A below). Nonetheless, IDEM has determined that temperature and thermal loadings are pollutants of concern and has proposed the above-mentioned monitoring requirements, citing 327 IAC 5-2-11.5(e). ArcelorMittal disagrees with that determination.

In light of IDEM's finding that there is no reasonable potential to exceed the water quality standards for temperature within the Indiana Harbor Ship Canal and Indiana Harbor, the proposed temperature monitoring requirements and thermal discharge loading reporting requirements pose an unnecessary burden on these four facilities. While there is no particular Commissioner substantiation or

rationale required by 327 IAC 5-2-11.5(e), that language was originally placed in the rule to allow monitoring based on situations where there is limited data and some evidence that there may be environmental harm. In this instance, there are sufficient data and historical documentation that the thermal discharges from these four facilities have neither caused exceedances of the temperature water criteria nor adversely impacted any biological species. These monitoring and reporting requirements are only monitoring for the sake of monitoring that will provide no useful direct information or data to assess compliance with ambient water quality standards. Therefore, these thermal monitoring and reporting requirements should be removed from the permits.

ArcelorMittal is willing to offer a periodic study approach that will provide definitive data to determine thermal discharge loadings from the Indiana Harbor Plants and definitive data to assess compliance with ambient Indiana water quality standards for temperature in the Indiana Harbor Ship Canal and Indiana Harbor. Following is the suggested language to be included in the permits as a replacement for the thermal monitoring and reporting requirements.

> "*Not later than 90 days after issuance of this permit, the permittee shall submit to IDEM a quality assurance project plan (QAPP) for thermal load and in-stream temperature monitoring studies to be conducted during warm weather months twice during the term of the NPDES permit (second and fourth years). The studies shall include thermal load determinations for all ArcelorMittal facilities discharging to the Indiana Harbor Ship Canal and Indiana Harbor, and sufficient concurrent in-stream temperature measurements to assess compliance with Indiana water quality standards for temperature. IDEM will provide comments within 45 days of receipt of the proposed studies. If IDEM does not provide comments within 45 days, the permittee shall conduct the studies as proposed.*"

This special condition should be included in each NPDES permit for ArcelorMittal's Indiana Harbor NPDES permits and the outfall and intake temperature monitoring requirements and the associated thermal discharge reporting requirements should be removed.

Finally, as discussed previously with IDEM, ArcelorMittal routinely measures intake and effluent temperatures early in the morning of each monitoring day, typically before 8:00 AM when 24-hour composite samplers are serviced. Sample collection and temperature measurements are conducted using contract resources. Any requirement for conducting temperature measurements during the midafternoon would require dispatching sampling crews for additional hours at additional expense, for no perceived environmental benefit.

Response 5: A discussion of the thermal analysis is included in the Fact Sheet of each permit. Indiana has water quality criteria for temperature that apply each month of the year and monitoring requirements for thermal discharges must be designed to protect the receiving stream on a year round basis. IDEM developed a conservative, dilution only model to determine if any ArcelorMittal outfall has a reasonable potential to exceed for temperature for any month of the year. While long-term data are available for ArcelorMittal East and ArcelorMittal Long Carbon, limited data are available for ArcelorMittal Central WWTP and

ArcelorMittal West. ArcelorMittal Central WWTP and ArcelorMittal West have not been required to conduct routine temperature monitoring since the permit was renewed in 1986. Data from July 1999 and April 2000 are available from Grand Calumet River TMDL sampling and permit application data are also available. The available data show that ArcelorMittal West Outfall 009 is the warmest of all the ArcelorMittal outfalls and discharge flow from Outfall 009 can increase significantly during summer months. As noted in the Fact Sheet of the ArcelorMittal West permit, actual effluent data for January and February are required to make a reasonable potential determination for Outfalls 009, 010 and 011 due to the absence of effluent data for these months. The thermal load and instream temperature monitoring studies requested by ArcelorMittal in place of routine outfall monitoring do not include winter months. The requested studies may also not capture worst case summer conditions since only two studies are proposed over five years. Therefore, IDEM believes that a conservative model and long-term seasonal outfall monitoring provide a reasonable means to screen the ArcelorMittal discharges for potential water quality impacts. The frequency of sampling and the requirement for only grab samples were also established to be consistent with the collection of other required outfall data.

In regards to the footnote dictating at what time temperature samples must be collected, additional language has been added. The facility now has the option of either sampling for temperature at the intakes and outfalls between 12pm and 4pm or installing equipment that will measure the highest temperature reading in a 24-hr. period.

Comment 6: **WHOLE EFFLUENT TOXICITY (WET) MONITORING FREQUENCY**

Biomonitoring Frequencies

The above-referenced draft NPDES permits contain proposed biomonitoring requirements as follows:

Plant	Outfalls (TUc Thresholds)	Initial Biomonitoring Frequency	Follow-Up Biomonitoring Frequency if No Toxicity Demonstrated with Initial Testing
Indiana Harbor East	014 (10.0) 018 (7.7)	3 consecutive months, 2 species	Quarterly, life of permit; most sensitive species after 3 months with no toxicity
Indiana Harbor Long Carbon	001 (17.3)	3 consecutive months, 2 species	Quarterly, life of permit; most sensitive species after 3 months with no toxicity
Indiana Harbor West	009 (2.2) 011 (5.8) 012 (1.0)	None specified	Quarterly, life of permit; most sensitive species after 3 tests with no toxicity
Indiana Harbor Central Treatment Plant	001 (9.8)	None specified	Quarterly, life of permit; most sensitive species after 3 tests with no toxicity

ArcelorMittal finds the proposed biomonitoring frequencies are inconsistent across the plants and are excessive. In the alternative, ArcelorMittal requests the biomonitoring frequencies be made uniform across the four permits as follows:

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two species, monthly for three months. If no toxicity is demonstrated, annual monitoring using most sensitive species determined as noted below.

Most Sensitive Species

The Indiana Harbor East and Long Carbon permits contain the following requirement:

> *In the absence of toxicity with either species in the monthly testing for three months in the current tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the immediate past.*

The Indiana Harbor West and Central Treatment Plant permits contain the following requirement:

> *In the absence of toxicity with either species in the initial three (3) tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the previous toxicity tests.*

ArcelorMittal finds these statements to be somewhat confusing with respect to determining the most sensitive species for subsequent testing after the initial three monthly tests, assuming no toxicity is demonstrated:

> *In the absence of toxicity with either species in the initial three (3) monthly tests, the permittee will select the most sensitive species for subsequent testing based on evaluation of the toxicity response from the three (3) monthly tests, or from any prior toxicity tests conducted by the permittee.*

Response 6: For clarity, the Testing Frequency and Duration section (d.) has been modified to read *"The chronic toxicity test specified in Part I.I.1.b. above shall be conducted monthly for three (3) months initially and thereafter at least once every quarter for the duration of the permit. After three tests have been completed, that indicate no toxicity as defined in section f. below, the permittee may reduce the number of species tested to only include the most sensitive to the toxicity in the effluent. In the absence of toxicity with either species in the monthly testing for three (3) months in the current tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the immediate past."*

Comment 7: **FREEZE PROECTION**

ArcelorMittal requests that the discharge authorization statements for each internal and external Outfall in each of the Indiana Harbor permits contain freeze protection agents within the list of the authorized discharges. Seasonal use of antifreeze in process and cooling water systems is essential to protect such systems from freeze damage when idled or taken out of service during cold weather periods. Upon start-up, service water is added to these systems and the antifreeze is diluted and becomes a component of the discharges. ArcelorMittal previously provided IDEM with estimates of possible concentrations of antifreeze for Outfall 011 at Indiana Harbor East and Outfall 001 at Indiana

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Harbor Long Carbon, and proposed to do so as follows for other outfalls at the Indiana Harbor plants where freeze protection agents may be used.

To ensure such discharges are authorized and regulated in an appropriate fashion, ArcelorMittal requests the following footnote be added in the NPDES permits for each internal and external outfall at the four ArcelorMittal Indiana Harbor plants:

> [x] The permittee is authorized to provide freeze protection for its process water, process wastewater and non-contact cooling water systems as necessary. Prior to discharge of the freeze protected water, the permittee shall provide IDEM estimates of discharge concentrations of the freeze protection agents.

Response 7: 'Freeze protection agents' are considered water treatment additives and are subject to IDEMs approval procedures prior to discharge. No changes to the discharge authorization statements will be made at this time. Additional language has been added to Section 5.8 of this Fact Sheet acknowledging the anticipated use of freeze protection agents.

Comment 8: **MONITORING REQUIREMENTS FOR FREE CYANIDE AND FLUORIDE**

The above draft NPDES permits contain proposed routine monitoring requirements as set out below for free cyanide, fluoride and selenium. Water quality based effluent limits have not been proposed. Reportedly, the data will be used to determine whether the discharges pose a *reasonable potential* to cause or contribute to exceedances of water quality standards for the next renewal NPDES permits.

Indiana Harbor Central Treatment Plant (p.41 of 60)

	Monitoring Period During Permit Term	Monitoring Frequency	Sample Type
Outfall 001			
Fluoride	Life of permit	2 x month	24-hr composite
Free cyanide	Life of permit	2 x month	Grab

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Indiana Harbor West (p. 55 of 77)

	Monitoring Period During Permit Term	Monitoring Frequency	Sample Type
Outfall 002			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab
Outfall 009			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab
Outfall 010			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab
Outfall 011			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab

The Fact Sheets for the draft Indiana Harbor permits state that a review of Indiana's Section 303(d) list shows there are no pollutants on the list that have the potential to impact waste load allocation analyses for the renewal of NPDES permits on a whole watershed basis (see Attachment A – Water Quality Assessment, p. 3). As shown below, available information and data, as well as Indiana's Section 302(d) list, demonstrate there is no reasonable basis for the proposed monitoring requirements.

Free Cyanide

The Indiana water quality standards for cyanide are for free cyanide as follows:

	ug/L	mg/L
Criteria Maximum Concentration	22	0.022
Criteria Continuous Concentration (4-Day Average)	5.2	0.0052

Indiana's 2008 Section 303(d) list included the Grand Calumet River as impaired for free cyanide, but not the Indiana Harbor Ship Canal or Indiana Harbor. The draft 2010 Section 303(d) list is the same. The Fact Sheet for Indiana Harbor East (p. 26 of 111) and Fact Sheets for the other ArcelorMittal Indiana Harbor permits state there is a new Section 303(d) listing for free cyanide in Indiana Harbor. However, the "new listing" is not reported in the Indiana 2008 Section 303(d) list or the draft 2010 list.

The Fact Sheets further state the proposed monitoring requirements for free cyanide are based on data collected at the IHC-0 monitoring station in Indiana Harbor during 2000 and 2001. These data are at least 10 years old and, as shown below, do not reflect current conditions in Indiana Harbor. Attachment A to this comment is a compilation of available IDEM data for cyanide amenable to chlorination (CATC), free cyanide (F. CN) and total cyanide (T. CN) collected at monitoring station IHC-0 (Indiana Harbor) from January 1990 to March 2008 and at monitoring station IHC-2 (Indiana Harbor Ship Canal at Dickey Road) for the period January 1990 to February 2010. The Dickey Road monitoring station IHC-2 is downstream of Indiana Harbor Central Treatment Plant and Indiana Harbor Long Carbon and upstream of all Indiana Harbor East and West outfalls.

The Indiana Harbor IHC-0 monitoring station is located downstream of all Indiana Harbor East outfalls and downstream of Indiana Harbor West Outfalls 002, 009 and 010, and in the immediate vicinity of where the discharge channel for Indiana Harbor West Outfall 011 empties into Indiana Harbor. Thus, the data collected at the IHC-0 monitoring station can be affected by the discharge from Outfall 011. Until recently, the discharge from Outfall 011 included treated process wastewaters from the blast furnaces and the sinter plant. These wastewaters can contain cyanide compounds. Unlike IHC-0, data obtained at the IHC-2 Dickey Road monitoring station provides a good representation of water quality in the upstream end of the Indiana Harbor Ship Canal.

The data for station IHC-2 show nearly all non-detect results at concentrations of < 0.005 mg/L for all three forms of cyanide for the entire period of record from 1990-2010. During 2000 and 2001 there were a few detect values of only total cyanide in the 0.007 to 0.008 mg/L range. For the period 2002 to 2010, there were three detect values at 0.006 mg/L (Dec. 2002, Dec. 2003, Jan. 2005), all well below the CMC water quality standard of 0.022 mg/L. These data do not indicate impairment for free cyanide at and upstream of Dickey Road.

The data for IHC-0 show detections of all forms of cyanide during 2000 and 2001; however, all reported analytical results were < 0.005 mg/L from 2002 through March 2008, when IDEM apparently suspended monitoring for total cyanide at station IHC-0. Thus, the data show CMC and CCC water quality standards for free cyanide have been attained at that location for at least six consecutive years, and at station IHC-2 for at least eight consecutive years. ArcelorMittal believes it is not appropriate to base considerations of impairment for free cyanide and NPDES permit monitoring requirements on data that are more than 10 years old.

Furthermore, available monitoring data for total cyanide at Indiana Harbor East and Indiana Harbor West external outfalls (July 2005 to June 2010) show most measurements of total cyanide are not present at levels above 0.005 mg/L, with average total cyanide discharge concentrations in the range of 0.005 mg/L to 0.013 mg/L on an outfall-by outfall basis (non-detect concentrations counted as present at 0.005 mg/L).

Given available monitoring data at stations IHC-0 and IHC-2 for the last several years and recent ArcelorMittal monitoring data for total cyanide, there is no basis to conclude the Indiana Harbor Ship Canal or Indiana Harbor are impaired for free cyanide, and no basis to include free cyanide monitoring requirements in the renewal NPDES permits for these four facilities. Thus, ArcelorMittal requests that free cyanide monitoring requirements be deleted from the NPDES permits for Indiana Harbor East, Indiana Harbor Long Carbon, Indiana Harbor West and Indiana Harbor Central Treatment Plant.

Fluoride

The Indiana water quality standards for fluoride are 1.0 mg/L applicable to Lake Michigan and 3.4 mg/l applicable to the IHSC. The water quality standard for Lake Michigan was established to minimize or prevent increased levels of fluoride in Lake Michigan (see 327 IAC 2-1.5-8, Table 8-9 of the water quality standards – Additional Criteria for Lake Michigan). The standard applicable to the IHSC is a chronic aquatic life criterion. Available monitoring data for

fluoride at the IHC-2 Dickey Road monitoring station (January 2005 to December 2009) show the geometric mean concentration of fluoride at that location is 0.49 mg/L, approximately one-half of the Lake Michigan water quality standard, and approximately one seventh of the IHSC aquatic life criterion.

Recent monitoring data (July 2005 to June 2010) for ArcelorMittal Indiana Harbor East and West facility outfalls are as follows:

Plant/Outfall	LTA Discharge Flow (mgd)	Average Fluoride Concentration (mg/L); (Number of data)	Gross Mass Loading (lbs/day)
Indiana Harbor East			
Outfall 011	84.7	0.27 (8)	191
Outfall 014	11.5	1.4 (2)	134
Outfall 018	15.9	0.9 (2)	119
Total IH East	112.1		444
Indiana Harbor West			
Outfall 002	11.2	0.41 (1)	38
Outfall 009	55.3	0.45 (20)	208
Outfall 010	36.6	0.45 (20)	137
Outfall 011	23.4	1.4 (19)	273
Total IH West	126.5		656
Total IH East and West	238.6		1,100
IDEM WQ Design Flow @ Canal Road (352 cfs)	227.5	0.49 (geometric mean)	930
Total Indiana Harbor (WQ Design Flow does not Include IDEM Lake Michigan Intrusion Flow)	466.1	0.52 (calculated)	2,030
IDEM Lake Michigan Intrusion Flow (132 cfs)	85.3	0.07 (IDEM model data)	50
Total Indiana Harbor and Lake Michigan Intrusion Flow	551.4	0.45 (calculated)	2,080

This simplified mass balance approach to estimating fluoride concentrations in Indiana Harbor shows that when considering the net addition of flow from ArcelorMittal Indiana Harbor East and West and gross mass discharges of fluoride, the calculated concentration of fluoride in Indiana Harbor is 0.52 mg/L, again approximately one-half the Lake Michigan water quality standard of 1.0 mg/L. These calculations indicate that the ArcelorMittal Indiana Harbor East and West gross discharges of fluoride add only 0.03 mg/L of fluoride to the background concentration measured at monitoring station IHC-2 (Dickey Road), which is downstream of Indiana Harbor Central Treatment Plant and Indiana Harbor Long Carbon. The above monitoring data do not reflect the zero discharge wastewater treatment system installed at Indiana Harbor West, which will reduce the above-listed mass discharge from Outfall 011. When accounting for the Lake Michigan intrusion flow, the calculated fluoride concentration at the mouth of Indiana Harbor is 0.45 mg/L, well below the 1.0 mg/L Lake Michigan

water quality standard. Furthermore, IDEM's multi-discharger WLA model overestimates discharges from the ArcelorMittal Indiana Harbor mills and fails to account properly for background fluoride monitoring data at Dickey Road.

The data presented in the table above demonstrate that discharges of fluoride from Indiana Harbor East, Indiana Harbor West, Indiana Harbor Long Carbon and Indiana Harbor Central Treatment Plant do not pose a *reasonable potential* to cause or contribute to exceedances of the water quality standards for fluoride in Lake Michigan and in the IHSC. Accordingly, ArcelorMittal requests the proposed monitoring requirements for fluoride be deleted from each of the four Indiana Harbor NPDES permits.

Response 8: Free Cyanide

The Indiana Harbor is included on the final 2010 303(d) list submitted by IDEM to U.S. EPA for free cyanide based on data collected in 2000 and 2001 at IDEM fixed water quality monitoring station IHC-0. The chronic aquatic criterion for free cyanide of 5.2 ug/l is near the reporting level of 5 ug/l used by IDEM for fixed station free cyanide data. Data reported as less than the reporting level may still be near the criterion as shown in TMDL sampling data collected in the Indiana Harbor Canal and Indiana Harbor in July 1999 and April 2000 using a more sensitive test method. Total cyanide is currently monitored at many of the ArcelorMittal internal and final outfalls, but little data for free cyanide are available. The total cyanide data include values reported above the chronic aquatic criterion for free cyanide. Since total cyanide is present at many of the ArcelorMittal outfalls and free cyanide has been shown to be present in the Indiana Harbor Canal and Indiana Harbor, a multi-discharger model for free cyanide is appropriate for the subwatershed. The monitoring requirements will allow the collection of long-term free cyanide data at final outfalls with known internal sources of total cyanide and provide a year of data at other final outfalls to provide sufficient information to characterize the variability of the discharges and conduct a multi-discharger model for free cyanide in the next permit renewal.

Fluoride

A multi-discharger model for fluoride was conducted based on known sources of fluoride in the ArcelorMittal discharges and known sources in the East Branch Grand Calumet River and West Branch Grand Calumet River that contribute to the background concentration. Limited data were available for some ArcelorMittal final outfalls that contain sources of fluoride at internal outfalls resulting in projected instream concentrations in the Indiana Harbor near the Lake Michigan criterion. Monitoring is being required to provide sufficient information to better characterize the variability of fluoride in the discharges and to conduct a multi-discharger model for free fluoride in the next permit renewal.

Comment 9: **MONITORING FREQUENCY FOR TOTAL RESIDUAL CHLORINE (TRC)**

Each of the draft NPDES permits for the Indiana Harbor plants contains proposed effluent limits and monitoring requirements for total residual chlorine (TRC) at external outfalls. The proposed monitoring frequencies are as follows:

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Plant, External Outfalls	Proposed Monitoring Frequencies
Indiana Harbor East 011, 014, 018 019 518 008 (only during emergency overflow)	 5 x week 1 x month 2 x week 1 x daily
Indiana Harbor Long Carbon 001	 5 x week
Indiana Harbor West 002, 009, 010, 011, 012	 1 x daily
Indiana Harbor Central Treatment Plant 001	 1 x daily

As discussed previously with IDEM, ArcelorMittal conducts TRC monitoring at each plant using contract sampling and analytical resources. Monitoring frequencies of daily would require weekend monitoring at high cost. Given that historical TRC monitoring data for each plant do not indicate significant or frequent problems with TRC monitoring, ArcelorMittal requests that, except for Outfall 019 at Indiana Harbor East, the TRC monitoring frequencies for all external outfalls at each plant be set at no more than 5 x week. IDEM addressed this issue for the Indiana Harbor East and Indiana Harbor Long Carbon draft permits, but did not for Indiana Harbor West and Indiana Harbor Central Treatment Plant. ArcelorMittal believes this was an oversight and requests that IDEM set the TRC monitoring frequencies at Indiana Harbor West and Indiana Harbor Central Treatment Plant at no more than 5 x week.

Response 9: IDEM agrees that the IH West and IH CTP permits will be changed to reflect a TRC monitoring frequency of 5 X Week for each final outfall. In addition, the footnote corresponding to TRC monitoring frequency has been changed from:

> *Monitoring for TRC shall be 1 X Daily during Zebra or Quagga mussel intake chlorination, and continue for three additional days after Zebra or Quagga mussel treatment has been completed.*

To:

> *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.*

Comment 10: **ANALYTICAL METHODS, SAMPLE TYPES, WATER TREATMENT ADDITIVES, LOW VOLUME WASTES**

ArcelorMittal requests the following comments regarding monitoring requirements, analytical methods, water treatment additives and low volume wastes be addressed in each of the Indiana Harbor NPDES permits, as appropriate:

1. Analytical Method for Total Cyanide and Free Cyanide Monitoring Requirements

The most recent revision to 40 CFR Part 136 lists ASTM D 2036-98(A) as an approved analytical method for total cyanide, in addition to those listed in the draft permits. The permits should clearly specify that any method approved by EPA and published at 40 CFR Part 136 can be used for NPDES permit compliance monitoring. In addition, where monitoring for both total cyanide and free cyanide is required (i.e., Outfall 014 at Indiana Harbor East), ArcelorMittal requests that if the total cyanide analytical result is non-detect, the corresponding analysis for free cyanide can be waived.

2. Sample type for Total Phenols (Phenols (4AAP))

ArcelorMittal requests the sample type of total phenols be specified as "24-hour composite" instead of "grab" to correspond to current monitoring requirements and current monitoring practices. This would allow continued collection of ammonia-N and total phenols samples in one container and separation of samples in the laboratory. Otherwise, additional samples would have to be collected to meet the "grab" sample requirement for total phenols.

3. Water Treatment Additives

Footnotes regarding water treatment additives for each outfall in each permit require reporting of changes in dosage rates in accordance with Part II.C. 1. of the standard conditions. As part of the NPDES permit renewal process, ArcelorMittal provided IDEM lists of currently used water treatment additives for each Indiana Harbor facility and the respective estimated maximum dosage rates of each additive. Part II.C.1.b. of the standard conditions states notice to IDEM is required only when:

> *"The alteration or addition could significantly change the nature of, or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in Part I.A. nor to notification requirements in Part II.C.9 of this permit."*

ArcelorMittal's interpretation of Part II.C.1.B. is that water treatment additives fall under the above reporting requirement. Because ArcelorMittal has reported to IDEM estimated maximum dosage rates of the water treatment additives, we believe this reporting requirement would not come into effect unless the previously reported maximum dosage rates were exceeded. Otherwise, taken literally, the reporting requirement would be virtually impossible to meet. For example, many non-contact cooling water and process water outfalls have effluent limits for total residual chlorine (TRC). Effluent dechlorination with sodium bisulfite is practiced to maintain compliance with the TRC effluent limits. The rates of application of sodium bisulfite are variable and are based on the amounts of TRC present. It would not be possible or reasonable to record changes in sodium bisulfite addition over the course of a day for each outfall. The same issue pertains to use of water treatment chemicals at process wastewater treatment facilities, but to a lesser extent.

To address this issue, ArcelorMittal requests the footnotes in each of the Indiana Harbor facility NPDES permits be modified as follows:

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"In the event that changes are to be made in the use of water treatment additives including dosage rates to Outfall 00x <u>*beyond previously reported estimated maximum dosage rates*</u>*, the permittee shall notify the Indiana Department of Environmental Management as required by Part II.C.1. of this permit."* <u>emphasis added</u>

4. Low volume wastes

For purposes of defining "low volume wastes" that may be discharged from boiler house and power station operations, ArcelorMittal requests that reverse osmosis reject water be considered "low volume waste". We believe this is consistent with the specialized definition at 40 CFR §423.11(b) of the Steam Electric Power Generating effluent limitations guidelines which includes ion exchange water treatment system wastewaters as low volume waste. Reverse osmosis systems are now being used to replace many of the conventional ion exchange and water softening operations at large boiler house and power generating stations for boiler water make-up treatment.

Response 10: <u>Analytical Method for Total Cyanide and Free Cyanide Monitoring Requirements</u>

IDEM establishes which analytical methods should be used in the NPDES permits, in part, to ensure that the data collected can be used adequately. Parameters identified in 40 CFR Part 136 often have many approved analytical methods at varying levels of detection (LOD) and quantitation (LOQ). Allowing a permittee to select any of those approved methods may not provide data at the factor of concentration needed. For example, if the permittee provided analytical data for a Reasonable Potential to Exceed analysis, a data set with values of <1 mg/l could not determine if a reasonable potential existed if the water quality criterion was at 0.5 mg/l. Therefore, IDEM determines which analytical method(s) can be used. The permittee may request to use another analytical method, however, and that request must be approved by IDEM prior to use for data collection.

<u>Sample type for Total Phenols (Phenols (4AAP))</u>

Grab samples should be used as the collection method for parameters that are: (i) relatively constant in the discharge; (ii) likely to change with storage such as temperature, residual chlorine, cyanides, phenols, pH, etc.; or (iii) likely affected by compositing such as oil and grease and volatiles. As the total phenols concentration in this permit is expected to be relatively constant, identified above as likely to change with storage, and is considered a volatile compound, the 'grab' sample method will remain.

<u>Water Treatment Additives</u>

IDEM agrees, in part, with the comment above regarding the footnotes directed at water treatment additives. However, IDEM proposes to incorporate the following statement in lieu of the one provided:

"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 the additive, the permittee shall notify the Indiana Department of Environmental Management as required by Part II.C.1. of this permit."

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It is important to note that the dosage rate is not the only deciding factor when calculating the discharge concentration of a pollutant from a water treatment additive. Other factors that need be considered when determining the discharge concentration are, but not limited to, discharge flow, equipment used, physical conditions, etc.

Low Volume Wastes

The comment above regarding the classification of RO reject water as 'Low Volume Waste' does not appear to be applicable to Indiana Harbor West or Indiana Harbor Central Treatment Plant nor would such a change necessitate a revision to the effluent limitations at either Internal or Final Outfalls. No changes are necessary at this time.

Comment 11: **STORM WATER NON-NUMERIC CONDITIONS**

Each of the Indiana Harbor draft NPDES permits includes special conditions under Storm Water Non Numeric Conditions that are conditions of applicable Title V air permits. For example, paragraph 5.b. that references good housekeeping, is covered under the applicable requirements in the facility's Fugitive Dust Control Plan. Also, paragraph 10.c. references regular inspections of air pollution control equipment as well as monitoring inlets and outlets of air flow ducts to check for particulate deposition. These requirements are duplicative of requirements in the applicable Title V air permits. Accordingly, ArcelorMittal requests that IDEM remove these requirements from the draft NPDES permits for the Indiana Harbor facilities, specifically every action, inspection or reporting requirement related to air pollution control equipment and fugitive dust controls.

Response 11: The storm water non-numeric conditions are the same as those in other similarly issued Individual NPDES permits. As a delegated state program, the IDEM modeled its storm water permitting approach after the US EPA's storm water program. For duplicative conditions, in instances where actions taken to comply the Title V air permits also satisfy the storm water non-numeric conditions, the action can be documented in the SWPPP for compliance purposes.

Comment 12: **PCB DISCHARGE PROHIBITION**

Part III of Each Draft NPDES Permit

ArcelorMittal has implemented programs to eliminate transformers and capacitors containing PCBs from its Indiana Harbor facilities and has essentially eliminated PCB-containing transformers from electrical service. PCBs are not used in any process, water treatment or wastewater treatment operations. The draft Indiana Harbor NPDES permits contains provisions that prohibit discharges of PCBs. These conditions were first included in NPDES permits issued in the 1980's and earlier. Since that time, there have been significant advances in analytical science such that PCBs can now be detected in the low ng/L range and lower. Consequently, it may be possible to detect PCBs in discharges where the source is the intake water. Accordingly, ArcelorMittal requests the phrase "... attributable to facility operations" be added to the PCB discharge prohibition statement in each Indiana Harbor permit. Without this requested change, ArcelorMittal could be put in the untenable position of being required to treat

large volume process wastewater and non-contact cooling water discharges for PCBs that are beyond its control and at levels that may be untreatable.

Response 12: The source of the prohibition says specifically: *"There shall be no discharge of polychlorinated biphenyl (PCBs) compounds such as those commonly used for transformer fluid."* In essence, this is a prohibition on using compounds containing PCB compounds at these facilities. Should PCBs be detected in the discharge, the facility should take action to determine if the source is indeed the source water.

Comment 13: **POLLUTANT MINIMIZATION PROGRAMS**

Part I.B of each draft NPDES Permit contains requirements for Pollutant Minimization Programs (PMPs) for outfalls where total residual chlorine (TRC) is limited. A PMP program is also required for silver at Outfall 001 at Indiana Harbor Central Treatment Plant. Paragraphs (3) of the PMP requirements for the draft NPDES permits for Indiana Harbor East (p. 55 of 84) and Indiana Harbor Long Carbon (p. 37 of 60) require only *"Monitoring as necessary to record progress toward the goal."*, whereas Paragraphs (3) contained in the draft NPDES permits for Indiana Harbor West (p. 48 of 77) and Central Treatment Plant (p. 34 of 59) prescribes more extensive set of monitoring programs. Also paragraphs (4) of the proposed PMPs require submission of an annual status report. Because monitoring data will be submitted as part of the monthly discharge monitoring reports, the requirement to submit an annual summary report is redundant and should be eliminated.

Consistent with the manner in which PMP requirements were addressed in the recently issued Burns Harbor NPDES permit, ArcelorMittal requests that the monitoring requirements for paragraphs (3) in the Indiana Harbor West and Indiana Harbor Central Treatment Plant NPDES permit be made consistent with those for Indiana Harbor East and Indiana Harbor Long Carbon, and that the paragraphs (4) annual reporting requirements be eliminated.

Response 13: For Indiana Harbor West and Indiana Harbor Central Treatment Plant, paragraph (3) will be made consistent with those for Indiana Harbor East and Indiana Harbor Long Carbon. However, the annual report is required in accordance with 327 IAC 5-2-11.6(h)(7)(A)(iv). The annual reporting requirements will not be removed.

Comment 14: **TETRACHLOROETHYLENE AND TOTAL TOXIC ORGANICS (TTO)**

The draft NPDES permit for the Indiana Harbor Central Treatment Plant contains proposed monitoring requirements for tetrachloroethylene (abbreviated as TCE in the draft NPDES Permit) and Total Toxic Organics (TTO) that specify the sample types as 24-hour composite (p. 5 of 59). TCE is a volatile substance. As such, the sampling method at 40 CFR Part 136 requires sampling in special vials equipped with flexible septa. The sampler must ensure that no air remains in the vial after it is capped with the septum. Because of this sampling requirement, one-time "grab" samples are typically specified in NPDES permits for TCE (*see e.g.*, Outfall 014 at Indiana Harbor East; Outfall 211 at Indiana Harbor West; Outfall 011 at Burns Harbor). ArcelorMittal requests the sample type for TCE be changed from "24-hour composite" to "grab" in the Indiana Harbor Central

Treatment Plant permit to be consistent with 40 CFR Part 136 requirements and the other permits for the Indiana Harbor facilities.

TTO is a measure of the sum of toxic organic pollutants listed at 40 CFR §433.11(e) (Metal Finishing effluent limitations guidelines) that are measured at concentrations greater than 0.01 mg/L. The list of toxic organic pollutants includes several volatile pollutants such as TCE as well as semi-volatile pollutants. The draft NPDES permit for Indiana Harbor Central treatment lists the sample type as "24-hour composite" for TTO. In this case the sample type should be "24-hour composite" for semi-volatile compounds that are part of the TTO and "grab" for volatile compounds that are part of the TTO. ArcelorMittal requests the sample type for TTO be modified accordingly.

Response 14: The sample type for TCE has been changed to 'grab'. The sample type for TTO will remain as '24-hour composite', consistent with other similarly issued NPDES permits.

Ms. Jeanette Neagu, President, Save the Dunes and Mr. Lyman C. Welch, Water Quality Program Manager, Alliance for the Great Lakes submitted the following comments. Mr. Jesse Kharbanda, Executive Director, Hoosier Environmental Council, submitted a letter supporting the joint comments submitted by Save the Dunes and the Alliance for the Great Lakes.

Comment 15: **Chromium Issues**

Health effects that can result from exposure to hexavalent chromium (also known as hex chromium or chromium-VI) include damage to the nose; anemia; intestinal and stomach damage; and cancer. The State of California is so concerned about this parameter that it has set a very low detection limit of 0.02 µg/L.

In 2010, ArcelorMittal West (TRI ID 46312LTVST3001D) reported through the Toxic Release Inventory (TRI) that 890 pounds of chromium compounds were discharged to the water, one of the highest amounts of chromium discharges reported in the Great Lakes Basin. IDEM has indicated that this chromium is removed from the wastewater in the Central Wastewater Plant and taken offsite for disposal, as might be evidenced by the 23,000 pounds of chromium compounds reported in the 2010 TRI as removed through this method. As a result of it being removed in the Central Plant, a specific provision was included in all of the permits that prohibits the discharge of chromium at any of the outfalls.

We don't know if it was an oversight or intentional, but there is nothing in these permits that requires monitoring to make sure this prohibition is being followed, making enforcement more difficult. This is particularly important since they have reported discharging 890 pounds of chromium compounds directly to the water as late as 2010.

A continuous monitoring system for chromium compounds should be required in all the permits where chromium discharges are prohibited. Furthermore, we need assurances that the wastewater sludge from the Central Treatment Plant that then

contains the chromium is handled in a lawful manner as it is taken off-site. Recent studies and media coverage of detections of chromium-6 in tap water, in addition to EPA's current efforts to conduct human health risk assessments, also support the need for monitoring protocols for chromium in this permit. This is especially important because hexavalent chromium is more soluble and more mobile than the more naturally occurring chromium III, and also enters the water through airborne sources in the plant.

Response 15: While many facilities base their TRI data on monitoring data, others report estimated data to TRI, as the TRI program does not mandate monitoring. Various estimation techniques can be used when monitoring data are not available, and EPA has published estimation guidance for the regulated community. Variations between facilities can result from the use of different estimation methodologies. These factors should be taken into account when considering data accuracy and comparability. It is also incorrect to equate the chromium compounds listed in the TRI as hexavalent chromium.

However, IDEM acknowledges the importance of verifying that hexavalent chromium is not being discharged from these facilities. Where required by federal effluent guidelines, total chromium limitations have been included in the proposed permits. Additionally, a prohibition against discharging wastewaters containing hexavalent chromium has been included in the proposed permit at potentially affected outfalls. IDEM will add hexavalent chromium monitoring at the potentially affected outfalls (Central Wastewater Treatment Plant) at a reasonable frequency in order to confirm that hexavalent chromium is not being discharged. IDEM doesn't require monitoring for "chromium compounds" as there are no water quality standards upon which to establish effluent limitations for "chromium compounds".

Comment 16: **Some Parameters May be Missing**

With respect to toxic pollutants, Clean Water Act Section 301 requires that NPDES permits "shall require application of "Best Available Technology" (BAT) to reduce pollutant discharges to the maximum extent "technologically and economically achievable," including "elimination of discharges of all pollutants" if it is achievable. Federal regulations promulgated by USEPA also require that "technology-based treatment requirements under Section 301(b) of the CWA represent the minimum level of control that must be imposed" in a NPDES permit. BAT is a stringent treatment standard that has been held to represent "a commitment of the maximum resources economically possible with the ultimate goal of eliminating all polluting discharges."

Technology-based effluent limitations (TBELs) are a necessary minimum requirement for a permit "regardless of a discharge's effect on water quality." Federal regulations require state permitting authorities to establish BAT effluent limits in individual NPDES permits on a case-by-case basis, using Best Professional Judgment (BPJ), "to the extent that EPA-promulgated effluent limitations are inapplicable." The use of the word "shall" in both the federal statute and regulations does not leave IDEM with any discretion as to whether TBELs should be established. Instead, TBELs must be established for every parameter reported in the TRI data. It is our contention that IDEM must set TBELs for all pollutants by determining BAT. Even if the ArcelorMittal facility

is not discharging these pollutants in amounts that would implicate the applicable water quality standard or require a WQBEL, the Clean Water Act still requires that they be subject to TBELs.

The Clean Water Act requires that "the discharge of any pollutant by any person shall be unlawful" except, in pertinent part, if it is authorized by a NPDES permit. The Act further defines "discharge of a pollutant" to mean "any addition of any pollutant to navigable waters from any point source." Requiring effluent limitations for even small discharges of pollutants is consistent with the Clean Water Act's statutory goal of "elimination of discharges of all pollutants."

Accordingly, although some pollutants reported in ArcelorMittal's TRI reports may only be discharged in small amounts, they still constitute "discharges of a pollutant" that are illegal under the Clean Water Act unless subject to appropriate TBELs. IDEM needs to review the TRI and revise the draft permit to incorporate such missing TBELs before ArcelorMittal's NPDES permits can be lawfully renewed.

Response 16: For the reasons outlined in Response #15, the TRI is not appropriate data source for establishing permit effluent limitations.

Development of limitations for every possible pollutant which could potentially be present in the discharge is not feasible. Technology based effluent guidelines are not always established for every pollutant present in a point source discharge. In many instances, EPA promulgates effluent guidelines for an *indicator* pollutant or pollutants. Industrial facilities that comply with the effluent guidelines for the indicator pollutant(s) will also control other pollutants (e.g., pollutants with a similar chemical structure). For example, EPA may choose to regulate only one of several metals present in the effluent from an industrial category, and compliance with the effluent guidelines will ensure that similar metals present in the discharge are adequately controlled. Additionally, for each industry sector EPA typically considers whether a pollutant is present in the process wastewater at treatable concentrations and whether the model technology for effluent guidelines effectively treats the pollutant.

Comment 17: One of the most serious concerns we have with this permit is the schedule of compliance proposed for this facility to meet new effluent limitations for mercury. Mercury is an especially dangerous parameter of concern since it bioaccumulates in fish tissue, and can adhere to sediments in all the affected water bodies. Lake Michigan, in particular, does not have a ready ability to heal itself as it takes more than 90 years for its waters to recycle and turn over. In addition, more than adequate studies have been done that prove that sediments in this area contain conditions that are sufficient to alter the chemical composition of fish tissues to the extent that the human uses of fishery resources in that area are adversely affected. (http://www.fws.gov/midwest/GrandCalumetRiverNRDA/documents/Volume1.pdf)

While the Great Lakes Initiative (GLI) allows Indiana to provide flexibility on compliance schedules, the key words are "shall not exceed five years or the term of the NPDES permit, whichever is less." That does not automatically mean that

54 months (4.5 years) is the standard amount of time granted. The effluent limitations should come as no surprise to ArcelorMittal, and we just don't see why it should take 54 months to ramp up to meet the standards.

It is our understanding that, as soon as the permit is approved, ArcelorMittal must in order of sequence:

1. Develop a Quality Assurance Project Plan (QAPP) within three months that identifies sources of mercury in the wastewater being treated.
    - It is our belief that this QAPP should take into account a mass balance study of all sources of mercury including air, water and solid waste such as secondary wastewater sludge.
    - Once the QAPP is approved by IDEM, how much time will then be allotted to identify those sources? Is it possible to negotiate this timeline within the permit?
    - Will the QAPP be made available for comment by the public?

2. Then develop a Final Plan for Compliance (FPC) to achieve compliance with the final effluent limits.
    - Will there be an opportunity for public comment on the FPC?

3. Implement the FPC within 24 months.
    - 24 months seems too long. We request that the FPC be implemented in 12 months.

We also want to have some assurances that there is a high degree of certainty that all these plans and schedules are realistic and achievable.

Response 17: Part I.F of the permit outlines the procedure for achieving compliance with the final effluent limitations for mercury. That section dictates that the permittee submit a QAPP report to IDEM no later than 3 months from the effective date of this permit outlining, among other things, the methods with which the permittee will identify sources of mercury. Another report is due no later than 15 months of the effective date of this permit that includes the previous 12 months sampling data for mercury and any pollution prevention activities implemented. A second QAPP report is due no later than 27 months from the effective date of this permit that includes the previous 24 months sampling data for mercury, an evaluation of the pollution prevention activities and treatment technologies, any additional control measures put in place since the last report, and the anticipated date when the permittee will submit the FPC.

The proposed FPC will contain the source identification report and a plan for implementing any pollution prevention or treatment technologies to achieve compliance with the final effluent limitation for mercury no later than 30 months from the effective date of this permit. Follow-up reports are due no later than 39 and 48 months, respectively, identifying progress and milestones contained in the FPC. The permittee shall comply with the final effluent limitations for mercury as soon as possible, but no later than 54 months from the effective date of this permit.

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The QAPP and FPC will become public documents. However, they will not be placed on Public Notice for review and comment by the public.

IDEM believes that implementing the FPC in 12 months is not a reasonable expectation due to the comprehensive analysis and critical examination required to be performed as part of the Schedule of Compliance and associated reports.

Comment 18: **Missing Total Maximum Daily Loads (TMDLs)**
It is amazing to Save the Dunes and the Alliance for the Great Lakes that IDEM reportedly spent $1 million to complete TMDL assessments on the Grand Calumet in 2001, and then never developed the TMDLs. Wasteload allocations used throughout all the permits are not sufficient because they are looking at parameters on a case-by-case basis and not the whole stream. You are not considering the other sources that might be contributing to impairments in the entire AOC.

We request that the necessary TMDLs be developed prior to the next renewal for these permits; and we invite IDEM and USEPA to work with Save the Dunes to make sure this happens, just as we are working together to develop TMDLs for the Salt Creek Watershed. TMDLs are a critical step to resolving impairments in the AOC; impairments that have far-reaching consequences beyond the AOC into Lake Michigan – and also impact a visitor's ability to enjoy the Indiana Dunes National Lakeshore.

Response 18: The IDEM Permitting Branch agrees that TMDLs are a critical step to resolving impairments in the AOC. There are many extenuating circumstances to be taken into consideration for TMDL approval. The Permitting Branch has no control over if and when TMDLs are developed and approved and must work with the most recent and applicable resources at their disposal.

In the event TMDLs have been developed and approved for the waterbodies which receive discharges from these ArcelorMittal facilities during the next permit renewal cycle, the information will be taken into consideration during the development of water quality based effluent limits and completion of RPE analyses. IDEM encourages Save the Dunes and other organizations to keep working with IDEM and EPA on projects such as the development of TMDLs.

Comment 19: **Thermal Concerns**
While we appreciate the in-stream sampling and modeling that has been done to prove that ArcelorMittal does not have a reasonable potential to exceed a water-quality criterion for temperature, it is our contention that continuous in-stream monitoring should be required as opposed to grab sampling. Grab samples are only as good as the sample. This is especially important since the Clean Water Act requires the permittee to demonstrate that the balanced indigenous community of aquatic organism is protected and maintained. We also need to know if US Fish and Wildlife, DNR and other staff were consulted during this study because thermal concerns have a major impact on impairments in the AOC.

Response 19: Based on multi-discharger thermal model, the discharges from these ArcelorMittal facilities do not have a reasonable potential to exceed a water

quality criterion for temperature. Therefore, continuous monitoring is not justifiable. 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, therefore monitoring for temperature and thermal discharge was included in this permit. IDEM believes that sampling twice weekly at the selected outfalls and intakes is sufficient to provide representative data of the temperature output from the outfalls.

Comment 20: **Typographical Error**
On page 32, line 5 of the permit it should say "prevention" not "prevent."

Response 20: The above mentioned changes have been made.

Comment 21: **Procedure for Whole Effluent Toxicity**
An overall goal of the GLI is to have consistency among the Great Lake States. We understand that USEPA disapproved Indiana's WET procedure in 2000 and therefore WET testing procedures in this permit must conform to EPA guidance and national standards in 40 C.F.R. 122.44(d)(1). IDEM must ensure that the WET procedures described in the permit comply with these federal standards to USEPA's satisfaction.

Response 21: IDEM's current WETT requirements have been reviewed and approved by IDEM's Toxicologist. US EPA has reviewed the WETT requirement as well and has no objections. Therefore, IDEM is confident that the program complies with federal standards to USEPA's satisfaction.

Comment 22: **Phenols**
Save the Dunes and the Alliance for the Great Lakes would like to applaud IDEM for proposing that the variance request for phenol (4AAP) not be renewed in the West facility permit as stated in that permit's Citizen's Summary. It does not appear that this same denial was in the other permits, however, including this Central Wastewater permit. Please clarify that for us.

Response 22: This comment incorrectly states that the phenols variance wasn't renewed in the West permit. The 301(g) variance request for phenols was renewed in the Indiana Harbor West permit. The variance for phenols was ***not*** renewed in the Indiana Harbor East permit. The variance renewal for the West facility was approved based on a review of the data available and the other qualifying factors identified in section 301(g) of the CWA. The variance request does not currently, or historically, been applicable to the wastestreams contributing to the Central Wastewater Treatment Plant. Therefore, the 301(g) variance request is not addressed in this permit.

Comment 23: In addition, we are wondering if any consideration might be given to using carbon filters in all the control technologies to reduce phenol pollution. For example, in the East Facility Permit, it is our understanding phenols are controlled using carbon filters that the blow down from Nos. 5 & 6 blast furnace recycled system is treated through clarifiers for solids remove and carbon

filtration to control phenols and is then discharged to the Main Plant Recycle System through internal Outfall 613.

Response 23: Phenols are not a parameter of concern for this NPDES permit.

Mr. Jim Sweeney, President, Izaak Walton League, PCC (Porter County Chapter), submitted the following comments.

Comment 24: **Chromium**
ArcelorMittal reported through the Toxic Release Inventory (TRI) that 890 pounds of chromium compounds were discharged to the water of Lake Michigan. Reportedly it is removed from the wastewater and a provision was included in each of the permits that prohibit the discharge of chromium at any of the outfalls.

This is welcome but we have found no requirement that calls for monitoring to make sure this happens. A monitoring system should be required in all the permits where chromium discharges are prohibited.

Response 24: Please refer to responses #15 and #16 above to comments submitted by Save the Dunes and the Alliance for the Great Lakes.

Comment 25: **Mercury**
Mercury is an especially dangerous toxin because it bioaccumulates in fish tissue and can adhere to sediments in water bodies. One of the most serious concerns we have with this permit is the schedule of compliance for these facilities to meet new effluent limitations for mercury.

We request that these new permits include a Final Plan for Compliance that will be implemented in 24 months that addresses all sources of mercury pollution.

Response 25: Please refer to response #17 above comments submitted by Save the Dunes and the Alliance for the Great Lakes.

Comment 26: **Total Maximum Daily Loads (TMDLs)**
IDEM reportedly spent $1 million to complete TMDL assessments on the Grand Calumet in 2001, and then did not develop the TMDLs. Waste load allocations used in these permits are not sufficient because they are looking at individual parameters on a case-by-case basis and not the whole stream. Refer to the definition of TMDL. All sources must be considered.

TMDLs need to be developed prior to the next renewal for these permits. They are a critical step to resolving impairments in the AOC.

Response 26: Please refer to response #18 above comments submitted by Save the Dunes and the Alliance for the Great Lakes.

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Comment 27: **Other Concerns**

The permits should require constant monitoring of all outfalls due to the potential for serious discharges for the entire range of pollutants and chemicals used at Arcelor Mittal. The Clean Water Act requires the permittee to show the ecology of the receiving waterway is protected.

Any impact of thermal discharge needs to be documented and corrected.

Section 301 of the Clean Water Act requires that NPDES permits "shall require application of "Best Available Technology" to reduce discharges to the extent "technologically and economically achievable," including "elimination of discharges of all pollutants" if it is achievable.

The Clean Water Act requires that "the discharge of any pollutant by any person shall be unlawful" except if authorized by a NPDES permit. The Act further defines "discharge of a pollutant" to mean "any addition of any pollutant to navigable waters from any point source." Requiring effluent limitations for even small discharges of pollutants is consistent with the Clean Water Act's statutory goal of "elimination of discharges of all pollutants."

Arcelor Mittal and the other factories have come a long way but still have a long way to go. Lake Michigan does not belong to them, it belongs to the public and your job is to make sure this incredible resource is protected for our use and for future generations.

Response 27: Constant monitoring for all outfalls for all pollutant and all chemicals is not feasible. In addition, the permittee demonstrates compliance with the CWA by taking representative samples of the discharge on a routine basis.

Mr. Ted Oberc, Concerned Citizen, submitted a written statement on the issuance of the permit. IDEM hereby acknowledges receipt of Mr. Oberc's written statement, and is appreciative of his participation. IDEM made no to changes to either the permit or fact sheet in response, but took all comments into consideration.

During the public hearing, held in Gary, Indiana, on September 15, 2011, statements were read by Mr. Kevin Doyle, Environmental Manager, ArcelorMittal and Mr. Patrick Gorman, Indiana Steel Environmental Group Facilitator. Transcripts of the statements can be found at http://www.in.gov/idem/5338.htm

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Attachment A

Water Quality Assessment

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 designated 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 2010 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 2010 Cycle. As of the 2010 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

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Water Quality Based Effluent Limitations

This outfall was previously included in NPDES Permit No. IN0000205 that was last renewed in 1986 and expired in 1991. Water quality-based effluent limitations (WQBELs) were not applied to Outfall 001 in the 1986 permit, but WQBELs for Cadmium were included in a 1990 permit modification and WQBELs for Total Residual Chlorine were included in a 1991 permit modification. The WQBELs for Cadmium were included in the 1990 permit modification because of a CWA Section 304(l) listing for Cadmium. The permit modification was considered the Individual Control Strategy required by Section 304(l). Indiana did not have water quality criteria for Cadmium that applied to the Indiana Harbor Canal when the permit was being modified so the WQBELs for Cadmium were calculated using U.S. EPA chronic water quality criteria for Cadmium with no allowance for dilution. The monthly average WQBEL was less than the limit of quantitation so the monthly average was set equal to the limit of quantitation. The WQBELs for Total Residual Chlorine were calculated using water quality criteria that became effective in 1990.

The 1992 Grand Calumet River – Indiana Harbor Ship Canal Wasteload Allocation Study was completed after NPDES Permit No. IN0000205 expired in 1991. The 1992 wasteload allocation was based on the 1990 Indiana water quality standards (new water quality criteria and an upgraded use designation for the Grand Calumet River and Indiana Harbor Canal) and a multi-discharger model that included the Indiana Harbor Watershed (Grand Calumet River (East and West Branches), Indiana Harbor Canal and Indiana Harbor) and portions of Lake Michigan around the Indiana Harbor. Pollutants selected for the wasteload allocation were based on water quality concerns at the time. Specific allocations for Cadmium, Total Chromium, Copper, Lead, Nickel, Zinc and Total Cyanide were assigned to ArcelorMittal Outfall 001 as part of the wasteload allocation. The results of the 1992 wasteload allocation were not incorporated in a permit renewal for NPDES Permit No. IN0000205.

New regulations in Indiana governing the development of water quality-based effluent limitations for discharges to waters within the Great Lakes system became effective in 1997. The regulations were developed in accordance with the Water Quality Guidance for the Great Lakes System at 40 CFR Part 132. The regulations included new water quality criteria and methodologies for developing water quality criteria (327 IAC 2-1.5), and procedures for calculating wasteload allocations (WLAs) (327 IAC 5-2-11.4), making reasonable potential to exceed determinations (5-2-11.5) and developing water quality-based effluent limitations (WQBELs) (5-2-11.6). These regulations are applicable to individual pollutants and to whole effluent toxicity. The application of whole effluent toxicity requirements to ArcelorMittal is included in a later section. Due to the new regulations, a different approach was warranted in determining the need for and establishing WQBELs in the Grand Calumet River, Indiana Harbor Canal and Indiana Harbor than was used in the 1992 wasteload allocation.

The 1992 multi-discharger model included a hydrodynamic component and a water quality component and was able to simulate instream dissolved oxygen concentrations. The model also accounted for flow stratification in the Indiana Harbor Canal and Indiana Harbor and the intrusion of lake water into the Indiana Harbor Canal. The model did not restrict any point source discharges based on mixing zones. The development of a hydrodynamic model for the

whole watershed is a resource intensive effort that still requires IDEM to develop wasteload allocations for each outfall to be used as inputs into the model. The 1997 Great Lakes rules added additional requirements for the development of wasteload allocations that were not required in previous modeling efforts. The antidegradation implementation provisions included in the 1997 Great Lakes rules also added an additional level of scrutiny to the incorporation of wasteload allocations developed through the new regulations into NPDES permits.

A review of the 2010 303(d) list shows that there are no pollutants on the list that have the potential to impact wasteload allocation analyses conducted for the renewal of NPDES permits for dischargers on a whole watershed basis. The new listing for Free Cyanide in the Indiana Harbor could potentially impact discharges to the Indiana Harbor Canal and Indiana Harbor. The listing is based on Free Cyanide data collected during the years 2000 and 2001 at IDEM fixed station IHC-0 in the Indiana Harbor. 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 (> 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 were not collected. Based on the 2010 listing methodology, the Total Cyanide data could not be used to assess the Indiana Harbor for Free Cyanide. The Indiana Harbor Canal was not listed for Free Cyanide on the 2010 303(d) list due to the two IDEM fixed stations in the Indiana Harbor Canal (located upstream of fixed station IHC-0 at Columbus Avenue and Dickey Road) not showing impairment for Free Cyanide. Total Cyanide is reported at many of the steel mill outfalls in the Indiana Harbor Canal and Indiana Harbor due to technology-based effluent limits (TBELs) for this parameter, but little data for Free Cyanide are available. Therefore, in the NPDES permit renewals, monitoring for Free Cyanide will be required at steel mill outfalls that have process wastewater for use in an assessment of reasonable potential. These data can also be used along with Total Cyanide data at fixed station IHC-0 and data collected in the Indiana Harbor Canal to reassess the impairment for Free Cyanide.

Therefore, a whole watershed model is not required at this time to develop permit requirements to address any TMDL related issues. There is currently not a need to develop WLAs for pollutants that impact the instream dissolved oxygen so a whole watershed hydrodynamic model is not needed for this purpose. There are several items that have occurred in the Indiana Harbor watershed since the 1992 model was developed that can be used to help establish a reasonable approach, other than a whole watershed model, to develop WLAs for discharges in the watershed. The number of dischargers to the Indiana Harbor watershed has decreased, the number of steel mill outfalls has decreased and the discharge volume at many of the remaining steel mill outfalls has decreased. U.S. Steel Gary Works dredged the five mile stretch of the East Branch Grand Calumet River along their property in 2003. Dredging of portions of the West Branch Grand Calumet River west of Indianapolis Boulevard began in December 2009. Data for a variety of parameters have been collected on a monthly basis by IDEM at several fixed water quality monitoring stations in the watershed. Three stations are located on the East Branch Grand Calumet River, one on the West Branch Grand Calumet River, two on the Indiana Harbor Canal, one on Lake George Canal and one on the Indiana Harbor. The U.S. Geological Survey (USGS) installed a stream gage in the Indiana Harbor Canal in 1991 that can be used to determine the Q7,10 and other stream flow statistics of the Indiana Harbor Canal. An intensive

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instream sampling effort along with effluent sampling of major dischargers occurred in July 1999 and April 2000 as part of the Grand Calumet River TMDL Study.

Taking into consideration the above information, it was decided to divide the Indiana Harbor watershed into three subwatersheds and determine the need for and establish water quality-based effluent limitations on a subwatershed basis. In this approach, the background concentration for each subwatershed is determined using instream water quality data instead of concentrations determined through whole watershed modeling. During the development of the wasteload allocation for the U.S. Steel Gary Works (IN0000281) NPDES permit that was renewed January 22, 2010, the Indiana Harbor watershed was divided into the following three subwatersheds: East Branch Grand Calumet River, West Branch Grand Calumet River (the portion that flows east into the Indiana Harbor Canal) and the Indiana Harbor Canal/Lake George Canal/Indiana Harbor. The analysis for the East Branch Grand Calumet River is included in the Fact Sheet of the U.S. Steel Gary Works 2010 permit. The analysis for the West Branch Grand Calumet River will be conducted as part of the NPDES permit renewals for the Hammond Sanitary District (IN0023060) and the East Chicago Sanitary District (IN0022829).

The subwatershed model for the Indiana Harbor Canal/Lake George Canal/Indiana Harbor included the ArcelorMittal Indiana Harbor – Central WWTP which has one active outfall to the Indiana Harbor Canal. The other major dischargers included in the subwatershed model are as follows in relation to the ArcelorMittal Indiana Harbor – Central WWTP outfall: ArcelorMittal USA – Indiana Harbor Long Carbon (IN0063355) which has one active outfall downstream to the Indiana Harbor Canal; ArcelorMittal USA – Indiana Harbor East (IN0000094) which has one active outfall downstream to the Indiana Harbor Canal and three active outfalls downstream to the Indiana Harbor; and, ArcelorMittal Indiana Harbor – Indiana Harbor West (IN0000205) which 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. The discharges from all these facilities were taken into consideration in determining the need for and establishing WQBELs for the discharge from ArcelorMittal Indiana Harbor – Central WWTP Outfall 001.

The procedures under 5-2-11.4 may be used to establish TMDLs, wasteload allocations in the absence of TMDLs and preliminary wasteload allocations. These procedures apply to the discharges to the Indiana Harbor Canal/Lake George Canal/Indiana Harbor. A TMDL has not been completed for the Assessment Units for the Indiana Harbor Canal and Indiana Harbor receiving the discharges from ArcelorMittal and a TMDL is not required for any of the pollutants of concern being considered in the wasteload allocation analysis. Therefore, the procedures under 5-2-11.4 were used to develop preliminary wasteload allocations and wasteload allocations 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 water quality-based effluent limitations to protect the designated uses of the Indiana Harbor Canal, Indiana Harbor and Lake Michigan.

To develop wasteload allocations and conduct reasonable potential to exceed analyses, IDEM utilized the following effluent data collected and submitted by ArcelorMittal: data collected during the period July 2005 through June 2010 in accordance with the current permit and reported on monthly monitoring reports (MMRs); data collected in 1999 and 2000 as part of the Grand Calumet River TMDL study; and, data collected for the 2005 and 2009 permit renewal application updates.

To develop wasteload allocations, 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); IDEM fixed station IHC-0 near the mouth of the Indiana Harbor; data collected in the Indiana Harbor Canal and Indiana Harbor in 1999 and 2000 as part of the Grand Calumet River TMDL study; data collected by ArcelorMittal USA – Indiana Harbor East at two locations in the Indiana Harbor Canal and one location in the Indiana Harbor during a six week monitoring period in 1996; and, Mercury data collected by the U.S. Geological Survey (USGS) in 2001 and 2002.

After a review of effluent and instream data for the Indiana Harbor Canal/Lake George Canal/Indiana Harbor subwatershed, it was decided to conduct a multi-discharger WLA for Ammonia-N, Chloride, Fluoride, Sulfate, Lead, Zinc and Total Residual Chlorine. Indiana currently only has a Great Lakes water quality criterion for Sulfate that applies to public water supply intakes and to Lake Michigan. A screening value based on the Indiana criterion for waters outside the Great Lakes system at 2-1-6(a)(5) was used for the Indiana Harbor Canal and Indiana Harbor. An industrial water supply criterion for Total Dissolved Solids of 750 mg/l applies in the Indiana Harbor at the ArcelorMittal Indiana Harbor – Indiana Harbor West intake. This also limits the amount of Sulfate that can be discharged due its contribution to dissolved solids. Other pollutants of concern, including Mercury, were considered on an outfall by outfall basis for the dischargers in the subwatershed.

In the 1992 model, the Indiana Harbor Canal was divided into sixteen complete mix segments, the Lake George Canal into five complete mix segments and the Indiana Harbor into five complete mix segments. Each of these segments included surface and bottom layers to account for stratification resulting from the warmer canal water inducing an underflow of cooler lake water. 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 1000 cfs was used in the 1992 model. The lake intrusion flow was reevaluated in 2002 by the U.S. Army Corps of Engineers (USACE) as part of the Grand Calumet River TMDL Study. The USACE determined that the lake intrusion flow used in the 1992 model was based on measurements collected during a high lake level. The USGS measured a lake intrusion flow of 138 cfs in October 2002 during a normal lake level condition. The lake intrusion flow measured during the normal lake level

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condition was determined to be more appropriate for modeling purposes. A new multi-discharger model was developed using a spreadsheet to conduct the multi-discharger WLA for the Indiana Harbor Canal/Lake George Canal/Indiana Harbor. The segmentation used in the 1992 model was maintained in the new spreadsheet model, but only the surface layer was modeled since it will have the higher pollutant concentrations.

