September 17, 2021

VIA ELECTRONIC MAIL

Mr. David Reaume, Plant Manager
United States Steel – Midwest Plant
6300 U.S. Highway 12
Portage, IN 46368

Dear Mr. Reaume:

Re: NPDES Permit No. IN0000337
United States Steel – Midwest Plant
Portage, IN – Porter 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. You are required to submit both federal discharge monitoring reports (DMRs) and state Monthly Monitoring Reports (MMRs) on a routine basis. The MMR form is available on the internet at the following web site: https://www.in.gov/idem/cleanwater/wastewater-compliance/wastewater-reporting-forms-notices-and-instructions/. Once you are on this page, select the "IDEM Forms" page and locate the "Monthly Monitoring Report (MMR) for Industrial Discharge Permits-30530" under the Wastewater Facilities heading. We recommend selecting the "XLS" version because it will complete all of the calculations when you enter the data.

All NPDES permit holders are required to submit their monitoring data to IDEM using NetDMR. Please contact Rose McDaniel at (317) 233-2653 or Helen Demmings at (317) 232-8815 if you would like more information on NetDMR. Information is also available on our website at https://www.in.gov/idem/cleanwater/resources/netdmr/.

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.

The draft NPDES permit for United States Steel – Midwest Plant was made available for public comment from April 19, 2021 through June 3, 2021 as part of Public Notice No. 20210419-IN0000337 and extended from June 3, 2021 to June 17, 2021 as part of Public Notice No. 20210521-IN0000337 on IDEM's website at https://www.in.gov/idem/public-notices/public-notices-all-regions/. A response to the comments, 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 fifteen (15) days of the emailing of an electronic copy of this letter or within eighteen (18) days of the mailing of this letter by filing at the following addresses:

Director
Office of Environmental Adjudication
Indiana Government Center North
Room N103
100 North Senate Avenue
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
Room 1301
100 North Senate Avenue
Indianapolis, Indiana 46204

If you have any questions concerning the permit, please contact Nicole Gardner at 317/232-8707 or ngardner@idem.in.gov. More information on the appeal review process is available at the website for the Office of Environmental Adjudication at http://www.in.gov/oea.

Sincerely,

Jerry Dittmer, Chief
Permits Branch
Office of Water Quality

Enclosures

cc: Porter County Health Department
Timothy Sullivan, USS Environmental Coordinator
Monique Bebly, Certified Operator
Chief, Permits Section, U.S. EPA, Region 5
Nick Ream IDEM Inspector
IDEM Northwest Regional Office
Alexis Piscitelli, U.S. Steel
Doug Cannon, Ogden Dunes Town Council
Paul Labovitz, National Park Service

Dena Mourtos, National Park Service
Colin Deverell, National Parks Conservation Association
Anna-Lisa Castle, Alliance for the Great Lakes
Kiana Courtney, Environmental Law & Policy Center
Jeff Hammons, Environmental Law & Policy Center
Indra Frank, Hoosier Environmental Council
Gary Brown, Izaak Walton League – Porter County Chapter
Natalie Johnson, Save the Dunes
Mitch McNeil, Surfrider Foundation – Chicago Chapter
Kevin Draganchuk, CEA Engineers

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 "Clean Water Act" or "CWA"), and IDEM's authority under IC13-15,

UNITED STATES STEEL CORPORATION – MIDWEST PLANT

is authorized to discharge from a steel manufacturing facility that is located at 6300 U.S. Route 12, in Portage, Indiana, to receiving waters identified as the Portage-Burns Waterway in accordance with effluent limitations, monitoring requirements, and other conditions set forth in Parts I, II, III, IV, V, and VI hereof. This permit may be revoked for the nonpayment of applicable fees in accordance with IC 13-18-20.

Effective Date: October 1, 2021

Expiration Date: September 30, 2026

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.

Issued on _September 17, 2021_ for the Indiana Department of Environmental Management.

Jerry Dittmer, Chief
Permits Branch
Office of Water Quality

Table of Contents

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 002, located at Latitude 41º 37' 23" Longitude -87º 10' 33". The discharge is limited to non-contact cooling water and stormwater. 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 Portage-Burns Waterway. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][9][10]

Outfall 002

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	-	-	-	1 X Weekly	24 Hour Total
Oil & Grease[8]	-	-	-	-	Report	mg/l	1 X Weekly	Grab
TRC[3,4,6]	0.03	0.05[5]	lbs/day	0.01	0.02	mg/l	Daily [7]	Grab
TSS	-	-	-	-	Report	mg/l	Quarterly[9]	Grab
COD	-	-	-	-	Report	mg/l	Quarterly[9]	Grab
Ammonia (as N)	-	-	-	-	Report	mg/l	Quarterly[9]	Grab
Zinc[11]	-	-	-	-	Report	mg/l	Quarterly[9]	Grab

Table 2

	Quality or Concentration			Monitoring Requirements	
Parameter	Daily Minimum	Daily Maximum	Units	Measurement Frequency	Sample Type
pH [12]	6.0	9.0	s.u.	Weekly	Grab

[1] See Part I.B. of the permit for the Minimum Narrative Limitations.

[2] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including dosage, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at: https://www.in.gov/idem/forms/idem-agency-forms/.

[3] The monthly average water quality-based effluent limit (WQBEL) for Total Residual Chlorine (TRC) is less than the limit of quantitation (LOQ) as specified below in footnote [4]. Compliance with the calculated monthly average limit will be demonstrated if the monthly average effluent level is less than or equal to the monthly average WQBEL. When calculating the monthly average effluent level, 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.

[4] The daily maximum WQBEL for TRC 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.

The following EPA approved test 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 and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ

The permittee may determine and use a case specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be determined by the procedure specified for method detection limits contained in 40 CR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD as prescribed by 327 IAC 5-2-11.6(h)(2)(B). Other methods may be used if first approved by the Commissioner.

[5] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value for TRC is less than 0.16 lbs/day.

[6] See Part I.I of the permit for the Pollutant Minimization Program (PMP) requirements.

[7] Monitoring for TRC shall be 1 X Daily during Zebra and Quagga mussel intake chlorination and continue for three (3) additional days after Zebra and Quagga mussel treatment has been completed.

[8] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

[9] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1-inch rainfall) storm event. For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling. A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[10] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWP3) requirements can be found in Part I.D. and I.E of this permit.

[11] The permittee shall measure and report the identified metal as total recoverable metal.

[12] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.

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 Outfall 003 located at Latitude 41º 37' 35" Longitude -87º 10' 33". The discharge is limited to non-contact cooling water and stormwater. 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 Portage-Burns Waterway. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1][2][9][10]

Outfall 003

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	-	-	-	1 X Weekly	24 Hour Total
Oil & Grease[8]	-	-	-	-	Report	mg/l	1 X Weekly	Grab
TRC[3,4,6]	1.3	2.5[5]	lbs/day	0.01	0.02	mg/l	Daily [7]	Grab
TSS	-	-	-	-	Report	mg/l	Quarterly[9]	Grab
COD	-	-	-	-	Report	mg/l	Quarterly[9]	Grab
Ammonia (as N)	-	-	-	-	Report	mg/l	Quarterly[9]	Grab
Zinc[11]	-	-	-	-	Report	mg/l	Quarterly[9]	Grab

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH[12]	6.0	9.0	s.u.	Weekly	Grab

[1] See Part I.B. of the permit for the Minimum Narrative Limitations.

[2] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including dosage, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at: https://www.in.gov/idem/forms/idem-agency-forms/.

[3] The monthly average water quality-based effluent limit (WQBEL) for Total Residual Chlorine (TRC) is less than the limit of quantitation (LOQ) as specified below in footnote [4]. Compliance with the calculated monthly average limit will be demonstrated if the monthly average effluent level is less than or equal to the monthly average WQBEL. When calculating the monthly average effluent level, 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.

[4] The daily maximum WQBEL for TRC 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.

The following EPA approved test 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 and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Chlorine	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l

Case-Specific LOD/LOQ

The permittee may determine and use a case specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be determined by the procedure specified for method detection limits contained in 40 CR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD as prescribed by 327 IAC 5-2-11.6(h)(2)(B). Other methods may be used if first approved by the Commissioner.

[5] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 7.6 lbs/day.

[6] See Part I. of the permit for the Pollutant Minimization Program (PMP) requirements.

[7] Monitoring for TRC shall be 1 X Daily during Zebra and Quagga mussel intake chlorination and continue for three (3) additional days after Zebra and Quagga mussel treatment has been completed.

[8] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

[9] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1-inch rainfall) storm event. For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling. A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[10] The Storm Water Monitoring and Non-Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWP3) requirements can be found in Part I.D. and I.E of this permit.

[11] The permittee shall measure and report the identified metal as total recoverable metal.

[12] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.

3. The permittee is authorized to discharge from the outfalls listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfall 004 located at Latitude 41º 37’ 51” Longitude -87º 10’ 33.6”. The discharge is limited to non-contact cooling water (NCCW), stormwater, and process wastewater from internal Outfalls 104 and 204 (Administrative Outfall 304).Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Portage-Burns Waterway. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1] [2]

Outfall 004

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	-	-	-	5 X Weekly	24 Hr. Total
Oil & Grease[19]	-	-	-	-	Report	mg/l	5 X Weekly	Grab
TRC[3,4,6,9]	1.4	2.8[5]	lbs/day	0.01	0.02	mg/l	Daily[21]	Grab
Silver[7,9]	0.012	0.021	lbs/day	0.076	0.13	ug/l	1 X Monthly	24 Hr. Comp
F. Cyanide [9]	1.2	2.1	lbs/day	0.0075	0.013	mg/l	2 X Monthly	Grab
Cadmium[7]	1.2	2.1	lbs/day	0.0077	0.013	mg/l	1 X Monthly	24 Hr. Comp
Copper[7]	4.7	8.2	lbs/day	0.030	0.052	mg/l	1 X Weekly	24 Hr. Comp
Nickel[7]	31	54	lbs/day	0.21	0.36	mg/l	1 X Monthly	24 Hr. Comp
Lead[7]	5.8	9.9	lbs/day	0.038	0.066	mg/l	1 X Monthly	24 Hr. Comp
Mercury[13,7,9]								
WQBELs	0.00018	0.00045	lbs/day	1.3	3.2	ng/l	6 X Annually[12]	Grab
Interim Discharge Limit [16, 20]		-----	-----	18	Report	ng/l	6 X Annually[12]	Grab
Formaldehyde[13,14]								
Interim	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	Grab
Final	20	34	lbs/day	0.14	0.24	mg/l	2 X Monthly	Grab
Hexavalent Chromium[17,18]	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	Grab
Whole Effluent Toxicity (WET)[10]								
Acute	-	-		-----	1.0	TUa	Quarterly[11]	24 Hr. Comp.
Chronic-	-	-		2.0	-----	TUc	Quarterly[11]	24 Hr. Comp.

Table 2

	Quality or Concentration			Monitoring Requirements	
Parameter	Daily Minimum	Daily Maximum	Units	Measurement Frequency	Sample Type
pH [8]	6.0	9.0	s.u.	5 X Weekly	Grab

[1] See Part I.B. of the permit for the Minimum Narrative Limitations.

[2] In the event that a new water treatment additive is to be used that will contribute to this Outfall, or changes are to be made in the use of water treatment additives, including dosage, the permittee must apply for and receive approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) currently available at: https://www.in.gov/idem/forms/idem-agency-forms/.

[3] The monthly average water quality-based effluent limits (WQBEL) for Total Residual Chlorine is less than the limit of quantitation (LOQ) as specified below (see footnote [9]). 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.

[4] The daily maximum WQBEL for Total Residual Chlorine is greater than or equal to the LOD but less than the LOQ as specified below (see footnote [9]). Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ.

[5] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 8.5 lbs/day for Total Residual Chlorine.

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

[7] The permittee shall measure and report the identified metal in total recoverable form.

[8] If the permittee collects more than one grab sample on a given day for pH, the values shall not be averaged for reporting daily maximums or daily minimums. The permittee must report the individual minimum and the individual maximum pH value of any sample during the month on the Monthly Monitoring Report form.

[9] The following EPA approved test methods and associated LODs and LOQs are to be used in the analysis of the effluent samples. Free cyanide shall be reported as free cyanide but measured using one of the EPA approved test methods below for available cyanide. Alternative methods may be used if first approved by IDEM and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Chlorine, Total residual	4500-Cl D-2000, E-2000 or G-2000	0.02 mg/l	0.06 mg/l
Cyanide, Available	OIA-1677-09 (available)	0.5 µg/l	2.0 µg/l
Cyanide, Available	Kelada-01 (available)	0.5 µg/l	1.6 µg/l
Mercury	1631E	0.2 ng/l	0.5 ng/l
Silver	200.8, Rev. 5.4 (1994) Selection Ion Monitoring	0.005 ug/l	0.016 µg/l

Case-Specific LOD/LOQ

The permittee may determine and use a case specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be determined by the procedure specified for method detection limits contained in 40 CR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD as prescribed by 327 IAC 5-2-11.6(h)(2)(B). Other methods may be used if first approved by the Commissioner.

[10] See Part I.F of the permit for Whole Effluent Toxicity Testing requirements.

[11] 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.

[12] Effluent mercury monitoring shall be conducted 6 X annually, monitoring in the months of February, April, June, August, October and December of each year for the term of the permit.

[13] See Part I.J of the permit for Reopening Clauses.

[14] The permittee has a schedule of compliance of up to sixty (60) months as outlined in Part I.G. of the permit in which to meet the final effluent limitations for Formaldehyde. The interim limitations shall apply until the final limits take effect.

[15] See Part V for additional mercury requirements.

[16] The permittee applied for, and received, a variance from the water quality criterion used to establish the referenced mercury WQBEL under 327 IAC 5-3.5. For the term of this permit, the permittee is subject to the interim discharge limit developed in accordance with 327 IAC 5-3.5-8.

The permittee shall report both a daily maximum concentration and an annual average concentration for total mercury. The annual average value shall be calculated as the average of the measured effluent daily values from the most recent twelve-month period. Reporting of the annual average value for mercury is not required during the first year of the permit term.

Calculating and reporting of the annual average value for mercury is only required for the months when samples are taken for mercury.

[17] Hexavalent chromium shall be measured and reported as dissolved metal. The hexavalent chromium sample type shall be by grab method. The maximum holding time for a hexavalent chromium sample is 28 days under 40 CFR 136.3(e), Table II. However, as noted in footnote 20 of Table II, to achieve the 28-day holding time, the ammonium sulfate buffer solution specified in EPA Method 218.6 must be used. This holding time allowance of 28-days supersedes the preservation and holding time requirements in the approved hexavalent chromium methods, unless this supersession would compromise the measurement, in which case the preservation and holding time requirements [the sample must be analyzed within 24 hours of collection] in the method must be followed.

[18] For both total chromium and hexavalent chromium, the following apply:

(a) In instances when there is insufficient sample volume (or no sample at all), the permittee shall document NODI code F (Insufficient flow for sampling) on the Discharge Monitoring Reports and Monthly Monitoring Reports for the impacted outfall. Appropriate use of this code will be deemed an acceptable event and count towards the required daily sampling frequency.
(b) In instances where there is no flow during a 24-hour period, the permittee shall document NODI code C (No Discharge) on the Discharge Monitoring Reports and Monthly Monitoring Reports for the impacted outfall. Appropriate use of this code will be deemed an acceptable event and count towards the required daily sampling frequency.

[19] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

[20] The interim discharge limit is the annual average. Compliance with the interim discharge limit will be achieved when the annual average measured over the most recent (rolling) twelve-month period is less than the interim discharge limit.

Compliance with the interim discharge limit will demonstrate compliance with mercury discharge limitations of this permit for this outfall

[21] Monitoring for TRC shall be 1 X Daily during Zebra and Quagga mussel intake chlorination and continue for three (3) additional days after Zebra and Quagga mussel treatment has been completed.

4. The permittee is authorized to discharge from the outfalls listed below in accordance with the terms and conditions of this permit. The permittee is authorized to discharge from Outfalls 104 and 204 located at Latitude 41º 37’ 50.4” Longitude -87º 10’ 31.7” and Latitude 41º 37’ 50.8” Longitude -87º 10’ 20”. The discharge is limited to treated process wastewater, backwash and washdown water, Greenbelt II landfill leachate, blowdown from Portside Energy, and the U.S. Steel Midwest intake. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge and prior to commingling with another wastestream. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1]
Outfalls 104 and 204

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	-	-	-	5 X Weekly	24 Hr. Total
TSS	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Oil & Grease	-	Report	lbs/day	Report	Report	mg/l	5 X Weekly	3 Grabs/24 Hr. Comp[2]
Total Chromium[3][7]	Report	Report	lbs/day	Report	Report	mg/l	Daily	24 Hr. Comp
Zinc[3]	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Lead[3]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Nickel[3]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Cadmium[3]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Copper[3]	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24 Hr. Comp
Silver[3]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
T. Cyanide [4]	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	Grab
Hexavalent Chromium[5][7]	Report	Report	lbs/day	Report	Report	mg/l	Daily	Grab
Naphthalene	-	Report	lbs/day	-	Report	mg/l	Monthly	Grab
Tetrachloro-ethylene	-	Report	lbs/day	Report	Report	mg/l	Monthly	Grab
TTO[6]	-	Report	lbs/day	-	Report	mg/l	Monthly	24 Hr. Comp
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp

[1] These parameters are limited at the Administrative Outfall 304. The effluent limitations for each parameter at the Administrative Outfall 304 shall be based on the combined effluent flow from Internal Outfall 104 and Internal Outfall 204. Compliance shall be demonstrated by calculating a flow weighted mass balance between Internal Outfalls 104 and 204 and reported at the Administrative Outfall 304.

[2] A minimum of three (3) grab samples shall be collected at equally spaced time intervals 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 metal in total recoverable form.

[4] The following EPA approved test 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 and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Cyanide, Total	335.4, Rev. 1.0 (1993) or 4500-CN^- E-1999	5 µg/l	16 µg/l
Cyanide, Total	Kelada-01	0.5 µg/l	1.6 µg/l

Case-Specific LOD/LOQ

The permittee may determine and use a case specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be determined by the procedure specified for method detection limits contained in 40 CR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD as prescribed by 327 IAC 5-2-11.6(h)(2)(B). Other methods may be used if first approved by the Commissioner.

[5] Hexavalent chromium shall be measured and reported as dissolved metal. The hexavalent chromium sample type shall be by grab method. The maximum holding time for a hexavalent chromium sample is 28 days under 40 CFR 136.3(e), Table II. However, as noted in footnote 20 of Table II, to achieve the 28-day holding time, the ammonium sulfate buffer solution specified in EPA Method 218.6 must be used. This holding time allowance of 28-days supersedes the preservation and holding time requirements in the approved hexavalent chromium methods, unless this supersession would compromise the measurement, in which case the preservation and holding time requirements [the sample must be analyzed within 24 hours of collection] in the method must be followed.

[6] 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 monthly 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." Normally, the Certification Statement may not be used until completion of the Toxic Organic Pollutant Management Plan required by Part I.H of this permit. However, since the Permittee has an existing TOPMP developed under the previous permit, the certification statement may be used as long as there have been no changes at the facility that would significantly alter the current TOPMP, and the permittee is following the current TOPMP that was developed under the previous permit until the new plan is completed as required by Part I.H 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.

[7] For both total chromium and hexavalent chromium, the following apply:

(a) In instances when there is insufficient sample volume (or no sample at all), the permittee shall document NODI code F (Insufficient flow for sampling) on the Discharge Monitoring Reports and Monthly Monitoring Reports for the impacted outfall. Appropriate use of this code will be deemed an acceptable event and count towards the required daily sampling frequency.

(b) In instances where there is no flow during a 24-hour period, the permittee shall document NODI code C (No Discharge) on the Discharge Monitoring Reports and Monthly Monitoring Reports for the impacted outfall. Appropriate use of this code will be deemed an acceptable event and count towards the required daily sampling frequency.

5. The permittee shall comply with the limitations at Outfall 304 below in accordance with the terms and conditions of this permit. This is an administratively created outfall which does not physically exist. Compliance with the below limitations shall be demonstrated by using the results of the sampling at Internal Outfalls 104 and 204 and a flow weighted calculation to determine the values to be reported at this outfall.

DISCHARGE LIMITATIONS [1][7]

Outfall 304

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	-	-	-	5 X Weekly	24 Hr. Total
TSS	1147	2290	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Oil & Grease	-	765	lbs/day	Report	Report	mg/l	5 X Weekly	3 Grabs/24 Hr. Comp[2]
T. Chromium[3,7]	10.0	30.0	lbs/day	Report	Report	mg/l	Daily	24 Hr. Comp
Zinc[3]	10.0	30.0	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Lead[3]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Nickel[3]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Cadmium[3]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Copper[3]	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24 Hr. Comp
Silver[3]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
T. Cyanide [4]	3.41	7.95	lbs/day	Report	Report	mg/l	5 X Weekly	Grab
Hex. Chromium[5,7]	0.17	0.51	lbs/day	Report	Report	mg/l	Daily	Grab
Naphthalene	-	0.86	lbs/day	-	Report	mg/l	Monthly	Grab
Tetrachloro-ethylene	-	1.29	lbs/day	Report	Report	mg/l	Monthly	Grab
TTO[6]	-	38.43	lbs/day	-	Report	mg/l	Monthly	24 Hr. Comp
Fluoride	150	400	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp

[1] For all of the parameters at this outfall, the permittee shall sample for the parameters at Outfalls 104 and 204 on the same day and use the results from that sampling and the following equations to calculate the daily values to be reported at this outfall (in the below equations, F is flow, M is mass, and C is concentration):

$$F_{304} = F_{104} + F_{204}$$

$$M_{304} = M_{104} + M_{204}$$

$$C_{304} = M_{304} /(F_{304} \times 8.3454)$$

[2] A minimum of three (3) grab samples shall be collected at equally spaced time intervals 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 metal in total recoverable form.

[4] The following EPA approved test 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 and EPA, if applicable.

Parameter	Test Method	LOD	LOQ
Cyanide, Total	335.4, Rev. 1.0 (1993) or 4500-CN^- E-1999	5 µg/l	16 µg/l
Cyanide, Total	Kelada-01	0.5 µg/l	1.6 µg/l

Case-Specific LOD/LOQ

The permittee may determine and use a case specific LOD or LOQ using the analytical method specified above, or any other analytical method which is approved by the Commissioner, and EPA if applicable, prior to use. The LOD shall be determined by the procedure specified for method detection limits contained in 40 CR Part 136, Appendix B, and the LOQ shall be set equal to 3.18 times the LOD as prescribed by 327 IAC 5-2-11.6(h)(2)(B). Other methods may be used if first approved by the Commissioner.

[5] Hexavalent chromium shall be measured and reported as dissolved metal. The hexavalent chromium sample type shall be by grab method. The maximum holding time for a hexavalent chromium sample is 28 days under 40 CFR 136.3(e), Table II. However, as noted in footnote 20 of Table II, to achieve the 28-day holding time, the ammonium sulfate buffer solution specified in EPA Method 218.6 must be used. This holding time allowance of 28-days supersedes the preservation and holding time requirements in the approved hexavalent chromium methods, unless this supersession would compromise the measurement, in which case the preservation and holding time requirements [the sample must be analyzed within 24 hours of collection] in the method must be followed

[6] 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 monthly 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." Normally, the Certification Statement may not be used until completion of the Toxic Organic Pollutant Management Plan required by Part I.H of this permit. However, since the Permittee has an existing TOPMP developed under the previous permit, the certification statement may be used as long as there have been no changes at the facility that would significantly alter the current TOPMP, and the permittee is following the current TOPMP that was developed under the previous permit until the new plan is completed as required by Part I.H 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.

[7] For both total chromium and hexavalent chromium, the following apply:

(a) In instances when there is insufficient sample volume (or no sample at all), the permittee shall document NODI code F (Insufficient flow for sampling) on the Discharge Monitoring Reports and Monthly Monitoring Reports for the impacted outfall. Appropriate use of this code will be deemed an acceptable event and count towards the required daily sampling frequency.
(b) In instances where there is no flow during a 24-hour period, the permittee shall document NODI code C (No Discharge) on the Discharge Monitoring Reports and Monthly Monitoring Reports for the impacted outfall. Appropriate use of this code will be deemed an acceptable event and count towards the required daily sampling frequency.

6. The permittee shall comply with the limitations at Outfall 600 below in accordance with the terms and conditions of this permit. This is an outfall created to report cooling water intake data.

DISCHARGE LIMITATIONS [1]

Outfall 600

Parameter	Monthly Average	Daily Maximum	Units	Frequency
Velocity, Off-shore Intake	-------	Report	Feet/second	Daily
Velocity; Traveling Screens	-------	0.5	Feet/second	Daily
Intake Flow	-------	Report	MGD	Daily
Water Depth; Traveling Screens	-------	Report	Feet	Daily
Open Area, Traveling Screens	-------	Report	Square feet	Daily

[1] The permittee must calculate the through-screen velocity at both the off-shore intake and at the inoperable traveling screens using water flow, water depth, and the screen/intake open areas. It is assumed that the open area of the offshore intake will remain 202.75 square feet for the life of this permit. The permittee is required to notify IDEM if it does change.

B. MINIMUM NARRATIVE LIMITATIONS

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

1. including waters within the mixing zone, to contain substances, materials, floating debris, oil, scum attributable to municipal, industrial, agricultural, and other land use practices, or other discharges that do any of the following:

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

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

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

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

   e. 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 that 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. <u>Representative Sampling</u>

   Samples and measurements taken as required herein shall be representative of the volume and nature of the discharge flow and shall be taken at times which reflect the full range and concentration of effluent parameters normally expected to be present. Samples shall not be taken at times to avoid showing elevated levels of any parameters.

2. <u>Monthly Reporting</u>

   The permittee shall submit federal and state discharge monitoring reports to the Indiana Department of Environmental Management (IDEM) containing results obtained during the previous month and shall be submitted 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.

These reports shall include, but not necessarily be limited to, the Discharge Monitoring Report (DMR) and the Monthly Monitoring Report (MMR). All reports shall be submitted electronically by using the NetDMR application, upon registration, receipt of the NetDMR Subscriber Agreement, and IDEM approval of the proposed NetDMR Signatory. Access the NetDMR website (for initial registration and DMR/MMR submittal) via CDX at: https://cdx.epa.gov/. 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. See Part II.C.10 of this permit for Future Electronic Reporting Requirements.

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), 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.

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, except the monthly average for *E. coli* shall be calculated as a geometric mean. Daily effluent values that are less than the LOQ, that are used to determine the monthly average effluent level shall be accommodated in calculation of the average using statistical methods that have been 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.

3. Definitions

a. “Monthly Average” means the total mass or flow-weighted concentration of all daily discharges during a calendar month on which daily discharges are sampled or measured, divided by the number of daily discharges sampled and/or measured during such calendar month.

   The monthly average discharge limitation is the highest allowable average monthly discharge for any calendar month.

b. “Daily Discharge” means the total mass of a pollutant discharged during the calendar day or, in the case of a pollutant limited in terms other than mass pursuant to 327 IAC 5-2-11(e), the average concentration or other measurement of the pollutant specified over the calendar day or any twenty-four hour period that reasonably represents the calendar day for the purposes of sampling.

c. “Daily Maximum” means the maximum allowable daily discharge for any calendar day.

d. A “24-hour composite sample” means a sample consisting 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 equally spaced time intervals 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 individual 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” means 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 5 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 the minimum 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.

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.

k. "Grab Sample" means a sample which is taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without considerations of time.

4. <u>Test Procedures</u>

The analytical and sampling methods used shall conform to the version of 40 CFR 136 incorporated by reference in 327 IAC 5. Different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency. When more than one test procedure is approved for the purposes of the NPDES program under 40 CFR 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 CFR 122.21(e)(3) and 122.44(i)(1)(iv).

5. Recording of Results

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

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

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

c. The date(s) analyses were performed;

d. The person(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such measurements and analyses.

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) and Monthly Monitoring Report (MMR). 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 EFFLUENT LIMITS

Within twelve (12) months of the effective date of this permit, the permittee shall implement the non-numeric permit conditions in this Section of the permit for the entire site as it relates to storm water associated with industrial activity regardless which outfall the storm water is discharged from.

1. Control Measures and Effluent Limits

   In the technology-based limits included in Part D.2-4., 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.

2. Control Measures

   Select, design, install, and implement control measures (including best management practices) to address the selection and design considerations in Part D.3 to meet the non-numeric effluent limits in Part D.4. 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.

3. 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 groundwater 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.

4. Technology-Based Effluent Limits (BPT/BAT/BCT)

Non-Numeric Effluent Limits:

a. Minimize Exposure

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 storm water 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;

(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; and

(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:

https://www.in.gov/idem/stormwater/resources/indiana-storm-water-quality-manual/
and
https://www.epa.gov/npdes/stormwater-discharges-industrial-activities

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 discharged 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 must be documented in the Storm Water Pollution Prevention Plan:

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;
Foundation or footing drains where flows are not contaminated with process materials;
Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from cooling towers (e.g., "piped cooling tower blowdown or drains);
Vehicle wash- waters where uncontaminated water without detergents or solvents is utilized; and
Runoff from the use of dust suppressants approved for use by IDEM.

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.

5. Annual Review

At least once every twelve (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, as well as the Compliance Branch, on an annual basis. The report may be submitted by email to the Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and to the Compliance Branch at wwReports@idem.in.gov. The email subject line should include the NPDES Permit # and the type of report being submitted (Annual Storm Water Report). The permittee's first annual review report will be due twelve (12) months from the effective date of the permit. All subsequent annual review reports will be due no later than the anniversary of the effective date of the permit.

6. 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 D.5 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 construction or a change in design, operation, or maintenance at your facility significantly changes the nature of pollutants discharged in storm water from your facility, or significantly increases the quantity of pollutants discharged, 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:

7. Corrective Action Deadlines

You must document your discovery of any of the conditions listed in Part I.D.6 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.

8. Corrective Action Report

a. Within 30 days of a discovery of any condition listed in Part I.D.6, you must document the following information:

(1) Brief description of the condition triggering corrective action;

(2) Date condition identified; and

(3) How deficiency identified.

b. Within 120 days of discovery of any condition listed in Part I.D.6, you must document the following information:

(1) Summary of corrective action taken or to be taken (or, for triggering events identified in Part I.D.6.b.(1), where you determine that corrective action is not necessary, the basis for this determination)

(2) Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;

(3) Date corrective action initiated; and

(4) Date corrective action completed or expected to be completed.

9. Inspections

The inspections in this part must be conducted at this facility when the facility is operating. Any corrective action required as a result of an inspection or evaluation conducted under Part I.D.9. must be performed consistent with Part I.D.6 of this permit.

a. Quarterly Inspections

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.

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.

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.4. of this permit shall be revised as appropriate within the timeframes contained in Part I.D.7 of this permit.

b. Annual Routine Facility Inspection

At least once during the calendar year, a routine facility inspection must be conducted while a discharge is occurring. 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.

c. Annual Comprehensive Site Compliance Evaluation

Qualified personnel and at least one member of your Pollution Prevention Team 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 measures, 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.

(2) 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.