In the development of wasteload allocation inputs for the 1992 model, the final acute value (FAV) was applied to individual outfalls and chronic criteria were applied to the end of each segment allowing up to one hundred percent (100%) of the stream flow for mixing. 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 instream data or instream concentrations estimated using actual or projected pollutant loading data. In the multi-discharger WLA, instream 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, instream data were used.

In the 1992 model, the flow assigned to each outfall was the long-term average flow. This was continued in the current analysis using data from January 2006 through December 2007. 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. The flow entering the Indiana Harbor Canal consists mostly of treated effluent flow. It has been historical practice to carry the long-term average discharge flow through the watershed to be used to determine discharge requirements for downstream dischargers. Since three distinct subwatersheds are now being modeled and the background concentration is being reset using actual instream data, it was also necessary to reset the stream flow. 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 gaging 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 9-30-2009. The Q7,10 based on the climatic year (April 1 through March 31) is 352 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

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those pollutants not included in a multi-discharger WLA, the background concentration for each outfall was based on instream data.

The results of the reasonable potential statistical procedure are included in Table 2. The results show that the discharge from ArcelorMittal Indiana Harbor – Central WWTP Outfall 001 has a reasonable potential to exceed a water quality criterion for Mercury.

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 a final or 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 Indiana Harbor – 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. 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.

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.

A wasteload allocation was not conducted for Free Cyanide due to the absence of effluent data for this pollutant of concern. Under 5-2-11.5(b)(2), when effluent data for a pollutant of concern are not available for an existing discharger, 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, and, where appropriate, the dilution of the effluent in the receiving water to determine whether it is necessary to require the discharger to collect the data required to make a reasonable potential determination. Based on the presence of Free Cyanide on the 2010 303(d) list for the Indiana Harbor, monitoring for Free Cyanide is being included at all ArcelorMittal outfalls containing process wastewater. 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 was added for fluoride based on its inclusion in the multi-discharger wasteload allocation.

Whole Effluent Toxicity 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 under 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 1990 permit modification (IN0000205) required ArcelorMittal to conduct chronic whole effluent toxicity (WET) testing using *Ceriodaphnia dubia* and Fathead Minnow monthly for a period of three months at Outfall 001. If toxicity, defined in the permit as 1.0 TUc (i.e. an NOEC of less than 100% effluent), was not demonstrated, no further WET testing was required. The value of 1.0 TUc used to define toxicity was based on meeting chronic WET requirements in the undiluted discharge. The facility did demonstrate toxicity to *Ceriodaphnia dubia* in two WET tests and was required to conduct a toxicity reduction evaluation (TRE). The facility completed the TRE process in 1992 after submission of a TRE plan that was approved by IDEM. After reducing the toxicity, the facility was required to conduct monthly WET testing for three months using the sensitive species *Ceriodaphnia dubia*, and provided no toxicity was shown, once every six months for the duration of the permit. The representative WET data for the WET reasonable potential analysis therefore begin in May 1992.

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 WET testing of its effluent discharge from Outfall 001 using *Ceriodaphnia dubia* and Fathead Minnow. The terms and conditions of the WET testing are contained in Part I.I. of the NPDES permit. Part I.I.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.1 and Part I.A.2 should be conducted for each effluent sample. The effluent should be sampled using the sample type requirements specified in Part I.A.1. and Part I.A.2. Questions regarding the WET testing procedures should be addressed to the Office of Water Quality, NPDES Permits Branch.

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As in the previous permit, acute and 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 toxicity reduction evaluation (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. After the completion of three toxicity tests that do not exceed the acute and chronic TRE triggers, ArcelorMittal may reduce the number of species tested to only include the most sensitive to the toxicity in the effluent. 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). Temperature was not a pollutant of initial focus in the Water Quality Guidance for the Great Lakes system under 40 CFR Part 132. Therefore, Indiana was allowed to apply its own temperature criteria to waters within the Great Lakes system when the rules were last revised in 1997 as part of the Great Lakes rulemaking. During this rulemaking, the monthly maximum temperature criteria that were updated in 1990 were retained. 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 five active outfalls discharging to the Indiana Harbor

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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 Indiana Harbor – Central Wastewater Treatment Plant Outfall 001 has a flow of 6.5 mgd with Internal Outfall 101 having a flow of 5.0 mgd and the remaining consisting mostly of noncontact cooling water. The 1986 permit (IN0000205) does not include a requirement for the monitoring of effluent temperature. The permit does include a requirement that sets the allowable net plant thermal discharge for Outfalls 001, 002, 009, 010 and 011 at 2.24 x 10^9 BTU/Hr. Based on the Post Public Notice Addendum included in the Fact Sheet of the 1986 permit, temperature monitoring was removed from the permit because the production at that time did not approach the limitation for thermal output. The main source of cooling water for ArcelorMittal Indiana Harbor – Central WWTP is the No. 1 Intake of the ArcelorMittal Indiana Harbor West (IN0000205) facility on the Indiana Harbor. Since the facility is not required to report effluent temperature, limited data are available. Effluent temperature data were collected in July 1999 and April 2000 as part of the Grand Calumet River TMDL study. Effluent temperature data are also available from the 2009 permit renewal application update. The maximum reported temperature was 80 °F in both the July 1999 sampling and the 2009 permit renewal application update.

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 ArcelorMittal Indiana Harbor Long Carbon (IN0063355) Outfall 001 on the east side of the canal and ArcelorMittal Indiana Harbor – Central WWTP Outfall 001 and ArcelorMittal West Outfall 002 on the west side of the canal are upstream of the railroad bridge. 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. As part of a special condition in the ArcelorMittal Indiana Harbor East (IN0000094) 1996 permit, the facility was required to conduct sampling in the Indiana Harbor Canal downstream of ArcelorMittal Indiana Harbor Long Carbon Outfall 001 and between ArcelorMittal East Outfalls 008 and 011 and in the Indiana Harbor at a point equal distant from ArcelorMittal East Outfalls 011, 014 and 018. Sampling was to be conducted from April through November for two years and at three river depths (one foot below the surface, mid-depth and one foot above the bottom). The facility conducted the sampling in 1997 and 1998 and submitted a summary of the results of this sampling along with an analysis of the thermal impact of the ArcelorMittal discharges to the Indiana Harbor Canal and Indiana Harbor based on the sampling results in a November 19, 2010 report. The report concluded the following: ArcelorMittal East (IN0000094) and ArcelorMittal West (IN0000205) were both operating at reasonably high production rates in 1997 and 1998 as measured by raw steel production; ambient air temperatures were within normal ranges; there have been no significant changes in the flow regimes in the Indiana Harbor Canal since the study was done; and, the study results demonstrate compliance with applicable temperature criteria.

Additional temperature monitoring at multiple depths was conducted in the Indiana Harbor Canal and Indiana Harbor as part of the July 1999 and April 2000 sampling conducted for the Grand Calumet River TMDL study. The sampling included two locations in the Indiana Harbor (just beyond the lighthouse at the outer edge of the Indiana Harbor and in the middle of the Indiana Harbor, just downstream of ArcelorMittal West Outfall 011, the last outfall on the Indiana

Harbor), two locations in the Indiana Harbor Canal downstream of the railroad bridge (about 0.6 miles downstream of ArcelorMittal West Outfalls 009 and 010 at the mouth of the Indiana Harbor Canal and about 0.3 miles downstream of ArcelorMittal West Outfalls 009 and 010), one location just downstream from Dickey Road and downstream of the three thermal discharges upstream of the railroad bridge and one location just upstream of ArcelorMittal Indiana Harbor – Central WWTP Outfall 001 which is the ArcelorMittal thermal discharge that is furthest upstream of the railroad bridge.. The data showed temperature stratification downstream of the railroad bridge and a decreasing trend in temperature from upstream to downstream. The Indiana Harbor Canal and Indiana Harbor were in compliance with the water quality criteria for temperature. Effluent temperature and flow data were collected during the July 1999 sampling and effluent temperature data were collected during the April 2000 sampling. The TMDL studies were done after the shutdown of the No. 4 AC power station that discharged through ArcelorMittal East Outfall 018 until about May 1999. A review of historical instream temperature data at IDEM fixed stations on the Indiana Harbor Canal and Indiana Harbor from January 1990 through December 2010 and the fixed station on Lake Michigan from January 1997 through December 2010 shows that the maximum temperature values were recorded in July 1999. The average stream flow during the July 1999 temperature monitoring as recorded at USGS gaging station 04092750 in the Indiana Harbor Canal at Canal Street was 485 cfs which is close to the Q7,10 of 352 cfs. Therefore, the July 1999 temperature monitoring was done during a period that is very close to critical stream conditions.

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. The effluent and instream data collected in July 1999 and April 2000 as part of the Grand Calumet River TMDL study were used as inputs to the model to determine if the model could predict the measured instream temperatures. The model predicts an increase in temperature downstream of the railroad bridge beginning with ArcelorMittal West Outfalls 009 and 010 and no exceedance at the edge of any mixing zones for both July 1999 and April 2000. The July 1999 TMDL data show a large decrease in temperature (about 7 °F) from Dickey Road to downstream of ArcelorMittal West Outfalls 009 and 010 in the upper one-half depth of the temperature stratified river with an even larger decrease in the lower one-half depth. There was essentially no further decrease in temperature in the Indiana Harbor during the sampling. The April 2000 TMDL data show a small decrease (about 0.5 °F) from Dickey Road to downstream of Outfalls 009 and 010. However, the temperature did decrease to a larger extent in the Indiana Harbor (about 4 °F). The multi-discharger model is therefore a conservative means of determining the impact of the thermal discharges.

A Q7,10 flow of 352 cfs, long-term average effluent flows, except as noted below, 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 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 effluent temperature input to the model for ArcelorMittal Indiana Harbor Long Carbon and ArcelorMittal East was set equal to the maximum temperature reported

for the month during the period January 1998 through December 2010 if it was considered representative data. The effluent temperature for ArcelorMittal Indiana Harbor – Central WWTP and ArcelorMittal West was set equal to the July 1999 TMDL data for the June through September period and the greater of the 2009 permit renewal application data or the April 2000 TMDL data for the other months since the permit renewal application data were reported as winter values. The effluent flow for ArcelorMittal West Outfall 009 for the June through September period was set equal to the daily maximum flow due to this outfall having the highest effluent temperature and a significant increase in discharge flow during this period. The results of the conservative, dilution only modeling show that the discharge from ArcelorMittal Indiana Harbor – 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 or Indiana Harbor from January through December. Based on the results of the instream sampling and multi-discharger thermal model, the discharge from ArcelorMittal Indiana Harbor – 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 even if it is determined that a WQBEL is not required based on a reasonable potential determination. Monitoring for temperature and thermal discharge was added in the renewal permit.

Antidegradation

New regulations in Indiana governing implementation of antidegradation for discharges to waters within the Great Lakes system became effective in 1997. The regulations were developed in accordance with the Water Quality Guidance for the Great Lakes System at 40 CFR Part 132. The regulations included an antidegradation policy (327 IAC 2-1.5-4), antidegradation implementation procedures for High Quality Waters that are not Outstanding State Resource Waters (OSRWs) (327 IAC 5-2-11.3(b)) and antidegradation implementation procedures for OSRWs (5-2-11.7). The implementation procedures for High Quality Waters and OSRWs distinguish between pollutants that are bioaccumulative chemicals of concern (BCCs) and pollutants that are not BCCs. For waters that are not considered High Quality Waters, the regulations do not allow a lowering of water quality (5-2-11.3(a)).

The Indiana portion of the open waters of Lake Michigan is designated in 2-1.5-19(b)(2) as an OSRW. The antidegradation implementation procedures for OSRWs include provisions for discharges to tributaries of OSRWs in 5-2-11.7(a)(2). Since the Indiana Harbor Canal is a tributary to Lake Michigan, the discharge from ArcelorMittal Indiana Harbor – Central WWTP Outfall 001 is subject to the antidegradation implementation procedures in 5-2-11.7(a)(2) in addition to those in 5-2-11.3. The procedures in 5-2-11.7(a)(2) are supplemented by Non-Rule Policy Document Water-002-NRD, "Antidegradation Requirements for Outstanding State Resource Waters Inside the Great Lakes Basin."

The Indiana Harbor Canal is considered a High Quality Water for all of the pollutants limited in the ArcelorMittal Indiana Harbor – Central WWTP permit except Oil and Grease since it is included on the 2010 303(d) List for this parameter. The Indiana Harbor is considered a High Quality Water for all of the pollutants limited in the ArcelorMittal permit except Mercury since it is included on the 2010 303(d) List for Mercury in fish tissue. Lake Michigan is considered a

High Quality Water for all of the pollutants limited in the ArcelorMittal permit except Mercury since it is included on the 2010 303(d) List for Mercury in fish tissue. Mercury is the only pollutant of concern in the ArcelorMittal permit that is a BCC.

After the effluent limitations were established for the proposed permit, a review was done to determine if the permit satisfies the antidegradation requirements in 5-2-11.3 and 5-2-11.7. The Indiana Harbor Canal is not a High Quality Water for Oil and Grease, so discharges of Oil and Grease from ArcelorMittal Outfall 001 are not allowed to cause a lowering of water quality in accordance with 5-2-11.3(a). The Indiana Harbor Canal is a High Quality Water for the other pollutants of concern in the ArcelorMittal permit so in accordance with 5-2-11.3(b), for High Quality Waters that are not designated as an OSRW, no action resulting in a significant lowering of water quality can occur unless an antidegradation demonstration has been completed and approved. Since the Indiana Harbor Canal is a tributary of an OSRW, in accordance with 5-2-11.7(a)(2)(B), the discharges shall not cause a significant lowering of water quality in the OSRW. If a discharge to a tributary of an OSRW causes a significant lowering of water quality in the OSRW, it would not be allowed, regardless of an approvable antidegradation demonstration under 5-2-11.3.

According to 5-2-11.3(b)(1)(A), a significant lowering of water quality occurs if there is a new or increased loading of a BCC from a point source for which a new permit or permit modification would be required. According to 5-2-11.3(b)(1)(B), a significant lowering of water quality occurs if there is a new or increased permit limit for a non-BCC from a point source and the new or increased permit limit will result in both of the following:

(i) A calculated increase in the concentration of the substance outside of the mixing zone, and;

(ii) A lowering of water quality that is greater than a de minimis lowering of water quality.

According to 5-2-11.7(a)(2), for a new or increased discharge of a pollutant or pollutant parameter from a new or existing Great Lakes discharger into a tributary of an OSRW for which a new or increased permit limit would be required, the following apply:

(1) 327 IAC 5-2-11.3(a) and 327 IAC 5-2-11.3(b) apply to the new or increased discharge; and

(2) the discharge shall not cause a significant lowering of water quality in the OSRW.

According to nonrule policy document Water-002-NPD, a new or increased discharge into a tributary of Lake Michigan will not cause a significant lowering of water quality in Lake Michigan if any of several provisions are met, including the following:

> The new or increased discharge into a tributary of Lake Michigan does not cause a significant lowering of water quality in the tributary, as determined under 327 IAC 5-2-11.3(b)(1)(A) or 327 IAC 5-2-11.3(b)(1)(B).

In addition to the antidegradation provisions in 5-2-11.3(b)(1)(A) and 5-2-11.3(b)(1)(B), exemptions and exceptions to antidegradation apply in 5-2-11.3(b)(1)(C). For example, in accordance with 5-2-11.3(b)(1)(C)(ii), the following does not constitute a significant lowering of water quality:

New limits for an existing permitted discharger that are not a result of changes in pollutant loading, and will not allow an increase in pollutant loading, including new limits that are a result of the following:

(AA) New or improved monitoring data.
(BB) New or improved analytical methods.
(CC) New or modified water quality criteria or values.
(DD) New or modified effluent limitations guidelines, pretreatment standards, or control requirements for POTWs.

Similarly, in addition to the antidegradation implementation provisions in 5-2-11.7(a)(2)(A) and 5-2-11.7(a)(2)(B), exemptions and exceptions apply in 5-2-11.7(a)(2)(C). For example, in accordance with 5-2-11.7(a)(2)(C)(i), the requirements of 5-2-11.7(a)(2) will be considered to have been met when one or more of the items listed in 5-2-11.3(b)(1)(C)(ii) apply.

The antidegradation procedures used in this review apply to point source discharges. The definition of "point source" in 5-1.5-40 applies to the discharge of a pollutant and the definition of "discharge of a pollutant" in 5-1.5-11 includes discharges through pipes that do not lead to treatment works. Therefore, the antidegradation procedures are applied to final outfalls and to internal outfalls that do not lead to treatment works. Internal Outfall 101 does not pass through a treatment system prior to discharge through Outfall 001 and was considered a point source discharge subject to the antidegradation implementation procedures.

Table 5 was developed to compare the existing effective limitations to the proposed limitations for each outfall. As noted above, the Indiana Harbor Canal is not a High Quality Water for Oil and Grease, so discharges of Oil and Grease from ArcelorMittal Outfall 001 are not allowed to cause a lowering of water quality in accordance with 5-2-11.3(a). In addition, if the permit authorizes a new or increased loading of a BCC (Mercury) or new or increased limits for non-BCCs, further analysis was required to determine if the discharge would cause a significant lowering of water quality under 5-2-11.3. If the permit authorizes a new or increased discharge of a pollutant into a tributary of an OSRW for which a new or increased permit limit would be required, further analysis was also required to determine if the discharge would cause a significant lowering of water quality in the OSRW under 5-2-11.7(a)(2)(B). The footnotes at the end of Table 5 provide an explanation of the antidegradation analysis. The following is a summary of the results of the antidegradation review in Table 5.

The Indiana Harbor Canal is not a High Quality Water for Oil and Grease, so antidegradation for the discharge of Oil and Grease was implemented under 327 IAC 5-2-11.3(a). This provision does not allow a lowering of water quality for Oil and Grease that prevents the attainment of the water quality criterion. Indiana does not currently have a numeric water quality criterion for Oil and Grease that applies to the Indiana Harbor Canal. When NPDES permit number IN0000205

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was last renewed in 1986, a numeric water quality criterion for Total Oils of 10 mg/l applied to the Indiana Harbor Canal. This criterion was not retained when the water quality standards applicable to the Indiana Harbor Canal were revised in 1990 and a water quality criterion for Oil and Grease was not included in the 1997 Great Lakes system rulemaking. The narrative water quality criteria that apply to the Indiana Harbor Canal do establish a water quality condition at 2-1.5-8(b)(1)(C) of being free from oil or other substances that produce a visible oil sheen in such degree as to create a nuisance. IDEM has used an Oil and Grease concentration of 10 mg/l to interpret this narrative criterion and has applied monthly average limits of 10 mg/l and daily maximum limits of 15 mg/l to final outfalls to ensure that the criterion is met. A new monthly average TBEL for Oil and Grease is required at Internal Outfall 101. The monthly average TBEL was authorized under the current permit, but was not applied. The Fact Sheet of the 1986 permit includes the calculation of monthly average and daily maximum TBELs for Oil and Grease. The TBELs were a combination of the mass allowed for the Iron and Steel Manufacturing Point Source Category under 40 CFR Part 420 and for the Metal Finishing Point Source Category under 40 CFR Part 433. All of the daily maximum allowance under 40 CFR Part 420 was moved to another outfall so the current daily maximum limit of 1250 lbs/day is based solely on the allowance under 40 CFR Part 433. The monthly average allowance under 40 CFR Part 433 was 625 lbs/day. However, a monthly average limit was not included in the permit. The monthly average TBEL for Oil and Grease calculated for the renewal permit is also 625 lbs/day. The monthly average TBEL was lowered to 542 lbs/day and the daily maximum TBEL was lowered to 813 lbs/day to ensure that the discharge from Internal Outfall 101 does not result in a monthly average Oil and Grease concentration of greater than 10 mg/l and daily maximum of greater than 15 mg/l at final Outfall 001 to meet the narrative criterion. In addition, a monthly average limit of 10 mg/l and a daily maximum limit of 15 mg/l were added to Outfall 001. These limits will ensure that the new monthly average limit at Internal Outfall 101 does not result in a lowering of water quality for Oil and Grease in the Indiana Harbor Canal and antidegradation under 327 IAC 5-2-11.3(a) is satisfied. The new monthly average TBEL at Internal Outfall 101 and the new monthly average and daily maximum limits at Outfall 001 do not allow an increase above what was authorized, but not applied in the current permit. The new monthly average TBEL is a new application of Federal Effluent Limitations Guidelines and the new monthly average and daily maximum limits at Outfall 001 result from the new TBEL so these limits fall under the antidegradation exemption in 5-2-1.3(b)(1)(C)(ii)(DD). This exemption applies to 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW.

New limits for Mercury are required at Outfall 001 based on a reasonable potential analysis using data collected in 1999. Since the previous permit under which Outfall 001 was regulated was last renewed in 1986, more stringent water quality criteria for Mercury have become effective and a new analytical method has become available that allows Mercury in the discharge to be quantified. The new limits for Mercury are a result of the following items in the antidegradation exemption in 5-2-11.3(b)(1)(C)(ii):

(AA) New or improved monitoring data.
(BB) New or improved analytical methods.
(CC) New or modified water quality criteria or values.

The new limits for Mercury are not a result of changes in pollutant loading and will not allow an increase in pollutant loading since the projected effluent quality is greater than the proposed effluent limits and the existing discharge flow was used to calculate the proposed mass limits. Therefore, the new limits for Mercury do not cause a significant lowering of water quality for Mercury and antidegradation under 5-2-11.3(b) is satisfied. Since this same exemption applies to 5-2-11.7(a)(2), the new limits for Mercury do not cause a significant lowering of water quality in the OSRW.

New mass-based and concentration-based WQBELs for Copper and Silver are required at Outfall 001 due to a reasonable potential analysis under 5-2-11.5(a) in which the mass-based WQBELs at Outfall 001 for these parameters were found to be more stringent than the mass-based TBELs at Internal Outfall 101. The reasonable potential analysis was conducted as a result of the new application of TBELs for these parameters at Internal Outfall 101. The TBELs were authorized under the current permit, but were not applied. A lower regulated wastestream flow (1.73 mgd) was used to calculate the TBELs for the proposed permit than would have been used in the current permit (2.88 mgd listed in Fact Sheet of 1986 permit), so the new limits do not allow an increase above what was authorized, but not applied in the current permit. The mass-based WQBELs at Outfall 001 are more stringent than the TBELs so they do not allow an increase above the TBELs. The new TBELs are a new application of Federal Effluent Limitations Guidelines and fall under the antidegradation exemption in 5-2-11.3(b)(1)(C)(ii)(DD) so they do not cause a significant lowering of water quality and antidegradation under 5-2-11.3(b) is satisfied. This exemption also applies to 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW. Since the WQBELs at Outfall 001 are more stringent than the TBELs at Internal Outfall 101, a report only requirement is included at Internal Outfall 101 instead of actual TBELs.

New mass-based and concentration-based WQBELs for Lead and Zinc are required due to a reasonable potential analysis under 5-2-11.5(a) in which the mass-based WQBELs at Outfall 001 for these parameters were found to be more stringent than the mass-based TBELs at Internal Outfall 101. The mass-based TBELs at Internal Outfall 101 in the current permit are less stringent than the mass-based WQBELs at Outfall 001 in the proposed permit and the mass-based WQBELs were calculated using water quality criteria that became effective in 1997 after the permit was last renewed. The new WQBELs fall under the antidegradation exemption in 5-2-11.3(b)(1)(C)(ii)(CC) so they do not cause a significant lowering of water quality and antidegradation under 5-2-11.3(b) is satisfied. This exemption also applies to 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW. Since the WQBELs at Outfall 001 are more stringent than the TBELs at Internal Outfall 101, a report only requirement is included at Internal Outfall 101 instead of actual TBELs.

New mass limits for Total Residual Chlorine are required at Outfall 001. The current permit only has concentration limits at this outfall for this parameter and they are less stringent than the proposed concentration limits. The existing effluent flow was used to calculate the WQBELs for the proposed permit so the new mass limits will not result in a calculated concentration increase outside of the mixing zone under 5-2-11.3(b)(1)(B)(i). Therefore, the new mass limits will not cause a significant lowering of water quality and antidegradation under 5-2-11.3(b) is satisfied. Since the new limits do not cause a significant lowering of water quality under

5-2-11.3(b)(1)(B), they do not cause a significant lowering of water quality in the OSRW in accordance with Non-Rule Policy Document Water-002-NRD.

New TBELs for Cadmium, Nickel and Total Toxic Organics (TTO) are required at Internal Outfall 101 as a result of the new application of TBELs at this outfall. The TBELs were authorized under the current permit, but were not applied. A lower regulated wastewater flow (1.73 mgd) was used to calculate the TBELs for the proposed permit than would have been used in the current permit (2.88 mgd), so the new limits do not allow an increase above what was authorized, but not applied in the current permit. A monitoring waiver per 40 CFR 122.44 has been granted for Cadmium for the term of this permit and the facility is required to notify IDEM if any changes occur at the facility that would require the conditions that the waiver was granted to be reviewed. The need for water quality-based effluent limitations at Outfall 001 and antidegradation requirements would be reviewed at that time. The new TBELs are a new application of Federal Effluent Limitations Guidelines and fall under the antidegradation exemption in 5-2-11.3(b)(1)(C)(ii)(DD) so they do not cause a significant lowering of water quality and antidegradation under 5-2-11.3(b) is satisfied. This exemption also applies to 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW.

New TBELs for Naphthalene and Tetrachloroethylene are required at Internal Outfall 101 as a result of the new application of TBELs at this outfall. The TBELs were authorized under the current permit, but were not applied. The Fact Sheet of the 1986 permit includes the calculation of daily maximum TBELs of 1.65 lbs/day for Naphthalene and 2.48 lbs/day for Tetrachloroethylene, so the new limits do not allow an increase above what was authorized, but not applied in the current permit. The new TBELs are a new application of Federal Effluent Limitations Guidelines and fall under the antidegradation exemption in 5-2-1.3(b)(1)(C)(ii)(DD) so they do not cause a significant lowering of water quality and antidegradation under 5-2-11.3(b) is satisfied. This exemption also applies to 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW.

A complete antidegradation review of the proposed ArcelorMittal permit is included in Table 5. Based on the antidegradation review, the Department has determined that the proposed permit complies with the antidegradation policy found in 2-1.5-4 and an antidegradation demonstration is not required.

The permittee is prohibited from undertaking any deliberate action that would result in a new or increased discharge of a BCC or a new or increased permit limit for a pollutant or pollutant parameter that is not a BCC unless one (1) of the following is completed prior to the commencement of the action; (i) Information is submitted to the commissioner demonstrating that the proposed new or increased discharge will not cause a significant lowering of water quality; (ii) An antidegradation demonstration submitted and approved in accordance with 5-2-11.3.

TABLE 2 REASONABLE POTENTIAL TO EXCEED

ARCELORMITTAL INDIANA HARBOR
CENTRAL WASTEWATER TREATMENT PLANT
OUTFALL 001 (6.5 mgd)

PARAMETER	MONTHLY AVERAGE					DAILY MAXIMUM					PEL		PEQ > PEL	
	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	Monthly Average@	Daily Maximum	Monthly Average	Daily Maximum
Cadmium (ug/l) *	1	60	0.0	1.0	1	1	258	0.0	1.0	1	10	20	No	No
Lead (ug/l) **					11	3	2	0.6	3.8	11	92	180	No	No
Mercury (ng/l) #					8.6	1.39	1	0.6	6.2	8.6	1.3	3.2	Yes	Yes
Zinc (ug/l) **					100	27	2	0.6	3.8	100	210	410	No	No
Chloride (mg/l) $					310	81	2	0.6	3.8	310	320	640	No	No
Fluoride (mg/l) $					2.9	0.95	3	0.6	3.0	2.9	2.9	5.7	No	No
Sulfate (mg/l) $					260	86.4	3	0.6	3.0	260	270	540	No	No
Ammonia-N (mg/l) ** :														
Summer %,!					0.27	0.07	2	0.6	3.8	0.27	0.41	0.82	No	No
Winter %,!					0.27	0.07	2	0.6	3.8	0.27	0.41	0.82	No	No

* Effluent data were obtained from MMRs for the period July 2005 through June 2010.

** Effluent data were obtained from the July 1999 TMDL study and from the June 2009 Form 2C.

Effluent data were obtained from the July 1999 TMDL study.

$ Effluent data were obtained from the July 1999 and April 2000 TMDL studies and, except for chloride, from the June 2009 Form 2C.

% Summer months are July through September, and winter months are October through June.

! Seasonal PEQs were not developed since less than one year of data are available.

@ Monthly average PELs were calculated based on the applicable sampling frequency in a month.

7/11/2011

TABLE 3

REASONABLE POTENTIAL TO EXCEED FOR WHOLE EFFLUENT TOXICITY
ARCELORMITTAL INDIANA HARBOR
CENTRAL WASTEWATER TREATMENT PLANT

Outfall 001*

Parameter	Maximum Effluent Value	Count	C.V.	M.F.	PEQ	WLA	PEQ>WLA	WQBEL	
								Monthly Average	Daily Maximum
Acute WET (TUa)	<1.0	32	0.0	1.0	<1.0	1.0	NO	--	Not Required
Chronic WET (TUc)	4.0	32	0.5	1.2	4.8	9.8	NO	Not Required	--

* Data Sources:

001 - May 1992 through January 2011 data collected in accordance with the June 1990 permit modification. The data were collected following the completion of a toxicity reduction evaluation in February 1992.

7/11/2011

TABLE 4
WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR ARCELORMITTAL INDIANA HARBOR CENTRAL WASTEWATER TREATMENT PLANT

Parameter	Quantity or Loading			Quality or Concentration		
	Monthly Average	Daily Maximum	Units	Monthly Average @	Daily Maximum	Units
Outfall 001 (6.5 mgd)						
Cadmium	0.54	1.1	lbs/day	10	20	ug/l
Total Chromium	65	140	lbs/day	1,200	2,500	ug/l
Copper	1.6	2.8	lbs/day	30	52	ug/l
Lead	5.0	9.8	lbs/day	92	180	ug/l
Mercury	0.000071	0.00017	lbs/day	1.3	3.2	ng/l
Nickel	48	81	lbs/day	880	1,500	ug/l
Silver	0.023	0.040	lbs/day	0.42	0.73	ug/l
Zinc	11	22	lbs/day	210	410	ug/l
Naphthalene	12	22	lbs/day	230	400	ug/l
Tetrachloroethylene	30	52	lbs/day	550	960	ug/l
Total Residual Chlorine	0.87	2.1	lbs/day	16	38	ug/l
Whole Effluent Toxicity (WET)						
Acute #					1.0	TUa
Chronic &				9.8		TUc

@ Monthly average WQBELs were calculated based on the applicable sampling frequency in a month.
# This value is the Toxicity Reduction Evaluation (TRE) trigger for acute WET testing.
& This value is the Toxicity Reduction Evaluation (TRE) trigger for chronic WET testing.

7/11/2011

TABLE 5
ANTIDEGRADATION
FOR ARCELORMITTAL INDIANA HARBOR - CENTRAL WASTEWATER TREATMENT PLANT

Parameter	Existing Permit Limits				Proposed Permit Limits				New or Increased Permit Limit for a Non-BCC or New or Increased Loading of a BCC?			
	Loading (lbs/day)		Concentration (ug/l)		Loading (lbs/day)		Concentration (ug/l)		Loading (lbs/day)		Concentration (ug/l)	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Outfall 001 (6.5 mgd)												
Total Suspended Solids	--	--	--	--	Report	Report	Report	Report				
Oil & Grease	--	--	Report	Report	Report	Report	10,000	15,000				
Cadmium	--	--	2	3	--	--	--	--			New (5)	New (5)
Copper	--	--	--	--	1.6	2.8	30	52	New (1)	New (1)	New (1)	New (1)
Lead	--	--	--	--	5.0	9.8	92	180	New (2)	New (2)	New (2)	New (2)
Mercury	--	--	--	--	0.000071	0.00017	0.0013	0.0032	New (3)	New (3)	New (3)	New (3)
Silver	--	--	--	--	0.023	0.040	0.42	0.73	New (1)	New (1)	New (1)	New (1)
Zinc	--	--	--	--	11	22	210	410	New (2)	New (2)	New (2)	New (2)
Fluoride	--	--	--	--	Report	Report	Report	Report				
Free Cyanide	--	--	--	--	Report	Report	Report	Report				
Total Residual Oxidants	--	--	--	50	--	--	--	--				
Total Residual Chlorine	--	--	20	40	0.87	2.1	16	38	New (4)	New (4)	No	No
Temperature (°F)	--	--	--	--	--	--	Report	Report				
Thermal Discharge (BTU/Hr.)	--	--	--	--	Report	Report	--	--				
pH (s.u.)	--	--	6.0 - 9.5		--	--	6.0 - 9.0				No	
Internal Outfall 101												
Total Suspended Solids	1,821	3,786	--	--	1,198	2,604	Report	Report	No	No		
Oil & Grease	--	1,250	--	--	542	813	Report	Report	New (5)	No		
Cadmium*	--	--	Report	Report	3.8	10	Report	Report	New (6)	New (6)		
Total Chromium	41.2	66.9	--	--	24.7	40.0	Report	Report	No	No		
Copper	--	--	--	--	Report	Report	Report	Report				
Iron	--	--	Report	Report	--	--	--	--				
Lead	10.32	16.57	--	--	Report	Report	Report	Report				
Nickel	--	--	--	--	34.3	57.4	Report	Report	New (6)	New (6)		
Silver	--	--	--	--	Report	Report	Report	Report				
Tin	Report	Report	Report	Report	--	--	--	--				
Zinc	35.55	62.69	--	--	Report	Report	Report	Report				
Total Cyanide	15.61	28.82	--	--	9.4	17.3	Report	Report	No	No		
Naphthalene	--	--	--	--	Report	0.158	Report	Report		New (7)		
Tetrachloroethylene	--	--	--	--	Report	0.236	Report	Report		New (7)		
Total Toxic Organics	--	--	--	--	--	30.7	--	Report		New (6)		
pH (s.u.)	--	--	6.0 - 9.5		--	--	--	--				

Footnotes:

*A monitoring waiver per 40 CFR 122.44 has been granted for this parameter for the term of this permit.

Significant Lowering of Water Quality?

(1) New mass-based and concentration-based WQBELs for copper and silver and new mass-based WQBELs for cadmium are required due to a reasonable potential analysis under 327 IAC 5-2-11.5(a) in which the mass-based WQBELs at Outfall 001 for these parameters were found to be more stringent than the mass-based TBELs at Internal Outfall 101. The reasonable potential analysis was conducted as a result of the new application of TBELs at Internal Outfall 101. The mass-based WQBELs are more stringent than the TBELs so they do not allow an increase above the TBELs. The TBELs were authorized under the current permit, but were not applied. A lower flow (1.73 mgd) was used to calculate the TBELs for the proposed permit than would have been used in the current permit (2.88 mgd), so the new limits do not allow an increase above what was authorized, but not applied in the current permit. The new TBELs fall under the antidegradation exemption in 327 IAC 5-2-11.3(b)(1)(C)(ii)(DD) so they do not cause a significant lowering and antidegradation under 327 IAC 5-2-11.3(b) is satisfied. This exemption also applies to 327 IAC 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW. Since the WQBELs at Outfall 001 are more stringent than the TBELs at Internal Outfall 101, a report only requirement is included at internal Outfall 101 instead of actual TBELs.

(2) New mass-based and concentration-based WQBELs for lead and zinc are required due to a reasonable potential analysis under 327 IAC 5-2-11.5(a) in which the mass-based WQBELs at Outfall 001 for these parameters were found to be more stringent than the mass-based TBELs at Internal Outfall 101. The mass-based TBELs at Internal Outfall 101 in the current permit are less stringent than the mass-based WQBELs at Outfall 001 in the proposed permit and the mass-based WQBELs were calculated using water quality criteria that became effective in 1997 after the permit was last renewed. The new WQBELs fall under the antidegradation exemption in 327 IAC 5-2-11.3(b)(1)(C)(ii)(CC) so they do not cause a significant lowering and antidegradation under 327 IAC 5-2-11.3(b) is satisfied. This exemption also applies to 327 IAC 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW. Since the WQBELs at Outfall 001 are more stringent than the TBELs at Internal Outfall 101, a report only requirement is included at internal Outfall 101 instead of actual TBELs.

(3) The new limits for mercury are based on a reasonable potential analysis using effluent monitoring data. The new limits fall under the antidegradation exemption in 327 IAC 5-2-11.3(b)(1)(C)(ii) so they do not cause a significant lowering of water quality and antidegradation under 327 IAC 5-2-11.3(b) is satisfied. This exemption also applies to 327 IAC 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW.

(4) The current permit has a concentration limit for this parameter that is less stringent than a WQBEL in the proposed permit. The existing effluent flow was used to calculate the WQBELs for the proposed permit so the new limit will not result in a calculated concentration increase outside of the mixing zone under 327 IAC 5-2-11.3(b)(1)(B)(i) and antidegradation under 327 IAC 5-2-11.3(b) is satisfied. Since the new limit does not cause a significant lowering under 327 IAC 5-2-11.3(b)(1)(B), it does not cause a significant lowering in the OSRW in accordance with Non-Rule Policy Document Water-002-NPD.

(5) A new monthly average TBEL for oil and grease is being applied in the proposed permit. The TBEL was authorized under the current permit, but was not applied. The Fact Sheet of the 1986 permit includes the calculation of a monthly average TBEL of 625 lbs/day for oil and grease based on the Metal Finishing Guideline at 40 CFR Part 433, so the new limit does not allow an increase above what was authorized, but not applied in the current permit. The monthly average TBEL was lowered to 542 lbs/day and the daily maximum TBEL was lowered to 813 lbs/day to ensure that the discharge from Internal Outfall 101 does not result in a monthly average oil and grease concentration of greater than 10 mg/l and daily maximum of greater than 15 mg/l at final Outfall 001 to meet the narrative criterion. In addition, a monthly average limit of 10 mg/l and a daily maximum limit of 15 mg/l were added to Outfall 001. These limits will ensure that the new monthly average limit at Internal Outfall 101 does not result in a lowering of water quality for oil and grease in the Indiana Harbor Canal and antidegradation under 327 IAC 5-2-11.3(a) is satisfied. The new monthly average TBEL at Internal Outfall 101 and the new monthly average and daily maximum limits at Outfall 001 do not allow an increase above what was authorized, but not applied in the current permit. These new limits fall under the antidegradation exemption in 327 IAC 5-2-11.3(b)(1)(C)(ii)(DD). This exemption applies to 327 IAC 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW.

(6) New TBELs for cadmium, nickel and total toxic organics are being applied in the proposed permit. The TBELs were authorized under the current permit, but were not applied. A lower flow (1.73 mgd) was used to calculate the TBELs for the proposed permit than would have been used in the current permit (2.88 mgd), so the new limits do not allow an increase above what was authorized, but not applied in the current permit. A monitoring waiver per 40 CFR 122.44 has been granted for cadmium for the term of this permit and the facility is required to notify IDEM if any changes occur at the facility that would require the conditions that the waiver was granted to be reviewed. The need for water quality-based effluent limitations at Outfall 001 and antidegradation requirements would be reviewed at that time. The new TBELs fall under the antidegradation exemption in 327 IAC 5-2-11.3(b)(1)(C)(ii)(DD) so they do not cause a significant lowering of water quality and antidegradation under 327 IAC 5-2-11.3(b) is satisfied. This exemption also applies to 327 IAC 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW.

(7) New TBELs for naphthalene and tetrachloroethylene are being applied in the proposed permit. The TBELs were authorized under the current permit, but were not applied. The Fact Sheet of the 1986 permit includes the calculation of daily maximum TBELs of 1.65 lbs/day for naphthalene and 2.48 lbs/day for tetrachloroethylene, so the new limits do not allow an increase above what was authorized, but not applied in the current permit. The new TBELs fall under the antidegradation exemption in 327 IAC 5-2-11.3(b)(1)(C)(ii)(DD) so they do not cause a significant lowering of water quality and antidegradation under 327 IAC 5-2-11.3(b) is satisfied. This exemption also applies to 327 IAC 5-2-11.7(a)(2) so the new limits do not cause a significant lowering of water quality in the OSRW.

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Attachment B

Non-Objection Letter

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 9 2011

REPLY TO THE ATTENTION OF
WN-16J

Bruno Pigott, Assistant Commissioner
Office of Water Quality
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: ArcelorMittal – Central Wastewater Treatment Plant
East Chicago, Indiana
NPDES Permit No: IN0063711

Dear Mr. Pigott:

The U.S. Environmental Protection Agency has reviewed the draft National Pollutant Discharge Elimination System (NPDES) permit and fact sheet for the ArcelorMittal – Central Wastewater Treatment Plant. The draft permit has been discussed with your staff and we have not identified any issues that would cause the Agency to object to issuance of the permit as drafted. Should meaningful changes occur after the public comment period, the U.S. Environmental Protection Agency reserves the right to object to the proposed permit.

Indiana DEM must resubmit the draft permit to EPA for review if:

a. Prior to the actual date of issuance, an effluent guideline or standard is promulgated which is applicable to the permit and would require revision or modification of a limitation or condition found in the draft permit.

b. A variance is granted and permit conditions are modified to incorporate the variance.

c. There are additional revisions to be incorporated into the final permit which have not been reviewed by this Agency.

When the final permit is issued, please forward one copy and significant comments received during the public comment period to this office at the above address, attention NPDES Programs Branch.

Sincerely,

Kevin M. Pierard, Chief,
NPDES Programs Branch

cc: Richard Hamblin, IDEM

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Attachment C

ArcelorMittal Comment Attachments
IHC-1 Data, IHC-2 Data, 1997/1998 In-Stream Temperature Monitoring Studies, and IDEM Fixed Station Monitoring Data for Cyanide

ATTACHMENT IHC-1

Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data

IHC-2 Dickey Road

Copper

Date	Copper (Dissolved) (ug/L)	Copper (Dissolved) for DMT (ug/L)	Copper (Total) (ug/L)	Dissolved Fraction
1/8/2004	1.19	1.19	3.44	0.35
2/18/2004	1.3	1.3	2.39	0.54
3/30/2004	< 1	1	3.72	0.27
4/21/2004	1.24	1.24	3.45	0.36
5/26/2004	1.21	1.21	2.62	0.46
6/16/2004	1.13	1.13	2.42	0.47
7/19/2004	1.37	1.37	2.34	0.59
8/16/2004	1.25	1.25	2.59	0.43
9/20/2004	1.41	1.41	2.81	0.50
10/25/2004	1.29 (EDJ)		2.45	
11/29/2004	1.04	1.04	2.54	0.41
12/20/2004	1.09	1.09	2.46	0.44
1/12/2005	1.1	1.1	2.74	0.40
2/23/2005	1.03	1.03	2.14	0.48
3/21/2005	1.12	1.12	2.43	0.46
4/27/2005	1.19	1.19	2.63	0.45
6/27/2005	1.1	1.1	1.91	0.58
7/27/2005	1.04	1.04	2.16	0.48
8/22/2005	1.23	1.23	2.5	0.49
9/26/2005	1.19	1.19	2.34	0.51
10/26/2005	1.15	1.15	2.42	0.48
11/28/2005	< 1	1	2.7	0.37
12/14/2005	< 1	1	4.28	0.23
1/12/2006	1.08	1.08	3.11	0.35
2/6/2006	1.21	1.21	2.63	0.46
3/15/2006	1.38	1.38	2.8	0.49
4/26/2006	1.52	1.52	2.83	0.54
5/22/2006	1.53	1.53	3.34	0.46
6/21/2006	1.67	1.67	2.67	0.63
7/11/2006	1.62	1.62	2.51	0.65
8/14/2006	1.58	1.58	3.54	0.45
9/25/2006	1.59	1.59	3.3	0.48
10/18/2006			3	
11/27/2006			2.61	
12/18/2006			2.55	
1/22/2007			2.73	
2/19/2007			2.66	
3/28/2007			3.73	
4/25/2007			5.04	
5/30/2007			2.61	
6/20/2007			3.26	
7/30/2007			2.16	
8/27/2007	1.98	1.98	2.68	0.74
9/24/2007	1.57	1.57	2.51	0.63
10/29/2007	1.48	1.48	4.52	0.33
11/19/2007	1.59	1.59	4.33	0.37
12/17/2007	1.34	1.34	2.52	0.53
1/9/2008	1.54	1.54	3.43	0.45

Lead

Date	Lead (Dissolved) (ug/L)	Lead (Dissolved) for DMT (ug/L)	Lead (Total) (ug/L)	Dissolved Fraction
1/8/2004	< 1	1	8.47	0.118
2/18/2004	< 1	1	3.06	0.327
3/30/2004	< 1	1	7.65	0.131
4/21/2004	< 1	1	7.97	0.125
5/26/2004	< 1	1	4.77	0.210
6/16/2004	< 1	1	4.95	0.202
7/19/2004	< 1	1	3.25	0.308
8/16/2004	< 1	1	4.77	0.210
9/20/2004	< 1	1	4.85	0.206
10/25/2004	< 1	1	3.26	0.307
11/29/2004	< 1	1	3.71	0.270
12/20/2004	< 1	1	3.11	0.322
1/12/2005	< 1	1	3.57	0.280
2/23/2005	< 1	1	2.42	0.413
3/21/2005	< 1	1	3.09	0.324
4/27/2005	< 1	1	5.12	0.195
6/27/2005	< 1	1	3.51	0.285
7/27/2005	< 1	1	4.06	0.246
8/22/2005	< 1	1	4.87	0.205
9/26/2005	< 1	1	7	0.143
10/26/2005	< 1	1	3.19	0.313
11/28/2005	< 1	1	3.8	0.263
12/14/2005	< 1	1	9.89	0.101
1/12/2006	< 1	1	5.86	0.171
2/6/2006	< 1	1	2.73	0.366
3/15/2006	< 1	1	4.26	0.235
4/26/2006	< 1	1	4.78	0.209
5/22/2006	< 1	1	5.19	0.193
6/21/2006	1.06	1.06	4.2	0.252
7/11/2006	< 1	1	2.86	0.350
8/14/2006	< 1	1	5.93	0.169
9/25/2006	< 1	1	5.7	0.175
10/18/2006			3.11	
11/27/2006			2.82	
12/18/2006			2.94	
1/22/2007			2.91	
2/19/2007			2.72	
3/28/2007			6.26	
4/25/2007			7.89	
5/30/2007			3.35	
6/20/2007			4.59	
7/30/2007			1.86	
8/27/2007	< 1	1	2.08	0.481
9/24/2007	< 1	1	3.24	0.309
10/29/2007	< 1	1	7.86	0.127
11/19/2007	< 1	1	7.7	0.130
12/17/2007	< 1	1	2.35	0.426
1/9/2008	< 1	1	4.53	0.221

Zinc

Date	Zinc (Dissolved) (ug/L)	Zinc (Dissolved) for DMT (ug/L)	Zinc (Total) (ug/L)	Dissolved Fraction
1/8/2004	8.1	8.1	43.7	0.185
2/18/2004	8.67	8.67	21	0.413
3/30/2004	9.42	9.42	37.6	0.251
4/21/2004	11.2	11.2	37.4	0.299
5/26/2004	13.6	13.6	29.1	0.467
6/16/2004	4.13	4.13	24.6	0.168
7/19/2004	7.66	7.66	17.8	0.430
8/16/2004	5.94	5.94	24.7	0.240
9/20/2004				
10/25/2004	6.95	6.95	18.4	0.378
11/29/2004	15.4	15.4	31.6	0.487
12/20/2004	8.93	8.93	25.5	0.350
1/12/2005	13.1	13.1	31.8	0.412
2/23/2005	10.2	10.2	20.9	0.488
3/21/2005	9.6	9.6	22.4	0.429
4/27/2005	7.86	7.86	44.4	0.177
6/27/2005	9.62	9.62	19.1	0.504
7/27/2005	9	9	18.4	0.489
8/22/2005	8.87	8.87	23.4	0.379
9/26/2005	9.65	9.65	21.6	0.447
10/26/2005	14.2	14.2	25.5	0.557
11/28/2005	11.5	11.5	25.2	0.456
12/14/2005	11.8	11.8	50.1	0.236
1/12/2006	11.4	11.4	35.5	0.321
2/6/2006	11.1	11.1	22.7	0.489
3/15/2006	13.5	13.5	30.9	0.437
4/26/2006	10.1	10.1	27.4	0.369
5/22/2006	11.9	11.9	28.6	0.416
6/21/2006	9.96	9.96	22.2	0.449
7/11/2006	7.34	7.34	20.6	0.356
8/14/2006	9.02	9.02	29.3	0.308
9/25/2006	10.5	10.5	29	0.362
10/18/2006			23.1	
11/27/2006			21.5	
12/18/2006			25.8	
1/22/2007			23.7	
2/19/2007			24.2	
3/28/2007			33.2	
4/25/2007			42.2	
5/30/2007			18.1	
6/20/2007			23.6	
7/30/2007			13.8	
8/27/2007	10.9	10.9	16.9	0.645
9/24/2007	9.38	9.38	18.2	0.515
10/29/2007	11.9	11.9	37.2	0.320
11/19/2007	9.24	9.24	38.9	0.238
12/17/2007	14.5	14.5	22.5	0.644
1/9/2008	17.5	17.5	35.4	0.494

Copper (January 2004 to January 2008)

No. of Samples	37
Geometric mean of dissolved fractions	0.457
95th percentile of dissolved fractions	0.629

Lead (January 2004 to January 2008)

No. of Samples	38
Geometric mean of dissolved fractions	0.228
95th percentile of dissolved fractions	0.415

Zinc (January 2004 to January 2008)

No. of Samples	37
Geometric mean of dissolved fractions	0.375
95th percentile of dissolved fractions	0.574

ATTACHMENT IHC-1

Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data

IHC-3S Columubus Drive Fixed Station Monitoring Data (Station IHC-3S)

Copper

Date	Copper (Dissolved) (ug/L)	Copper (Dissolved) for DMT (ug/L)	Copper (Total) (ug/L)	Dissolved Fraction
1/7/2004	1.19	1.19	4.3	0.277
2/18/2004	1.13	1.13	4.26	0.265
3/30/2004	1.03	1.03	3.56	0.289
4/21/2004	1.36	1.36	4.99	0.273
5/26/2004	1.28	1.28	3.12	0.410
6/16/2004	1.17	1.17	2.54	0.461
7/19/2004	1.23	1.23	1.55	0.794
8/16/2004	1.26	1.26	2.33	0.541
9/20/2004	1.33	1.33	2.62	0.508
10/25/2004	1.87 (fDJ)		3.1	
11/29/2004	1.08	1.08	2.69	0.401
12/20/2004	< 1	1	6.52	0.153
1/12/2005	1.1	1.1	5.64	0.195
2/23/2005	1.21	1.21	2.54	0.476
3/22/2005	1.07	1.07	3.21	0.333
4/27/2005	1.23	1.23	3.66	0.336
5/24/2005	1.17	1.17	3.33	0.351
6/27/2005	< 1	1	1.63	0.613
7/27/2005	1.06	1.06	1.85	0.573
8/22/2005	1.22	1.22	2.04	0.598
9/26/2005	1.55	1.55	2.41	0.643
10/26/2005	1.28	1.28	2.68	0.478
11/28/2005	< 1	1	24.2	0.041
12/15/2005	< 1	1	2.33	0.429
1/11/2006	1.08	1.08	4.6	0.235
2/6/2006	1.05	1.05	3.69	0.285
3/15/2006	1.55	1.55	4.88	0.318
4/26/2006	1.5	1.5	6.84	0.219
5/22/2006	1.58	1.58	3.9	0.405
6/21/2006	1.49	1.49	2.67	0.558
7/10/2006	1.65	1.65	2.22	0.743
8/14/2006	1.61	1.61	2.51	0.641
9/25/2006	1.78	1.78	4.86	0.366
10/18/2006			3.76	
11/27/2006			3.36	
12/18/2006			3	
1/22/2007			3.23	
2/20/2007			3.16	
3/28/2007			3.59	
4/25/2007			9.49	
5/30/2007			3.24	

Lead

Date	Lead (Dissolved) (ug/L)	Lead (Dissolved) for DMT (ug/L)	Lead (Total) (ug/L)	Dissolved Fraction
1/7/2004	< 1	1	10.9	0.092
2/18/2004	< 1	1	11	0.091
3/30/2004	< 1	1	9.46	0.106
4/21/2004	< 1	1	13.5	0.074
5/26/2004	< 1	1	6.43	0.156
6/16/2004	< 1	1	5.96	0.168
7/19/2004	< 1	1	1.49	0.671
8/16/2004	< 1	1	3.88	0.258
9/20/2004	< 1	1	4.23	0.236
10/25/2004	< 1	1	6.04	0.166
11/29/2004	< 1	1	3.99	0.251
12/20/2004	< 1	1	15.2	0.066
1/12/2005	< 1	1	9.98	0.100
2/23/2005	< 1	1	2.37	0.422
3/22/2005	< 1	1	5.24	0.191
4/27/2005	< 1	1	7.06	0.142
5/24/2005	< 1	1	6.57	0.152
6/27/2005	< 1	1	2.76	0.362
7/27/2005	< 1	1	2.98	0.336
8/22/2005	< 1	1	2.15	0.465
9/26/2005	< 1	1	2.68	0.373
10/26/2005	< 1	1	3.07	0.326
11/28/2005	< 1	1	58.3	0.017
12/15/2005	< 1	1	3.66	0.273
1/11/2006	< 1	1	8.04	0.124
2/6/2006	< 1	1	5.33	0.188
3/15/2006	< 1	1	7.73	0.129
4/26/2006	< 1	1	15.3	0.065
5/22/2006	< 1	1	6.3	0.159
6/21/2006	< 1	1	3.14	0.318
7/10/2006	< 1	1	1.96	0.510
8/14/2006	< 1	1	3.06	0.327
9/25/2006	< 1	1	8.57	0.117
10/18/2006			4.44	
11/27/2006			4.16	
12/18/2006			3.39	
1/22/2007			3.72	
2/20/2007			4.17	
3/28/2007			5.65	
4/25/2007			16.1	
5/30/2007			5.04	

Zinc

Date	Zinc (Dissolved) (ug/L)	Zinc (Dissolved) for DMT (ug/L)	Zinc (Total) (ug/L)	Dissolved Fraction
1/7/2004	7.06	7.06	47.2	0.150
2/18/2004	7.45	7.45	45.1	0.165
3/30/2004	10.3	10.3	45	0.229
4/21/2004	12.7	12.7	57.6	0.220
5/26/2004	14.1	14.1	36.2	0.390
6/16/2004	5.81	5.81	34.7	0.167
7/19/2004	8.86	8.86	12.1	0.732
8/16/2004	4.96	4.96	22.2	0.223
9/20/2004			17.8	
10/25/2004	4.78	4.78	27.1	0.176
11/29/2004	12.6	12.6	26.6	0.474
12/20/2004	8.85	8.85	69.1	0.128
1/12/2005	18.9	18.9	55.3	0.342
2/23/2005	12.7	12.7	21.6	0.588
3/22/2005	9.15	9.15	29.5	0.310
4/27/2005	10.5	10.5	39.9	0.263
5/24/2005	8.98	8.98	33.8	0.266
6/27/2005	9.36	9.36	16.7	0.560
7/27/2005	11.2	11.2	17.9	0.626
8/22/2005	8.33	8.33	12.4	0.672
9/26/2005	8.38	8.38	15.2	0.551
10/26/2005	11.4	11.4	19.9	0.573
11/28/2005	11	11	193	0.057
12/15/2005	13	13	26.8	0.485
1/11/2006	12.9	12.9	43.5	0.297
2/6/2006	11.4	11.4	30.3	0.376
3/15/2006	15.7	15.7	45.8	0.343
4/26/2006	12.1	12.1	69.4	0.174
5/22/2006	11.1	11.1	29.2	0.380
6/21/2006	11	11	20.3	0.542
7/10/2006	8.14	8.14	14.6	0.558
8/14/2006	7.66	7.66	15.8	0.485
9/25/2006	12.4	12.4	40.4	0.307
10/18/2006			28.9	
11/27/2006			26.4	
12/18/2006			27.6	
1/22/2007			25.3	
2/20/2007			27.5	
3/28/2007			33.3	
4/25/2007			71.3	
5/30/2007			25.2	

ATTACHMENT IHC-1

Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data

6/20/2007			2.52	
7/30/2007			1.91	
8/27/2007	1.92	1.92	4.3	0.447
9/24/2007	1.51	1.51	2.13	0.709
10/29/2007	1.32	1.32	3.38	0.391
11/19/2007	1.36	1.36	3.81	0.357
12/17/2007	1.25	1.25	5.58	0.224
1/9/2008	1.56	1.56	6.92	0.225
2/20/2008	1.31	1.31	3.07	0.427
3/18/2008	1.36	1.36	4.03	0.337
4/21/2008			4	
5/28/2008			2.71	
6/10/2008			2.68	
7/28/2008			1.93	
8/26/2008			2.15	
9/23/2008			4.42	
10/28/2008			3.79	
11/19/2008			6.28	
12/15/2008	1.14	1.14	5.54	0.206
1/22/2009	1.24	1.24	3.87	0.320
2/10/2009	< 1	1	5.09	0.196
3/5/2009	1.28	1.28	4.43	0.289
4/21/2009	1.49	1.49	2.61	0.571
5/18/2009	1.09	1.09	2.88	0.378
6/11/2009	1.42	1.42	3.95	0.359
7/27/2009			2.59	
8/19/2009			2.17	
9/22/2009			3.37	
10/8/2009			5.66	
11/5/2009			4.08	
12/14/2009			4.25	
1/19/2010			2.19	
2/15/2010			2.38	

6/20/2007			2.65	
7/30/2007			1.37	
8/27/2007	< 1	1	5.59	0.179
9/24/2007	< 1	1	2.21	0.452
10/29/2007	< 1	1	4.98	0.201
11/19/2007	< 1	1	5.37	0.186
12/17/2007	< 1	1	13.1	0.076
1/9/2008	< 1	1	11.3	0.088
2/20/2008	< 1	1	3.8	0.263
3/18/2008	< 1	1	6.57	0.152
4/21/2008			7.2	
5/28/2008			3.74	
6/10/2008			4.75	
7/28/2008			2	
8/26/2008			2.01	
9/23/2008			5.76	
10/28/2008			5.98	
11/19/2008			12.5	
12/15/2008	< 1	1	10.7	0.093
1/22/2009	< 1	1	6	0.167
2/10/2009	< 1	1	8.66	0.115
3/5/2009	< 1	1	5.99	0.167
4/21/2009	< 1	1	2.81	0.356
5/18/2009	< 1	1	4.81	0.208
6/11/2009	< 1	1	6.97	0.143
7/27/2009			3.03	
8/19/2009			2.25	
9/22/2009			5.23	
10/8/2009			10.6	
11/5/2009			6.66	
12/14/2009			6.4	
1/19/2010			1.77	
2/15/2010			2.33	

6/20/2007			16.6	
7/30/2007			12.1	
8/27/2007	12.7	12.7	30.9	0.411
9/24/2007	8.21	8.21	18.5	0.508
10/29/2007	10.8	10.8	24.4	0.443
11/19/2007	7.52	7.52	27.5	0.273
12/17/2007	11.1	11.1	48.9	0.227
1/9/2008	17.8	17.8	62.6	0.284
2/20/2008	15.6	15.6	31.3	0.498
3/18/2008	13	13	34.6	0.376
4/21/2008			38.8	
5/28/2008			24.1	
6/10/2008			28.5	
7/28/2008			14.6	
8/26/2008			13.4	
9/23/2008			32.4	
10/28/2008			27.3	
11/19/2008			53.4	
12/15/2008	10.1	10.1	53	0.191
1/22/2009	10.2	10.2	31.8	0.321
2/10/2009	14	14	43.5	0.322
3/5/2009	13.7	13.7	35.1	0.390
4/21/2009	15.7	15.7	26.9	0.584
5/18/2009	13.9	13.9	31.3	0.444
6/11/2009	9.5	9.5	33.1	0.287
7/27/2009			15.1	
8/19/2009			18.6	
9/22/2009			20.3	
10/8/2009			38.2	
11/5/2009			31.2	
12/14/2009			30.8	
1/19/2010			16.2	
2/15/2010			17.7	

Copper (January 2004 to June 2009)	
No. of Samples	47
Geometric mean of dissolved fractions	0.358
TSS regression DMT (TSS = 4 mg/l)	0.493
95th percentile of dissolved fractions	0.716

Lead (January 2004 to June 2009)	
No. of Samples	48
Geometric mean of dissolved fractions	0.176
TSS regression DMT (TSS = 4 mg/l)	0.268
95th percentile of dissolved fractions	0.472

Zinc (January 2004 to June 2009)	
No. of Samples	47
Geometric mean of dissolved fractions	0.332
TSS regression DMT (TSS = 4 mg/l)	0.432
95th percentile of dissolved fractions	0.635

ATTACHMENT IHC-1

Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data

IHC-0 Fixed Station Monitoring Data

Copper

Date	Copper (Dissolved) (ug/L)	Copper (Dissolved) for DMT (ug/L)	Copper (Total) (ug/L)	Dissolved Fraction
1/7/2004	1.42	1.42	2.53	0.561
2/19/2004	1.25	1.25	2.06	0.607
3/30/2004	1.14	1.14	2.78	0.410
4/21/2004	< 1	1	32.7	0.031
5/26/2004	1.41	1.41	2.42	0.583
6/16/2004	1.42	1.42	2.36	0.602
7/19/2004	1.65	1.65	2.5	0.660
8/16/2004	1.42	1.42	2.53	0.561
9/21/2004	1.47	1.47	2.65	0.555
10/26/2004	1.34 (iDJ)		2.71	
11/30/2004	1.05	1.05	1.76	0.597
12/20/2004	< 1	1	5.34	0.187
1/12/2005	1.2	1.2	2.85	0.421
2/24/2005	1.32	1.32	2	0.660
3/21/2005	1.48	1.48	2.72	0.544
4/27/2005	1.3	1.3	3.11	0.418
5/24/2005	1.48	1.48	2.92	0.507
6/27/2005	1.42	1.42	2.03	0.700
7/28/2005	1.25	1.25	2.1	0.595
8/22/2005	1.32	1.32	2.12	0.623
9/26/2005	1.09	1.09	1.89	0.577
11/28/2005	1.59	1.59	2.49	0.639
12/14/2005	1.15	1.15	3.12	0.369
2/6/2006	1.36	1.36	2.75	0.495
3/15/2006	1.58	1.58	2.8	0.564
4/26/2006	1.94	1.94	2.47	0.785
5/22/2006	1.59	1.59	2.64	0.602
6/21/2006	1.48	1.48	1.9	0.779
7/10/2006	1.42	1.42	3.04	0.467
8/14/2006	1.5	1.5	2.17	0.691
9/26/2006	1.48	1.48	2.18	0.679

Lead

Date	Lead (Dissolved) (ug/L)	Lead (Dissolved) for DMT (ug/L)	Lead (Total) (ug/L)	Dissolved Fraction
1/7/2004	< 1	1	2.71	0.369
2/19/2004	< 1	1	1.72	0.581
3/30/2004	< 1	1	3.82	0.262
4/21/2004	< 1	1	83.4	0.012
5/26/2004	< 1	1	2.1	0.476
6/16/2004	< 1	1	3.17	0.315
7/19/2004	< 1	1	1.63	0.613
8/16/2004	< 1	1	1.85	0.541
9/21/2004	< 1	1	2.42	0.413
10/26/2004	< 1	1	2.79	0.358
11/30/2004	< 1	1	1.69	0.592
12/20/2004	< 1	1	9.59	0.104
1/12/2005	< 1	1	3.29	0.304
2/24/2005	< 1	1	1.71	0.585
3/21/2005	< 1	1	2.62	0.397
4/27/2005	< 1	1	3.66	0.273
5/24/2005	< 1	1	2.67	0.375
6/27/2005	< 1	1	1.76	0.568
7/28/2005	< 1	1	1.94	0.515
8/22/2005	< 1	1	1.72	0.581
9/26/2005	< 1	1	1.96	0.510
11/28/2005	< 1	1	1.58	0.633
12/14/2005	< 1	1	3.58	0.279
2/6/2006	< 1	1	2.35	0.426
3/15/2006	< 1	1	3.21	0.312
4/26/2006	< 1	1	2.26	0.442
5/22/2006	< 1	1	2.77	0.361
6/21/2006	< 1	1	1.85	0.541
7/10/2006	< 1	1	3.19	0.313
8/14/2006	< 1	1	1.43	0.699
9/26/2006	< 1	1	1.52	0.658

Zinc

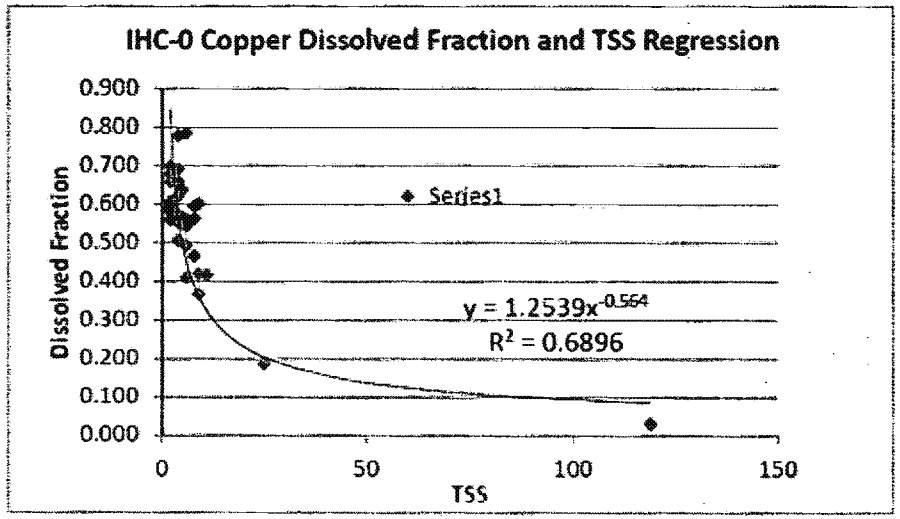
Date	Zinc (Dissolved) (ug/L)	Zinc (Dissolved) for DMT (ug/L)	Zinc (Total) (ug/L)	Dissolved Fraction
1/7/2004	11.1	11.1	24.4	0.455
2/19/2004	10.6	10.6	19.4	0.546
3/30/2004	10.1	10.1	29.9	0.338
4/21/2004	7.38	7.38	414	0.018
5/26/2004	13.3	13.3	24.3	0.547
6/16/2004	24	24	45.8	0.524
7/19/2004	9.9	9.9	19.2	0.516
8/16/2004	17.5	17.5	37	0.473
9/21/2004				
10/26/2004	9.13	9.13	23.1	0.395
11/30/2004	13.8	13.8	21.3	0.648
12/20/2004	7.7	7.7	59.2	0.130
1/12/2005	10.8	10.8	32	0.338
2/24/2005	36.3	36.3	50.9	0.713
3/21/2005	12.6	12.6	25.9	0.486
4/27/2005	31.3	31.3	65.6	0.476
5/24/2005	47	47	74.5	0.631
6/27/2005	20.9	20.9	33	0.633
7/28/2005	14.8	14.8	24.5	0.604
8/22/2005	17	17	24.9	0.683
9/26/2005	17.3	17.3	26.4	0.655
11/28/2005	45.6	45.6	52.9	0.862
12/14/2005	10.9	10.9	25	0.436
2/6/2006	25.1	25.1	37.8	0.664
3/15/2006	24.4	24.4	35.2	0.693
4/26/2006	14.6	14.6	26.9	0.543
5/22/2006	14.4	14.4	27.4	0.526
6/21/2006	14.1	14.1	29.1	0.485
7/10/2006	14.4	14.4	38.2	0.377
8/14/2006	8.29	8.29	14.8	0.560
9/26/2006	43.9	43.9	53.3	0.824

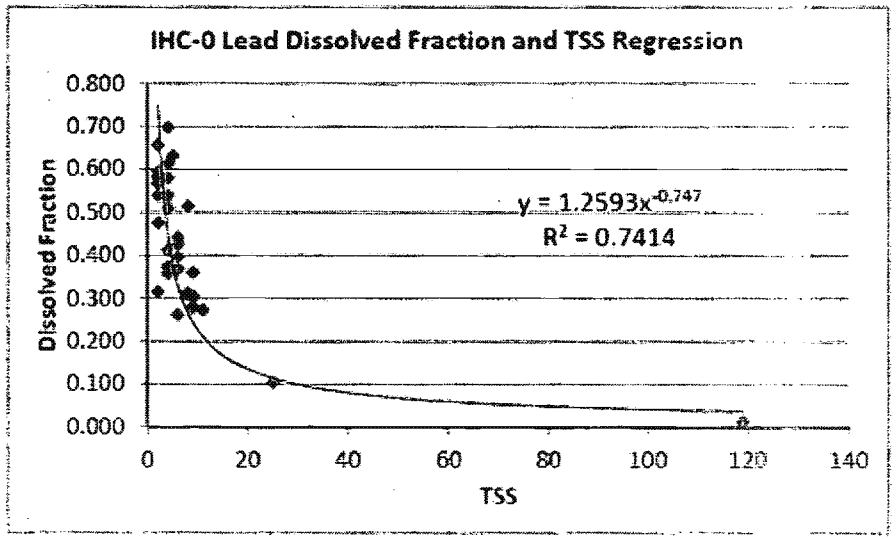
Copper (January 2004 to October 2006)	
No. of Samples	30
Geometric mean of dissolved fractions	0.499
TSS regression DMT (TSS = 4 mg/l)	0.574
95th percentile of dissolved fractions	0.743

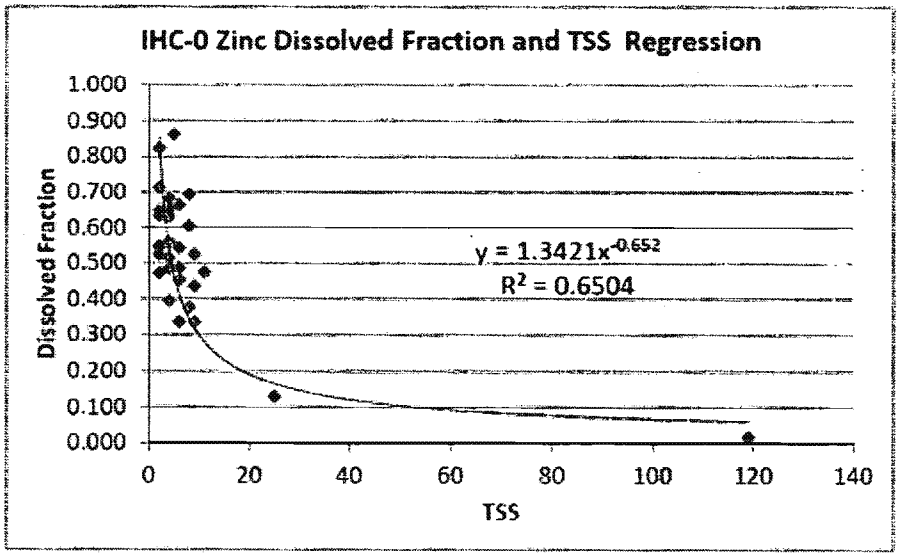
Lead (January 2004 to October 2006)	
No. of Samples	31
Geometric mean of dissolved fractions	0.374
TSS regression DMT (TSS = 4 mg/l)	0.447
95th percentile of dissolved fractions	0.645

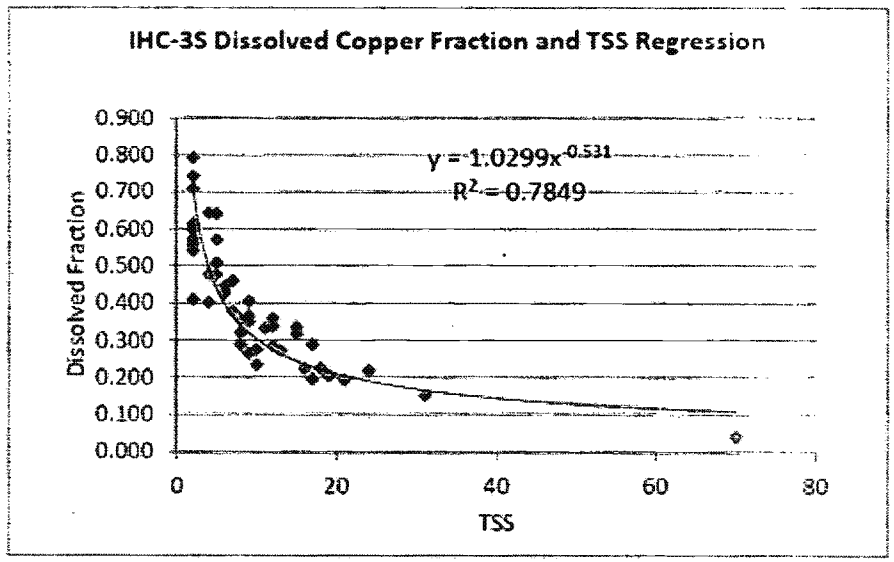
Zinc (January 2004 to October 2006)	
No. of Samples	30
Geometric mean of dissolved fractions	0.462
TSS regression DMT (TSS = 4 mg/l)	0.544
95th percentile of dissolved fractions	0.774

ATTACHMENT IHC-1
Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data



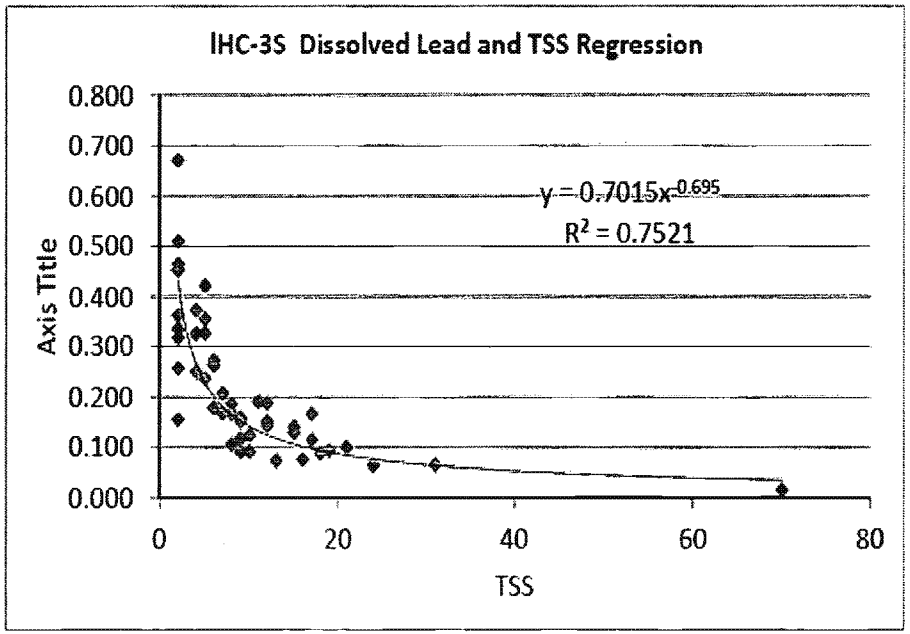


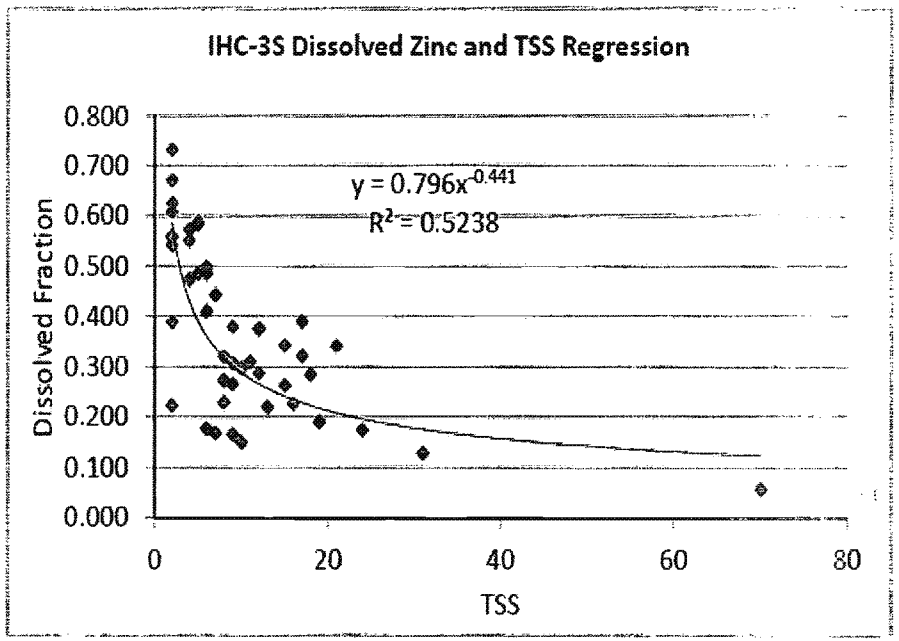




ATTACHMENT IHC-1

Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data





ATTACHMENT IHC-2
MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: LEAD (TOTAL RECOVERABLE)

SECTION 1 - MODEL INPUTS

SEGMENT	OUTFALL	DISCHARGE FLOW (mgd)	4-DAY AVERAGE DISCHARGE CONC. (µg/L)	4-DAY AVERAGE DISCHARGE LOAD (lbs/day)	MONTHLY SAMPLING FREQUENCY	PRELIMINARY EFFLUENT LIMITATIONS			
						MONTHLY AVERAGE		DAILY MAXIMUM	
						CONC. (µg/L)	LOAD (lbs/day)	CONC. (µg/L)	LOAD (lbs/day)
27	BUC001	0.55	25	0.11	4	20	0.092	41	0.19
29	AMC001	6.5	215	11.66	4	170	9.5	350	19
30	AMLC001	3.8	14	0.42	4	11	0.30	23	0.70
31	AMW002	11.2	2.0	0.19					
33	AME007	0.0037	4.0	0.00012					
34	AMW009	55.3	13	6.00	4	11	5.1	21	9.7
34	AMW010	38.6	3.0	0.92					
37	AME011	84.7	–	1.1					
37	AME014	11.5	148	14.01	4	120	11.5	240	23
37	AME018	15.9	40	5.31	4	33	4.3	68	9.0
38	AMW011	23.4	32	6.25	4	26	5.1	53	10
124	CDF001	0.33	16	0.04	4	13	0.036	26	0.072
123	EM001	0.33	16	0.04	4	13	0.036	26	0.072
37	AMW Intake	-49	(Withdrawal)						

Lake Michigan Conc. (µg/l) = 0.57 (for lake intrusion flow) 8/18/2011

ATTACHMENT IHC-2

MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: LEAD (TOTAL RECOVERABLE)

SECTION 2 - MODEL OUTPUT

SURFACE SEGMENT	DISCHARGE FLOW TO THE SEGMENT (mgd)	DISCHARGE LOAD TO THE SEGMENT (lbs/day)	25% FLOW OF PRECEDING SEGMENT (mgd)	25% LOAD OF PRECEDING SEGMENT (lbs/day)	TOTAL MIXING ZONE FLOW IN THE SEGMENT (mgd)	TOTAL MIXING ZONE LOAD IN THE SEGMENT (lbs/day)	STREAM CONCENTRATION AT EDGE OF MIXING ZONE[1] (µg/L)	FLOW OUT OF SEGMENT (mgd)	LOAD OUT OF SEGMENT (lbs/day)	CONC. OUT OF SEGMENT[1] (µg/L)
20/133								227.54	9.68	5.1
21	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
22	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
23	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
24	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
25	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
26	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
27	0.55	0.11	56.89	2.42	57.44	2.54	5.3	228.09	9.80	5.1
28	0	0	57.02	2.45	57.02	2.45	5.1	228.09	9.80	5.1
LGC	0.66	0.09	–	–	–	–	–	228.75	9.89	5.2
29	6.5	11.7	57.19	2.47	63.69	14.13	26.6	235.25	21.55	11.0
30	3.6	0.42	58.81	5.39	62.41	5.81	11.2	238.85	21.97	11.0
31	11.2	0.19	59.71	5.48	70.91	5.68	9.6	250.05	8.35	4.0
32	0	0	62.51	2.09	62.51	2.09	4.0	250.05	8.35	4.0
33	9.05	0.04	62.51	2.09	71.57	2.13	3.6	259.10	8.39	3.9
34	101.60	6.96	64.78	2.10	166.37	9.06	6.5	360.70	15.35	5.1
35	9.70	0.05	90.17	3.84	99.87	3.88	4.7	370.40	15.40	5.0
36	9.70	0.05	92.60	3.85	102.30	3.90	4.6	380.09	15.44	4.9
Intake	-49	-1.99	–	–	–	–	–	331.09	13.45	4.9
37	121.50	20.48	82.77	3.38	204.57	23.83	14.0	452.89	33.92	9.0
38	33.74	6.30	113.22	8.48	146.96	14.78	12.0	486.63	40.22	9.9
39	10.34	0.05	121.66	10.05	132.00	10.10	9.2	496.97	40.28	9.7
40	10.34	0.05	124.24	10.07	134.59	10.12	9.0	507.32	40.31	9.5
41	10.34	0.05	126.83	10.09	137.17	10.13	8.8	517.66	40.36	9.3

[1]Segments 21-26: Lead $C_{instream}$ (CCC/DMT) = 16 µg/L (Hardness = 208 mg/L and DMT = 0.684)

Segments 27-31: Lead $C_{instream}$ (CCC/DMT) = 26.6 µg/L (Hardness = 206 mg/L and DMT = 0.415)

Segments 32-41: Lead $C_{instream}$ (CCC/DMT) = 25.3 µg/L (Hardness = 178 mg/L and DMT = 0.374)

Lake Michigan (Out of Segment 41): Lead $C_{instream}$ (CCC/DMT) = 9.9 µg/L (Hardness = 140 mg/L and DMT = 0.742)

8/18/2011

ATTACHMENT IHC-2

MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: LEAD (TOTAL RECOVERABLE)

SECTION 3 - RATIONALE FOR MODEL INPUTS	
OUTFALL	RATIONALE FOR WASTELOAD ALLOCATION
BUC001	The 4-day average WLA for this outfall was set equal to 25 ug/l in the March 19, 2009 WLA (WLA001600). Only one discharge event has occured at this facility (March 11, 2010) and the lead concentration was 0.4 ug/l which is less than the estimated daily maximum PEQ of 36 ug/l in the 2009 WLA. Therefore, it was set equal to the value used in the 2009 WLA. The sampling frequency was set equal to the default of 1/week.
AMC001	Set equal to value that equates to limits based on site-specic DMT
AMLC001	Set equal to value that results in limits which are greater than PEQs calculated under 327 IAC 5-2-11.5(b)(1)(B)(V) and greater than the concentrations equivalent to Outfall 602 TBELs.
AMW002	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-3S and comparable to background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall consists of noncontact cooling water, stormwater and groundwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Indiana Harbor Canal and Lake Michigan; primarily noncontact cooling water; effluent concentration small compared to the criterion; and, no internal outfalls), downstream fixed station IHC-2 showing instream concentration less than upstream concentration at fixed station IHC-3S and the available dilution. Set equal to effluent concentration which is the same as the background concentration at fixed station IHC-0.
AME007	Only stormwater data available. Preliminary effluent limitations not developed based on source and nature of the discharge. Set equal to background concentration calculated at IDEM fixed station IHC-2.
AMW009	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-2 which is upstream of the outfall and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall currently consists of noncontact cooling water, stormwater and groundwater. It is proposed to add internal Outfall 509 which will have TBELs for lead of monthly average 2.98 lbs/day and daily maximum 8.95 lbs/day and an effluent flow of 1.1 mgd. Estimated monthly average (8.4 ug/l) and daily maximum (21 ug/l) PEQs were developed based on the sum of the TBELs at internal Outfall 509 and the mass calculated using a current effluent concentration of 2 ug/l (background concentration at fixed station IHC-0) and flow of 54.2 mgd. Set so that monthly and daily PEQs do not exceed PELs. The sampling frequency was set equal to the default of 1/week.
AMW010	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-2 which is upstream of the outfall and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall consists of noncontact cooling water, stormwater and groundwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Indiana Harbor Canal and Lake Michigan; primarily noncontact cooling water; effluent concentration small compared to the criterion; and, no internal outfalls), downstream fixed station IHC-0 showing instream concentration less than upstream concentration at fixed station IHC-2 and the available dilution. Set based on the effluent concentration which is the same as the background concentration at fixed station IHC-0. Also, set so that the combined mass for Outfalls 009 and 010 does not exceed the PELs in the PEL spreadsheet for the combined outfalls.
AME011	MMR data comparable to Lake Michigan data collected at IDEM fixed station LM-EC Lake Michigan at East Chicago Waterworks which is located in the vicinity of the ArcelorMittal Indiana Harbor East intakes. This outfall consists of noncontact cooling water, boiler blowdown, zeolite rinse water and stormwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Lake Michigan; primarily noncontact cooling water; effluent concentration small compared to criterion; and, no internal outfalls) and the available dilution. Set equal to the geometric mean of effluent loading data due to the availability of a large, representative effluent data set.
AME014	Set equal to value that equates to existing Outfall 014 monthly average limit and that reserves some capacity at Lake Michigan. Resulting daily max PEL is more stringent than existing daily max limit and preliminary daily max WQBEL calculated using TSS regression or geometric mean DMTs.
AME018	Set equal to value that results in PELs greater than the sum of the 518 and 618 TBELs.
AMW011	The monthly PEQ is 14 ug/l and the daily PEQ is 29 ug/l. This outfall currently has TBELs for lead, but it is proposed to move part of the source of lead and part of the TBELs to internal Outfall 509. It is also proposed to create internal Outfalls 701 and 702 that will have TBELs for lead and discharge through Outfall 011. The proposed internal Outfall 701 monthly average/daily maximum TBELs are 0.25/0.78 lbs/day. The proposed internal Outfall 702 monthly average/daily maximum TBELs are 0.72/2.17 lbs/day. Set to meet the PELs in the PEL spreadsheet. This value allows the PEQs and the proposed TBELs to be met. The sampling frequency was set equal to the default of 1/week.
CDF001	No effluent data available. Set equal to the chronic criterion based on potential future discharge. The sampling frequency was set equal to 1/week based on potential future permit limit.
EM001	Limited effluent data available from 1997 and 1998. Data from 1997 provided in April 1, 1998 WLA Report (WLA000307). Set equal to the chronic criterion based on the available data. The sampling frequency was set equal to 1/week based on potential future permit limit.

8/18/2011

ATTACHMENT IHC-2

MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: ZINC (TOTAL RECOVERABLE)

SECTION 1 - MODEL INPUTS

SEGMENT	OUTFALL	DISCHARGE FLOW (mgd)	4-DAY AVERAGE DISCHARGE CONC. (µg/L)	4-DAY AVERAGE DISCHARGE LOAD (lbs/day)	MONTHLY SAMPLING FREQUENCY	PRELIMINARY EFFLUENT LIMITATIONS			
						MONTHLY AVERAGE		DAILY MAXIMUM	
						CONC. (µg/L)	LOAD (lbs/day)	CONC. (µg/L)	LOAD (lbs/day)
27	BUC001	0.55	29	0.13					
29	AMC001	6.5	440	23.67	4	360	20	720	39
30	AMLC001	3.6	46	1.38	4	38	1.1	80	2.4
31	AMW002	11.2	27	2.52					
33	AME007	0.0037	25	0.00077					
34	AMW009	55.3	45	20.77	4	37	17	74	34
34	AMW010	38.6	27	9.25					
37	AME011	84.7	–	7.2					
37	AME014	11.5	295	28.31	4	240	23	480	46
37	AME018	15.9	217	28.79	4	180	24	360	48
38	AMW011	23.4	214	41.79	4	180	35	350	68
124	CDF001	0.33	134	0.37	4	110	0.30	220	0.61
123	EM001	0.33	134	0.37	4	110	0.30	220	0.61
37	AMW Intake	-49	(Withdrawal)						
Lake Michigan Conc. (µg/l) =		3.5	(for lake intrusion flow)						8/18/2011

ATTACHMENT IHC-2

MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: ZINC (TOTAL RECOVERABLE)

SECTION 2 - MODEL OUTPUT

SURFACE SEGMENT	DISCHARGE FLOW TO THE SEGMENT (mgd)	DISCHARGE LOAD TO THE SEGMENT (lbs/day)	25% FLOW OF PRECEDING SEGMENT (mgd)	25% LOAD OF PRECEDING SEGMENT (lbs/day)	TOTAL MIXING ZONE FLOW IN THE SEGMENT (mgd)	TOTAL MIXING ZONE LOAD IN THE SEGMENT (lbs/day)	STREAM CONCENTRATION AT EDGE OF MIXING ZONE[1] (µg/L)	FLOW OUT OF SEGMENT (mgd)	LOAD OUT OF SEGMENT (lbs/day)	CONC. OUT OF SEGMENT[1] (µg/L)
20/133								227.54	55.07	29
21	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
22	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
23	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
24	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
25	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
26	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
27	0.55	0.13	56.89	13.77	57.44	13.90	29	228.09	55.20	29
28	0	0	57.02	13.80	57.02	13.80	29	228.09	55.20	29
LGC	0.66	0.74	–	–	–	–	–	228.75	55.94	29
29	6.5	23.9	57.19	13.98	63.69	37.85	71	235.25	79.80	41
30	3.6	1.38	58.81	19.95	62.41	21.33	41	238.85	81.19	41
31	11.2	2.52	59.71	20.30	70.91	22.82	39	250.05	52.17	25
32	0	0	62.51	13.04	62.51	13.04	25	250.05	52.17	25
33	9.05	0.27	62.51	13.04	71.57	13.31	22	259.10	52.43	24
34	101.80	29.30	64.78	13.11	166.37	42.40	31	360.70	81.73	27
35	9.70	0.38	90.17	20.43	99.87	20.72	25	370.40	82.01	27
36	9.70	0.28	92.60	20.50	102.30	20.79	24	380.09	82.29	26
Intake	-49	-10.61	--	--	--	--	--	331.09	71.69	26
37	121.80	84.59	82.77	17.92	204.57	82.51	48	452.89	136.27	36
38	33.74	42.09	113.22	34.07	146.96	76.16	62	456.63	178.36	44
39	10.34	0.30	121.66	44.59	132.00	44.89	41	496.97	178.66	43
40	10.34	0.30	124.24	44.67	134.59	44.97	40	507.32	178.97	42
41	10.34	0.30	126.83	44.74	137.17	45.04	39	517.66	179.27	41

[1]Segments 21-26: Zinc $C_{instream}$ (CCC/DMT) = 220 µg/L (Hardness = 208 mg/L and DMT = 0.986)

Segments 27-31: Zinc $C_{instream}$ (CCC/DMT) = 582 µg/L (Hardness = 206 mg/L and DMT = 0.375)

Segments 32-41: Zinc $C_{instream}$ (CCC/DMT) = 417 µg/L (Hardness = 178 mg/L and DMT = 0.462)

Lake Michigan (Out of Segment 41): Zinc $C_{instream}$ (CCC/DMT) = 160 µg/L (Hardness = 140 mg/L and DMT = 0.986)

8/18/2011

ATTACHMENT IHC-2
MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: ZINC (TOTAL RECOVERABLE)

SECTION 3 - RATIONALE FOR MODEL INPUTS	
OUTFALL	**RATIONALE FOR WASTELOAD ALLOCATION**
BUC001	No effluent data available. Set equal to the background concentration calculated at fixed station IHC-3S based on industrial user (to East Chicago WWTP) data submitted with January 2008 permit application. Preliminary effluent limitations not developed based on source and nature of the discharge.
AMC001	WLA value equates to limits calculated with site-specific DMT
AMLC001	Set equal to value that results in limits which are greater than PEQs calculated under 327 IAC 5-2-11.5(b)(1)(B)(V) and greater than the concentrations equivalent to Outfall 802 TBELs.
AMW002	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-3S and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall consists of noncontact cooling water, stormwater and groundwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Indiana Harbor Canal and Lake Michigan; primarily noncontact cooling water; effluent concentration small compared to criterion; and, no internal outfalls), downstream fixed station IHC-2 showing instream concentration less than upstream concentration at fixed station IHC-3S and the available dilution. Set equal to background concentration at fixed station IHC-0.
AME007	Only stormwater data available. Set equal to background concentration calculated at IDEM fixed station IHC-2. Preliminary effluent limitations not developed based on source and nature of the discharge.
AMW009	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-2 which is upstream of the outfall and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall currently consists of noncontact cooling water, stormwater and groundwater. It is proposed to add internal Outfall 509 which will have TBELs for zinc of monthly average 4.46 lbs/day and daily maximum 13.41 lbs/day and an effluent flow of 1.1 mgd. Estimated monthly average (38 ug/l) and daily maximum (56 ug/l) PEQs were developed based on the sum of the TBELs at internal Outfall 509 and the mass calculated using a current effluent concentration of 27 ug/l (estimated based on available effluent data and intake source data) and flow of 54.2 mgd. Set so that monthly and daily PEQs do not exceed PELs. The sampling frequency was set equal to the default of 1/week.
AMW010	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-2 which is upstream of the outfall and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall consists of noncontact cooling water, stormwater and groundwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Indiana Harbor Canal and Lake Michigan; effluent concentration small compared to the criterion; and, no internal outfalls), and the available dilution. Set based on available effluent data and intake source data. Also, set so that the combined mass for Outfalls 009 and 010 does not exceed the PELs in the PEL spreadsheet for the combined outfalls.
AME011	MMR data elevated above Lake Michigan data collected at IDEM fixed station LM-EC Lake Michigan at East Chicago Waterworks which is located in the vicinity of the ArcelorMittal Indiana Harbor East intakes. However, it is less than upstream data collected at IDEM fixed station IHC-2. This outfall consists of noncontact cooling water, boiler blowdown, zeolite rinse water and stormwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Lake Michigan; primarily noncontact cooling water; effluent concentration less than background concentration; effluent concentration small compared to criterion; and, no internal outfalls) and the available dilution. Set equal to the geometric mean of effluent loading data due to the availability of a large, representative effluent data set.
AME014	WLA value equates to limits calculated with site-specific DMT
AME018	The monthly PEQ is 260 ug/l and the daily PEQ is 1700 ug/l. The internal Outfall 518 current monthly average/daily maximum TBELs are 2.73/8.21 lbs/day and the new calculated TBELs are 3.25/9.79 lbs/day. The internal Outfall 618 current monthly average/daily maximum TBELs are 3.50/10.50 lbs/day and the new calculated TBELs are 5.55/16.63 lbs/day. Set to meet the PELs in the PEL spreadsheet to allow the maximum possible limits due to the high PEQs and internal mass limits. This value does not allow the PEQs to be me, but it does allow the current TBELs to be met. The sampling frequency was set equal to the default of 1/week.
AMW011	The monthly PEQ is 260 ug/l and the daily PEQ is 580 ug/l. This outfall currently has TBELs for zinc, but it is proposed to move part of the source of zinc and part of the TBELs to internal Outfall 509. It is also proposed to create internal Outfalls 701 and 702 that will have TBELs for zinc and discharge through Outfall 011. The proposed internal Outfall 701 monthly average/daily maximum TBELs are 0.38/1.15 lbs/day. The proposed internal Outfall 702 monthly average/daily maximum TBELs are 1.09/3.28 lbs/day. Set to meet the PELs in the PEL spreadsheet to allow the maximum possible limits due to the high PEQs. This value does not allow the PEQs to be me, but it does allow the proposed TBELs to be met. The sampling frequency was set equal to the default of 1/week.
CDF001	No effluent data available. Set based on the PELs in the PEL spreadsheet due to potential future discharge. The PELs in the PEL spreadsheet are based on the acute (1-hour average) WLA. The 4-day average WLA was set equal to the concentration that would allow the PELs in the PEL spreadsheet to be met. The sampling frequency was set equal to 1/week based on potential future permit limit.
EM001	Historical monitoring data are available and indicate the presence of zinc. Set based on the PELs in the PEL spreadsheet due to available monitoring data. The PELs in the PEL spreadsheet are based on the acute (1-hour average) WLA. The 4-day average WLA was set equal to the concentration that would allow the PELs in the PEL spreadsheet to be met. The sampling frequency was set equal to 1/week based on potential future permit limit.

Indiana Harbor and Indiana Harbor Ship Canal
1997, 1998 In-stream Temperature Monitoring Studies
(Data Previously Submitted to IDEM by Inland Steel and Ispat-Inland)

Introduction

The Indiana Department of Environmental Management (IDEM) has requested that ArcelorMittal provide information regarding thermal discharges from the Indiana Harbor West facility. We understand the purpose of the data request is to assess compliance with Indiana water quality standards for temperature in the Indiana Harbor Ship Canal and Indiana Harbor. The current NPDES permit for Indiana Harbor West does not contain monitoring requirements that would generate the necessary data to calculate historic thermal discharge loadings. Intake and effluent temperature monitoring under current relatively low production rates at Indiana Harbor West would not yield useful data in that regard.

To address the question of compliance with Indiana water quality standards for temperature in the Indiana Harbor Ship Canal and Indiana Harbor, ArcelorMittal requests that IDEM evaluate ambient temperature monitoring data collected by Inland Steel during 1997 and Ispat-Inland in 1998. These studies were conducted pursuant to Inland Steel's (now Indiana Harbor East) NPDES permit. The scope of the studies included ambient temperature measurements at key locations in the Indiana Harbor Ship Canal and Indiana Harbor from April to November of each year. Measurements were made approximately once per week during the summer months and less frequent in the spring and fall. Instream temperature measurements were made near the water surface, at mid-depth and near the bottom of the Canal and Harbor. The study results show compliance with applicable Indiana water quality standards during a period of relatively high production and relatively high thermal loads.

At the time these studies were conducted both LTV Steel (Indiana Harbor West) and Inland and Ispat-Inland (Indiana Harbor East) were operating at reasonably high production rates as measured by raw steel production. Ambient air temperatures were within normal ranges and there have been no significant changes in the flow regimes in the Indiana Harbor Ship Canal between then and now. Consequently, the results of those studies can be used to assess compliance with applicable Indiana water quality standards for temperature under current discharge and production conditions and under prospective future high production conditions.

Results of 1997 and 1998 Temperature Monitoring Studies

In 1997 and 1998, in-stream temperature was measured from April through November of each year at two locations in the Indiana Harbor Ship Canal and at one location in Indiana Harbor. Temperature in the Indiana Harbor Ship Canal was measured in the center of the canal at the now Indiana Harbor Long Carbon Outfall 001, and at the center of the canal between now Indiana Harbor East Outfalls 008 and 011. Temperature in Indiana Harbor was measured in the center of the Harbor, between now Indiana Harbor East Outfalls 011, 014, and 018. At each location, temperature was measured one-foot below the water surface, at mid-depth, and one-foot above the bottom. This temperature measuring protocol is consistent with ambient temperature monitoring protocols established at 327 IAC 2-1.5-8(6)(c)(4)(D)(i).

The final two monitoring events conducted on October 26 and November 24, 1998 included temperature measurements at additional locations across the Canal at Outfall 001 and between Outfalls 008 and 011. At each location, temperatures were monitored near the east bank and the west bank in addition to the center of the canal. Aerial maps of all monitoring locations are included as Exhibit A.

Exhibit B presents the in-stream temperature monitoring data. For each monitoring event, the maximum recorded temperature was compared to the Indiana maximum water quality standards for Indiana streams within the Great Lakes basin (327 IAC 2-1.5-8(6)(c)(4)(C)). Both the Indiana Harbor Ship Canal and Indiana Harbor are streams within the Great Lakes basin and are not within the open waters of Lake Michigan (327 IAC 2-15-2(64)).

The in-stream temperature monitoring data show maximum temperature water quality standards were met at all locations monitored in 1997 and 1998. The results are shown graphically in Figures 1 and 2.

Historical Ambient Air Temperature Data Analysis

Monthly average ambient air temperatures for 1997 and 1998 were compared to historic monthly average ambient air temperatures from 1970 to 2009 to determine whether air temperatures observed in 1997 and 1998 were typical of air temperatures historically measured and thus consistent with typical conditions. A summary of the summer monthly average data is presented below (all temperatures in Deg. F):

	July	August	September
1997	74.2	71.8	70.3
1998	74.3	74.5	73.2
1970-2009 Avg.	72.4	72.7	70.3
1970-2009 Max.	77.1	76.9	74.1

These data show ambient air temperatures in 1997 and 1998 were typical of historic conditions and suggest in-stream temperatures for 1997 and 1998 are representative of thermal discharges at the time and typical summer air temperatures. Monthly average data for January through December are included as Exhibit C and are shown graphically in Figure 3.

1997 and 1998 Steel Production at LTV Steel and Inland Steel, Ispat-Inland

Presented below is comparison of raw steel production for 1997 and 1998 and current steelmaking capacity (2010 joint capacity of Indiana Harbor East and West). Raw steel production is a good indicator of overall mill activity and thermal discharges. The 1997 and 1998, raw steel production was calculated as the sum of annual raw steel tonnages from the two basic oxygen furnace) BOF shops and the one electric arc furnace (EAF) shop at Inland Steel and Ispat-Inland, and the single BOF shop at LTV Steel.

1997 Production	9,816,000 tons 98.2 % of 2010 Nominal Capacity
1998 Production	9,282,000 tons 92.8 % of 2010 Nominal Capacity
2010 Nominal Capacity	10,000,000 tons (estimated)

Raw steel production during each year was in the immediate range of the current nominal steel capacity at Indiana Harbor. Furthermore, the following thermal load sources that were operating at Inland Steel or Ispat-Inland in 1997 and 1998 are no longer operating:

- No. 4 AC Power Station (Outfall 018)
- No. 2A Blooming Mill/21" Bar Mill (Outfall 014)
- Plant 1 Galvanizing Line (Outfall 014)

Thus, today's thermal loading at comparable steel production rates are expected to be less than observed in 1997 and 1998. Consequently, thermal discharges and impacts on ambient water temperatures in the Indiana Harbor Ship Canal and Indiana Harbor at future high production rates are expected to be less than those observed in 1997 and 1998.

EXHIBIT A (page 1 of 4)

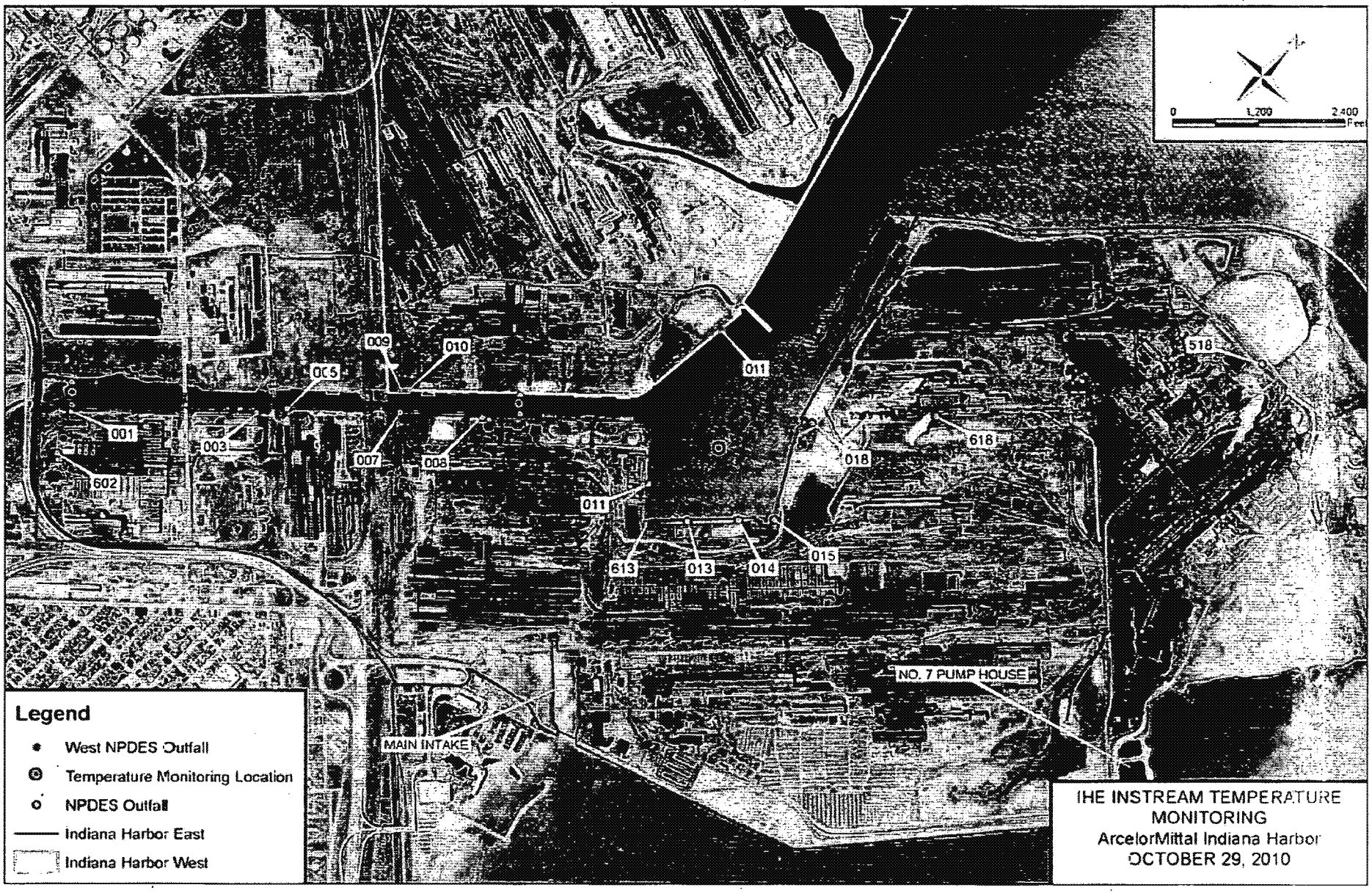


EXHIBIT A (page 2 of 4)

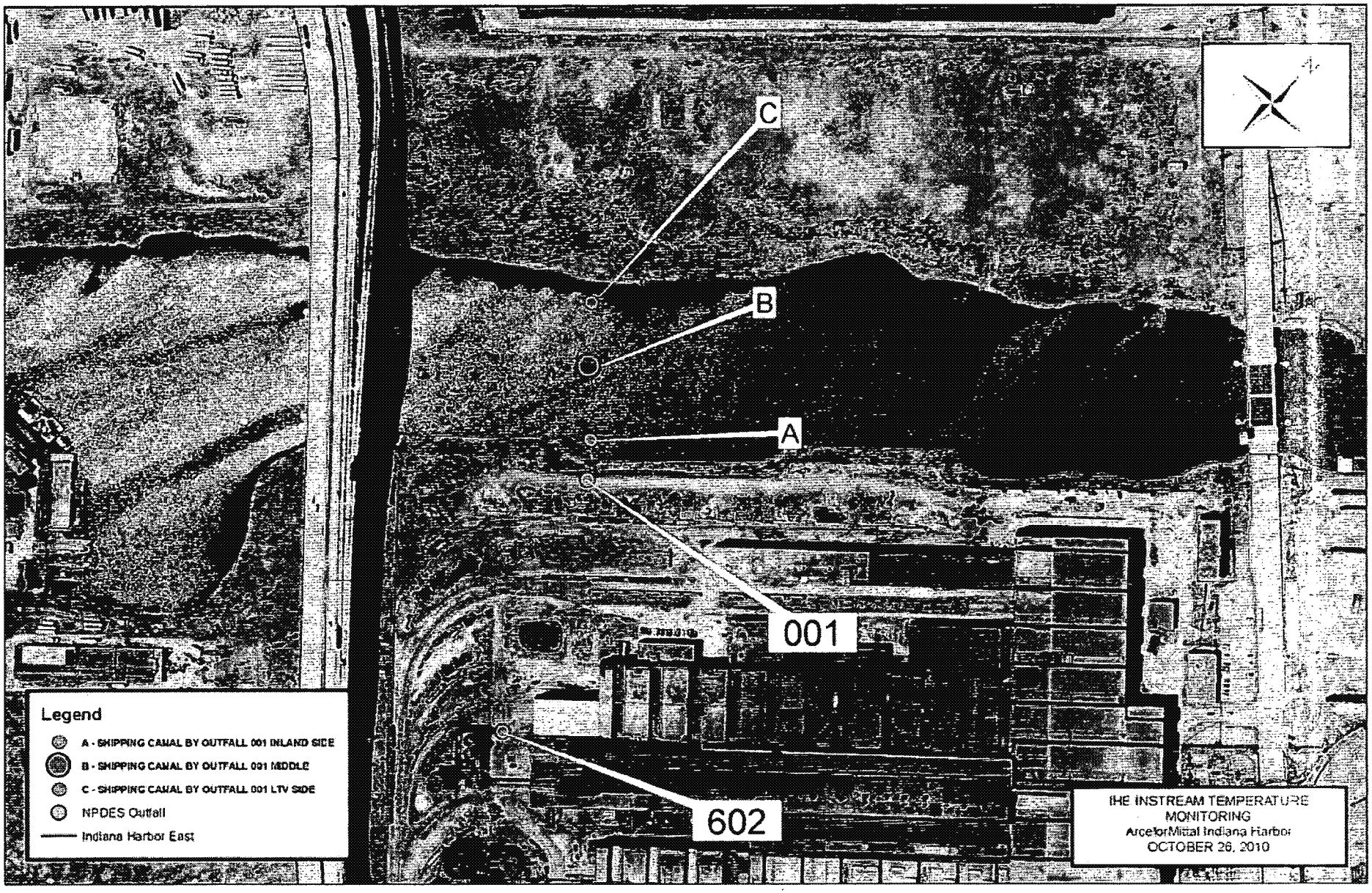


EXHIBIT A (page 3 of 4)

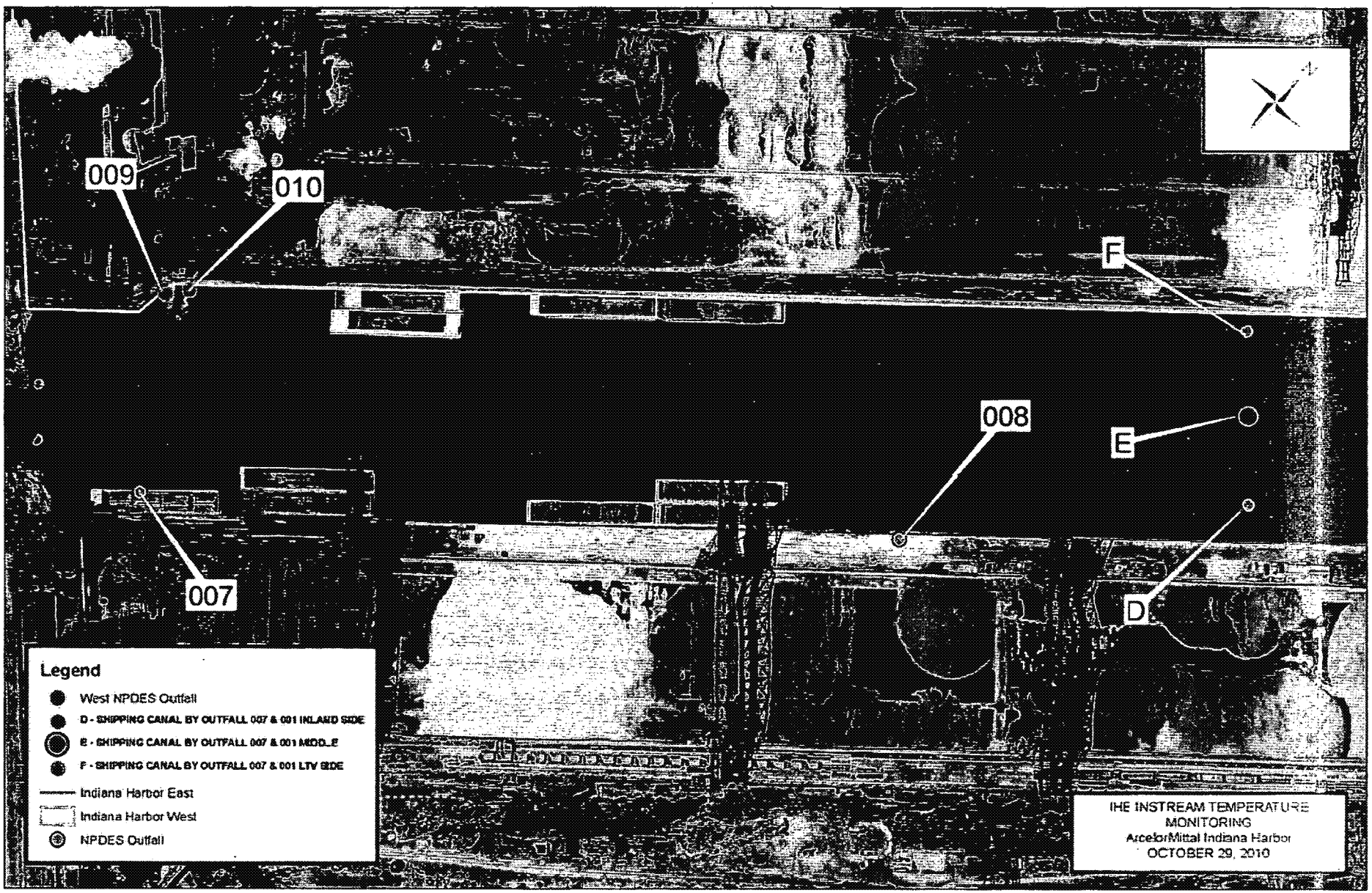


EXHIBIT A (page 4 of 4)

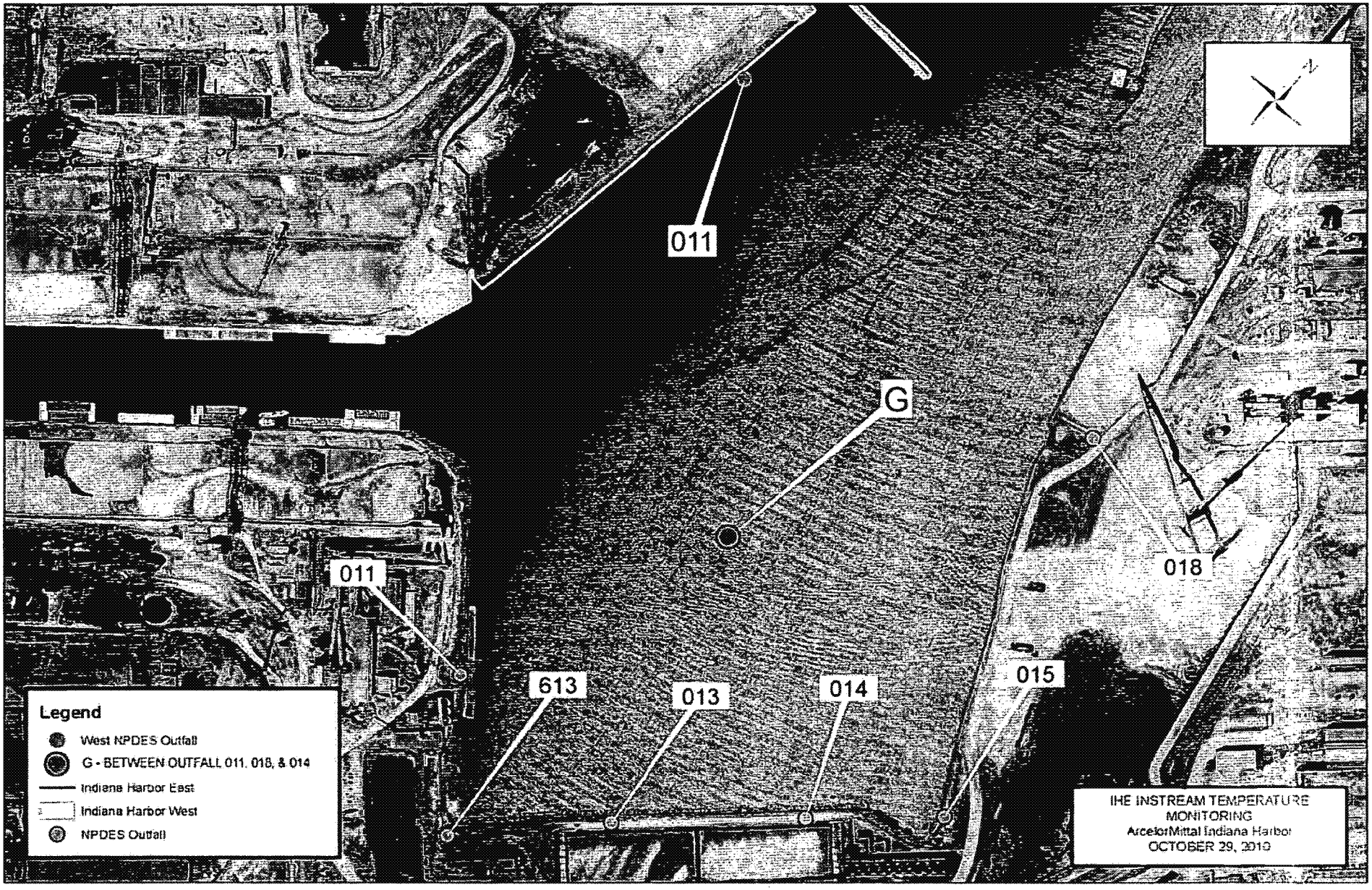


EXHIBIT B

Instream Temperature Monitoring Study

11/15/2010

Indiana Harbor and Indiana Harbor Ship Canal

Data Collected in 1997 and 1998 (all temperatures in deg F)

	ONE FOOT BELOW SURFACE			MID-DEPTH			ONE FOOT FROM BOTTOM			MAXIMUM	Indiana
Date	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	of Recorded Temperatures	Water Quality Standard (Lake Michigan)
04/29/97 (center)	64	55	57	63	53	51	63	52	50	64	70
05/21/97 (center)	67	67	65	66	63	63	65	65	55	67	90
06/04/97 (center)	71	67	68	70	61	66	64	55	58	71	90
06/11/97 (center)	73	71	70	72	60	58	72	59	58	73	90
06/16/97 (center)	74	71	70	73	67	64	73	62	62	74	90
06/27/97 (center)	79	75	75	78	65	63	77	63	62	79	90
07/03/97 (center)	77	70	70	75	61	64	73	59	60	77	90
07/07/97 (center)	76	75	74	74	69	62	70	62	62	76	90
07/16/97 (center)	82	77	75	80	70	68	73	66	66	82	90
07/24/97 (center)	82	82	81	81	74	72	80	70	70	82	90
08/01/97 (center)	84	80	81	83	76	75	82	73	73	84	90
08/04/97 (center)	84	82	82	82	80	78	81	72	72	84	90
08/14/97 (center)	80	79	77	80	76	74	80	73	72	80	90
08/21/97 (center)	79	78	77	79	76	78	78	72	72	79	90
08/26/97 (center)	81	77	79	80	75	77	80	70	71	81	90
09/03/97 (center)	78	80	78	78	78	77	77	73	73	80	90
09/13/97 (center)	78	76	75	78	71	71	77	69	69	78	90
09/18/97 (center)	79	76	76	79	72	74	79	71	70	79	90
09/25/97 (center)	76	73	74	75	73	73	75	68	68	76	90
10/01/97 (center)	72	74	74	72	71	70	72	67	66	74	78
10/23/97 (center)	63	63	62	63	59	60	63	58	57	63	78
11/25/97 (center)	58	53	50	58	50	46	57	44	43	58	70

EXHIBIT B

Instream Temperature Monitoring Study
Indiana Harbor and Indiana Harbor Ship Canal
Data Collected in 1997 and 1998 (all temperatures in deg F)

11/12/2010

Date		ONE FOOT BELOW SURFACE			MID-DEPTH			ONE FOOT FROM BOTTOM			MAXIMUM	Indiana Water Quality Standard
		Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	of Recorded Temperatures	(Lake Michigan)
04/24/98	(center)	65	51	60	61	58	56	61	55	52	65	70
05/14/98	(center)	73	66	67	71	60	61	70	55	55	73	80
06/16/98	(center)	75	70	74	74	69	66	72	67	65	75	90
06/03/98	(center)	74	73	71	73	68	69	73	66	66	74	90
06/10/98	(center)	72	70	71	70	67	66	69	63	63	72	90
06/23/98	(center)	79	75	77	78	70	71	76	66	67	79	90
07/07/98	(center)	81	79	81	81	74	78	80	71	72	81	90
07/17/98	(center)	85	84	85	83	78	77	82	73	75	85	90
07/23/98	(center)	83	84	83	83	78	77	82	74	75	84	90
08/07/98	(center)	81	79	77	81	76	74	80	73	70	81	90
08/04/98	(center)	83	82	81	83	78	78	82	75	75	83	90
08/14/98	(center)	84	81	81	82	76	76	82	72	72	84	90
08/20/98	(center)	83	79	82	82	78	76	82	75	75	83	90
08/28/98	(center)	84	80	81	84	76	75	84	73	73	84	90
09/04/98	(center)	82	81	81	82	78	77	81	75	74	82	90
09/10/98	(center)	80	76	77	80	79	74	79	72	72	80	90
09/17/98	(center)	82	80	80	81	77	75	81	72	72	82	90
09/23/98	(center)	79	78	78	74	73	74	78	70	70	79	90
09/30/98	(center)	76	75	76	76	70	71	75	67	67	76	90
10/26/98	(center)	69	66	64	69	60	61	68	57	55	69	78
10/26/98	(east bank)	69	66		69	60		68	57			78
10/26/98	(west bank)	68	66		69	61		68	56			78
11/24/98	(center)	58	57	56	58	54	53	57	51	51	58	70
11/24/98	(east bank)	58	58		58	55		57	52			70
11/24/98	(west bank)	58	56		57	54		57	51			70