(3) Where compliance evaluation schedules overlap the inspections required under this part, the compliance evaluation may be conducted in place of one such inspection.

E. STORM WATER POLLUTION PREVENTION PLAN

1. Development of Plan

Within 12 months from the effective date of this permit, the permittee is required to revise and update the current 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)(14)) 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.

(U) The mapping of historical locations is only required if the historical locations have a reasonable potential for storm water 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;

(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 (T) 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 (T) 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 Part I.E.2(d) of this permit.

(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-Storm water Discharges – You must document that you have evaluated for the presence of non-storm water discharges not authorized by an NPDES permit. Any non-storm water discharges have either been eliminated or incorporated into this permit. Documentation of non-storm water discharges shall include:

(1) A written non-storm water assessment, including the following:

(A) 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.

(B) 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.

(C) 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.

(D) 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. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

To adequately assess the effects of the effluent on aquatic life, the permittee is required by this section of the permit to conduct chronic whole effluent toxicity (WET) testing. Part I.F.1. of this permit describes the testing procedures and Part I.F.2. describes the toxicity reduction evaluation (TRE) which is only required if the effluent demonstrates toxicity in two (2) consecutive toxicity tests as described in Part I.F.1.f.

1. Whole Effluent Toxicity (WET) Tests

The permittee must conduct the series of aquatic toxicity tests specified in Part I.F.1.d. to monitor the acute and chronic toxicity of the effluent discharged from Outfall 004.

If toxicity is demonstrated in two (2) consecutive toxicity tests, as described in Part I.F.1.f., with any test species during the term of the permit, the permittee is required to conduct a TRE under Part I.F.2.

a. Toxicity Test Procedures and Data Analysis

(1) All test organisms, test procedures and quality assurance criteria used must be in accordance with the Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, Section 11, Fathead Minnow (*Pimephales promelas*) Larval Survival and Growth Test Method 1000.0, and Section 13, Daphnid (*Ceriodaphnia dubia*) Survival and Reproduction Test Method 1002.0, EPA 821-R-02-013, October 2002 (hereinafter "Chronic Toxicity Test Method"), or most recent update that conforms to the version of 40 CFR 136 incorporated by reference in 327 IAC 5. References to specific portions of the Chronic Toxicity Test Method contained in this Part I.F. are provided for informational purposes. If the Chronic Toxicity Test Method is updated, the corresponding provisions of that updated method would be applicable.

(2) Any circumstances not covered by the above methods, or that require deviation from the specified methods must first be approved by the IDEM Permits Branch.

Due to pathogen interference in the WET testing program at U.S. Steel – Midwest Plant, IDEM has approved the use of the alternative test method of sampling filtration to demonstrate compliance for fathead minnow testing. This method has been approved by U.S. EPA and, based on prior determination by IDEM, is appropriate for use at U.S. Steel – Midwest Plant.

(3) The determination of acute and chronic endpoints of toxicity (LC_{50}, NOEC and IC_{25} values) must be made in accordance with the procedures in Section 9, "Chronic Toxicity Test Endpoints and Data Analysis" and the Data Analysis procedures as outlined in Section 11 for fathead minnow (Test Method 1000.0; see flowcharts in Figures 5, 6 and 9) and Section 13 for *Ceriodaphnia dubia* (Test Method 1002.0; see flowcharts in Figures 4 and 6) of the Chronic Toxicity Test Method. The IC_{25} value together with 95% confidence intervals calculated by the Linear Interpolation and Bootstrap Methods in Appendix M of the Chronic Toxicity Test Method must be determined in addition to the NOEC value.

b. Types of Whole Effluent Toxicity Tests

(1) Tests may include a 3-brood (7-day) definitive static-renewal daphnid (*Ceriodaphnia dubia*) survival and reproduction toxicity test and a 7-day definitive static-renewal fathead minnow (*Pimephales promelas*) larval survival and growth toxicity test.

(2) All tests must be conducted using 24-hour composite samples of final effluent. Three effluent samples are to be collected on alternate days (e.g., collected on days one, three and five). The first effluent sample will be used for test initiation and for test solution renewal on day 2. The second effluent sample will be used for test solution renewal on days 3 and 4. The third effluent sample will be used for test solution renewal on days 5, 6 and 7. If shipping problems are encountered with renewal samples after a test has been initiated, the most recently used sample may continue to be used for test renewal, if first approved by the IDEM Permits Branch, but for no longer than 72 hours after first use.

(3) The whole effluent dilution series for the definitive test must include a control and at least five effluent concentrations with a minimum dilution factor of 0.5. The effluent concentrations selected must include and, if practicable, bracket the effluent concentrations associated with the determinations of acute and chronic toxicity provided in Part I.F.1.f. Guidance on selecting effluent test concentrations is included in Section 8.10 of the Chronic Toxicity Test Method. The use of an alternate procedure for selecting test concentrations must first be approved by the IDEM Permits Branch.

(4) If, in any control, more than 10% of the test organisms die in the first 48 hours with a daphnid species or the first 96 hours with fathead minnow, or more than 20% of the test organisms die in 7 days, that test is considered invalid and the toxicity test must be repeated. In addition, if in the *Ceriodaphnia dubia* survival and reproduction test, the average number of young produced per surviving female in the control group is less than 15, or if 60% of surviving control females have less than three broods; and in the fathead minnow (*Pimephales promelas*) survival and growth test, if the mean dry weight of surviving fish in the control group is less than 0.25 mg, that test is considered invalid and must also be repeated. All other test conditions and test acceptability criteria for the fathead minnow (*Pimephales promelas*) and *Ceriodaphnia dubia* chronic toxicity tests must be in accordance with the test requirements in Section 11 (Test Method 1000.0), Table 1 and Section 13 (Test Method 1002.0), Table 3, respectively, of the Chronic Toxicity Test Method.

c. Effluent Sample Collection and Chemical Analysis

(1) Whole effluent samples taken for the purposes of toxicity testing must be 24-hour composite samples collected at a point that is representative of the final effluent, but prior to discharge. Effluent sampling for the toxicity testing may be coordinated with other permit sampling requirements as appropriate to avoid duplication. First use of the whole effluent toxicity testing samples must not exceed 36 hours after termination of the 24-hour composite sample collection and must not be used for longer than 72 hours after first use. For discharges of less than 24 hours in duration, composite samples must be collected for the duration of the discharge within a 24-hour period (see "24-hour composite sample" definition in Part I.C.3. of this permit).

(2) Chemical analysis must accompany each effluent sample taken for toxicity testing, including each sample taken for the repeat testing as outlined in Part I.F.1.f.(3). The chemical analysis detailed in Part I.A.3 must be conducted for the effluent sample in accordance with Part I.C.4. of this permit.

d. Toxicity Testing Species, Frequency and Duration

Under the previous permit, this facility initiated a TRE and the Compliance Data Section suspended toxicity testing requirements for the term of the TRE compliance schedule. The facility is required under this permit to complete the TRE following the current compliance schedule which ends September 1, 2023.

Successful completion of the TRE will be demonstrated by the toxicity tests required under Part I.F.2.c. After successful completion of the TRE, the toxicity tests established under Part I.F.2.c.(4) must be conducted once quarterly, as calculated from the first day of the first month following successful completion of the post-TRE toxicity tests (see Part I.F.2.c.(4)), for the remainder of the permit term.

If a subsequent TRE is initiated during the term of the permit, after receiving notification under Part I.F.1.e, the Compliance Data Section will suspend the toxicity testing requirements above for the term of the TRE compliance schedule described in Part I.F.2. After successful completion of the TRE, the toxicity tests established under Part I.F.2.c.(4) must be conducted once quarterly, as calculated from the first day of the first month following successful completion of the post-TRE toxicity tests (see Part I.F.2.c.(4)), for the remainder of the permit term.

e. Reporting

(1) Notifications of the failure of two (2) consecutive toxicity tests and the intent to begin the implementation of a toxicity reduction evaluation (TRE) under Part I.F.1.f.(4) must be submitted in writing to the Compliance Data Section of IDEM's Office of Water Quality.

(2) Results of all toxicity tests, including invalid tests, must be reported to IDEM according to the general format and content recommended in the Chronic Toxicity Test Method, Section 10, "Report Preparation and Test Review". However, only the results of valid toxicity tests are to be reported on the discharge monitoring report (DMR). The results of the toxicity tests and laboratory report are due by the earlier of 60 days after completion of the test or the 28th day of the month following the end of the period established in Part I.F.1.d.

(3) The full whole effluent toxicity (WET) test laboratory report must be submitted to IDEM electronically as an attachment to an e-mail to the Compliance Data Section at wwreports@idem.IN.gov. The results must also be submitted via NetDMR.

(4) For quality control and ongoing laboratory performance, the laboratory report must include results from appropriate standard reference toxicant tests. This will consist of acute (LC_{50} values), if available, and chronic (NOEC, LOEC and IC_{25} values) endpoints of toxicity obtained from reference toxicant tests conducted within 30 days of the most current effluent toxicity tests and from similarly obtained historical reference toxicant data with mean values and appropriate ranges for each species tested for at least three months to one year. Toxicity test laboratory reports must also include copies of chain-of-custody records and laboratory raw data sheets.

(5) Statistical procedures used to analyze and interpret toxicity data (e.g., Fisher's Exact Test and Steel's Many-one Rank Test for 7-day survival of test organisms; tests of normality (e.g., Shapiro-Wilk's Test) and homogeneity of variance (e.g., Bartlett's Test); appropriate parametric (e.g., Dunnett's Test) and non-parametric (e.g., Steel's Many-one Rank Test) significance tests and point estimates (IC_{25}) of effluent toxicity, etc.; together with graphical presentation of survival, growth and reproduction of test organisms), including critical values, levels of significance and 95% confidence intervals, must be described and included as part of the toxicity test laboratory report.

(6) For valid toxicity tests, the whole effluent toxicity (WET) test laboratory report must include a summary table of the results for each species tested as shown in the table presented below. This table will provide toxicity test results, reported in acute toxic units (TU_a) and chronic toxic units (TU_c), for evaluation under Part I.F.1.f. and reporting on the discharge monitoring report (DMR).

<table>
<tr><th>Test Organism [1]</th><th>Test Type</th><th>Endpoint [2]</th><th>Units</th><th>Result</th><th>Compliance Limit</th><th>Pass/ Fail [6]</th><th>Reporting</th></tr>
<tr><td rowspan="10">Ceriodaphnia dubia</td><td rowspan="10">3-brood (7-day) Definitive Static-Renewal Survival and Reproduction</td><td rowspan="2">48-hr. LC_{50}</td><td>%</td><td>Report</td><td rowspan="8"></td><td rowspan="8"></td><td rowspan="8">Laboratory Report</td></tr>
<tr><td>TU_a</td><td>Report</td></tr>
<tr><td rowspan="2">NOEC Survival</td><td>%</td><td>Report</td></tr>
<tr><td>TU_c</td><td>Report</td></tr>
<tr><td rowspan="2">NOEC Reproduction</td><td>%</td><td>Report</td></tr>
<tr><td>TU_c</td><td>Report</td></tr>
<tr><td rowspan="2">IC_{25} Reproduction</td><td>%</td><td>Report</td></tr>
<tr><td>TU_c</td><td>Report</td></tr>
<tr><td>Toxicity (acute) [3]</td><td>TU_a</td><td>Report [5]</td><td>1.0</td><td>Report</td><td>Laboratory Report and NetDMR (Parameter Code 61425)</td></tr>
<tr><td>Toxicity (chronic) [4]</td><td>TU_c</td><td>Report [5]</td><td>2.0</td><td>Report</td><td>Laboratory Report and NetDMR (Parameter Code 61426)</td></tr>
<tr><td rowspan="10">Pimephales promelas</td><td rowspan="10">7-day Definitive Static-Renewal Larval Survival and Growth</td><td rowspan="2">96-hr. LC_{50}</td><td>%</td><td>Report</td><td rowspan="8"></td><td rowspan="8"></td><td rowspan="8">Laboratory Report</td></tr>
<tr><td>TU_a</td><td>Report</td></tr>
<tr><td rowspan="2">NOEC Survival</td><td>%</td><td>Report</td></tr>
<tr><td>TU_c</td><td>Report</td></tr>
<tr><td rowspan="2">NOEC Growth</td><td>%</td><td>Report</td></tr>
<tr><td>TU_c</td><td>Report</td></tr>
<tr><td rowspan="2">IC_{25} Growth</td><td>%</td><td>Report</td></tr>
<tr><td>TU_c</td><td>Report</td></tr>
<tr><td>Toxicity (acute) [3]</td><td>TU_a</td><td>Report [5]</td><td>1.0</td><td>Report</td><td>Laboratory Report and NetDMR (Parameter Code 61427)</td></tr>
<tr><td>Toxicity (chronic) [4]</td><td>TU_c</td><td>Report [5]</td><td>2.0</td><td>Report</td><td>Laboratory Report and NetDMR (Parameter Code 61428)</td></tr>
</table>

[1] For the whole effluent toxicity (WET) test laboratory report, eliminate from the table any species that was not tested.
[2] A separate acute test is not required. The endpoint of acute toxicity must be extrapolated from the chronic toxicity test.
[3] The toxicity (acute) endpoint for *Ceriodaphnia dubia* is the 48-hr. LC_{50} result reported in acute toxic units (TU_a). The toxicity (acute) endpoint for *Pimephales promelas* is the 96-hr. LC_{50} result reported in acute toxic units (TU_a).
[4] The toxicity (chronic) endpoint for *Ceriodaphnia dubia* is the higher of the NOEC Survival, NOEC Reproduction and IC_{25} Reproduction values reported in chronic toxic units (TU_c). The toxicity (chronic) endpoint for *Pimephales promelas* is the higher of the NOEC Survival, NOEC Growth and IC_{25} Growth values reported in chronic toxic units (TU_c).

[5] Report the values for acute and chronic endpoints of toxicity determined in [3] and [4] for the corresponding species. These values are the ones that need to be reported on the discharge monitoring report (DMR).
[6] If the toxicity result (in TUs) is less than or equal to the compliance limit, report “Pass”. If the toxicity result (in TUs) exceeds the compliance limit, report “Fail”.

f. Demonstration of Toxicity

(1) Toxicity (acute) will be demonstrated if the effluent is observed to have exceeded 1.0 TU_a (acute toxic units) for *Ceriodaphnia dubia* in 48 hours or in 96 hours for *Pimephales promelas*. For this purpose, a separate acute toxicity test is not required. The results for the acute toxicity demonstration must be extrapolated from the chronic toxicity test. For the purpose of selecting test concentrations under Part I.F.1.b.(3), the effluent concentration associated with acute toxicity is 100%.

(2) Toxicity (chronic) will be demonstrated if the effluent is observed to have exceeded 2.0 TU_c (chronic toxic units) for *Ceriodaphnia dubia* or *Pimephales promelas* from the chronic toxicity test. For the purpose of selecting test concentrations under Part I.F.1.b.(3), the effluent concentration associated with chronic toxicity is 50%.

(3) If toxicity (acute) or toxicity (chronic) is demonstrated in any of the chronic toxicity tests specified above, a repeat chronic toxicity test using the procedures in Part I.F.1. of this permit and the same test species must be initiated within two (2) weeks of test failure. During the sampling for any repeat tests, the permittee must also collect and preserve sufficient effluent samples for use in any toxicity identification evaluation (TIE) and/or toxicity reduction evaluation (TRE), if necessary.

(4) If any two (2) consecutive chronic toxicity tests, including any and all repeat tests, demonstrate acute or chronic toxicity, the permittee must notify the Compliance Data Section under Part I.F.1.e. within 30 days of the date of termination of the second test, and begin the implementation of a toxicity reduction evaluation (TRE) as described in Part I.F.2. After receiving notification from the permittee, the Compliance Data Section will suspend the whole effluent toxicity testing requirements in Part I.F.1. for the term of the TRE compliance schedule.

g. Definitions

(1) "Acute toxic unit" or "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.

(2) "Chronic toxic unit" or "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.

(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 is only required if toxicity is demonstrated in two (2) consecutive tests as described in Part I.F.1.f.(4). The post-TRE toxicity testing requirements in Part I.F.2.c. must also be completed as part of the TRE compliance schedule.

Milestone Dates: See a. through e. below for more detail on the TRE milestone dates.

Requirement	Deadline
Development and Submittal of a TRE Plan	Within 90 days of the date of two (2) consecutive failed toxicity tests.
Initiate a TRE Study	Within 30 days of TRE Plan submittal.
Submit TRE Progress Reports	Every 90 days beginning six (6) months from the date of two (2) consecutive failed toxicity tests.
Post-TRE Toxicity Testing Requirements	Immediately upon completion of the TRE, conduct three (3) consecutive months of toxicity tests with both test species; if no acute or chronic toxicity is shown with any test species, reduce toxicity tests to once quarterly for the remainder of the permit term. If post-TRE toxicity testing demonstrates toxicity, continue the TRE study.
Submit Final TRE Report	Within 90 days of successfully completing the TRE (including the post-TRE toxicity testing requirements), not to exceed three (3) years from the date that toxicity is initially demonstrated in two (2) consecutive toxicity tests.

a. Development of TRE Plan

Within 90 days of the date of two (2) consecutive failed toxicity tests (i.e. the date of termination of the second test), the permittee must submit plans for an effluent TRE to the Compliance Data Section. The TRE plan must include appropriate measures to characterize the causative toxicants and reduce toxicity in the effluent discharge to levels that demonstrate no toxicity with any test species as described in Part I.F.1.f. Guidance on conducting effluent toxicity reduction evaluations is available from EPA and from the EPA publications listed below:

(1) Methods for Aquatic Toxicity Identification Evaluations:

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

Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/080), September 1993.
Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity (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) Clarifications Regarding Toxicity Reduction and Identification Evaluations in the National Pollutant Discharge Elimination System Program, U.S. EPA, March 27, 2001.

b. Conduct the TRE

Within 30 days after submittal of the TRE plan to the Compliance Data Section, the permittee must initiate the TRE consistent with the TRE plan.

c. Post-TRE Toxicity Testing Requirements

(1) After completing the TRE, the permittee must conduct monthly post-TRE toxicity tests with the two (2) test species *Ceriodaphnia dubia* and fathead minnow (*Pimephales promelas*) for a period of three (3) consecutive months.

(2) If the three (3) monthly tests demonstrate no toxicity with any test species as described in Part I.F.1.f., the TRE will be considered successful. Otherwise, the TRE study must be continued.

(3) The post-TRE toxicity tests must be conducted in accordance with the procedures in Part I.F.1. The results of these tests must be submitted as part of the final TRE Report required under Part I.F.2.d.

(4) After successful completion of the TRE, the permittee must resume <u>the chronic toxicity tests required in Part I.F.1.</u> 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. The established starting date for the frequency in Part I.F.1.d. is the first day of the first month following successful completion of the post-TRE toxicity tests.

d. Reporting

(1) Progress reports must be submitted every 90 days to the Compliance Data Section beginning six (6) months from the date of two (2) consecutive failed toxicity tests. Each TRE progress report must include a listing of proposed activities for the next quarter and a schedule to reduce toxicity in the effluent discharge to acceptable levels through control of the toxicant source or treatment of whole effluent.

(2) Within 90 days of successfully completing the TRE, including the three (3) consecutive monthly tests required as part of the post-TRE toxicity testing requirements in Part I.F.2.c., the permittee must submit to the Compliance Data Section a final TRE Report that includes the following:

(A) A discussion of the TRE results;
(B) The starting date established under Part I.F.2.c.(4) for the continuation of the toxicity testing required in Part I.F.1.; and
(C) If applicable, the intent to reduce the number of species tested to the one most sensitive to the toxicity in the effluent under Part I.F.2.c.(4).

e. Compliance Date

The permittee must complete items a., b., c. and d. from Part I.F.2. and reduce toxicity in the effluent discharge to acceptable levels as soon as possible, but <u>no later than three (3) years from the date that toxicity is initially demonstrated in two (2) consecutive toxicity tests (i.e. the date of termination of the second test) as described in Part I.F.1.f.(4).</u>

G. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for formaldehyde at Outfall 004 in accordance with the following schedule:

a. The permittee shall submit a written progress report to the Compliance Data Section of the Office of Water Quality (OWQ) twelve (12) months from the effective date of this permit. The progress report shall include a description of the method(s) selected for meeting the newly imposed limitation for formaldehyde, in addition to any other relevant information. The progress report shall also include a specific time line specifying when each of the steps will be taken. The new effluent limits for formaldehyde are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date. The permittee shall notify the Compliance Data Section of OWQ as soon as the newly imposed effluent limits for formaldehyde can be met. Upon receipt of such notification by OWQ, the final limits for formaldehyde will become effective, but no later than sixty (60) months from the effective date of this permit. Monitoring and reporting of the effluent for these parameters is required during the interim period.

b. The permittee shall submit a subsequent progress report to the Compliance Data Section of OWQ no later than twenty-four (24) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the timeline set out in the initial progress report.

c. The permittee shall submit a subsequent progress report to the Compliance Data Section of OWQ no later than thirty-six (36) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the timeline set out in the initial progress report.

d. The permittee shall submit a subsequent 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 the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the timeline set out in the initial progress report.

e. Within thirty (30) days of completion of construction, 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.

f. The permittee shall comply with the final effluent limitations for formaldehyde no later than sixty (60) months from the effective date of this permit.

2. 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 Compliance Data Section of the OWQ stating the cause of noncompliance, any remedial action taken or planned, and the probability of meeting the date fixed for compliance with final effluent limitations.

H. TOXIC ORGANIC POLLUTANT MANAGEMENT PLAN

In order to use the Certification Statement for Total Toxic Organics on Pages 16 and 19 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, storm water, or other surface waters.

I. POLLUTION MINIMIZATION PROGRAM

The permittee is required to develop and conduct a pollutant minimization program (PMP) for each pollutant with a WQBEL below the LOQ. This permit contains a WQBEL below the LOQ for Total Residual Chlorine.

During the previous permit term, the permittee demonstrated that the discharge of Total Residual Chlorine that has a WQBEL below the LOQ, is reasonably expected to be in compliance with the WQBEL at the point of discharge into the receiving water. Therefore, an updated pollution minimization program is not required.

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 ninety (90) days of the effective date of this permit.

(2) Implementation of appropriate cost-effective control measures, consistent with the control strategy within one hundred and eighty (180) days of the effective date of this permit.

(3) Monitor as necessary to record the progress toward the goal. Potential sources of the pollutant shall be monitored on a semi-annual basis. Quarterly monitoring of the influent of the wastewater treatment system is also required. The permittee may request a reduction in this monitoring requirement after four quarters of monitoring data.

(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 pollution 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 pollution 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 pollution minimization program, the following factors may be considered:

(1) Significance of sources.

(2) Economic and technical feasibility.

(3) Treatability.

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 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.

5. to comply with any applicable standards, regulations and requirements issued or approved under section 316(b) of the Clean Water Act.

6. to include revised Streamlined Mercury Variance (SMV) and/or Pollutant Minimization Program Plan (PMPP) requirements.

7. to include a revised thermal model for determination of permit compliance with thermal requirements, including revised regression model coefficients. Any revision to the existing model must limit the mixing zone to one-half the width of Portage-Burns Waterway; account for the range of the upstream flows and temperature and effluent flows and temperature expected at the site; and account for the combined effect of the discharges from Outfall 002, 003 and 004 on the temperature at the edge of the mixing zone.

8. to include a reduced monitoring frequency for hexavalent or total chromium at Outfalls 104, 204 and 304 after 2 years of daily monitoring under this permit.

9. to include less stringent limits for formaldehyde if information is submitted to the Agency that justifies the rederivation of applicable water quality criteria resulting in less stringent WQBELs.

K. REPORTING REQUIREMENTS FOR SOLVENTS, DEGREASING AGENTS, ROLLING OILS, WATER TREATMENT CHEMICALS AND BIOCIDES

Annually, US Steel Midwest Plant will report, as part of the fourth monthly Discharge Monitoring Report of the following year, the total quantity (lbs/yr) of each solvent, degreasing agent, water treatment chemical, rolling oil and biocide that was purchased for that year and which can be present in any outfall regulated by this permit. This reporting requirement includes all surfactants, anionic cationic and non-ionic, which may be used in part or wholly as a constituent in these compounds.

US Steel Midwest Plant may submit the annual SARA 312 chemical inventory report, in lieu of a separate chemical report, by the end of the first quarter of each year. US Steel Midwest Plan will maintain these files for a period of ten (10) years. Files will include the Material Safety Data Sheet, FIFRA Label for each biocide, chemical name and CAS number for each compound used. If these compounds contain proprietary material, US Steel Midwest Plant may maintain this information in a separate file that can be accessed by U.S. EPA or IDEM personnel with appropriate authority.

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 all of the following occur:

   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; and

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

a. 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:

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

   2. 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

3. 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.

b. 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.

c. 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 Environmental Rules 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(e), a person who willfully or negligently violates any NPDES permit condition or filing requirement, or any applicable standards or limitations of IC 13-18-3-2.4, IC 13-18-4-5, IC 13-18-12, IC 13-18-14, IC 13-18-15, or IC 13-18-16, commits a Class A misdemeanor.

Pursuant to IC 13-30-10-1.5(i), an offense under IC 13-30-10-1.5(e) is a Level 4 felony if the person knowingly commits the offense and knows that the commission of the offense places another person in imminent danger of death or serious bodily injury. The offense becomes a Level 3 felony if it results in serious bodily injury to any person, and a Level 2 felony if it results in death to any person.

Pursuant to IC 13-30-10-1.5(g), a person who willfully or recklessly violates any applicable standards or limitations of IC 13-18-8 commits a Class B misdemeanor.

Pursuant to IC 13-30-10-1.5(h), a person who willfully or recklessly violates any applicable standards or limitations of IC 13-18-9, IC 13-18-10, or IC 13-18-10.5 commits a Class C misdemeanor.

Pursuant to IC 13-30-10-1, a person who knowingly or intentionally makes any false material statement, representation, or certification in any NPDES form, notice, or report commits a Class B misdemeanor.

11. Penalties for Tampering or Falsification

In accordance with 327 IAC 5-2-8(10), 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, (b) tampers with, falsifies, or renders inaccurate or inoperative a recording or monitoring device or method, including the data gathered from the device or method, or (c) makes a false material statement or representation in any label, manifest, record, report, or other document; all required to be maintained under the terms of 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, Industrial NPDES Permits Section, 100 North Senate Avenue, Indianapolis, IN 46204-2251.

15. Inspection and Entry

In accordance with 327 IAC 5-2-8(8), 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 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 action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless 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 2-1.3-2(50). 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 2-1.3-5 and 327 IAC 2-1.3-6.

B. MANAGEMENT REQUIREMENTS

1. <u>Proper Operation and Maintenance</u>

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(9).

Neither 327 IAC 5-2-8(9), 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. <u>Bypass of Treatment Facilities</u>

Pursuant to 327 IAC 5-2-8(12), the following are requirements for bypass:

a. The following definitions:

(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 contained in this permit, but only if it is also for essential maintenance to assure efficient operation. These bypasses are not subject to Part II.B.2.c. and d.

c. 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) As required by 327 IAC 5-2-8(11)(C), the permittee shall orally report an unanticipated bypass that exceeds any effluent limitations in the permit within twenty-four (24) hours from the time the permittee becomes aware of such noncompliance. A written submission shall also be provided within five (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 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 noncompliance. If a complete report is submitted by e-mail within 24 hours of the noncompliance, then that e-mail report will satisfy both the oral and written reporting requirement. E-mails should be sent to wwreports@idem.in.gov.

d. The following provisions are applicable to bypasses:

(1) Except as provided by Part II.B.2.b., bypass is prohibited, and the Commissioner may take enforcement action against a permittee for bypass, unless the following occur:

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage.

(B) 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 down time. 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.

(C) The permittee submitted notices as required under Part II.B.2.c.

(2) 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.d.(1). The Commissioner may impose any conditions determined to be necessary to minimize any adverse effects.

e. 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. However, under 327 IAC 2-6.1-3(1), when the constituents of the bypass are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

3. Upset Conditions

Pursuant to 327 IAC 5-2-8(13):

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;

(2) The permitted facility was at the time being properly operated;

(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. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

d. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof pursuant to 40 CFR 122.41(n)(4).

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

3. Twenty-Four Hour Reporting Requirements

Pursuant to 327 IAC 5-2-8(11)(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. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge that is in noncompliance are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

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.

d. Violation of a maximum daily discharge limitation for any of the following toxic pollutants: **cadmium, total residual chlorine, hexavalent chromium, total chromium, copper, total cyanide, lead, mercury, nickel, silver, zinc, formaldehyde, naphthalene, tetrachloroethylene**

The permittee can make the oral reports by calling (317)232-8670 during regular business hours and asking for the Compliance Data Section 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/Overflow Report" (State Form 48373) or a "Noncompliance 24-Hour Notification Report" (State Form 52415), whichever is appropriate, to IDEM at (317) 232-8637 or wwreports@idem.in.gov. If a complete e-mail submittal is sent within 24 hours of the time that the permittee became aware of the occurrence, then the email report will satisfy both the oral and written reporting requirements.

4. Other Compliance/Noncompliance Reporting

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

The permittee shall also give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements; and

All reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

5. Other Information

Pursuant to 327 IAC 5-2-8(11)(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(15):

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. A "responsible corporate officer" means either of the following:

a. 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

b. The manager of one (1) or more manufacturing, production, or operating facilities provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty to make major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where 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 governmental body or any agency or political subdivision thereof: by either a principal executive officer or ranking elected official.

(4) Under the proposed Federal E-Reporting Rule, a method will be developed for submittal of all affected reports and documents using electronic signatures that is compliant with the Cross-Media Electronic Reporting Regulation (CROMERR). Enrollment and use of NetDMR currently provides for CROMERR-compliant report submittal.

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. Electronic Signatures. If documents described in this section are submitted electronically by or on behalf of the NPDES-regulated facility, any person providing the electronic signature for such documents shall meet all relevant requirements of this section, and shall ensure that all of the relevant requirements of 40 CFR part 3 (including, in all cases, subpart D to part 3) (Cross-Media Electronic Reporting) and 40 CFR part 127 (NPDES Electronic Reporting Requirements) are met for that submission.

d. 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. <u>Availability of Reports</u>

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, the Regional Administrator, and on the IDEM Virtual Filing Cabinet. As required by the Clean Water Act, permit applications, permits, and effluent data shall not be considered confidential.

8. <u>Penalties for Falsification of Reports</u>

IC 13-30 and 327 IAC 5-2-8(15) 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. <u>Changes in Discharge of Toxic Substances</u>

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

a. That any activity has occurred or will occur which would result in the discharge of any toxic pollutant that is not limited in the permit if that discharge will exceed the highest of the following notification levels.

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

(2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/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 the Commissioner's 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 it has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant that was not reported in the permit application under 40 CFR 122.21(g)(9). However, this subsection b. does not apply to the permittee's use or manufacture of a toxic pollutant solely under research or laboratory conditions.

10. Future Electronic Reporting Requirements

IDEM is currently developing the technology and infrastructure necessary to allow compliance with the EPA Phase 2 e-reporting requirements per 40 CFR 127.16 and to allow electronic reporting of applications, notices, plans, reports, and other information not covered by the federal e-reporting regulations.