EXHIBIT C

ArcelorMittal Indiana Harbor West
Instream Temperature Monitoring Study
Monthly Average Air Temperature Statistics at Ogden Dunes, IN
1970 to 2009

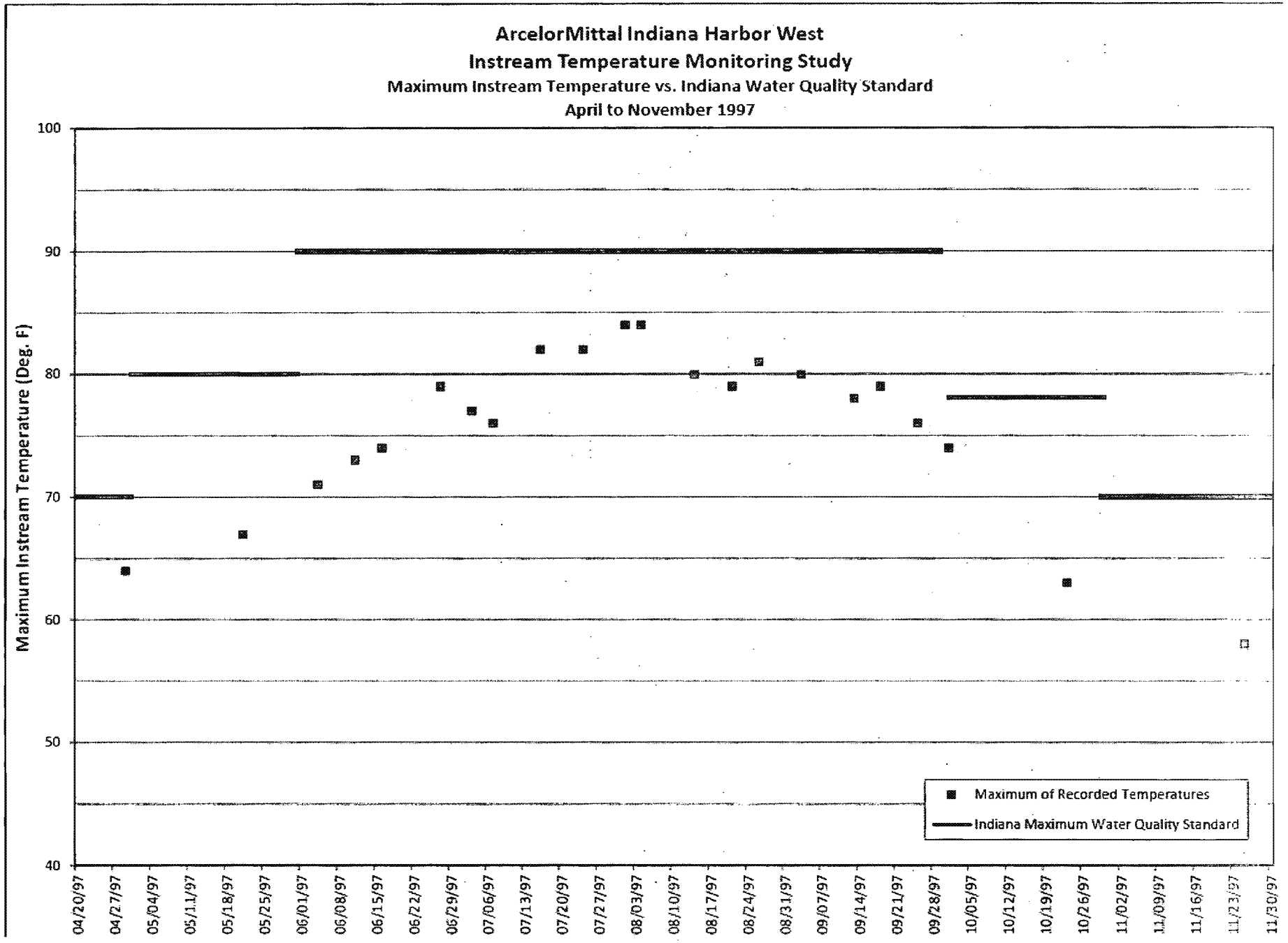
Amendola Engineering, Inc.
11/16/2010

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Temperature Study	1997	43.4	51.6	54.4	58.3	62.9	72.6	74.2	71.8	70.3	62.6	54.9	50.3
Temperature Study	1998	49.4	56.1	54.6	62.0	68.7	73.3	74.3	74.5	73.2	64.1	59.1	53.0
AVG Monthly Average Temperature		46.0	50.1	53.7	61.2	64.7	71.2	72.4	72.7	70.3	61.6	56.5	48.9
MAX Monthly Average Temperature		52.8	56.1	58.4	64.9	71.3	76.3	77.1	76.9	74.1	68.2	61.4	54.5

Temperature Data Sources

1970-1989 - Station No. 12654299999

1990-2009 - Station No. 12424499999



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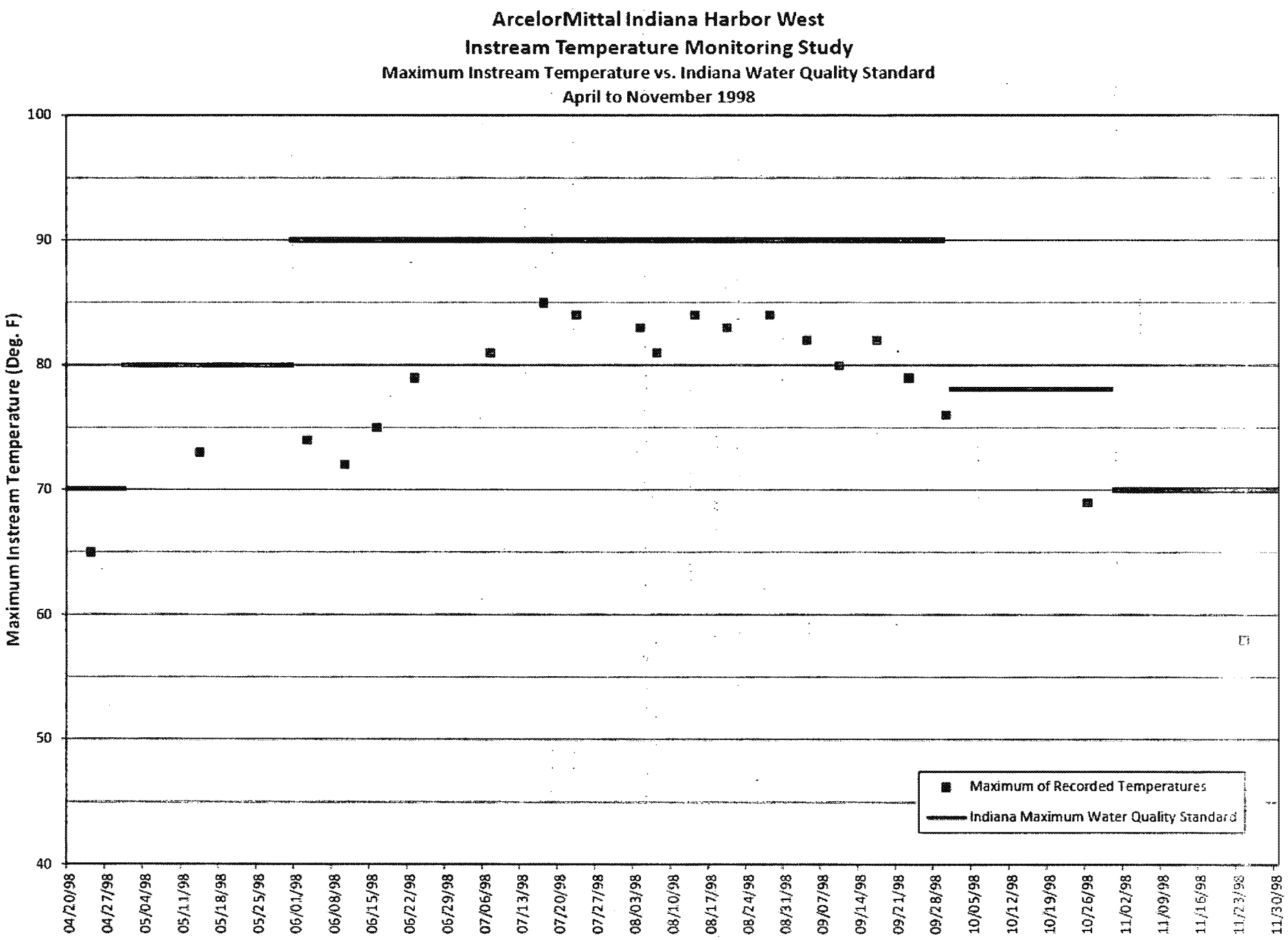

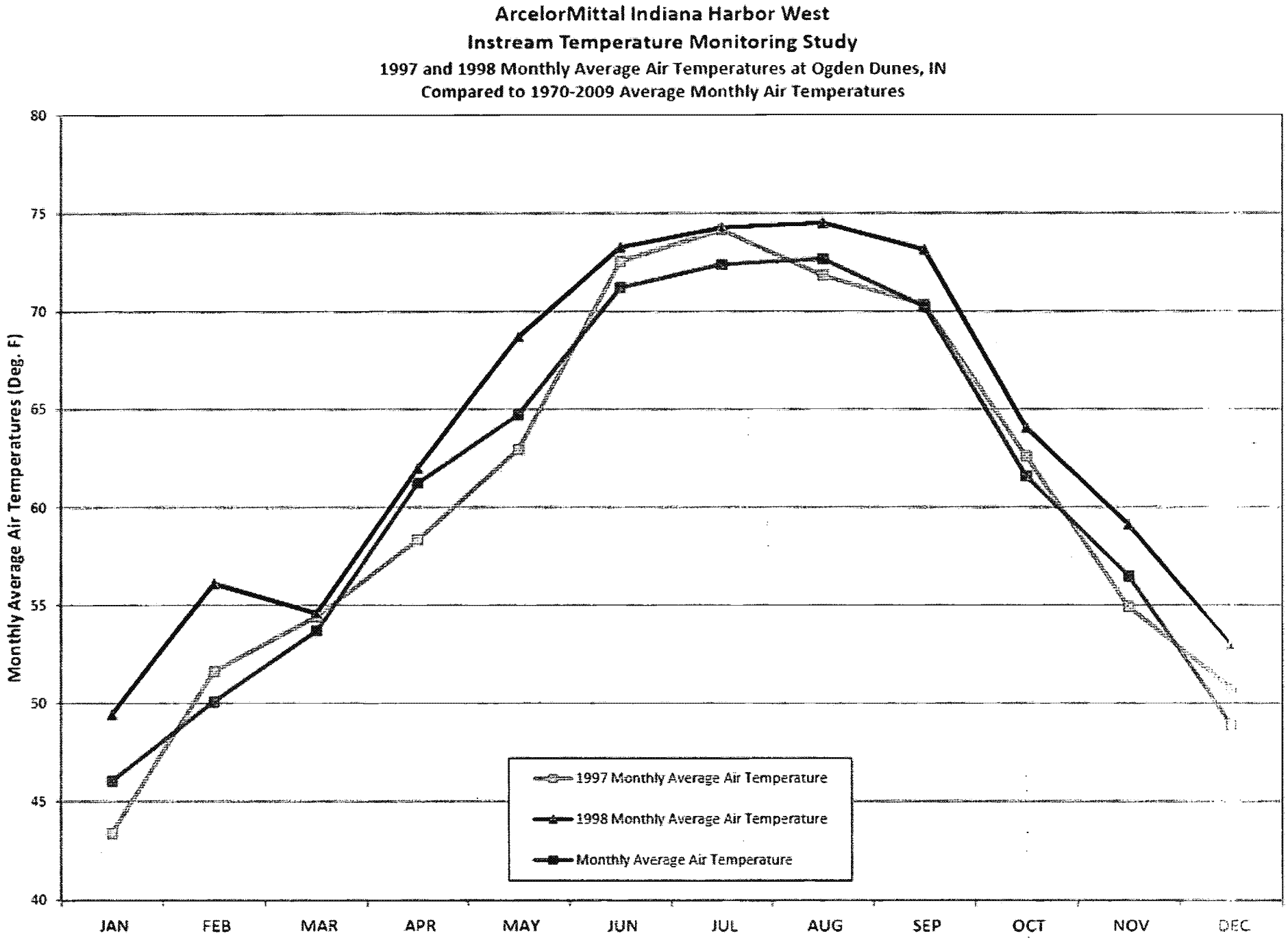
ArcelorMittal Indiana Harbor West
Instream Temperature Monitoring Study
1997 and 1998 Monthly Average Air Temperatures at Ogden Dunes, IN
Compared to 1970-2009 Average Monthly Air Temperatures
Monthly Average Air Temperatures (Deg. F)
80
75
70
65
60
55
50
45
40
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1997 Monthly Average Air Temperature
1998 Monthly Average Air Temperature
Monthly Average Air Temperature

IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArcelorMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
1/23/1990			0.007
2/27/1990			0.008
3/27/1990			< 0.005
4/24/1990			< 0.005
6/5/1990			< 0.005
8/7/1990			< 0.005
9/18/1990			< 0.005
10/2/1990			< 0.005
11/27/1990			< 0.005
1/16/1991			0.006
2/12/1991			0.009
4/17/1991			0.007
5/22/1991			< 0.005
7/24/1991			< 0.005
8/14/1991			< 0.005
10/22/1991			< 0.005
11/20/1991			< 0.005
2/25/1992			0.007
3/25/1992			< 0.005
4/21/1992			< 0.005
5/19/1992			< 0.005
6/23/1992			< 0.005
9/22/1992			< 0.005
10/20/1992			< 0.005
11/17/1992			< 0.005
3/16/1993			< 0.005
4/26/1993			0.006
5/11/1993			< 0.005
8/2/1993			< 0.005
9/8/1993			0.011
9/29/1993			0.006
10/27/1993			< 0.005
11/16/1993			< 0.005
12/28/1993			0.01
2/1/1994			0.007
3/2/1994			< 0.005
3/15/1994			< 0.005
4/26/1994			< 0.005
6/1/1994			
8/1/1994			0.009
8/31/1994			0.006
10/3/1994			< 0.005
11/9/1994			0.008
1/18/1995			0.012
3/7/1995			0.005
4/27/1995			< 0.005

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
1/23/1990			< 0.005
2/27/1990			0.008
3/27/1990			< 0.005
4/24/1990			0.005
5/15/1990			0.007
6/5/1990			0.008
4/26/1993			< 0.005
5/11/1993			< 0.005
8/2/1993			< 0.005
9/8/1993			< 0.005
9/29/1993			0.006
10/27/1993			0.007
11/17/1993			< 0.005
12/23/1993			0.006
2/1/1994			< 0.005
3/2/1994			0.005
3/15/1994			0.006
4/26/1994			0.005
6/1/1994			
8/1/1994			0.005
8/31/1994			< 0.005
10/3/1994			< 0.005
11/9/1994			0.006
1/17/1995			0.01
3/7/1995			< 0.005
4/26/1995			< 0.005
5/18/1995			< 0.005
6/15/1995			0.007
7/26/1995			0.007
8/29/1995			< 0.005
9/26/1995			< 0.005
10/24/1995			< 0.005
11/14/1995			0.005
12/20/1995			< 0.005
1/22/1996			0.006
2/27/1996			< 0.005
3/25/1996			0.005
4/23/1996			0.008
5/21/1996			0.006
6/18/1996			0.009
7/16/1996			0.006
8/20/1996			0.007
9/17/1996			< 0.005
10/22/1996			0.006
11/12/1996			0.007
12/10/1996			0.009

IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArcelorMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
5/19/1995			< 0.005
6/15/1995			< 0.005
7/26/1995			< 0.005
8/29/1995			< 0.005
9/26/1995			< 0.005
10/24/1995			< 0.005
11/14/1995			0.006
12/20/1995			< 0.005
1/22/1996			0.008
2/27/1996			0.007
3/25/1996			0.005
4/23/1996			< 0.005
5/21/1996			0.006
6/18/1996			0.008
7/16/1996			0.006
8/20/1996			< 0.005
9/17/1996			0.029
10/22/1996			0.005
11/12/1996			0.006
12/10/1996			< 0.005
2/4/1997			0.006
2/25/1997			0.007
4/1/1997			< 0.005
4/29/1997			< 0.005
5/27/1997			< 0.005
6/17/1997			0.005
7/22/1997			< 0.005
8/19/1997			< 0.005
9/23/1997			< 0.005
10/20/1997			< 0.005
11/17/1997			< 0.005
12/8/1997			< 0.005
2/3/1998			< 0.005
3/3/1998	0.005		0.006
3/31/1998			< 0.005
4/27/1998			< 0.005
6/2/1998			< 0.005
6/29/1998			< 0.005
7/27/1998			< 0.005
8/31/1998			< 0.005
9/28/1998			< 0.005
10/26/1998			< 0.005
11/16/1998			< 0.005
12/14/1998			< 0.005
1/25/1999	0.005		0.009
2/22/1999			< 0.005

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
2/4/1997			0.009
2/25/1997			0.013
4/1/1997			0.01
4/29/1997			0.008
5/27/1997			< 0.005
6/17/1997			0.005
7/22/1997			< 0.005
8/19/1997			< 0.005
9/23/1997			< 0.005
10/20/1997			0.005
11/17/1997			0.006
12/8/1997			0.006
2/3/1998	0.005		0.007
3/3/1998	0.005		0.005
3/31/1998	0.005		0.005
4/27/1998			< 0.005
6/2/1998			< 0.005
6/29/1998			< 0.005
7/27/1998			< 0.005
8/31/1998			< 0.005
9/28/1998	0.005		0.005
10/26/1998			0.01
11/16/1998			< 0.005
12/14/1998			< 0.005
1/25/1999	0.005		0.006
2/22/1999	0.005		0.007
3/23/1999			< 0.005
4/28/1999	0.007		0.007
5/25/1999			< 0.005
6/22/1999			< 0.005
7/27/1999	0.005	< 0.005	0.005
8/25/1999		< 0.005	< 0.005
9/28/1999	< 0.005	< 0.005	0.006
10/27/1999		< 0.005	< 0.005
11/23/1999	0.005	< 0.005	0.005
12/14/1999	0.005	< 0.005	0.005
1/31/2000		< 0.005	< 0.005
2/28/2000		< 0.005	< 0.005
3/29/2000		< 0.005	< 0.005
4/26/2000		< 0.005	< 0.005
5/31/2000		< 0.005	< 0.005
6/27/2000		< 0.005	< 0.005
7/25/2000			< 0.005
8/30/2000			< 0.005
9/27/2000			< 0.005
10/30/2000			< 0.005

IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArceforMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
3/23/1999			< 0.005
4/28/1999			< 0.005
5/25/1999			< 0.005
6/22/1999			< 0.005
7/28/1999		< 0.005	< 0.005
8/25/1999		< 0.005	< 0.005
9/28/1999	0.006	< 0.005	0.006
10/27/1999		< 0.005	< 0.005
11/23/1999		< 0.005	< 0.005
12/29/1999	0.005	< 0.005	0.007
1/31/2000	0.005	0.014	0.017
2/28/2000	0.005	0.015	0.021
3/29/2000	0.011	0.006	0.011
4/27/2000	0.45	0.545	0.521
5/31/2000	0.005	0.005	0.008
6/27/2000	0.005	< 0.005	0.007
7/25/2000			0.009
8/30/2000			0.014
9/27/2000			0.008
10/31/2000			0.008
11/28/2000			0.03
12/18/2000			0.005
1/30/2001		< 0.005	< 0.005
2/26/2001		< 0.005	
3/20/2001		< 0.005	< 0.005
4/18/2001		< 0.005 (QJ)	< 0.005
5/29/2001			< 0.005
6/25/2001			< 0.005
7/23/2001	0.005	< 0.005	0.005
8/22/2001			< 0.005 (QJ)
9/24/2001	0.017	0.014	0.034
10/16/2001	< 0.005	< 0.005	0.008
11/26/2001	0.007	0.032	0.079
12/17/2001	< 0.005	0.006	0.012
1/23/2002			< 0.005
2/25/2002			< 0.005
3/27/2002			< 0.005
4/22/2002			< 0.005
5/13/2002			< 0.005 (QJ)
6/24/2002			< 0.005
7/24/2002			< 0.005
9/23/2002			< 0.005
10/30/2002			< 0.005
11/20/2002			< 0.005
12/18/2002			< 0.005
1/15/2003			< 0.005

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
11/28/2000			0.008
12/18/2000			0.007
10/30/2000			< 0.005
1/30/2001	< 0.005	< 0.005	0.007
2/26/2001		< 0.005	
3/20/2001		< 0.005	< 0.005
4/18/2001		< 0.005 (QJ)	< 0.005
5/29/2001			< 0.005
6/25/2001			< 0.005
7/23/2001			< 0.005
8/22/2001			< 0.005 (QJ)
9/24/2001			< 0.005
10/16/2001			< 0.005
11/26/2001	0.005	< 0.005	0.005
12/17/2001	0.005	< 0.005	0.005
1/23/2002			< 0.005
2/25/2002			< 0.005
3/27/2002			< 0.005
4/22/2002			< 0.005
5/13/2002			< 0.005 (QJ)
6/24/2002			< 0.005
7/24/2002			< 0.005
8/26/2002			< 0.005
9/23/2002			< 0.005
10/30/2002			< 0.005
11/20/2002			< 0.005
12/18/2002	0.006	< 0.005	0.006
1/15/2003			< 0.005
2/19/2003			< 0.005
3/19/2003			< 0.005
4/23/2003			< 0.005
5/12/2003			< 0.005
6/11/2003			< 0.005
7/7/2003			< 0.005
8/11/2003			< 0.005
9/10/2003			< 0.005
10/22/2003			< 0.005
11/19/2003			< 0.005
12/17/2003	0.005 (UJ)	< 0.005	0.006
1/8/2004			< 0.005
2/18/2004			< 0.005
3/30/2004			
4/21/2004			< 0.005
5/26/2004			< 0.005
6/16/2004			< 0.005
7/19/2004			< 0.005

IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArcelorMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
2/19/2003			< 0.005
3/19/2003			< 0.005
4/23/2003			< 0.005
5/12/2003			< 0.005
6/11/2003			< 0.005
7/7/2003			< 0.005
8/11/2003			< 0.005
9/10/2003			< 0.005
10/22/2003			< 0.005
11/20/2003			< 0.005
12/17/2003			< 0.005
1/7/2004			< 0.005
2/19/2004			< 0.005
3/30/2004			
4/21/2004			< 0.005
5/26/2004			< 0.005
6/16/2004			< 0.005
7/19/2004			< 0.005
8/16/2004			< 0.005
9/21/2004			< 0.005
10/26/2004			< 0.005
11/30/2004			< 0.005
12/20/2004			< 0.005
1/12/2005			< 0.005
2/24/2005			< 0.005
3/21/2005			< 0.005
4/27/2005			< 0.005
5/24/2005			< 0.005
6/27/2005			< 0.005
7/28/2005			< 0.005
8/22/2005			< 0.005
9/26/2005			< 0.005
11/28/2005			< 0.005
12/14/2005			< 0.005
2/6/2006			< 0.005
3/15/2006			< 0.005
4/26/2006			< 0.005
5/22/2006			< 0.005
6/21/2006			< 0.005
7/10/2006			< 0.005
8/14/2006			< 0.005
9/26/2006			< 0.005
10/19/2006			< 0.005
11/28/2006			< 0.005
12/18/2006			< 0.005
1/22/2007			< 0.005

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
8/16/2004			< 0.005
9/20/2004			< 0.005
10/25/2004			< 0.005
11/29/2004			< 0.005
12/20/2004			< 0.005
1/12/2005	0.006	< 0.005	0.006
2/23/2005	0.005	< 0.005	0.005
3/21/2005			< 0.005
4/27/2005			< 0.005
6/27/2005			< 0.005
7/27/2005			< 0.005
8/22/2005			< 0.005
9/26/2005			< 0.005
10/26/2005			< 0.005
11/28/2005			< 0.005
12/14/2005			< 0.005
1/12/2006			< 0.005 (QJ)
2/6/2006			< 0.005
3/15/2006			< 0.005
4/26/2006			< 0.005
5/22/2006			< 0.005
6/21/2006			< 0.005
7/11/2006			< 0.005
8/14/2006			< 0.005
9/25/2006			< 0.005
10/18/2006			< 0.005
11/27/2006			< 0.005
12/18/2006	0.005	< 0.005	0.005
1/22/2007			< 0.005
2/19/2007			< 0.005
3/28/2007			< 0.005
4/25/2007			< 0.005
5/30/2007			< 0.005
6/20/2007			< 0.005
7/30/2007			< 0.005
8/27/2007	0.005	< 0.005	0.005
9/24/2007			< 0.005
10/29/2007			< 0.005
11/19/2007			< 0.005
12/17/2007			< 0.005
1/9/2008			< 0.005
2/20/2008			< 0.005
3/18/2008			< 0.005
4/21/2008			< 0.005
5/28/2008			< 0.005
6/10/2008			< 0.005

IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArcelorMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
2/19/2007			< 0.005
3/28/2007			< 0.005
4/26/2007			< 0.005
5/30/2007			< 0.005
6/21/2007			< 0.005
7/30/2007			< 0.005
8/27/2007			< 0.005
9/24/2007			< 0.005
10/29/2007			< 0.005
11/19/2007			< 0.005
12/17/2007			
1/9/2008			
2/20/2008			
3/18/2008			< 0.005
4/21/2008			
5/28/2008			
6/10/2008			
7/28/2008			
8/26/2008			
9/23/2008			
10/27/2008			
11/19/2008			
12/15/2008			
1/21/2009			
2/9/2009			
3/4/2009			
4/21/2009			
5/18/2009			
6/10/2009			
7/27/2009			
8/19/2009			
9/21/2009			
10/7/2009			
11/4/2009			
12/14/2009			
1/19/2010			
2/15/2010			

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
7/28/2008			< 0.005
8/26/2008			< 0.005
9/23/2008			< 0.005
10/27/2008			< 0.005
11/19/2008			< 0.005
12/15/2008			< 0.005
1/21/2009			< 0.005
2/9/2009			< 0.005
3/4/2009			< 0.005
4/21/2009			< 0.005
5/18/2009			< 0.005
6/10/2009			< 0.005
7/27/2009			< 0.005
8/19/2009			< 0.005
9/21/2009			< 0.005
10/7/2009			< 0.005
11/4/2009			< 0.005
12/14/2009			< 0.005
1/19/2010			< 0.005
2/15/2010			< 0.005

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WATER QUALITY

2011 JUL -1 A 11: 08

ArcelorMittal

June 28, 2011

Via Email & U.S. Mail

Mr. Stanley Rigney, Chief
Industrial NPDES Permits Section
Indiana Department of Environmental Management (IDEM)
Office of Water Quality, Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Dear Mr. Rigney:

Re: ArcelorMittal Indiana Harbor West, NPDES Permit No. IN0000205
ArcelorMittal Central Treatment Plant, NPDES Permit No. IN0063711
Preliminary Comments on Initial Draft NPDES permits

The following preliminary comments are provided by ArcelorMittal for ArcelorMittal Indiana Harbor LLC (the Indiana Harbor West facility) and for the Indiana Harbor Central Treatment Plant (the Central Treatment Plant) based upon our limited review of the preliminary draft renewal NPDES permits on June 7, and June 8, 2011. Thank you for the opportunity to provide these comments.

ARCELORMITTAL INDIANA HARBOR WEST – NPDES PERMIT NO. IN0000205

301(g) Variances for Ammonia and Total Phenols at Outfall 509: ArcelorMittal's request to continue Section 301(g) variances for ammonia-N and total phenols (4AAP) was submitted to IDEM on May 10, 2011. Per advice from IDEM, that updated request was prepared in the form required by EPA Region 5, where the U.S. EPA's Section 301(g) checklist was used. The proposed modified effluent limits (PMELs) for ammonia-N and total phenols summarized below are numerically the same as those contained in the current NPDES permit, but are proposed on a gross basis at new internal Outfall 509 rather than on a "net" basis under the current permit at Outfalls 009, 010 and 011. New internal Outfall 509 is the discharge from the upgraded blast furnace/sinter plant wastewater treatment and recycle system. The PMELs are also the same as those for new internal Outfall 509 set out in the Agreed Order for Case No. 2011-19777-W that was approved by IDEM on February 22, 2011.

Following is a summary of the generally applicable BPT and BAT effluent limits, the current permit Section 301(g) limits, and the PMELs requested by ArcelorMittal.

Lbs/day	Ammonia-N		Total Phenols	
	M. Average	D. Maximum	M. Average	D. Maximum
BAT	99	298	0.99	1.99
BPT	1,128	3,381	44	131
Current Sec. 301(g) limits (net)	600	1,450	NA	21
ArcelorMittal PMELs (gross)	600	1,450	NA	21

Ammonia-N

The PMELs requested by ArcelorMittal and approved by IDEM in the February 22, 2011 Agreed Order meet water quality standards in the Indiana Harbor Ship Canal and Indiana Harbor and should be approved.

From a TMDL perspective, there is more than ample capacity in the Indiana Harbor Ship Canal and Indiana Harbor to accommodate the PMELs for ammonia-N requested by ArcelorMittal for Indiana Harbor West (Outfall 509) and Indiana Harbor East (Outfall 613) and the technology-based effluent limits for the Indiana Harbor East No. 7 blast furnace (Outfall 518). See Attachment C to May 10, 2011 ArcelorMittal Section 301(g) request for Indiana Harbor West. 327 IAC 5-2-11.4(b)(3)(C) limits calculations of WQBELs to attain and maintain chronic water quality criteria to no more than 25% of the stream design flow, unless a mixing zone demonstration is completed.

Outfalls 009 and 010 discharge principally non-contact cooling water and storm water to the Indiana Harbor Ship Canal and are located close to one another. Aside from the discharge of treated process water from internal Outfall 509, the quality of the discharges from Outfalls 009 and 010 is essentially the same. ArcelorMittal requests that the sum of the preliminary monthly average WQBELs for ammonia-N for Outfalls 009 and 010 be considered in IDEM's assessment of the ArcelorMittal PMEL for monthly average ammonia-N at Outfall 509 as shown below using data provided by IDEM for the Indiana Harbor Ship Canal:

$Q_{7,10}$	400.8 cfs (259.1 mgd)
25% of $Q_{7,10}$	100.2 cfs (64.78 mgd)

	Summer	Winter
Upstream ammonia-N	0.14 mg/L	0.41 mg/L
Ammonia-N WQS		
Chronic	1.033 mg/L	1.022 mg/L
Acute	4.536 mg/L	4.484 mg/L
Allowable Loads (Monthly Average)		
Outfall 009	482.7 lbs/day	330.8 lbs/day
Outfall 010	482.7 lbs/day	330.8 lbs/day
Total	965.4 lbs/day	661.6 lbs/day

Because the monthly average Outfall 509 PMEL of 600 lbs/day is less than the above summer and winter PMELs for Outfalls 009 and 010 (calculated using a stringent water quality regulation that restricts calculations of preliminary WQBELs to 25% of the water quality design flow) and because there are no other downstream non-ArcelorMittal point source discharges of ammonia-N, this approach is reasonable and will ensure compliance with the chronic ambient water quality standards in the Indiana Harbor Ship Canal and Indiana Harbor.

There is more than ample assimilative capacity to accommodate ArcelorMittal's daily maximum PMEL of 1,450 lbs/day, so ArcelorMittal requests that the PMEL be approved as a daily maximum effluent limit.

Total Phenols

Considering background data for total phenols at Dickey Road that show essentially all non-detect results over a multi-year period, and considering the Indiana ambient water quality standards for the toxic pollutant "phenol" as a surrogate for a "total phenols" water quality standard, ArcelorMittal requests that the PMEL of 21 lbs/day be carried over to the renewal NPDES permit at Outfall 509.

Mercury Limits: ArcelorMittal requests a 54-month compliance schedule for the mercury effluent limits included in the initial draft NPDES permit for a number of outfalls. Please use the mercury compliance schedule language in ArcelorMittal Burns Harbor NPDES Permit No. IN0000175 as a guide. We believe the limited available intake and effluent data for these facilities are not sufficient to establish mercury WQBELs, or to determine whether these facilities are actual sources of mercury. The compliance schedule is needed to develop a more robust data set to establish whether intake and effluent concentrations are essentially the same, which appears to be the case. If one or more outfalls are determined to be sources of

mercury, then a 54-month compliance schedule will be necessary to evaluate potential options to address the source(s).

Outfall 012: Outfall 012, a new internal effluent point to be added to the permit, is the discharge from the North Lagoon that is routed to the No. 3 Pumphouse intake. It contains treated process water discharges from internal Outfalls 111 (84" hot strip mill) and 211 (No. 3 cold mill complex), non-contact cooling water and storm water. During January 2011, ArcelorMittal submitted a report of field studies conducted during November 2010 that demonstrated that virtually all of the water discharged from Outfall 012 is recycled to the plant when the 84" hot strip mill is not operating, and approximately 90% when the 84" hot strip mill is operating. The great majority, if not all, of the recycled water is returned to the 84" hot strip mill and the No. 3 cold mill complex. Water not recycled at the No. 3 intake likely flows down the intake channel and is recycled by the No. 2 Pumphouse intake to the mill service water system and would ultimately be discharged from Outfalls 009, 010 and 011, if not recycled and discharged from Outfall 012. Discharges from Outfall 009 and 010 are to the Indiana Harbor Ship Canal and discharges from Outfall 011 are to Indiana Harbor.

IDEM used a discharge flow of 70 mgd for its initial reasonable potential assessment for Outfall 012 and assumed the discharge was direct to Lake Michigan. Both of these assumptions are clearly wrong. At most, any reasonable potential assessment should be based on a flow of not more than 7 mgd because of the recycle noted above; and, any discharge should be considered to be to the Indiana Harbor Ship Canal (Outfalls 009, 010) or to the Indiana Harbor (Outfall 011). Even under a worst case assumption that water from Outfall 012 not recycled through the No. 3 or No. 2 intake was discharged to waters of the State, the discharge would be to Indiana Harbor, not to the open waters of Lake Michigan. 327 IAC 2-1.5-2(64) establish the open waters of Lake Michigan for the Indiana Harbor Ship Canal as the lakeward waters delineated by a line drawn across the mouth of the harbor from the East Breakwater Light (1995 United States Coast Guard Light List No. 19675) to the northernmost point of the LTV Steel (now ArcelorMittal) property along the west side of the harbor. Under this regulation, the No. 3 intake is clearly within Indiana Harbor and not the open waters of Lake Michigan.

In addition, for vanadium, one datum that is clearly an outlier should be discounted from the RPE considerations in accordance with IDEM water quality assessment policies. Table 3 of the ArcelorMittal Outfall 012 flow recycle study presents estimates of possible discharges to the IHSC and Indiana Harbor. Those estimates show that only minimal amounts of discharge are possible and that these, if occurring, would not impact water quality in the Indiana Harbor Ship Canal or Indiana Harbor to any appreciable extent.

Furthermore, because of the overall high recycle rates, ArcelorMittal requests that a 75% recycle rate credit be allowed for compliance determinations for internal Outfalls 111, 211 and 411. Given this credit, there should be no reasonable potential for the discharges from Outfalls 111 or 211 to cause or contribute to any exceedances of water quality standards in the Indiana

Harbor Ship Canal and Indiana Harbor, and no WQBELs should be proposed for Outfalls 111, 211 or 012.

ArcelorMittal would agree to periodically demonstrate recycle rates at Outfall 012 and the No. 3 water intake during the term of the renewal NPDES permit. For example, the study could be repeated once during the second year of the NPDES permit and once just prior to the next renewal permit application.

Outfall 211 Naphthalene and Tetrachloroethelyene: ArcelorMittal does not use tetrachloroethylene at Indiana Harbor West and naphthalene is not a principal component of process materials or process additives. As such, pursuant to 40 CFR §122.44(a)(2), ArcelorMittal will be requesting monitoring waivers that would allow the facility to forgo sampling for these pollutants provided that sampling and analysis indicates that the pollutants are not present in the discharge or are present only at background levels from intake water. It is planned to provide such data prior to issuance of the final NPDES permit.

No. 3 Steel Producing (SP) water treatment systems and associated Outfalls 701 & 702: In anticipation of the renewal NPDES permit for Indiana Harbor West, ArcelorMittal installed and recently put into operation new and upgraded process water treatment and recycle systems at the Steel Producing Department vacuum degasser (Outfall 701) and continuous slab caster (Outfall 702). An innovative feature of the design is the potential for zero discharge from one or both of these systems through evaporation in the gas cleaning systems for the basic oxygen furnaces (BOFs). ArcelorMittal's recent operating experience has been that zero discharge operations have been sustained on more or less a continuous basis. To date, there has only been one day of discharge from the continuous caster system (Outfall 702).

ArcelorMittal has requested that, for purposes of determining compliance with the monthly average technology-based effluent limits for Outfalls 701 and 702, ArcelorMittal be authorized to consider days of zero discharge as zero in calculation of the monthly average discharge (that is, days on which sampling is required under the permit). This is, in fact, a true representation of the monthly average discharge under such circumstances. There are other approaches that could be considered such as determining the total mass discharge of each pollutant on a monthly basis and comparing that number against the product of the monthly average limit and the number of days in the month. Imposing monthly average limits in this situation appears to penalize a discharger for taking the initiative to install a zero discharge treatment system, something that is beyond the requirements of the NPDES permit and effluent limitations guidelines regulations, and something that is clearly consistent with one of the primary goals of the Clean Water Act.

Notwithstanding, ArcelorMittal believes an appropriate alternative would be to include in the Indiana Harbor West renewal NPDES permit only the applicable daily maximum effluent limits at Outfalls 701 and 702. Given the operating experience to date, ArcelorMittal believes that

the frequency of discharges from Outfalls 701 and 702 will be low during any given month, and for the balance of the time there will be no discharges. Under this approach, effluent monitoring would be required on each day of discharge and compliance would be assessed on a daily basis against the daily maximum effluent limits.

Outfall 002 Chlorine footnote: Footnote 5 includes a typographical error referencing the LOD instead of the LOQ for being in compliance with the limits. Please make this correction.

Flow-Proportioned Sampling: With regard to the flow-proportioned sampling provisions included in the initial draft NPDES permit, it has come to our attention that the definitional language included in Part I,C.3d of the ArcelorMittal Burns Harbor permit (NPDES Permit No. IN0000175) is not consistent with sampling methods recommended under EPA's NPDES Compliance Sampling Manual. In order to address this issue, ArcelorMittal proposes that IDEM include the following alternative language instead (additional language from the existing permit language indicated by **bold** print): "A 24-hour composite sample consists of at least 3 individual flow-proportioned samples of wastewater, taken by the grab sample method or by an automatic sampler, which are taken at **either** approximately equally spaced time intervals **or at approximate time intervals between samples proportional to stream flow** for the duration of the discharge within a 24-hour period, and which are combined prior to analysis".

Further, with regard to the continuous flow monitoring and flow proportional monitoring requirements of the draft NPDES permit, ArcelorMittal requests a 12-month compliance schedule for Outfall 001 at Indiana Harbor West in order to allow sufficient time to obtain and install the necessary monitoring equipment.

Monitoring for Free Cyanide, Fluoride, and other constituents: ArcelorMittal requests that the monitoring requirements at the following outfalls be moved to the 'Special conditions' section of the permit.

- Outfall 002, Free Cyanide, Fluoride and Zinc
- Outfall 009, Free Cyanide, Fluoride, Zinc and Lead
- Outfall 010, Free Cyanide, ammonia, phenol, Zinc, Lead, and Fluoride
- Outfall 011, Free Cyanide, ammonia, phenol, Zinc, Lead, and Fluoride

Because these parameters are being measured solely for the purposes of gathering data for the next NPDES permit cycle, we request that sampling be limited to a weekly basis for one year during the fourth year of the permit. The analytical results would then be submitted with the next renewal NPDES permit application.

Addition of Antifreeze on a Seasonal Basis: The ArcelorMittal Long Carbon draft permit contains seasonal antifreeze in the description of the approved discharges. Likewise, ArcelorMittal

requests that IDEM include seasonal antifreeze in the description of the approved discharges for Outfalls 009, 010 and 011 at the Indiana Harbor West facility. This can be included either in the outfall descriptions or in a general provision in the permit.

Outfall 509: The ArcelorMittal Indiana Harbor West Agreed Order for Case No. 2011-19777-W provides that sampling for 2,3,7,8-TetraChloroDibenzo-Furan (TCDF) shall only occur when the Sinter Plant is operating (footnote 3). This same provision should be included in the Indiana Harbor West Permit. In addition, pursuant to 40 CFR §420.07, it is requested that the pH effluent limits and monitoring requirements for Internal Outfall 509 be removed, because pH will be monitored and limited at Outfall 009 prior to discharge to the Indiana Harbor Ship Canal. Finally, the units for 2,3,7,8-TCDF contained a typographical error and were in mg/L instead of pg/L.

Storm Water Pollution Prevention Plan, implementation requirements: ArcelorMittal requests an extension of the length of time required to meet the Storm Water Plan requirements from twelve months to eighteen months to account for the extensive work that will be required to develop a storm water pollution prevention plan for Indiana Harbor West

Whole Effluent Toxicity Testing Program: With respect to the 'Frequency and Duration' Section of Part I.G.1, section D of the Whole Effluent Toxicity requirements, the language in this section is confusing and contradictory.

Storm Water Non Numeric Conditions: There are several requirements in this section that are already referenced by the requirements of Indiana Harbor West's Title V permit. For example, Part I.D.5.(b) references good housekeeping, which is covered under the Facility's Fugitive Dust Plan. Additionally, Part I.D.10(c)(1) references regular inspections of air pollution control equipment as well as monitoring inlets and outlets of air flow ducts to check for particulate deposition. Because these requirements are already referenced in the Title V permit, ArcelorMittal Indiana Harbor West requests that IDEM remove these requirements from the NPDES permit.

Thermal Requirements: ArcelorMittal understands that IDEM is still working on the temperature/thermal provisions in the draft NPDES permit. With regard to the language currently in Part III, ArcelorMittal is not clear how a 24-hour average temperature limit can be reported for a grab sample. In addition, the thermal component of the discharge from the outfalls is not significant and will have limited impact on the ambient temperature of the Indiana Harbor Ship Canal in the vicinity of the Outfalls. Therefore, a monitor-only condition is the only potential requirement that should apply. If Indiana Harbor West will be required to do 24-hour temperature monitoring, a compliance schedule will be needed to allow for the installation of appropriate temperature monitoring equipment.

Cooling Water Intake Structures, Section 316(b): With respect to the 316(b) monitoring requirements contained in Part IV of the draft permit, ArcelorMittal requests language similar to that contained in Burns Harbor's NPDES permit IN0000175 (Part III.A. page 66).

Outfall 009, 010, and 011, Chlorine limits: Please include a footnote for these outfalls clarifying that monitoring for chlorine shall only occur during Zebra or Quagga mussel intake chlorination.

Outfall 012, Reduction in Mercury monitoring frequency: Part I.H.6 of the initial draft permit would allow a modification of the permit to reduce the mercury monitoring frequency at Outfall 012. ArcelorMittal requests that this same condition also be applicable for Outfalls 009, 010 and 011.

Mercury Footnote [6]: Please check the numbering for Outfalls 010, 011 and 012 to confirm if the mercury footnote should be number 5 or number 6.

Outfall 011: Please make the following changes:

- Remove "Oil Tec" and replace with "on-site oil processing facility".
- Use the term "basic oxygen furnace" instead of "oxygen furnace".
- Add caster non-contact cooling water to the narrative description.

Part III. PCB's: Although no known PCB transformers exist at Indiana Harbor, and PCBs are not used in the operations, new advances in monitoring and analysis can detect very low levels of PCBs that could in fact be present in the intake water data. Consequently, the phrase "... attributable to facility operations." needs to be added to the PCB discharge prohibition statement.

ARCELORMITTAL INDIANA HARBOR CENTRAL TREATMENT DRAFT NPDES PERMIT COMMENTS PERMIT NO. IN0063711

Water Quality Based Effluent Limits: Attachment A presents an assessment of alternate water quality-based effluent limits for Outfall 001 for lead and zinc using dissolved metals translators and requests monitoring waivers for cadmium, copper and silver.

Mercury Effluent Limits: See above comments for Indiana Harbor West.

Addition of Antifreeze on a Seasonal Basis: See above comments for Indiana Harbor West.

Outfall 101 pH Effluent Limits: Because pH will be monitored and limited at Outfall 001 we request that pH effluent limits and monitoring requirements at internal Outfall 101 be removed from the draft NPDES permit. See 40 CFR §420.07.

Monitoring Waivers for Naphthalene, TCE and TTO at Outfall 101: See comments for Indiana Harbor West.

Outfall 001S: Based upon the frequency of sampling at Outfall 001, we believe that rainfall events would be captured during our normal sampling events and thus request the removal of Outfall 001s from the draft NPDES permit.

Outfall 101 Increased Monitoring Frequency: We do not understand the rationale for increasing the sampling frequency at Internal Outfall 101 to twice a week, when the Indiana Harbor West outfalls have a sample frequency of once per week.

Outfall 001 Oil & Grease sampling: We request that the grab sample frequency listed in the draft permit should be reduced to two grabs per 24 hours to match the requirements in the Indiana Harbor East NPDES permit. Three grabs in twenty four hours is a burdensome requirement and would increase the cost of monitoring conducted by contractors for ArcelorMittal.

Thermal Requirements: See comments for Indiana Harbor West.

Storm Water Non Numeric Conditions: See comments for Indiana Harbor West.

Daily Maximum Reporting: We have not previously seen the daily maximum reporting requirement that dictates only exceedances of specific pollutants are to be reported within twenty-four hours. We believe this adds unnecessary complications to the reporting process and request that language similar to that in the Burns Harbor Permit be utilized.

Biomonitoring and WET Testing: The biomonitoring demonstration of toxicity requirements includes a typographical error of the word "sue" instead of 'use". Please make this correction.

General Conditions, New or Increased Discharges of Pollutants: Please add the word "deliberate" to the following sentence: "this permit prohibits the permitee from undertaking any *deliberate* action that would result in new or increased discharge of a bioaccumulative chemical of concern."

Part III, Intake Screen Wash: Because the associated intake structures for Central Treatment Plant are accounted for in the Indiana Harbor West permit, please ensure that reference is made to IN0000205 in both Cooling Water Intake Structures and in Intake Screen Wash sections.

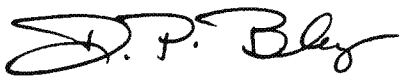
Part III. PCB's: Although we have no known PCB transformers at Indiana Harbor, and do not utilize PCBs in our operations, new advances in monitoring and analysis can detect very low levels of PCBs that could in fact be present in the intake water. Consequently, the phrase "... attributable to facility operations" needs to be added to the PCB discharge prohibition statement.

* * * * *

Given these extensive comments and those previously made for Indiana Harbor East and Indiana Harbor Long Carbon, we request the opportunity to review all comments with IDEM prior to the permits being public noticed. Please contact me at your earliest convenience to schedule a mutually agreeable date and time.

If there are any questions regarding these comments, please contact either Tom Barnett at (219) 399-2380 or me at (330) 659-9160. . Thank you, in advance, for your consideration of these comments.

Very truly yours,



Douglas Bley
Manager, Water Programs
ArcelorMittal USA LLC

Attachment
cc: Thomas Barnett
Simonne T. Benoit
Gary Amendola
Mark Amendola

Attachment A
ArcelorMittal Indiana Harbor Central Treatment Plant
Comments on Water Quality Based Effluent Limits

Dissolved Metals Translators: Lead and Zinc

Total and dissolved lead and zinc data collected by IDEM at Dickey Road should be used to calculate Dissolved Metals Translators, and those translators should be used in the development of WQBELs. Data collected from the IHSC at Dickey Road demonstrate that the majority of lead and zinc present is associated with particulate and is not in the dissolved form. Dissolved metals more accurately reflect the bioavailable fraction of the metal in the water column than the total metal form does. Consequently, use of site-specific dissolved metals translators are well suited for the Indiana Harbor Ship Canal (IHSC). Per USEPA guidance, dissolved metals translators for lead and zinc can be calculated as the dissolved to total fraction of the metal. Following USEPA guidance, translators for lead and zinc are calculated as follows using data collected by IDEM at Dickey Road.

Dissolved Metals Translators Calculated from Dickey Road Data (2004 to 2007)		
	Lead	Zinc
No. of Data Points	38	37
Geometric Mean of Dissolved Fractions	0.23	0.37
95th Percentile of Dissolved Fractions	0.42	0.57

Use of these translators significantly impacts calculation of water quality based effluent limits. The table below summarizes the Outfall 001 water quality based limits contained in the draft permit, the water quality based limits using the Dissolved Metals Translators (DMTs), and the technology-based limits at Outfall 101. The limits in the table below are based upon using the 95th percentile of the Dickey Road lead and zinc dissolved fractions, which is highly conservative.

Pollutant	**Outfall 001 Draft Permit WQBELs (lbs/day)**		**Outfall 001 Draft Permit WQBELs using Dickey Road DMTs (lbs/day)**		**Outfall 101 Technology-Based Limits (lbs/day)**	
	Monthly Avg.	**Daily Max**	**Monthly Avg.**	**Daily Max**	**Monthly Avg.**	**Daily Max**
Lead	5.0	9.8	9.2	19.0	7.24	13.1
Zinc	11	22	19.5	39.6	22.7	41.6

Based upon this information, ArcelorMittal requests that the renewal permit contain the following effluent limits for Outfalls 001 and 101 for lead and zinc.

Pollutant	Requested Outfall 001 Limits (lbs/day)		Requested Outfall 101 Limits (lbs/day)	
	Monthly Avg.	**Daily Max**	**Monthly Avg.**	**Daily Max**
Lead	Report only	Report Only	7.24	13.1
Zinc	19.5	39.6	Report only	Report only

In conjunction with limits requested above, ArcelorMittal requests that the Dickey Road data be used to 're-establish' background water quality at the appropriate location in IDEM's multidischarger wasteload allocation model.

Monitoring Waivers: Cadmium, Silver and Copper

In accordance with 40 CFR 122.44(a)(2), ArcelorMittal requests monitoring waivers for cadmium and silver at Outfalls 001 and 101. Under 40 CFR 122.44(a)(2), a monitoring waiver may be granted for any guideline-listed pollutant if the discharger demonstrates through sampling and other technical factors 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.

For cadmium, all 238 monitoring results for Outfall 001 and all 132 monitoring results for Outfall 101 considered by IDEM in the NPDES permit renewal process were reported as " < 1 ug/l". Cadmium is not used in the process operations tributary to Outfalls 101 and 001. Therefore, the requirements of 40 CFR 122.44(a)(2) have been satisfied, and the waiver should be granted accordingly.

For silver, the Form 2C monitoring data collected for the NPDES permit renewal application at Outfalls 001 and 101 were "< 1.1 ug/l" and "< 1.3 ug/l", respectively. Silver is not used in the process operations tributary to Outfalls 101 and 001. Therefore, the requirements of 40 CFR 122.44(a)(2) have been satisfied, and the waiver should be granted accordingly.

For copper, ArcelorMittal requests a 54-month compliance schedule, similar to the compliance schedule contained in the Burns Harbor NPDES permit No. IN0000175, prior to any water quality based effluent limits becoming effective. Copper was detected at Outfalls 101 and 001 during the Form 2C NPDES permit renewal sampling. We cannot determine at this time if the concentration in the Outfall 101 and 001 effluent is present only at background levels. Consequently, AcerlorMittal plans to collect additional copper data at Outfalls 101 and 001 and the intake in order to compare effluent and intake concentrations. If no substantial difference between intake and effluent concentrations are found, ArcelorMittal will submit a permit modification request to remove the monitoring requirement for copper at Outfalls 101 and 001.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 9 2011

REPLY TO THE ATTENTION OF:
WN-16J

Bruno Pigott, Assistant Commissioner
Office of Water Quality
Indiana Department of Environmental Management
100 North Senate Avenue
Indianapolis, Indiana 46204

Re: ArcelorMittal – Central Wastewater Treatment Plant
East Chicago, Indiana
NPDES Permit No: IN0063711

Dear Mr. Pigott:

The U.S. Environmental Protection Agency has reviewed the draft National Pollutant Discharge Elimination System (NPDES) permit and fact sheet for the ArcelorMittal – Central Wastewater Treatment Plant. The draft permit has been discussed with your staff and we have not identified any issues that would cause the Agency to object to issuance of the permit as drafted. Should meaningful changes occur after the public comment period, the U.S. Environmental Protection Agency reserves the right to object to the proposed permit.

Indiana DEM must resubmit the draft permit to EPA for review if:

a. Prior to the actual date of issuance, an effluent guideline or standard is promulgated which is applicable to the permit and would require revision or modification of a limitation or condition found in the draft permit.

b. A variance is granted and permit conditions are modified to incorporate the variance.

c. There are additional revisions to be incorporated into the final permit which have not been reviewed by this Agency.

When the final permit is issued, please forward one copy and significant comments received during the public comment period to this office at the above address, attention NPDES Programs Branch.

Sincerely,

Kevin M. Pierard, Chief,
NPDES Programs Branch

cc: Richard Hamblin, IDEM

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ArcelorMittal USA LLC
ArcelorMittal Indiana Harbor LLC

September 29, 2011

Via Overnight Mail

Stan Rigney
IDEM, Office of Water Quality
MC 65-42 IGCN 1255
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Nicole Gardner
IDEM, Office of Water Quality
MC 65-42 IGCN 1255
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Richard Hamblin
IDEM, Office of Water Quality
MC 65-42 IGCN 1255
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Re: Comments of ArcelorMittal USA LLC and ArcelorMittal Indiana Harbor LLC Regarding the Following Draft NPDES Permits:

ArcelorMittal USA LLC
(Indiana Harbor East)
3210 Watling Street
East Chicago, Indiana 46312
NPDES Permit Number: IN0000094

ArcelorMittal Indiana Harbor LLC
(Indiana Harbor West)
3001 Dickey Road
East Chicago, Indiana 46312
NPDES Permit Number: IN0000205

ArcelorMittal USA LLC
(Indiana Harbor Long Carbon)
3300 Dickey Road
East Chicago, Indiana 46312
NPDES Permit Number: IN0063355

ArcelorMittal Indiana Harbor LLC
(Central Wastewater Treatment Plant)
3001 Dickey Road
East Chicago, Indiana 46312
New NPDES Permit Number: IN0063711

Dear Mr. Rigney, Ms. Gardner and Mr. Hamblin:

On August 15, 2011, the Indiana Department of Environmental Management ("IDEM") issued Public Notice Number 2011-8F-RD/PH that simultaneously public noticed the proposed renewal and issuance of the four draft NPDES permits identified above. The Public Notice included a forty-five (45) day comment period and provided a deadline of September 30, 2011 for the submission and receipt of comments for all four permits. The enclosed comments are timely submitted by and on behalf of ArcelorMittal USA LLC and ArcelorMittal Indiana Harbor LLC (collectively herein referred to as "ArcelorMittal") for all four draft NPDES permits and for the four ArcelorMittal facilities identified above.

ArcelorMittal appreciates the opportunity to provide comments on these draft permits and for the ongoing dialogue with IDEM during this draft permit process. The enclosed comments are divided

into sections that include: (1) common comments on issues applicable to two or more of the four draft permits; and (2) comments on issues that are applicable to a specific NPDES permit or ArcelorMittal facility.[1] These comments track the organization of the draft permits and are intended to provide a roadmap for future discussions between ArcelorMittal and IDEM. Please note that we submit these comments subject to ArcelorMittal's ongoing review and analysis of the proposed terms and conditions of the draft permits in light of our actual operations. For ease of reference and convenience, ArcelorMittal has enclosed a hard copy of all the comments submitted, along with a disc of the comments submitted in Word format.

As I noted during the public hearing on September 15, 2011, ArcelorMittal recognizes the substantial time and effort involved by IDEM in drafting the four NPDES permits. ArcelorMittal looks forward to further working with IDEM on issues regarding these permits and sincerely appreciates IDEM's consideration of the enclosed comments.

Sincerely,

Kevin Doyle TRR

Kevin Doyle
Environmental Manager

Enclosure
cc: Christina L. Archer, Esq., ArcelorMittal USA LLC
Thomas R. Barnett, ArcelorMittal USA LLC
Simonne T. Benoit, ArcelorMittal USA LLC
Douglas P. Bley, ArcelorMittal USA LLC
Benjamin R. Huckins, ArcelorMittal USA LLC
Gary A. Amendola, Amendola Engineering, Inc.

[1] ArcelorMittal has been involved in communications and ongoing dialogue with IDEM during the draft permit process. Accordingly, ArcelorMittal expressly incorporates by reference in the enclosed comments all other prior correspondence, email communications and other comments that ArcelorMittal previously submitted to IDEM regarding these permits. This includes, but is not limited to letters ArcelorMittal submitted to IDEM dated June 6, 2011, June 28, 2011, August 4, 2011, and other email communications as well.

ArcelorMittal

Comments of ArcelorMittal USA LLC and ArcelorMittal Indiana Harbor LLC Regarding the Following Draft NPDES Permits

ArcelorMittal USA LLC

Indiana Harbor East
NPDES Permit No. IN0000094

Indiana Harbor Long Carbon
NPDES Permit No. IN0063355

ArcelorMittal Indiana Harbor LLC

Indiana Harbor West
NPDES Permit No. IN0000205

Indiana Harbor Central Treatment Plant
NPDES Permit No. IN0063711

September 29, 2011

Prepared for:

ArcelorMittal

ArcelorMittal USA LLC
ArcelorMittal Indiana Harbor LLC
Indiana Harbor, IN

Prepared by:

AMENDOLA ENGINEERING INC.

Amendola Engineering, Inc.
Lakewood, OH

ArcelorMittal Common Comments on Draft NPDES Permits

Comments Common on Draft NPDES Permits for Two or More of the Following Facilities

Legal Name	Common Name	Abbreviation	NPDES Permit No.
ArcelorMittal USA LLC	Indiana Harbor East	IH East	IN0000094
ArcelorMittal Indiana Harbor LLC	Indiana Harbor West	IH West	IN0000205
ArcelorMittal USA LLC	Indiana Harbor Long Carbon	IH LC	IN0063355
ArcelorMittal Indiana Harbor LLC	Indiana Harbor Central Treatment Plant	IH CTP	IN0063711

For purposes of these comments and in the interest of simplifying the comments, the above common names are used throughout.

Common Comments

1. Water Quality-Based Effluent Limits (WQBELs)
2. Compliance Schedules for New WQBELs
3. Monitoring Waivers for Naphthalene and Tetrachlorethylene
4. Section 316(b) Water Intake Monitoring Requirements
5. Temperature and Thermal Load Monitoring and Reporting
6. EPA Consent Decree and Other Requirements
7. Whole Effluent Toxicity (WET) Monitoring Frequency
8. SWPPP Baselines and Monitoring Requirements for Lead and Zinc
9. Freeze Protection
10. Monitoring Requirements for Free Cyanide, Fluoride and Selenium
11. Monitoring Frequency for Total Residual Chlorine (TRC)
12. Analytical Methods, Sample Types, Water Treatment Additives, Low Volume Waste
13. Compliance Schedules for Storm Water Pollution Prevention Plans
14. Changes in Discharges of Toxic Substances
15. Storm Water Non-Numeric Conditions
16. PCB Discharge Prohibition
17. Pollutant Minimization Programs

ArcelorMittal Common Comments on Draft NPDES Permits

1. WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)

ArcelorMittal understands that IDEM used the procedures at 327 IAC 5-2-11.4 and 11.6 to calculate Water Quality Based Effluent Limits for ArcelorMittal outfalls discharging to the Indiana Harbor Ship Canal (IHSC) and constructed a multi-discharger Waste Load Allocation model to ensure that water quality standards are maintained throughout the IHSC and as the IHSC meets Lake Michigan.

IDEM failed to use readily available, reliable site-specific data as part of the Waste Load Allocation model development and this can significantly impact calculation of the WQBELs. Specifically, IDEM failed to use background water-quality data at Dickey Road, and site-specific dissolved and total metals data for calculation of site-specific dissolved metals translators (DMTs). All of these data have historically been collected by IDEM and the failure to use current, scientifically sound site-specific data is unexplainable. Further discussion is presented below.