IDEM will notify the permittee when IDEM's e-reporting system is ready for use for one or more applications, notices, plans, reports, or other information. This IDEM notice will identify the specific applications, notices, plans, reports, or other information that are to be submitted electronically and the permittee will be required to use the IDEM electronic reporting system to submit the identified application(s), notice(s), plan(s), report(s), or other information.

See Part I.C.2. of this permit for the current electronic reporting requirements for the submittal of monthly monitoring reports such as the Discharge Monitoring Report (DMR) and the Monthly Monitoring Report (MMR).

PART III
Other Requirements

A. <u>Thermal Effluent Requirements</u>

The following thermal requirements are applicable:

1. There shall be no rise in the temperature in Portage-Burns Waterway of greater than 2ºF, as determined from upstream temperature and downstream temperature at the edge of the mixing zone.

2. The downstream temperature at the edge of the mixing zone shall not exceed the maximum limits in Temperature Limits-Table 1 below during more than one percent (1%) of the hours in the twelve (12) month period ending with any month: at no time shall the downstream temperature at the edge of the mixing zone exceed the maximum limits in Temperature Limits-Table 1 by more than 3ºF:

Temperature Limits-Table 1			
Maximum Instream Water Temperatures (ºF)			
January	February	March	December
50	50	60	57

3. The number of hours where the downstream temperature at the edge of the mixing zone exceeds the maximum limits in Temperature Limits Table 1 and the number of days where the downstream temperature exceeds the maximum limits in Temperature Limits Table 1 by more than 3 ºF shall be reported on the state monthly monitoring report and the federal discharge monitoring report.

4. The cumulative number of hours where the downstream temperature at the edge of the mixing zone exceeds the maximum limits in Temperature Limits Table 1 during the most recent twelve (12) months period shall be reported on the state monthly monitoring report and federal discharge monitoring report every month. The most recent twelve (12) months shall include the current month and the previous eleven (11) months.

5. The downstream temperature at the edge of the mixing zone shall not exceed the maximum limits in Temperature Limits Table 2 below at any time:

Temperature Limits-Table 2							
Maximum Instream Water Temperatures (ºF)							
April	May	June	July	August	September	October	November
65	65	70	70	70	65	65	65

6. The provisions of paragraph 5 above shall be inapplicable at any time when the upstream temperature is within 2 ºF of the maximum limitation for that day.

7. The mixing zone is the area in Portage-Burns Waterway extending laterally from Outfall 002 to one-half the width of Portage-Burns Waterway and to a distance of 300 feet downstream of Outfall 004.

8. In order to verify compliance with the above limitations, the permittee is required to report the following information as Outfall 500:

Parameter	Monthly Average	Daily Maximum	Units	Frequency	Sample Type
Intake Temperature	Report	Report	ºF	1 X Hourly	[1]
Upstream River Temperature	Report	Report	ºF	1 X Hourly	[1]
Outfall 002 Effluent Temperature	Report	Report	ºF	1 X Hourly	[1]
Outfall 003 Effluent Temperature	Report	Report	ºF	1 X Hourly	[1]
Outfall 004 Effluent Temperature	Report	Report	ºF	1 X Hourly	[1]
Downstream River Temperature [2]	Report	Report	ºF	1 X Hourly	[3]
Delta T [4]	-------	Report	ºF	1 X Daily	[5]

[1] Monitoring and reporting of temperature is to occur on a continuous basis. Temperature measurements shall be recorded continuously in one-hour intervals and the highest single recorded hourly measurement shall be reported on the federal discharge monitoring report as the maximum daily temperature of that month.

[2] The following equation shall be used to calculate the downstream river temperature using concurrent hourly temperature and flow measurements:

$$T_d = \alpha * T_u * \frac{Q_u}{Q_t} + \gamma * T_2 * \frac{Q_2}{Q_t} + \delta * T_3 * \frac{Q_3}{Q_t} + \epsilon * T_4 * \frac{Q_4}{Q_t}$$

where:

T_d = hourly downstream temperature
T_u = hourly river temperature upstream of Outfall 002
T_2 = hourly Outfall 002 temperature
T_3 = hourly Outfall 003 temperature
T_4 = hourly Outfall 004 temperature
Q_u = the 24-hour rolling average flow in Portage-Bums Waterway measured upstream of Outfall 002 (MGD); this flow shall be calculated on an hourly basis as the average of the current hourly flow measurement and the previous 23 hourly flow measurements
Q_2 = hourly outfall 002 flow (MGD)
Q_3 = hourly outfall 003 flow (MGD)
Q_4 = hourly outfall 004 flow (MGD)
Q_t = $Q_u + Q_2 + Q_3 + Q_4$
α = 1.017
γ = 1.443
δ = 1.177
ε = 0.762

These coefficients (α, γ, δ, and ε) are the coefficients from the June 28, 2013 letter from the permittee and have been approved by IDEM. The coefficients may be updated based upon additional data collection at Buoy A. Any changes shall be submitted for review and approval by IDEM before use by the permittee.

Alternatively, the permittee may measure the downstream temperature, T_d, at the edge of the mixing zone approximately 300 feet downstream of Outfall 004. Temperature measurements shall be taken at mid-stream and at a depth of approximately one meter below the water's surface. An annotation shall be made on the state monthly monitoring report each day this option is used.

[3] Monitoring and reporting of temperature is to occur on a continuous basis. Temperature measurements shall be recorded continuously in one-hour intervals and the total number of hours above the corresponding maximum limits in Part III.A.2 for the twelve (12) months shall be reported. The twelve (12) months shall include the current month and the previous elven (11) months. The highest single recorded hourly measurement shall be reported on the federal discharge monitoring report as a maximum daily temperature of that month.

[4] This is the difference each day between the maximum upstream and maximum downstream (peak) temperature.

[5] Calculated maximum.

9. The following narrative requirements for temperature shall apply outside the mixing zone:
   a. There shall be no abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions.
   b. The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.

Part IV
Cooling Water Intake Structures

A. Best Technology Available (BTA) Determination

In accordance with 40 CFR 401.14, the location, design, construction and capacity of cooling water intake structures of any point source for which a standard is established pursuant to section 301 or 306 of the Act shall reflect the best technology available for minimizing adverse environmental impact.

The EPA promulgated a CWA section 316(b) regulation on August 15, 2014, which became effective on October 14, 2014. 79 Fed. Reg. 48300-439 (August 15, 2014). This regulation established application requirements and standards for cooling water intake structures. The regulation is applicable to point sources with a cumulative design intake flow (DIF) greater than 2 MGD where 25% or more of the water withdrawn (using the actual intake flow (AIF)) is used exclusively for cooling purposes. The regulation establishes best technology available (BTA) standards to reduce impingement and entrainment of aquatic organisms at existing power generation and manufacturing facilities.

The USS Midwest Plant has a design intake flow (DIF) of 69.12 MGD. The actual intake flow (AIF), as defined under 40 CFR 125.92(a), is the average volume of water withdrawn on an annual basis by the cooling water intake structures over the previous five years. The annual actual intake flows from January 2015 through December 2019 was 27.0 MGD and approximately 30% of the intake water on average is used for cooling purposes.

Therefore, since the facility has a DIF greater than 2 MGD, and because the percentage of flow used at the facility exclusively for cooling is greater than 25%, the facility is required to meet the BTA standards for impingement and entrainment mortality, including any measures to protect Federally listed threatened and endangered species and designated critical habitat established under 40 CFR 125.94(g).

Based on available information, IDEM has made a best technology available (BTA) determination that the existing cooling water intake structure represents the best technology available to minimize adverse environmental impact for impingement and entrainment mortality as follows:

1. Based on the available information, IDEM has determined that the facility employs impingement mortality BTA alternative 3 (40 CFR 125.94(c)(3)), operate a CWIS that has a maximum actual through-screen intake velocity under 0.5 fps, and is therefore in compliance with the BTA to minimize adverse environmental impacts from impingement.

2. Further, after considering all the factors that must and may be considered by the federal rules, IDEM has determined that the existing facility meets BTA for entrainment. This is primarily based on the relatively small numbers of organisms likely entrained which is primarily due to the intake location 2800 feet offshore.

B. Permit Requirements

The permittee shall comply with requirements below:

1. In accordance with 40 CFR 125.98(b)(1), nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

2. The permittee must at all times properly operate and maintain the cooling water intake structure and associated intake equipment.

3. The permittee must inform IDEM of any proposed changes to the cooling water intake structure or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.

4. At a minimum frequency of daily, the permittee must calculate the through-screen velocity at both the off-shore intake and at the inoperable traveling screens using water flow, water depth, and the screen/intake open areas. These velocities and factors used in the calculation shall be reported on the MMR and DMR as Outfall 600, as follows (it is assumed that the open area of the off-shore intake will remain 202.75 square feet for the life of this permit. The permittee is required to notify IDEM if it does change):

Parameter	Monthly Average	Daily Maximum	Units	Frequency
Velocity, Off-shore Intake	-------	Report	Feet/second	Daily
Velocity; Traveling Screens	-------	Report	Feet/second	Daily
Intake Flow	-------	Report	MGD	Daily
Water Depth; Traveling Screens	-------	Report	Feet	Daily
Open Area, Traveling Screens	-------	Report	Square feet	Daily

5. The permittee must either conduct visual inspections or employ remote monitoring devices during the period the cooling water intake structure is in operation as required by 40 CFR 125.96(e). The permittee must conduct such inspections at least weekly to ensure that any technologies operated to comply with 40 CFR 125.94 are maintained and operated to function as designed including those installed to protect Federally listed threatened or endangered species or designated critical habitat. Alternative procedures can be approved if this requirement is not feasible (e.g., an offshore intake, velocity cap, or during periods of inclement weather).

6. In accordance with 40 CFR 125.97(c), by January 31 of each year, the permittee must submit to the Industrial NPDES Permit Section IDEM-OWQ an annual certification statement for the preceding calendar year signed by the responsible corporate officer as defined in 40 CFR 122.22 (see 327 IAC 5-2-22) subject to the following:

a. If the information contained in the previous year's annual certification is still pertinent, you may simply state as such in a letter to IDEM and the letter, along with any applicable data submission requirements specified in this section shall constitute the annual certification.

b. If you have substantially modified operation of any unit at your facility that impacts cooling water withdrawals or operation of your cooling water intake structure, you must provide a summary of those changes in the report. In addition, you must submit revisions to the information required at 40 CFR 122.21(r) in your next permit application.

7. Best technology available (BTA) determinations for entrainment mortality and impingement mortality at cooling water intake structures will be made in each permit reissuance in accordance with 40 CFR 125.90-98. The permittee must submit all the information required by the applicable provisions of 40 CFR 122.21(r)(2) through (r)(8) with the next renewal application. Since the permittee has submitted the studies required by 40 CFR 122.21(r), the permittee may, in subsequent renewal applications pursuant to 40 CFR 125.95(c), request to reduce the information required if conditions at the facility and in the waterbody remain substantially unchanged since the previous application so long as the relevant previously submitted information remains representative of the current source water, intake structure, cooling water system, and operating conditions. Any habitat designated as critical or species listed as threatened or endangered after issuance of the current permit whose range of habitat or designated critical habitat includes waters where a facility intake is located constitutes potential for a substantial change that must be addressed by the owner/operator in subsequent permit applications, unless the facility received an exemption pursuant to 16 U.S.C. 1536(o) or a permit pursuant to 16 U.S.C. 1539(a) or there is no reasonable expectation of take. The permittee must submit the request for reduced cooling water intake structure and waterbody application information at least **two years and six months** prior to the expiration of the NPDES permit. The request must identify each element in this subsection that it determines has not substantially changed since the previous permit application and the basis for the determination. IDEM has the discretion to accept or reject any part of the request.

8. The permittee shall submit and maintain all the information required by the applicable provisions of 40 CFR 125.97.

9. All required reports must be submitted to the IDEM, Office of Water Quality, NPDES Permits Branch, Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and the Compliance Branch at wwReports@idem.in.gov.

Part V
Streamlined Mercury Variance (SMV)

Introduction

The permittee submitted an application for a streamlined mercury variance (SMV) on February 5, 2021, in accordance with the provisions of 327 IAC 5-3.5. The SMV establishes a streamlined process for obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit. Based on a review of the SMV application, IDEM has determined the application to be complete as outlined in 327 IAC 5-3.5-4(e). Therefore, the SMV is being incorporated into the NPDES permit in accordance with 327 IAC 5-3.5-6.

Term of SMV

The SMV and the interim discharge limit included in Part I.A.1., Discharge limitations Table, will remain in effect until the NPDES permit expires under IC 13-14-8-9 (amended under SEA 620, May 2005). Pursuant to IC 13-14-8-9(d), when the NPDES permit is extended under IC 13-15-3-6 (administratively extended), the SMV will remain in effect as long as the NPDES permit requirements affected by the SMV are in effect.

Annual Reports

The annual report is a condition of the Pollutant Minimization Program Plan (PMPP) requirements of 327 IAC 5-3.5-9(a)(8). The annual report must describe the permittee's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP. The annual report may also include documentation of chemical and equipment replacements, staff education programs, and other initiatives regarding mercury awareness or reductions. The complete inventory and complete evaluation required by the PMPP may be submitted as part of the annual report.

The permittee will submit the annual reports to IDEM on the anniversary of the effective date of this NPDES permit renewal, as indicated on Page 1 of this permit. Annual Reports should be submitted to the Office of Water Quality, Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and the Compliance Branch at wwReports@idem.in.gov.

SMV Renewal

As authorized under 327 IAC 5-3.5-7(a)(1), the permittee may apply for the renewal of an SMV at any time within 180 days prior to the expiration of the NPDES permit. In accordance with 327 IAC 5-3.5-7(c), an application for renewal of the SMV must contain the following:

- All information required for an initial SMV application under 327 IAC 5-3.5-4, including revisions to the PMPP, if applicable.
- A report on implementation of each provision of the PMPP.

- An analysis of the mercury concentrations determined through sampling at the facility's locations that have mercury monitoring requirements in the NPDES permit for the two (2) year period prior to the SMV renewal application.
- A proposed alternative mercury discharge limit, if appropriate, to be evaluated by the department according to 327 IAC 5-3.5-8(b) based on the most recent two (2) years of representative sampling information from the facility.

Renewal of the SMV is subject to a demonstration showing that PMPP implementation has achieved progress toward the goal of reducing mercury from the discharge.

Pollutant Minimization Program Plan (PMPP)

The PMPP is a requirement of the SMV application and is defined in 327 IAC 5-3.5-3(4) as the plan for development and implementation of Pollutant Minimization Program (PMP). The PMP is defined in 327 IAC 5-3.5-3(3) as the program developed by an SMV applicant to identify and minimize the discharge of mercury into the environment. PMPP requirements (including the enforceable parts of the PMPP) are outlined in 327 IAC 5-3.5-9. In accordance with 327 IAC 5-3.5-6, the permittee's PMPP is hereby incorporated within this permit below:

Row ID	***Planned Activity***	***Activity Type***	***Goal***	***Measure of Performance***	***Schedule of Action***
1	Complete Inventory	Type 1: Source Characterization	Finalize the inventory mercury containing equipment/materials and chemicals.	Development of a complete inventory.	W/in 9 months of SMV approval. Updated inventory will be provided as part of the Annual Progress Report.
2	Review of Purchasing Policies and Procedures	Type 3: Awareness and Containment Control	1. Review mercury content information from vendors/manufacturers. 2. Restrict or eliminate (as practicable) the purchase of mercury containing chemicals and equipment.	Implementation of Policies and Procedures that address the mercury content of materials.	Implemented/Ongoing.
3	Mercury Awareness Training	Type 3: Awareness and Containment Control	Education and increased awareness.	Expand the existing employee health and safety training program to include additional mercury information.	Within 12 months of SMV approval.
4	Good Housekeeping Practices: *Mercury Containing Chemicals and Materials*	Type 3: Awareness and Containment Control	Reduce possibility of accidental spills and releases.	Training of employees on good housekeeping practices that reduce the possibility of accidental spills and releases.	Implemented/Ongoing.
5	Maintenance and Cleaning Practices	Type 3: Awareness and Containment Control	Proper and safe-handling during maintenance activities.	Implement procedures to minimize release of mercury from mercury-containing materials during maintenance and cleaning activities.	Implemented/Ongoing.
6	Standard Operating Practices: Spill Prevention and Response: *Chemicals and Materials*	Type 3: Awareness and Containment Control	Safe and proper spill response for dealing with chemical spills. Reduce possibility of accidental spills and releases.	Training of employees on proper and safe spill response for dealing with chemical spills.	Implemented/Ongoing.
7	Disposal Practices of Mercury-Containing Materials	Type 3: Awareness and Containment Control	Estimate quantity of mercury from materials that are properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed pursuant to applicable disposal/recycling regulations.	Implemented/Ongoing. Estimated disposal quantities will be provided as part of the Annual Progress Report.
8	Disposal Practices of Mercury-Containing Items: *Bulbs/Lamps*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from equipment that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from lamps/bulbs.	Implemented/Ongoing. Estimated disposal quantities will be provided as part of the Annual Progress Report.

Row ID	Planned Activity	Activity Type	Goal	Measure of Performance	Schedule of Action
9	Disposal Practices of Mercury-Containing Items: *Batteries*	Type 3: Awareness and Containment Control	Estimate quantity of mercury from batteries that is properly disposed of and removed from the site.	Tracking/documentation of number of containers disposed as a universal waste from mercury-containing batteries.	Implemented/Ongoing. Estimated disposal quantities will be provided as part of the Annual Progress Report.
10	*Outfall 004* Source Characterization: Water Treatment Additives - High Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 1 year of SMV approval for existing materials. For new water treatment additives, w/in 1 year of beginning use.
11	*Outfall 004* Source Characterization: Water Treatment Additives - Low Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information.	Documentation that mercury has been quantified.	Within 2 years of SMV approval for existing materials. For new water treatment additives, w/in 1 year of beginning use.
12	*Outfall 004* Source Characterization: Process Chemicals - Low Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information for the low potential process chemicals that meet the usage threshold criteria [(A)].	Documentation that mercury has been quantified.	Within 1 year of SMV approval for existing materials. For new process chemicals, w/in 1 year of beginning use.
13	*Outfalls 004* Source Characterization: Process Chemicals - Very Low Potential	Type 1: Source Characterization	Estimate the amount of mercury via direct sampling, literature review, and/or vendor information for the low potential process chemicals that meet the usage threshold criteria [(A)].	Documentation that mercury has been quantified.	Within 2 years of SMV approval for existing materials. For new process chemcials, w/in 1 year of beginning use.
14	*Internal Outfall* Source Characterization	Type 1: Source Characterization	Perform additional mercury monitoring of Outfalls 104 and 204 in order to understand the potential mercury contribution from these wastewaters to Outfall 004.	Documentation of evaluation.	Within 12 months of SMV approval.
15	*Intake* Source Characterization	Type 1: Source Characterization	Perform additional mercury monitoring of the intake (representative of non-contact cooling water) in order to understand the potential mercury contribution from non-contact cooling waters to Outfall 004.	Documentation of evaluation.	Within 12 months of SMV approval.

Row ID	Planned Activity	Activity Type	Goal	Measure of Performance	Schedule of Action
16	Alternatives for Reduction Evaluation: *Mercury-Containing Chemicals and Materials*	Type 2: Alternatives for Reduction Evaluation	Investigate replacement/reduction options for in-service mercury-containing materials.	Documentation of evaluation.	The scope and schedule of this type of activity will be determined based on the outcome of the various source characterization activities.

Part VI
Operation and Maintenance Plan

The permittee shall implement and comply with Revision 7 of its Wastewater Treatment O&M Manual and Preventative Maintenance Program Plan, dated 4-15-2020, or a later version of this Plan if revised, and approved, if applicable, under its consent decree (a revised consent decree was filed November 20, 2019). On August 30, 2021, the Court granted the United States of America’s motion to enter the revised consent decree.

National Pollutant Discharge Elimination System
Fact Sheet for
United States Steel Corporation – Midwest Plant

Draft: April 2021
Final: September 2021

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:	United States Steel Corporation, Midwest Plant One North Broadway, MS 70 Gary, Indiana 46402
Existing Permit Information:	Permit Number: IN0000337 Expiration Date: March 31, 2021
Facility Contact:	Brandon Miller, Environmental Control (319) 888-3369 BSMiller@uss.com
Facility Location:	6300 U.S. Highway 12 Portage, Indiana 46368 Porter County
Receiving Stream(s):	Portage – Burns Waterway (Burns Ditch)
GLI/Non-GLI:	GLI
Proposed Permit Action:	Renew
Date Application Received:	October 1, 2020
Source Category	NPDES Major– Industrial
Permit Writer:	Jennifer Elliot (317) 232-8702 Jelliot@idem.in.gov

Table of Contents

1.0 INTRODUCTION

The Indiana Department of Environmental Management (IDEM) received a National Pollutant Discharge Elimination System (NPDES) Permit application from U.S. Steel Corporation – Midwest Plant on October 1, 2020.

In accordance with 327 IAC 5-2-6(a), the current five-year permit was issued with an effective date of April 1, 2016. A five-year permit is proposed in accordance with 327 IAC 5-2-6(a).

The Federal Water Pollution Control Act (more commonly known as the Clean Water Act), as amended, (Title 33 of the United States Code (U.S.C.) Section 1251 *et seq.*), requires an NPDES permit for the discharge of pollutants into surface waters. Furthermore, Indiana law 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 and implements these federal and state requirements.

In accordance with Title 40 of the Code of Federal Regulations (CFR) Sections 124.8 and 124.56, as well as Title 327 of the Indiana Administrative Code (IAC) Article 5-3-8, a Fact Sheet is required for certain NPDES permits. This document fulfills the requirements established in these 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, Indiana water quality standards-based wasteload allocations, and other information available to IDEM. Decisions to award variances to Water Quality Standards or promulgated effluent guidelines are justified in the Fact Sheet where necessary.

2.0 FACILITY DESCRIPTION

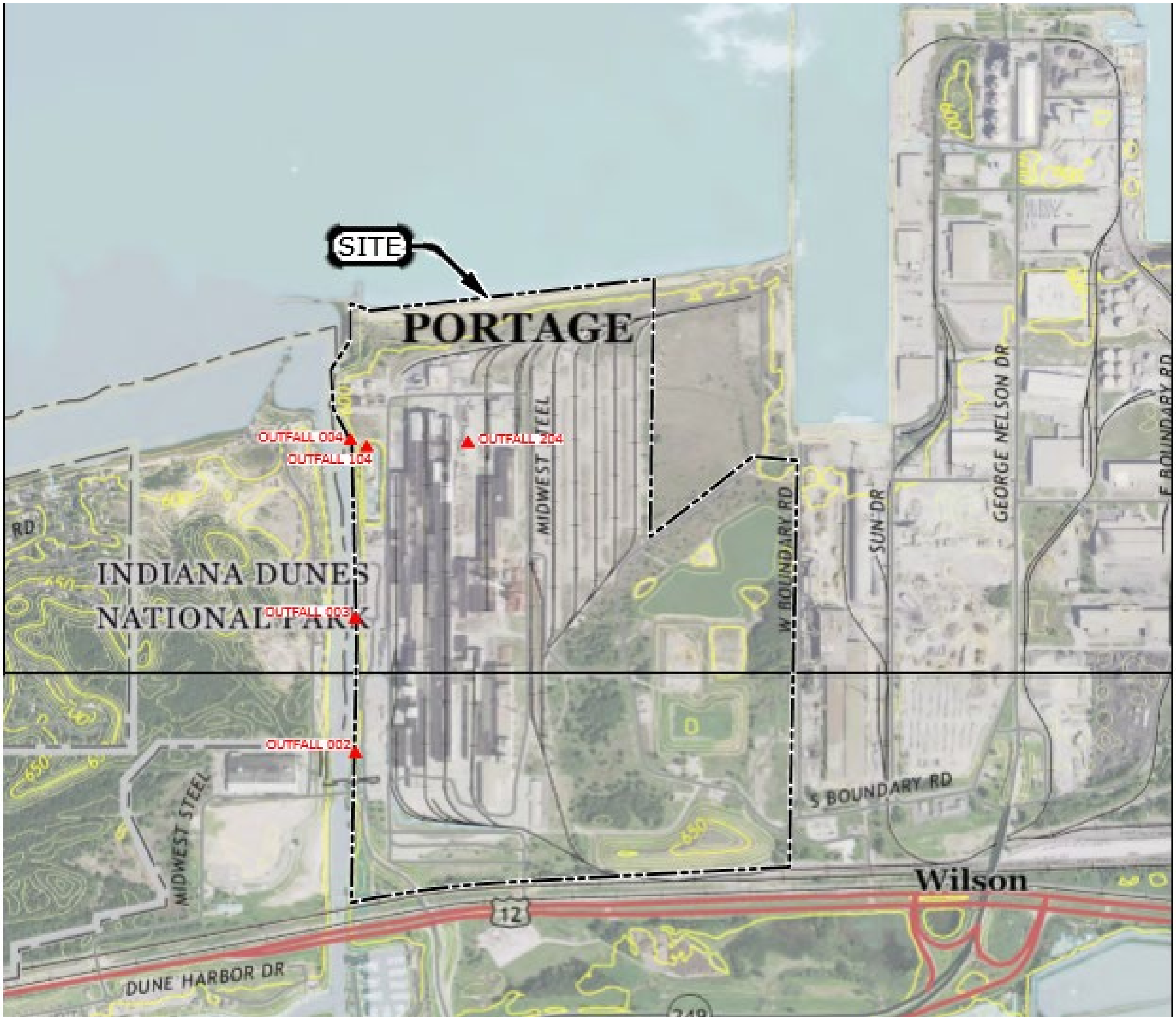
2.1 General

U.S. Steel Corporation, Midwest Plant is classified under Standard Industrial Classification (SIC) Codes **3316 – Cold Rolled Steel, 3443 – Tin Mill Products and 3325 – Galvanized Steel.**

The facility manufactures steel and related products. Activities conducted involve acid pickling, cold rolling, alkaline cleaning, operation of sheet temper mill, continuous annealing, electro-galvanizing, and tin electroplating.

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

Figure 1: Facility Location



6300 U.S. Highway 12
Portage, Indiana 46368
Porter County

2.2 Outfall Locations

Outfall 002	Latitude: 41º 37’ 23” Longitude: -87º 10’ 33”
Outfall 003	Latitude: 41º 37’ 35” Longitude: -87º 10’ 33”
Outfall 004	Latitude: 41º 37’ 51” Longitude: -87º 10’ 33.6”
Outfall 104	Latitude: 41º 37’ 50.4” Longitude: -87º 10’ 31.7”
Outfall 204	Latitude: 41º 37’ 50.8” Longitude: -87º 10’ 20”
Outfall 304	This is an administrative compliance point. It does not have a physical location.
Outfall 002S	Latitude: 41º 37’ 23” Longitude: -87º 10’ 33”
Outfall 003S	Latitude: 41º 37’ 35” Longitude: -87º 10’ 33”

2.3 Outfall Descriptions and Wastewater Treatment

Each outfall is described in detail below including waste streams, wastewater treatment, and long-term average flow as given in the renewal application Form 2C. Flows given in (parentheses) were used in the wasteload allocation and/or calculation of mass-based limits and are explained in Sections 5.2 and 5.3 of this fact sheet. The facility has an average total discharge of approximately 38.18 MGD.

Outfall 002

The discharge from Outfall 002 is composed of Non-Contact Cooling Water (NCCW) and stormwater. There is no treatment at this outfall. The highest monthly average flow for the last two years, from August 2018 to August 2020, is 0.329 MGD and occurred in March 2019. Outfall 002 discharges to the Portage-Burns Waterway.

Outfall 003

The discharge from Outfall 003 is composed of Non-Contact Cooling Water (NCCW) and stormwater. There is no treatment at this outfall. The highest monthly average flow from the last two years, from August 2018 to August 2020, is 15.17 MGD and occurred in September 2019. Outfall 003 discharges to the Portage-Burns Waterway.

Outfall 004

The discharge from Outfall 004 is composed of Non-Contact Cooling Water (NCCW), stormwater, and process wastewater from internal Outfalls 104 and 204 (Administrative Outfall 304). The highest monthly average flow from the last two years, from August 2018 to August 2020, is 17.06 MGD and occurred in August 2018. Outfall 004 discharges to the Portage-Burns Waterway.

Outfall 104

Outfall 104 is composed of treated non-hexavalent chromium process wastewaters (continuous anneal line, No. 1 and 2 tin recoil lines, electrolytic tinning line, chrome line, No. 3 galvanize line. 72-inch galvanizing line, pickle line, combination line, sheet temper mill), backwashes, washdowns, blowdowns from Portside Energy and the U.S. Steel – Midwest intake. Treatment includes flow equalization and mixing, API oil separating, dissolved air floatation, settling and a filter press. Outfall 104 discharges to the Portage-Burns Waterway via Outfall 304, which discharges via Outfall 004.

Outfall 204

Outfall 204 is composed of Chrome treatment plant effluent (treated Greenbelt II Landfill leachate and hexavalent chromium bearing wastewaters from the Tin Free Steel, Electrolytic Tinning, and Galvanizing Lines). The chrome treatment plant treats hexavalent chrome bearing wastewaters from the Tin Free Steel (TFS), Electrolytic Tinning Lines (ETL), and Galvanizing Lines via a reduction process (i.e., chrome removal) using sodium bisulfite, sulfuric acid, and sodium hydroxide. Outfall 204 discharges to the Portage-Burns Waterway via Outfall 304, which discharges via Outfall 004.

Outfall 304

Outfall 304 is an administrative compliance point and is where the sum of the mass for the internal Outfalls 104 and 204 is applied. Sampling at 104 and 204 must occur on the same day.

Outfall 500

Outfall 500 is an instream compliance point, used to measure compliance with the applicable temperature criteria.

Water balance diagrams have been included as Figures 2a and 2b.