Background Water Quality

In its water quality assessment and development of WQBELs, IDEM determined background water quality using the cumulative allocated loadings from the upstream outfalls in the applicable study area. This is an overly conservative approach that ignores more than ten years of actual in-stream data. Those data reflect the cumulative and collective discharges of all dischargers upstream of Dickey Road. Actual in-stream data for the IHSC were developed by IDEM and are available for the IHC-2 monitoring station at Dickey Road. These data can be used to re-establish background water quality for the ArcelorMittal Indiana Harbor permits based on actual conditions. These data were summarized by ArcelorMittal and previously presented to IDEM.[1] Unexplainably, IDEM did not use these data to establish background water quality for the draft Indiana Harbor permits. Instead, IDEM used the cumulative allocated loadings upstream of this location to determine background water quality for the stream segment downstream of Dickey Road. This approach is impractical because it is not realistic to presume that all upstream dischargers would be discharging at or near their permitted mass loadings simultaneously. Using the actual in-stream data is more appropriate because the data represent actual conditions instead of projected concentrations based upon the presumption of discharges at allocated loadings. IDEM's choice not to use Dickey Road data to establish background concentrations is confusing in light of its comments contained in the supplemental documentation supporting the WLA analysis for the ArcelorMittal Indiana Harbor permits:

> *"Developing background concentrations based on actual instream data is consistent with the regulations and accounts for the wastewater treatment that is occurring upstream of the subwatershed. Otherwise, overly conservative requirements can be placed on downstream dischargers." (pg 17)*

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[1] *Grand Calumet River, Indiana Harbor Water Quality Assessment, Lake Michigan Potable Intake Water Quality and Potential Impacts of ArcelorMittal Indiana Harbor East and West Plants.* Prepared for ArcelorMittal USA, Environmental Affairs, Richfield, Ohio, prepared by Amendola Engineering, Inc., Lakewood, Ohio. June 6, 2008, Water Quality Update April 2, 2009.

ED_002857_00000116-00197

1. WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)

These comments appear to demonstrate that IDEM not only supports, but prefers, the use of actual in-stream data to establish background water quality, where available. Accordingly, the Dickey Road data must be used to 're-establish' background water quality at the appropriate location in the IHSC for IDEM's water quality assessment and calculation of WQBELs. A comparison of the concentrations used by IDEM at Dickey Road and the actual IHSC concentrations at Dickey Road are presented below for fluoride, lead and zinc.

Comparison of IDEM Predicted Concentrations at Dickey Road to Actual Concentrations		
	IDEM Predicted Concentration at Dickey Road	Actual Concentration at Dickey Road*
Fluoride, mg/l	0.63	0.49
Lead, Total, ug/l	8.5	4.0
Zinc, Total, ug/l	36	25
* Geometric mean of IHC-2 fixed monitoring station data January 2005 to December 2009		

Using Dickey Road data as background concentrations leads to significantly less stringent preliminary WQBELs for lead and zinc. ArcelorMittal's requested effluent limits based on the Dickey Road background data, and other factors, are presented throughout these comments.

Dissolved Metals Translators

Total and dissolved data for copper, lead and zinc collected by IDEM from the Indiana Harbor Ship Canal at fixed monitoring stations IHC-2 (Dickey Road) and IHC-0 should be used to calculate site-specific dissolved metals translators (DMTs). These DMTs should be used in the calculation of preliminary water-quality based effluent limits for the Central Treatment Plant (CTP) Outfall 001, and Indiana Harbor East Outfall 014. Data collected by IDEM over a period of several years for these metals demonstrate that the majority of the copper, lead and zinc present is associated with particulate in the water column and is not in the dissolved form. Dissolved metals more closely approximate the bioavailable fraction in the water column than do total or total recoverable metals. Consequently, use of site-specific DMTs is well suited for the IHSC. The Dickey Road fixed monitoring station, located downstream of CTP Outfall 001, serves as an appropriate data set for calculating DMTs for development of WQBELs for CTP Outfall 001. IDEM should consider the Dickey Road data representative of conditions in the IHSC and reliable because IDEM used the lead and zinc data collected at Dickey Road for another purpose in the NPDES permit renewal process for the ArcelorMittal facilities (*i.e.,* Dickey Road data were use to project the effluent quality from Indiana Harbor West Outfall 007 in IDEM's multi-discharger WLA). The IHC-0 fixed monitoring station is located downstream of Indiana Harbor East Outfall 014.

1. WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)

Per EPA guidance[2], DMTs can be calculated as the dissolved to total metal fraction, and can be calculated from a correlation of the dissolved fraction to receiving stream TSS concentration. Following that guidance, DMTs for copper, lead and zinc were calculated from the Dickey Road and IHC-0 data and are summarized below. The dissolved and total metals data used in the DMT calculations are attached (see Attachment IHC-1). For comparison, IDEM's default translators that were used in the development of the proposed permit limits, and DMT's calculated from data collected by IDEM at fixed Station IHC-3S are also shown.

[2] *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit From a Dissolved Criterion, USEPA, June 1996*

1. WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)

Comparison of Indiana Harbor Ship Canal Dissolved Metal Fractions to IDEM Default Translators

	IHC-3S (Columbus Drive)	IDEM Default Translators for IHLC and CTP	IHC-2 (Dickey Road)	IDEM Default Translators for IH East 014 and 018	IHC-0
	1/04 to 6/09	NA	1/04 to 1/08	NA	1/04 to 10/06
Copper					
N	47	0	37	0	30
Geometric Mean	0.358	0.960	0.457	0.960	0.499
DMT by TSS Regression (TSS = 4 mg/l)	0.493		NA		0.574
95th Percentile	0.716		0.629		0.743
Lead					
N	48	0	38	0	31
Geometric Mean	0.176	0.686	0.228	0.707	0.374
DMT by TSS Regression (TSS = 4 mg/l)	0.268		NA		0.447
95th Percentile	0.472		0.415		0.645
Zinc					
N	47	0	37	0	30
Geometric Mean	0.332	0.978	0.375	0.978	0.462
DMT by TSS Regression (TSS = 4 mg/l)	0.432		NA		0.544
95th Percentile	0.635		0.574		0.774

IDEM's default DMTs, which rely on no data specific to the IHSC, are clearly inaccurate for the ArcelorMittal permits and overestimate the dissolved copper, lead and zinc fractions in the IHSC by significant amounts. For example, the default translators are 2.1, 3.0 and 2.6 times greater than the calculated geometric mean of the dissolved fractions for copper, lead and zinc, respectively, at IHC-2. Even the 95th percentiles of the dissolved fractions for all metals at all locations are significantly below IDEM's default translators. As shown, the DMTs calculated at IHC-3S, IHC-2 and IHC-0 are considerably lower than IDEM's default DMTs used in the calculation of WQBELs. Graphs of the geometric mean dissolved fractions, TSS-regression developed DMTs, and IDEMs default DMTs are presented below.

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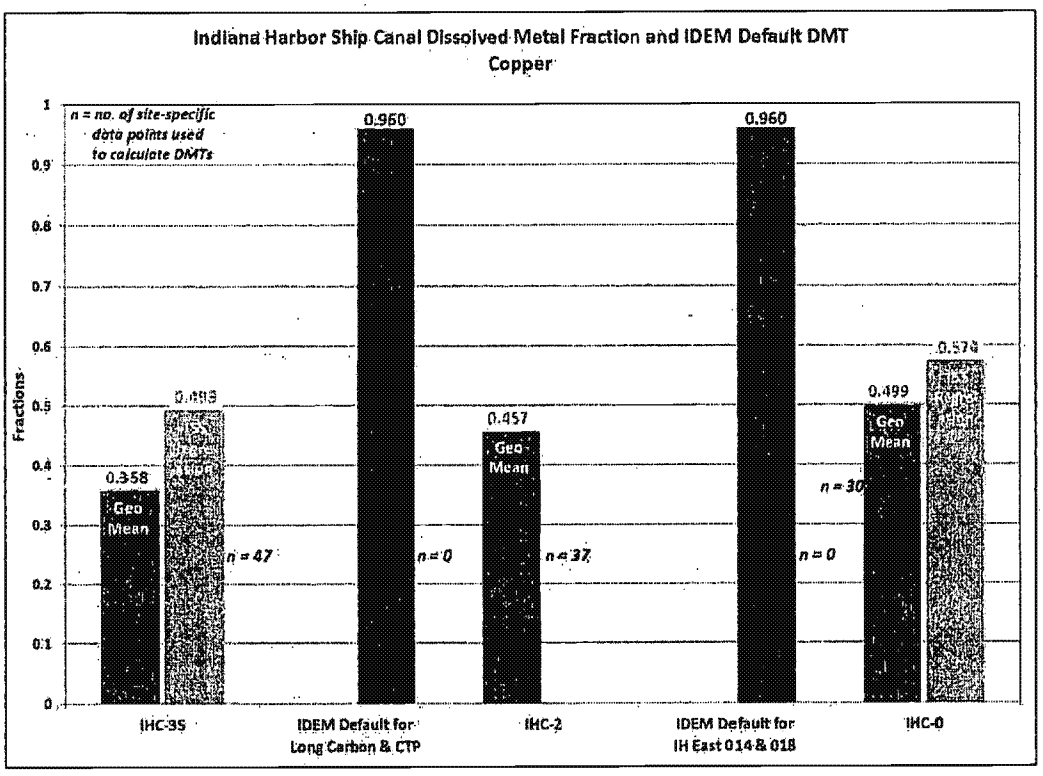
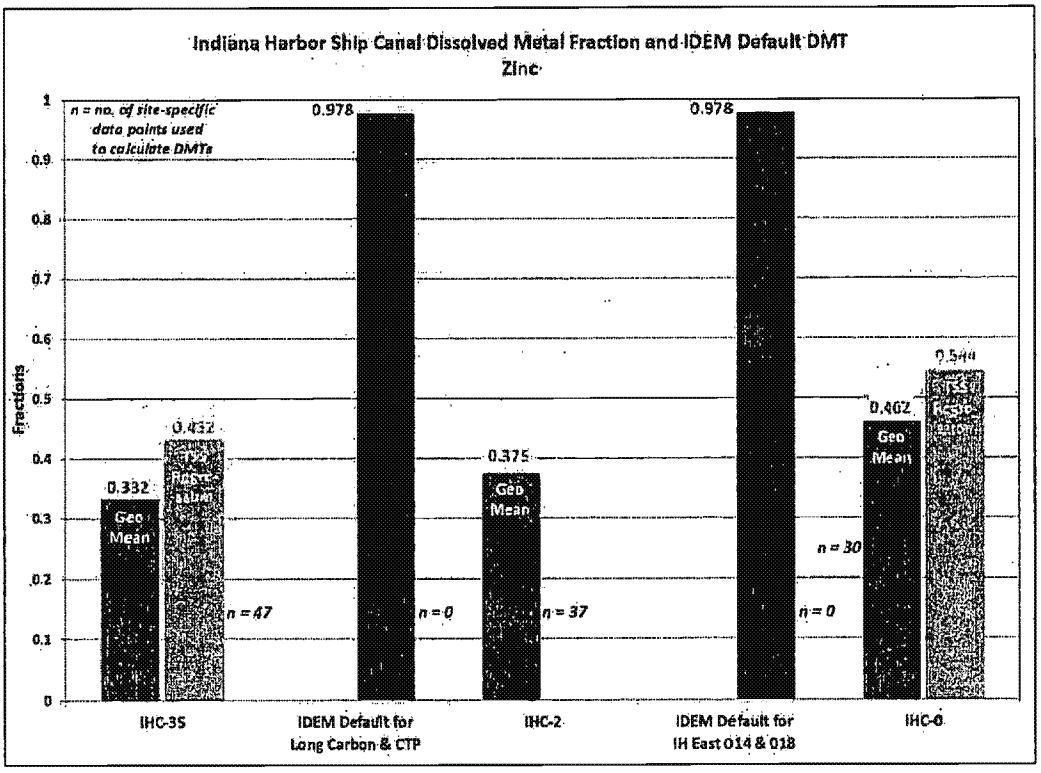
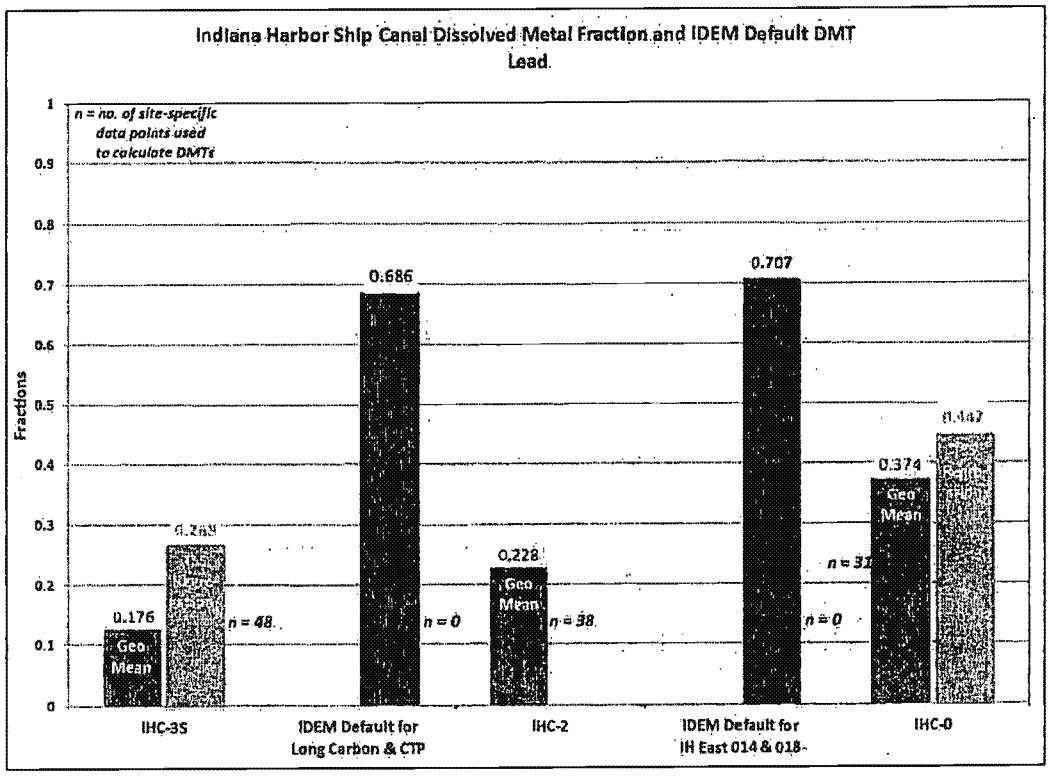
1. WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)





1. WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)



Given the data presented in the table and graphs above, it is not reasonable to assume, as IDEM has done through use of the default DMTs, that the dissolved metal fraction in the water column somehow increases dramatically in between the fixed monitoring stations. ArcelorMittal's requested effluent limits, based upon site-specific DMTs derived from the IDEM fixed monitoring station data and other factors, are presented below.

ArcelorMittal Requested Effluent Limits for IH Central Treatment Plant (Copper, Lead and Zinc)								
	Requested Outfall 001 Permit Limits				Requested Outfall 101 Permit Limits			
	Concentration (ug/l)		Mass (lbs/day)		Concentration (ug/l)		Mass (lbs/day)	
Pollutant	Monthly Average	Daily Max.	Monthly Average	Daily Max.	Monthly Average	Daily Max.	Monthly Average	Daily Max.
Copper	47	81	2.5	4.4	Report only	Report Only	Report Only	Report Only
Lead	Report Only	Report Only	Report Only	Report Only	Report Only	Report Only	9.4	19
Zinc	360	720	20	39	Report Only	Report Only	Report Only	Report Only

1. WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)

ArcelorMittal Requested Effluent Limits for IH East Outfall 014 (Lead and Zinc)				
	Requested Outfall 014 Permit Limits			
	Concentration (ug/l)		Mass (lbs/day)	
Pollutant	Monthly Average	Daily Max.	Monthly Average	Daily Max.
.Lead	120	240	11.5	23
Zinc	Report only	Report Only	14.91	44.69

Comments on Multi-discharger Wasteload Allocation Model

IDEM constructed a multi-discharger wasteload allocation model for ammonia, total residual chlorine, fluoride, sulfate, lead and zinc to ensure that water quality standards are maintained throughout the IHSC and as the IHSC meets Lake Michigan. Comments specific to lead, zinc and fluoride are presented below.

Lead and Zinc

At the 'end' of IDEM's multi-discharger WLA model (i.e., the end of the IHSC and the beginning of Lake Michigan) IDEM shows a lead concentration of 9.9 ug/l, which is essentially equivalent to the chronic aquatic life water quality criterion. This 'end-result' creates the false impression that essentially all assimilative capacity in the IHSC has been consumed. Using more reasonable projected loadings from outfalls at which no WQBELs are warranted in conjunction with "re-establishing" background water quality at Dickey Road and accounting for the requested effluent limits throughout these comments shows that assimilative capacity remains in the IHSC, even when making the unrealistic assumption that all dischargers downstream of Dickey Road are simultaneously discharging at their maximum permitted levels. It is important that IDEM recognize this fact going forward, to avoid the false impression that essentially all assimilative capacity for lead in the IHSC has been consumed. This position could make future permitting of new discharges or expansion at existing dischargers a more difficult task than necessary.

In addition, IDEM significantly overestimated the pollutant loadings from certain ArcelorMittal outfalls in its multi-discharger WLA model. We understand that a WLA for an outfall derived from preliminary effluent limits serves as the input to the model to ensure that water quality standards are maintained. However, where no WQBEL exists, or where none is warranted, IDEM has overestimated pollutant loadings.

For Indiana Harbor Long Carbon, where the draft permit contains no WQBELs for lead and zinc, IDEM estimated discharges of 1.68 lbs/day of lead and 2.94 lbs/day of zinc based upon its default projected

1. WATER QUALITY-BASED EFFLUENT LIMITS (WQBELs)

effluent quality (PEQ) procedure. However, implementing the projected effluent quality (PEQ) procedures at 327 IAC 5-2-11.5(b)(1)(B)(V), and considering the technology-based effluent limits at Outfall 602, allows for model input wasteload allocation discharges of 0.42 lbs/day lead and 1.38 lbs/day zinc. These wasteload allocations result in preliminary effluent limits which are greater than the PEQs derived from 327 IAC 5-2-11.5(b)(1)(B)(V), and the Outfall 602 TBELs, and therefore adequately characterize the discharge from Indiana Harbor Long Carbon Outfall 001.

For Indiana Harbor East Outfall 018, IDEM estimated discharges of 6.24 lbs/day of lead based upon WQBELs derived pursuant to 327 IAC 5-2-11.4 and 11.6. However, as stated elsewhere in these comments, there is no reasonable potential to exceed these limits, and they should not be included in the renewal NPDES permit. Implementing the projected effluent quality (PEQ) procedures at 327 IAC 5-2-11.5(b)(1)(B)(V), and considering the technology-based effluent limits at Outfalls 518 and 618, allows a model input discharge of 5.31 lbs/day lead. This wasteload allocation results in preliminary effluent limits of 4.3 lbs/day (monthly average) and 9.0 lbs/day (daily maximum) lead. These values are greater than the PEQs derived from 327 IAC 5-2-11.5(b)(1)(B)(V) and the sum of the Outfall 518 and 618 TBELs, and therefore adequately characterize the discharge from Indiana Harbor East Outfall 018.

Printouts of IDEM's multi-discharger WLA model for lead and zinc that was modified to include Dickey Road data as background, the more accurate discharges from Indiana Harbor Long Carbon Outfall 001 and Indiana Harbor East Outfall 018, and ArcelorMittal's requested effluent limits are attached (see Attachment IHC-2). The results show remaining assimilative capacity throughout the IHSC and at Lake Michigan for lead and zinc.

Fluoride

IDEM made the same general errors for fluoride in its multi-discharger WLA model, as it did for lead and zinc. Namely, the discharges from certain ArcelorMittal outfalls are overestimated and IDEM did not 're-establish" background fluoride concentrations at Dickey Road. A simplified mass balance accounting for Dickey Road data and discharges from Indiana Harbor East and West is presented in other comments. The results show minimal effect on the concentration of fluoride where the IHSC meets Lake Michigan.

ATTACHMENT IHC-1
Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data

IHC-2 Dickey Road

Copper

Date	Copper (Dissolved) (ug/L)	Copper (Dissolved) for DMT (ug/L)	Copper (Total) (ug/L)	Dissolved Fraction
1/8/2004	1.19	1.19	3.44	0.35
2/18/2004	1.3	1.3	2.39	0.54
3/30/2004	< 1	1	3.72	0.27
4/21/2004	1.24	1.24	3.45	0.36
5/26/2004	1.21	1.21	2.62	0.46
6/16/2004	1.13	1.13	2.42	0.47
7/19/2004	1.37	1.37	2.34	0.59
8/16/2004	1.25	1.25	2.59	0.48
9/20/2004	1.41	1.41	2.81	0.50
10/25/2004	1.29 (fDJ)		2.45	
11/29/2004	1.04	1.04	2.54	0.41
12/20/2004	1.09	1.09	2.46	0.44
1/12/2005	1.1	1.1	2.74	0.40
2/23/2005	1.03	1.03	2.14	0.48
3/21/2005	1.12	1.12	2.43	0.46
4/27/2005	1.19	1.19	2.63	0.45
6/27/2005	1.1	1.1	1.91	0.58
7/27/2005	1.04	1.04	2.16	0.48
8/22/2005	1.23	1.23	2.5	0.49
9/26/2005	1.19	1.19	2.34	0.51
10/26/2005	1.15	1.15	2.42	0.48
11/28/2005	< 1	1	2.7	0.37
12/14/2005	< 1	1	4.28	0.23
1/12/2006	1.08	1.08	3.11	0.35
2/6/2006	1.21	1.21	2.63	0.46
3/15/2006	1.38	1.38	2.8	0.49
4/26/2006	1.52	1.52	2.83	0.54
5/22/2006	1.53	1.53	3.34	0.46
6/21/2006	1.67	1.67	2.67	0.63
7/11/2006	1.62	1.62	2.51	0.65
8/14/2006	1.58	1.58	3.54	0.45
9/25/2006	1.59	1.59	3.3	0.48
10/18/2006			3	
11/27/2006			2.61	
12/18/2006			2.55	
1/22/2007			2.73	
2/19/2007			2.66	
3/28/2007			3.73	
4/25/2007			5.04	
5/30/2007			2.61	
6/20/2007			3.26	
7/30/2007			2.16	
8/27/2007	1.98	1.98	2.68	0.74
9/24/2007	1.57	1.57	2.51	0.63
10/29/2007	1.48	1.48	4.52	0.33
11/19/2007	1.59	1.59	4.33	0.37
12/17/2007	1.34	1.34	2.52	0.53
1/9/2008	1.54	1.54	3.43	0.45

Lead

Date	Lead (Dissolved) (ug/L)	Lead (Dissolved) for DMT (ug/L)	Lead (Total) (ug/L)	Dissolved Fraction
1/8/2004	< 1	1	8.47	0.118
2/18/2004	< 1	1	3.06	0.327
3/30/2004	< 1	1	7.65	0.131
4/21/2004	< 1	1	7.97	0.125
5/26/2004	< 1	1	4.77	0.210
6/16/2004	< 1	1	4.95	0.202
7/19/2004	< 1	1	3.25	0.308
8/16/2004	< 1	1	4.77	0.210
9/20/2004	< 1	1	4.85	0.206
10/25/2004	< 1	1	3.26	0.307
11/29/2004	< 1	1	3.71	0.270
12/20/2004	< 1	1	3.11	0.322
1/12/2005	< 1	1	3.57	0.280
2/23/2005	< 1	1	2.42	0.413
3/21/2005	< 1	1	3.09	0.324
4/27/2005	< 1	1	5.12	0.195
6/27/2005	< 1	1	3.51	0.285
7/27/2005	< 1	1	4.06	0.246
8/22/2005	< 1	1	4.87	0.205
9/26/2005	< 1	1	7	0.143
10/26/2005	< 1	1	3.19	0.313
11/28/2005	< 1	1	3.8	0.263
12/14/2005	< 1	1	9.88	0.101
1/12/2006	< 1	1	5.86	0.171
2/6/2006	< 1	1	2.73	0.366
3/15/2006	< 1	1	4.26	0.235
4/26/2006	< 1	1	4.78	0.209
5/22/2006	< 1	1	5.19	0.193
6/21/2006	1.06	1.06	4.2	0.252
7/11/2006	< 1	1	2.86	0.350
8/14/2006	< 1	1	5.93	0.169
9/25/2006	< 1	1	5.7	0.175
10/18/2006			3.11	
11/27/2006			2.82	
12/18/2006			2.94	
1/22/2007			2.91	
2/19/2007			2.72	
3/28/2007			6.26	
4/25/2007			7.89	
5/30/2007			3.35	
6/20/2007			4.59	
7/30/2007			1.66	
8/27/2007	< 1	1	2.08	0.481
9/24/2007	< 1	1	3.24	0.309
10/29/2007	< 1	1	7.86	0.127
11/19/2007	< 1	1	7.7	0.130
12/17/2007	< 1	1	2.35	0.426
1/9/2008	< 1	1	4.53	0.221

Zinc

Date	Zinc (Dissolved) (ug/L)	Zinc (Dissolved) for DMT (ug/L)	Zinc (Total) (ug/L)	Dissolved Fraction
1/8/2004	8.1	8.1	43.7	0.185
2/18/2004	8.67	8.67	21	0.413
3/30/2004	9.42	9.42	37.6	0.251
4/21/2004	11.2	11.2	37.4	0.299
5/26/2004	13.6	13.6	29.1	0.467
6/16/2004	4.13	4.13	24.6	0.168
7/19/2004	7.66	7.66	17.8	0.430
8/16/2004	5.94	5.94	24.7	0.240
9/20/2004				
10/25/2004	6.95	6.95	18.4	0.378
11/29/2004	15.4	15.4	31.6	0.487
12/20/2004	8.93	8.93	25.5	0.350
1/12/2005	13.1	13.1	31.8	0.412
2/23/2005	10.2	10.2	20.9	0.488
3/21/2005	9.6	9.6	22.4	0.429
4/27/2005	7.86	7.86	44.4	0.177
6/27/2005	9.62	9.62	19.1	0.504
7/27/2005	9	9	18.4	0.489
8/22/2005	8.87	8.87	23.4	0.379
9/26/2005	9.65	9.65	21.6	0.447
10/26/2005	14.2	14.2	25.5	0.557
11/28/2005	11.5	11.5	25.2	0.456
12/14/2005	11.8	11.8	50.1	0.236
1/12/2006	11.4	11.4	35.5	0.321
2/6/2006	11.1	11.1	22.7	0.489
3/15/2006	13.5	13.5	30.9	0.437
4/26/2006	10.1	10.1	27.4	0.369
5/22/2006	11.9	11.9	28.6	0.416
6/21/2006	9.96	9.96	22.2	0.449
7/11/2006	7.34	7.34	20.6	0.356
8/14/2006	9.02	9.02	29.3	0.308
9/25/2006	10.5	10.5	29	0.362
10/18/2006			23.1	
11/27/2006			21.5	
12/18/2006			25.8	
1/22/2007			23.7	
2/19/2007			24.2	
3/28/2007			33.2	
4/25/2007			42.2	
5/30/2007			18.1	
6/20/2007			23.6	
7/30/2007			13.8	
8/27/2007	10.9	10.9	16.9	0.645
9/24/2007	9.38	9.38	18.2	0.515
10/29/2007	11.9	11.9	37.2	0.320
11/19/2007	9.24	9.24	38.9	0.238
12/17/2007	14.5	14.5	22.5	0.644
1/9/2008	17.5	17.5	35.4	0.494

Copper (January 2004 to January 2008)	
No. of Samples	37
Geometric mean of dissolved fractions	0.457
95th percentile of dissolved fractions	0.629

Lead (January 2004 to January 2008)	
No. of Samples	38
Geometric mean of dissolved fractions	0.228
95th percentile of dissolved fractions	0.415

Zinc (January 2004 to January 2008)	
No. of Samples	37
Geometric mean of dissolved fractions	0.375
95th percentile of dissolved fractions	0.574

ATTACHMENT IHC-1

Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data

IHC-3S Columubus Drive Fixed Station Monitoring Data (Station IHC-3S)

Copper

Date	Copper (Dissolved) (ug/L)	Copper (Dissolved) for DMT (ug/L)	Copper (Total) (ug/L)	Dissolved Fraction
1/7/2004	1.19	1.19	4.3	0.277
2/18/2004	1.13	1.13	4.26	0.265
3/30/2004	1.03	1.03	3.56	0.289
4/21/2004	1.36	1.36	4.99	0.273
5/26/2004	1.28	1.28	3.12	0.410
6/16/2004	1.17	1.17	2.54	0.461
7/19/2004	1.23	1.23	1.55	0.794
8/16/2004	1.26	1.26	2.33	0.541
9/20/2004	1.33	1.33	2.62	0.508
10/25/2004	1.87 (fDJ)		3.1	
11/29/2004	1.08	1.08	2.69	0.401
12/20/2004	< 1	1	6.52	0.153
1/12/2005	1.1	1.1	5.64	0.195
2/23/2005	1.21	1.21	2.54	0.476
3/22/2005	1.07	1.07	3.21	0.333
4/27/2005	1.23	1.23	3.66	0.336
5/24/2005	1.17	1.17	3.33	0.351
6/27/2005	< 1	1	1.63	0.613
7/27/2005	1.06	1.06	1.85	0.573
8/22/2005	1.22	1.22	2.04	0.598
9/26/2005	1.55	1.55	2.41	0.643
10/26/2005	1.28	1.28	2.68	0.478
11/28/2005	< 1	1	24.2	0.041
12/15/2005	< 1	1	2.33	0.429
1/11/2006	1.08	1.08	4.6	0.235
2/6/2006	1.05	1.05	3.69	0.285
3/15/2006	1.55	1.55	4.88	0.318
4/26/2006	1.5	1.5	6.84	0.219
5/22/2006	1.58	1.58	3.9	0.405
6/21/2006	1.49	1.49	2.67	0.558
7/10/2006	1.65	1.65	2.22	0.743
8/14/2006	1.61	1.61	2.51	0.641
9/25/2006	1.78	1.78	4.86	0.366
10/18/2006			3.76	
11/27/2006			3.36	
12/18/2006			3	
1/22/2007			3.23	
2/20/2007			3.16	
3/28/2007			3.59	
4/25/2007			9.49	
5/30/2007			3.24	

Lead

Date	Lead (Dissolved) (ug/L)	Lead (Dissolved) for DMT (ug/L)	Lead (Total) (ug/L)	Dissolved Fraction
1/7/2004	< 1	1	10.9	0.092
2/18/2004	< 1	1	11	0.091
3/30/2004	< 1	1	9.46	0.106
4/21/2004	< 1	1	13.5	0.074
5/26/2004	< 1	1	6.43	0.156
6/16/2004	< 1	1	5.96	0.168
7/19/2004	< 1	1	1.49	0.671
8/16/2004	< 1	1	3.88	0.258
9/20/2004	< 1	1	4.23	0.236
10/25/2004	< 1	1	6.04	0.166
11/29/2004	< 1	1	3.99	0.251
12/20/2004	< 1	1	15.2	0.066
1/12/2005	< 1	1	9.98	0.100
2/23/2005	< 1	1	2.37	0.422
3/22/2005	< 1	1	5.24	0.191
4/27/2005	< 1	1	7.06	0.142
5/24/2005	< 1	1	6.57	0.152
6/27/2005	< 1	1	2.76	0.362
7/27/2005	< 1	1	2.98	0.336
8/22/2005	< 1	1	2.15	0.465
9/26/2005	< 1	1	2.68	0.373
10/26/2005	< 1	1	3.07	0.326
11/28/2005	< 1	1	58.3	0.017
12/15/2005	< 1	1	3.66	0.273
1/11/2006	< 1	1	8.04	0.124
2/6/2006	< 1	1	5.33	0.188
3/15/2006	< 1	1	7.73	0.129
4/26/2006	< 1	1	15.3	0.065
5/22/2006	< 1	1	6.3	0.159
6/21/2006	< 1	1	3.14	0.318
7/10/2006	< 1	1	1.96	0.510
8/14/2006	< 1	1	3.06	0.327
9/25/2006	< 1	1	8.57	0.117
10/18/2006			4.44	
11/27/2006			4.16	
12/18/2006			3.39	
1/22/2007			3.72	
2/20/2007			4.17	
3/28/2007			5.65	
4/25/2007			16.1	
5/30/2007			5.04	

Zinc

Date	Zinc (Dissolved) (ug/L)	Zinc (Dissolved) for DMT (ug/L)	Zinc (Total) (ug/L)	Dissolved Fraction
1/7/2004	7.06	7.06	47.2	0.150
2/18/2004	7.45	7.45	45.1	0.165
3/30/2004	10.3	10.3	45	0.229
4/21/2004	12.7	12.7	57.8	0.220
5/26/2004	14.1	14.1	36.2	0.390
6/16/2004	5.81	5.81	34.7	0.167
7/19/2004	8.86	8.86	12.1	0.732
8/16/2004	4.96	4.96	22.2	0.223
9/20/2004			17.8	
10/25/2004	4.78	4.78	27.1	0.176
11/29/2004	12.6	12.6	26.6	0.474
12/20/2004	8.85	8.85	69.1	0.128
1/12/2005	18.9	18.9	55.3	0.342
2/23/2005	12.7	12.7	21.6	0.588
3/22/2005	9.15	9.15	29.5	0.310
4/27/2005	10.5	10.5	39.9	0.263
5/24/2005	8.98	8.98	33.8	0.266
6/27/2005	9.36	9.36	16.7	0.560
7/27/2005	11.2	11.2	17.9	0.626
8/22/2005	8.33	8.33	12.4	0.672
9/26/2005	8.38	8.38	15.2	0.551
10/26/2005	11.4	11.4	19.9	0.573
11/28/2005	11	11	193	0.057
12/15/2005	13	13	26.8	0.485
1/11/2006	12.9	12.9	43.5	0.297
2/6/2006	11.4	11.4	30.3	0.376
3/15/2006	15.7	15.7	45.8	0.343
4/26/2006	12.1	12.1	69.4	0.174
5/22/2006	11.1	11.1	29.2	0.380
6/21/2006	11	11	20.3	0.542
7/10/2006	8.14	8.14	14.6	0.558
8/14/2006	7.66	7.66	15.8	0.485
9/25/2006	12.4	12.4	40.4	0.307
10/18/2006			28.8	
11/27/2006			26.4	
12/18/2006			27.6	
1/22/2007			25.3	
2/20/2007			27.5	
3/28/2007			33.3	
4/25/2007			71.3	
5/30/2007			25.2	

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Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data

6/20/2007			2.52	
7/30/2007			1.91	
8/27/2007	1.92	1.92	4.3	0.447
9/24/2007	1.51	1.51	2.13	0.709
10/29/2007	1.32	1.32	3.38	0.391
11/19/2007	1.36	1.36	3.81	0.357
12/17/2007	1.25	1.25	5.58	0.224
1/9/2008	1.56	1.56	6.92	0.225
2/20/2008	1.31	1.31	3.07	0.427
3/18/2008	1.36	1.36	4.03	0.337
4/21/2008			4	
5/28/2008			2.71	
6/10/2008			2.68	
7/28/2008			1.93	
8/26/2008			2.15	
9/23/2008			4.42	
10/28/2008			3.79	
11/19/2008			6.28	
12/15/2008	1.14	1.14	5.54	0.206
1/22/2009	1.24	1.24	3.87	0.320
2/10/2009	< 1	1	5.09	0.196
3/5/2009	1.28	1.28	4.43	0.289
4/21/2009	1.49	1.49	2.61	0.571
5/18/2009	1.09	1.09	2.88	0.378
6/11/2009	1.42	1.42	3.95	0.359
7/27/2009			2.59	
8/19/2009			2.17	
9/22/2009			3.37	
10/8/2009			5.66	
11/5/2009			4.08	
12/14/2009			4.25	
1/19/2010			2.19	
2/15/2010			2.36	

6/20/2007			2.65	
7/30/2007			1.37	
8/27/2007	< 1	1	5.59	0.179
9/24/2007	< 1	1	2.21	0.452
10/29/2007	< 1	1	4.98	0.201
11/19/2007	< 1	1	5.37	0.186
12/17/2007	< 1	1	13.1	0.076
1/9/2008	< 1	1	11.3	0.088
2/20/2008	< 1	1	3.8	0.263
3/18/2008	< 1	1	6.57	0.152
4/21/2008			7.2	
5/28/2008			3.74	
6/10/2008			4.75	
7/28/2008			2	
8/26/2008			2.01	
9/23/2008			5.76	
10/28/2008			5.98	
11/19/2008			12.5	
12/15/2008	< 1	1	10.7	0.093
1/22/2009	< 1	1	6	0.167
2/10/2009	< 1	1	8.66	0.115
3/5/2009	< 1	1	5.99	0.167
4/21/2009	< 1	1	2.81	0.356
5/18/2009	< 1	1	4.81	0.208
6/11/2009	< 1	1	6.97	0.143
7/27/2009			3.03	
8/19/2009			2.25	
9/22/2009			5.23	
10/8/2009			10.6	
11/5/2009			6.66	
12/14/2009			6.4	
1/19/2010			1.77	
2/15/2010			2.33	

6/20/2007			18.8	
7/30/2007			12.1	
8/27/2007	12.7	12.7	30.9	0.411
9/24/2007	8.21	8.21	13.5	0.608
10/29/2007	10.8	10.8	24.4	0.443
11/19/2007	7.52	7.52	27.5	0.273
12/17/2007	11.1	11.1	48.9	0.227
1/9/2008	17.8	17.8	62.6	0.284
2/20/2008	15.6	15.6	31.3	0.498
3/18/2008	13	13	34.6	0.376
4/21/2008			38.8	
5/28/2008			24.1	
6/10/2008			28.5	
7/28/2008			14.6	
8/26/2008			12.4	
9/23/2008			32.4	
10/28/2008			27.3	
11/19/2008			53.4	
12/15/2008	10.1	10.1	53	0.191
1/22/2009	10.2	10.2	31.8	0.321
2/10/2009	14	14	43.5	0.322
3/5/2009	13.7	13.7	35.1	0.390
4/21/2009	15.7	15.7	26.9	0.584
5/18/2009	13.9	13.9	31.3	0.444
6/11/2009	9.5	9.5	33.1	0.287
7/27/2009			15.1	
8/19/2009			10.6	
9/22/2009			20.3	
10/8/2009			38.2	
11/5/2009			31.2	
12/14/2009			30.8	
1/19/2010			16.2	
2/15/2010			17.7	

Copper (January 2004 to June 2009)	
No. of Samples	47
Geometric mean of dissolved fractions	0.358
TSS regression DMT (TSS = 4 mg/l)	0.493
95th percentile of dissolved fractions	0.716

Lead (January 2004 to June 2009)	
No. of Samples	48
Geometric mean of dissolved fractions	0.176
TSS regression DMT (TSS = 4 mg/l)	0.268
95th percentile of dissolved fractions	0.472

Zinc (January 2004 to June 2009)	
No. of Samples	47
Geometric mean of dissolved fractions	0.332
TSS regression DMT (TSS = 4 mg/l)	0.432
95th percentile of dissolved fractions	0.635

ATTACHMENT IHC-1

Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data

IHC-0 Fixed Station Monitoring Data

Copper

Date	Copper (Dissolved) (ug/L)	Copper (Dissolved) for DMT (ug/L)	Copper (Total) (ug/L)	Dissolved Fraction
1/7/2004	1.42	1.42	2.53	0.561
2/19/2004	1.25	1.25	2.06	0.607
3/30/2004	1.14	1.14	2.78	0.410
4/21/2004	< 1	1	32.7	0.031
5/26/2004	1.41	1.41	2.42	0.583
6/16/2004	1.42	1.42	2.36	0.602
7/19/2004	1.65	1.65	2.5	0.660
8/16/2004	1.42	1.42	2.53	0.561
9/21/2004	1.47	1.47	2.65	0.555
10/26/2004	1.34 (fDJ)		2.71	
11/30/2004	1.05	1.05	1.76	0.597
12/20/2004	< 1	1	5.34	0.187
1/12/2005	1.2	1.2	2.85	0.421
2/24/2005	1.32	1.32	2	0.660
3/21/2005	1.48	1.48	2.72	0.544
4/27/2005	1.3	1.3	3.11	0.418
5/24/2005	1.48	1.48	2.92	0.507
6/27/2005	1.42	1.42	2.03	0.700
7/28/2005	1.25	1.25	2.1	0.595
8/22/2005	1.32	1.32	2.12	0.623
9/26/2005	1.09	1.09	1.89	0.577
11/28/2005	1.59	1.59	2.49	0.639
12/14/2005	1.15	1.15	3.12	0.369
2/6/2006	1.36	1.36	2.75	0.495
3/15/2006	1.58	1.58	2.8	0.564
4/26/2006	1.94	1.94	2.47	0.785
5/22/2006	1.59	1.59	2.64	0.602
6/21/2006	1.48	1.48	1.9	0.779
7/10/2006	1.42	1.42	3.04	0.467
8/14/2006	1.5	1.5	2.17	0.691
9/26/2006	1.48	1.48	2.18	0.679

Lead

Date	Lead (Dissolved) (ug/L)	Lead (Dissolved) for DMT (ug/L)	Lead (Total) (ug/L)	Dissolved Fraction
1/7/2004	< 1	1	2.71	0.369
2/19/2004	< 1	1	1.72	0.581
3/30/2004	< 1	1	3.82	0.262
4/21/2004	< 1	1	83.4	0.012
5/26/2004	< 1	1	2.1	0.476
6/16/2004	< 1	1	3.17	0.315
7/19/2004	< 1	1	1.63	0.613
8/16/2004	< 1	1	1.85	0.541
9/21/2004	< 1	1	2.42	0.413
10/26/2004	< 1	1	2.79	0.358
11/30/2004	< 1	1	1.68	0.595
12/20/2004	< 1	1	9.59	0.104
1/12/2005	< 1	1	3.29	0.304
2/24/2005	< 1	1	1.71	0.585
3/21/2005	< 1	1	2.52	0.397
4/27/2005	< 1	1	3.66	0.273
5/24/2005	< 1	1	2.67	0.375
6/27/2005	< 1	1	1.76	0.568
7/28/2005	< 1	1	1.94	0.515
8/22/2005	< 1	1	1.72	0.581
9/26/2005	< 1	1	1.96	0.510
11/28/2005	< 1	1	1.58	0.633
12/14/2005	< 1	1	3.58	0.279
2/6/2006	< 1	1	2.35	0.426
3/15/2006	< 1	1	3.21	0.312
4/26/2006	< 1	1	2.26	0.442
5/22/2006	< 1	1	2.77	0.361
6/21/2006	< 1	1	1.85	0.541
7/10/2006	< 1	1	3.19	0.313
8/14/2006	< 1	1	1.43	0.699
9/26/2006	< 1	1	1.52	0.658

Zinc

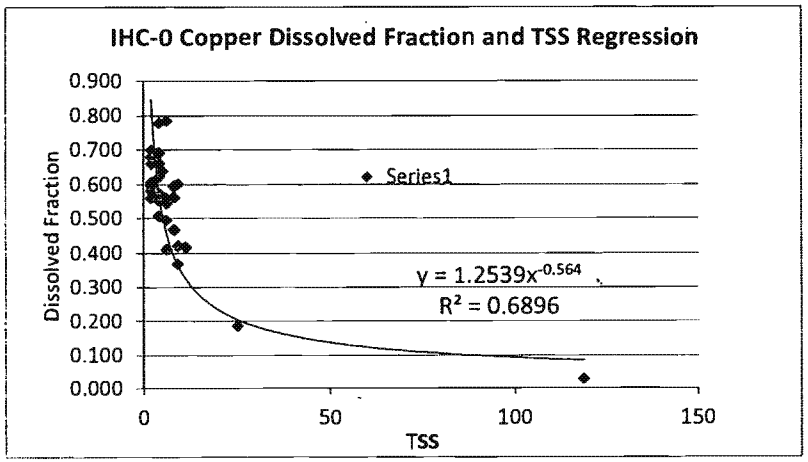
Date	Zinc (Dissolved) (ug/L)	Zinc (Dissolved) for DMT (ug/L)	Zinc (Total) (ug/L)	Dissolved Fraction
1/7/2004	11.1	11.1	24.4	0.455
2/19/2004	10.6	10.6	19.4	0.546
3/30/2004	10.1	10.1	29.9	0.338
4/21/2004	7.38	7.38	414	0.018
5/26/2004	13.3	13.3	24.3	0.547
6/16/2004	24	24	45.8	0.524
7/19/2004	9.9	9.9	19.2	0.516
8/16/2004	17.5	17.5	37	0.473
9/21/2004				
10/26/2004	9.13	9.13	23.1	0.395
11/30/2004	13.8	13.8	21.3	0.648
12/20/2004	7.7	7.7	59.2	0.130
1/12/2005	10.8	10.8	32	0.338
2/24/2005	36.3	36.3	50.9	0.713
3/21/2005	12.6	12.6	25.9	0.486
4/27/2005	31.3	31.3	65.8	0.476
5/24/2005	47	47	74.5	0.631
6/27/2005	20.9	20.9	33	0.633
7/28/2005	14.8	14.8	24.5	0.604
8/22/2005	17	17	24.9	0.683
9/26/2005	17.3	17.3	26.4	0.655
11/28/2005	45.6	45.6	52.9	0.862
12/14/2005	10.9	10.9	25	0.436
2/6/2006	25.1	25.1	37.8	0.664
3/15/2006	24.4	24.4	35.2	0.693
4/26/2006	14.6	14.6	26.9	0.543
5/22/2006	14.4	14.4	27.4	0.526
6/21/2006	14.1	14.1	29.1	0.485
7/10/2006	14.4	14.4	38.2	0.377
8/14/2006	8.29	8.29	14.8	0.560
9/26/2006	43.9	43.9	53.3	0.824

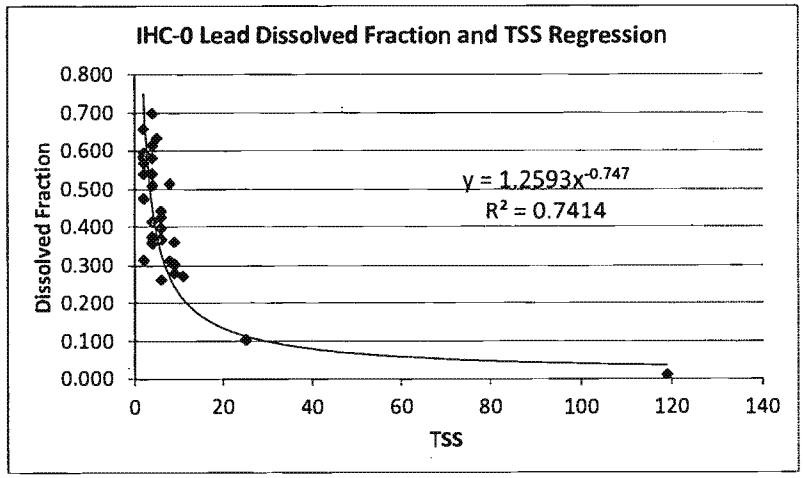
Copper (January 2004 to October 2006)	
No. of Samples	30
Geometric mean of dissolved fractions	0.499
TSS regression DMT (TSS = 4 mg/l)	0.574
95th percentile of dissolved fractions	0.743

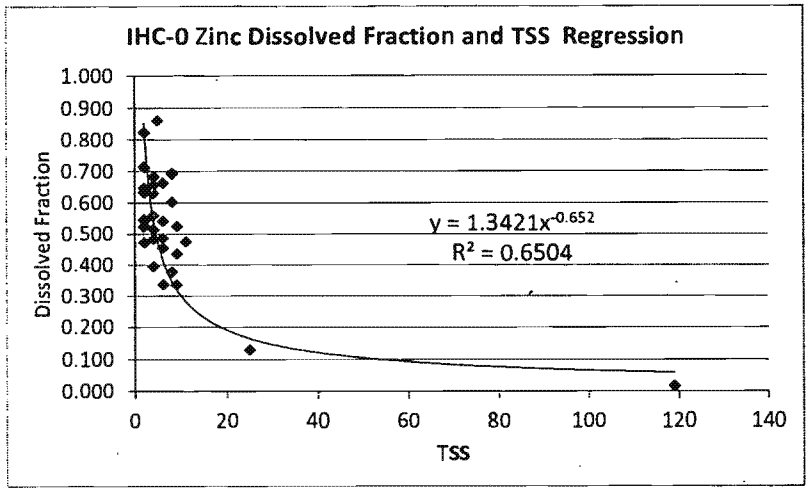
Lead (January 2004 to October 2006)	
No. of Samples	31
Geometric mean of dissolved fractions	0.374
TSS regression DMT (TSS = 4 mg/l)	0.447
95th percentile of dissolved fractions	0.645

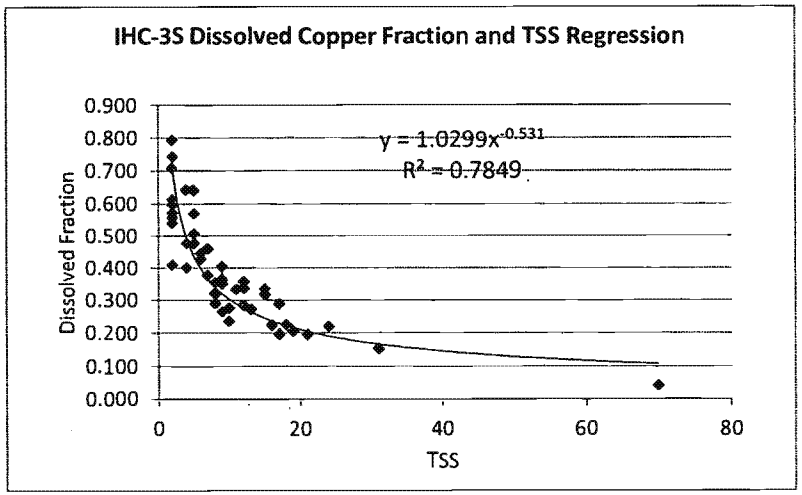
Zinc (January 2004 to October 2006)	
No. of Samples	30
Geometric mean of dissolved fractions	0.462
TSS regression DMT (TSS = 4 mg/l)	0.544
95th percentile of dissolved fractions	0.774

ATTACHMENT IHC-1
Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data



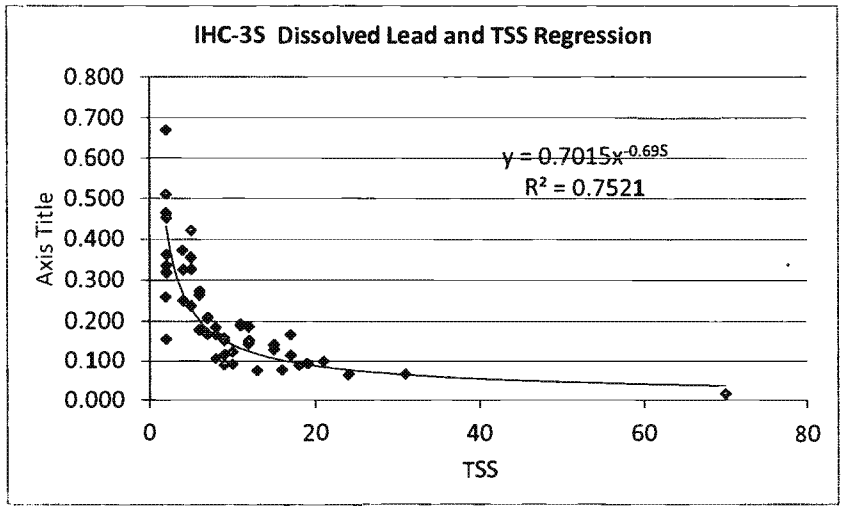


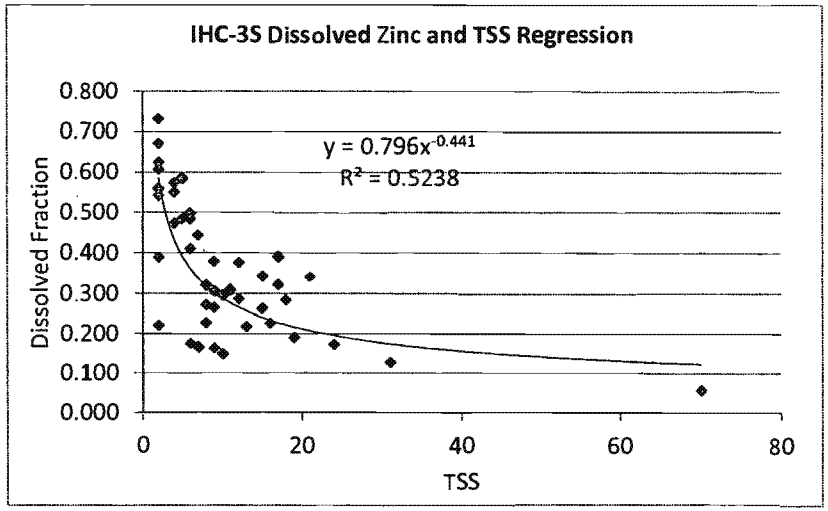




ATTACHMENT IHC-1

Calculation of Dissolved Metals Translators from IDEM fixed station monitoring data





ATTACHMENT IHC-2

MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: LEAD (TOTAL RECOVERABLE)

SECTION 1 - MODEL INPUTS

SEGMENT	OUTFALL	DISCHARGE FLOW (mgd)	4-DAY AVERAGE DISCHARGE CONC. (µg/L)	4-DAY AVERAGE DISCHARGE LOAD (lbs/day)	MONTHLY SAMPLING FREQUENCY	PRELIMINARY EFFLUENT LIMITATIONS			
						MONTHLY AVERAGE		DAILY MAXIMUM	
						CONC. (µg/L)	LOAD (lbs/day)	CONC. (µg/L)	LOAD (lbs/day)
27	BUC001	0.55	25	0.11	4	20	0.092	41	0.19
29	AMC001	6.5	215	11.66	4	176	9.5	350	19
30	AMLC001	3.6	14	0.42	4	11	0.30	23	0.70
31	AMW002	11.2	2.0	0.19					
33	AME007	0.0037	4.0	0.00012					
34	AMW009	55.3	13	6.00	4	11	5.1	21	9.7
34	AMW010	36.6	3.0	0.92					
37	AME011	84.7	--	1.1					
37	AME014	11.5	146	14.01	4	120	11.5	240	23
37	AME018	15.9	40	5.31	4	33	4.3	66	9.0
38	AMW011	23.4	32	6.25	4	26	5.1	53	10
124	CDF001	0.33	16	0.04	4	13	0.036	26	0.072
123	EM001	0.33	16	0.04	4	13	0.036	26	0.072
37	AMW Intake	-49	(Withdrawal)						
Lake Michigan Conc. (µg/l) =		0.57	(for lake intrusion flow)						8/18/2011

ATTACHMENT IHC-2
MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: LEAD (TOTAL RECOVERABLE)

SECTION 2 - MODEL OUTPUT

SURFACE SEGMENT	DISCHARGE FLOW TO THE SEGMENT (mgd)	DISCHARGE LOAD TO THE SEGMENT (lbs/day)	25% FLOW OF PRECEDING SEGMENT (mgd)	25% LOAD OF PRECEDING SEGMENT (lbs/day)	TOTAL MIXING ZONE FLOW IN THE SEGMENT (mgd)	TOTAL MIXING ZONE LOAD IN THE SEGMENT (lbs/day)	STREAM CONCENTRATION AT EDGE OF MIXING ZONE[1] (µg/L)	FLOW OUT OF SEGMENT (mgd)	LOAD OUT OF SEGMENT (lbs/day)	CONC. OUT OF SEGMENT[1] (µg/L)
20/133								227.54	9.68	5.1
21	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
22	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
23	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
24	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
25	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
26	0	0	56.89	2.42	56.89	2.42	5.1	227.54	9.68	5.1
27	0.55	0.11	56.89	2.42	57.44	2.54	5.3	228.09	9.80	5.1
28	0	0	57.02	2.45	57.02	2.45	5.1	228.09	9.80	5.1
LGC	0.66	0.09	--	--	--	--	--	228.75	9.89	5.2
29	6.5	11.7	57.19	2.47	63.69	14.13	26.6	235.25	21.55	11.0
30	3.6	0.42	58.81	5.39	62.41	5.81	11.2	238.85	21.97	11.0
31	11.2	0.19	59.71	5.49	70.91	5.68	9.6	250.05	8.35	4.0
32	0	0	62.51	2.09	62.51	2.09	4.0	250.05	8.35	4.0
33	9.05	0.04	62.51	2.09	71.57	2.13	3.6	259.10	8.39	3.9
34	101.60	6.96	64.78	2.10	166.37	9.06	6.5	360.70	15.35	5.1
35	9.70	0.05	90.17	3.84	99.87	3.88	4.7	370.40	15.40	5.0
36	9.70	0.05	92.60	3.85	102.30	3.90	4.6	380.09	15.44	4.9
Intake	-49	-1.99	--	--	--	--	--	331.09	13.45	4.9
37	121.80	20.46	82.77	3.36	204.57	23.83	14.0	452.89	33.92	9.0
38	33.74	6.30	113.22	8.48	146.96	14.78	12.0	486.63	40.22	9.9
39	10.34	0.05	121.66	10.05	132.00	10.10	9.2	496.97	40.26	9.7
40	10.34	0.05	124.24	10.07	134.59	10.12	9.0	507.32	40.31	9.5
41	10.34	0.05	126.83	10.08	137.17	10.13	8.8	517.66	40.36	9.3

[1]Segments 21-26: Lead $C_{instream}$ (CCC/DMT) = 16 µg/L (Hardness = 208 mg/L and DMT = 0.684)

Segments 27-31: Lead $C_{instream}$ (CCC/DMT) = 26.6 µg/L (Hardness = 208 mg/L and DMT = 0.415)

Segments 32-41: Lead $C_{instream}$ (CCC/DMT) = 25.3 µg/L (Hardness = 178 mg/L and DMT = 0.374)

Lake Michigan (Out of Segment 41): Lead $C_{instream}$ (CCC/DMT) = 9.9 µg/L (Hardness = 140 mg/L and DMT = 0.742)

8/18/2011

ED_002857_00000116-00212

ATTACHMENT IHC-2
MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: LEAD (TOTAL RECOVERABLE)

SECTION 3 - RATIONALE FOR MODEL INPUTS

OUTFALL	RATIONALE FOR WASTELOAD ALLOCATION
BUC001	The 4-day average WLA for this outfall was set equal to 25 ug/l in the March 19, 2009 WLA (WLA001600). Only one discharge event has occured at this facility (March 11, 2010) and the lead concentration was 0.4 ug/l which is less than the estimated daily maximum PEQ of 36 ug/l in the 2009 WLA. Therefore, it was set equal to the value used in the 2009 WLA. The sampling frequency was set equal to the default of 1/week.
AMC001	Set equal to value that equates to limits based on site-specific DMT.
AMLC001	Set equal to value that results in limits which are greater than PEQs calculated under 327 IAC 5-2-11.5(b)(1)(B)(V) and greater than the concentrations equivalent to Outfall 602 TBELs.
AMW002	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-3S and comparable to background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall consists of noncontact cooling water, stormwater and groundwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Indiana Harbor Canal and Lake Michigan; primarily noncontact cooling water; effluent concentration small compared to the criterion; and, no internal outfalls), downstream fixed station IHC-2 showing instream concentration less than upstream concentration at fixed station IHC-3S and the available dilution. Set equal to effluent concentration which is the same as the background concentration at fixed station IHC-0.
AME007	Only stormwater data available. Preliminary effluent limitations not developed based on source and nature of the discharge. Set equal to background concentration calculated at IDEM fixed station IHC-2.
AMW009	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-2 which is upstream of the outfall and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall currently consists of noncontact cooling water, stormwater and groundwater. It is proposed to add internal Outfall 509 which will have TBELs for lead of monthly average 2.98 lbs/day and daily maximum 8.95 lbs/day and an effluent flow of 1.1 mgd. Estimated monthly average (8.4 ug/l) and daily maximum (21 ug/l) PEQs were developed based on the sum of the TBELs at internal Outfall 509 and the mass calculated using a current effluent concentration of 2 ug/l (background concentration at fixed station IHC-0) and flow of 54.2 mgd. Set so that monthly and daily PEQs do not exceed PELs. The sampling frequency was set equal to the default of 1/week.
AMW010	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-2 which is upstream of the outfall and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall consists of noncontact cooling water, stormwater and groundwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Indiana Harbor Canal and Lake Michigan; primarily noncontact cooling water; effluent concentration small compared to the criterion; and, no internal outfalls), downstream fixed station IHC-0 showing instream concentration less than upstream concentration at fixed station IHC-2 and the available dilution. Set based on the effluent concentration which is the same as the background concentration at fixed station IHC-0. Also, set so that the combined mass for Outfalls 009 and 010 does not exceed the PELs in the PEL spreadsheet for the combined outfalls.
AME011	MMR data comparable to Lake Michigan data collected at IDEM fixed station LM-EC Lake Michigan at East Chicago Waterworks which is located in the vicinity of the ArcelorMittal Indiana Harbor East intakes. This outfall consists of noncontact cooling water, boiler blowdown, zeolite rinse water and stormwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Lake Michigan; primarily noncontact cooling water; effluent concentration small compared to criterion; and, no internal outfalls) and the available dilution. Set equal to the geometric mean of effluent loading data due to the availability of a large, representative effluent data set.
AME014	Set equal to value that equates to existing Outfall 014 monthly average limit and that reserves some capacity at Lake Michigan. Resulting daily max PEL is more stringent than existing daily max limit and preliminary daily max WQBEL calculated using TSS regression or geometric mean DMTs.
AME018	Set equal to value that results in PELs greater than the sum of the 518 and 618 TBELs.
AMW011	The monthly PEQ is 14 ug/l and the daily PEQ is 29 ug/l. This outfall currently has TBELs for lead, but it is proposed to move part of the source of lead and part of the TBELs to internal Outfall 509. It is also proposed to create internal Outfalls 701 and 702 that will have TBELs for lead and discharge through Outfall 011. The proposed internal Outfall 701 monthly average/daily maximum TBELs are 0.25/0.76 lbs/day. The proposed internal Outfall 702 monthly average/daily maximum TBELs are 0.72/2.17 lbs/day. Set to meet the PELs in the PEL spreadsheet. This value allows the PEQs and the proposed TBELs to be met. The sampling frequency was set equal to the default of 1/week.
CDF001	No effluent data available. Set equal to the chronic criterion based on potential future discharge. The sampling frequency was set equal to 1/week based on potential future permit limit.
EM001	Limited effluent data available from 1997 and 1998. Data from 1997 provided in April 1, 1998 WLA Report (WLA000307). Set equal to the chronic criterion based on the available data. The sampling frequency was set equal to 1/week based on potential future permit limit.
	8/18/2011