Figure 2a: Water Balance Diagram Outfalls 002, 003 and 004

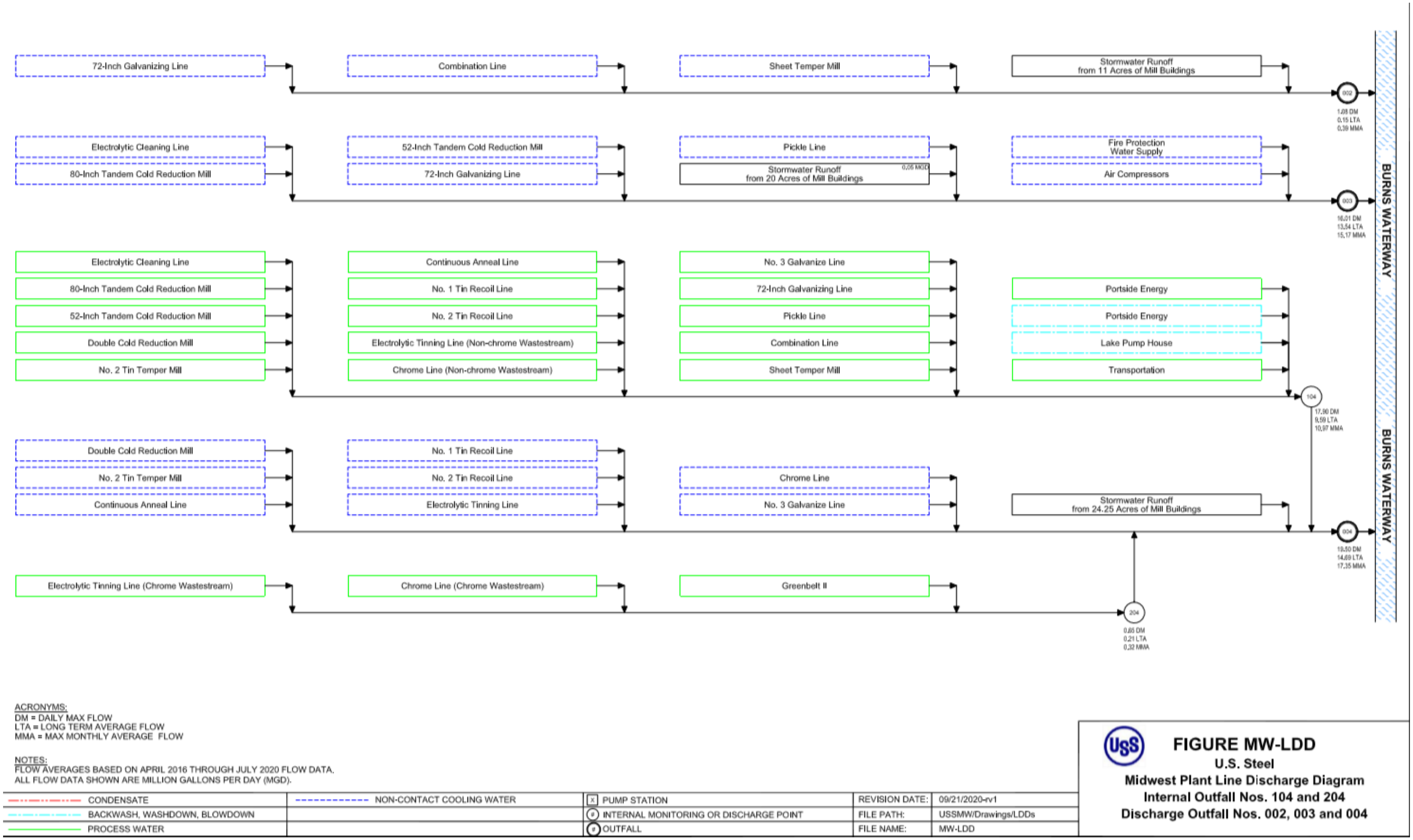
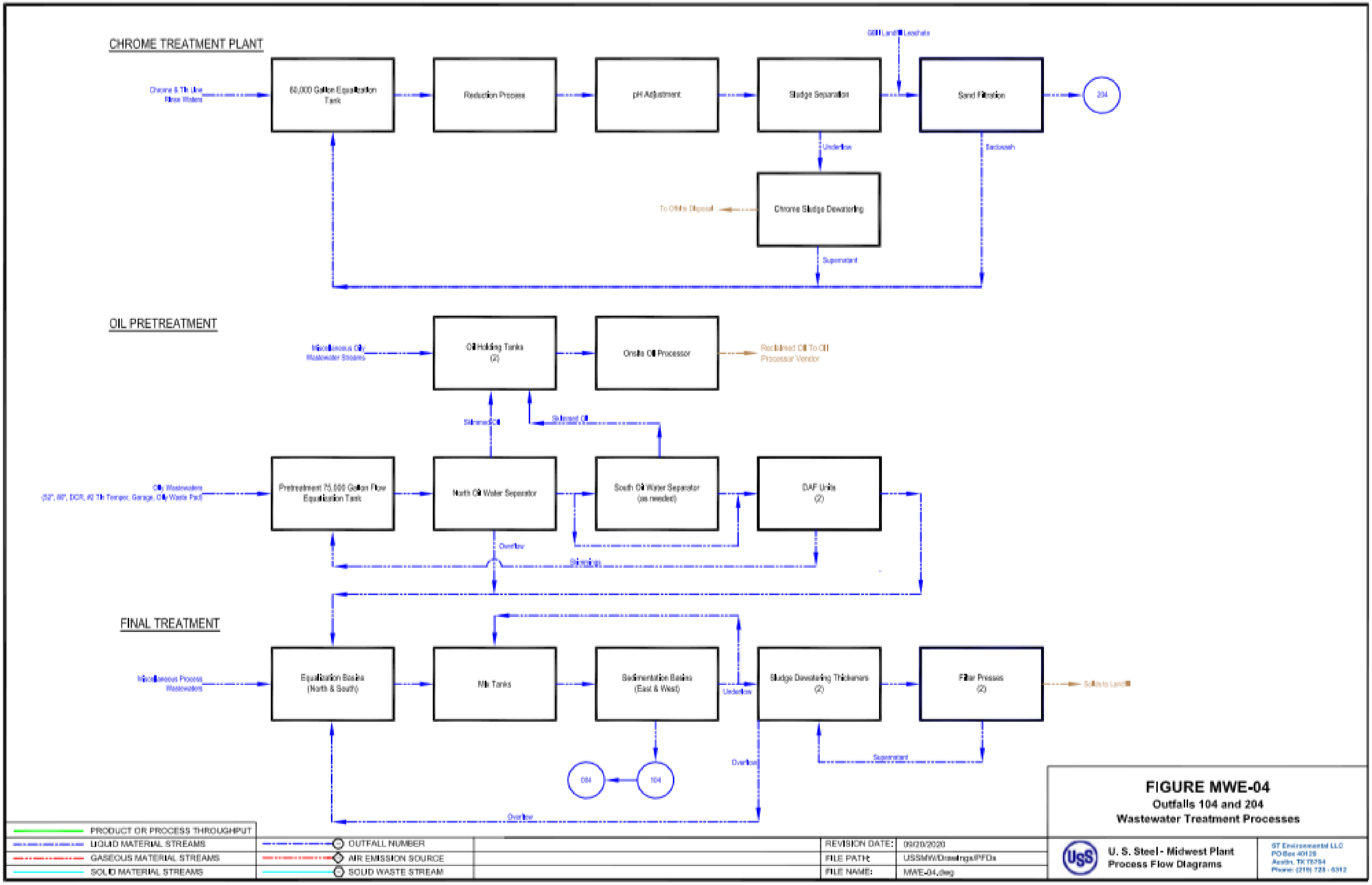


Figure 2b: Water Balance Diagram Outfalls 104 and 204



2.4 Changes in Operation

In the permit application, no changes in operation were identified as occurring since the previous permit renewal.

2.5 Facility Storm Water

There is no suitable storm water sampling location available that will allow effective sampling in accordance with the storm water event requirements. Therefore, under the current permit, the facility conducted storm water sampling at Outfalls 002 and 003 in lieu of sampling at internal monitoring points. This practice is continued for this permit renewal and storm water reporting requirements have been included in Outfalls 002 and 003.

3.0 PERMIT HISTORY

3.1 Compliance History

3.1.1 Review of Discharge Monitoring Report Data

A review of this facility's discharge monitoring data was conducted for compliance verification. This review indicates the permit limitation violations listed in Section 3.1.2.A.1.

3.1.2 Federal and State Enforcement Actions

There are two ongoing enforcement actions related to this NPDES permit. There is a joint federal-state enforcement action that was initiated in April 2018 and a state enforcement action that was initiated by a notice of violation issued October 31, 2019. A summary of these two enforcement actions is as follows:

A. April 2018 Joint State and Federal Enforcement Action

On April 2, 2018, the U.S. Department of Justice, on behalf of the U.S. Environmental Protection Agency, the National Park Service of the United States Department of the Interior, and the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce; and the State of Indiana, on behalf of the Indiana Department of Environmental Management and the Indiana Department of Natural Resources lodged a proposed Consent Decree with the United States District Court for the Northern District of Indiana in *United States and State of Indiana* v. *United States Steel Corporation,* Civil Action No. 2:18-cv-00127. The lodging of the proposed Decree immediately followed the filing in the same court of a civil complaint (Complaint) against United States Steel Corporation (U.S. Steel).

After lodging the proposed consent decree in April 2018, approximately 2,700 public comments were received, including extensive comments from the City of Chicago and the Surfrider Foundation (plaintiff intervenors in the Governments' action). Having taken those comments into account, a revised proposed decree was filed in November 2019.

U. S. Steel has already complied with several requirements of the proposed decree that was lodged in April 2018, including enhanced daily wastewater sampling, even though the decree has not been in effect.

Once the decree is entered, all of the decree's requirements, including implementation of key operation and maintenance plans and an improved wastewater process monitoring system, will be enforceable. When fully implemented, the decree is expected to help prevent future spills such as the April 2017 spill, and to achieve the decree's objective of promoting U. S. Steel's compliance with the Clean Water Act and related requirements.

Both IDEM and EPA have established websites for this enforcement action at:

IDEM Website: https://www.in.gov/idem/cleanwater/2538.htm
EPA Website: https://www.epa.gov/in/u-s-steel-corporation-consent-decree

The following is a list of alleged NPDES permit violations listed in the Compliant that was filed for this enforcement action:

1. Violations of Quantitative and Qualitative Limits

Outfall	Violation	Date(s) of Violation	Violation Type
304A	Chromium, Total Recoverable	02/03/2013	Daily Maximum Effluent Limit; Operations & Maintenance
004	Whole Effluent Toxicity, Chronic	Week of 08/04/2013	Quarterly Effluent Limit
004	Discoloration	12/12/2013	Narrative Standard; Operations & Maintenance
500A	Temperature	05/31/2014	Effluent Limit
004	Whole Effluent Toxicity, Chronic	Week of 06/08/2014	Quarterly Effluent Limit
004	Whole Effluent Toxicity, Chronic	Week of 06/22/2014	Quarterly Effluent Limit
500A	Temperature	10/01/2014	Effluent Limit
304A	Oil & Grease	03/19/2015	Daily Maximum Effluent Limit; Operations & Maintenance
004	Discoloration	04/01/2016	Narrative Standard; Operations & Maintenance
004	Discoloration	04/05/2016	Narrative Standard; Operations & Maintenance
500A	Temperature	09/07/2016	Effluent Limit
500A	Temperature	11/02/2016	Effluent Limit
304A	Chromium, Hexavalent	01/12/2017	Daily Maximum Effluent Limit; Operations & Maintenance
500A	Temperature	02/26/2017	Effluent Limit
500A	Temperature	02/27/2017	Effluent Limit
500A	Temperature	02/28/2017	Effluent Limit
304A	Chromium, Total Recoverable	04/10/2017	Daily Maximum Effluent Limit; Operations & Maintenance
004	Discoloration	04/10/2017	Narrative Standard; Operations & Maintenance

Outfall	Violation	Date(s) of Violation	Violation Type
304A	Chromium, Total Recoverable	04/11/2017	Daily Maximum Effluent Limit; Operations & Maintenance
004	Discoloration	04/11/2017	Narrative Standard; Operations & Maintenance
304A	Chromium, Total Recoverable	04/2017	Monthly Average Effluent Limit; Operations & Maintenance
304A	Chromium, Hexavalent	04/11/2017	Daily Maximum Effluent Limit; Operations & Maintenance
304A	Chromium, Hexavalent	04/12/2017	Daily Maximum Effluent Limit; Operations & Maintenance
304A	Chromium, Hexavalent	04/2017	Monthly Average Effluent Limit; Operations & Maintenance
304A	Chromium, Total Recoverable	10/25/2017	Daily Maximum Effluent Limit; Operations & Maintenance

2. Reporting, Monitoring, and Storm Water Violations

Outfall	Violation Type	Date(s) of Violation	Violation Description
304A	Reporting	02/03/2013	Inconsistent values for daily maximum total recoverable chromium
500A	Reporting	10/01/2014	Incorrectly calculated temperature difference
		01/06/2016	
		01/07/2016	
		01/09/2016	
		01/10/2016	
		01/15/2016	
		01/16/2016	
		01/20/2016	
		01/21/2016	
		01/22/2016	
NA	Storm water	1/2016	Failure to submit 2015 SWPPP Annual Report
500A	Reporting	04/23/2016	Incorrectly calculated temperature difference Incorrectly calculated temperature difference Incorrectly calculated temperature difference Incorrectly calculated temperature difference
		04/24/2016	
		06/07/2016	
		06/09/2016	
		06/22/2016	
		06/26/2016	
500A	Reporting	06/28/2016	
500A	Reporting	08/19/2016	
500A	Reporting	08/20/2016	
500A	Reporting	08/21/2016	Incorrectly calculated temperature difference
NA	Reporting	10/2016	Missing Total Toxic Organic Certification
002, 003	Monitoring	12/2016	Failure to monitor weekly pH
204A, 304A	Monitoring	12/2016	Failure to monitor multiple parameters
NA	Storm water	04/20/2017	Incomplete SWPPP

B. October 31, 2019 IDEM Enforcement Action.

With respect to this enforcement action, IDEM issued notice of violations (NOVs) to the permittee on October 31, 2019, December 13, 2019, and February 7, 2020. In addition, an IDEM inspection summary dated October 26, 2020 for an inspection conducted October 7, 2020 noted additional violations and referred those violations to IDEM enforcement. A summary of the violations noted in these NOVs and inspection summary are as follows:

1. Numerous discharges of foam, scum, solids, discolored effluent and/or an oil sheen at Outfall 004 and Outfall 003.
2. Failure to notify downstream users of spills in May and September 2019.
3. Failure to minimize or correct adverse impacts to the environment resulting from permit noncompliance on May 9, 2019 and October 30, 2019.
4. Failure to provide information requested by IDEM in May 2019.
5. Failure to maintain all treatment and collection facilities and systems in good working order on May 9, 2019 and August 20, 2019, and in September 2019 and December 2019.
6. Reporting hourly average temperatures on its DMR instead of the maximum hourly temperatures as required by the permit.
7. Violation of daily maximum copper limitation at Outfall 004 on October 13, 2019.
8. Violation of daily maximum load limit for hexavalent chromium at Outfall 304 on October 30, 2019.
9. Deficiencies in chain of custody reports in August 2020 and September 2020.

4.0 LOCATION OF DISCHARGE/RECEIVING WATER USE DESIGNATION

The receiving stream for Outfalls 002, 003, and 004 is the Portage-Burns Waterway (this stream is also referred to as Burns Ditch [in Indiana water quality rules] and the Little Calumet River [on USGS Topo maps]. The $Q_{7,10}$ low flow value of the Portage-Burns Waterway is 100 cfs.

The Portage-Burns Waterway is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community in 327 IAC 2-1.5-5(a)(1) and (a)(2). In addition, the “East Branch of Little Calumet River and its tributaries downstream to Lake Michigan via Burns Ditch” (Portage-Burns Waterway) are designated in 327 IAC 2-1.5-5(a)(3)(B) as salmonid waters and shall be capable of supporting a salmonid fishery.

The Indiana portion of the open waters of Lake Michigan is classified in 327 IAC 2-1.5-19(b)(2) as an outstanding state resource water (OSRW).

The permittee discharges to a waterbody that has been identified as a water of the state within the Great Lakes system. Therefore, it is subject to NPDES requirements specific to Great Lakes system dischargers under 327 IAC 2-1.5 and 327 IAC 5-2-11.4 through 11.6. These rules contain water quality standards applicable to dischargers within the Great Lakes system and the procedures to calculate and incorporate water quality-based effluent limitations.

A Site Map has been included as Figure 3.

Figure 3: Site Map

4.1 Total Maximum Daily Loads (TMDLs)

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 considering 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 2018 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 2018 Cycle.

The Portage-Burns Waterway, Burns Ditch, (Assessment-Unit INC 0159_02), HUC (40400010509), is on the 2018 303(d) list for PCBs in fish tissue.

A TMDL for the Burns Ditch (Assessment Unit INC 0159-02) has been developed for *E. coli*.

https://www.in.gov/idem/nps/2853.htm

5.0 PERMIT LIMITATIONS

Under 327 IAC 5-2-10 (see also 40 CFR 122.44), NPDES permit limits are based on either TBELs (including TBELs developed on a case-by-case basis using BPJ, where applicable) or WQBELs, whichever is most stringent. The decision to limit or monitor the parameters contained in this permit is based on information contained in the permittee's NPDES application, and other available information relating to the facility and the receiving waterbody. In addition, when renewing a permit, the existing permit limits and the antibacksliding requirements under 327 IAC 5-2-10(a)(11) must be considered.

5.1 Technology-Based Effluent Limits (TBEL)

TBELs require every individual member of a discharge class or category to operate their water pollution control technologies according to industry-wide standards and accepted engineering practices. TBELs are developed by applying the National Effluent Limitation Guidelines (ELGs) established by EPA for specific industrial categories. Technology-based treatment requirements established pursuant to sections 301(b) and 306 of the CWA represent the minimum level of control that must be imposed in an NPDES permit (327 IAC 5-5-2(a)).

In the absence of ELGs, TBELs can also be established on a case-by-case basis using best professional judgment (BPJ) in accordance with 327 IAC 5-2-10 and 327 IAC 5-5 (which implement 40 CFR 122.44, 125.3, and Section 402(a)(1) of the Clean Water Act (CWA)).

For each of the basic steelmaking and steel finishing operations, the NPDES production rates developed by US Steel Midwest were used in combination with the BPT, BAT, BCT effluent limitations and guidelines or NSPS from 40 CFR 420 (Iron and Steel Manufacturing Point Source Category) and 40 CFR 433 (Metal Finishing Point Source Category), as appropriate, to compute the allowable technology based effluent limitations of the regulated pollutants.

The applicable technology-based standards for the US Steel Corp, Midwest are contained in 40 CFR 420 Iron and Steel Manufacturing, Subparts I (Acid Pickling), J (Cold Forming), K (Alkaline Cleaning), L (Hot Coating) and 40 CFR 433 – Metal Finishing Category.

Applicable ELG Subparts and Production Levels

ELG Outfall	Current Permit ELG Production (1000 lbs/day)	Renewal Application Max Monthly Production 2015-2020	Production Unit/Area	40 CFR
304 (Acid Pickling)	9,688	7,548	80” Pickle Line	420.92(b)(2)
	2 Units	1 Unit	Fume Scrubber (associated with 80” Pickle Line)	420.92(b)(4)
304 (Cold Forming)	4,082	16,106	80” Sheet Cold Mill	420.102(a)(2)
	10,193	5,190	52” Tin Cold Mill	
	2,455	2,862	Sheet Temper Mill	420.102(a)(3)
			Double Cold Reduction Mill	
			No. 2 Tin Temper Mill	420.102(a)(5)
304 (Alkaline Cleaning)	3,865	1,990	Sheet Batch Annealing	420.112(a)
	3,962	2,094	Tin Continuous Annealing	420.112(b)
	474	1,446	Tin Cleaner Line (CLNM)	420.114(a)
304 (Hot Coating)	3,057	3,533	72” Cont Galvanizing Line	420.122(a)(1)
			48” Galvanizing Line (inactive)	
	1,375	1,278	No. 3 Cont Galvanizing Line	420.124(a)(1)
	--	1 Unit	Fume Scrubber for No. 3 Continuous Galvanizing Line	420.124(c)(1)
304 (Metal Finishing)	2.3MGD/2.162 MGD	2.3 MGD/ 2.162 MGD	Electrolytic Tinning Line	433.13(a)
			Tin Free Steel Line	433.13(a)

Attachment B includes the production/flow values for the applicable operations, the multiplication factors from the applicable Federal Effluent Guidelines, and the resulting technology based effluent limitations applied at Outfall 304.

5.2 Water Quality-Based Effluent Limits

WQBELs are designed to be protective of the beneficial uses of the receiving water and are independent of the available treatment technology. The WQBELs for this facility are based on water quality criteria in 327 IAC 2-1.5-8 or developed under the procedures described in 327 IAC 2-1.5-11 through 16 and implementation procedures in 327 IAC 5. Limitations are required for any parameter which has the reasonable potential to exceed a water quality criterion as determined using the procedures under 327 IAC 5-2-11.5.

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 are calculated at the final outfall. This was done for the following parameters at Outfall 004: **cadmium, hex. chromium, total chromium, copper, lead, nickel, silver, zinc, total cyanide, naphthalene, and tetrachloroethylene.** The mass-based WQBELs at the final outfall were compared to the mass-based TBELs at the internal outfall. Since the facility is authorized to discharge up to the mass-based TBELs at the internal outfall, if the mass-based TBELs at the internal outfall 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 327 IAC 2-1.5 and WQBELs are required at the final outfall. This was the case for the following parameters at Outfall 004: **cadmium, copper, lead, nickel and silver**. Therefore, WQBELs are required for cadmium, copper, lead, nickel and silver at Outfall 004. As part of this renewal, a Waste Load Allocation (WLA) report was completed and is included as Attachment A.

5.3 Effluent Limitations and Monitoring Requirements by Outfall

Under 327 IAC 5-2-10(a) (see also 40 CFR 122.44), NPDES permit requirements are technology-based effluent limitations and standards (including technology-based effluent limitations (TBELs) based on federal effluent limitations guidelines or developed on a case-by-case basis using best professional judgment (BPJ), where applicable), water quality standards-based, or based on other more stringent requirements. The decision to limit or monitor the parameters contained in this permit is based on information contained in the permittee's NPDES application and other available information relating to the facility and the receiving waterbody as well as the applicable federal effluent limitations guidelines. In addition, when renewing a permit, the existing permit limits, the antibacksliding requirements under 327 IAC 5-2-10(a)(11), and the antidegradation requirements under 327 IAC 2-1.3 must be considered.

5.3.1 All External Outfalls

Minimum Narrative Limitations

The narrative water quality criteria contained under 327 IAC 2-1.5-8(b)(1) and (2) have been included in this permit to ensure that these minimum water quality conditions are met.

Flow

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

5.3.2 Outfalls 002, 003, and 004

The following provides the rationale for inclusion in the permit for the parameters for which monitoring and/or limitations are included at Outfalls 002, 003, and 004.

pH

Limitations for pH in the proposed permit are based on the criteria established in 327 IAC 2-1.5-8(c)(2).

Total Residual Chlorine (TRC)

The effluent limitations of 0.01 mg/l as a monthly average and 0.02 mg/l as a daily maximum are water quality based and are below the limit of quantitation (LOQ) of 0.06 mg/l. In accordance with 327 IAC 5-2-11.6(h)(3), compliance with the daily maximum limit will be demonstrated when effluent concentrations for total residual chlorine are less than the LOQ. The permittee must comply with the monthly average limit but may consider daily values that are less than the LOQ to be zero for purposes of calculating a monthly average value.

In accordance with 327 IAC 5-2-11.6(g)(1), mass limits and a mass-based compliance value for TRC are included in the renewal permit at Outfall 002, based on a flow of 0.329 MGD; Outfall 003, based on a flow of 15.17 MGD; and Outfall 004 based on a flow of 17 MGD. The flows used for calculating mass limits are based on the highest monthly flow from August 2018 to August 2020.

The facility adds chlorine to the intake water for Zebra and Quagga mussel control. At Outfalls 002 and 003, TRC monitoring is required on a daily basis during Zebra and Quagga mussel intake chlorination and must continue for three (3) additional days after Zebra and Quagga mussel treatment has been completed. Outfall 004 requires daily TRC monitoring, regardless of the status of Zebra and Quagga mussel control.

Oil and Grease (O & G)

If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l).

<u>Outfall 004</u>

In addition to the parameters listed above, Outfall 004 includes limits and monitoring requirements for Mercury, Free Cyanide, Silver, Cadmium, Copper, Nickel, Lead, Formaldehyde and Hexavalent Chromium, as follows:

Mercury

Mercury has been identified as a pollutant of concern discharged at Outfall 004. A reasonable potential analysis for Mercury was conducted in accordance with the reasonable potential statistical procedure in 327 IAC 5-2-11.5(b) as part of a Waste Load Allocation analysis performed by the Indiana Department of Environmental Management, WLA002530. The results of the reasonable potential procedure show that there is a reasonable potential to exceed (RPE) a water quality criterion for Mercury, therefore, concentration limits for Mercury of 3.2 ng/l Daily Maximum and 1.3 ng/l Monthly Average, have been included in the permit. Mass limits of 0.00045 lbs/day Daily Maximum and 0.00018 lbs/day Monthly Average have also been included in this permit.

The permittee applied for a Streamlined Mercury Variance. See Section 6.6 for details.

Free Cyanide

A reasonable potential analysis for Free Cyanide was done in accordance with the reasonable potential statistical procedure in 327 IAC 5-2-11.5(b) as part of a Waste Load Allocation (WLA002530) analysis performed by the Indiana Department of Environmental

Management. The results of the reasonable potential procedure show that there was not a reasonable potential to exceed (RPE) a water quality criterion for Free Cyanide. The monthly average and daily maximum limits for Free Cyanide have been retained upon renewal of this permit as TBELs for total cyanide apply at internal Outfall 304 and insufficient information exists pertaining to potential sources of and treatment for cyanide.

Formaldehyde

Formaldehyde has been identified as a pollutant of concern discharged at Outfall 004. A reasonable potential analysis for Formaldehyde was conducted in accordance with the reasonable potential statistical procedure in 327 IAC 5-2-11.5(b) as part of a Waste Load Allocation analysis performed by the Indiana Department of Environmental Management, WLA002530. The results of the reasonable potential procedure show that there is a reasonable potential to exceed (RPE) a water quality value for Formaldehyde, therefore, concentration limits for Formaldehyde of 0.24 mg/l Daily Maximum and 1.4 mg/l Monthly Average, have been included in the permit. Mass limits of 34 lbs/day Daily Maximum and 20 lbs/day Monthly Average have also been included in this permit.

Silver, Cadmium, Copper, Nickel, Lead

These parameters have been identified as pollutants of concern, discharged at Outfall 004. The mass-based WQBELs at the final outfall were compared to the mass-based TBELs that apply at internal Outfall 304. The mass-based TBELs at the internal outfall exceed the mass-based WQBELs at the final outfall, therefore, WQBELs are included at Outfall 004. The WQBELs applied in the renewal permit are the more stringent of the limits in the current permit and WQBELs calculated as part of a Waste Load Allocation analysis performed by the Indiana Department of Environmental Management, WLA002530. See Section 5.2 for a detailed discussion on the establishment of limits for these parameters.

Hexavalent Chromium

Due to compliance issues with Hexavalent Chromium, monitoring requirements have been included in this permit at Outfall 004.

5.3.3 Outfall 500 (Temperature Requirements)

The permit establishes an instream compliance point, Outfall 500, to measure compliance with the applicable temperature criteria. The permit authorizes the permittee to either use an equation or use an instream measurement device to determine compliance with the applicable water quality criteria. Section 6.4 of this Fact Sheet describes these temperature requirements in more detail.

5.3.4 Internal Outfalls 104, 204 and 304

The following provides the rationale for inclusion in the permit for the parameters for which monitoring and/or limitations are included at Outfalls 104, 204 and 304.

For all of the parameters below, monitoring requirements only are required at Internal Outfalls 104 and 204. Internal Outfall 304 is an administrative compliance point and is where the sum of the mass limitations for Internal Outfalls 104 and 204 is applied. Sampling at 104 and 204 must occur on the same day.

Flow

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

TSS, Oil & Grease, Total Chromium, Total Zinc, Total Cyanide, Hexavalent Chromium, TTO, Tetrachloroethylene, and Naphthalene

The limits calculated using updated information provided in the renewal application are less stringent than those contained in the previous permit, therefore, the limits from the previous permit have been retained in the renewal permit in accordance with the antibacksliding provisions of 40 CFR 122.44(l)(1) and (2).

Fluoride

The limits calculated using updated information provided in the renewal application are less stringent than those contained in the previous permit, therefore, the limits from the previous permit have been retained in the renewal permit in accordance with the antibacksliding provisions of 40 CFR 122.44(l)(1) and (2).

Cadmium, Copper, Lead, Nickel and Silver

The Water Quality-Based Effluent Limitations are more stringent at Outfall 004, therefore, the monitoring requirements at Outfalls 104, 204 and 304 have been retained from the previous permit.

5.4 Whole Effluent Toxicity (WET) TESTING

Under 327 IAC 2-1.5-8(b)(1)(E)(ii), a discharge shall not cause acute toxicity, as measured by whole effluent toxicity (WET) tests, at any point in the waterbody. Under 327 IAC 2-1.5-8(b)(2)(A)(iv) a discharge shall not cause chronic toxicity to aquatic life, outside of the applicable mixing zone, as measured by WET tests. Under 327 IAC 5-2-11.5(c)(2), IDEM may include WET test requirements in an NPDES Permit, or if determined to be necessary, WET limits based on a reasonable potential to exceed water quality standards.

WET monitoring was included for Outfall 004 in the 2016 permit renewal. As part of this permit renewal, a reasonable potential to exceed (RPE) analysis for WET was performed for this outfall. The results show that the discharge from Outfall 004 has a reasonable potential to exceed the numeric interpretation of the narrative criterion for both acute and chronic WET. Therefore, WQBELs are required for WET. The WQBELs for WET and the toxicity reduction evaluation (TRE) triggers for the permit renewal for Outfall 004 are included in Appendix B of this Fact Sheet. This does not negate the requirement to submit a water treatment additive

(WTA) application and/or worksheet for replacement or new additives/chemicals proposed for use at the site.

Due to pathogen interference in the WET testing program at U.S. Steel – Midwest Plant, IDEM has approved the use of the alternative test method of sampling filtration to demonstrate compliance for fathead minnow testing. This method has been approved by U.S. EPA and based on prior determination by IDEM, is appropriate for use at U.S. Steel – Midwest Plant.

U.S. Steel Midwest Plant entered into a TRE under the current permit due to a WETT failure in September 2020. Therefore, the facility is currently under a compliance schedule for WET and has suspended WET testing. U.S. Steel Midwest Plant is required to complete the TRE by September 1, 2023. TRE reports are due quarterly, for up to 36 months from the September WETT failure. After successful completion of the TRE, WET testing will continue under the renewal permit and be subject to new limits for acute and chronic WET.

5.5 Antibacksliding

Indiana's prohibitions on backsliding under 327 IAC 5-2-10(a)(11) are applicable to BPJ case-by-case technology-based effluent limitations, when proposed to be increased based on subsequently promulgated effluent guidelines under Section 304(b) of the CWA, and limitations based on Indiana water quality standards or treatment standards (327 IAC 5-10). Prohibitions on other types of backsliding (e.g., backsliding from limitations derived from effluent guidelines, from existing case-by-case limitations to new case-by-case limitations, and from conditions such as monitoring requirements that are not effluent limitations) are covered under federal regulation at 40 CFR 122.44(l)(1).

Under 5-2-10(a)(11), unless an exception under 10(a)(11)(B) applies, a permit may not be renewed, reissued or modified to contain effluent limitations that are less stringent than the comparable effluent limitations in the previous permit. For effluent limitations based on Indiana water quality or treatment standards, less stringent effluent limitations may also be allowed if they are in compliance with Section 303(d)(4) of the CWA. Under 40 CFR 122.44(l)(1), a permit may not be renewed or reissued to contain less stringent interim effluent limitations, standards or conditions than the final effluent limitations, standards or conditions in the previous permit unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under 40 CFR 122.62.