ED_002857_00000116-00213

ATTACHMENT IHC-2

MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: ZINC (TOTAL RECOVERABLE)

SECTION 1 - MODEL INPUTS

SEGMENT	OUTFALL	DISCHARGE FLOW (mgd)	4-DAY AVERAGE DISCHARGE CONC. (µg/L)	4-DAY AVERAGE DISCHARGE LOAD (lbs/day)	MONTHLY SAMPLING FREQUENCY	PRELIMINARY EFFLUENT LIMITATIONS			
						MONTHLY AVERAGE		DAILY MAXIMUM	
						CONC. (µg/L)	LOAD (lbs/day)	CONC. (µg/L)	LOAD (lbs/day)
27	BUC001	0.55	29	0.13					
29	AMC001	6.5	440	23.87	4	360	20	720	39
30	AMLC001	3.6	46	1.38	4	38	1.1	80	2.4
31	AMW002	11.2	27	2.52					
33	AME007	0.0037	25	0.00077					
34	AMW009	55.3	45	20.77	4	37	17	74	34
34	AMW010	36.6	27	8.25					
37	AME011	84.7	--	7.2					
37	AME014	11.5	295	28.31	4	240	23	480	46
37	AME018	15.9	217	28.79	4	180	24	360	48
38	AMW011	23.4	214	41.79	4	180	35	350	68
124	CDF001	0.33	134	0.37	4	110	0.30	220	0.61
123	EM001	0.33	134	0.37	4	110	0.30	220	0.61
37	AMW Intake	-49	(Withdrawal)						

Lake Michigan Conc. (µg/l) = 3.5 (for lake intrusion flow) 8/18/2011

ATTACHMENT IHC-2
MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: ZINC (TOTAL RECOVERABLE)

SECTION 2 - MODEL OUTPUT

SURFACE SEGMENT	DISCHARGE FLOW TO THE SEGMENT (mgd)	DISCHARGE LOAD TO THE SEGMENT (lbs/day)	25% FLOW OF PRECEDING SEGMENT (mgd)	25% LOAD OF PRECEDING SEGMENT (lbs/day)	TOTAL MIXING ZONE FLOW IN THE SEGMENT (mgd)	TOTAL MIXING ZONE LOAD IN THE SEGMENT (lbs/day)	STREAM CONCENTRATION AT EDGE OF MIXING ZONE (µg/L)	FLOW OUT OF SEGMENT (mgd)	LOAD OUT OF SEGMENT (lbs/day)	CONC. OUT OF SEGMENT[1] (µg/L)
20/133								227.54	55.07	29
21	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
22	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
23	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
24	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
25	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
26	0	0	56.89	13.77	56.89	13.77	29	227.54	55.07	29
27	0.55	0.13	56.89	13.77	57.44	13.90	29	228.09	55.20	29
28	0	0	57.02	13.80	57.02	13.80	29	228.09	55.20	29
LGC	0.66	0.74	–	–	–	–	–	228.75	55.94	29
29	6.5	23.9	57.19	13.98	63.69	37.85	71	235.25	79.80	41
30	3.6	1.38	58.81	19.95	62.41	21.33	41	238.85	81.19	41
31	11.2	2.52	59.71	20.30	70.91	22.82	39	250.05	52.17	25
32	0	0	62.51	13.04	62.51	13.04	25	250.05	52.17	25
33	9.05	0.27	62.51	13.04	71.57	13.31	22	259.10	52.43	24
34	101.60	29.30	64.78	13.11	166.37	42.40	31	360.70	81.73	27
35	9.70	0.28	90.17	20.43	99.87	20.72	25	370.40	82.01	27
36	9.70	0.28	92.60	20.50	102.30	20.79	24	380.09	82.29	26
Intake	-49	-10.61	–	–	–	–	–	331.09	71.69	26
37	121.80	64.59	82.77	17.92	204.57	82.51	48	452.89	136.27	36
38	33.74	42.09	113.22	34.07	146.96	76.16	62	486.63	178.36	44
39	10.34	0.30	121.66	44.59	132.00	44.89	41	496.97	178.66	43
40	10.34	0.30	124.24	44.67	134.59	44.97	40	507.32	178.97	42
41	10.34	0.30	126.83	44.74	137.17	45.04	39	517.66	179.27	41

[1]Segments 21-26: Zinc $C_{instream}$ (CCC/DMT) = 220 µg/L (Hardness = 208 mg/L and DMT = 0.986)

Segments 27-31: Zinc $C_{instream}$ (CCC/DMT) = 582 µg/L (Hardness = 206 mg/L and DMT = 0.375)

Segments 32-41: Zinc $C_{instream}$ (CCC/DMT) = 417 µg/L (Hardness = 178 mg/L and DMT = 0.462)

Lake Michigan (Out of Segment 41): Zinc $C_{instream}$ (CCC/DMT) = 160 µg/L (Hardness = 140 mg/L and DMT = 0.986)

8/18/2011

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ATTACHMENT IHC-2
MODIFIED INDIANA HARBOR CANAL WASTELOAD ALLOCATION - MODIFICATIONS HIGHLIGHTED

PARAMETER: ZINC (TOTAL RECOVERABLE)

SECTION 3 - RATIONALE FOR MODEL INPUTS

OUTFALL	RATIONALE FOR WASTELOAD ALLOCATION
BUC001	No effluent data available. Set equal to the background concentration calculated at fixed station IHC-3S based on industrial user (to East Chicago WWTP) data submitted with January 2008 permit application. Preliminary effluent limitations not developed based on source and nature of the discharge.
AMC001	WLA value equates to limits calculated with site-specific DMT.
AMLC001	Set equal to value that results in limits which are greater than PEQs calculated under 327 IAC 5-2-11.5(b)(1)(B)(V) and greater than the concentrations equivalent to Outfall 602 TBELs.
AMW002	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-3S and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall consists of noncontact cooling water, stormwater and groundwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Indiana Harbor Canal and Lake Michigan; primarily noncontact cooling water; effluent concentration small compared to criterion; and, no internal outfalls), downstream fixed station IHC-2 showing instream concentration less than upstream concentration at fixed station IHC-3S and the available dilution. Set equal to background concentration at fixed station IHC-0.
AME007	Only stormwater data available. Set equal to background concentration calculated at IDEM fixed station IHC-2. Preliminary effluent limitations not developed based on source and nature of the discharge.
AMW009	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-2 which is upstream of the outfall and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall currently consists of noncontact cooling water, stormwater and groundwater. It is proposed to add internal Outfall 509 which will have TBELs for zinc of monthly average 4.46 lbs/day and daily maximum 13.41 lbs/day and an effluent flow of 1.1 mgd. Estimated monthly average (36 ug/l) and daily maximum (56 ug/l) PEQs were developed based on the sum of the TBELs at internal Outfall 509 and the mass calculated using a current effluent concentration of 27 ug/l (estimated based on available effluent data and intake source data) and flow of 54.2 mgd. Set so that monthly and daily PEQs do not exceed PELs. The sampling frequency was set equal to the default of 1/week.
AMW010	1999 TMDL data less than background concentration calculated at IDEM fixed station IHC-2 which is upstream of the outfall and less than background concentration at IHC-0 which is the fixed station most representative of the intake source. This outfall consists of noncontact cooling water, stormwater and groundwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Indiana Harbor Canal and Lake Michigan; effluent concentration small compared to the criterion; and, no internal outfalls), and the available dilution. Set based on available effluent data and intake source data. Also, set so that the combined mass for Outfalls 009 and 010 does not exceed the PELs in the PEL spreadsheet for the combined outfalls.
AME011	MMR data elevated above Lake Michigan data collected at IDEM fixed station LM-EC Lake Michigan at East Chicago Waterworks which is located in the vicinity of the ArcelorMittal Indiana Harbor East intakes. However, it is less than upstream data collected at IDEM fixed station IHC-2. This outfall consists of noncontact cooling water, boiler blowdown, zeolite rinse water and stormwater. Preliminary effluent limitations not developed based on source and nature of discharge (intake from Lake Michigan; primarily noncontact cooling water; effluent concentration less than background concentration; effluent concentration small compared to criterion; and, no internal outfalls) and the available dilution. Set equal to the geometric mean of effluent loading data due to the availability of a large, representative effluent data set.
AME014	WLA value equates to limits calculated with site-specific DMT.
AME016	The monthly PEQ is 260 ug/l and the daily PEQ is 1700 ug/l. The internal Outfall 518 current monthly average/daily maximum TBELs are 2.73/8.21 lbs/day and the new calculated TBELs are 3.25/9.79 lbs/day. The internal Outfall 616 current monthly average/daily maximum TBELs are 3.50/10.50 lbs/day and the new calculated TBELs are 5.55/16.63 lbs/day. Set to meet the PELs in the PEL spreadsheet to allow the maximum possible limits due to the high PEQs and internal mass limits. This value does not allow the PEQs to be me, but it does allow the current TBELs to be met. The sampling frequency was set equal to the default of 1/week.
AMW011	The monthly PEQ is 260 ug/l and the daily PEQ is 590 ug/l. This outfall currently has TBELs for zinc, but it is proposed to move part of the source of zinc and part of the TBELs to internal Outfall 509. It is also proposed to create internal Outfalls 701 and 702 that will have TBELs for zinc and discharge through Outfall 011. The proposed internal Outfall 701 monthly average/daily maximum TBELs are 0.38/1.15 lbs/day. The proposed internal Outfall 702 monthly average/daily maximum TBELs are 1.08/3.28 lbs/day. Set to meet the PELs in the PEL spreadsheet to allow the maximum possible limits due to the high PEQs. This value does not allow the PEQs to be me, but it does allow the proposed TBELs to be met. The sampling frequency was set equal to the default of 1/week.
CDF001	No effluent data available. Set based on the PELs in the PEL spreadsheet due to potential future discharge. The PELs in the PEL spreadsheet are based on the acute (1-hour average) WLA. The 4-day average WLA was set equal to the concentration that would allow the PELs in the PEL spreadsheet to be met. The sampling frequency was set equal to 1/week based on potential future permit limit.
EM001	Historical monitoring data are available and indicate the presence of zinc. Set based on the PELs in the PEL spreadsheet due to available monitoring data. The PELs in the PEL spreadsheet are based on the acute (1-hour average) WLA. The 4-day average WLA was set equal to the concentration that would allow the PELs in the PEL spreadsheet to be met. The sampling frequency was set equal to 1/week based on potential future permit limit.

8/18/2011

2. COMPLIANCE SCHEDULES FOR NEW WATER QUALITY-BASED EFFLUENT LIMITS

The draft NPDES permits for each of ArcelorMittal's Indiana Harbor plants contain new water quality-based effluent limits for mercury and other pollutants. There are only limited available intake and effluent data that suggest the intake and effluent concentrations at each facility are within the same range, meaning process wastewater and non-cooling water discharges may not be sources or not significant sources of these pollutants. In addition, additional monitoring in all cases is required in order to capture the variability in discharges of these pollutants in order to evaluate compliance with the proposed limits. As a result, ArcelorMittal requests 54-month compliance schedules for every new WQBEL in each permit. This will provide sufficient time to develop statistically significant databases, determine if there are any controllable sources and implement best management practices or other control strategies. ArcelorMittal requests that the 54-month compliance schedule provisions included in the ArcelorMittal Burns Harbor NPDES Permit (No. IN0000175) be used as a guide. We believe the limited available intake and effluent data for these facilities are not sufficient to establish WQBELs, to determine that the Indiana Harbor facilities are actual sources, or to advise facility management on whether the proposed new WQBELs can be achieved on a consistent basis. If one or more outfalls are determined to not be in compliance with one or more of the new WQBELs, then a 54-month compliance schedule will be necessary to evaluate potential options to address the source(s).

3. MONITORING WAIVERS NAPHTHALENE AND TETRACHLOROETHYLENE

The draft NPDES permits for Indiana Harbor West (Outfall 211, p. 19 of 77) and Indiana Harbor Central Treatment Plant (Outfall 101, p. 6 of 59) contain the following footnote regarding ArcelorMittal's request for monitoring waivers for naphthalene and tetrachloroethylene under 40 CFR §122.44(a)(2):

> *At the end of a twelve month sampling period, the permittee may request in writing, a review of these monitoring requirements. Upon review by IDEM, the permit may be modified, after public notice and for hearing, to reduce or delete the monitoring requirements.*

ArcelorMittal requests the respective footnotes for Indiana Harbor West and Indiana Central Treatment Plant be modified as follows, and that the following footnote be added for the proposed naphthalene and tetrachloroethylene monitoring requirements for Outfall 014 at Indiana Harbor East:

> *At the end of a twelve month sampling period, the permittee may request in writing, a review of these monitoring requirements pursuant to 40 CFR §122.44(a)(2). Upon review by IDEM, the permit may be modified, after public notice and for hearing, to reduce or delete the monitoring requirements.*

4. INTAKE 316(b) REQUIREMENTS

Indiana Harbor Long Carbon and Indiana Harbor Central Treatment Plant

Part III.D (Cooling Water Intake Structures) of the draft Indiana Harbor Long Carbon NPDES permit (p. 60 of 60) and Part III.B. of the draft Indiana Harbor Central Treatment Plant (CTP) NPDES permit (p. 58 of 59) require quarterly reporting by Indiana Harbor Long Carbon and by Indiana Harbor CTP that Indiana Harbor East and Indiana Harbor West, respectively, either are in or out of compliance with CWA Section 316(b). Neither facility has a cooling water intake structure and there is no regulatory basis to impose any CWA Section 316(b) reporting requirements on these facilities. In addition, holding these permitees accountable based on whether the water supplier is in compliance is inappropriate when the compliance condition is beyond the control of the permitee. This reporting is also duplicative because IDEM will receive such reporting from the primary facilities with cooling water intake structures. Accordingly, ArcelorMittal requests the above referenced sections of the Indiana Harbor Long Carbon and Indiana Harbor CTP permits be replaced with the following statements:

> Indiana Harbor Long Carbon (Part III.D.)
> Indiana Harbor Central Treatment Plant (Part III.B.)
>
> *The facility obtains its intake water from the ArcelorMittal Indiana Harbor East facility that is permitted as IN0000094 and whose CWIS is in compliance with the CWA Section 316(b) as noted in its permit. [substitute "Indiana Harbor West facility" for the Indiana Harbor CTP permit]. All monitoring and reporting requirements related to CWA Section 316(b) are contained in the above referenced NPDES permit for the Indiana Harbor East facility [substitute "Indiana Harbor West facility" for the Indiana Harbor CTP permit].*

Indiana Harbor East Intake No. 2

ArcelorMittal further requests that cooling water intake monitoring requirements not apply to the No. 2 intake at Indiana Harbor East. As described in ArcelorMittal's letter to IDEM dated June 6, 2011, the Main Intake at Indiana Harbor East is the primary source of process and cooling water for Indiana Harbor East, supplying water to Indiana Harbor Long Carbon, Indiana Harbor East Plant 1, and the majority of Indiana Harbor East Plant 2. The smaller No. 7 Intake supplies water to the north end of Plant 2. When Lake Michigan levels are high enough, water flows into the forebay through flap gates in the wall to the tunnel shaft, and is conducted to No. 2 Intake via the tunnel that runs underneath the plant, approximately 200 feet below grade. The No. 2 Intake creates the draw that brings the water in. From the intake, the water is then conveyed out to various locations in Plant 2.

For a number of years, low water levels in Lake Michigan created a situation in which the levels are so low that the water line was below the flap gates and thus the pumps at No. 2 Intake could not draw Lake water into the plant. This necessitated installation of low lift pumps that pump the water over a wall (the wall with flap gates described above) that divides the tunnel shaft forebay from the Main Intake. This surcharges the system, and from there the water flows to No. 2 Intake via the plant tunnel. Water travels across the plant to reach the No. 2 Intake, and water may be picked up by the low lift pumps at the main intake. In other words, water from Lake Michigan is not withdrawn directly into the facility through the No. 2 Intake. Accordingly, it is not appropriate to impose Section 316(b) monitoring and

4. INTAKE 316(b) REQUIREMENTS

reporting requirements and possible controls at the No. 2 Intake. Thus, Part IV of the Indiana Harbor East NPDES permit should not include the No. 2 Intake as subject to Clean Water Act (CWA) Section 316(b) requirements).

Indiana Harbor East Main Intake and Intake No. 7

ArcelorMittal requests that Intake No. 7 at Indiana Harbor East be designated as the Lake Michigan intake at which the Section 316(b) studies be conducted, rather than conduct such studies at both the Main Intake and Intake No. 7. Given the high cost and resource intensive nature of the Section 316(b) studies, ArcelorMittal is proposing to conduct one set of studies at Intake No. 7 and transfer the results of the studies to the Main Intake.

5. TEMPERATURE AND THERMAL LOAD MONITORING AND REPORTING

The draft NPDES permits for ArcelorMittal's Indiana Harbor plants: IH East, IH Long Carbon, IH West and IH Central Treatment Plant, contain twice per week temperature monitoring requirements and associated net thermal discharge loading reporting requirements for external outfalls discharging to the Indiana Harbor Ship Canal and Indiana Harbor. In the Fact Sheets for the NPDES permits, IDEM acknowledges that thermal discharges from the Indiana Harbor Plants do not pose a reasonable potential to exceed water quality standards for temperature. The reasonable potential evaluation is based on the results of instream sampling and a multi-discharger thermal model (see, for example, p. 32 of the Fact Sheet and pages 14 and 15 of Appendix A of the Fact Sheet for the draft IH West permit). The model results have been confirmed by studies that were conducted by Inland Steel and Ispat-Inland during 1997 and 1998 (see Attachment A below). Nonetheless, IDEM has determined that temperature and thermal loadings are pollutants of concern and has proposed the above-mentioned monitoring requirements, citing 327 IAC 5-2-11.5(e). ArcelorMittal disagrees with that determination.

In light of IDEM's finding that there is no reasonable potential to exceed the water quality standards for temperature within the Indiana Harbor Ship Canal and Indiana Harbor, the proposed temperature monitoring requirements and thermal discharge loading reporting requirements pose an unnecessary burden on these four facilities. While there is no particular Commissioner substantiation or rationale required by 327 IAC 5-2-11.5(e), that language was originally placed in the rule to allow monitoring based on situations where there is limited data and some evidence that there may be environmental harm. In this instance, there are sufficient data and historical documentation that the thermal discharges from these four facilities have neither caused exceedances of the temperature water criteria nor adversely impacted any biological species. These monitoring and reporting requirements are only monitoring for the sake of monitoring that will provide no useful direct information or data to assess compliance with ambient water quality standards. Therefore, these thermal monitoring and reporting requirements should be removed from the permits.

ArcelorMittal is willing to offer a periodic study approach that will provide definitive data to determine thermal discharge loadings from the Indiana Harbor Plants and definitive data to assess compliance with ambient Indiana water quality standards for temperature in the Indiana Harbor Ship Canal and Indiana Harbor. Following is the suggested language to be included in the permits as a replacement for the thermal monitoring and reporting requirements.

> *"Not later than 90 days after issuance of this permit, the permittee shall submit to IDEM a quality assurance project plan (QAPP) for thermal load and in-stream temperature monitoring studies to be conducted during warm weather months twice during the term of the NPDES permit (second and fourth years). The studies shall include thermal load determinations for all ArcelorMittal facilities discharging to the Indiana Harbor Ship Canal and Indiana Harbor, and sufficient concurrent in-stream temperature measurements to assess compliance with Indiana water quality standards for temperature. IDEM will provide comments within 45 days of receipt of the proposed studies. If IDEM does not provide comments within 45 days, the permittee shall conduct the studies as proposed."*

This special condition should be included in each NPDES permit for ArcelorMittal's Indiana Harbor NPDES permits and the outfall and intake temperature monitoring requirements and the associated thermal discharge reporting requirements should be removed.

5. TEMPERATURE AND THERMAL LOAD MONITORING AND REPORTING

Finally, as discussed previously with IDEM, ArcelorMittal routinely measures intake and effluent temperatures early in the morning of each monitoring day, typically before 8:00 AM when 24-hour composite samplers are serviced. Sample collection and temperature measurements are conducted using contract resources. Any requirement for conducting temperature measurements during the mid-afternoon would require dispatching sampling crews for additional hours at additional expense, for no perceived environmental benefit.

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5. TEMPERATURE AND THERMAL LOAD MONITORING AND REPORTING

Attachment A
Indiana Harbor and Indiana Harbor Ship Canal
1997, 1998 In-stream Temperature Monitoring Studies
(Data Previously Submitted to IDEM by Inland Steel and Ispat-Inland)

Introduction

The Indiana Department of Environmental Management (IDEM) has requested that ArcelorMittal provide information regarding thermal discharges from the Indiana Harbor West facility. We understand the purpose of the data request is to assess compliance with Indiana water quality standards for temperature in the Indiana Harbor Ship Canal and Indiana Harbor. The current NPDES permit for Indiana Harbor West does not contain monitoring requirements that would generate the necessary data to calculate historic thermal discharge loadings. Intake and effluent temperature monitoring under current relatively low production rates at Indiana Harbor West would not yield useful data in that regard.

To address the question of compliance with Indiana water quality standards for temperature in the Indiana Harbor Ship Canal and Indiana Harbor, ArcelorMittal requests that IDEM evaluate ambient temperature monitoring data collected by Inland Steel during 1997 and Ispat-Inland in 1998. These studies were conducted pursuant to Inland Steel's (now Indiana Harbor East) NPDES permit. The scope of the studies included ambient temperature measurements at key locations in the Indiana Harbor Ship Canal and Indiana Harbor from April to November of each year. Measurements were made approximately once per week during the summer months and less frequent in the spring and fall. In-stream temperature measurements were made near the water surface, at mid-depth and near the bottom of the Canal and Harbor. The study results show compliance with applicable Indiana water quality standards during a period of relatively high production and relatively high thermal loads.

At the time these studies were conducted both LTV Steel (Indiana Harbor West) and Inland and Ispat-Inland (Indiana Harbor East) were operating at reasonably high production rates as measured by raw steel production. Ambient air temperatures were within normal ranges and there have been no significant changes in the flow regimes in the Indiana Harbor Ship Canal between then and now. Consequently, the results of those studies can be used to assess compliance with applicable Indiana water quality standards for temperature under current discharge and production conditions and under prospective future high production conditions.

Results of 1997 and 1998 Temperature Monitoring Studies

In 1997 and 1998, in-stream temperature was measured from April through November of each year at two locations in the Indiana Harbor Ship Canal and at one location in Indiana Harbor. Temperature in the Indiana Harbor Ship Canal was measured in the center of the canal at the now Indiana Harbor Long Carbon Outfall 001, and at the center of the canal between now Indiana Harbor East Outfalls 008 and 011. Temperature in Indiana Harbor was measured in the center of the Harbor, between now Indiana Harbor East Outfalls 011, 014, and 018. At each location, temperature was measured one-foot below the water surface, at mid-depth, and one-foot above the bottom. This temperature measuring protocol is consistent with ambient temperature monitoring protocols established at 327 IAC 2-1.5-8(6)(c)(4)(D)(i).

5. TEMPERATURE AND THERMAL LOAD MONITORING AND REPORTING

The final two monitoring events conducted on October 26 and November 24, 1998 included temperature measurements at additional locations across the Canal at Outfall 001 and between Outfalls 008 and 011. At each location, temperatures were monitored near the east bank and the west bank in addition to the center of the canal. Aerial maps of all monitoring locations are included as Exhibit A.

Exhibit B presents the in-stream temperature monitoring data. For each monitoring event, the maximum recorded temperature was compared to the Indiana maximum water quality standards for Indiana streams within the Great Lakes basin (327 IAC 2-1.5-8(6)(c)(4)(C)). Both the Indiana Harbor Ship Canal and Indiana Harbor are streams within the Great Lakes basin and are not within the open waters of Lake Michigan (327 IAC 2-15-2(64)).

The in-stream temperature monitoring data show maximum temperature water quality standards were met at all locations monitored in 1997 and 1998. The results are shown graphically in Figures 1 and 2.

Historical Ambient Air Temperature Data Analysis

Monthly average ambient air temperatures for 1997 and 1998 were compared to historic monthly average ambient air temperatures from 1970 to 2009 to determine whether air temperatures observed in 1997 and 1998 were typical of air temperatures historically measured and thus consistent with typical conditions. A summary of the summer monthly average data is presented below (all temperatures in Deg. F):

	July	August	September
1997	74.2	71.8	70.3
1998	74.3	74.5	73.2
1970-2009 Avg.	72.4	72.7	70.3
1970-2009 Max.	77.1	76.9	74.1

These data show ambient air temperatures in 1997 and 1998 were typical of historic conditions and suggest in-stream temperatures for 1997 and 1998 are representative of thermal discharges at the time and typical summer air temperatures. Monthly average data for January through December are included as Exhibit C and are shown graphically in Figure 3.

1997 and 1998 Steel Production at LTV Steel and Inland Steel, Ispat-Inland

Presented below is comparison of raw steel production for 1997 and 1998 and current steelmaking capacity (2010 joint capacity of Indiana Harbor East and West). Raw steel production is a good indicator of overall mill activity and thermal discharges. The 1997 and 1998, raw steel production was calculated as the sum of annual raw steel tonnages from the two basic oxygen furnace) BOF shops and the one electric arc furnace (EAF) shop at Inland Steel and Ispat-Inland, and the single BOF shop at LTV Steel.

1997 Production	9,816,000 tons	98.2 % of 2010 Nominal Capacity
1998 Production	9,282,000 tons	92.8 % of 2010 Nominal Capacity
2010 Nominal Capacity	10,000,000 tons (estimated)	

Raw steel production during each year was in the immediate range of the current nominal steel capacity at Indiana Harbor. Furthermore, the following thermal load sources that were operating at Inland Steel or Ispat-Inland in 1997 and 1998 are no longer operating:

5. TEMPERATURE AND THERMAL LOAD MONITORING AND REPORTING

- No. 4 AC Power Station (Outfall 018)
- No. 2A Blooming Mill/21" Bar Mill (Outfall 014)
- Plant 1 Galvanizing Line (Outfall 014)

Thus, today's thermal loading at comparable steel production rates are expected to be less than observed in 1997 and 1998. Consequently, thermal discharges and impacts on ambient water temperatures in the Indiana Harbor Ship Canal and Indiana Harbor at future high production rates are expected to be less than those observed in 1997 and 1998.

EXHIBIT A (page 1 of 4)

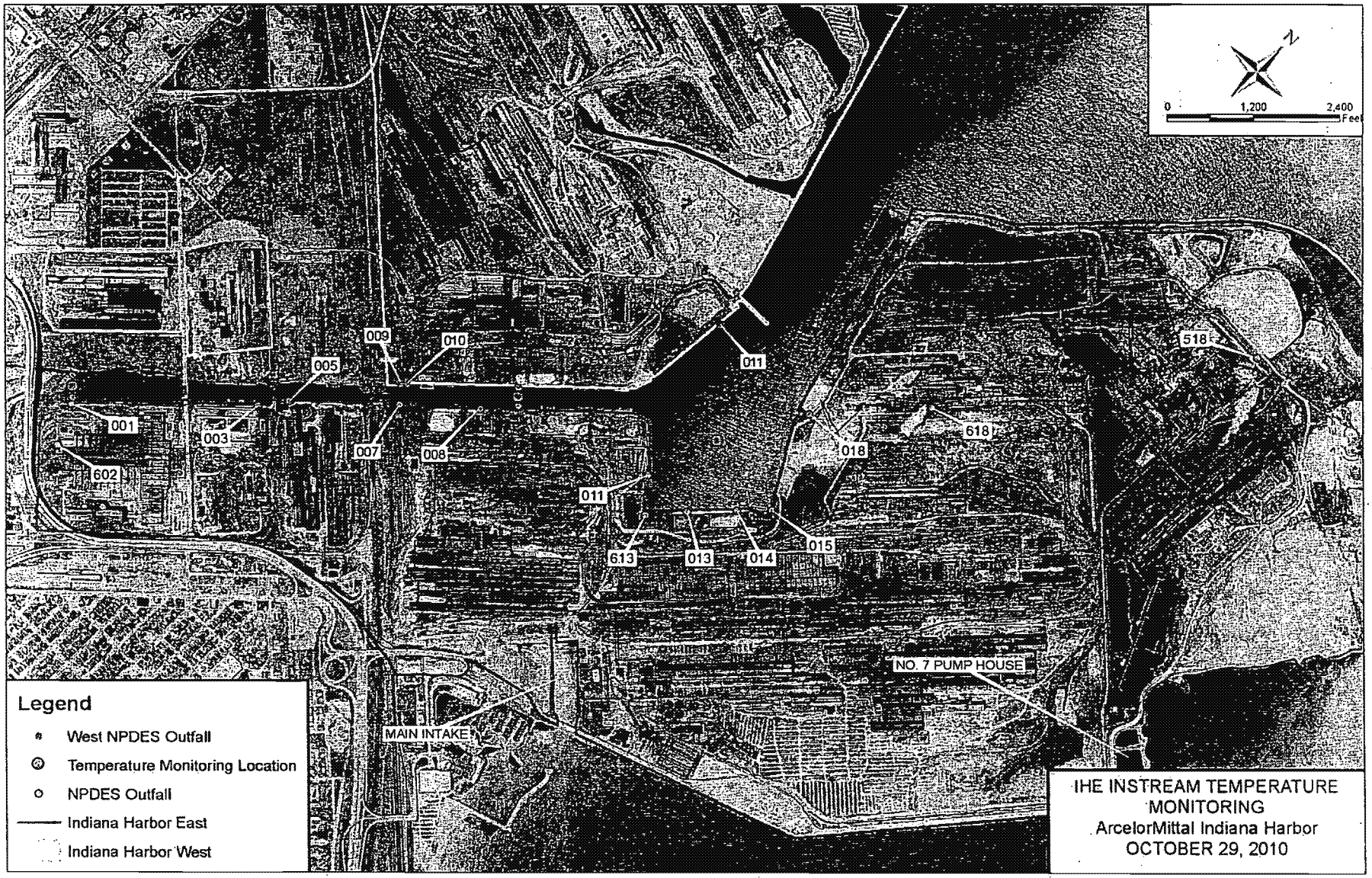

EXHIBIT A (page 2 of 4)

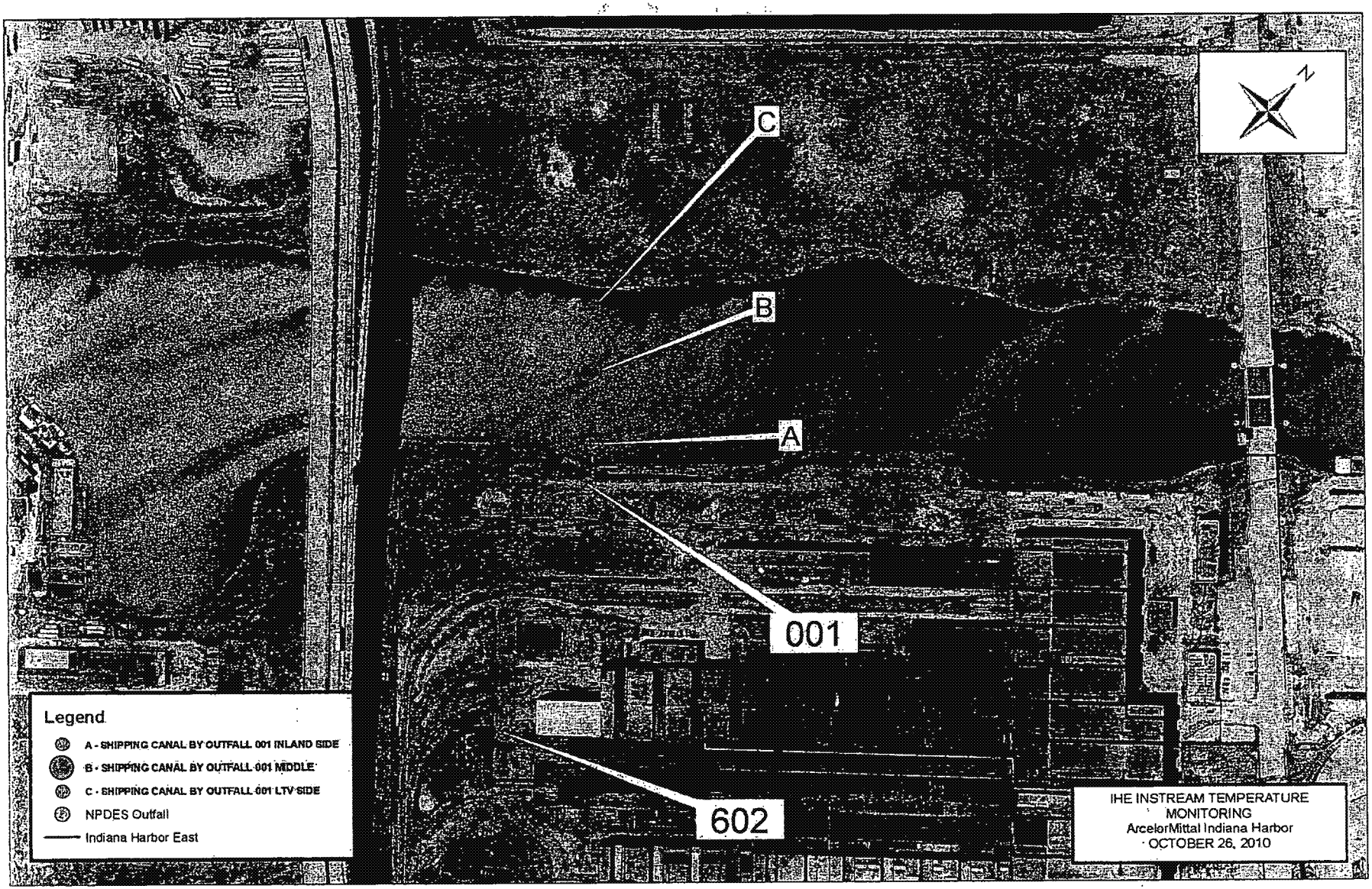

EXHIBIT A (page 3 of 4)

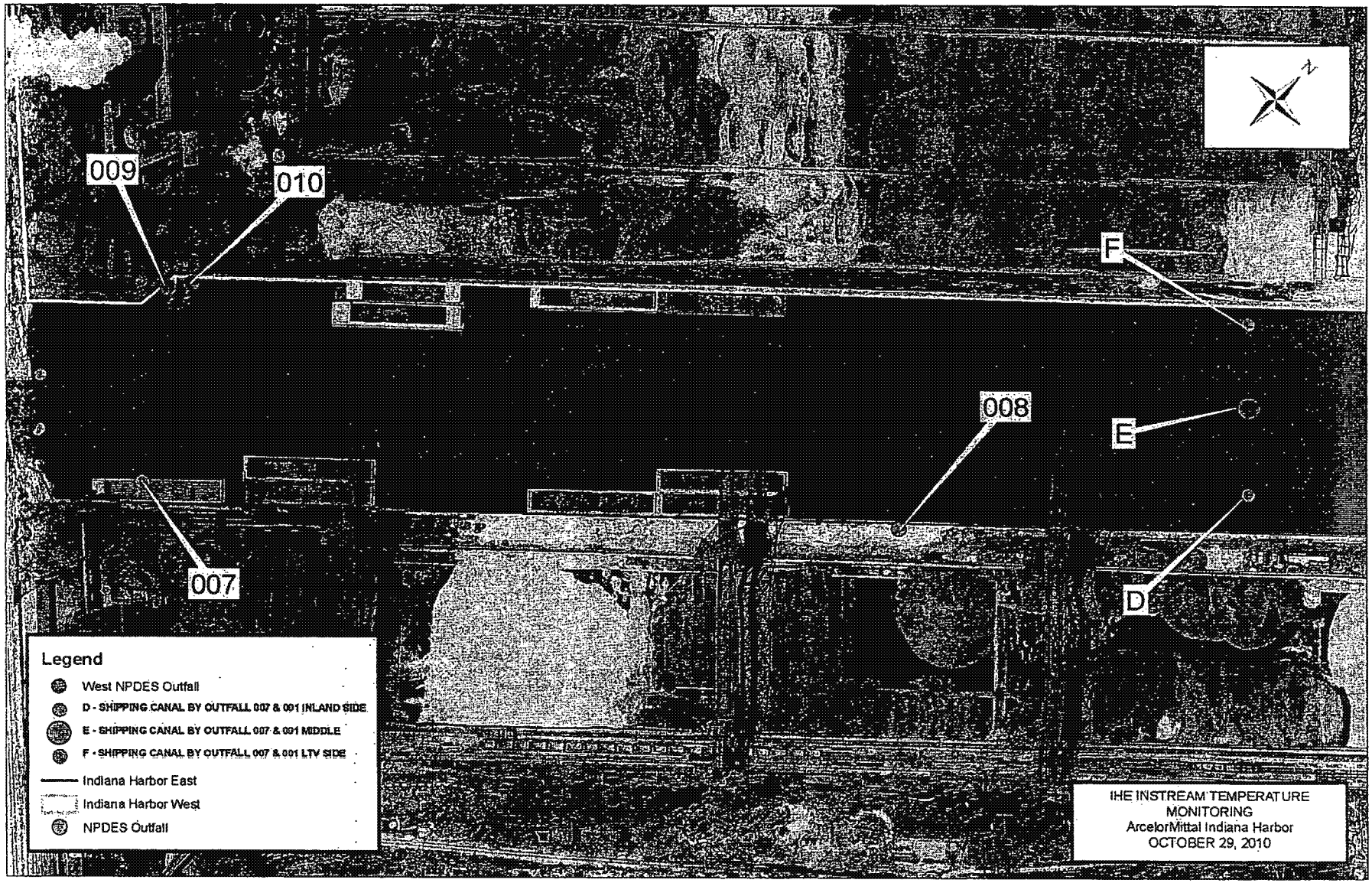

EXHIBIT A (page 4 of 4)

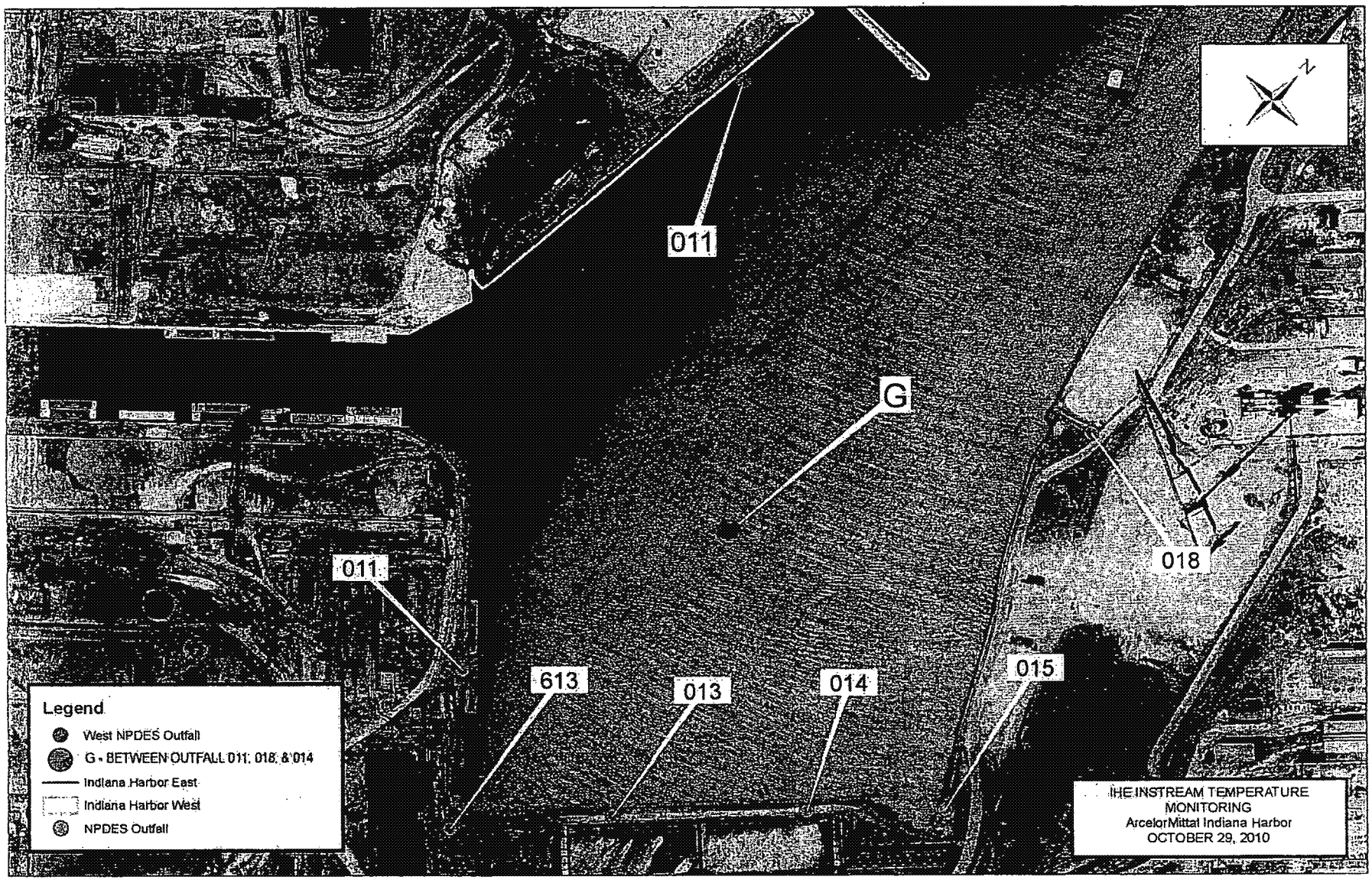

EXHIBIT B

Instream Temperature Monitoring Study
Indiana Harbor and Indiana Harbor Ship Canal
Data Collected in 1997 and 1998 (all temperatures in deg F)

11/16/2010

Date	ONE FOOT BELOW SURFACE			MID-DEPTH			ONE FOOT FROM BOTTOM			MAXIMUM	Indiana
	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	of Recorded Temperatures	Water Quality Standard (Lake Michigan)
04/29/97 (center)	64	55	57	63	53	51	63	52	50	64	70
05/21/97 (center)	67	67	65	66	63	63	65	65	55	67	80
06/04/97 (center)	71	67	68	70	61	66	64	55	58	71	90
06/11/97 (center)	73	71	70	72	60	58	72	59	58	73	90
06/16/97 (center)	74	71	70	73	67	64	73	62	62	74	90
06/27/97 (center)	79	75	75	78	65	63	77	63	62	79	90
07/03/97 (center)	77	70	70	75	61	64	73	59	60	77	90
07/07/97 (center)	76	75	74	74	69	62	70	62	62	76	90
07/16/97 (center)	82	77	75	80	70	68	73	66	66	82	90
07/24/97 (center)	82	82	81	81	74	72	80	70	70	82	90
08/01/97 (center)	84	80	81	83	76	75	82	73	73	84	90
08/04/97 (center)	84	82	82	82	80	78	81	72	72	84	90
08/14/97 (center)	80	79	77	80	76	74	80	73	72	80	90
08/21/97 (center)	79	78	77	79	76	78	78	72	72	79	90
08/26/97 (center)	81	77	79	80	75	77	80	70	71	81	90
09/03/97 (center)	78	80	78	78	78	77	77	73	73	80	90
09/13/97 (center)	78	76	75	78	71	71	77	69	69	78	90
09/18/97 (center)	79	76	76	79	72	74	79	71	70	79	90
09/25/97 (center)	76	73	74	75	73	73	75	68	68	76	90
10/01/97 (center)	72	74	74	72	71	70	72	67	66	74	78
10/23/97 (center)	63	63	62	63	59	60	63	58	57	63	78
11/25/97 (center)	58	53	50	58	50	46	57	44	43	58	70

ED_002857_00000116-00230

EXHIBIT B

Instream Temperature Monitoring Study
Indiana Harbor and Indiana Harbor Ship Canal
Data Collected in 1997 and 1998 (all temperatures in deg F)

11/16/2010

Date		ONE FOOT BELOW SURFACE			MID-DEPTH			ONE FOOT FROM BOTTOM			MAXIMUM	Indiana
		Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	Ship Canal near Outfall 001	Between Outfalls 007 & 011	Between Outfalls 011, 018 & 014	of Recorded Temperatures	Water Quality Standard (Lake Michigan)
04/24/98	(center)	65	51	60	61	58	56	61	55	52	65	70
05/14/98	(center)	73	66	67	71	60	61	70	55	55	73	80
06/16/98	(center)	75	70	74	74	69	66	72	67	65	75	90
06/03/98	(center)	74	73	71	73	68	69	73	66	66	74	90
06/10/98	(center)	72	70	71	70	67	66	69	63	63	72	90
06/23/98	(center)	79	75	77	78	70	71	76	66	67	79	90
07/07/98	(center)	81	79	81	81	74	78	80	71	72	81	90
07/17/98	(center)	85	84	85	83	78	77	82	73	75	85	90
07/23/98	(center)	83	84	83	83	78	77	82	74	75	84	90
08/07/98	(center)	81	79	77	81	76	74	80	73	70	81	90
08/04/98	(center)	83	82	81	83	78	78	82	75	75	83	90
08/14/98	(center)	84	81	81	82	76	76	82	72	72	84	90
08/20/98	(center)	83	79	82	82	78	76	82	75	75	83	90
08/28/98	(center)	84	80	81	84	76	75	84	73	73	84	90
09/04/98	(center)	82	81	81	82	78	77	81	75	74	82	90
09/10/98	(center)	80	76	77	80	79	74	79	72	72	80	90
09/17/98	(center)	82	80	80	81	77	75	81	72	72	82	90
09/23/98	(center)	79	78	78	74	73	74	78	70	70	79	90
09/30/98	(center)	76	75	76	76	70	71	75	67	67	76	90
10/26/98	(center)	69	66	64	69	60	61	68	57	55	69	78
10/26/98	(east bank)	69	66		69	60		68	57			78
10/26/98	(west bank)	68	66		69	61		68	56			78
11/24/98	(center)	58	57	56	58	54	53	57	51	51	58	70
11/24/98	(east bank)	58	58		58	55		57	52			70
11/24/98	(west bank)	58	56		57	54		57	51			70

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EXHIBIT C

ArcelorMittal Indiana Harbor West
Instream Temperature Monitoring Study
Monthly Average Air Temperature Statistics at Ogden Dunes, IN
1970 to 2009

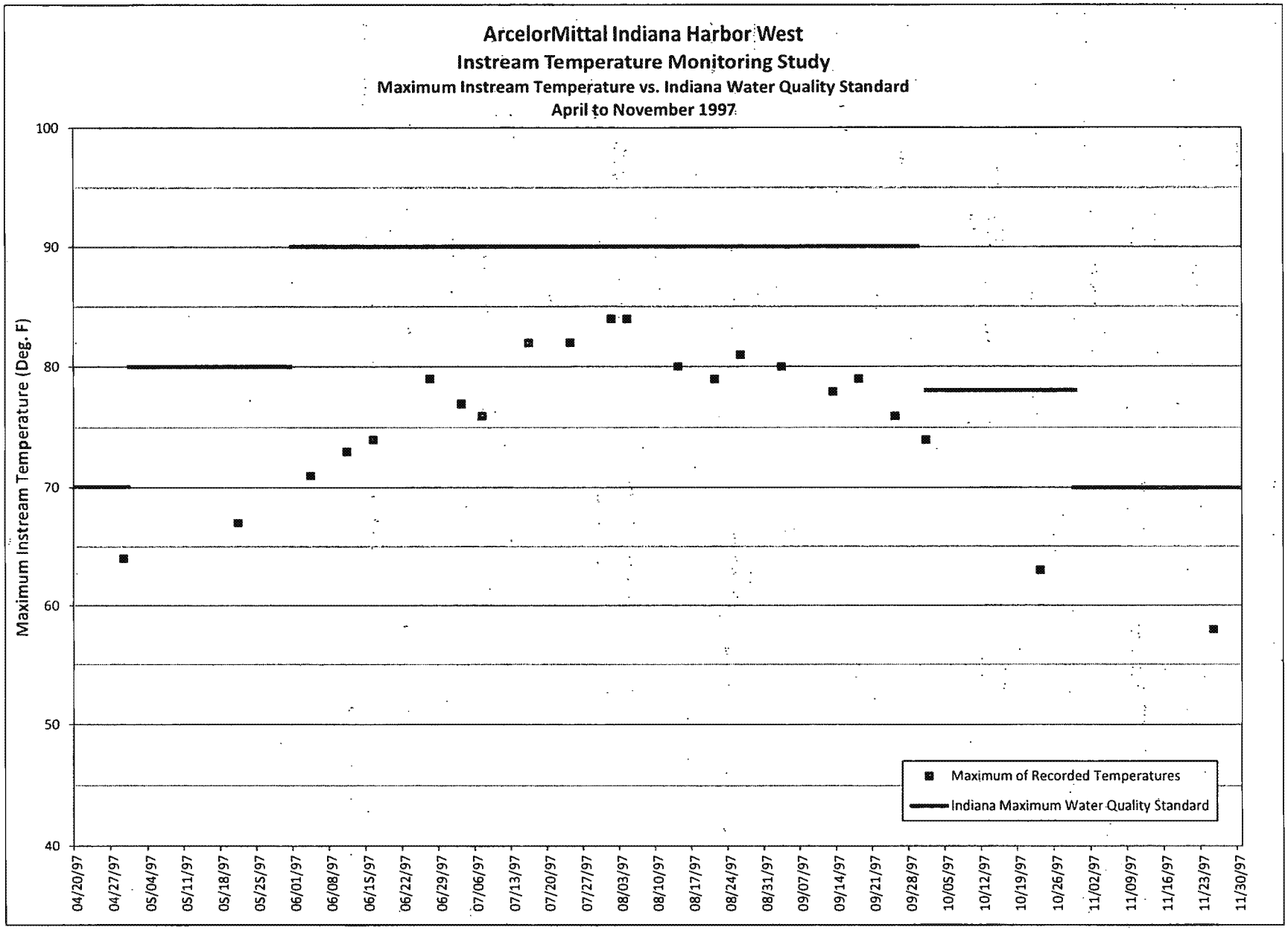
Amendola Engineering, Inc.
11/16/2010

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Temperature Study	1997	43.4	51.6	54.4	58.3	62.9	72.6	74.2	71.8	70.3	62.6	54.9	50.8
Temperature Study	1998	49.4	56.1	54.6	62.0	68.7	73.3	74.3	74.5	73.2	64.1	59.1	53.0
AVG Monthly Average Temperature		46.0	50.1	53.7	61.2	64.7	71.2	72.4	72.7	70.3	61.6	56.5	48.9
MAX Monthly Average Temperature		52.8	56.1	58.4	64.9	71.3	76.3	77.1	76.9	74.1	68.2	61.4	54.5

Temperature Data Sources
1970-1989 - Station No. 12654299999
1990-2009 - Station No. 12424499999

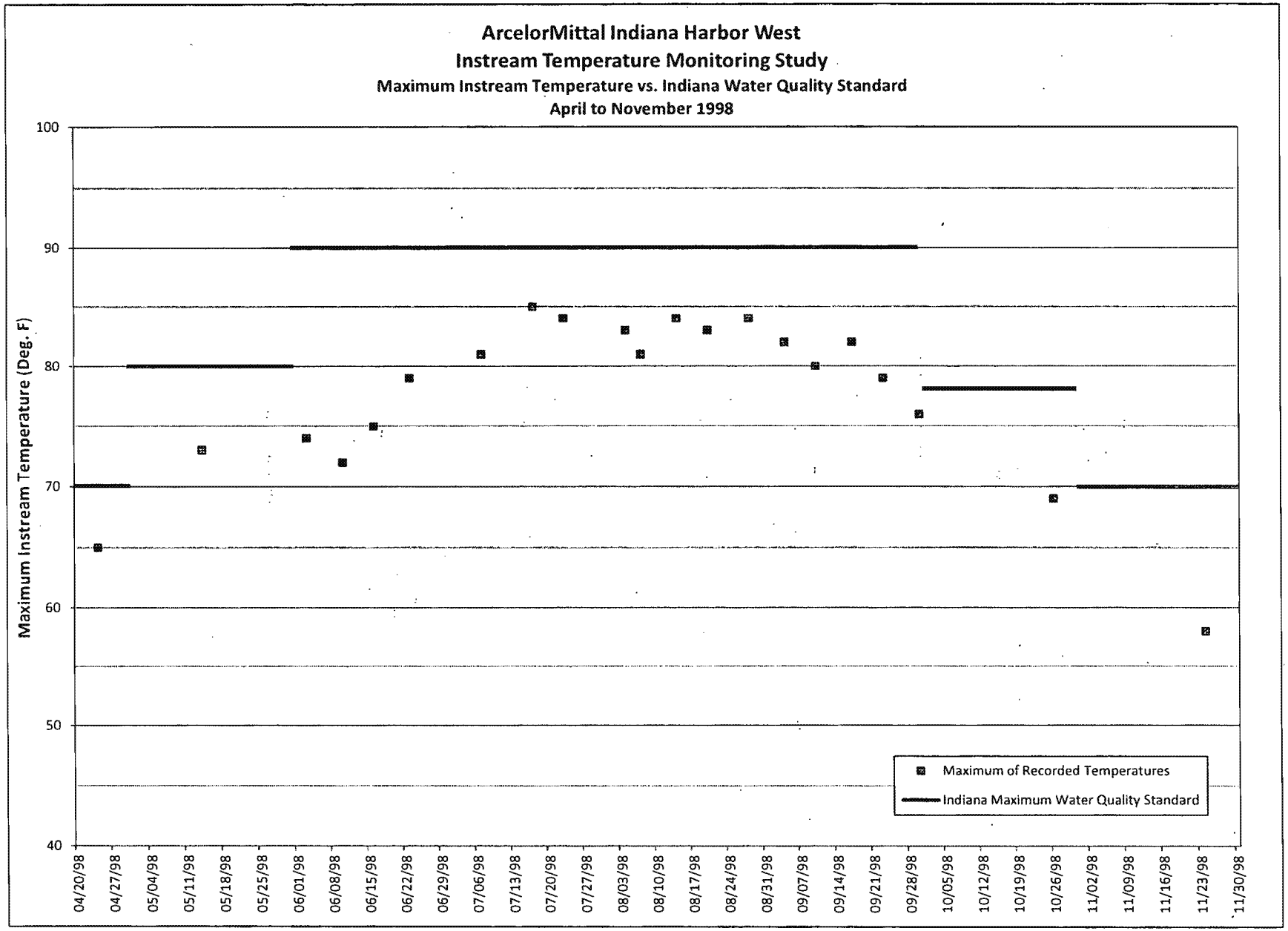
ED_002857_00000116-00232

FIGURE 1



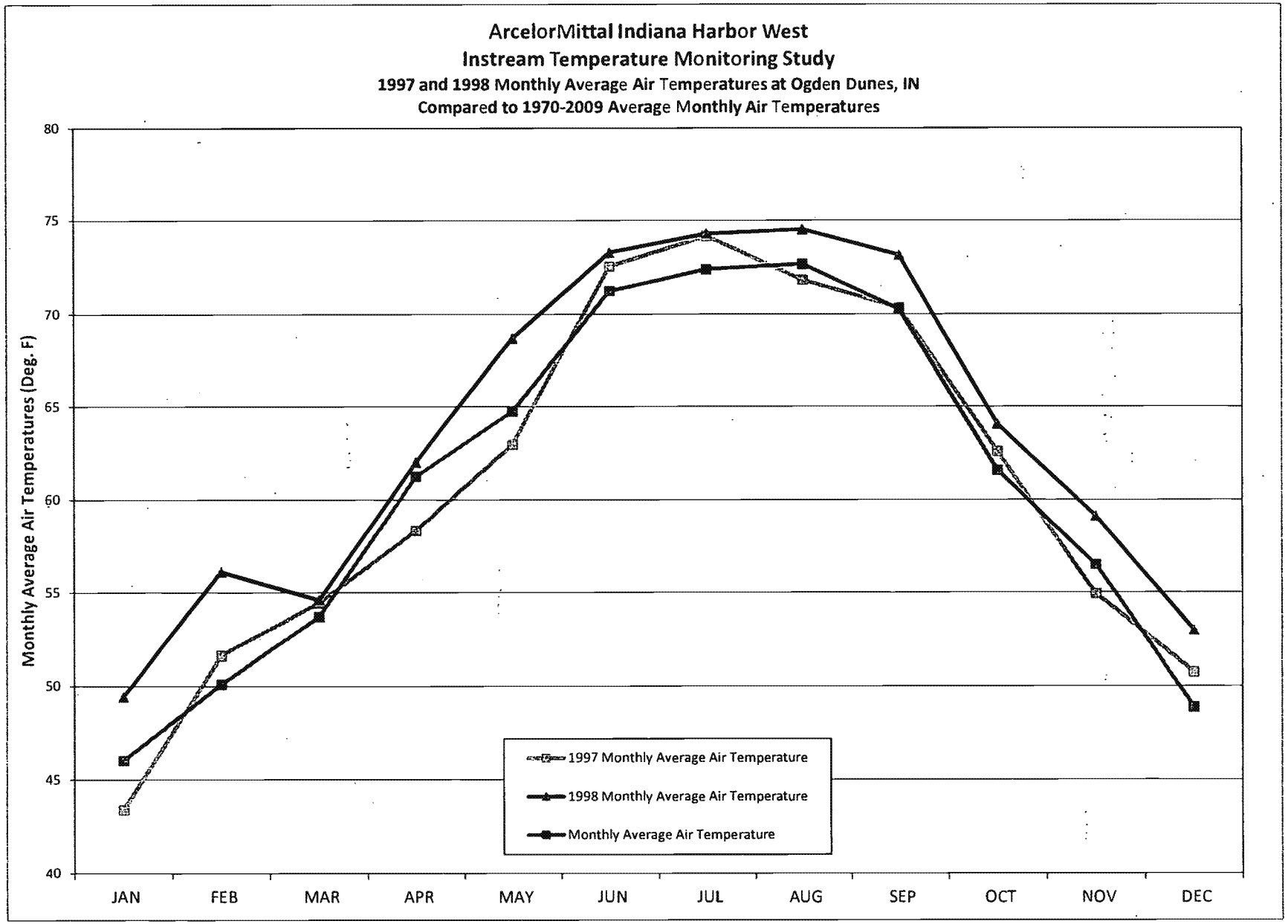
ED_002857_00000116-00233

FIGURE 2



ED_002857_00000116-00234

FIGURE 3


ArcelorMittal Indiana Harbor West
Instream Temperature Monitoring Study
1997 and 1998 Monthly Average Air Temperatures at Ogden Dunes, IN
Compared to 1970-2009 Average Monthly Air Temperatures
Monthly Average Air Temperatures (Deg. F)
80
75
70
65
60
55
50
45
40
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1997 Monthly Average Air Temperature
1998 Monthly Average Air Temperature
Monthly Average Air Temperature

6. EPA CONSENT DECREE AND OTHER PRIOR PERMIT CARRY OVER REQUIREMENTS (IH EAST & IH LONG CARBON)

Visible Oil Monitoring

The draft NPDES permits for Indiana Harbor East at Part I.G. (p. 51 of 84) and Indiana Harbor Long Carbon at Part I.L., (p. 43 of 60) contain proposed visible oil monitoring requirements carried over from an Inland Steel Company federal consent decree from the 1990's (H90-0328). ArcelorMittal reports the results of its visible oil monitoring program in accordance with that consent decree on a quarterly basis to EPA Region 5. These records are available for IDEM's review at any time. Because these requirements are contained in a unilateral EPA consent decree and because IDEM has enforcement authority under the narrative water quality standards included in the draft NPDES permit, including the visible oil monitoring requirements in the draft NPDES permits is redundant, not reasonable and exceeds IDEM's authority. A consent decree is intended to have a finite duration. Including these requirements in the NPDES permits could subject ArcelorMittal to an extended and unwarranted requirement as well as duplicative and potentially inconsistent enforcement by EPA and IDEM. Accordingly, ArcelorMittal requests that IDEM remove the visible oil monitoring requirements from the respective draft NPDES permits.