The renewal permit includes effluent limitations based on water quality standards, existing effluent guidelines, and case-by-case TBELs. Under 40 CFR 122.62(a)(1), a cause for modification exists when there are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit. Per 327 IAC 5-2-16(d)(1), production changes would constitute as "[m]aterial and substantial alterations or additions to the discharger's operation which were not covered in the effective permit." The federal ELGs for 40 CFR 420 and 40 CFR 433 have not changed since the previous permit. The calculation of TBELs under existing effluent guidelines in Appendix B provides an increase in applicable limitations for TSS, Oil & Grease, Lead, Zinc, Hexavalent Chromium, Naphthalene and

Tetrachloroethylene over those calculated for the 2016 permit renewal. The permittee has not requested an increase in any effluent limitations. IDEM has not made a determination on whether these increases would be considered substantial for purposes of antibacksliding. None of the effluent limitations are proposed to be relaxed, therefore, backsliding is not an issue in this permit renewal.

5.6 Antidegradation

Indiana's Antidegradation Standards and Implementation procedures are outlined in 327 IAC 2-1.3. The antidegradation standards established by 327 IAC 2-1.3-3 apply to all surface waters of the state. The permittee is prohibited from undertaking any deliberate action that would result in a new or increased discharge of a bioaccumulative chemical of concern (BCC) or a new or increased permit limit for a regulated pollutant that is not a BCC unless information is submitted to the commissioner demonstrating that the proposed new or increased discharge will not cause a significant lowering of water quality, or an antidegradation demonstration submitted and approved in accordance 327 IAC 2-1.3-5 and 2-1.3-6.

This permit includes new permit limitations for Mercury, Formaldehyde and Whole Effluent Toxicity (WET). In accordance with 327 IAC 2-1.3-1(b), the new or increased permit limitations are not subject to the Antidegradation Implementation Procedures in 327 IAC 2-1.3-5 and 2-1.3-6 as the new or increased permit limitations are not the result of a deliberate activity taken by the permittee. A reasonable potential analysis was completed using Mercury data from April 2016 to October 2020 and Formaldehyde data included with the permit renewal application. It was found that there is a reasonable potential to exceed water quality standards for these pollutants. Therefore, limits for Mercury, Formaldehyde, and WET are required in the permit.

5.7 Storm Water

Under 327 IAC 5-4-6(d), if an individual permit is required under 327 IAC 5-4-6(a) for discharges consisting entirely of storm water, or if an individual permit is required under 327 IAC 5-2-2 that includes discharge of commingled storm water associated with industrial activity, IDEM may consider the following in determining the requirements to be contained in the permit:

(1) The provisions in the following: (A) 327 IAC 15-5, 327 IAC 15-6, and 327 IAC 15-13, as appropriate to the type of storm water discharge, (B) NPDES Pesticide General Permit for Point Source Discharges to Waters of the State from the Application of Pesticides, Permit Number ING870000, effective October 31, 2011, available at: http://www.in.gov/idem/cleanwater/2480.htm#pesticide or from the IDEM Office of Water Quality, Permits Branch, 100 North Senate Avenue, Indianapolis, IN 46204-2251, and (C) 327 IAC 5-2 [Basic NPDES Requirements], 327 IAC 5-5 [NPDES Criteria and Standards for Technology-based Treatment Requirements], and 327 IAC 5-9 [Best Management Practices; Establishment].

(2) "Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits", EPA 833-D-96-001, September 1, 1996, available from U.S. EPA, National Service Center for Environmental Publications at https://www.epa.gov/nscep or from IDEM.
(3) The nature of the discharges and activities occurring at the site or facility.

(4) Other information relevant to the potential impact on water quality.

In accordance with 327 IAC 15-2-2(a), the commissioner may regulate storm water discharges associated with industrial activity, as defined in 40 CFR 122.26(b)(14), consistent with the EPA 2008 NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity, as modified, effective May 27, 2009, under an NPDES general permit. Therefore, using Best Professional Judgment to develop case-by-case technology-based limits as authorized by 327 IAC 5-2-10, 327 IAC 5-5, and 327 IAC 5-9 (see also 40 CFR 122.44, 125.3, and Section 402(a)(1) of the Clean Water Act (CWA)), IDEM has developed storm water requirements for individual permits that are consistent with the EPA 2008 NPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity. The 2008 Multi-Sector General Permit and Fact Sheet is available from: https://www.epa.gov/npdes/previous-versions-epas-msgp-documents.

According to 40 CFR 122.26(b)(14) and 327 IAC 15-6-2 facilities classified under Standard Industrial Classification (SIC) Codes 2216 Coiled Rolled Steel, 3443 – Tin Mill Products and 2225 – Galvanized Steel., are considered to be engaging in "industrial activity" for purposes of 40 CFR 122.26(b). Therefore, the permittee is required to have all storm water discharges associated with industrial activity permitted. Treatment for storm water discharges associated with industrial activities is required to meet, at a minimum, best available technology economically achievable/best conventional pollutant control technology (BAT/BCT) requirements. EPA has determined that non-numeric technology-based effluent limits have been determined to be equal to the best practicable technology (BPT) or BAT/BCT for storm water associated with industrial activity.

Storm water associated with industrial activity must also be assessed to ensure compliance with all water quality standards. Effective implementation of the non-numeric technology-based requirements should, in most cases, control discharges as necessary to meet applicable water quality standards. Violation of any of these effluent limitations constitutes a violation of the permit.

Additionally, IDEM has determined that with the appropriate implementation of the required control measures and Best Management Practices (BMPs) found in Part I.D. of the permit, the discharge of storm water associated with industrial activity from this facility will meet applicable water quality standards and will not cause a significant lowering of water quality. Therefore, the storm water discharge is in compliance with the antidegradation standards found in 327 IAC 2-1.3-3, and pursuant to 327 IAC 2-1.3-4(a)(5), an antidegradation demonstration is not required.

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

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

The permittee must control its discharge as necessary to meet applicable water quality standards. It is expected that compliance with the non-numeric technology-based requirements should ensure compliance with applicable water quality standards. 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 and IDEM may impose additional water quality-based limitations.

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

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

The requirement to prepare a SWPPP is not an effluent limitation. Rather, it documents what practices the discharger is implementing to meet the effluent limitations in Part I.D. of the permit. The SWPPP is not an effluent limitation because it does not restrict quantities, rates, and concentrations of constituents which are discharged. Instead, the requirement to develop a SWPPP is a permit "term or condition" authorized under sections 402(a)(2) and 308 of the Act. Section 402(a)(2) states, "[t]he Administrator shall prescribe conditions for [NPDES] permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate." The SWPPP requirements set forth in this permit are terms or conditions under the CWA because the discharger is documenting information on how it intends to comply with the effluent limitations (and inspection and evaluation requirements) contained elsewhere in the permit. Thus, the requirement to develop a SWPPP and keep it up to date is no different than other information collection conditions, as authorized by 327 IAC 5-1-3 (see also CWA section 402(a)(2)).

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

Public availability of documents

Part I.E.,2.d(2) of the permit requires that the permittee retain a copy of the current SWPPP at the facility and make it immediately available, at the time of an onsite inspection or upon request, to IDEM. When submitting the SWPPP to IDEM, if any information in the SWPPP is considered to be confidential, that information shall be submitted in accordance with 327 IAC 12.1. Interested persons can request a copy of the SWPPP through IDEM. Any information that is confidential pursuant to Indiana law will not be released to the public.

5.8 Water Treatment Additives

In the event that changes are to be made in the use of water treatment additives that could significantly change the nature of or increase the discharge concentration of any of the additives contributing to an outfall governed under the permit, the permittee must apply for and obtain approval from IDEM prior to such discharge. Discharges of any such additives must meet Indiana water quality standards. The permittee must apply for permission to use water treatment additives by completing and submitting State Form 50000 (Application for Approval to Use Water Treatment Additives) available at: http://www.in.gov/idem/5157.htm and submitting any needed supplemental information. In the review and approval process, IDEM determines, based on the information submitted with the application, whether the use of any new or changed water treatment additives/chemicals or dosage rates could potentially cause the discharge from any permitted outfall to cause chronic or acute toxicity in the receiving water.

The authority for this requirement can be found under one or more of the following: 327 IAC 5-2-8(11)(B), which generally requires advance notice of any planned changes in the permitted facility, any activity, or other circumstances that the permittee has reason to believe may result in noncompliance with permit requirements; 327 IAC 5-2-8(11)(F)(ii), which generally requires notice as soon as possible of any planned physical alterations or additions to the permitted facility if the alteration or addition could significantly change the nature of, or increase the quantity of, pollutants discharged; and 327 IAC 5-2-9(2) which generally requires notice as soon as the discharger knows or has reason to know that the discharger has begun or expects to begin to use or manufacture, as an intermediate or final product or byproduct, any toxic pollutant that was not reported in the permit application.

The following is a list of water treatment additives currently approved for use at the facility:

Outfall	Item	Purpose/Application	Area
Outfall 002	Sodium Bisulfite	Dechlorination	Final Discharge to Burns Waterway
	Sodium Hypochlorite	Biocide for Mussel Control	Lake Water Pump Station
Outfall 003	Sodium Bisulfite	Dechlorination	Final Discharge to Burns Waterway
	Sodium Hypochlorite	Biocide for Mussel Control	Lake Water Pump Station
Outfall 004	ChemTreat BL-1307	pH Control	API Interceptor
	ChemTreat CL-240	Antifoam	Final Treatment
	ChemTreat CL-2480	Corrosion Inhibitor	Haskris Coolers
	ChemTreat CL-2865	Corrosion Inhibitor	3CL - Rectifier Closed Loop Cooling
	ChemTreat CL-2875	Corrosion Inhibitor	3CL - Pot Melt Closed Loop Cooling System
	ChemTreat CL-4442	Scale Inhibitor/Dispersant	3CL - Hot Water Rinse System
	ChemTreat FO-120	Antifoam	Final Treatment
	Lime	pH Control / Sludge Dewatering	Final Treatment
	Magnesium Hydroxide	Sludge Dewatering	Final Treatment
	ChemTreat P-817E	Polymer Flocculant	Chrome Treatment / Final Treatment
	ChemTreat P-841L	Coagulant	API Interceptor
	ChemTreat P8905L	Coagulant	API Interceptor
	ChemTreatP-891L	Coagulant	Chrome Treatment / Final Treatment
	ChemTreat S-101	Coagulant	Final Treatment
	Sodium Bisulfite	Dechlorination	Final Discharge to Burns Waterway
	Sodium Hypochlorite	Biocide for Mussel Control	Lake Water Pump Station
	Sulfuric Acid	pH Control	Chrome Treatment / Final Treatment
	Sodium Hydroxide	pH Control	Chrome Treatment
	AB Phycomycin SCP	Algae and Fungus Control	Final Treatment (Sedimentation Basin)
	Hydrogen Peroxide	Algae and Fungus Control; Potable Water Treatment	Final Treatment (Sedimentation Basin); Mix point of Outfall 104 and 004 piping

6.0 PERMIT DRAFT DISCUSSION

6.1 Discharge Limitations, Monitoring Conditions and Rationale

The proposed final effluent limitations are based on the more stringent of the Indiana water quality-based effluent limitations (WQBELs), technology-based effluent limitations (TBELs), or approved total maximum daily loads (TMDLs) and NPDES regulations as appropriate for each regulated outfall. Section 5.3 of this document explains the rationale for the effluent limitations at each Outfall.

6.1.1 Monitoring Frequency and Sample Type Requirements

With the following exceptions, the monitoring frequencies and sample types have not changed:

- At Outfalls 104, 204 and 304, the sampling frequency for total chromium has been increased from 5 X weekly to daily and the sampling frequency for hexavalent chromium has been increased from weekly to daily. This increase is primarily included because of the April 11, 2017 spill in which process wastewater containing high concentrations of hexavalent chromium and total chromium was discharged to the receiving waters and the resulting Federal-State enforcement action. In addition to the violations which occurred as a result of this April 2017 incident, at Outfall 304, the permittee did also violate its total chromium limit in October 2017 and its hexavalent chromium limit in January and October 2017 and October 2019.

  Under VI.12.a of the revised consent decree that was filed November 20, 2019 (Revised Consent Decree) and is pending final approval by the United States District Court for the Northern District of Indiana, the permittee is required to monitor for total and hexavalent chromium daily at Outfalls 104 and 204. Under VI.12.b. of the Revised Consent Decree, the permittee was required to address the requirements related to hexavalent and total chromium required by VI.12.a of the Revised Consent Decree in its permit renewal application. In addition, the Revised Consent Decree allowed the permittee to request a reduced monitoring frequency as part of its permit application. In its application, the permittee did not request a reduction in this monitoring frequency but did request that the permit include a reopening clause that would allow a reduction in the future. The permittee also requested the inclusion of specific language in the permit with respect to these monitoring requirements. This language was included in Attachment IV of the renewal permit application. IDEM has incorporated the requested reopening clause and language into the permit.

- The monitoring frequency for copper at Outfall 004 has been increased from 2 X monthly to weekly. The permittee has reported recent violations of its copper limit at this outfall in August and October 2019 and November 2020; therefore, an increase in the monitoring frequency is warranted for this parameter at this outfall.
- The monitoring frequencies for Silver, Cadmium, Nickel and Lead has decreased from 2 X Monthly to 1 X Monthly.

6.1.2 Analytical and Sampling Methods

As specified at 327 IAC 5-2-13(d)(1), test procedures identified in 40 CFR 136, including analytical and sampling methods, shall be used for pollutants or pollutant parameters listed in that part unless an alternate test procedure has been approved under 40 CFR 136.5. The State of Indiana has currently incorporated by reference the July 1, 2016 version of 40 CFR 136 under 327 IAC 5-2-1.5 and 327 IAC 1-1-2; therefore, this is the version of 40 CFR 136 currently applicable in NPDES permits.

Outfall 002: Non-Contact Cooling Water and Storm Water

Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Weekly	24 Hour Total
Oil and Grease	-	-	-	-	Report	mg/l	Weekly	Grab
Total Residual Chlorine	0.03	0.05	lbs/day	0.01	0.02	mg/l	Daily	Grab
TSS	-	-	-	-	Report	mg/l	Quarterly	Grab
COD	-	-	-	-	Report	mg/l	Quarterly	Grab
Ammonia	-	-	-	-	Report	mg/l	Quarterly	Grab
Zinc	-	-	-	-	Report	mg/l	Quarterly	Grab

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	Weekly	Grab

- Mass Limits were calculated using a flow of 0.329 MGD which was the highest monthly flow in the last 2 years.

Outfall 003: Non-Contact Cooling Water and Storm Water

Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	Weekly	24 Hour Total
Oil and Grease	-	-	-	-	Report	mg/l	Weekly	Grab
Total Residual Chlorine	1.3	2.5	lbs/day	0.01	0.02	mg/l	Daily	Grab
TSS	-	-	-	-	Report	mg/l	Quarterly	Grab
COD	-	-	-	-	Report	mg/l	Quarterly	Grab
Ammonia	-	-	-	-	Report	mg/l	Quarterly	Grab
Zinc	-	-	-	-	Report	mg/l	Quarterly	Grab

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	Weekly	Grab

- Mass Limits were calculated using a flow of 15.17 MGD which was the highest monthly flow in the last 2 years.

Outfall 004: Non-Contact Cooling Water (NCCW), storm water, and process wastewater from internal Outfalls 104 and 204 (Administrative Outfall 304)

Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	5 X Weekly	24 Hour Total
Oil and Grease	-	-	-	-	Report	mg/l	5 X Weekly	Grab
Silver	0.012	0.021	lbs/day	0.076	0.13	ug/l	1 X Monthly	24 Hour Comp
Free Cyanide	1.2	2.1	lbs/day	0.0075	0.013	mg/l	2 X Monthly	Grab
Total Residual Chlorine	1.4	2.8	lbs/day	0.01	0.02	mg/l	Daily	Grab
Cadmium	1.2	2.1	lbs/day	0.0077	0.013	mg/l	1 X Monthly	24 Hour Comp
Nickel	31	54	lbs/day	0.21	0.36	mg/l	1 X Monthly	24 Hour Comp
Lead	5.8	9.9	lbs/day	0.038	0.066	mg/l	1 X Monthly	24 Hour Comp
Copper	4.7	8.2	lbs/day	0.030	0.052	mg/l	1 X Weekly	24 Hour Comp
Mercury WQBELs Interim Discharge Limits	0.00018 -----	0.00045 -----	lbs/day -----	1.3 18	3.2 Report	ng/l ng/l	6 X Annually 6 X Annually	Grab Grab
Hexavalent Chromium	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	Grab
Formaldehyde Interim Final	 Report 20	 Report 34	 lbs/day lbs/day	 Report 0.14	 Report 0.24	 mg/l mg/l	 2 X Monthly 2 X Monthly	 Grab Grab
Whole Effluent Toxicity								
Acute	-------	-------	------	------	1.0	TU_a	Quarterly	24-Hr. Comp.
Chronic	-------	-------	------	2.0	------	TU_c	Quarterly	24-Hr. Comp.

Parameter	Daily Minimum	Daily Maximum	Units	Minimum Frequency	Sample Type
pH	6.0	9.0	Std Units	5 X Weekly	Grab

- Mass Limits for TRC, were calculated using a flow of 17 MGD which was the highest monthly flow in the last 2 years.

WQBEL in Mass

TRC = (0.01*17*8.345)= 1.4 lbs/day Avg (0.02*17*8.345) = 2.8 lbs/day Max

Outfall 104: Treated non-hexavalent chromium process wastewaters (continuous anneal line, No. 1 and 2 tin recoil lines, electrolytic tinning line, chrome line, No. 3 galvanize line. 72-inch galvanizing line, pickle line, combination line, sheet temper mill), backwashes, washdowns, blowdowns from Portside Energy and the U.S. Steel – Midwest intake. Applicable Effluent Guidelines are 40 CFR 420 and 40 CFR 433. The pollutants covered by the guidelines are Cadmium, Total Chromium, Hexavalent Chromium, Copper, Total Cyanide, Lead, Nickel, Silver, Zinc, TTO, Naphthalene and Tetrachloroethylene.

Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	5 X Weekly	24 Hour Total
TSS	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Oil & Grease	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	3 grabs/24 Hr. Comp
Total Chromium	Report	Report	lbs/day	Report	Report	mg/l	Daily	24 Hr. Comp
Zinc	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Lead	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Nickel	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Cadmium	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Copper	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24 Hr. Comp
Silver	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Total Cyanide	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	Grab
Hexavalent Chromium	Report	Report	lbs/day	Report	Report	mg/l	Daily	Grab
Naphthalene	-	Report	lbs/day	-	Report	mg/l	Monthly	Grab
Tetrachloroethylene	-	Report	lbs/day	Report	Report	mg/l	Monthly	Grab
TTO	-	Report	lbs/day	-	Report	mg/l	Monthly	24 Hr. Comp
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp

Outfall 204: Chrome treatment plant effluent (treated Greenbelt II Landfill leachate and hexavalent chromium bearing wastewaters from the Tin Free Steel, Electrolytic Tinning, and Galvanizing Lines). The chrome treatment plant treats hexavalent Chrome wastewaters from the Tin Free Steel (TFS), Electroplating Tinning Lines (ETL), and Galvanizing Lines via a reduction process (i.e., chrome removal) using sodium bisulfite, sulfuric acid, and sodium hydroxide.

Parameter	Daily Maximum	Monthly Average	Units	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	5 X Weekly	24 Hour Total
TSS	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Oil & Grease	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	3 grabs/24 Hr. Comp
Total Chromium	Report	Report	lbs/day	Report	Report	mg/l	Daily	24 Hr. Comp
Zinc	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Lead	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Nickel	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Cadmium	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Copper	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24 Hr. Comp
Silver	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Total Cyanide	Report	Report	lbs/day	Report	Report	mg/l	5 X Weekly	Grab
Hexavalent Chromium	Report	Report	lbs/day	Report	Report	mg/l	Daily	Grab
Naphthalene	-	Report	lbs/day	-	Report	mg/l	Monthly	Grab
Tetrachloroe thylene	-	Report	lbs/day	Report	Report	mg/l	Monthly	Grab
TTO	-	Report	lbs/day	-	Report	mg/l	Monthly	24 Hr. Comp
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp

Outfall 304: Administrative Combination of Outfalls 104 and 204

Parameter	Monthly Average	Daily Maximum	Units	Monthly Average	Daily Maximum	Units	Minimum Frequency	Sample Type
Flow	Report	Report	MGD	-	-	-	5 X Weekly	24 Hour Total
TSS	1147	2290	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Oil & Grease	-	765	lbs/day	Report	Report	mg/l	5 X Weekly	3 grabs/24 Hr. Comp
Total Chromium	10.0	30.0	lbs/day	Report	Report	mg/l	Daily	24 Hr. Comp
Zinc	10.0	30.0	lbs/day	Report	Report	mg/l	5 X Weekly	24 Hr. Comp
Lead	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Nickel	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Cadmium	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Copper	Report	Report	lbs/day	Report	Report	mg/l	1 X Weekly	24 Hr. Comp
Silver	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp
Total Cyanide	3.41	7.95	lbs/day	Report	Report	mg/l	5 X Weekly	Grab
Hexavalent Chromium	0.17	0.51	lbs/day	Report	Report	mg/l	Daily	Grab
Naphthalene	-	0.86	lbs/day	-	Report	mg/l	Monthly	Grab
Tetrachloroethylene	-	1.29	lbs/day	-	Report	mg/l	Monthly	Grab
TTO	-	38.43	lbs/day	-	Report	mg/l	Monthly	24 Hr. Comp
Fluoride	150	400	lbs/day	Report	Report	mg/l	Monthly	24 Hr. Comp

Outfall 600

At a minimum frequency of daily, the permittee must calculate the through-screen velocity at both the off-shore intake and at the inoperable traveling screens using water flow, water depth, and the screen/intake open areas. These velocities and factors used in the calculation shall be reported on the MMR and DMR as Outfall 600, as follows (it is assumed that the open area of the offshore intake will remain 202.75 square feet for the life of this permit. The permittee is required to notify IDEM if it does change). Refer to Section 6.5 of this Fact Sheet for a full discussion on the Cooling Water Intake Structure(s).

Parameter	Monthly Average	Daily Maximum	Units	Frequency
Velocity, Off-shore Intake	-------	Report	Feet/second	Daily
Velocity; Traveling Screens	-------	0.5	Feet/second	Daily
Intake Flow	-------	Report	MGD	Daily
Water Depth; Traveling Screens	-------	Report	Feet	Daily
Open Area, Traveling Screens	-------	Report	Square feet	Daily

6.2 Schedule of Compliance

The draft permit contains new effluent limits for Formaldehyde. In accordance with 327 IAC 5-2-12.1 (see also 40 CFR 122.47(a)), a schedule of compliance is allowed in an NPDES permit when requested and justified by the permittee, but only when appropriate and when the schedule of compliance requires achievement of compliance “as soon as possible” and meets other specified conditions. Before a schedule of compliance can be included in a permit, the permittee must submit a request for the schedule to IDEM and demonstrate that they meet the requirements for such a schedule pursuant to 327 IAC 5-2-12.1.

The permittee has requested and provided justification for a sixty (60) month schedule of compliance. IDEM believes that this is a reasonable amount of time to comply with the new water quality-based effluent limitation. The 60-month schedule of compliance has been included in Part I.G. of the permit.

6.3 Consent Decree Requirement-Wastewater Operation and Maintenance Plan

Pursuant to VI.10.f of the Revised Consent Decree that was filed November 20, 2019 (Revised Consent Decree) and is pending final approval by the United States District Court for the Northern District of Indiana, the permittee was required to, “at the time of renewal of its Permit and as part of its application for renewal, submit to IDEM the most current O&M Plan that includes the requirements of Paragraph 10(a)-(e) [of the Revised Consent Decree]. The renewal application shall include a request that the renewed Permit contain the requirements to develop, implement, and review the O&M Plan pursuant to Paragraph 10(a)-(e) [of the Revised Consent Decree].”

The permittee included this information, including Revision 7 of its Wastewater Treatment O&M Manual and Preventative Maintenance Program Plan, dated 4-15-2020, as Attachment III of its NPDES permit renewal application.

The proposed permit includes the requirements to develop, implement, and review the O&M Plan pursuant to Paragraph 10(a)-(e) of the Revised Consent Decree.

6.4 Thermal Effluent Requirements

6.4.1 History of Thermal Requirements

A. NPDES Permit Issued January 31, 2011

The following is an excerpt from the Fact Sheet for the NPDES Permit issued January 31, 2011:

> Noncontact cooling water is discharged at Outfalls 002, 003 and 004. The temperature of the effluent from the combined outfalls is regulated under 327 IAC 2-l.5-8(c)(4) for a warm water aquatic community. As Portage-Bums Waterway is designated as a salmonid water under 327 IAC 2-1.5-5(a)(3)(B), the effluent temperature is also regulated under. 327 IAC 2-l.5-8(d)(2) for cold water fish. According to the Lake Michigan Fisheries Office of the Indiana Department of Natural Resources, spawning and imprinting of salmonids occurs from September through the end of May annually and can occur at any place in the watershed. The temperature criteria for a warm water aquatic community and for cold water fish apply outside of a mixing zone.
>
> 327 IAC 2-1.5-8(c)(4) sets a maximum temperature limit by month, while 327 IAC 2-1.5-8(d)(2)(A) prohibits temperatures from exceeding 70° F at any time, and 327 IAC 2-1.5-8(d)(2)(B) prohibits temperatures from exceeding 65° F during spawning and imprinting of salmonids. 327 IAC 2-l .5-8(d)(2) states that these temperature limits apply unless due to natural causes. Therefore, the temperature limits for cold water fish are inapplicable when measured temperatures upstream of the discharge from Outfalls 002, 003 and 004 equal or exceed the temperature limit for that day. 327 IAC 2-1.5-8(d)(2) also states that the maximum temperature rise above natural shall not exceed 2°F at any time or place.
>
> The thermal effluent requirements in the previous permit are based on temperature criteria that applied prior to the 1990 change in water quality standards. Prior to 1990, Portage-Bums Waterway was considered a migration route for salmonids, so the permit included temperature criteria for migration routes for those months where they were more stringent than criteria that applied to a warm water aquatic community. Portage-Burns Waterway is now designated as a salmonid water and the temperature criteria are more stringent than those that applied to salmonid migration routes. Therefore, the temperature limits in the previous permit were updated to include the more stringent of the temperature criteria for cold water fish in 2-1.5-8(d) or for a warm water aquatic community in 2-1.5-8(c)(4). The previous permit includes a provision for instances where the upstream temperature equals or exceeds the temperature limit for any given day. In these instances, the temperature from the combined discharge from Outfalls 002, 003 and 004 is prohibited from raising the temperature greater than 2°F at the edge of the mixing zone. This provision is only consistent with the temperature criteria for cold water fish. Based on a review of upstream

temperature data presented in Attachment 35 of the wasteload allocation report in Appendix E [of the 2011 Fact Sheet], there is no reasonable potential to exceed the maximum temperature requirements for warm water aquatic communities during the months when temperature criteria for cold water fish are more stringent. Therefore, this provision was retained for those months when the temperature criteria for cold water fish are more stringent.

Compliance with the thermal requirements in the previous permit is determined using a model developed by the facility in 1991 that calculates the temperature rise at the edge of the mixing zone for each outfall. A review of the model is included in the wasteload allocation report in Appendix E [of the 2011 Fact Sheet]. Based on the review, the model may no longer be used to determine compliance with the temperature limits in the permit. Instead, the permit includes a requirement to measure the temperature in Portage-Bums Waterway at the edge of the mixing zone. The thermal mixing zone for Outfalls 002, 003 and 004 is the area in Portage-Burns Waterway extending from Outfall 002 to one-half the width of Portage-Bums Waterway and to a distance of 300 feet downstream of Outfall 004. Temperature measurements shall be taken at the edge of the mixing zone approximately 300 feet downstream of Outfall 004 and at mid-stream.

Instead of measuring the temperature at the edge of the mixing zone, the permittee may choose to submit a new model for review by IDEM as a measure to achieve compliance with the temperature limits in this permit. A reopening clause has been included in this permit to allow review for a proposed thermal model whereby the permit may be reopened to include such a provision for compliance. Any new model must limit the mixing zone to one-half the width of Portage-Bums Waterway and account for: upstream flow and temperature; effluent flow and temperature; and the combined effect of the discharges from Outfalls 002, 003 and 004 on the temperature at the edge of the mixing zone. The permittee has a 24-month schedule of compliance to develop a newly proposed model or install monitoring equipment to comply with the current thermal effluent requirements. Any proposed model should be provided to IDEM at least 90 (ninety) days prior to anticipated use of model for review and must be approved by IDEM before use.

B. NPDES Permit Modification Issued March 19, 2014

The permittee submitted an application to modify its NPDES permit on June 28, 2013 requesting approval to use a thermal model to assess compliance with Outfall 500 temperature requirements as an alternative to measuring the temperature instream.

The following is an excerpt from the Fact Sheet for the NPDES permit modification issued March 19, 2014:

Outfall 500 is the temperature compliance point and is located at the edge of the mixing zone in Bums Waterway, 300 feet downstream of Outfall 004 in the middle of the channel (Buoy A). The thermal model is an alternative to direct, in-situ measurement.

Buoy A is sited at a location frequented by boat traffic and is at risk for removal or damage. Its existence for the duration of the permit cannot be guaranteed and is beyond the control of USS. USS has demonstrated that when Buoy A is removed from Bums Waterway, a regression model can be used to reliably assess temperature at the compliance point. The regression model (equation) incorporates hourly Outfall 002, 003, 004, and upstream Bums Waterway temperatures and flows currently measured by USS and the coefficients given in the table below. Upstream Bums Waterway flow is expressed as a 24-hour rolling average.

C. NPDES Permit Issued March 30, 2016

This same thermal regression model was included in the renewal permit issued March 30,2016.

6.4.2 Summary of Temperature Discharge Levels at Outfall 002, 003 and 004

The following tables were prepared using DMR data from December 2017 through November 2020.

Outfall 002

Month	Average Flow (MGD)	Maximum Flow (MGD)	Average Temperature (ºF)	Maximum Temperature (ºF)
January	0.097	1.2	75	92
February	0.099	0.70	72	89
March	0.15	0.93	78	91
April	0.12	1.1	75	90
May	0.099	0.70	71	90
June	0.099	0.70	75	84
July	0.14	0.72	78	85
August	0.16	0.72	80	85
September	0.14	0.65	80	84
October	0.18	1.1	76	85
November	0.20	1.2	79	95
December	0.10	0.88	75	90

Outfall 003

Month	Average Flow (MGD)	Maximum Flow (MGD)	Average Temperature (ºF)	Maximum Temperature (ºF)
January	13	15	42	49
February	13	14	41	63
March	13	14	46	53
April	13	15	50	58
May	13	15	58	67
June	13	16	67	77
July	14	16	73	86
August	14	16	78	85
September	14	16	73	84
October	14	16	64	76
November	14	15	53	62
December	13	15	45	54

Outfall 004

Month	Average Flow (MGD)	Maximum Flow (MGD)	Average Temperature (ºF)	Maximum Temperature (ºF)
January	14	18	59	69
February	14	18	58	68
March	13	18	62	66
April	14	18	66	71
May	14	17	71	74
June	14	18	79	82
July	15	17	84	88
August	15	18	88	98
September	14	18	83	96
October	13	17	78	94
November	12	15	69	88
December	14	18	60	77

6.4.3 Thermal Requirements Proposed in this Permit

As discussed above, the temperature criteria applicable to the Portage-Burns Waterway are located at 327 IAC 2-1.5-8(c)(4) [for warmwater aquatic life] and (d)(2) [for cold water fish]. These criteria are applicable at every point outside of the applicable mixing zone.

The following thermal requirements are proposed in this permit to ensure that the applicable temperature criteria are met:

1. There shall be no rise in the temperature in Portage-Burns Waterway of greater than 2ºF, as determined from upstream temperature and downstream temperature at the edge of the mixing zone.

2. The downstream temperature at the edge of the mixing zone shall not exceed the maximum limits in Temperature Limits-Table 1 below during more than one percent (1%) of the hours in the twelve (12) month period ending with any month: at no time shall the downstream temperature at the edge of the mixing zone exceed the maximum limits in Temperature Limits-Table 1 by more than 3ºF:

Temperature Limits-Table 1

Maximum Instream Water Temperatures (ºF)

January	February	March	December
50	50	60	57

3. The number of hours where the downstream temperature at the edge of the mixing zone exceeds the maximum limits in Temperature Limits Table 1 and the number of days where the downstream temperature exceeds the maximum limits in Temperature Limits Table 1 by more than 3 ºF shall be reported on the state monthly monitoring report and the federal discharge monitoring report.

4. The cumulative number of hours where the downstream temperature at the edge of the mixing zone exceeds the maximum limits in Temperature Limits Table 1 during the most recent twelve (12) months period shall be reported on the state monthly monitoring report and federal discharge monitoring report every month. The most recent twelve (12) months shall include the current month and the previous eleven (11) months.

5. The downstream temperature at the edge of the mixing zone shall not exceed the maximum limits in Temperature Limits Table 2 below at any time:

Temperature Limits-Table 2

Maximum Instream Water Temperatures (ºF)

April	May	June	July	August	September	October	November
65	65	70	70	70	65	65	65

6. The provisions of paragraph 5 above shall be inapplicable at any time when the upstream temperature is within 2 ºF of the maximum limitation for that day.

7. The mixing zone is the area in Portage-Burns Waterway extending laterally from Outfall 002 to one-half the width of Portage-Burns Waterway and to a distance of 300 feet downstream of Outfall 004.

8. In order to verify compliance with the above limitations, the permittee is required to report the following information as Outfall 500:

Parameter	Monthly Average	Daily Maximum	Units	Frequency	Sample Type
Intake Temperature	Report	Report	ºF	1 X Hourly	[1]
Upstream River Temperature	Report	Report	ºF	1 X Hourly	[1]
Outfall 002 Effluent Temperature	Report	Report	ºF	1 X Hourly	[1]
Outfall 003 Effluent Temperature	Report	Report	ºF	1 X Hourly	[1]
Outfall 004 Effluent Temperature	Report	Report	ºF	1 X Hourly	[1]
Downstream River Temperature [2]	Report	Report	ºF	1 X Hourly	[3]
Delta T [4]	-------	Report	ºF	1 X Daily	[5]

[1] Monitoring and reporting of temperature is to occur on a continuous basis. Temperature measurements shall be recorded continuously in one-hour intervals and the highest single recorded hourly measurement shall be reported on the federal discharge monitoring report as the maximum daily temperature of that month.

[2] The following equation shall be used to calculate the downstream river temperature using concurrent hourly temperature and flow measurements:

$$T_d = \alpha * T_u * \frac{Q_u}{Q_t} + \gamma * T_2 * \frac{Q_2}{Q_t} + \delta * T_3 * \frac{Q_3}{Q_t} + \epsilon * T_4 * \frac{Q_4}{Q_t}$$

where:

T_d = hourly downstream temperature
T_u = hourly river temperature upstream of Outfall 002
T_2 = hourly Outfall 002 temperature
T_3 = hourly Outfall 003 temperature
T_4 = hourly Outfall 004 temperature
Q_u = the 24-hour rolling average flow in Portage-Bums Waterway measured upstream of Outfall 002 (MGD); this flow shall be calculated on an hourly basis as the average of the current hourly flow measurement and the previous 23 hourly flow measurements
Q_2 = hourly outfall 002 flow (MGD)
Q_3 = hourly outfall 003 flow (MGD)
Q_4 = hourly outfall 004 flow (MGD)
$Q_t = Q_u + Q_2 + Q_3 + Q_4$
α = 1.017
γ = 1.443
δ = 1.177
ε = 0.762

These coefficients (α, γ, δ, and ε) are the coefficients from the June 28, 2013 letter from the permittee and have been approved by IDEM. The coefficients may be updated based upon additional data collection at Buoy A. Any changes shall be submitted for review and approval by IDEM before use by the permittee.

Alternatively, the permittee may measure the downstream temperature, T_d, at the edge of the mixing zone approximately 300 feet downstream of Outfall 004. Temperature measurements shall be taken at mid-stream and at a depth of approximately one meter below the water's surface. An annotation shall be made on the state monthly monitoring report each day this option is used.

[3] Monitoring and reporting of temperature is to occur on a continuous basis. Temperature measurements shall be recorded continuously in one-hour intervals and the total number of hours above the corresponding maximum limits in Part III.A.2 for the twelve (12) months shall be reported. The twelve (12) months shall include the current month and the previous elven (11) months. The highest single recorded hourly measurement shall be reported on the federal discharge monitoring report as a maximum daily temperature of that month.

[4] This is the difference each day between the maximum upstream and maximum downstream (peak) temperature.

[5] Calculated maximum.

9. The following narrative requirements for temperature shall apply outside the mixing zone:
   a. There shall be no abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions.
   b. The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.

6.4.4 Future Temperature Study Requirements

IDEM is not proposing to add any additional study requirements in this permit renewal; however, in the next permit renewal, IDEM may consider adding a requirement that the permittee reevaluate or reconduct its thermal study during its next permit renewal.

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

6.5.1 Introduction

In accordance with 40 CFR 401.14, the location, design, construction and capacity of cooling water intake structures of any point source for which a standard is established pursuant to section 301 or 306 of the Act shall reflect the best technology available for minimizing adverse environmental impact.

The EPA promulgated a CWA section 316(b) regulation on August 15, 2014, which became effective on October 14, 2014. 79 Fed. Reg. 48300-439 (August 15, 2014). This regulation established application requirements and standards for cooling water intake structures. The regulation is applicable to point sources with a cumulative design intake flow (DIF) greater than 2 MGD where 25% or more of the water withdrawn (using the actual intake flow (AIF)) is used exclusively for cooling purposes. All existing facilities subject to these regulations must submit the information required by 40 CFR 122.21(r)(2)–(r)(8) and facilities with an actual intake flow of greater than 125 MGD must also submit the information required by 40 CFR 122.21(r)(9)-(r)(13). The regulation establishes best technology available standards to reduce impingement and entrainment of aquatic organisms at existing power generation and manufacturing facilities.

Impingement is the process by which fish and other aquatic organisms are trapped and often killed or injured when they are pulled against the cooling water intake structures (CWIS's) outer structure or screens as water is withdrawn from a waterbody. Entrainment is the process by which fish larvae and eggs and other aquatic organisms in the intake flow enter and pass through a CWIS and into a cooling water system, including a condenser or heat exchanger, which often results in the injury or the death of the organisms (see definitions at 40 CFR 125.92(h) and (n)).

The USS Midwest facility withdraws water for their process and cooling water needs through an intake structure located approximately 2800 feet offshore in Lake Michigan.

The USS Midwest Plant has a design intake flow (DIF) of 69.12 MGD. The actual intake flow (AIF), as defined under 40 CFR 125.92(a), is the average volume of water withdrawn on an annual basis by the cooling water intake structures over the previous five years. The annual actual intake flows from January 2015 through December 2019 was 27.0 MGD and approximately 30% of the intake water on average is used for cooling purposes.

Therefore, since the facility has a DIF greater than 2 MGD, and because the percentage of flow used at the facility exclusively for cooling is greater than 25%, the facility is required to meet the BTA standards for impingement and entrainment mortality, including any measures to protect Federally listed threatened and endangered species and designated critical habitat established under 40 CFR 125.94(g).

As an existing facility with a DIF greater than 2 MGD and because the AIF is less than or equal to 125 MGD, the permittee was required to submit the application information required by 40 CFR 122.21(r)(2) through (r)(8).

In a letter to IDEM dated October 8, 2018, the permittee, as authorized by 40 CFR 125.95(c), requested permission to reduce the 316(b) application information that was due with the submittal of its 2020 NPDES permit renewal application. IDEM denied this request in an e-mail dated January 29, 2019 and stated, in pertinent part:

> "[t]he application does need to comply with 40 CFR 122.21(r). We believe that a new 316(b) application should be submitted with the renewal application. Some or even much of the new application can likely be taken from the previous application.

Even though IDEM denied the permittee's request for a reduced 316(b) application, the permittee submitted a reduced 316(b) application with its October 1, 2020 permit renewal application. After a review of the 2020 reduced 316(b) application and the 2015 316(b) application which were both included with the permittee's renewal application, IDEM has determined for this facility, in these circumstances, the application submitted by the permittee was satisfactory for IDEM evaluation of the 316(b) requirements.

The regulation also established requirements that build on existing CWA requirements to coordinate with the U.S. Fish and Wildlife Service prior to issuing NPDES permits. Pursuant to 40 CFR 125.98(h), upon receipt of an NPDES permit 316(b) application for an existing facility subject to the rule, the Director (IDEM) must forward a copy of the permit application to the appropriate Field Office of the U.S. Fish and Wildlife Service for a 60-day review. A copy of this permit application was sent to the Bloomington Field Office of the U.S. Fish and Wildlife Service on October 1, 2020. A response was received from Mr. Daniel W. Sparks of the U.S. Fish and Wildlife Service on December 15, 2020 which is discussed in Section 6.5.5, below.

Much of the factual information presented below was taken, sometimes directly, from the permittee's October 2020 NPDES Application, primarily Attachment II which addresses the 316(b) application requirements and includes the August 2015 Cooling Water Intake Structure (CWIS) Report. This NPDES application is available from IDEM. After the permit is issued, the 2020 renewal application, including the 2015 CWIS report will be included in IDEM's virtual filing cabinet with the issued permit.

<u>6.5.2</u> <u>Facility and Cooling Water Intake Structure (CWIS) Description</u>

A. Detailed Description

The Midwest Plant finishes coils received from other U. S. Steel plants into cold rolled, galvanized, chromium or tin-plated strip and sheet products. The Midwest Plant is authorized to withdraw water for their process and non-contact cooling water needs from one intake. The intake is located approximately 2,800 ft. offshore of the Midwest Plant in the Southern Lake Michigan Basin at a depth of roughly 30 to 35 feet.

The Midwest Pump Station intake is designed with a closed intake conduit that withdraws water from the bottom of Lake Michigan via four intake openings (diameter is approximately

8 feet 8 inches each), which are capped with bars spaced approximately 7 inches apart in a grid pattern. An 84-inch diameter pipe transports water from the openings in Lake Michigan to the Midwest lakeside pump station (LSPS).

See Figures 1420 (A730-0001) and 1421 (A730-0019) shown below which are taken from the 2015 CWIS report.

Figure 1420 (A730-0001)

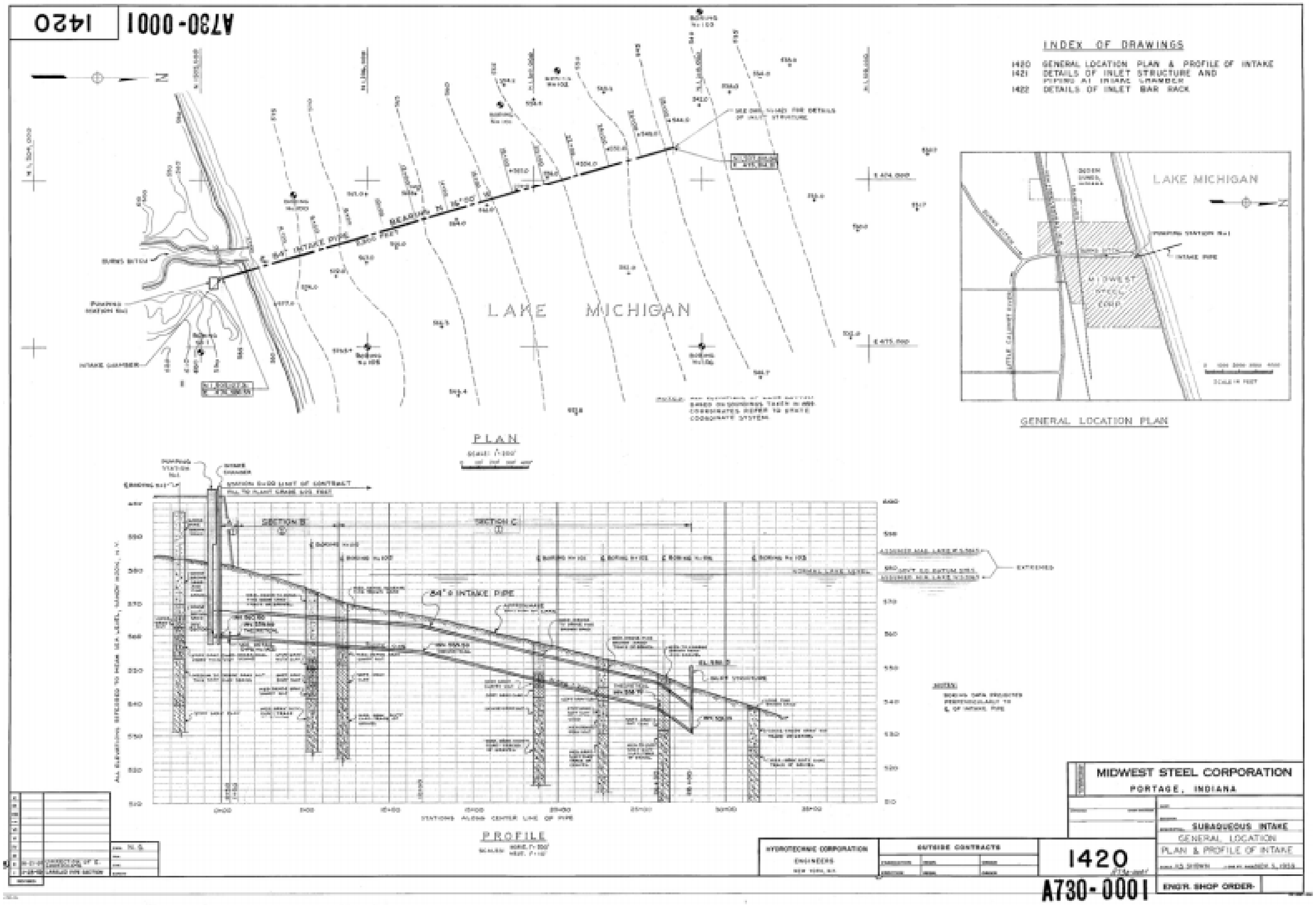
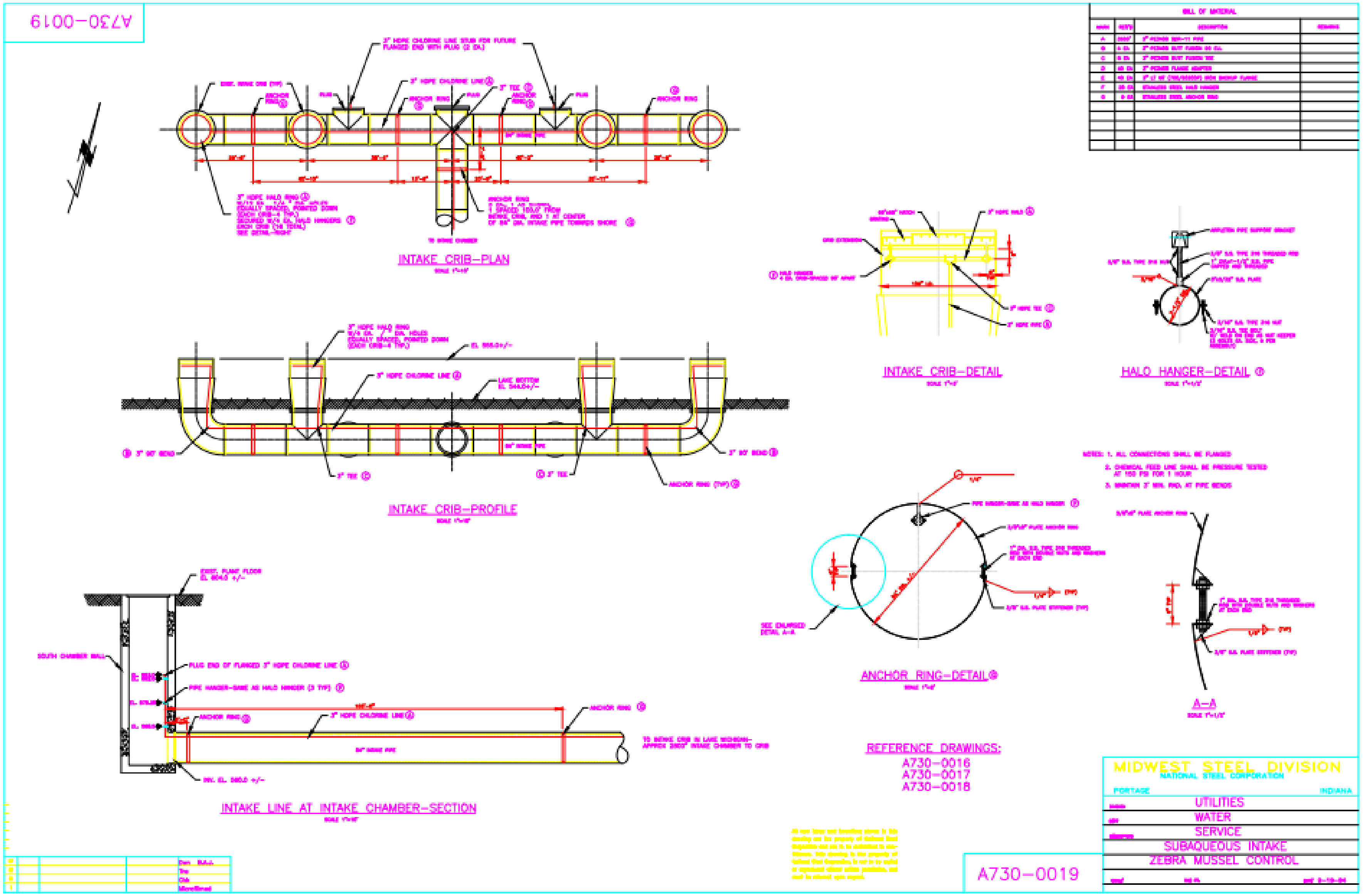


Figure 1421 (A730-0019)



The basic infrastructure of the Midwest LSPS includes two wet wells equipped with one vertical traveling screen (1/4-inch mesh) each; four vertical Fairbanks – Morse Deep Well Turbine pumps with a maximum capacity of approximately 12,000 gallons per minute (gpm) or 17.2 million gallons per day (MGD) each; and a distribution manifold to deliver cooling water to all plant areas.

In 1993, USS eliminated and plugged the return conduit for backwash from the traveling screens to discharge to Lake Michigan. The return conduit (previously Outfall 005) was reportedly removed because debris and impinged fish were typically absent and posed no risk to operations of the Midwest LSPS.

Following closure of Outfall 005, operation of the two traveling screens was performed approximately once every 3-6 months to remove accumulated debris. Debris consisted of a few plastic bags, biofilm, and zebra mussel remains that were removed from the trough in the Midwest LSPS after backwash.

Rotation of the traveling screens was found to be unnecessary and eventually stopped in approximately 2006 as debris and impinged fish were typically absent during backwash. Since 2006, the permittee has not operated the traveling screens at the Midwest LSPS because the permittee determined that debris and impinged fish are minimal and do not pose any operational issues. Other than routine maintenance, there has been no repair or replacement of infrastructure at the Midwest LSPS.

Currently, the traveling screens at the Midwest LSPS are nonfunctional. Pump operation over the past 25 years has demonstrated debris and fish impingement do not occur at a significant amount. Therefore, Midwest does not currently have plans to refurbish, repair, or remove the infrastructure of the traveling screens. In addition, Midwest has considered complete removal of the traveling screens. However, due to the condition of the screens, removal activities pose a significant risk to the integrity of pump operations at the Midwest LSPS.

Current maintenance includes annual inspection by divers for integrity and condition status of the intake system and normal preventative maintenance inspections of mechanical pump and water distribution components.

USS has indicated in phone conversation and correspondence with IDEM that the inoperable traveling screens have deteriorated, and portions of screen are likely no longer present. USS also indicated that zebra mussel or debris buildup on the screens is minimal.

Chlorination of the intakes near the openings in Lake Michigan occurs continuously from approximately mid-May to mid-November for zebra mussel control.

B. Intake Flows, Velocity of Intake Flows Through Submerged Intake Openings, Velocity of Intake Flows Through Traveling Screens and Area of Influence

The USS Midwest Plant has a design intake flow (DIF) of 69.12 MGD. The actual intake flow (AIF), as defined under 40 CFR 125.92(a), is the average volume of water withdrawn on an annual basis by the cooling water intake structures over the previous five years. The annual actual intake flows from January 2015 through December 2019 was 27.0 MGD.

As presented previously, water enters the CWIS at the Lake Michigan offshore intake structure, travels approximately 2800 ft in an 84-inch diameter buried pipe to the onshore wet wells and pumps. The pumps are preceded by the inoperable travelling screens.

The hydrologic zone of influence for the Midwest intake is the area surrounding the intake mouth where intake velocity is in excess of local natural lake circulation or wind induced current velocity, or where intake velocity restricts the ability of fish to swim away. Typically, velocities that are less than 0.5 fps are considered low enough to allow fish to freely swim away. Specific distances of influence from the intake mouth are unknown but expected to be negligible based on the intake volume of water and divers' observations that fish swim freely in and out of the pipe openings. The zone of influence could be variable depending upon seasonal differences and meteorological conditions.

Intake velocities were calculated at the submerged intake openings in Lake Michigan as well as at the inoperable traveling screens in the wet well.

At the design intake flow (DIF) of 69.12 MGD, the intake velocity at the submerged intake openings in Lake Michigan is calculated as 0.53 feet per second (fps). Assuming the traveling screens are in the original configuration and condition, the through screen design intake velocity is calculated to be 0.56 fps at the DIF.

Typical operation is two pumps running continuously and a third pump that starts and stops as needed. This protocol has remained consistent 2007 to present. The CWIS operates continuously on a year-round basis. USS reports a maximum daily flow of 41.3 MGD from 2015 through 2019.

With three of the 17.2 MGD capacity pumps running, the intake flow would be approximately 51.6 MGD. This 51.6 MGD flow is the maximum intake flow that used to calculate the maximum through-screen intake velocity for impingement BTA alternative at 40 CFR 125.94(b)(3). See Section 6.5.6 Best Technology Available (BTA) Determinations below.

At 51.6 MGD, the maximum intake velocity at the submerged intake openings in Lake Michigan is calculated to be approximately 0.39 fps. Assuming the traveling screens are in their original configuration and condition, the maximum actual through screen intake velocity is calculated to be 0.42 fps at the 51.6 MGD maximum intake flow.

At the AIF of 27.0 MGD, the intake velocities at the submerged Lake Michigan openings and traveling screens are calculated as 0.21 fps and 0.22 fps, respectively. This assumes the traveling screens are in their original condition.

At the design intake flow (DIF) of 69.12 MGD, the velocity in the 84-inch diameter pipe that conveys water from the intake structure to the onshore pump stations was calculated by IDEM to be 2.8 fps; at the maximum intake flow of 51.6 MGD this velocity is calculated to be 2.1 fps, and at the AIF of 27.0 MGD, this velocity is calculated to be 1.1 fps.
Based on the above velocity calculations and reported observations by divers, it is likely that fish can freely enter and exit the offshore intake structure. However, once fish enter the 84-inch diameter pipe that conveys water from the intake structure to the pumps, velocities above 1.1 fps and up to 2.1 fps likely entrap and prevent fish from exiting the CWIS.

6.5.3 Source Water Biological Characterization

The intake structure is positioned a distance of approximately 2,800 feet offshore and at a lake depth of approximately 30 feet, and is designed with a closed intake conduit that withdraws water from the bottom of Lake Michigan via four intake openings

The area where the intake structure is located receives minimal commercial boat or ship traffic but is subject to occasional recreational boat activity. Bottom substrates for this portion of the southern shoreline of Lake Michigan consist of sand, the surface of which is unconsolidated and is constantly disrupted by surface wave energy. No critical or significant habitats, such as submerged aquatic vegetation or "sea grass beds," have been identified in the area of intake structure.

Coastal shoreline fish assemblages in the vicinity of the Midwest Plant and the available habitat in the vicinity of the Midwest CWIS intake crib is limited. Moreover, the distance of the intake crib from the shore likely reduces this area of the lake to planktivorous fish.

6.5.4 Impingement and Entrainment – Aquatic Life Studies

A. Impingement

Studies have been conducted to characterize numbers and species of organisms impinged at USS Midwest and other facilities located in the same proximity as the USS Midwest facility.

Those other facilities include U.S. Steel Gary Works and ArcelorMittal Burns Harbor.

The ArcelorMittal Burns Harbor offshore intake withdraws water from the same general area in Lake Michigan as does USS Midwest.

Yellow perch, round goby, alewife, and spottail shiner were the most frequently impinged fish species at the ArcelorMittal Burns Harbor pump stations, which pull from the offshore intake accounting for 39.8%, 31.3%, 18.9%, and 6.7% of the total impinged fish sample respectively (ENVIRON, 2015).

The USS Gary offshore Lakeside intake is located approximately 20 miles west of the US Midwest intake. At the USS Gary Lakeside Pump Station, the three most abundant species encountered were yellow perch, round goby, and alewife respectively. These three species accounted for 95.7% of the total abundance. Total richness observed at Lakeside Pump Station over the four-year monitoring period was 20 species with peak spawning periods resulting in the greatest abundance in April, June, and November.

At the USS Midwest facility, impingement studies were conducted beginning in 2012 and into 2014. At the USS Midwest facility, species (with the exception of round goby) were not able to be identified.

Results of the USS Midwest, ArcelorMittal Burns Harbor and USS Gary impingement studies are summarized in more detail below.

USS Midwest Impingement Study and Fish Observations During Underwater CWIS Inspections

Impingement Study: A typical fish impingement study involves the collection of fish from the fish return system following physical impingement on travelling screens and subsequent wash-down cycles.

This is not possible at the Midwest CWIS because the travelling screens are not operational, and the fish return system has been blocked since 2006. In place of sampling fish impinged on traveling screens, a dual-frequency Identification Sonar (DIDSON) was used to estimate fish abundance and describe fish behaviors in the cooling water intake structures (CWIS) at the Midwest Plant.

Beginning June 2012 through May 2014, DIDSON data were collected at the Midwest CWIS at multiple locations, depths, and aiming orientations during 21 sample dates. Results demonstrated that DIDSON was effective for detecting and imaging fish within the intake structures. Fish were observed to be present in low numbers in 18 sampling events, and not present during three sampling events (June and September in 2012 and March in 2013). Only small fish (< 25 cm) were observed. Estimated abundance per event of small fish ranged from zero to 53 fish with peak abundance during the November 6, 2012 and November 12, 2013 sample dates.

Temporal expansion of per event estimates to obtain annual estimates indicated the mean annual abundance ranged from about 28,000 fish to about 34,000 fish. It is assumed that fish within the CWIS are considered the equivalent of impinged fish.

DIDSON sampling at the Midwest CWIS demonstrated its effectiveness for assessing distributions of fish in the primary well and pre-well structures. Few fish were observed with DIDSON, which suggests densities of fish are very low in the CWIS. DIDSON data also provided estimates of total length of fish. However, specific behaviors related to structural features of the CWIS could not be effectively assessed due to the low fish densities observed. Given that travelling screens are not installed at the Midwest CWIS, DIDSON provides the only means to estimate the relationship between fish abundance and potential impingement mortality.

The method however is not without limitations; species identification is challenging with DIDSON since many of the species potentially present in the wells have similar body morphologies and swimming behaviors. The only species that could be identified was the round goby (*Neogobius melanostomus*), which is a benthic species that typically moves around in hopping motions. These motions were evident in DIDSON imagery. One round goby was observed along the bottom of the pre-well during the November 30, 2012 sample event, two individuals of this species were observed along the bottom of the primary well during the April 18, 2013 sample event, and one was observed along the bottom of the primary well during the May 20, 2014 sample event.

Fish Observation from Underwater CWIS Inspections: Underwater video from inspections conducted by Sea Brex Marine Inc. during dives in June/July 2006, April/May 2007, and October 2008 was reviewed specifically to record the number of fish encountered during the inspection. Dives in 2006 and 2007 included the intake chamber and the 2800-foot intake pipe, but not the wet well. The October 2008 dives included the wet well and intake chamber only. The results indicated the following:

> June 14, 2006: Pipeline inspection from intake chamber at pumphouse outwards 2000 ft: 34 total fish consisting of 23 live fish 1-3 in. long and 11 dead fish 1-2 in. long. All but 3 fish were gobies.
>
> June 14, 2006: Intake cribs in Lake Michigan inward 1000 ft: 73 total fish consisting of 69 live fish 1-2 in. long. Fish identified included 5 live and 2 dead gobies 1-3 in. long, and one live perch 3 in. long.
>
> July 17 and July 26, 2006: Pumphouse bar rack to intake crib in Lake Michigan: 37 total fish consisting of live fish 1-2 in. long. One fish identified as a goby 1-2 in. long.
>
> April 9, 2007: Pipeline inspection from intake chamber at pumphouse outward 2400 ft: 1 total fish consisting of a dead goby 1-2 in. long.

April 9, 2007: Lake Michigan intake crib inspection: 12 total fish consisting of 11 live fish 1-3 in. long and 1 dead fish 1-2 in. long. Fish identified included 6 live gobies 1-3 in. long and 1 dead goby 1-2 in. long.

May 10-11, 2007: Lake Michigan east and west intake final inspection: 10 total fish consisting of live fish 1-3 in. long. Four fish identified as gobies 1-3 in. long.

October 16, 2008: Intake chamber: 4 total fish consisting of 3 live gobies and 1 dead goby. Wet well: 3 total fish consisting of 2 live gobies and 1 dead goby.

These video count results range from a total of zero to 73 fish depending upon time of inspection and location within the intake system. The video counts of fish demonstrate the variability in fish impingement that can occur over time. It is unknown whether the same fish were encountered more than once, and duplicate counted during the video recording of the inspections presented above. However, the video count in combination with available observational information from U. S. Steel personnel demonstrate that fish within the intake system at Midwest LSPS (at certain locations) can freely swim about. Intake water velocities in the 84-inch diameter conduit that transports water from the Lake Michigan intake to the onshore pump stations, however, likely prevent fish from exiting the intake once inside the pipe.