Reporting Requirements for Solvents, Degreasing Agents, Rolling Oils, Water Treatment Chemicals, and Biocides

The draft NPDES permits for Indiana Harbor East at Part I.I. (p. 52 of 84) and Indiana Harbor Long Carbon at Part I.M. (p. 43 of 60) contain proposed reporting requirements for the above-listed substances carried over from the current NPDES permit for Indiana Harbor East. As discussed previously with IDEM, these reporting requirements are burdensome and, to a large extent, duplicative of other state and federal reporting requirements. For example, many of these substances are subject to reporting under the federal Toxic Release Inventory (TRI) reporting program under SARA, and the NPDES permit requires reporting and approvals for use of water treatment chemicals and biocides. These reporting requirements were removed from the ArcelorMittal Burns Harbor NPDES permit and have not been included in the draft renewal NPDES permits for the Indiana Harbor West (Permit No. IN0000205) and Indiana Harbor Central Wastewater Treatment Plant (Permit No. IN0063711). Accordingly, ArcelorMittal requests that these reporting requirements be removed from the NPDES permits for Indiana Harbor East and Indiana Harbor Long Carbon.

Long-Term Instream Biological Monitoring

ArcelorMittal requests that IDEM remove the sediment monitoring requirements set out at Part I.H. (p. 51 of 84) of the draft NPDES permit for Indiana Harbor East. The US Army Corps of Engineers ship canal dredging project referenced in the March 1993 Consent Decree (H90-0328) between Inland Steel and EPA will be conducted over the next several decades. Therefore, it is not reasonable or appropriate to reference the long-term instream biological monitoring requirements in the NPDES permit for Indiana Harbor East. Such requirements are included in the above-referenced Consent Decree and should be addressed under terms of the Consent Decree and not the NPDES permit.

6. EPA CONSENT DECREE AND OTHER PRIOR PERMIT CARRY OVER REQUIREMENTS (IH EAST & IH LONG CARBON)

Sediment Monitoring

ArcelorMittal requests that IDEM remove the sediment monitoring requirements set out at Part I.J. (p. 53 of 84) of the draft NPDES permit for Indiana Harbor East. The US Army Corps of Engineers ship canal dredging project referenced in the March 1993 Consent Decree (H90-0328) between Inland Steel and EPA is planned to take place over the next several decades. Therefore, it is not reasonable or appropriate to reference the sediment monitoring requirements in the NPDES permit for Indiana Harbor East. Such requirements are included in the above-referenced Consent Decree and should be addressed under terms of the Consent Decree and not the NPDES permit.

Discharges to the Lake Michigan Impoundment and No. 6 Dock

The draft NPDES permit for Indiana Harbor East contains special conditions for the Lake Michigan Impoundment (Part I.S., (p. 62 of 84) and the No. 6 Dock (Part I.R., P. 61 of 84) carried over from the current NPDES permit that are not appropriate for inclusion in the renewal NPDES permit. A copy of the Army Corps permit, effective March 5, 1986, for the Lake Michigan revetment was provided to IDEM by letter of August 4, 2011. Please note that this permit only requires annual water quality sampling when active filling has occurred. The requirements for monitoring of Lake Michigan Impoundment and sealing leaks in the sheet pile wall revetment were driven by the fact that, at that time, Inland Steel was discharging process water to the groundwater from its fly ash pits and the No. 7 Blast Furnace slag pits. The No. 7 Blast Furnace slag pits were then unlined. The Lake Michigan Impoundment has been monitored for over 18 years. The results have not varied significantly during the past 10 years or more. These results demonstrate that water quality in the impoundment is stable. Accordingly, further monitoring is unnecessary and, in fact, IDEM has removed this condition from the current draft permits.

Similarly, sealing of leaks in the sheet pile wall at No. 6 Dock was also a requirement driven by leakage of the fly ash pits and the slag pits to the groundwater. Given the number of years since cessation of discharges from both of these sources, and the fact that the facility continues its sampling of perimeter wells, this draft permit condition is also unnecessary and should be removed.

In addition to the above, these requirements are also subject to the unilateral March 1993 Consent Decree referenced above. As stated above, consent decrees are intended to have limited life and subject to their own modification procedures. Imposing these requirements in the NPDES permit memorializes the requirements, which exceeds IDEM's authority, requires duplicative reporting, and can potentially cause inconsistent enforcement by the regulatory agencies.

No. 7 Blast Furnace

The draft NPDES permit for Indiana Harbor East contains special conditions regarding the No. 7 Blast Furnace at Part I.L, p. 54 of 84). The No. 7 Blast Furnace slag pit reconstruction project conducted during 2004 and 2005 included clay lining (3 feet of clay, plus two feet of slag fines for armoring). Groundwater

6. EPA CONSENT DECREE AND OTHER PRIOR PERMIT CARRY OVER REQUIREMENTS (IH EAST & IH LONG CARBON)

pumping ceased at that time as well. A copy of the Purchase Order and specification sheet dated April 24, 2004 issued to Beemsterboer, Inc., the contractor who lined the pits, was provided to IDEM by letter of August 4, 2011. Given that this project was completed several years ago and was the subject of the unilateral March 1993 Consent Decree, references to requirements for slag pit lining and groundwater pumping exceeds IDEM's authority, is unnecessary and should be removed from the NPDES permit. Part I, paragraph L in the draft NPDES permit should either be removed or replaced with the following statement:

> *"The permittee is prohibited from discharging process wastewater from the No. 7 Blast Furnace except through Internal Outfall 518 and subsequently through Outfall 018; or, as necessary, through internal Outfall 613 and subsequently through Outfall 014."*

7. WHOLE EFFLUENT TOXICITY (WET) MONITORING FREQUENCY

Biomonitoring Frequencies

The above-referenced draft NPDES permits contain proposed biomonitoring requirements as follows:

Plant	Outfalls (TUc Thresholds)	Initial Biomonitoring Frequency	Follow-Up Biomonitoring Frequency if No Toxicity Demonstrated with Initial Testing
Indiana Harbor East	014 (10.0) 018 (7.7)	3 consecutive months, 2 species	Quarterly, life of permit; most sensitive species after 3 months with no toxicity
Indiana Harbor Long Carbon	001 (17.3)	3 consecutive months, 2 species	Quarterly, life of permit; most sensitive species after 3 months with no toxicity
Indiana Harbor West	009 (2.2) 011 (5.8) 012 (1.0)	None specified	Quarterly, life of permit; most sensitive species after 3 tests with no toxicity
Indiana Harbor Central Treatment Plant	001 (9.8)	None specified	Quarterly, life of permit; most sensitive species after 3 tests with no toxicity

ArcelorMittal finds the proposed biomonitoring frequencies are inconsistent across the plants and are excessive. In the alternative, ArcelorMittal requests the biomonitoring frequencies be made uniform across the four permits as follows: two species, monthly for three months. If no toxicity is demonstrated, annual monitoring using most sensitive species determined as noted below.

Most Sensitive Species

The Indiana Harbor East and Long Carbon permits contain the following requirement:

> *In the absence of toxicity with either species in the monthly testing for three months in the current tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the immediate past.*

The Indiana Harbor West and Central Treatment Plant permits contain the following requirement:

> *In the absence of toxicity with either species in the initial three (3) tests, sensitive species will be selected based on frequency and failure of whole effluent toxicity tests with one or the other species in the previous toxicity tests.*

ArcelorMittal finds these statements to be somewhat confusing with respect to determining the most sensitive species for subsequent testing after the initial three monthly tests, assuming no toxicity is demonstrated:

7. WHOLE EFFLUENT TOXICITY (WET) MONITORING FREQUENCY

In the absence of toxicity with either species in the initial three (3) monthly tests, the permittee will select the most sensitive species for subsequent testing based on evaluation of the toxicity response from the three (3) monthly tests, or from any prior toxicity tests conducted by the permittee.

Indiana Harbor West – Outfall (Monitoring Station 012

As noted in the above table, and as specified in the draft NPDES permit for Indiana Harbor West at Part I.H.f.(2), (p. 52 of 77), the threshold chronic toxicity level for triggering a toxicity reduction evaluation (TRE) is 1.0 TUc. This threshold level is based on IDEM's erroneous determination that Indiana Harbor West No. 2 and 3 water intakes withdraw water directly from Lake Michigan and Outfall 012 discharges directly to the "open waters of Lake Michigan". Reference is made to ArcelorMittal's comments regarding IDEM's erroneous determination that monitoring station 012 discharges to the "open waters of Lake Michigan" and the related proposed water quality based effluent limits for monitoring station 012, which are not warranted based on *reasonable potential to exceed* assessments. Likewise, the proposed chronic toxicity threshold level of 1.0 TUc is not warranted for monitoring station 012. Given the discharge circumstances and high rate recycle for monitoring station 012, ArcelorMittal requests that the renewal NPDES permit not contain any biomonitoring requirements for monitoring station 012, if limited and monitored at all.

8. SWPPP BASELINE REQUIREMENTS FOR LEAD AND ZINC

The draft Indiana Harbor East and Indiana Harbor Long Carbon NPDES permits contain proposed special conditions regarding Storm Water Monitoring and Non-Numeric Conditions. Specifically each draft permit contains proposed provisions, sub-paragraphs (f) and (g), that require the development of "baseline concentrations" for lead and zinc based on the previous five years of storm water monitoring data. The draft permits also require a recalculation of the baseline using five-year rolling averages of storm water monitoring data, while discounting any data that exceeds the prior baseline concentration. Corrective action is required in the event a baseline concentration is exceeded. These permit requirements are convoluted and can result in lower storm water baseline concentrations and a series of unnecessary corrective actions over time. Moreover, such permit requirements were not included in the recently issued permit for ArcelorMittal Burns Harbor LLC (NPDES Permit No. IN0000175) and have not been proposed in the draft NPDES permits for Indiana Harbor West (NPDES Permit No. IN0000205) and Indiana Harbor Central Treatment Plant (IN0063711).

ArcelorMittal requests that these proposed provisions be removed from the draft NPDES permits for Indiana Harbor Long Carbon and Indiana Harbor East in their entirety. Available storm water monitoring data for Indiana Harbor East and Indiana Harbor Long Carbon demonstrate that storm water discharges are within acceptable bounds and do not pose a *reasonable potential* to cause or contribute to exceedances of water quality standards in the Indiana Harbor Ship Canal under wet weather conditions. Furthermore, there is no regulatory basis for this requirement.

As an alternative, ArcelorMittal is willing to include in its annual SWPPP update graphical summaries of storm water analytical results that can be used to evaluate potential trends that may warrant further investigation or corrective action. In lieu of development of "baseline concentrations" for lead and zinc, ArcelorMittal's proposes the following alternative special condition for the Indiana Harbor Long Carbon and Indiana Harbor East NPDES permits:

> *Not later than January 31 of each year, the permittee shall prepare and submit a report of historical and current storm water monitoring data for each storm water outfall where storm water monitoring is required. Such report shall include graphical summaries of available data for each monitored pollutant for the past five years to illustrate trends in discharges. The permittee shall undertake investigations and corrective actions when determined necessary as provided in its storm water pollution prevention plan.*

ArcelorMittal Common Comments on Draft NPDES Permits

9. FREEZE PROECTION

ArcelorMittal requests that the discharge authorization statements for each internal and external Outfall in each of the Indiana Harbor permits contain freeze protection agents within the list of the authorized discharges. Seasonal use of antifreeze in process and cooling water systems is essential to protect such systems from freeze damage when idled or taken out of service during cold weather periods. Upon start-up, service water is added to these systems and the antifreeze is diluted and becomes a component of the discharges. ArcelorMittal previously provided IDEM with estimates of possible concentrations of antifreeze for Outfall 011 at Indiana Harbor East and Outfall 001 at Indiana Harbor Long Carbon, and proposed to do so as follows for other outfalls at the Indiana Harbor plants where freeze protection agents may be used

To ensure such discharges are authorized and regulated in an appropriate fashion, ArcelorMittal requests the following footnote be added in the NPDES permits for each internal and external outfall at the four ArcelorMittal Indiana Harbor plants:

> [x] The permittee is authorized to provide freeze protection for its process water, process wastewater and non-contact cooling water systems as necessary. Prior to discharge of the freeze protected water, the permittee shall provide IDEM estimates of discharge concentrations of the freeze protection agents.

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10. MONITORING REQUIREMENTS FOR FREE CYANIDE, FLUORIDE AND SELENIUM

The above draft NPDES permits contain proposed routine monitoring requirements as set out below for free cyanide, fluoride and selenium. Water quality based effluent limits have not been proposed. Reportedly, the data will be used to determine whether the discharges pose a *reasonable potential* to cause or contribute to exceedances of water quality standards for the next renewal NPDES permits.

Indiana Harbor East (pp. 9, 13, 59 and 60 of 84)

	Monitoring Period During Permit Term	Monitoring Frequency	Sample Type
Outfall 011			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab
Outfall 014			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	Life of permit	3 x week	Grab
Outfall 018			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	Life of permit	2 x week	Grab
Selenium	Life of permit	2 x month	24-hr composite

Indiana Harbor Long Carbon (p.41 of 60)

	Monitoring Period During Permit Term	Monitoring Frequency	Sample Type
Outfall 001			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab

Indiana Harbor Central Treatment Plant (p.41 of 60)

	Monitoring Period During Permit Term	Monitoring Frequency	Sample Type
Outfall 001			
Fluoride	Life of permit	2 x month	24-hr composite
Free cyanide	Life of permit	2 x month	Grab

10. MONITORING REQUIREMENTS FOR FREE CYANIDE, FLUORIDE AND SELENIUM

Indiana Harbor West (p. 55 of 77)

	Monitoring Period During Permit Term	Monitoring Frequency	Sample Type
Outfall 002			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab
Outfall 009			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab
Outfall 010			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab
Outfall 011			
Fluoride	36 to 47 months	2 x month	24-hr composite
Free cyanide	36 to 47 months	2 x month	Grab

The Fact Sheets for the draft Indiana Harbor permits state that a review of Indiana's Section 303(d) list shows there are no pollutants on the list that have the potential to impact waste load allocation analyses for the renewal of NPDES permits on a whole watershed basis (see Attachment A – Water Quality Assessment, p. 3). As shown below, available information and data, as well as Indiana's Section 302(d) list, demonstrate there is no reasonable basis for the proposed monitoring requirements.

Free Cyanide

The Indiana water quality standards for cyanide are for free cyanide as follows:

	ug/L	mg/L
Criteria Maximum Concentration	22	0.022
Criteria Continuous Concentration (4-Day Average)	5.2	0.0052

Indiana's 2008 Section 303(d) list included the Grand Calumet River as impaired for free cyanide, but not the Indiana Harbor Ship Canal or Indiana Harbor. The draft 2010 Section 303(d) list is the same. The Fact Sheet for Indiana Harbor East (p. 26 of 111) and Fact Sheets for the other ArcelorMittal Indiana Harbor permits state there is a new Section 303(d) listing for free cyanide in Indiana Harbor. However, the "new listing" is not reported in the Indiana 2008 Section 303(d) list or the draft 2010 list.

The Fact Sheets further state the proposed monitoring requirements for free cyanide are based on data collected at the IHC-0 monitoring station in Indiana Harbor during 2000 and 2001. These data are at least 10 years old and, as shown below, do not reflect current conditions in Indiana Harbor. Attachment A to this comment is a compilation of available IDEM data for cyanide amenable to chlorination (CATC), free cyanide (F. CN) and total cyanide (T. CN) collected at monitoring station IHC-0 (Indiana Harbor) from

10. MONITORING REQUIREMENTS FOR FREE CYANIDE, FLUORIDE AND SELENIUM

January 1990 to March 2008 and at monitoring station IHC-2 (Indiana Harbor Ship Canal at Dickey Road) for the period January 1990 to February 2010. The Dickey Road monitoring station IHC-2 is downstream of Indiana Harbor Central Treatment Plant and Indiana Harbor Long Carbon and upstream of all Indiana Harbor East and West outfalls. The Indiana Harbor IHC-0 monitoring station is located downstream of all Indiana Harbor East outfalls and downstream of Indiana Harbor West Outfalls 002, 009 and 010, and in the immediate vicinity of where the discharge channel for Indiana Harbor West Outfall 011 empties into Indiana Harbor. Thus, the data collected at the IHC-0 monitoring station can be affected by the discharge from Outfall 011. Until recently, the discharge from Outfall 011 included treated process wastewaters from the blast furnaces and the sinter plant. These wastewaters can contain cyanide compounds. Unlike IHC-0, data obtained at the IHC-2 Dickey Road monitoring station provides a good representation of water quality in the upstream end of the Indiana Harbor Ship Canal.

The data for station IHC-2 show nearly all non-detect results at concentrations of < 0.005 mg/L for all three forms of cyanide for the entire period of record from 1990-2010. During 2000 and 2001 there were a few detect values of only total cyanide in the 0.007 to 0.008 mg/L range. For the period 2002 to 2010, there were three detect values at 0.006 mg/L (Dec. 2002, Dec. 2003, Jan. 2005), all well below the CMC water quality standard of 0.022 mg/L. These data do not indicate impairment for free cyanide at and upstream of Dickey Road.

The data for IHC-0 show detections of all forms of cyanide during 2000 and 2001; however, all reported analytical results were < 0.005 mg/L from 2002 through March 2008, when IDEM apparently suspended monitoring for total cyanide at station IHC-0. Thus, the data show CMC and CCC water quality standards for free cyanide have been attained at that location for at least six consecutive years, and at station IHC-2 for at least eight consecutive years. ArcelorMittal believes it is not appropriate to base considerations of impairment for free cyanide and NPDES permit monitoring requirements on data that are more than 10 years old.

Furthermore, available monitoring data for <u>total</u> cyanide at Indiana Harbor East and Indiana Harbor West external outfalls (July 2005 to June 2010) show most measurements of <u>total</u> cyanide are not present at levels above 0.005 mg/L, with average <u>total</u> cyanide discharge concentrations in the range of 0.005 mg/L to 0.013 mg/L on an outfall-by outfall basis (non-detect concentrations counted as present at 0.005 mg/L).

Given available monitoring data at stations IHC-0 and IHC-2 for the last several years and recent ArcelorMittal monitoring data for <u>total</u> cyanide, there is no basis to conclude the Indiana Harbor Ship Canal or Indiana Harbor are impaired for free cyanide, and no basis to include free cyanide monitoring requirements in the renewal NPDES permits for these four facilities. Thus, ArcelorMittal requests that free cyanide monitoring requirements be deleted from the NPDES permits for Indiana Harbor East, Indiana Harbor Long Carbon, Indiana Harbor West and Indiana Harbor Central Treatment Plant.

10. MONITORING REQUIREMENTS FOR FREE CYANIDE, FLUORIDE AND SELENIUM

Fluoride

The Indiana water quality standards for fluoride are 1.0 mg/L applicable to Lake Michigan and 3.4 mg/l applicable to the IHSC. The water quality standard for Lake Michigan was established to minimize or prevent increased levels of fluoride in Lake Michigan (see 327 IAC 2-1.5-8, Table 8-9 of the water quality standards – Additional Criteria for Lake Michigan). The standard applicable to the IHSC is a chronic aquatic life criterion. Available monitoring data for fluoride at the IHC-2 Dickey Road monitoring station (January 2005 to December 2009) show the geometric mean concentration of fluoride at that location is 0.49 mg/L, approximately one-half of the Lake Michigan water quality standard, and approximately one seventh of the IHSC aquatic life criterion.

Recent monitoring data (July 2005 to June 2010) for ArcelorMittal Indiana Harbor East and West facility outfalls are as follows:

Plant/Outfall	LTA Discharge Flow (mgd)	Average Fluoride Concentration (mg/L); (Number of data)	Gross Mass Loading (lbs/day)
Indiana Harbor East			
Outfall 011	84.7	0.27 (8)	191
Outfall 014	11.5	1.4 (2)	134
Outfall 018	15.9	0.9 (2)	119
Total IH East	112.1		444
Indiana Harbor West			
Outfall 002	11.2	0.41 (1)	38
Outfall 009	55.3	0.45 (20)	208
Outfall 010	36.6	0.45 (20)	137
Outfall 011	23.4	1.4 (19)	273
Total IH West	126.5		656
Total IH East and West	238.6		1,100
IDEM WQ Design Flow @ Canal Road (352 cfs)	227.5	0.49 (geometric mean)	930
Total Indiana Harbor (WQ Design Flow does not include IDEM Lake Michigan Intrusion Flow)	466.1	0.52 (calculated)	2,030
IDEM Lake Michigan Intrusion Flow (132 cfs)	85.3	0.07 (IDEM model data)	50
Total Indiana Harbor and Lake Michigan Intrusion Flow	551.4	0.45 (calculated)	2,080

10. MONITORING REQUIREMENTS FOR FREE CYANIDE, FLUORIDE AND SELENIUM

This simplified mass balance approach to estimating fluoride concentrations in Indiana Harbor shows that when considering the net addition of flow from ArcelorMittal Indiana Harbor East and West and gross mass discharges of fluoride, the calculated concentration of fluoride in Indiana Harbor is 0.52 mg/L, again approximately one-half the Lake Michigan water quality standard of 1.0 mg/L. These calculations indicate that the ArcelorMittal Indiana Harbor East and West gross discharges of fluoride add only 0.03 mg/L of fluoride to the background concentration measured at monitoring station IHC-2 (Dickey Road), which is downstream of Indiana Harbor Central Treatment Plant and Indiana Harbor Long Carbon. The above monitoring data do not reflect the zero discharge wastewater treatment system installed at Indiana Harbor West, which will reduce the above-listed mass discharge from Outfall 011. When accounting for the Lake Michigan intrusion flow, the calculated fluoride concentration at the mouth of Indiana Harbor is 0.45 mg/L, well below the 1.0 mg/L Lake Michigan water quality standard. Furthermore, IDEM's multi-discharger WLA model overestimates discharges from the ArcelorMittal Indiana Harbor mills and fails to account properly for background fluoride monitoring data at Dickey Road.

The data presented in the table above demonstrate that discharges of fluoride from Indiana Harbor East, Indiana Harbor West, Indiana Harbor Long Carbon and Indiana Harbor Central Treatment Plant do not pose a *reasanable patential* to cause or contribute to exceedances of the water quality standards for fluoride in Lake Michigan and in the IHSC. Accordingly, ArcelorMittal requests the proposed monitoring requirements for fluoride be deleted from each of the four Indiana Harbor NPDES permits.

Selenium

The draft NPDES permit for Indiana Harbor East contains a proposed monitoring requirement for selenium at Outfall 018 for the life of the NPDES permit at a frequency of 2 x month. The initial NPDES permit application for Indiana Harbor East Outfall 018 included two monitoring data, both with non-detect results of < 0.0019 mg/L. The CCC water quality criterion for selenium is 5 ug/L (0.005 mg/L). More recent NPDES permit application monitoring data for selenium at Internal Outfall 518 includes one value at 1.3 mg/L, equivalent to a mass loading of 2.02 lbs/day at the maximum flow of 0.186 mgd reported in the application. At the time internal Outfall 518 was sampled, Outfall 018 was also sampled and the measured selenium concentration was 0.0031 mg/L, also below the 0.005 mg/L CCC water quality standard.

ArcelorMittal has plans to possibly increase the discharge flow at internal Outfall 518 to a maximum of approximately 0.4 mgd. At that flow, the maximum mass discharge of selenium would be 4.34 lbs/day. Using the Indiana Harbor water quality design flow from the above table (466.1 mgd), the increase in the Indiana Harbor selenium concentration resulting from an Outfall 018 discharge of 4.34 lbs/day would be approximately 1.1 ug/L. Considering the Lake Michigan intrusion flow, the increase in the ambient concentration would be less than 1 ug/l, well below the CCC water quality standard of 5 ug/L.

10. MONITORING REQUIREMENTS FOR FREE CYANIDE, FLUORIDE AND SELENIUM

These calculations show the maximum expected discharge of selenium from Outfall 018 does not pose a *reasonable potential* to cause or contribute to an exceedance of the CCC water quality standard for selenium. Accordingly, ArcelorMittal requests the proposed monitoring requirements for selenium be removed from the Indiana Harbor East NPDES permit.

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ATTACHMENT A

IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArcelorMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
1/23/1990			0.007
2/27/1990			0.008
3/27/1990			< 0.005
4/24/1990			< 0.005
6/5/1990			< 0.005
8/7/1990			< 0.005
9/18/1990			< 0.005
10/2/1990			< 0.005
11/27/1990			< 0.005
1/16/1991			0.006
2/12/1991			0.009
4/17/1991			0.007
5/22/1991			< 0.005
7/24/1991			< 0.005
8/14/1991			< 0.005
10/22/1991			< 0.005
11/20/1991			< 0.005
2/25/1992			0.007
3/25/1992			< 0.005
4/21/1992			< 0.005
5/19/1992			< 0.005
6/23/1992			< 0.005
9/22/1992			< 0.005
10/20/1992			< 0.005
11/17/1992			< 0.005
3/16/1993			< 0.005
4/26/1993			0.006
5/11/1993			< 0.005
8/2/1993			< 0.005
9/8/1993			0.011
9/29/1993			0.006
10/27/1993			< 0.005
11/16/1993			< 0.005
12/28/1993			0.01
2/1/1994			0.007
3/2/1994			< 0.005
3/15/1994			< 0.005
4/26/1994			< 0.005
6/1/1994			
8/1/1994			0.009
8/31/1994			0.006
10/3/1994			< 0.005
11/9/1994			0.008
1/18/1995			0.012
3/7/1995			0.005
4/27/1995			< 0.005

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
1/23/1990			< 0.005
2/27/1990			0.008
3/27/1990			< 0.005
4/24/1990			0.005
5/15/1990			0.007
6/5/1990			0.008
4/26/1993			< 0.005
5/11/1993			< 0.005
8/2/1993			< 0.005
9/8/1993			< 0.005
9/29/1993			0.006
10/27/1993			0.007
11/17/1993			< 0.005
12/23/1993			0.006
2/1/1994			< 0.005
3/2/1994			0.005
3/15/1994			0.006
4/26/1994			0.005
6/1/1994			
8/1/1994			0.005
8/31/1994			< 0.005
10/3/1994			< 0.005
11/9/1994			0.006
1/17/1995			0.01
3/7/1995			< 0.005
4/26/1995			< 0.005
5/18/1995			< 0.005
6/15/1995			0.007
7/26/1995			0.007
8/29/1995			< 0.005
9/26/1995			< 0.005
10/24/1995			< 0.005
11/14/1995			0.005
12/20/1995			< 0.005
1/22/1996			0.006
2/27/1996			< 0.005
3/25/1996			0.005
4/23/1996			0.008
5/21/1996			0.006
6/18/1996			0.009
7/16/1996			0.006
8/20/1996			0.007
9/17/1996			< 0.005
10/22/1996			0.006
11/12/1996			0.007
12/10/1996			0.009

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IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArcelorMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
5/19/1995			< 0.005
6/15/1995			< 0.005
7/26/1995			< 0.005
8/29/1995			< 0.005
9/26/1995			< 0.005
10/24/1995			< 0.005
11/14/1995			0.006
12/20/1995			< 0.005
1/22/1996			0.008
2/27/1996			0.007
3/25/1996			0.005
4/23/1996			< 0.005
5/21/1996			0.006
6/18/1996			0.008
7/16/1996			0.006
8/20/1996			< 0.005
9/17/1996			0.029
10/22/1996			0.005
11/12/1996			0.006
12/10/1996			< 0.005
2/4/1997			0.006
2/25/1997			0.007
4/1/1997			< 0.005
4/29/1997			< 0.005
5/27/1997			< 0.005
6/17/1997			0.005
7/22/1997			< 0.005
8/19/1997			< 0.005
9/23/1997			< 0.005
10/20/1997			< 0.005
11/17/1997			< 0.005
12/8/1997			< 0.005
2/3/1998			< 0.005
3/3/1998	0.005		0.006
3/31/1998			< 0.005
4/27/1998			< 0.005
6/2/1998			< 0.005
6/29/1998			< 0.005
7/27/1998			< 0.005
8/31/1998			< 0.005
9/28/1998			< 0.005
10/26/1998			< 0.005
11/16/1998			< 0.005
12/14/1998			< 0.005
1/25/1999	0.005		0.009
2/22/1999			< 0.005

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
2/4/1997			0.009
2/25/1997			0.013
4/1/1997			0.01
4/29/1997			0.008
5/27/1997			< 0.005
6/17/1997			0.005
7/22/1997			< 0.005
8/19/1997			< 0.005
9/23/1997			< 0.005
10/20/1997			0.005
11/17/1997			0.006
12/8/1997			0.006
2/3/1998	0.005		0.007
3/3/1998	0.005		0.005
3/31/1998	0.005		0.005
4/27/1998			< 0.005
6/2/1998			< 0.005
6/29/1998			< 0.005
7/27/1998			< 0.005
8/31/1998			< 0.005
9/28/1998	0.005		0.005
10/26/1998			0.01
11/16/1998			< 0.005
12/14/1998			< 0.005
1/25/1999	0.005		0.006
2/22/1999	0.005		0.007
3/23/1999			< 0.005
4/28/1999	0.007		0.007
5/25/1999			< 0.005
6/22/1999			< 0.005
7/27/1999	0.005	< 0.005	0.005
8/25/1999		< 0.005	< 0.005
9/28/1999	< 0.005	< 0.005	0.006
10/27/1999		< 0.005	< 0.005
11/23/1999	0.005	< 0.005	0.005
12/14/1999	0.005	< 0.005	0.005
1/31/2000		< 0.005	< 0.005
2/28/2000		< 0.005	< 0.005
3/29/2000		< 0.005	< 0.005
4/26/2000		< 0.005	< 0.005
5/31/2000		< 0.005	< 0.005
6/27/2000		< 0.005	< 0.005
7/25/2000			< 0.005
8/30/2000			< 0.005
9/27/2000			< 0.005
10/30/2000			< 0.005

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IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArcelorMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
3/23/1999			< 0.005
4/28/1999			< 0.005
5/25/1999			< 0.005
6/22/1999			< 0.005
7/28/1999		< 0.005	< 0.005
8/25/1999		< 0.005	< 0.005
9/28/1999	0.006	< 0.005	0.006
10/27/1999		< 0.005	< 0.005
11/23/1999		< 0.005	< 0.005
12/29/1999	0.005	< 0.005	0.007
1/31/2000	0.005	0.014	0.017
2/28/2000	0.005	0.015	0.021
3/29/2000	0.011	0.006	0.011
4/27/2000	0.45	0.545	0.521
5/31/2000	0.005	0.005	0.008
6/27/2000	0.005	< 0.005	0.007
7/25/2000			0.009
8/30/2000			0.014
9/27/2000			0.008
10/31/2000			0.008
11/28/2000			0.03
12/18/2000			0.005
1/30/2001		< 0.005	< 0.005
2/26/2001		< 0.005	
3/20/2001		< 0.005	< 0.005
4/18/2001		< 0.005 (QJ)	< 0.005
5/29/2001			< 0.005
6/25/2001			< 0.005
7/23/2001	0.005	< 0.005	0.005
8/22/2001			< 0.005 (QJ)
9/24/2001	0.017	0.014	0.034
10/16/2001	< 0.005	< 0.005	0.008
11/26/2001	0.007	0.032	0.079
12/17/2001	< 0.005	0.006	0.012
1/23/2002			< 0.005
2/25/2002			< 0.005
3/27/2002			< 0.005
4/22/2002			< 0.005
5/13/2002			< 0.005 (QJ)
6/24/2002			< 0.005
7/24/2002			< 0.005
9/23/2002			< 0.005
10/30/2002			< 0.005
11/20/2002			< 0.005
12/18/2002			< 0.005
1/15/2003			< 0.005

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
11/28/2000			0.008
12/18/2000			0.007
10/30/2000			< 0.005
1/30/2001	< 0.005	< 0.005	0.007
2/26/2001		< 0.005	
3/20/2001		< 0.005	< 0.005
4/18/2001		< 0.005 (QJ)	< 0.005
5/29/2001			< 0.005
6/25/2001			< 0.005
7/23/2001			< 0.005
8/22/2001			< 0.005 (QJ)
9/24/2001			< 0.005
10/16/2001			< 0.005
11/26/2001	0.005	< 0.005	0.005
12/17/2001	0.005	< 0.005	0.005
1/23/2002			< 0.005
2/25/2002			< 0.005
3/27/2002			< 0.005
4/22/2002			< 0.005
5/13/2002			< 0.005 (QJ)
6/24/2002			< 0.005
7/24/2002			< 0.005
8/26/2002			< 0.005
9/23/2002			< 0.005
10/30/2002			< 0.005
11/20/2002			< 0.005
12/18/2002	0.006	< 0.005	0.006
1/15/2003			< 0.005
2/19/2003			< 0.005
3/19/2003			< 0.005
4/23/2003			< 0.005
5/12/2003			< 0.005
6/11/2003			< 0.005
7/7/2003			< 0.005
8/11/2003			< 0.005
9/10/2003			< 0.005
10/22/2003			< 0.005
11/19/2003			< 0.005
12/17/2003	0.005 (UJ)	< 0.005	0.006
1/8/2004			< 0.005
2/18/2004			< 0.005
3/30/2004			
4/21/2004			< 0.005
5/26/2004			< 0.005
6/16/2004			< 0.005
7/19/2004			< 0.005

ATTACHMENT A

IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArcelorMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
2/19/2003			< 0.005
3/19/2003			< 0.005
4/23/2003			< 0.005
5/12/2003			< 0.005
6/11/2003			< 0.005
7/7/2003			< 0.005
8/11/2003			< 0.005
9/10/2003			< 0.005
10/22/2003			< 0.005
11/20/2003			< 0.005
12/17/2003			< 0.005
1/7/2004			< 0.005
2/19/2004			< 0.005
3/30/2004			
4/21/2004			< 0.005
5/26/2004			< 0.005
6/16/2004			< 0.005
7/19/2004			< 0.005
8/16/2004			< 0.005
9/21/2004			< 0.005
10/26/2004			< 0.005
11/30/2004			< 0.005
12/20/2004			< 0.005
1/12/2005			< 0.005
2/24/2005			< 0.005
3/21/2005			< 0.005
4/27/2005			< 0.005
5/24/2005			< 0.005
6/27/2005			< 0.005
7/28/2005			< 0.005
8/22/2005			< 0.005
9/26/2005			< 0.005
11/28/2005			< 0.005
12/14/2005			< 0.005
2/6/2006			< 0.005
3/15/2006			< 0.005
4/26/2006			< 0.005
5/22/2006			< 0.005
6/21/2006			< 0.005
7/10/2006			< 0.005
8/14/2006			< 0.005
9/26/2006			< 0.005
10/19/2006			< 0.005
11/28/2006			< 0.005
12/18/2006			< 0.005
1/22/2007			< 0.005

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
8/16/2004			< 0.005
9/20/2004			< 0.005
10/25/2004			< 0.005
11/29/2004			< 0.005
12/20/2004			< 0.005
1/12/2005	0.006	< 0.005	0.006
2/23/2005	0.005	< 0.005	0.005
3/21/2005			< 0.005
4/27/2005			< 0.005
6/27/2005			< 0.005
7/27/2005			< 0.005
8/22/2005			< 0.005
9/26/2005			< 0.005
10/26/2005			< 0.005
11/28/2005			< 0.005
12/14/2005			< 0.005
1/12/2006			< 0.005 (QJ)
2/6/2006			< 0.005
3/15/2006			< 0.005
4/26/2006			< 0.005
5/22/2006			< 0.005
6/21/2006			< 0.005
7/11/2006			< 0.005
8/14/2006			< 0.005
9/25/2006			< 0.005
10/18/2006			< 0.005
11/27/2006			< 0.005
12/18/2006	0.005	< 0.005	0.005
1/22/2007			< 0.005
2/19/2007			< 0.005
3/28/2007			< 0.005
4/25/2007			< 0.005
5/30/2007			< 0.005
6/20/2007			< 0.005
7/30/2007			< 0.005
8/27/2007	0.005	< 0.005	0.005
9/24/2007			< 0.005
10/29/2007			< 0.005
11/19/2007			< 0.005
12/17/2007			< 0.005
1/9/2008			< 0.005
2/20/2008			< 0.005
3/18/2008			< 0.005
4/21/2008			< 0.005
5/28/2008			< 0.005
6/10/2008			< 0.005

ATTACHMENT A

IDEM Fixed Station Monitoring Data for Cyanide (Stations IHC - 0 and IHC - 2)

IHC - 0 (IHSC near ArcelorMittal West Outfall 011) (mg/l)			
Date	CATC	F. CN	T. CN
2/19/2007			< 0.005
3/28/2007			< 0.005
4/26/2007			< 0.005
5/30/2007			< 0.005
6/21/2007			< 0.005
7/30/2007			< 0.005
8/27/2007			< 0.005
9/24/2007			< 0.005
10/29/2007			< 0.005
11/19/2007			< 0.005
12/17/2007			
1/9/2008			
2/20/2008			
3/18/2008			< 0.005
4/21/2008			
5/28/2008			
6/10/2008			
7/28/2008			
8/26/2008			
9/23/2008			
10/27/2008			
11/19/2008			
12/15/2008			
1/21/2009			
2/9/2009			
3/4/2009			
4/21/2009			
5/18/2009			
6/10/2009			
7/27/2009			
8/19/2009			
9/21/2009			
10/7/2009			
11/4/2009			
12/14/2009			
1/19/2010			
2/15/2010			

IHC-2 (IHSC at Dickey Road) (mg/l)			
Date	CATC	F. CN	T. CN
7/28/2008			< 0.005
8/26/2008			< 0.005
9/23/2008			< 0.005
10/27/2008			< 0.005
11/19/2008			< 0.005
12/15/2008			< 0.005
1/21/2009			< 0.005
2/9/2009			< 0.005
3/4/2009			< 0.005
4/21/2009			< 0.005
5/18/2009			< 0.005
6/10/2009			< 0.005
7/27/2009			< 0.005
8/19/2009			< 0.005
9/21/2009			< 0.005
10/7/2009			< 0.005
11/4/2009			< 0.005
12/14/2009			< 0.005
1/19/2010			< 0.005
2/15/2010			< 0.005

11. MONITORING FREQUENCY FOR TOTAL RESIDUAL CHLORINE (TRC)

Each of the draft NPDES permits for the Indiana Harbor plants contains proposed effluent limits and monitoring requirements for total residual chlorine (TRC) at external outfalls. The proposed monitoring frequencies are as follows:

Plant, External Outfalls	Proposed Monitoring Frequencies
Indiana Harbor East	
011, 014, 018	5 x week
019	1 x month
518	2 x week
008 (only during emergency overflow)	1 x daily
Indiana Harbor Long Carbon	
001	5 x week
Indiana Harbor West	
002, 009, 010, 011, 012	1 x daily
Indiana Harbor Central Treatment Plant	
001	1 x daily

As discussed previously with IDEM, ArcelorMittal conducts TRC monitoring at each plant using contract sampling and analytical resources. Monitoring frequencies of daily would require weekend monitoring at high cost. Given that historical TRC monitoring data for each plant do not indicate significant or frequent problems with TRC monitoring, ArcelorMittal requests that, except for Outfall 019 at Indiana Harbor East, the TRC monitoring frequencies for all external outfalls at each plant be set at no more than 5 x week. IDEM addressed this issue for the Indiana Harbor East and Indiana Harbor Long Carbon draft permits, but did not for Indiana Harbor West and Indiana Harbor Central Treatment Plant. ArcelorMittal believes this was an oversight and requests that IDEM set the TRC monitoring frequencies at Indiana Harbor West and Indiana Harbor Central Treatment Plant at no more than 5 x week.

<u>Additional Comments Regarding TRC</u>

1. Indiana Harbor East Outfall 019, Footnote 6 (p. 19 of 84). The footnote needs to be expanded to include the standard TRC provisions for discharges between the LOD and LOQ for both the proposed monthly average and daily maximum effluent limits.

2. Indiana Harbor East Outfall 518, (p. 16 of 84). A footnote needs to be added to include the standard TRC provisions for discharges between the LOD and LOQ for both the proposed monthly average and daily maximum effluent limits.

3. Indiana Harbor West Outfalls 002, 009, 010, 011 and 012, (pp. 3, 6, 10, 13, 19 of 77). For Outfalls 002 and 009, footnote (5) should also refer to the monthly average mass limit. For Outfalls 010 and 011, footnote (4) should apply to the average mass limit. For Outfall 012, footnote (6) should apply to the monthly average mass. In addition, only footnote 9 for Outfall 012 refers to Section I.G, when all of the other outfalls with TRC limits are referenced in that section.

12. ANALYTICAL METHODS, SAMPLE TYPES, WATER TREATMENT ADDITIVES, LOW VOLUME WASTES

ArcelorMittal requests the following comments regarding monitoring requirements, analytical methods, water treatment additives and low volume wastes be addressed in each of the Indiana Harbor NPDES permits, as appropriate:

1. Analytical Method for Total Cyanide and Free Cyanide Monitoring Requirements

The most recent revision to 40 CFR Part 136 lists ASTM D 2036-98(A) as an approved analytical method for total cyanide, in addition to those listed in the draft permits. The permits should clearly specify that any method approved by EPA and published at 40 CFR Part 136 can be used for NPDES permit compliance monitoring. In addition, where monitoring for both total cyanide and free cyanide is required (i.e., Outfall 014 at Indiana Harbor East), ArcelorMittal requests that if the total cyanide analytical result is non-detect, the corresponding analysis for free cyanide can be waived.

2. Sample type for Total Phenols (Phenols (4AAP))

ArcelorMittal requests the sample type of total phenols be specified as "24-hour composite" instead of "grab" to correspond to current monitoring requirements and current monitoring practices. This would allow continued collection of ammonia-N and total phenols samples in one container and separation of samples in the laboratory. Otherwise, additional samples would have to be collected to meet the "grab" sample requirement for total phenols.

3. Water Treatment Additives

Footnotes regarding water treatment additives for each outfall in each permit require reporting of changes in dosage rates in accordance with Part II.C. 1. of the standard conditions. As part of the NPDES permit renewal process, ArcelorMittal provided IDEM lists of currently used water treatment additives for each Indiana Harbor facility and the respective estimated maximum dosage rates of each additive. Part II.C.1.b. of the standard conditions states notice to IDEM is required only when:

> *"The alteration or addition could significantly change the nature of, or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in Part I.A. nor to notification requirements in Part II.C.9 of this permit."*

ArcelorMittal's interpretation of Part II.C.1.B. is that water treatment additives fall under the above reporting requirement. Because ArcelorMittal has reported to IDEM estimated maximum dosage rates of the water treatment additives, we believe this reporting requirement would not come into effect unless the previously reported maximum dosage rates were exceeded. Otherwise, taken literally, the reporting requirement would be virtually impossible to meet. For example, many non-contact cooling water and process water outfalls have effluent limits for total residual chlorine (TRC). Effluent dechlorination with sodium bisulfite is practiced to maintain compliance with the TRC effluent limits. The rates of application of sodium bisulfite are variable and are based on the amounts of TRC present. It would not be possible or reasonable to record changes in sodium bisulfite addition over the course of a day for each outfall. The same issue pertains to use of water treatment chemicals at process wastewater treatment facilities, but to a lesser extent.

12. ANALYTICAL METHODS, SAMPLE TYPES, WATER TREATMENT ADDITIVES, LOW VOLUME WASTES

To address this issue, ArcelorMittal requests the footnotes in each of the Indiana Harbor facility NPDES permits be modified as follows:

> *"In the event that changes are to be made in the use of water treatment additives including dosage rates to Outfall 00x beyond previously reported estimated maximum dosage rates, the permittee shall notify the Indiana Department of Environmental Management as required by Part II.C.1. of this permit."* emphasis added

4. Low volume wastes

For purposes of defining "low volume wastes" that may be discharged from boiler house and power station operations, ArcelorMittal requests that reverse osmosis reject water be considered "low volume waste". We believe this is consistent with the specialized definition at 40 CFR §423.11(b) of the Steam Electric Power Generating effluent limitations guidelines which includes ion exchange water treatment system wastewaters as low volume waste. Reverse osmosis systems are now being used to replace many of the conventional ion exchange and water softening operations at large boiler house and power generating stations for boiler water make-up treatment.

13. COMPLIANCE SCHEDULES FOR STORM WATER POLLUTION PREVENTION PLANS

Part I.F (p. 44 of 84) of the draft Indiana Harbor East NPDES permit and Part I.F. (p 29 of 60) of the draft Indiana Harbor Long Carbon NPDES permit require that storm water pollution prevention plans (SWPPPs) be developed for each facility 12 months after permit issuance. ArcelorMittal requests that the time required to meet the SWPPP requirements be extended from twelve (12) months to twenty-four (24) months to account for the extensive work that will be required to develop and modify the SWPPPs for all of the Indiana Harbor facilities. In addition, ArcelorMittal will be heavily involved in preparing a SWPPP for Burns Harbor (due 18 months after the permit effective date of March 1, 2011), Indiana Harbor West and Indiana Harbor Central Wastewater Treatment Plant (both are due 18 months after the effective date of the permit). The requested extension will allow the plans for all of these facilities to be prepared in a staggered fashion to minimize manpower requirements as well as to evaluate best practices of each.

14. CHANGES IN DISCHARGES OF TOXIC SUBSTANCES

The draft NPDES permit for the Indiana Harbor Central Treatment Plant includes a Standard Condition at Part II.A.16 (p. 48 of 59) titled "New or Increased Discharges of Pollutants." The other three draft Indiana Harbor permits contain the same Standard Condition in Part II.A.16, but the titles are "Changes in Discharges of Toxic Substances." ArcelorMittal requests the titles be made consistent in all four NPDES permits so that the title reads "New or Increased Discharges of Pollutants."

In addition, page 48 of the draft NPDES permit for the Indiana Harbor Central Treatment Plant contains the following statement:

> *"This permit prohibits the permittee from taking any <u>deliberate</u> 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 pollutant parameter that is not a BCC unless one of the following is completed prior to commencement of the action: ... "* (emphasis added.)

The word "deliberate" is missing from the statement in the draft NPDES permits for Indiana Harbor East, Indiana Harbor Long Carbon and Indiana Harbor West. ArcelorMittal requests that the word "deliberate" be added to the NPDES permits issued for Indiana Harbor East (p. 70 of 84), Indiana Harbor Long Carbon (p. 50 of 60), Indiana Harbor West (p. 62 of 72), as well as Indiana Harbor Central Treatment Plant (p. 48 of 59).

15. STORM WATER NON-NUMERIC CONDITIONS

Each of the Indiana Harbor draft NPDES permits includes special conditions under Storm Water Non Numeric Conditions that are conditions of applicable Title V air permits. For example, paragraph 5.b. that references good housekeeping, is covered under the applicable requirements in the facility's Fugitive Dust Control Plan. Also, paragraph 10.c. references regular inspections of air pollution control equipment as well as monitoring inlets and outlets of air flow ducts to check for particulate deposition. These requirements are duplicative of requirements in the applicable Title V air permits. Accordingly, ArcelorMittal requests that IDEM remove these requirements from the draft NPDES permits for the Indiana Harbor facilities, specifically every action, inspection or reporting requirement related to air pollution control equipment and fugitive dust controls.

16. PCB DISCHARGE PROHIBITION

Part III of Each Draft NPDES Permit

ArcelorMittal has implemented programs to eliminate transformers and capacitors containing PCBs from its Indiana Harbor facilities and has essentially eliminated PCB-containing transformers from electrical service. PCBs are not used in any process, water treatment or wastewater treatment operations. The draft Indiana Harbor NPDES permits contains provisions that prohibit discharges of PCBs. These conditions were first included in NPDES permits issued in the 1980's and earlier. Since that time, there have been significant advances in analytical science such that PCBs can now be detected in the low ng/L range and lower. Consequently, it may be possible to detect PCBs in discharges where the source is the intake water. Accordingly, ArcelorMittal requests the phrase "... attributable to facility operations" be added to the PCB discharge prohibition statement in each Indiana Harbor permit. Without this requested change, ArcelorMittal could be put in the untenable position of being required to treat large volume process wastewater and non-contact cooling water discharges for PCBs that are beyond its control and at levels that may be untreatable.

17. POLLUTANT MINIMIZATION PROGRAMS

Part I.B of each draft NPDES Permit contains requirements for Pollutant Minimization Programs (PMPs) for outfalls where total residual chlorine (TRC) is limited. A PMP program is also required for silver at Outfall 001 at Indiana Harbor Central Treatment Plant. Paragraphs (3) of the PMP requirements for the draft NPDES permits for Indiana Harbor East (p. 55 of 84) and Indiana Harbor Long Carbon (p. 37 of 60) require only *"Monitoring as necessary to record progress toward the goal."*, whereas Paragraphs (3) contained in the draft NPDES permits for Indiana Harbor West (p. 48 of 77) and Central Treatment Plant (p. 34 of 59) prescribes more extensive set of monitoring programs. Also paragraphs (4) of the proposed PMPs require submission of an annual status report. Because monitoring data will be submitted as part of the monthly discharge monitoring reports, the requirement to submit an annual summary report is redundant and should be eliminated.

Consistent with the manner in which PMP requirements were addressed in the recently issued Burns Harbor NPDES permit, ArcelorMittal requests that the monitoring requirements for paragraphs (3) in the Indiana Harbor West and Indiana Harbor Central Treatment Plant NPDES permit be made consistent with those for Indiana Harbor East and Indiana Harbor Long Carbon, and that the paragraphs (4) annual reporting requirements be eliminated.

ArcelorMittal Comments on Draft NPDES Permits

Legal Name	Common Name	Abbreviation	NPDES Permit No.
ArcelorMittal USA LLC	Indiana Harbor East	IH East	IN0000094

For purposes of these comments and in the interest of simplifying the comments, the above common name is used throughout.

1. WQBELS for Indiana Harbor East Outfalls 011, 014 and 018
2. Transport of No. 7 Blast Furnace Process Water
3. Monitoring Requirements for Outfall 014 – Ammonia-N and Total Phenols
4. Outfall 018 – No. 17 Turbine

ArcelorMittal Comments on Draft Indiana Harbor East NPDES Permit

1. WQBELS FOR INDIANA HARBOR EAST OUTFALLS 011, 014 and 018

The draft NPDES permit for Indiana Harbor East contains proposed water quality based effluent limits for total residual chlorine and mercury at Outfall 011 and total residual chlorine, mercury, lead and zinc at Outfalls 014 and 018. Comments on the proposed effluent limits for lead and zinc at Outfalls 014 and 018 are presented below.

Outfall 014 Proposed Lead and Zinc Effluent Limits

IDEM's proposed permit limits for lead and zinc at Outfall 014 are overly stringent and are not necessary to protect water quality. As noted elsewhere in these comments, IDEM failed to use its own readily available site-specific data for two important aspects of developing preliminary water quality based effluent limits: (1) available and representative data at Dickey Road were not used to determine background water quality; and, (2) site-specific dissolved and total metals data were not used to develop site-specific dissolved metals translators. Both of these shortcomings significantly impact calculation of preliminary water quality based effluent limits for lead and zinc at Outfall 014.

For the reasons set out previously in these comments, data collected by IDEM from the IHSC at Dickey Road should be used to establish background water quality in IDEM's water quality assessment. Furthermore, site-specific dissolved metals translators should be calculated from IDEM's available total and dissolved metals data collected from the IHSC. The table below presents: (1) the proposed permit effluent limits; (2) current effluent limits; (3) preliminary water quality based effluent limits (PELs) calculated using Dickey Road background data and site-specific DMTs; and, (4) ArcelorMittal's requested effluent limits for Outfall 014.

IH East Outfall 014	Lead				Zinc			
	Mass (lbs/day)		Conc. (ug/l)		Mass (lbs/day)		Conc. (ug/l)	
	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max	M. Avg	D. Max
Draft Permit Limits	5.9	12	61	120	14.91	35	Report	Report
Existing Limits	11.58	31.08	Report	Report	14.91	44.69	Report	Report
PELs w/95th Percentile DMT	8.5	17	89	180	22	45	230	470
PELs w/TSS Regression DMT	13.7	28	143	290	33	65	340	680
PELs w/geomean DMT	17	34	177	350	38	77	400	800
Requested NPDES permit limits	**11.5**	**23**	**120**	**240**	**14.91**	**44.69**	**Report**	**Report**

The requested limits for lead for Outfall 014 are derived from a wasteload allocation of 146 ug/l, which results in a lead concentration of 9.3 ug/l at Lake Michigan using IDEM's multi-discharger wasteload allocation model. The concentration of 9.3 ug/l is below the Lake Michigan chronic Water Quality Criteria for lead of 9.9 ug/l. The requested limits are below the PELs calculated using the TSS-regression derived and geometric mean dissolved fraction DMTs. DMTs used for this analysis were calculated from IDEM data collected at fixed monitoring station IHC-0, which is downstream of Outfall 014.

ArcelorMittal's requested effluent limits for zinc are the current NPDES permit effluent limits, which are more stringent than the preliminary water quality based limits calculated from the site-specific DMTs and Dickey Road data used to establish the background concentration at the appropriate location in the IHSC.

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1. WQBELS FOR INDIANA HARBOR EAST OUTFALLS 011, 014 and 018

Printouts of IDEM's multi-discharger Waste Load Allocation model for lead and zinc that was modified to include Dickey Road data as background, the measured discharges from Indiana Harbor Long Carbon Outfall 001 and Indiana Harbor East Outfall 018, and ArcelorMittal's requested effluent limits are attached (see Attachment IHC-2 under the 'Common Comments'). The results show remaining assimilative capacity throughout the IHSC and at Lake Michigan for lead and zinc.

Outfall 018 Proposed Lead and Zinc Effluent Limits

IDEM's proposed effluent limits for lead and zinc at Outfall 018 are not warranted and should be removed from the renewal NPDES permit. Lead and zinc discharges from Outfall 018 show no *reasonable potential* to cause or contribute to exceedances of water quality criteria. In its reasonable potential assessment, IDEM used its default projected effluent quality (PEQ) calculation procedure to compare lead and zinc discharges to preliminary water quality based effluent limits.

IDEM's default PEQ procedure results in a projected effluent quality that is skewed unreasonably high by a very small number of data points. From July 2005 to June 2010, of the 638 samples analyzed for zinc, only four, or 0.6% of the results, were above the maximum PEL calculated by IDEM. Of the 60 monthly average zinc concentrations, only one was above the average PEL. Similarly for lead, of the 636 samples analyzed, only one, or 0.16% of the results were above the maximum PEL calculated by IDEM, and only one monthly average concentration was above the average PEL. The few abnormally high data points were apparently the results of upset conditions.

Under 327 IAC 5-2-11.5(b)(1)(B)(V), IDEM ***shall*** ***(emphasis added)*** allow the use of an alternate procedure to calculate the PEQ if the procedure is scientifically defensible, specifies the maximum and average PEQs as the 95th percentile of the daily and monthly average data, respectively, captures long-term variability, accounts for sparse data sets, and assumes a log-normal distribution unless some other distribution is shown to be more appropriate. Following these guidelines, ArcelorMittal calculated PEQs using all data, including outliers, from July 2005 to June 2010, which are attached (see Attachment IHE-1). The results are summarized below. For this analysis, data reported as "<" (ND) were accounted for in three ways: (1) setting ND values equal to the detection limit; (2) discounting all ND values; and, (3) replacing ND values by using regression. The 90% upper confidence limit on the 95th percentile of the projected distribution is also presented (that is, we are 90% confident that the 95th percentile of the data is below this value). Accordingly, ArcelorMittal requests that the PEQs presented in the table below, which meet the requirements of 327 IAC 5-2-11.5(b)(1)(B)(V), be used in IDEM's reasonable potential assessment for Outfall 018.

ArcelorMittal Comments on Draft Indiana Harbor East NPDES Permit

1. WQBELS FOR INDIANA HARBOR EAST OUTFALLS 011, 014 and 018

Application of 327 IAC 5-2-11.5(b)(1)(B)(v); Alternate Methodology for Determination of PEQ Outfall 018, Lead and Zinc PEQ July 2005 to June 2010, no outliers removed

	Lead (mg/l)		Zinc (mg/l)	
PEQs	Average	Maximum	Average	Maximum
ND = RL; n (lead) = 636; n (zinc) =638				
PEQ (95th Percentile of Projected Distribution)	0.003	0.004	0.027	0.045
90% UCL on 95th Percentile	0.003	0.004	0.027	0.048
ND values removed from data set; n(lead) = 323; n(zinc) = 481				
PEQ (95th Percentile of Projected Distribution)	0.003	0.005	0.029	0.048
90% UCL on 95th Percentile	0.003	0.006	0.030	0.052
ND values replaced by regression; n (lead) = 636; n (zinc) =638				
PEQ (95th Percentile of Projected Distribution)	0.003	0.004	0.026	0.043
90% UCL on 95th Percentile	0.003	0.004	0.026	0.046
PEL calculated by IDEM	0.038	0.077	0.180	0.360

All calculated PEQs in the table above are below their respective PELs calculated by IDEM.

Lead and zinc discharges to Outfall 018 are limited by technology-based effluent limits at Outfalls 518 and 618. A summary of the Outfall 518 and 618 effluent limits compared to the draft Outfall 018 permit effluent limits is presented below.

IH East Outfall 018; comparison of 518 and 618 TBELs to Outfall 018 Draft Permit WQBELs				
	Lead		Zinc	
	M. Avg	D. Max	M. Avg	D. Max
Outfall 518 TBELs, lbs/day	1.32	2.28	2.73	8.21
Outfall 618 TBELs, lbs/day	2.16	6.48	3.50	10.50
Total, lbs/day	3.48	8.76	6.23	18.71
Outfall 018 flow, mgd	15.9			
Outfall 018 TBELs concentration, ug/l	26	66	47	141
IDEM Outfall 018 Draft Permit WQBELs, ug/l	38	77	180	360

The sum of the Outfall 518 and 618 TBELs are more stringent than the preliminary WQBELs contained in the draft permit calculated by IDEM.

Considering that the PEQ values calculated under 327 IAC 5-2-11.5(b)(1)(B)(V) are below the proposed effluent limits, and that the technology-based effluent limits at Outfalls 518 and 618 are more stringent

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1. WQBELS FOR INDIANA HARBOR EAST OUTFALLS 011, 014 and 018

than the proposed permit effluent limits, the proposed effluent limits for lead and zinc at Outfall 018 should be removed from the permit.