There are no known documents associated with Midwest or its previous owners prior to 2006 that report fish observations, or provide records of fish impingement, or other reports that indicate operational practices, pump or infrastructure maintenance, or changes in operations were necessary at any time due to fish impingement at Midwest LSPS.

AM Burns Harbor 316(b) Impingement Study

Impingement studies were conducted at the ArcelorMittal Burns Harbor facility (BH) from June 2012 through May 2014. For BH, withdrawal is via two pump stations that withdraw water from Lake Michigan via two intake cribs located approximately 3,600 feet offshore in about 40 feet of water. The DIF for both pump stations is 748.8 MGD.

During the sampling period at the BH pump stations, there were 11 different species impinged (alewife, round goby, yellow perch, smallmouth bass, bluegill, emerald shiner, spottail shiner, gizzard shad, rainbow smelt, burbot, unidentifiable). No species of special concern were impinged at the BH pump stations; however, there was one sport fish species impinged (yellow perch). Yellow perch, round goby, alewife, and spottail shiner were the most frequently impinged fish species at the BH pump stations, accounting for 39.8%, 31.3%, 18.9%, and 6.7% of the total impinged fish sample respectively (ENVIRON, 2015).

USS Gary Impingement Studies

Pursuant to the previous NPDES Permit No. IN0000281 (effective March 1, 2010), U. S. Steel was required to conduct monitoring studies for both impingement and entrainment during the 2nd (2011 - 2012), 3rd (2012 - 2013), 4th (2013 - 2014), and 5th (2014 – 2015) years of the Permit.

Impingement monitoring was required at No. 1 Pump Station, No. 2 Pump Station, and Lakeside Pump Station, while entrainment monitoring was only required at No. 1 Pump Station and Lakeside Pump Station (see entrainment section below).

Studies were abbreviated in 2015 with the agreement of IDEM due to the promulgation of the final federal 316(b) rule which eliminated the need for the final year of monitoring.

At the Lakeside Pump Station which pulls approximately 64. MGD on average from an offshore intake structure, the three most abundant species encountered were yellow perch, round goby, and alewife respectively. These three species accounted for 95.7% of the total abundance. Total richness observed at Lakeside Pump Station over the four-year monitoring period was 20 species with peak spawning periods resulting in the greatest abundance in April, June, and November. More detail available in charts 6, 7, and 8 of the 40 CFR 122.21 (r)(2) – (r)(2) report submitted with the NPDES application.

Charts 6, 7 and 8 from the 40 CFR 122.21 (r)(2) – (r)(8) report submitted with the NPDES application provide estimated annual impingement totals by year and species for PS No 1, PS No 2 and Lakeside Intakes based on the sampling conducted.

B. Entrainment

Entrainment studies have been conducted at USS Midwest as well as several other nearby facilities. The results of those studies indicate that for the volume of water used by these facilities, there were relatively small numbers of organisms entrained by their offshore intakes. Distance of intakes from shore at some intakes and lack of habitat likely contribute to the smaller number of organisms entrained.

Based on the studies from the USS Midwest, USS Gary as well as other nearby Lake Michigan facility studies, it appears that entrainment impacts from operation of the USS Midwest facility are not significant in terms of numbers or species entrained as well as impacts on the nearby ecosystem.

Results of the USS Midwest, USS Gary Works and ArcelorMittal Indiana Harbor East and Burns Harbor entrainment studies are summarized in more detail below.

U.S. Steel Midwest -Entrainment Study

The USS Midwest Plant operates a cooling water intake structure (CWIS) at the Portage facility which is located approximately 2,800 feet offshore at a depth of roughly 30 feet. Intake flows for this pump station average approximately 27 MGD.

Entrainment samples were collected during 32 sample events over a 24-month period from June 2012 to May 2014. Samples were collected every other week during peak spawning months (March – May and October – November) and once a month during February, June – September.

Of the 32 sample events, 28 did not indicate the presence of any ichthyoplankton. A check on entrainment subsampling effectiveness was accomplished by evaluating the presence/absence of zooplankton and mussel veligers in the entrainment samples. Therefore, is it believed that the subsampling system was operating effectively since nonicthyoplankton organisms (zooplankton and mussels) were present in the majority of samples.

Samples that were positive for the presence of ichthyoplankton were June 25, 2012, June 24, 2012, June 17, 2013, and August 19, 2013. Projections of ichthyoplankton per 24-hours ranged from 58 to 1,121. For Sample Events #1 - #16, the annual projection of ichthyoplankton entrained is 15,667, and for Sample Events #17- #32 the projection is 26,900. These projections are a combination of fish eggs and larvae collected, which includes Actinopterygii (class for ray-finned fishes), Gobidae (family for goby) juveniles, *Neogobius melanostomus* (species and genus for Round Goby). Zooplankton (not identified to species) were present during every sample event except June 25, 2012, while the appearance of mussel veligers was more inconsistent. No threatened or endangered species were encountered; nor were there any species on the Indiana Department of Natural Resources list of species of concern collected during sampling.

The results of entrainment sampling and the subsequent data evaluation demonstrate that entrainment of critical fish eggs, larvae, and other valued ichthyoplankton by the Midwest Plant CWIS and equipment is likely negligible. This is likely due to a variety of factors, including the fact that coastal shoreline fish assemblages in the vicinity of the Midwest Plant and the available habitat in the vicinity of the Midwest CWIS intake crib is limited. Moreover, the distance of the intake crib from the shore likely reduces this area of the lake to planktivorous fish. Consequently, the high number of samples with no entrained ichthyoplankton, and the few positive samples dominated by round goby larvae indicate that the impact due to entrainment would be considered negligible (United States Steel Corporation Midwest, 2015).

ArcelorMittal Burns Harbor – Entrainment Studies

2012 -2014 Study: Concurrently with impingement studies, entrainment characterization studies were performed over a two-year period from 2012 to 2014. The BH pump stations withdraw water from Lake Michigan via two intake cribs located approximately 3,600 feet offshore in about 40 feet of water, with a total DIF of 748.8 MGD.

Entrainment samples were collected during 32 sample events over a 24-month period from June 2012 to May 2014. Samples were collected more frequently during peak spawning months (February – May and October – November).

The results of the 32 entrainment sampling events found no fish larvae and/or eggs in over 80 percent of all sampling events at both pump stations. Subsequently, the total daily entrainment estimates of ichthyoplankton varied radically from 0 to 132,000 larvae and/or eggs per day.

Round goby larvae accounted for the majority of fish larvae entrained. The only other identified larvae were alewife from two sampling events at one of the pump stations. Fish eggs accounted for roughly two thirds of all ichthyoplankton entrained, but because they were only identified to the class or family level, no further assessment was possible. However, given the significant numbers of alewife found in the impingement data, it is assumed that the majority of the eggs are associated with alewife (ENVIRON, 2015).

Given the high percentage of samples with no entrained ichthyoplankton, and with most of the positive samples being dominated by round goby larvae, the impact due to entrainment is considered negligible for AMBH.

2019 -2020 Study: AMBH also conducted entrainment studies in 2019 – 2020 as required by the federal 316(b) rule. AMBH concluded that:

"*positive samples being comprised solely of demersal spawning Centrarchidae or Percidae eggs, the impact due to entrainment is negligible. Estimated ichthyoplankton entrainment of 7,555 larvae and/or eggs per day at PS1 and 5,375 larvae and/or eggs per day at PS2 are significantly less than those rates found at other facilities in the Great Lakes Basin.*"

These more recent studies and conclusions are still under review by IDEM.

ArcelorMittal Indiana Harbor

The IHE has one offshore intake that withdraws water from Lake Michigan via the Main Intake and Pumphouse 2E. The total DIF for the Main Intake is 1152 MGD. During the IHE 2E Pumphouse sampling, entrainment samples were collected monthly or twice monthly over the two-year period per the sampling plan at the 7E and 2E intakes. Sample events spanned periods both with and without chlorination for mussel control. Water volume of entrained samples averaged 122 cubic meters. The results of 32 events found no fish/larvae or eggs in the majority of sampling events. Only one fish, all of the same species, (slimy sculpin) was entrained during the sampling period (Tetra Tech, 2016).

U. S. Steel Gary Works

Pursuant to the NPDES Permit No. IN0000281 (effective March 1, 2010) Part III.C.2(a), U. S. Steel was required to conduct scientifically valid entrainment studies at the Lakeside and #2 Pump Stations in two-year periods following Year 1 of the Permit. Due to logistical constraints, entrainment sampling was conducted at No. 1 Pump Station, rather than No. 2 Pump Station. This change in sampling location was reflected in the study plan submitted to IDEM.

Entrainment characterization studies were conducted in the second half of 2011, 2012, 2013, and 2014 at the U. S. Steel Gary Works site, but were suspended in 2015 following a March 24, 2015 email from the Indiana Department of Environmental Management, stating that sampling could be stopped.

Entrainment sample analysis focused on identification to the lowest practical taxonomic classification and enumeration of fish larvae/juveniles, fish eggs, mussel veligers, and immature mussels. Invertebrate forms of plankton that were noted included bivalve veligers and copepods as either present or absent.

Ichthyoplankton were fairly rare (although invertebrate forms were observed in most samples). A certain degree of seasonality was observed during entrainment sampling. Ichthyoplankton, when encountered, were typically identified as present during the spring and summer months. Entrainment typically occurred in June, July, and August at both No. 1 Pump Station and Lakeside Pump Station.

Raw data, daily entrainment estimates, and annualized totals are shown for each pump station in Tables 2 through 10 in the NPDES Permit Application 40 CFR 122.21 (r)(9) – (r)(12) report.

The annualized entrainment estimate for the facility by species and life stage is shown in Table 11 in the NPDES Permit Application 40 CFR 122.21 (r)(9) – (r)(12) report. Table 12, from the same report, reflects the same information as shown in Table 11, but has been adjusted to remove the identified nuisance species (i.e., Round Goby). Table 10 from the same report provides same data but for Lakeside Intake only.

6.5.5 Protected Species Susceptible to Impingement and Entrainment

The federal regulation requires that facilities identify all federally listed threatened and endangered species and designated critical habitat that are present in the “action area.” The “action area,” as defined by the USFWS and NMFS under Section 7, includes all areas that may be directly or indirectly affected by the operation of a facility's CWIS and not merely the immediate area involved in the action; this is because the USFWS and NMFS consider that the effects of CWIS can extend well beyond the footprint of the CWIS.

There are no known federally listed threatened or endangered (T&E) aquatic species in the vicinity of the intakes that may be susceptible to impingement and entrainment.

However, Lake Sturgeon (*Acipenser fulvescens*) is listed as a state Endangered Species and is identified on IDNR's Wildlife Action Plan. One tagged adult Lake Sturgeon was found during the 2011 316(a) Demonstration conducted by the BP Whiting refinery, although it was not at a location in the vicinity of the Whiting Refinery Intakes. It is possible, however, based on habitat preferences of Lake Sturgeon that they could be found near the BP or USS CWIS Intakes.
In addition, Troutperch (*Percopsis omiscomaycus*) and Slimy Sculpin (*Cottus cognatus*), both being State Species of Concern, have been identified in 316(b) impingement studies in the area.

IDEM received the following comment on the permittee's 316(b) application from the U.S. Fish and Wildlife Service, Bloomington Field Office on December 15, 2020:

> *[T]here are no endangered species / CWIS issues with this permit.*

6.5.6 Best Technology Available (BTA) Determinations

A. Impingement BTA

Under 40 CFR 125.94(c) existing facilities subject to the rule must comply with one of the following seven BTA Standards for Impingement Mortality:

1. Operate a closed-cycle recirculating system as defined at 40 CFR §125.92;
2. Operate a CWIS that has a maximum design through-screen design intake velocity of 0.5 fps;
3. Operate a CWIS that has a maximum actual through-screen intake velocity of 0.5 fps;
4. Operate an offshore velocity cap that is a minimum of 800 feet offshore;
5. Operate a modified traveling screen that the Director (IDEM) determines meets the definition of the rule (at §125.92(s)) and that the Director (IDEM) determines is BTA for impingement reduction;
6. Operate any other combination of technologies, management practices, and operational measures that the Director (IDEM) determines is BTA for impingement reduction; or
7. Achieve the specified impingement mortality performance standard of less than 24 percent.

The permittee has proposed to comply with alternative 3, above. Under this alternative, the permittee must operate a cooling water intake structure that has a maximum through-screen intake velocity of 0.5 feet per second. The owner or operator of the facility must submit information to IDEM that demonstrates that the maximum intake velocity as water passes through the structural components of a screen measured perpendicular to the screen mesh does not exceed 0.5 feet per second. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on best professional judgment using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure. IDEM may authorize the owner or operator of the facility to exceed the 0.5 fps velocity at an intake for brief periods for the purpose of maintaining the cooling water intake system, such as backwashing the screen face. If the intake does not have a screen, the maximum intake velocity perpendicular to the opening of the intake must not exceed 0.5 feet per second during minimum ambient source water surface elevations. In addition, the permittee must monitor the velocity at the screen at a minimum frequency of daily. In lieu of velocity monitoring at the screen face, the permittee may calculate the through-screen velocity using water flow, water depth, and the screen open areas. The permit will specify the permittee's selected compliance method for this alternative (monitor velocity or calculate velocity).

As discussed in previously in Section 6.5.2 Facility and Cooling Water Intake Structure (CWIS) Description, at the maximum daily operating flow of 51.6 MGD, the intake velocity at the submerged intake openings in Lake Michigan is calculated at 0.39 fps. Assuming the traveling screens are in their original configuration and condition, the maximum actual through screen velocity is calculated to be 0.42 fps (this was calculated using the intake flow of 51.6 MGD).

IDEM concurs with the permittee that it operates a cooling water intake structure that has a maximum actual through screen intake velocity of 0.5 fps and is in compliance with best technology available (BTA) alternative 3 for impingement mortality.

B. Entrainment BTA

For existing facilities, EPA did not identify any single technology or group of technology controls as available and feasible for establishing national performance standards for entrainment. Instead, EPA's regulations require the permitting agency to make a site-specific determination of the best technology available standard for entrainment for each individual facility. See 40 CFR 125.94(d).

EPA's regulations put in place a framework for establishing entrainment requirements on a site-specific basis, including the factors that <u>must</u> be considered in the determination of the appropriate entrainment controls. These factors include the number of organisms entrained, emissions changes, land availability, and remaining useful plant life as well as social benefits and costs of available technologies when such information is of sufficient rigor to make a decision. These required factors are listed under 40 CFR 125.98(f)(2).

EPA's regulations also establish factors that <u>may</u> be considered when establishing site-specific entrainment BTA requirements, including entrainment impacts on the waterbody, thermal discharge impacts, credit for flow reductions associated with unit retirements, impacts on reliability of energy delivery, impacts on water consumption, and availability of alternative sources of water. (40 CFR 125.98(f)(3))

After considering all the factors that must and may be considered by the federal rules, see discussion below, IDEM finds that the existing facility meets BTA for entrainment.

<u>*Must and May Factor Discussion (40 CFR 125.98(f)(2) and (3))*</u>

1. MUST FACTORS (40 CFR 125.98(f)(2))

   i. *Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federally listed, threatened and endangered species, and designated critical habitat (e.g., prey base);*

      The results of entrainment sampling and the subsequent data evaluation at USS Midwest and other nearby industrial facilities demonstrate that entrainment of critical fish eggs, larvae, and other valued ichthyoplankton by the Midwest Plant CWIS and equipment is likely negligible.

This is likely due to a variety of factors, including the fact that coastal shoreline fish assemblages in the vicinity of the Midwest Plant and the available habitat in the vicinity of the Midwest CWIS intake crib is limited. Moreover, the distance of the intake crib from the shore likely reduces this area of the lake to planktivorous fish. Consequently, the high number of samples with no entrained ichthyoplankton, and the few positive samples dominated by round goby larvae indicate that the impact due to entrainment would be considered negligible (United States Steel Corporation Midwest, 2015).

There are no known Federally listed threatened or endangered (T&E) aquatic species near the intakes that may be susceptible to impingement and entrainment. In addition, there is no Federally listed designated critical habitat in the vicinity of the intakes. A state-listed endangered species, lake sturgeon (Acipenser fulvescens) is listed for Lake County, Indiana and is identified on IDNR's Wildlife Action Plan. One tagged adult lake sturgeon was found during the field work in 2011 in support of a 316(a) Demonstration, however it was not at a location near the USS Midwest intakes.

In addition to lower withdrawal rates relative to other users in the area, the USS Midwest intake is located approximately 2800 feet offshore and submerged roughly 30 to 35 feet below the surface. Submerged, offshore intakes withdraw water from less biologically productive areas to reduce impingement and entrainment.

Intakes designed in this manner, specifically in the southern basin of Lake Michigan, exhibit a lower density of organisms as well as modify the species found as a function of the distance from the shoreline and depth in water column. Intakes at an offshore submerged location typically result in a larger proportion of round goby in the fish impacted than near shore intakes.

IDEM agrees with USS Midwest that the entrainment impacts are expected to be negligible given the location of the intake openings in Lake Michigan, a lower withdrawal rate compared to other representative facilities and the low rates of entrainment observed at USS Midwest and in those other facility studies.

ii. *Impact of changes in particulate emissions or other pollutants associated with entrainment technologies;*

The installation of additional cooling towers would be expected to result in:

- Significant increases in particulate emissions (e.g., PM, PM-10, and PM-2.5) from the cooling towers drift;
- Significant increases in carbon dioxide (CO2) and other criteria air pollutants from the increase in energy required to operate the cooling towers;
- A potential increase of mists, fog, and icing from the cooling towers evaporation plumes impacting facility safety;
- Impacts to nearby vegetation/structures from drift corrosion; and
- An increase in the total dissolved solids (TDS) loading to Lake Michigan due to concentrating pollutants in cooling tower cycles and use of water treatment additives to control corrosion.

iii. Land availability insofar as it relates to the feasibility of entrainment technology;

The following is taken from the 2020 NPDES Permit application:

The installation of cooling towers would result in a significant impact to land availability on the USS MW Plant footprint. The land availability is limited given the USS MW Plant proximity to heavily populated industrial and residential areas. The installation of cooling towers within the USS MW Plant's process areas would be complex given the existing limited available space and the need for an additional area that can be used for buffer. The buffer area is required due to safety concerns from the increased potential for mists, fog, and icing (see response to Section 9.2 above).

iv. Remaining useful plant life; and

USS Midwest has operated at this location since the early 1900s and plans to continue operations for the foreseeable future.

v. Quantified and qualitative social benefits and costs of available entrainment technologies when such information on both benefits and costs is of sufficient rigor to make a decision.

USS Midwest has not performed any detailed evaluation of quantified and qualitative social benefits and costs of available entrainment technologies such as cooling towers, wedgewire screen intakes or fine mesh screens.

However, it is anticipated that the installation of these technologies would result in minimal further reductions in entrainment rates, given the predicted low rates of entrainment at USS Midwest and based on a review of entrainment characterization data from representative nearby Lake Michigan intakes (see above).

2. MAY FACTORS (40 CFR 125.98(f)(3))

i. Entrainment impacts on the waterbody;

As discussed above, the entrainment impacts on Lake Michigan from operation of the USS Midwest intakes are expected to be negligible.

ii. Thermal discharge impacts;

Installation of cooling towers would significantly reduce the thermal load discharged by USS Midwest to the Burns Waterway.

The benefit of such a reduction is not clear given the modeling studies showing that the current thermal discharge is in compliance with applicable NPDES permit limits that address both in-stream criteria and a rise in temperature above upstream values. That said, any reduction in thermal load would likely benefit fish passage.

iv. Impacts on the reliability of energy delivery within the immediate area;

The impact of cooling towers or other entrainment control technologies on energy reliability is unknown.

v. *Impacts on water consumption; and*

The installation of cooling towers would possibly result in an increase in net water consumption, due to the increase in consumptive use from cooling tower evaporation

vi. *Availability of process water, gray water, wastewater, reclaimed water, or other waters of appropriate quantity; and, quality for reuse as cooling water*

The USS Midwest facility has limited options for available process, gray, waste, or reclaimed water in appropriate quantity and/or appropriate quality that could be used for reuse of the total volume of cooling water.

vii. *Credit for flow reductions associated with unit retirements;*

USS Midwest states that they continually evaluate water optimization projects but has not retired units that would impact water consumption within the last ten years preceding October 14, 2014.

6.5.7 Best Technology Available (BTA) Impingement and Entrainment Determination Summary

IDEM concurs with the permittee that it operates a CWIS that has a maximum actual through screen intake velocity of 0.5 fps and the existing CWIS is in compliance with best technology available (BTA) alternative 3 for impingement mortality.

IDEM has also determined that the existing facility and CWIS meets BTA for entrainment. Primary in this entrainment BTA determination is the relatively small numbers of organisms likely entrained which is primarily due to the intake location 2800 feet offshore.

6.5.8 Permit Conditions

The permittee shall comply with requirements below:

1. In accordance with 40 CFR 125.98(b)(1), nothing in this permit authorizes take for the purposes of a facility’s compliance with the Endangered Species Act.

2. The permittee must at all times properly operate and maintain the cooling water intake structure and associated intake equipment.

3. The permittee must inform IDEM of any proposed changes to the CWIS or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.

4. At a minimum frequency of daily, the permittee must calculate the through-screen velocity at both the off-shore intake and at the inoperable traveling screens using water flow, water depth, and the screen/intake open areas. These velocities and factors used in the calculation shall be reported on the MMR and DMR as Outfall 600, as follows (it is assumed that the open area of

the off-shore intake will remain 202.75 square feet for the life of this permit. The permittee is required to notify IDEM if it does change):

Parameter	Monthly Average	Daily Maximum	Units	Frequency
Velocity, Off-shore Intake	-------	Report	Feet/second	Daily
Velocity; Traveling Screens	-------	0.5	Feet/second	Daily
Intake Flow	-------	Report	MGD	Daily
Water Depth; Traveling Screens	-------	Report	Feet	Daily
Open Area, Traveling Screens	-------	Report	Square feet	Daily

5. The permittee must either conduct visual inspections or employ remote monitoring devices during the period the cooling water intake structure is in operation as required by 40 CFR 125.96(e). The permittee must conduct such inspections at least weekly to ensure that any technologies operated to comply with 40 CFR 125.94 are maintained and operated to function as designed including those installed to protect Federally listed threatened or endangered species or designated critical habitat. Alternative procedures can be approved if this requirement is not feasible (e.g., an offshore intake, velocity cap, or during periods of inclement weather).

6. In accordance with 40 CFR 125.97(c), by January 31 of each year, the permittee must submit to the Industrial NPDES Permit Section IDEM-OWQ an annual certification statement for the preceding calendar year signed by the responsible corporate officer as defined in 40 CFR 122.22 (see 327 IAC 5-2-22) subject to the following:

   a. If the information contained in the previous year's annual certification is still pertinent, you may simply state as such in a letter to IDEM and the letter, along with any applicable data submission requirements specified in this section shall constitute the annual certification.

   b. If you have substantially modified operation of any unit at your facility that impacts cooling water withdrawals or operation of your cooling water intake structures, you must provide a summary of those changes in the report. In addition, you must submit revisions to the information required at 40 CFR 122.21(r) in your next permit application.

7. Best technology available (BTA) determinations for entrainment mortality and impingement mortality at cooling water intake structures will be made in each permit reissuance in accordance with 40 CFR 125.90-98. The permittee must submit all the information required by the applicable provisions of 40 CFR 122.21(r)(2) through (r)(8) with the next renewal application. Since the permittee has submitted the studies required by 40 CFR 122.21(r), the permittee may, in subsequent renewal applications pursuant to 40 CFR 125.95(c), request to reduce the information required if conditions at the facility and in the waterbody remain substantially unchanged since the previous application so long as the relevant previously submitted information remains representative of the current source water, intake structure, cooling water system, and operating conditions. Any habitat designated as critical or species listed as threatened or endangered after issuance of the current permit whose range of habitat or designated critical habitat includes waters where a facility intake is located constitutes potential for a substantial change that must be addressed by the owner/operator in subsequent permit applications, unless the facility received an exemption pursuant to 16 U.S.C. 1536(o) or a permit pursuant to 16 U.S.C. 1539(a) or there is no reasonable expectation of take. The permittee must submit the request for reduced cooling water intake structure and waterbody

application information at least **two years and six months** prior to the expiration of the NPDES permit. The request must identify each element in this subsection that it determines has not substantially changed since the previous permit application and the basis for the determination. IDEM has the discretion to accept or reject any part of the request.

8. The permittee shall submit and maintain all the information required by the applicable provisions of 40 CFR 125.97.

9. All required reports must be submitted to the IDEM, Office of Water Quality, NPDES Permits Branch, Industrial NPDES Permit Section at OWQWWPER@idem.in.gov and the Compliance Branch at wwReports@idem.in.gov.

6.6 Streamlined Mercury Variance (SMV)

Based on a Reasonable Potential Analysis performed on February 12, 2021, it was determined that the Projected Effluent Quality (PEQ) was greater than the Projected Effluent Limitations (PEL) for mercury discharged from Outfall(s) 004. Therefore, water quality based effluent limitations were required and included in the permit. In anticipation of not being able to meet the final limitations for mercury, the permittee applied for a Streamlined Mercury Variance (SMV) on February 5, 2021. The SMV application was deemed complete on February 8, 2021. The SMV has been incorporated into this permit renewal and applies to the discharge from Outfall 004.

The SMV establishes a streamlined process for obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit. The goal of the SMV is to reduce the effluent levels of mercury towards, and achieve as soon as practicable, compliance with the mercury WQBELs through implementation of a pollutant minimization program plan (PMPP). The SMV will remain in effect until the permit expires under IC 13-14-8-9. Pursuant to IC 13-14-8-9(e), when the SMV is incorporated into a permit extended under IC 13-15-3-6 (administratively extended), the SMV will remain in effect as long as the NPDES permit requirements affected by the SMV are in effect.

<u>Mercury Interim Discharge Limit</u>

The permit includes an interim discharge limit for mercury of 18 ng/l. Compliance with the interim discharge limit will be achieved when the average of the measured effluent daily values over the rolling twelve-month period is less than the interim limit. Each reporting period, the permittee shall report a daily maximum value. After the first year of the permit term, the permittee will also report the annual average value.

The interim discharge limit was developed in accordance with 327 IAC 5-3.5-7 and with 327 IAC 5-3.5-8. Specifically, the interim discharge limit shall be based upon available, valid, and representative data of the effluent mercury levels collected and analyzed over the most recent two (2) year period from the facility. The interim limit of 18 ng/l represents the highest daily value for mercury from the most recent two (2) years of the permittee’s effluent data. This Office received a complete SMV application on February 5, 2021. Therefore, mercury data two (2) years prior to February 5, 2021 were utilized in determining the mercury interim discharge limit.

The SMV establishes a streamlined process for obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit. The goal of the SMV is to reduce the effluent levels of mercury towards, and achieve as soon as practicable, compliance with the mercury WQBELs through implementation of a pollutant minimization program plan (PMPP). The SMV renewal will remain in effect until the permit expires under IC 13-14-8-9. Pursuant to IC 13-14-8-9(e), when the SMV renewal is incorporated into a permit extended under IC 13-15-3-6 (administratively extended), the renewal will remain in effect until the permit expires.

Pollutant Minimization Program Plan (PMPP)

PMPP requirements are outlined in 327 IAC 5-3.5-9 and are included in Part V of the NPDES permit in accordance with 327 IAC 5-3.5-6. The PMPP focuses on pollution prevention and source control measures to achieve mercury reduction in the effluent. The PMPP was public noticed prior to submittal to IDEM in accordance with 327 IAC 5-3.5-9(c). No comments were received during the public notice period. The goal of the PMPP is to reduce the effluent levels of mercury towards, and achieve as soon as practicable, compliance with the mercury WQBELs established for the permitted facility.

SMV Annual Reports

The permittee is required to submit annual reports to IDEM by August 1 of each year in which the SMV is in effect. The annual report must describe the SMV applicant's progress toward fulfilling each PMPP requirement, the results of all mercury monitoring within the previous year, and the steps taken to implement the planned activities outlined under the PMPP.

6.7 Spill Response and Reporting Requirement

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

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

6.8 Permit Processing/Public Comment

Pursuant to IC 13-15-5-1, IDEM will publish the draft permit document online at https://www.in.gov/idem/public-notices/. Additional information on public participation can be found in the "Citizens' Guide to IDEM", available at https://www.in.gov/idem/resources/citizens-guide-to-idem/. A 45-day comment period is available to solicit input from interested parties, including the public. A general notice will also be published in the newspaper with the largest general circulation within Porter County.

6.9 Post Public Notice Addendum

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Time Extension for United States Steel Corp. Midwest Plant	Draft NPDES Permit and Hearing [PDF]	05/21/2021 - 06/17/2021	Yes	Permit Number: IN0000337 Project Manager: Elliot, Jennifer IDEM has extended the comment period for this Draft Major NPDES Permit Renewal until 06/17/2021. The Virtual Public Hearing is still scheduled for 05/26/2021.
United States Steel Corporation - Midwest Plant	Draft Permit Public Notice [PDF] Fact Sheet [PDF] PowerPoint Presentation [PDF] Info Sheet [PDF]	04/19/2021 - 06/03/2021	Yes	Permit Number: IN0000337 Project Manager: Elliot, Jennifer

The draft NPDES permit for United States Steel Corporation – Midwest Plant was made available for public comment from April 19, 2021, through June 3, 2021 as part of Public Notice No. 20210419-IN0000337 and was extended from June 3, 2021 to June 17, 2021 as part of Public Notice No. 20210521-IN0000337 on IDEM's website at https://www.in.gov/idem/public-notices/public-notices-all-regions/. During this comment period, a public hearing was held on May 26, 2021. At the public hearing, two (2) individuals provided oral comments; Alexis Piscitelli on behalf of U.S. Steel, and Doug Cannon on behalf of the Ogden Dunes Town Council. Also, during the comment period, additional written comments were received from: U.S. Steel Midwest; Doug Cannon on behalf of the Ogden Dunes Town Council; Paul Labovitz on behalf of the National Park Service; Colin Deverell, National Parks Conservation Association; Anna-Lisa Castle, Alliance for the Great Lakes; Kiana Courtney & Jeff Hammons, Environmental Law & Policy Center; Indra Frank, Hoosier Environmental Council; Gary Brown, Izaak Walton League – Porter County Chapter; Natalie Johnson, Save the Dunes; and Mitch McNeil, Surfrider Foundation – Chicago Chapter. Additionally, a Technical Evaluation Report from Kevin Draganchuk with CEA Engineers was submitted. The comments submitted and this Office's corresponding responses are summarized below. Any changes to the permit and/or Fact Sheet are so noted below.