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ATTACHMENT IHE-1: Outfall 018 Lead (July 2005 to June 2010, no outliers removed)
Application of 327 IAC 5-2-11.5(b)(1)(B)(v); Alternate Methodology for Determination of Max PEQ and Average PEQ

ND = DL	
Daily Data Projections	
No. Samples, n	636
LM	-6.465
LS	0.573
z	1.645
Max PEQ, 95th Percentile of Projected Distribu	0.0040
z	1.738
90% UCL on on 95th Percentile	0.0042
Monthly Average Projections	
EX	0.002
VX	0.000001
LMA	-6.325
LSA	0.218
m	8
k	1.645
Avg PEQ, 95th Percentile of Projected M. Avgs	0.00256
k, UCL	1.738
90% UCL on on 95th Percentile	0.00262

ND values eliminated from data set	
Daily Data Projections	
No. Samples, n	323
LM	-6.430
LS	0.730
z	1.645
Max PEQ, 95th Percentile of Projected Distribu	0.0054
z	1.738
90% UCL on on 95the Percentile	0.0057
Monthly Average Projections	
EX	0.002
VX	0.000003
LMA	-6.205
LSA	0.290
m	8
k	1.645
Avg PEQ, 95th Percentile of Projected M. Avgs	0.00325
k, UCL	1.738
90% UCL on on 95th Percentile	0.00334

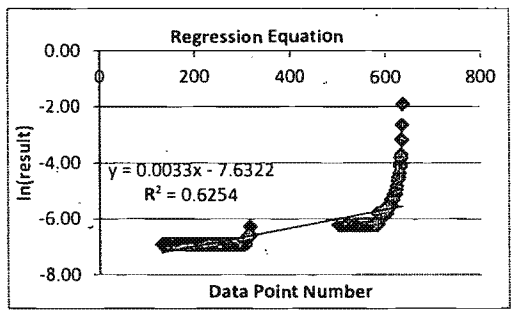
ND values replaced by regression	
Daily Data Projections	
No. Samples, n	636
LM	-6.589
LS	0.680
z	1.645
Max PEQ, 95th Percentile of Projected Distribu	0.0042
z	1.738
90% UCL on on 95the Percentile	0.0045
Monthly Average Projections	
EX	0.002
VX	0.000002
LMA	-6.393
LSA	0.266
m	8
k	1.645
Avg PEQ, 95th Percentile of Projected M. Avgs	0.00259
k, UCL	1.738
90% UCL on on 95th Percentile	0.00266

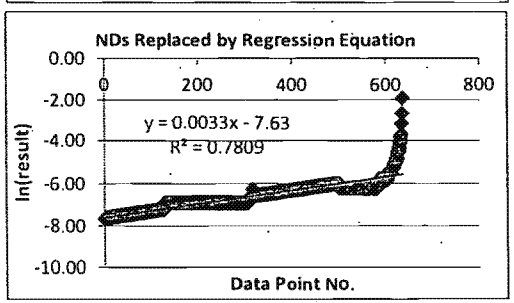
Maximum PEQ = exp(LM + k * LS)

Average PEQ for m<10 = exp(LMA + k * LSA)

Average PEQ for m>10 = EX + k * sqrt(VX / m)

where
- m = Number of effluent observations per month, minimum of 4.
- n = Total number of effluent observations.
- LM = Mean of the natural logs of the daily effluent data.
- LS = Standard deviation of the natural logs of the daily effluent data.
- LMA = ln(EX) - 0.5 * LSA^2 = Estimated mean of the natural logs of the monthly averages of the effluent data[5].
- LSA = sqrt{ ln[VX / (m * EX^2) + 1] } = Estimated standard deviation of the natural logs of the monthly averages of the effluent data[5].
- EX = exp(LM + 0.5 * LS^2) = Estimated long-term mean of the daily effluent data[5].
- VX = exp(2*LM + LS^2) * (exp[LS^2] - 1) = Estimated long-term variance of the daily effluent data[5].
- exp() = Base e (or approximately 2.71828) raised to the power of the quantity shown within the parentheses.
- ln() = Natural log of the quantity shown within the parentheses.
- sqrt() = Square root of the quantity shown within the parentheses.
- k, UCL = TINV(p,df,nc) / sqrt(n) = Factor representing the position in the standard normal curve of the upper 90% confidence interval about the 95th percentile for a data set with n observations. Derived from section 11.2 of Odeh & Owen[2]. The factor can also be determined using Table 1 of Odeh & Owen[2] (for "P"=0.95 and "GAMMA"=0.90), or Table A.12d of Hahn & Meeker[3] (for "p"=0.95 and "1-α"=0.90.)
- TINV() = Inverse noncentral t-distribution function.
- p = 0.90 = numeric probability of upper confidence level.
- df = n - 1 = degrees of freedom.
- nc = $z_{0.95}$ * sqrt(n) = noncentrality factor representing 95th percentile.
- k and Z0.95 = 1.64485 = 95th percentile of the standard normal distribution.





ATTACHMENT IHE-1: Outfall 018 Zinc (July 2005 to June 2010, no outliers removed)
Application of 327 IAC 5-2-11.5(b)(1)(B)(v); Alternate Methodology for Determination of Max PEQ and Average PEQ

ND = DL	
Daily Data Projections	
No. Samples, n	638
LM	-4.523
LS	0.859
z	1.645
Max PEQ, 95th Percentile of Projected Distribu	0.045
z	1.738
90% UCL on on 95th Percentile	0.048
Monthly Average Projections	
EX	0.016
VX	0.00027
LMA	-4.218
LSA	0.358
m	8
k	1.645
Avg PEQ, 95th Percentile of Projected M. Avgs	0.027
k, UCL	1.738
90% UCL on on 95th Percentile	0.027

ND values eliminated from data set	
Daily Data Projections	
No. Samples, n	481
LM	-4.243
LS	0.737
z	1.645
Max PEQ, 95th Percentile of Projected Distribu	0.048
z	1.738
90% UCL on on 95the Percentile	0.052
Monthly Average Projections	
EX	0.019
VX	0.00026
LMA	-4.015
LSA	0.294
m	8
k	1.645
Avg PEQ, 95th Percentile of Projected M. Avgs	0.029
k, UCL	1.738
90% UCL on on 95th Percentile	0.030

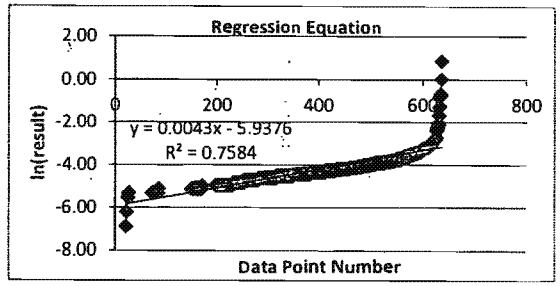
ND values replaced by regression	
Daily Data Projections	
No. Samples, n	638
LM	-4.564
LS	0.860
z	1.645
Max PEQ, 95th Percentile of Projected Distribut	0.043
z	1.738
90% UCL on on 95the Percentile	0.046
Monthly Average Projections	
EX	0.015
VX	0.00025
LMA	-4.258
LSA	0.358
m	8
k	1.645
Avg PEQ, 95th Percentile of Projected M. Avgs	0.026
k, UCL	1.738
90% UCL on on 95th Percentile	0.026

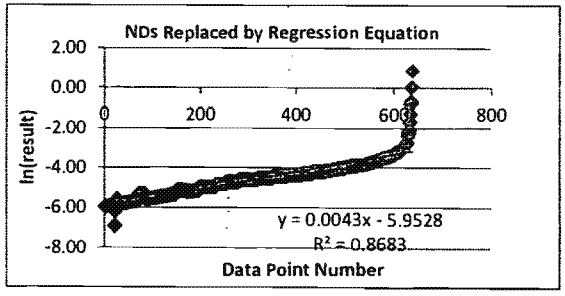
Maximum PEQ = exp(LM + k * LS)

Average PEQ for m<10 = exp(LMA + k * LSA)

Average PEQ for m≥10 = EX + k * sqrt(VX / m)

where
- m = Number of effluent observations per month, minimum of 4.
- n = Total number of effluent observations.
- LM = Mean of the natural logs of the daily effluent data.
- LS = Standard deviation of the natural logs of the daily effluent data.
- LMA = ln(EX) - 0.5 * LSA^2 = Estimated mean of the natural logs of the monthly averages of the effluent data[5].
- LSA = sqrt(ln[VX / (m * EX^2) + 1]) = Estimated standard deviation of the natural logs of the monthly averages of the effluent data[5].
- EX = exp(LM + 0.5 * LS^2) = Estimated long-term mean of the daily effluent data[5].
- VX = exp(2*LM + LS^2) * (exp[LS^2] - 1) = Estimated long-term variance of the daily effluent data[5].
- exp() = Base e (or approximately 2.71828) raised to the power of the quantity shown within the parentheses.
- ln() = Natural log of the quantity shown within the parentheses.
- sqrt() = Square root of the quantity shown within the parentheses.
- k, UCL = TINV(p,df,nc) / sqrt(n) = Factor representing the position in the standard normal curve of the upper 90% confidence interval about the 95th percentile for a data set with n observations. Derived from section 11.2 of Odeh & Owen[2]. The factor can also be determined using Table 1 of Odeh & Owen[2] (for "P"=0.95 and "GAMMA"=0.90), or Table A.12d of Hahn & Meeker[3] (for "p"=0.95 and "1-α"=0.90.)
- TINV() = Inverse noncentral t-distribution function.
- p = 0.90 = numeric probability of upper confidence level.
- df = n - 1 = degrees of freedom.
- nc = $z_{0.95}$ * sqrt(n) = noncentrality factor representing 95th percentile.
- k and Z0.95 = 1.64485 = 95th percentile of the standard normal distribution.





2. TRANSPORT OF NO. 7 BLAST FURNACE PROCESS WATER

Occasional hydraulic imbalances can occur in the process water treatment and recycle system for the No.7 blast furnace at Indiana Harbor East. Under certain circumstances, the volume of process water can exceed the capacity of the internal Outfall 518 treatment system for the No. 7 blast furnace. ArcelorMittal requests authorization to transport water by tank truck or other means to the Outfall 613 treatment system for the Nos. 5 & 6 blast furnaces. Such process wastewaters can be treated in the internal Outfall 613 treatment system and then discharged through internal Outfall 613 and ultimately through external Outfall 014. Because all of the pollutants limited for the No. 7 blast furnace at internal Outfall 518 are also limited at either Outfall 613 or Outfall 014, ArcelorMittal requests that "intermittent discharges of process wastewater from the No.7 blast furnace" be added to the respective discharge authorization statements for internal Outfall 613 (p. 12 of 84) and external Outfall 014 (p. 9 of 84). As part of this comment, ArcelorMittal is not requesting that any applicable technology-based effluent limits or Section 301(g) variance effluent limits for ammonia-N and Phenols (4AAP) at internal Outfall 613 or Outfall 014 be modified.

3. MONITORING REQUIREMENTS FOR OUTFALL 014 AMMONIA-N, TOTAL AND FREE CYANIDE AND TOTAL PHENOLS

The only regulated process sources of ammonia-N, cyanide and total phenols that discharge to the Master Recycle System tributary to Outfall 014 are the Nos. 5 and 6 blast furnaces. Process water discharges from these furnaces are also regulated at internal Outfall 613. These furnaces are currently not operating and future operation over the near term is likely to be intermittent. Accordingly, ArcelorMittal requests that monitoring requirements for ammonia-N, total and free cyanide and total phenols at Outfall 014 be waived for any month when the Nos. 5 and 6 blast furnaces are not operated.

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ArcelorMittal Comments on Draft Indiana Harbor East NPDES Permit

4. OUTFALL 018 - CORRECTION TO DESIGNATION OF NO. 17 TURBINE

On page 13 of 84 of the draft Indiana Harbor East NPDES permit, the discharge authorization statement for Outfall 018 incorrectly lists the No. 17 turbine as the North Lake Energy No. 7 turbine. ArcelorMittal requests that this authorization statement be revised to state the "North Lake Energy/No. 17 Turbine" rather than the "North Lake Energy/No. 7 Turbine".

ED_002857_00000116-00271

ArcelorMittal Comments on Draft NPDES Permits

Legal Name	Common Name	Abbreviation	NPDES Permit No.
ArcelorMittal Indiana Harbor LLC	Indiana Harbor West	IH West	IN0000205

For purposes of these comments and in the interest of simplifying the comments, the above common name is used throughout.

1. New Proposed Outfall 012 (Monitoring Station 012)
2. Outfalls 701 and 702 – Zero Discharge
3. Section 301(g) Effluent Limits
4. Minimum Level for 2,3,7,8-TCDF

ArcelorMittal Comments on Indiana Harbor West Draft NPDES Permit

1. NEW PROPOSED OUTFALL 012 (MONITORING STATION 012)

Outfall 012 is a new internal compliance monitoring station that IDEM proposes to add to the renewal NPDES permit for Indiana Harbor West. Monitoring station 012 is the overflow from the North Lagoon that is routed directly to the forebay of the No. 3 Pumphouse intake (No. 3 intake). The North Lagoon overflow contains fully treated process water from internal Outfalls 111 (84" hot strip mill) and 211 (No. 3 cold mill complex), non-contact cooling water and storm water. The current NPDES permit and the draft renewal NPDES permit contain technology-based effluent limits at internal Outfalls 111 and 211 that were derived from 40 CFR Part 420. Thus, process water discharges from the 84" hot strip mill and the No. 3 cold mill complex are regulated and fully treated prior to mixing with non-contact cooling water and storm water in the North Lagoon and prior to recycle through the No. 3 intake.

The Fact Sheet for the draft Indiana Harbor West NPDES permit raises a number of issues associated with monitoring station 012:

1. IDEM considers the intake channel for the Nos. 2 and 3 intakes at IH West as "open waters of Lake Michigan". However, the regulatory definition of the "open waters of Lake Michigan" clearly excludes nearly all of the intake channel because the channel is within the "northern most point of the LTV Steel property" established by that definition (see below).
2. Lack of proper consideration of the high rate recycle of fully treated process wastewaters from the 84" hot strip mill and the No. 3 cold strip mill complex provided by the No. 3 intake.
3. Improper water quality based effluent limits for vanadium and zinc.

<u>Open Waters of Lake Michigan</u>

The definition of the "open waters of Lake Michigan" is set out in the Indiana water quality standards at 327 IAC 2-1.5-2(64):

> *""Open waters of Lake Michigan" means all of the waters within Lake Michigan lakeward from a line drawn across the mouth of tributaries to the lake, including all waters enclosed by constructed breakwaters. For the Indiana Harbor Ship Canal, the boundary of the open waters of Lake Michigan is delineated by a line drawn across the mouth of the harbor from the East Breakwater Light (1995 United States Coast Guard Light List No. 19675) to the northernmost point of the LTV Steel Property along the west side of the harbor."*

IDEM states in Attachment A of the Fact Sheet (p. 5), that Indiana Harbor West has two water intakes in Lake Michigan; and, that IDEM considers the intake channel for the Nos. 2 and 3 intakes as "open waters of Lake Michigan" (p. 12). Figure IHW-1 is an aerial photograph showing the Nos. 2 and 3 intakes, the intake channel and the northern section of the Indiana Harbor Ship canal that borders the open waters of Lake Michigan. A line depicting the boundary described in the above definition of "open waters of Lake Michigan" is shown on the aerial photograph. It is evident from a simple reading of the regulatory definition of "open waters of Lake Michigan" and review of the aerial photograph that the Indiana Harbor West intake channel and the Nos. 2 and 3 intakes are not within open waters of Lake Michigan. They are not lakeward of the line between the East Breakwater Light and the northernmost point of LTV Steel property (now ArcelorMittal Indiana Harbor LLC property). In fact, the No. 3 Intake is approximately 0.21 miles south of the northernmost point of ArcelorMittal property and the No. 2 intake is approximately 1.0 miles south and southwest of the northernmost point of ArcelorMittal property. Thus, IDEM's assertion that the intake channel for the Nos. 2 and 3 intakes are within the

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1. NEW PROPOSED OUTFALL 012 (MONITORING STATION 012)

open waters of Lake Michigan is wrong, and any applications of Indiana water quality standards and water quality standards implementation procedures based on that premise are unreasonable and unlawful.

As can clearly be seen in the aerial photo, monitoring station 012 does not discharge directly into the intake channel. Instead, this discharge is directly into the No. 3 Pumphouse forebay. Therefore, it is a moot point if IDEM chooses to disagree with ArcelorMittal's interpretation of the "open waters of Lake Michigan" because the monitoring station 012 discharge does not discharge directly to the intake channel. As a result, monitoring station 012 should not be regulated at all because it does not discharge directly to waters of the State.

High-Rate Recycle of North Lagoon Overflow and Outfall 111 and Outfall 211 Compliance Assessments

During January 2011, ArcelorMittal submitted a report of field studies conducted during November 2010 that demonstrated the water discharged from Outfall 012 is recycled to the plant. The great majority, if not all, of the recycled water is returned to the 84" hot strip mill and the No. 3 cold mill complex. This is a high-rate process water recycle system that does not discharge directly to waters of the State.

The draft NPDES permit requires that measured discharge flows at internal Outfalls 111 and 211 be used to calculate mass discharge of limited pollutants at those internal compliance monitoring stations. Because the fully treated process waters discharged from Outfalls 111 and 211 are recycled back to the processes that generated the process wastewaters and are not discharged to waters of the state, calculations of mass discharges of limited pollutants at Outfalls 111 and 211 as required by the draft NPDES permit overstate actual discharges by a considerable amount. In effect, ArcelorMittal is not receiving full credit for the technology it installed to comply with the technology-based effluent limits. For purposes of assessing compliance with technology-based effluent limits at internal Outfalls 111 and 211, ArcelorMittal requests that the NPDES permit authorize a nominal and constant 75% reduction in calculated mass loadings to account for the high rate recycle of treated process water through the No. 3 intake.

Improper Water Quality-Based Effluent Limits for Vanadium and Zinc at Monitoring Station 012

As demonstrated above, IDEM wrongly assumed the discharge from Outfall 012 is to the open waters of Lake Michigan and based its water quality assessment on that incorrect premise. In so doing, IDEM also used an incorrect monitoring station 012 discharge flow of 70 million gallons per day (mgd) for its reasonable potential assessments. At most, any reasonable potential assessment should be based on a flow of not more than 7 mgd because of the recycle noted above; and, any discharge should be considered to the Indiana Harbor Ship Canal (Outfalls 009, 010) or to Indiana Harbor (Outfall 011).

Furthermore, reasonable potential assessments for Outfalls 009, 010 and 011 conducted by IDEM implicitly consider any discharges resulting from recycle of the North Lagoon overflow to the Nos. 2 and 3 intakes. Those reasonable potential assessments did not yield any proposed WQBELs for any pollutants contained in the North Lagoon overflow.

In addition, for vanadium, one datum that is clearly an outlier should be discounted from the RPE considerations in accordance with IDEM water quality assessment policies. Table 3 of the November 2010 ArcelorMittal Outfall 012 flow recycle study presents estimates of possible discharges to the IHSC

1. NEW PROPOSED OUTFALL 012 (MONITORING STATION 012)

and Indiana Harbor. Those estimates show that only minimal amounts of discharge are possible and that these discharges, if occurring, would not impact water quality in the Indiana Harbor Ship Canal or Indiana Harbor to any appreciable extent considering water quality design flows developed by IDEM.

As noted above, ArcelorMittal requests that a 75% recycle rate credit be allowed for compliance determinations for internal Outfalls 111, 211 and 411. Given this credit, there should be no reasonable potential for the discharges from Outfalls 111 or 211 to cause or contribute to any exceedances of water quality standards in the Indiana Harbor Ship Canal and Indiana Harbor, and no WQBELs should be established for Outfalls 111, 211 or monitoring station 012.

ArcelorMittal would agree to periodically demonstrate recycle rates at monitoring station 012 and the No. 3 water intake during the term of the renewal NPDES permit. For example, the study could be repeated once during the second year of the NPDES permit and once just prior to the next renewal permit application.

Monitoring Station 012, Reduction in Proposed Mercury Monitoring Frequency

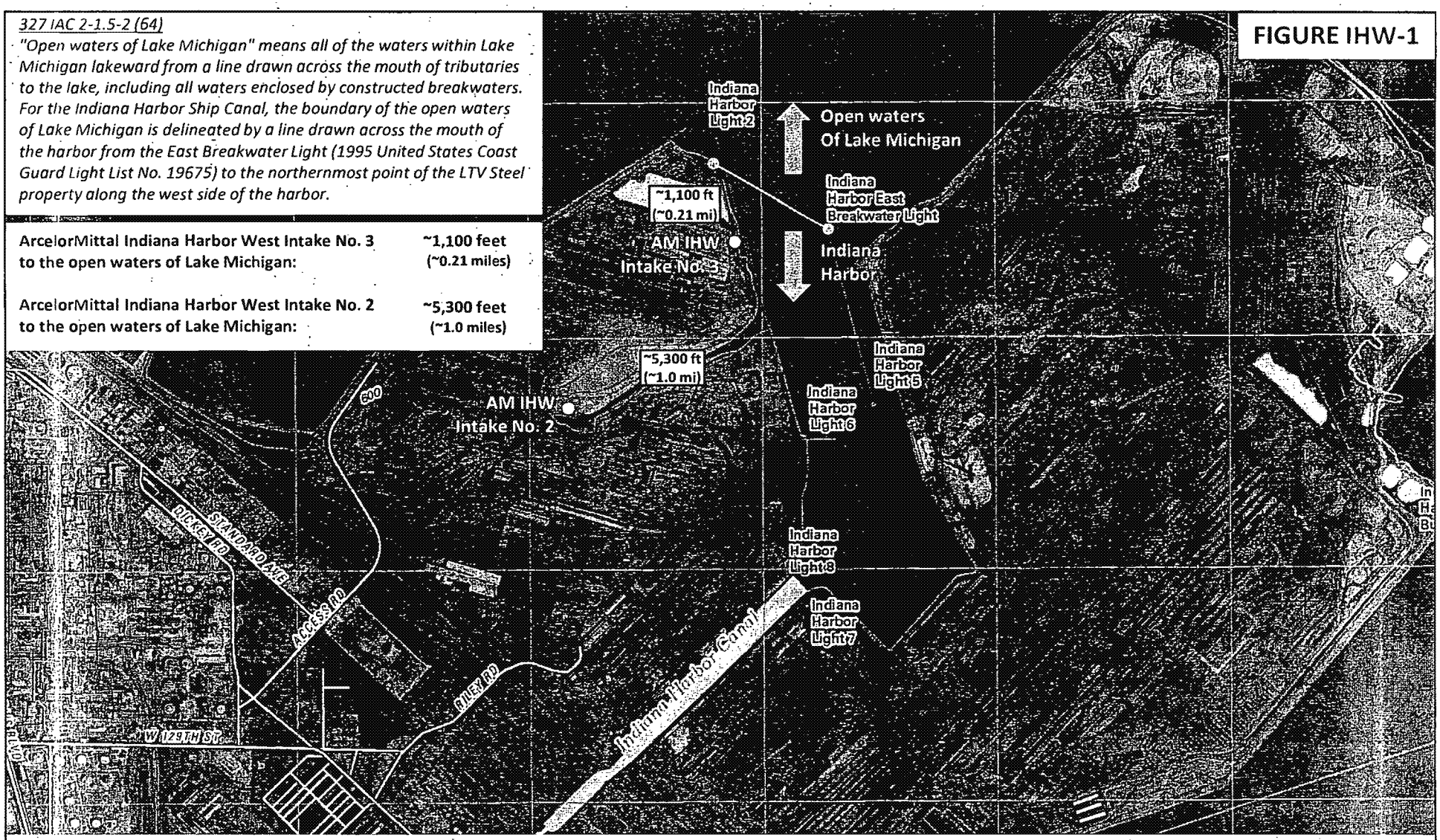
Footnote [5] on page 18 of 77 of the draft NPDES permit would allow a modification of the permit to reduce the mercury monitoring frequency at monitoring station 012. ArcelorMittal requests that this same provision also be added for Outfalls 002, 009, 010 and 011.

FIGURE IHW-1

327 IAC 2-1.5-2 (64)

"Open waters of Lake Michigan" means all of the waters within Lake Michigan lakeward from a line drawn across the mouth of tributaries to the lake, including all waters enclosed by constructed breakwaters. For the Indiana Harbor Ship Canal, the boundary of the open waters of Lake Michigan is delineated by a line drawn across the mouth of the harbor from the East Breakwater Light (1995 United States Coast Guard Light List No. 19675) to the northernmost point of the LTV Steel property along the west side of the harbor.

ArcelorMittal Indiana Harbor West Intake No. 3 to the open waters of Lake Michigan:	**~1,100 feet (~0.21 miles)**
ArcelorMittal Indiana Harbor West Intake No. 2 to the open waters of Lake Michigan:	**~5,300 feet (~1.0 miles)**



SCALE 1:24 000

KILOMETERS: 1 0.5 0 1 2

METERS: 1000 500 0 1000 2000

MILES: 1 0.5 0 1

FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 16T
10 000-foot ticks: Indiana Coordinate System of 1983 (west zone)

Imagery.....NAIP, August 2008
Roads.....US Census Bureau TIGER data with limited USGS updates, 2008
Names.....GNIS, 2008
Hydrography.....National Hydrography Dataset, 2008
Contours.....National Elevation Dataset, 2003

UTM GRID AND 2010 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100-000-m Square ID
DM
Grid Zone Designation
16T

2. OUTFALLS 701 & 702 – ZERO DISCHARGE

In anticipation of the renewal NPDES permit for Indiana Harbor West, new and upgraded process water treatment and recycle systems at the Steel Producing Department vacuum degasser and continuous slab caster were recently installed and placed into operation. The investment cost for these upgrades was approximately $12,000,000. These upgraded systems were installed primarily to achieve the generally applicable technology-based effluent limits for those operations set out at 40 CFR Part 420 rather than have the limits apply at Outfall 011 as in the current NPDES permit. An innovative feature of the upgraded design was the potential for zero discharge from one or both of these systems. In order to achieve zero discharge, the fully treated process water system blowdowns can be utilized in the gas cleaning systems for the basic oxygen furnaces (BOFs). This feature was viewed as an innovative approach to achieving one of the overarching goals of the Clean Water Act – zero discharge of pollutants (see 33 U.S.C. §§ 1251(a)(1)).

ArcelorMittal's operating experience since these systems were put into operation in mid-2010 has been that zero discharge has been sustained on a continuous basis. As of this writing, there has only been one day of discharge from the continuous caster system and none from the vacuum degasser system. The draft NPDES permit establishes new internal NPDES compliance monitoring stations at the discharge from each system: Outfall 701 – vacuum degasser; Outfall 702 – continuous caster. Each treatment system is equipped with an NPDES permit compliance monitoring station comprising primary and secondary flow monitoring devices and an automatic 24-hour composite sampler. The draft permit specifies twice per week monitoring at Outfalls 701 and 702 (see pp. 15 and 16 of 77). Also, the draft permit contains the following footnote for Outfall 701, and the same footnote for Outfall 702:

> *"[1] The above identified effluent limitations are only applicable when the discharge does not get directed to the BOF and discharges through Internal Outfall 701."*

In effect, this footnote means that for compliance determinations ArcelorMittal can only consider monitoring data for days of discharge through Outfalls 701 or 702. It is possible that ArcelorMittal could have a discharge on only one day of a month that is less than an applicable daily maximum effluent limit, but greater than the corresponding monthly average limit. This would put ArcelorMittal in jeopardy of being charged with violating the 30-day average effluent limit, when in fact the actual monthly average discharge would have been far less than the respective monthly average effluent limit owing to the days with zero discharge. There is no regulatory basis for this provision and it would be counterproductive to include it in the renewal NPDES permit for Indiana Harbor West Outfalls 701 and 702.

To remedy this situation, ArcelorMittal requests that the above footnote be deleted from the final NPDES permit for Outfalls 701 and 702, and that ArcelorMittal be authorized to count scheduled monitoring days with zero discharge as "zero" for purposes of calculating the monthly average discharge to evaluate compliance with the applicable monthly average effluent limits. This is consistent with the

2. OUTFALLS 701 & 702 – ZERO DISCHARGE

definition of *average monthly discharge limitation* contained in the NPDES permit regulations at 40 CFR §122.2:

> *"Average monthly discharge limitation means the highest allowable average of "daily discharges" measured during a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month."*

For the example cited above, there would be one day of discharge during a month and no discharges on the other seven days that month when monitoring would be required with a twice per week monitoring frequency. The *sum of the daily discharges* would be the sum of the monitoring result measured on the day of actual discharge and seven zeros. The *number of daily discharges measured during that month* would be eight (i.e., the measurement for the actual discharge day and seven measurements of zero). This approach is clearly within the NPDES permit regulations.

Furthermore, the federal effluent limitations guidelines at 40 CFR Part 420 are based on the premise that the discharger is free to install any technology of its choosing to comply with NPDES permit effluent limits derived from the effluent limitations guidelines. [1] In this case, ArcelorMittal elected to go beyond minimum national standards and achieve zero discharge. The technologies and operating practices ArcelorMittal employs to achieve zero discharge clearly fall within the construct of the effluent limitations guidelines program and are entirely consistent with one of the principal goals of the Clean Water Act. The footnotes noted above for Outfalls 701 and 702 must be removed from the NPDES permit and ArcelorMittal must be allowed to consider monitoring days with zero discharge as zero for determining compliance with monthly average effluent limits.

In the alternative, IDEM could remove the footnotes and the monthly average limits for Outfalls 701 and 702 from the permit on the basis that ArcelorMittal has demonstrated that there is no routine discharge. The flow monitoring requirement could remain to demonstrate that there is no discharge flow and, if things would unexpectedly change, provide IDEM with the data to modify the permit at a later date to include the monthly average limits.

The continued imposition of monthly average limits at Outfalls 701 and 702 is truly a form of command and control that demonstrates a lack of ingenuity and belies the stated goals of the Clean Water Act.

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[1] See Development Document for Effluent limitations Guidelines and Standards for the Iron and Steel Manufacturing Point Source Category, Vol. I (EPA 440/1-82/024, May 1982), p. 87.

> *"The limitations neither require the installation of any specific control technology nor the attainment of any specific flow rate or effluent concentration. Various treatment alternatives or water conservation practices can be employed to achieve a particular effluent limitation and standard. The model treatment systems presented in the development document illustrate one means available to achieve the limitations and standards. In most cases, other technologies or operating practices are available to achieve the limitations and standards."*

2. OUTFALLS 701 & 702 – ZERO DISCHARGE

Rather than rewarding a facility for achieving the goal of "zero discharge" to protect the environment, the proposed footnote and the monthly average limits would actually encourage ArcelorMittal to create a low-volume discharge each monitoring day so that analytical measurements can be made and low mass discharges can be calculated to demonstrate compliance with effluent limits for each limited pollutant. In effect, IDEM would be encouraging discharges of pollutants that would otherwise not occur. ArcelorMittal requests that IDEM delete the proposed footnote cited above for Outfalls 701 and 702 and specifically authorize using zero for monitoring days with no discharge for calculation of monthly average discharges; or, delete the monthly average effluent limits at Outfalls 701 and 702. We believe IDEM should encourage innovative approaches to achieve "zero discharge".

3. SECTION 301(g) EFFLUENT LIMITS: OUTFALLS 509, 009, 010 AND, 011

ArcelorMittal request that the following condition to allow modification of Section 301(g) effluent limits for ammonia-N and total phenols be included in the Indiana Harbor West NPDES permit for Outfalls 509, 009, 010 and 011:

> *"At any time during the term of this NPDES permit, the permittee may request modification of Section 301(g) effluent limits for ammonia-N and total phenols. Such modified limits may be applied at Outfalls 509, 009, 010 and 011, or any combination thereof."*

The above condition is similar to one included in the NPDES permit for ArcelorMittal Burns Harbor LLC that IDEM recently renewed.

4. MINIMUM LEVEL (ML) for 2,3,7,8-TCDF

The description of the Minimum Level (ML) for 2,3,7,8-TCDF in footnote [3] on page 8 of the permit correctly states the ML concentration as 10 picograms per liter (pg/L). However, the parenthetical clause at the end of this footnote identifies pg/L as parts per trillion (ppt) instead of parts per quadrillion (ppq). ArcelorMittal requests the NPDES permit be corrected as noted above.

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ArcelorMittal Comments on Draft NPDES Permits

Legal Name	Common Name	Abbreviation	NPDES Permit No.
ArcelorMittal Indiana Harbor LLC	Indiana Harbor Central Treatment Plant	IH CTP	IN0063711

For purposes of these comments and in the interest of simplifying the comments, the above common name is used throughout.

1. Tetrachloroethylene and Total Toxic Organics (TTO)

ArcelorMittal Comments on Indiana Harbor Central Treatment Plant Draft NPDES Permit

1. TETRACHLOROETHYLENE AND TOTAL TOXIC ORGANICS (TTO)

The draft NPDES permit for the Indiana Harbor Central Treatment Plant contains proposed monitoring requirements for tetrachloroethylene (abbreviated as TCE in the draft NPDES Permit) and Total Toxic Organics (TTO) that specify the sample types as 24-hour composite (p. 5 of 59). TCE is a volatile substance. As such, the sampling method at 40 CFR Part 136 requires sampling in special vials equipped with flexible septa. The sampler must ensure that no air remains in the vial after it is capped with the septum. Because of this sampling requirement, one-time "grab" samples are typically specified in NPDES permits for TCE (*see e.g.*, Outfall 014 at Indiana Harbor East; Outfall 211 at Indiana Harbor West; Outfall 011 at Burns Harbor). ArcelorMittal requests the sample type for TCE be changed from "24-hour composite" to "grab" in the Indiana Harbor Central Treatment Plant permit to be consistent with 40 CFR Part 136 requirements and the other permits for the Indiana Harbor facilities.

TTO is a measure of the sum of toxic organic pollutants listed at 40 CFR §433.11(e) (Metal Finishing effluent limitations guidelines) that are measured at concentrations greater than 0.01 mg/L. The list of toxic organic pollutants includes several volatile pollutants such as TCE as well as semi-volatile pollutants. The draft NPDES permit for Indiana Harbor Central treatment lists the sample type as "24-hour composite" for TTO. In this case the sample type should be "24-hour composite" for semi-volatile compounds that are part of the TTO and "grab" for volatile compounds that are part of the TTO. ArcelorMittal requests the sample type for TTO be modified accordingly.

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Hamblin, Richard

From: Gardner, Nicole
Sent: Saturday, October 01, 2011 4:09 PM
To: RIGNEY, STAN; Hamblin, Richard; Higginbotham, Paul
Subject: FW: PCC comments on Arcelor Mittal

FYI

Nicole Gardner
Senior Environmental Manager
OWQ/IDEM
317/232-8707

From: Jim Sweeney [jpbiod@comcast.net]
Sent: Friday, September 30, 2011 11:28 PM
To: Gardner, Nicole
Cc: 'Charlotte Read'; 'Susan MiHalo'
Subject: PCC comments on Arcelor Mittal

Nicole Gardner
IDEM, Office of Water Quality
100 N Senate Ave
Indianapolis, IN 46204

September 30, 2011

Subject: Porter County Chapter Izaak Walton League of America comments on:

IDEM Permit Number IN0063355
Indiana Harbor Long Carbon Facility

IDEM Permit Number IN0063711
Indiana Harbor Central Wastewater Treatment Plant

IDEM Permit Number IN0000094
Indiana Harbor East Facility

IDEM Permit Number IN0000205
Indiana Harbor West Facility

We appreciate the opportunity to comment on these permits and wish to have our comments made part of the public record for all four permits. A hard copy will follow in the US mail.

The Porter County Chapter of the IWLA was founded in 1958 to support the establishment of the Indiana Dunes National Lakeshore and has been an advocate for the park and for the air and water of northwest Indiana ever since.

It is our opinion that the ultimate goal of the Clean Water Act is to eliminate pollution and to make all waters of the United States "fishable and swimmable" as specifically stated in the Act.

Our comments reflect much of what has been submitted to you by the Save the Dunes Council as we have worked closely with the Council since 1958.

Our concerns include heavy metals, missing TMDL's, and a few other issues.

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Chromium

ArcelorMittal reported through the Toxic Release Inventory (TRI) that 890 pounds of chromium compounds were discharged to the water of Lake Michigan. Reportedly it is removed from the wastewater and a provision was included in each of the permits that prohibit the discharge of chromium at any of the outfalls.

This is welcome but we have found no requirement that calls for monitoring to make sure this happens. A monitoring system should be required in all the permits where chromium discharges are prohibited.

Mercury

Mercury is an especially dangerous toxin because it bioaccumulates in fish tissue and can adhere to sediments in water bodies. One of the most serious concerns we have with this permit is the schedule of compliance for these facilities to meet new effluent limitations for mercury.

We request that these new permits include a Final Plan for Compliance that will be implemented in 24 months that addresses all sources of mercury pollution.
Total Maximum Daily Loads (TMDLs)

IDEM reportedly spent $1 million to complete TMDL assessments on the Grand Calumet in 2001, and then did not develop the TMDLs. Waste load allocations used in these permits are not sufficient because they are looking at individual parameters on a case-by-case basis and not the whole stream. Refer to the definition of TMDL. All sources must be considered.

TMDLs need to be developed prior to the next renewal for these permits. They are a critical step to resolving impairments in the AOC.

Other Concerns

The permits should require constant monitoring of all outfalls due to the potential for serious discharges for the entire range of pollutants and chemicals used at Arcelor Mittal. The Clean Water Act requires the permittee to show the ecology of the receiving waterway is protected.

Any impact of thermal discharge needs to be documented and corrected.

Section 301 of the Clean Water Act requires that NPDES permits "shall require application of "Best Available Technology" to reduce discharges to the extent "technologically and economically achievable," including "elimination of discharges of <u>all</u> pollutants" if it is achievable.

The Clean Water Act requires that "the discharge of any pollutant by any person shall be unlawful" except if authorized by a NPDES permit. The Act further defines "discharge of a pollutant" to mean "any addition of any pollutant to navigable waters from any point source." Requiring effluent limitations for even small discharges of pollutants is consistent with the Clean Water Act's statutory goal of "elimination of discharges of <u>all</u> pollutants."

Arcelor Mittal and the other factories have come a long way but still have a long way to go. Lake Michigan does not belong to them, it belongs to the public and your job is to make sure this incredible resource is protected for our use and for future generations.

Thank you,

Jim Sweeney, President

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Hamblin, Richard

From: Jesse Kharbanda [jkharbanda@hecweb.org]
Sent: Friday, September 30, 2011 8:00 PM
To: Gardner, Nicole; Hamblin, Richard
Cc: Jesse Kharbanda
Subject: Ar-Mittal Permits - Brief Letter in Support of Comments Submitted by Partners
Attachments: ArMittalSupportforComments-HEC-9-30-2011 .doc

Nicole and Richard,

Could you acknowledge receipt of the attached, brief letter?

Thanks,

Jesse

Jesse Kharbanda
Executive Director
Hoosier Environmental Council
www.hecweb.org
(317) 685-8800 (o)
(317) 979-3236 (c)

Hoosier Environmental Council
3951 N Meridian St., #100
Indianapolis, IN 46208
317-685-8800

Nicole Gardner
Richard Hamblin
IDEM, Office of Water Quality
MC 65-42 IGCN 1255
100 N Senate Ave
Indianapolis, IN 46204-2251

RE: Permit Number IN0063711
Indiana Harbor Central Wastewater Treatment Plant

Permit Number IN0000094
Indiana Harbor East Facility

Permit Number IN0063355
Indiana Harbor Long Carbon Facility

Permit Number IN0000205
Indiana Harbor West Facility

Dear Ms. Gardner and Mr. Hamblin,

On behalf of the Hoosier Environmental Council, Indiana's largest environmental policy organization, we're writing to express our support for the joint comments submitted on Sept. 30, 2011 by Save the Dunes and the Alliance for the Great Lakes on the above four draft permits.

We'd appreciate if this could be noted in the comments associated with all four draft permits.

Jesse Kharbanda
Executive Director
Hoosier Environmental Council
jkharbanda@hecweb.org

Hamblin, Richard

From: Susan MiHalo [smihal763@frontier.com]
Sent: Friday, September 30, 2011 1:05 PM
To: Hamblin, Richard
Subject: Comments on Permit Number IN0063711
Attachments: Central Permit IN0063711.pdf

Importance: High

Please see attached comments on the Central Wastewater Permit Number IN0063711 for ArcelorMittal. If you have any questions, I can be reached at 219-763-4871.

Note: although the two letters for the different permits I just sent you might look the same, there may be subtle differences, so please don't just assume in response to comments that they are the same letter.

Thank you,

Susan MiHalo
Board Secretary
Save the Dunes

Joint Comments
Save the Dunes, 444 Barker Rd., Michigan City, IN 46360
&
Alliance for the Great Lakes
17 N. State Street, Suite 1390, Chicago, IL 60602

September 30, 2011

Richard Hamblin
IDEM, Office of Water Quality
MC 65-42 IGCN 1255
100 N Senate Ave
Indianapolis, IN 46204-2251

RE: Permit Number IN0063711
Indiana Harbor Central Wastewater Treatment Plant

Dear Mr. Hamblin:

Thank you for the opportunity to comment on NPDES Permit Number IN0063711, which is the Indiana Harbor Central Wastewater Treatment Plant for the ArcelorMittal Indiana Harbor Plant. We would also like to commend Mr. Bruno Pigott and his staff for taking time to patiently answer our questions and concerns, and for working closely with USEPA in advance to iron out potential issues and concerns USEPA might have otherwise had with the permits.

Save the Dunes maintains interests in this area for several reasons, not the least of which we are landowners in the Grand Calumet Area of Concern (AOC). In addition, we have a long tradition of supporting any efforts to protect the waters of Lake Michigan and its tributaries that are intricately tied to the geological history of the Indiana Dunes. Even more important is the need to ensure that our members as well as residents in that area are not being exposed to harmful toxins or chemicals when they utilize these important resources for drinking water, swimming, fishing, recreation and boating.

As a stakeholder in preserving, protecting and restoring the natural resources of Northwest Indiana since 1952, it is extremely bothersome to Save the Dunes and the Alliance for the Great Lakes that a permit for the Central Wastewater area was last issued in 1986 and modified as far back as 1991 as part of the LTV facility. Waiting this long to issue a "new" permit calls into question the integrity of, in the eyes of the general public, not only the administratively extended permits but also these renewed permits and new permits. Furthermore, administratively extended permits do not allow for adequate public input, and should never be used to mask serious problems with permitting delays. All living matter in that area and humans deserve to have a current permit that strives to uphold the intent of the Clean Water

Act, which has an ultimate goal of zero discharge. Save the Dunes and the Alliance for the Great Lakes will be watching in the future to make sure major facility NPDES backlogs do not develop again.

Because Lake Michigan is an Outstanding State Resource Water, and because it has been so long since this area has had a current permit, we believe that it is imperative to approve this new permit without delay. Nevertheless, considering the impact of this facility on the environment, drinking water and human health, it is critical that this permit be the best permit possible. Therefore, we are providing several recommendations that we hope will be given serious consideration, and we look forward to your response on those recommendations.

Areas of focus that need improvement in this permit include:

Chromium Issues

Health effects that can result from exposure to hexavalent chromium (also known as hex chromium or chromium-VI) include damage to the nose; anemia; intestinal and stomach damage; and cancer. The State of California is so concerned about this parameter that it has set a very low detection limit of 0.02 µg/L.

In 2010, ArcelorMittal West (TRI ID 46312LTVST3001D) reported through the Toxic Release Inventory (TRI) that 890 pounds of chromium compounds were discharged to the water, one of the highest amounts of chromium discharges reported in the Great Lakes Basin. IDEM has indicated that this chromium is removed from the wastewater in the Central Wastewater Plant and taken offsite for disposal, as might be evidenced by the 23,000 pounds of chromium compounds reported in the 2010 TRI as removed through this method. As a result of it being removed in the Central Plant, a specific provision was included in all of the permits that prohibits the discharge of chromium at any of the outfalls.

We don't know if it was an oversight or intentional, but there is nothing in these permits that requires monitoring to make sure this prohibition is being followed, making enforcement more difficult. This is particularly important since they have reported discharging 890 pounds of chromium compounds directly to the water as late as 2010.

A continuous monitoring system for chromium compounds should be required in all the permits where chromium discharges are prohibited. Furthermore, we need assurances that the wastewater sludge from the Central Treatment Plant that then contains the chromium is handled in a lawful manner as it is taken off-site. Recent studies and media coverage of detections of chromium-6 in tap water, in addition to EPA's current efforts to conduct human health risk assessments, also support the need for monitoring protocols for chromium in this permit. This is especially important because hexavalent chromium is more soluble and more mobile than the more naturally occurring chromium III, and also enters the water through airborne sources in the plant.

Some Parameters May be Missing

With respect to toxic pollutants, Clean Water Act Section 301 requires that NPDES permits "shall require application of "Best Available Technology" (BAT) to reduce pollutant discharges to the maximum extent "technologically and economically achievable," including "elimination of discharges of all pollutants" if it is achievable. Federal regulations promulgated by USEPA also require that "[t]echnology-based treatment requirements under Section 301(b) of the [CWA] represent the minimum level of control that must be imposed" in a NPDES permit. BAT is a stringent treatment standard that has been held to represent "a commitment of the maximum resources economically possible with the ultimate goal of eliminating all polluting discharges."

Technology-based effluent limitations (TBELs) are a necessary minimum requirement for a permit "regardless of a discharge's effect on water quality." Federal regulations require state permitting authorities to establish BAT effluent limits in individual NPDES permits on a case-by-case basis, using Best Professional Judgment (BPJ), "to the extent that EPA-promulgated effluent limitations are inapplicable." The use of the word "shall" in both the federal statute and regulations does not leave IDEM with any discretion as to whether TBELs should be established. Instead, TBELs must be established for every parameter reported in the TRI data. It is our contention that IDEM must set TBELs for all pollutants by determining BAT. Even if the ArcelorMittal facility is not discharging these pollutants in amounts that would implicate the applicable water quality standard or require a WQBEL, the Clean Water Act still requires that they be subject to TBELs.

The Clean Water Act requires that "the discharge of any pollutant by any person shall be unlawful" except, in pertinent part, if it is authorized by a NPDES permit. The Act further defines "discharge of a pollutant" to mean "any addition of any pollutant to navigable waters from any point source." Requiring effluent limitations for even small discharges of pollutants is consistent with the Clean Water Act's statutory goal of "elimination of discharges of all pollutants."

Accordingly, although some pollutants reported in ArcelorMittal's TRI reports may only be discharged in small amounts, they still constitute "discharges of a pollutant" that are illegal under the Clean Water Act unless subject to appropriate TBELs. IDEM needs to review the TRI and revise the draft permit to incorporate such missing TBELs before ArcelorMittal's NPDES permits can be lawfully renewed.

Mercury Issues

One of the most serious concerns we have with this permit is the schedule of compliance proposed for this facility to meet new effluent limitations for mercury. Mercury is an especially dangerous parameter of concern since it bioaccumulates in fish tissue, and can adhere to sediments in all the affected water bodies. Lake Michigan, in particular, does not have a ready

ability to heal itself as it takes more than 90 years for its waters to recycle and turn over. In addition, more than adequate studies have been done that prove that sediments in this area contain conditions that are sufficient to alter the chemical composition of fish tissues to the extent that the human uses of fishery resources in that area are adversely affected. (http://www.fws.gov/midwest/GrandCalumetRiverNRDA/documents/Volume1.pdf)

While the Great Lakes Initiative (GLI) allows Indiana to provide flexibility on compliance schedules, the key words are "shall not exceed five years or the term of the NPDES permit, whichever is less." That does not automatically mean that 54 months (4.5 years) is the standard amount of time granted. The effluent limitations should come as no surprise to ArcelorMittal, and we just don't see why it should take 54 months to ramp up to meet the standards.

It is our understanding that, as soon as the permit is approved, ArcelorMittal must in order of sequence:

1. Develop a Quality Assurance Project Plan (QAPP) within three months that identifies sources of mercury in the wastewater being treated.
    - It is our belief that this QAPP should take into account a mass balance study of all sources of mercury including air, water and solid waste such as secondary wastewater sludge.
    - Once the QAPP is approved by IDEM, how much time will then be allotted to identify those sources? Is it possible to negotiate this timeline within the permit?
    - Will the QAPP be made available for comment by the public?
2. Then develop a Final Plan for Compliance (FPC) to achieve compliance with the final effluent limits.
    - Will there be an opportunity for public comment on the FPC?
3. Implement the FPC within 24 months.
    - 24 months seems too long. We request that the FPC be implemented in 12 months.

We also want to have some assurances that there is a high degree of certainty that all these plans and schedules are realistic and achievable.

Missing Total Maximum Daily Loads (TMDLs)

It is amazing to Save the Dunes and the Alliance for the Great Lakes that IDEM reportedly spent $1 million to complete TMDL assessments on the Grand Calumet in 2001, and then never developed the TMDLs. Wasteload allocations used throughout all the permits are not sufficient because they are looking at parameters on a case-by-case basis and not the whole stream. You are not considering the other sources that might be contributing to impairments in the entire AOC.

We request that the necessary TMDLs be developed prior to the next renewal for these permits; and we invite IDEM and USEPA to work with Save the Dunes to make sure this

happens, just as we are working together to develop TMDLs for the Salt Creek Watershed. TMDLs are a critical step to resolving impairments in the AOC; impairments that have far-reaching consequences beyond the AOC into Lake Michigan – and also impact a visitor's ability to enjoy the Indiana Dunes National Lakeshore.

Thermal Concerns

While we appreciate the in-stream sampling and modeling that has been done to prove that ArcelorMittal does not have a reasonable potential to exceed a water-quality criterion for temperature, it is our contention that continuous in-stream monitoring should be required as opposed to grab sampling. Grab samples are only as good as the sample. This is especially important since the Clean Water Act requires the permittee to demonstrate that the balanced indigenous community of aquatic organism is protected and maintained. We also need to know if US Fish and Wildlife, DNR and other staff were consulted during this study because thermal concerns have a major impact on impairments in the AOC.

Typographical Error

On page 32, line 5 of the permit it should say "prevention" not "prevent."

Procedure for Whole Effluent Toxicity

An overall goal of the GLI is to have consistency among the Great Lake States. We understand that USEPA disapproved Indiana's WET procedure in 2000 and therefore WET testing procedures in this permit must conform to EPA guidance and national standards in 40 C.F.R. 122.44(d)(1). IDEM must ensure that the WET procedures described in the permit comply with these federal standards to USEPA's satisfaction.

Phenols

Save the Dunes and the Alliance for the Great Lakes would like to applaud IDEM for proposing that the variance request for phenol (4AAP) not be renewed in the West facility permit as stated in that permit's Citizen's Summary. It does not appear that this same denial was in the other permits, however, including this Central Wastewater permit. Please clarify that for us.

In addition, we are wondering if any consideration might be given to using carbon filters in all the control technologies to reduce phenol pollution. For example, in the East Permit, It is our understanding phenols are controlled using carbon filters that the blow down from Nos. 5 & 6 blast furnace recycled system is treated through clarifiers for solids remove and carbon filtration to control phenols and is then discharged to the Main Plant Recycle System through internal Outfall 613

Again, thank you for the opportunity to comment on these permits. While we appreciate that it is certainly more stringent than the current, administratively extended permit, as you can see there are still areas that need to be strengthened in the permit to further protect our most precious resource – water.

Sincerely,

Jeanette Neagu
President
Save the Dunes
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Michigan City, IN 46360
jgvneagu@yahoo.com

and

Lyman C. Welch
Water Quality Program Manager
Alliance for the Great Lakes
17 N. State St., Suite 1390
Chicago, IL 60602
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cc: Nicole Kamins, Executive Director, Save the Dunes
Kevin Pierard, Chief, NPDES Permits Branch, Region V, USEPA

For Some very odd reason, Why have not their permits been done Sooner? Every Citizen has to comply with rules Why are "Big Comp." Alway given Much extra time?

Now, here we are again looking at issuing a "New Permit" or "Face ability to add more Waste to our Lakes. Than on the other side of the Coin the People + E.P.A. who are trying to help remove or add less pollution are asking for More Funds to Clean-up the toxine that Steel + Other Company despose of into our Lake.

This is a Stupid as the day is long. Our Govt is OKing companies to pollute, than giving Monies to other Organization to Clean it up. "Dumb, Dumb" Shame on You's!!

The Rule Should be This: What ever water is used you must replace it with a better product than you started Since our Water save you Money, Enabled you to Produce your product for Profet and Most of all Took out more than you have replaced (Short.) This is the least you Should

permit since it is our Life Source that they are using or abusing for Profit for Them-Self.

What is More important Their Monitary funds given to us, or The ability to have the most important Substance for our lives, Water!

When the water is gone so are millions of people But the Business can Still go on, just a different Location.

Now; You be the judge. Do what we elected you to do + represent us and our good or Support the Monies that Fill your Coffers and pockets.

Ted Olsen

STATE OF INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PUBLIC NOTICE OF PUBLIC HEARING & DRAFT NPDES PERMIT
TO DISCHARGE WASTEWATER INTO NAVIGABLE WATERS OF THE STATE.

PUBLIC NOTICE NO. 2011 – 8F – RD/PH: DATE OF NOTICE: AUGUST 15, 2011;
HEARING DATE: SEPTEMBER 15, 2011; RESPONSE DATE: SEPTEMBER 30, 2011.

MAJOR - INDUSTRIAL RENEWAL & NEW PERMITS

ARCELORMITTAL EAST & WEST FACILITIES, LAKE COUNTY, IN. This is the first Public Notice for permits: (IN0000094) ArcelorMittal Steel USA Inc, IN Harbor East (administratively extended since expiring 5/31/2001), and ArcelorMittal Steel USA Inc, IN Harbor Long Carbon; and (IN0000205) ArcelorMittal IN Harbor, LLC – IN Harbor West (administratively extended since expiring 9/29/91), and ArcelorMittal IN Harbor LLC- Central WWTP. The permittee has requested these 2 permit be separated into individual permits as designated below.

ArcelorMittal Steel USA Inc - IN Harbor East, Permit No. IN0000094 - RENEWAL

Industrial facility: manufactures iron & steel, rolling mill operations, and finishing operations with additional support operations: power generation, wastewater treatment, recycling, laboratory & research. Main Outfalls: 011, 014 & 018, discharging to the IN Harbor Turning Basin, and IN Harbor Ship Canal. Several storm water outfalls which have the potential to discharge to these waters are also covered by this permit. .

Variance from Technology Based Effluent Limitations (301(g)) for the East Facility

In February 1988, Inland Steel, owner/operator of the ArcelorMittal Steel USA, IN Harbor East facility, applied for & received a "waiver" from the Best Available Technology (BAT) economically achievable limitations contained in the ironmaking & sintering subcategories of 40 CFR 420. The US EPA granted a variance from the BAT requirements provided for by the federal NPDES permit requirements of the Clean Water Act pursuant to section 301(g). ArcelorMittal IN Harbor East has requested, through its permit renewal, that the Proposed Modified Effluent Limitations (PMELs) based on the 301(g) variance be continued. IDEM has reviewed the application submitted by ArcelorMittal Steel USA, IN Harbor East for continuance of the variance under Section 301(g) of the Clean Water Act from the more stringent BAT effluent limitations guidelines (ELGs) for the non-conventional pollutants Ammonia (as N) and Phenols (4AAP) in the wastewater discharges from the Nos. 5 & 6 Blast Furnaces at ArcelorMittal IN Harbor East through internal Outfall 613. The final application was received on May 10, 2011 from ArcelorMittal for continuance of the variances approved by EPA on February 8, 1989.

The 301(g) variance application was reviewed to determine if it is complete by using the completeness checklist contained in the Technical Guidance Manual developed by U.S. EPA for the regulations promulgated pursuant to section 301(g) of the Clean Water Act. The PMELs proposed in the application that will replace the otherwise applicable effluent limitations based on the BAT ELGs, are identical to the PMELs approved by EPA on February 8, 1989.

IDEM, Office of Water Quality, has tentatively approved the PMELs for Ammonia (as N), because the Ammonia (as N) PMELs will result in compliance with Indiana water quality standards and because all Section 301(g) conditions will be met. IDEM, Office of Water Quality, has tentatively denied the PMELs for Phenols (4AAP), because it appears that the treatment system currently in place sufficiently removes Phenols (4AAP) and BAT for this parameter can be met at internal Outfall 613.

ArcelorMittal Steel USA Inc - IN Harbor Long Carbon, Permit No. IN0063355 – NEW (split from IN0000094).

Industrial Operations: steel manufacturing, consisting of electric furnace steelmaking, ladle metallurgy, billet casting, hot rolling (bar mill), and ancillary operations. Wastewater discharge to the IN Harbor Canal, process wastewater Outfalls are 001 & internal Outfall 602; Storm water only Outfalls: 020, 021 & 022; all five (5) outfalls have been removed from IN0000094 at the permittees request for inclusion in a new NPDES permit.

ArcelorMittal IN Harbor, LLC –IN Harbor West, Permit No. IN0000205 - RENEWAL

Industrial Operations: large integrated steel mill, intermediate & final products include sinter, iron, raw steel, cast steel, hot strip, cold rolled strip, hot dip galvanized strip & chromium/tin plated strip. Wastewater discharge to the IN Harbor Ship Canal: Outfalls 002, 009, 010, 011 & 012 (Outfall 012 is considered a direct discharge to Lake Michigan). Internal Outfalls 509, 701, 702, 111, and 211 discharge via one of the above outfalls.

Variance from Technology Based Effluent Limitations (301(g)) for the West Facility

In March 1986, LTV Steel, owner/operator of ArcelorMittal IN Harbor West, applied for/received a "waiver" from the BAT limitations contained in the ironmaking & sintering subcategories of 40 CRF 420. The US EPA granted a variance from the BAT requirements provided for by the federal NPDES permit requirements of the Clean Water Act pursuant to

section 301(g). Through its NPDES permit renewal application, ArcelorMittal IN Harbor West has requested the PMELs based on the 301(g) variance be continued.
IDEM has reviewed the application submitted by ArcelorMittal IN Harbor West for the continuance of the variance under Section 301(g) of the Clean Water Act from the more stringent BAT Effluent Limitations Guidelines (ELGs) for the non-conventional pollutants Ammonia (as N) and Phenols (4AAP) in the wastewater discharges from the H3 & H4 blast furnaces & sinter plant at ArcelorMittal IN Harbor West. The final application was received on May 10, 2011 for the continuance of the variance previously approved by the U.S. EPA in a letter dated March 3, 1986. The existing 301(g) variance limited Ammonia (as N) and Phenols (4AAP) on a net basis over Outfalls 009, 010, and 011. Due to redirection of the waste streams from the blast furnaces & sinter plant from the three outfalls to only Outfall 009, the Proposed Modified Effluent Limitations (PMELs) proposed in the variance application requested that the net limitations for Ammonia (as N) and Phenols (4AAP) be applied as gross limitations at Internal Outfall 509.
The 301(g) variance application was reviewed to determine if it is complete by using the completeness checklist contained in the Technical Guidance Manual for the regulations promulgated pursuant to section 301(g) of the Clean Water Act. The PMELs proposed in the permit that will replace the otherwise applicable effluent limitations based on the BAT ELGs, will remain as fixed net limits at Outfalls 009, 010 and 011. The cumulative totals for Ammonia (as N) and Phenols (4AAP) for the three outfalls are identical to the PMELs approved by EPA on March 3, 1986.
IDEM has tentatively approved the PMELs for Ammonia (as N) and Phenols (4AAP), because the PMELs will result in compliance with Indiana water quality standards and because all Section 301(g) conditions will be met.

ArcelorMittal IN Harbor LLC – Central WWTP, Permit No. IN0063711 - NEW (split from IN0000205).
Industrial Operations: steel manufacturing, pickling operations, cold rolling, galvanizing temper mill, alkaline cleaning, hot dip galvanizing & tin/chrome electroplating operations. Outfall 001(discharging to IN Harbor Ship Canal), & Internal Outfall 101 have been removed from the IN0000205 permit at the permittees request for inclusion in a new NPDES permit.

Tentative Determination: On the basis of preliminary staff review and application of pertinent standards and regulations, IDEM proposes to issue the Renewal permits for IN0000094 & IN0000205, and is issuing new permits for IN0063355 & IN0063711 which will impose certain effluent limitations, monitoring requirements, and special conditions. The permit terms are no more than five years each.
Hearing Information: IDEM has scheduled a Public Hearing concerning these Draft Permits for September 15, 2011, at 6 p.m. (local time), at Ivy Tech Community College – Gary Campus, in the Multipurpose Room (North Building), 1440 East 35th Ave, Gary IN 46409-1499. The purpose of the Hearing is to allow public participation in the determination of the terms and conditions of the NPDES permits. Interested parties should submit written or oral comments to the IDEM representatives at the time of the meeting.
Special Considerations
Individuals requiring reasonable accommodations for this Hearing must contact the IDEM - ADA Coordinator at 100 N Senate Ave., Rm 1322N, (317) 233-4200, or via the Indiana Relay Service at 1-800-743-3333, at least 72 hours prior to the hearing.
Comment Period & Procedures for the Formulation of Final Determination
The proposed determination to issue an NPDES permit is tentative. Comments not submitted at the Public Hearing must be received/postmarked at IDEM no later than September 30, 2011 to be considered in the formulation of the Final Determination. Anyone wishing notification of the Final Determination on this permit must provide written contact information to IDEM staff at the Public Hearing or during the specified comment period. Notice of Final Permit action will not be made to persons who fail to comment on the Draft Permit or fail to request such notice. Deliver or mail all written requests or comments to: IDEM - Office of Water Quality / Industrial NPDES Permits Section. Attention: Mr. Stan Rigney - MC 65-42 IGCN Rm 1255, 100 N Senate Av, Indianapolis, IN 46204-2251 or Email requests or comments to: srigney@idem.in.gov, phone, 317/232-8709.
Additional Information: The Draft permits are available for review at the IDEM Central File Room, 100 N Senate Av, Room IGCN 1201, Indianapolis, IN, between 8:30 a.m. and 4:30 p.m., M-F. Permits are available for public access at the following Public Libraries & Health Departments: East Chicago, Gary (main branch), Hammond & Lake County (W 41st St branch), at IDEM's Northwest Regional Office; and on IDEM's Web site at www.idem.IN.gov/5338.htm. Please tell others you think might be interested in this matter.