*** A Revised Consent Decree was filed November 20, 2019, in the United States District Court for the Northern District of Indiana, in case No. 2:18-CV-127 JD. On August 30, 2021, the Court granted the United States of America's motion to enter the revised consent decree. ***

Public Hearing Comments by Alexis Piscitelli, U.S. Steel

Comment 1: I'm Alexis Piscitelli, Environmental Director with U.S. Steel. First, I'd like to thank IDEM for their efforts in renewing this permit in a timely manner and allowing me to make a few comments today. Located along the Burns Waterway, the Midwest Plant employs just under a thousand full-time employees, as well as support other jobs in the region. The Midwest Plant is a steel finishing facility that operates as a part of Gary Works and supplies key customers in the automotive, construction and container industries. We appreciate IDEM incorporated the increased monitoring requirements included in the draft consent decree as part of the permit renewal. While the draft permit might not appear overly onerous, there are a few items of technical concern we hope to be able to resolve as part of this public comment period. We have some concerns with lab capability with regards to level of detection. In some cases, the detection levels in the permit are so low that there's not equipment in the region that's capable of meeting the requirements. Also of concern, sample hold time in the permit can be more restrictive than EPA method, and such short lead times can overburden the lab and potentially lead to invalid results. As part of our technical comments submission, we are suggesting some small language changes to address these issues. Again, I'd like to thank IDEM for their efforts and for hearing my comments today.

Response 1: IDEM appreciates your participation in the Public Hearing. U.S. Steel's written comments, and IDEM's response to those comments, are provided below.

Public Hearing Comments by Doug Cannon, Ogden Dunes Town Council

Comment 2: My name is Doug Cannon. I'm currently the Town Council President of Ogden Dunes. We are about a couple of hundred yards away from you guys, and we have some concerns, and I'm going to read off some of the bullet points of those concerns.

We have a very well developed Environmental Advisory Board. They are very active and very vigilant, and I'm representing them as well. I've been on the Environmental Advisory Board in the past, but I'm not currently on that, but I am speaking as the President of the Town Council. So, as a downstream user from the facility, the town has a vested interest in these proceedings, and has been very carefully reviewing the Draft Permit and Fact Sheet for U.S. Steel Midwest. Indiana American Water, their intake that supplies drinking water to our town through the Ogden Dunes Waterworks, was closed as a preventive measure during the 2017 spill in Burns Waterway. An estimated 350 pounds of total chromium and 300 pounds of hexavalent chromium dumped into Burns Waterway. It was a serious and frightening incident, and our residents will not forget it any time soon. While we are pleased that the recently released agreed order with IDEM puts U.S. Steel Midwest on the road to compliance with IDEM and addresses some of the violations, the town is very dismayed that this permit is in the process of being renewed while the consent decree with the Department of Justice remains unsigned. Nevertheless, we would like to thank the permit writers for making sure IDEM's promises in the consent decree were addressed in the Draft Permit. The town also wants to make sure that the permit clearly addresses spill response measures required by 327 IAC 2-6.1-7, subsection (5), that U.S. Steel Midwest, upon discovery of a reportable spill to the soil or surface waters of the state exercises due diligence and documents all attempts to notify all affected downstream users, not just IDEM or the National Response Center.

We appreciate what appears to have been better coordination with our Fire Chief, Eric Kurtz, over the past two years, and we hope those calls are now part of the culture of compliance. On page 27, item 4, the Draft Permit indicates that contact information must be in locations that are readily accessible and available. It is our belief that potentially affected downstream users like the Town of Ogden Dunes should be listed in the permit, and not just readily accessible and available. If that change cannot be accommodated, then perhaps change the wording to "readily accessible via electronic communication, with hard copy backup located in a designated area." On page 26 of the Fact Sheet, IDEM is requiring increased sampling for total chromium and hexavalent chromium to daily. We thank you for recognizing that these increases were needed. The Fact Sheet provides detail on U.S. Steel's previous violations starting on page 13. This shows a longstanding and persistent pattern of admitted CWA violations, maintenance failures, and environmental neglect at U.S. Steel's Midwest Plant, a pattern that preceded and post-dated it. We hope that a strong Draft Permit will help stop this pattern of neglect of the environment.

That's all we have for tonight, and we look forward to submitting additional comments prior to the written comment deadline, and I do want to point out that, you know, our concern is -- has a large part to do with doing the right thing. But the fact that we're -- if you've ever gone out and looked at the Burns Waterway and you see what comes down it -- and we're not just talking the out -- you know, outtakes, you know, what's coming out of the -- what's coming out of U.S. Steel, but also out of Arcelor in the past, and now Cleveland Cliffs, and septics and everything. The Burns Waterway empties out and often, more often than not, flows directly into the path of our intakes for Indiana Water.

And I understand that Indiana Water has filtration and all of those things, but the fact is there's just an unacceptable amount of stuff that is in the water, and it is brown, it is a brown ocean that just comes right out of Burns Waterway. And so, anything that we can do, anything that you can do, to improve the vigilance of the factory, the employees, the monitoring systems, the levels of acceptable rates of effluents is a real help to us and our health. So, with that, I appreciate you letting me speak, and I hope for the best. Thank you.

Response 2: IDEM appreciates your participation in the Public Hearing. The Town of Ogden Dunes Town Council's written comments, and IDEM's response to those comments, are provided below.

Comment Letter from United States Steel Midwest

Comment 1: Issue: Appropriate statistical techniques for sample results less than the LOQ

Reference: Draft NPDES Permit Part I.A. (Outfall 002) Footnote [3]. Pages 2-3 of 78, (Outfall 003) Footnote [3] page 5-6 of 78, (Outfall 004) Footnote [3] Page 9 of 78.

U. S. Steel Position: Permit language is ambiguous and unclear when referencing 'appropriate statistical techniques.' By definition, data below an LOQ cannot be statistically confirmed or distinguished with precision or accuracy. Therefore, the exception cannot be implemented and must be removed. Requested Change: Footnotes should be restated as follows:

'…When calculating the monthly average effluent level, 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.~~'

Response 1: No changes to the permit were made in response to the above comment. The strikethrough language above was taken directly from 327 IAC 5-2-11.6(h)(3)(D).

Comment 2: Issue: 40 CFR 136 Reference for Test Procedures

Reference: Draft NPDES Permit Part I.C.4 (Test Procedures). Page 22 of 78.

U. S. Steel Position: U. S. Steel recognizes that 327 IAC 5-2-13 specifically references requirements for monitoring including analytical test procedures. These references are contained in 327 IAC 5-2-13(d)(1) which states "Test procedures identified in 40 CFR 136 shall be utilized for pollutants and parameters".
Based on the most recent updates to state rules (specifically 327 IAC 1-1-2), references to the Code of Federal Regulations (CFR) within 327 IAC refer to the July 1, 2016, edition. However, significant updates (e.g., rule updates with effective dates of September 27, 2017, and July 19, 2021, have been approved) to federal regulations have been implemented since the July 1, 2016, edition rendering the references within 327 IAC outdated. This section of the permit should be revised to reference the current version of 40 CFR 136. This approach is utilized in the current U. S. Steel Midwest Permit and other Indiana permits (e.g., see Part.I.C.4 of IN0000108).

U. S. Steel requests that the language in Part I.C.4 be revised as follows (changes in red italics):

"The analytical and sampling methods used shall conform to the current version of 40 CFR 136 ~~incorporated by reference in 327 IAC 5~~. Different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency. When more than one test procedure is approved for the purposes of the NPDES program under 40 CFR 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 CFR 122.21(e)(3) and 122.44(i)(1)(iv)."

Response 2: The current version of 40 CFR 136 has not yet been incorporated into the Indiana Administrative Code; therefore, the current language will remain in the permit.

Comment 3: Issue: Test Method Version Information References: Draft NPDES Permit Part I.A.1. (Outfall 002), Footnote [4]. Page 3 of 78. Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [9]. Page 9 of 78. Draft NPDES Permit Part I.A.4. (Outfalls 104 & 204), Footnote [4]. Page 13 of 78. Draft NPDES Permit Part I.A.5. (Outfall 304), Footnote [4]. Page 16 of 78.

U. S. Steel Position: As indicated in comment #2, significant changes have been made to the 40 CFR 136 list of methods including version (e.g., publication dates and revision numbers) updates to some methods. As such, specific method version information in the listed footnotes either currently conflicts with 40 CFR 136 listings or may conflict with future versions should there be updates to 40 CFR 136 within the permit term. In addition, this would make the methods information consistent throughout the permit (e.g., Part I.A.2 does not include any method version references). This approach has also been utilized in other Indiana NPDES Permits. For example, modifications to IN0000108 (modification effective date January 1, 2021) included removal of the method version information.

Requested Change: U. S. Steel requests that the specific method version information be removed from each of the listed footnotes.
Part 1.A.1 – remove chlorine method publication dates
Part 1.A.3 – remove chlorine method publication dates and silver method revision numbers and publication dates
Part 1.A.4 – remove cyanide method revision numbers and publication dates
Part 1.A.5 – remove cyanide method revision numbers and publication dates

Response 3: The publication and revision dates will remain in the permit since these dates are included in 40 CFR 136, and the footnotes that did not contain this information will be updated to be consistent throughout the permit.

Comment 4: Issue: Case-Specific LOD/LOQ

References:

Draft NPDES Permit Part I.A.1. (Outfall 002), Footnote [4]. Page 3 of 78;
Draft NPDES Permit Part I.A.2. (Outfall 003), Footnote [4]. Page 6 of 78;
Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [9]. Page 9 of 78;
Draft NPDES Permit Part I.A.4. (Outfalls 104 & 204), Footnote [4]. Page 13 of 78; Draft NPDES Permit Part I.A.5. (Outfall 304), Footnote [4]. Page 16 of 78.

U. S. Steel Position: The second part of Footnote [4] for Outfalls 002 and 003 addresses the ability to determine a case-specific LOD or LOQ and cites 327 IAC 5-2-11.6(h)(2)(B) for determination of the LOD and LOQ. However, while this reference does detail determination of the LOQ and indicates that the LOD is equal to the MDL, it does not address determination of the MDL itself. 40 CFR 136 Appendix B sets forth requirements for MDL determination which could then be used in conjunction with the 327 IAC 5 requirements to set the LOD and LOQ.

Additionally, for the footnotes associated with specific LODs and LOQs for Outfall 004 (Footnote [9]), Outfalls 104 & 204 (Footnote [4]), and Outfall 304 (Footnote [4]), there is no inclusion of any language allowing a case-specific LOD or LOQ. The allowance for case-specific LODs/LOQs is appropriate for these monitoring locations as well as for Outfalls 002 and 003.

Revision of footnotes to reference 40 CFR 136 for the MDL procedure is requested (suggested language below). Significant changes have been made to the 40 CFR 136 list of methods including version (e.g., publication dates and revision numbers) updates to some methods. As such, specific method version information in the listed footnotes either currently conflicts with 40 CFR 136 listings or may conflict with future versions should there be updates to 40 CFR 136 within the permit term. In addition, this would make the methods information consistent throughout the permit (e.g., Part I.A.2 does not include any method version references).

Requested Change: U. S. Steel requests revision of the footnote language for case-specific LOD/LOQ be revised as follows (revisions in red) for Outfalls 002 and 003 (both Footnote [4]). Further, the allowance to develop case-specific LODs/LODs should be applied to all outfalls. Addition of the entire below text to the footnotes for Outfall 004 (Footnote [9]), Outfalls 104 & 204 (Footnote [4]), and Outfall 304 (Footnote [4]) is requested.

"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, and EPA if applicable, 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 as ~~determined as established~~ prescribed by 327 IAC 5-2-11.6(h)(2)(B). Other methods may be used if first approved by the Commissioner."

Response 4: IDEM agrees with the above comment and will make the requested changes. However, it is important to note that this provision in the permit is currently referencing the version of 40 CFR 136, Appendix B that is contained in the 2016 version of the code of federal regulations, since that is the version of 40 CFR 136 that is currently incorporated by reference into Indiana's rules.

Comment 5: Issue: O&G values below detection in NCCW

Reference: Draft NPDES Permit Part I.A.1. (Outfalls 002), Footnote [8]. Page 3 of 78; (Outfall 003), Footnote [8]. Page 6 of 78.

U. S. Steel Position: The current permit provides clarifying language that has been omitted from the draft. The existing language provides relevant context on the intent of the requirement and should be retained.

Requested Change: U. S. Steel requests that footnote [8] be changed as follows:

[8] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l). This requirement is considered sufficient to ensure compliance with narrative water quality criteria in 327 IAC 2-1.5-8(b)(1)(C) which prohibits oil or other substances in amounts sufficient to create a visible film or sheen on the receiving water.

Response 5: The requested change to the permit has not been made. The intent of this footnote is to require the permittee to investigate and eliminate oil and grease if it is detected at this outfall. The purpose of the narrative water quality criteria at 327 IAC 2-1.5.8(b)(1)(C) and the corresponding minimum narrative limit contained in Part I.B.1.c. of the permit is to prohibit discharges that result in color, a visible oil sheen, odor, or other conditions in such degree as to create a nuisance in the receiving water. These two sets of requirements are separate and independent. The specific oil and grease requirements imposed at this outfall are not considered to be sufficient to ensure compliance with the narrative water quality criteria and limits. The permittee must comply with both sets of requirements.

Comment 6: Issue: Outfall 004 Mass Limits

Reference: Draft NPDES Permit Part I.A.3. (Outfall 004). Page 8 of 78.

U. S. Steel Position: IDEM indicated several of the Outfall 004 limits have been carried over from the current Permit, as they are more stringent than the preliminary effluent limits (PELs) calculated in the 2021 RPE Evaluation and Waste Load Allocation Determination (henceforth WLA). For most (TRC, Silver, Free Cyanide, Cadmium, and Copper), both the concentration limits and associated mass limits were retained. However, only the concentration limits were retained for Nickel and Lead. For the mass limits, the mass PELs from the 2021 WLA are utilized with the basis being indicated that these were the more stringent of the current limits and PELs from the current WLA.

However, quoting 327 IAC 5-2-11.6(g)(2): "[t]he mass loading rates shall be calculated using effluent flow rates that are the same as those used in establishing the concentration-based WQBELs." Since the Nickel and Lead concentration limits from the previous permit were retained, the Nickel and Lead mass limits (which are based on the same flows used to establish the concentration based WQBELs) from the current Permit should also be retained.

Requested Change: U. S. Steel requests revision of the following mass limits for Outfall 004:

Parameter	Current Draft Permit Mass Limit (lb/d)	Requested Revised Mass Limit (lb/d)
Nickel	31 Monthly Average 54 Daily Max	33.3 Monthly Average 57.1 Daily Max
Lead	5.8 Monthly Average 9.9 Daily Max	6.0 Monthly Average 10.5 Daily Max

Response 6: No changes to the permit were made in response to the above comment. While IDEM followed the provision in 327 IAC 5-2-11.6(g)(2) when calculating mass WQBELs as part of the 2021 WLA, IDEM must also ensure that the final mass and concentration limits included in the permit comply with the antibacksliding provisions in 327 IAC 5-2-10(a)(11). This provision prohibits backsliding of comparable WQBELs except in compliance with Section 303(d)(4) of the CWA. Since the lead and nickel limitations in the current permit are WQBELs, IDEM made a comparison of the current and proposed (based on the 2021 WLA) mass and concentration WQBELs on an independent basis. The proposed concentration WQBELs are less stringent than the current concentration WQBELs, so the current concentration WQBELs were retained. The proposed mass WQBELs are more stringent than the current mass WQBELs, so they were included in the permit.

Comment 7: Issue: Silver Limits and Monitoring Requirements

References: Draft NPDES Permit Part I.A.3. (Outfall 004). Page 8 of 78; Draft NPDES Permit Part I.A.4. (Outfalls 104 & 204). Page 12 of 78; Draft NPDES Permit Part I.A.5 Outfall 304. Page 15 of 78.

U. S. Steel Position: Silver limitations and monitoring requirements are included in the Permit for Outfall 004 because the metal finishing (40 CFR 433) mass TBELs for Outfall 304 are less stringent than the WQBEL (when converted to mass). However, in determining if there is a reasonable potential to exceed WQBELs for Great Lake system dischargers, the source and nature of the discharge should and can be considered. Quoting 327 IAC 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, the commissioner shall incorporate water quality-based effluent limitations (WQBELs) in an NPDES permit that will ensure compliance with the criterion or value. The commissioner shall exercise best professional judgment, taking into account the:

(1) source and nature of the discharge;
(2) existing controls on point and nonpoint sources of pollution;
(3) variability of the pollutant or pollutant parameter in the effluent; and
(4) where appropriate, dilution of the effluent in the receiving water.

In all cases, the commissioner shall use any valid, relevant, representative information pertaining to the discharge of the pollutant." While the metal finishing ELGs address Silver, U. S. Steel does not use Silver or Silver solutions as part of its electroplating operations and there is no known source of Silver to wastewaters. Additionally, review of the Outfall 004 data for the current permit cycle shows that there have been no quantifiable0F 1 detections of Silver. Given these factors and the ability to apply best professional judgement, the Silver limitations and monitoring requirements for Outfall 004 and silver monitoring requirements for Outfalls 104, 204, and 304 are unnecessary.

Requested Change: U. S. Steel requests that Silver monitoring requirements and limitations for Outfall 004 be removed and that Silver monitoring requirements for Outfalls 104, 204, and 304 be removed.

Response 7: Monitoring requirements for Silver at Outfalls 104, 204 and 304 will remain in the permit as they were contained in the previous permit and are potentially a constituent of the discharge. Silver will remain in the permit at Outfall 004 since the facility is authorized to discharge up to the mass based TBELs at the internal outfall. If the mass-based TBELs at the internal outfall 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 327 IAC 2-1.5 therefore, WQBELs are required at the final outfall. However, the facility does have the option to apply for a monitoring waiver pursuant to 40 CFR 122.44(a)(2). Under this permit renewal, the facility is required to utilize an analytical method for Silver with an LOQ less than the monthly average WQBEL. Effluent data collected at these levels could be used as part of a monitoring waiver demonstration.

Comment 8: Issue: Silver limits are below the achievable LOQ

Reference: Draft NPDES Permit Part I.A.3. (Outfall 004). Footnotes [3], [4], and [5]. Page 9 of 78.

U. S. Steel Position: Absent removal of the Silver limits and monitoring requirements requested in Comment #7, revision of select Outfall 004 footnotes to address Silver is necessary. As is discussed in Comment #10, the draft Permit detection limits for Silver are not currently achievable. With the currently achievable detection limits (LOD = 0.05 ug/L and LOQ = 0.20 ug/L), the Silver concentration limits (0.13 ug/L as a daily max and 0.076 ug/L as a monthly average) are below the LOQ. As such, Footnotes [3], [4] and [5] should be revised to include Silver.

Requested Change: U. S. Steel requests that Silver be added to Footnote [3], [4], and [5] and changed as follows. Note that the changes requested in Comment #1 are also included in the suggested language.

[3] The monthly average water quality-based effluent limits (WQBEL) for Total Residual Chlorine and Silver ~~is~~ are less than the limit of quantitation (LOQ) as specified below (see footnote [9]). 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.~~

[4] The daily maximum WQBEL for Total Residual Chlorine and Silver ~~is~~ are greater than or equal to the LOD but less than the LOQ as specified below (see footnote [9]). Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ.

[5] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 8.5 lbs/day for Total Residual Chlorine and less than 0.03 lbs/day for Silver.

Response 8: No changes to the permit were made in response to the above comment. The WQBELs for silver are greater than the LOQ specified in the permit. In addition, the strikethrough language in Footnote 3, above, was taken directly from 327 IAC 5-2-11.6(h)(3)(D).

Comment 9: Issue: Outfall 004 Cyanide Test Methods and Detection Limits

Reference: Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [9]. Page 9 of 78.

U. S. Steel Position: The methods listed in Footnote [9] should also reflect the use of the Weak Acid Dissociable Cyanide method for compliance monitoring of Free Cyanide. This would be consistent with what is allowed in the current Permit.

In addition, the Draft Permit detection limits for both the OIA-1677-09 and Kelada-01 methods are not currently achievable. U. S. Steel's contract lab is currently achieving an LOD and LOQ of 1.69 ug/L and 2.00 ug/L for the OIA1677-09 method and 1.1 ug/L and 4.0 ug/L for the Kelada-01 method. These detection limits are sufficiently sensitive to assess compliance with the water quality-based effluent limits (7.5 ug/L monthly average and 13 ug/L daily max).

Requested Change: U. S. Steel requests that Footnote [9] table be changed as follows for the cyanide method listings (requested changes from other comments are not listed below):

Parameter	Test Method	LOD	LOQ
Cyanide, Free	OIA-1677-09	*1.69* ~~0.5~~µg/l	*2.00* ~~1.6~~µg/l
Cyanide, Free (as WAD)	*4500-CN-I*	*2.5 µg/l*	*5.0 µg/l*
Cyanide, Free	Kelada-01	*1.1* ~~0.5~~µg/l	*4.0* ~~1.6~~µg/l

Response 9: Method 4500-CN^- I is not an approved method under 40 CFR 136, so it was not added to this permit. The free cyanide LODs and LOQs for the Kelada method were not changed. For OIA-1677-09, the LOD was not changed, but the LOQ was changed to 2.0 ug/l consistent with the detection and minimum levels established in the method. Requests to change an LOD or LOQ should include documentation from the lab supporting such a change. The test methods in the tables have been updated to clarify that the test methods should analyze for available cyanide instead of free cyanide.

Comment 10: Issue: Outfall 004 Silver Test Methods and Detection Limits

Reference: Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [9]. Page 9 of 78.

U. S. Steel Position: The Draft Permit listed Method 200.8 Selective Ion Monitoring (SIM) mode detection limits for Silver (0.005 ug/L MDL/LOD and 0.016 ug/L MDL/LOQ) are not feasibly achievable.

Running ICP-MS in SIM mode is not standard protocol for the environmental industry and instrument software may not be configured with this option. Furthermore, scanning mode was used to determine all of the precision and recovery data outlined in EPA 200.8, Rev 5.4. An updated version of EPA 200.8, Revision 5.5, Table 7 states an MDL/LOD for Total Recoverable Silver as 0.03 ug/L based on additional MDL studies conducted by EPA to verify the MDLs outlined in Revision 5.4. The MDL of 0.03 ug/L would result in an expected PQL/LOQ of 0.096 ug/L using SIM mode. The additional studies conducted by EPA indicate that the detection limit for Total Recoverable Silver by SIM listed in 200.8 Rev 5.4 Table 7 was unreasonably low.

Further, it is imperative to note that the MDLs/LODs for both the Rev 5.4 and Rev 5.5 were not developed under the current 40 CFR 136 Appendix B procedure ("MDL procedure") for determining method detection limits. In the current MDL procedure, blank detections must now be accounted for in the calculations. This has generally resulted in increased MDLs/LODs over previous MDLs/LODs developed with the older MDL procedure, especially for trace level methods.

At this time, no laboratory in the US has been identified that currently uses the SIM mode for NPDES reporting nor has a laboratory been able to confirm that the listed detection limits are achievable with SIM mode. To address these concerns, continued use of scanning mode with currently achieved detection limits (0.05 ug/L LOD and 0.20 ug/L LOQ) is requested. These detection limits are lower than those required by the current Permit (0.20 ug/L LOD and 0.64 ug/L LOQ).

Requested Change: U. S. Steel requests that Footnote [9] table listings for Silver methods be revised as follows:

Parameter	Test Method	LOD	LOQ
Silver	*200.8, Scanning Mode*	*0.05 ug/l*	*0.20 ug/l*
~~*Silver*~~	~~*200.8, Rev. 5.4 (1994) Selection Ion Monitoring*~~	~~*0.005 ug/L*~~	~~*0.016 ug/L*~~

Response 10: The test method and associated LOD/LOQ will remain in the permit to be consistent with Indiana's rules at 327 IAC 5-2-11.6(h)(2)(A), which require the most sensitive applicable analytical method approved under 40 CFR 136 to be specified in the permit when a WQBEL is less than the LOQ.

Comment 11: Issue: Outfall 004, 104 and 204 Copper Sampling Frequency

Reference: Draft NPDES Permit Part I.A.4. (Outfalls 104 & 204). Page 12 of 78; Part I.A.5. (Outfall 304). Page 15 of 78.

U. S. Steel Position: In the draft permit Copper sampling frequencies have been increased from the current Permit frequencies (2/month vs. weekly for Outfall 004 and monthly vs. weekly for Outfalls 104 and 204) due to Copper levels in the discharges. As previously communicated to IDEM, it was determined that increased Copper results were related to contamination of samples during lab processing of the samples. The root cause of the contamination was eliminated on February 4, 2021, and data post-February 5, 2021, is considered more representative of current and anticipated future Copper discharges.

Comparison of summary statistics for different datasets, shows how the representative data are much lower since elimination of the contamination source.

Dataset	Location	Daily Max (ug/L)	Average (ug/L)	Max Monthly Average (ug/L)	Number of Results
Apr 2016 - Feb 4, 2021	Outfall 004	77	11.1	21	660
Feb 5, 2021 - May 2021		24	2.5	3.1	107
Apr 2016 - Feb 4, 2021	Outfall 104	42	8.2	19	624
Feb 5, 2021 - May 2021		19	0.9	1.5	108
Apr 2016 - Feb 4, 2021	Outfall 204	170	15.2	77	572
Feb 5, 2021 - May 2021		37	6.9	8.2	107

Further, if the Outfall 004 data from February 5, 2021, through May 31, 2021 are utilized in a reasonable potential to exceed (RPE) analysis, no RPE exists for either Total or Dissolved Copper. RPE summaries are shown below and the supporting datasets included as Attachments 1 and 2. Based on this, the Copper sampling frequency does not need to be changed from the current Permit frequencies (Outfall 004 2/month vs. weekly; Outfalls 104 and 204 monthly vs. weekly).

Outfall 004 Total Copper RPE Summary (2/5/2021 - 5/31/2021 dataset)

Description	Daily Max	Monthly Average
Maximum Value (mg/L)	0.024	0.0031
# of Results	107	4
Coefficient of Variation (CV)	1.2	0.2
Multiplying Factor	1	2.6
Projected Effluent Quality or PEQ (mg/L)	0.024	0.008
Preliminary Effluent Limit or PEL (mg/L)	0.066	0.033
PEQ > PEL?	No	No

Note: PELs from IDEM Feb 2021 Wasteload Allocation Analysis.

Outfall 004 Dissolved Copper RPE Summary (2/5/2021 - 3/31/2021 dataset)

Description	Daily	Monthly Average
Maximum Value (mg/L)	0.003	0.001
# of Results	52	2
Coefficient of Variation (CV)	0.8	0.1
Multiplying Factor	1	3.8
Projected Effluent Quality or PEQ (mg/L)	0.003	0.003
Preliminary Effluent Limit or PEL (mg/L)	0.066	0.033
PEQ > PEL?	No	No

Note: Dissolved PELs developed using same inputs from the IDEM Feb 2021 Wasteload Allocation Analysis.

Requested Change: U. S. Steel requests that the current Copper sampling frequencies (monthly for Outfalls 104 and 204; 2/month for Outfall 004) be maintained.

Response 11: The sampling frequency for copper was increased to 'weekly' due to exceedances of limitations for this parameter in August and October of 2019. These occurred before the lab error that occurred between September 2020 and February 2021. Therefore, the sampling frequency will remain at weekly for Outfalls 004, 104 and 204.

Comment 12: Issue: Outfall 004 Footnote Error

References: Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [12]. Pages 8 & 10 of 78. U. S. Steel Position: Footnote [12] is associated with Outfall 004 Free Cyanide monitoring requirements in Table 1 on page 8 of the Draft Permit. However, the language of Footnote [12] addresses the timing requirements for mercury monitoring.

Requested Change: U. S. Steel requests correction of the typographical error by moving Footnote [12] from the Free Cyanide listing in Table 1 to the Mercury listing.

Response 12: IDEM has made the correction.

Comment 13: Issue: Outfall 104, 204 & 304 Total Toxic Organics Related Requirements

References: Draft NPDES Permit Part I.A.4. (Outfall 104 & 204), Footnote [6]. Page 13 of 78; Draft NPDES Permit Part I.A.5 (Outfall 304), Footnote [6]. Page 16 of 78.

U. S. Steel Position: Clarifying language regarding the use of the Certification Statement for Total Toxic Organics (TTO) is needed. The draft Permit footnotes for Total Toxic Organics (TTO) at Outfalls 104, 204, and 304 include both of the following statements:

"The Certification Statement may not be used until completion of the Toxic Organic Pollutant Management Plan required by Part I.H of this permit."

"However, the certification statement may be used as long as there have been no changes at the facility that would significantly alter the current TOPMP, and the permittee is following the current TOPMP that was developed under the previous permit until the new plan is completed as required by Part I.H of this permit."

These statements appear contradictory as they are currently worded.

Requested Change: U. S. Steel recommends revising these statements to include clarifying (in red) language in the TTO footnotes for Outfalls 104, 204, and 304.

"Normally, the Certification Statement may not be used until completion of the Toxic Organic Pollutant Management Plan required by Part I.H of this permit. However, since the Permittee has an existing TOPMP developed under the previous permit, the certification statement may be used as long as there have been no changes at the facility that would significantly alter the current TOPMP, and the permittee is following the current TOPMP that was developed under the previous permit until the new plan is completed as required by Part I.H of this permit."

Response 13: IDEM agrees with the comment above and will make the requested change.

Comment 14: Issue: Outfall 600 Limitation Table and CWIS Requirements

References: Draft NPDES Permit Part I.A.6. (Outfall 600). Page 18 of 78; Draft NPDES Permit Part IV. Pages 74 – 76 of 78.

U. S. Steel Position: The Velocity should only be required to be measured at the compliance point. Due to the fact that Midwest's traveling screens have been abandoned and have shown significant deterioration to the screen panels, the compliance point should be at the intake crib. With compliance at the intake crib, the water depth and open area values (which are part of traveling screen velocity calculations) are not applicable and do not need to be reported.

Requested Change: U. S. Steel requests that the discharge limitation table for Outfall 600 be changed as indicated below. In addition, U. S. Steel requests revision of the language in Part IV. Cooling Water Intake Structures to also reflect this approach.

DISCHARGE LIMITATIONS [1]

Outfall 600

Parameter	Monthly Average	Daily Maximum	Units	Frequency
Velocity, Off-shore Intake	-------	Report	Feet/second	Daily
~~Velocity; Traveling Screens~~	~~-------~~	~~Report~~	~~Feet/second~~	~~Daily~~
Intake Flow	-------	Report	MGD	Daily
~~Water Depth; Traveling Screens~~	~~-------~~	~~Report~~	~~Feet~~	~~Daily~~
~~Open Area, Traveling Screens~~	~~-------~~	~~Report~~	~~Square feet~~	~~Daily~~

[1] The permittee must calculate the through-screen velocity at ~~both~~ the off-shore intake ~~and at the inoperable traveling screens~~ using water flow~~, water depth,~~ and the ~~screen/~~intake open areas. It is assumed that the open area of the offshore intake will remain 202.75 square feet for the life of this permit. The permittee is required to notify IDEM if it does change.

Response 14: No changes will be made to the permit. EPA regulations require the maximum velocity requirement to be measured at the screens, therefore, this is where the measurement and limit will be imposed.

Comment 15: Issue: Anti-backsliding and Technology Based Effluent Limits

Reference: Fact Sheet Page 20.

U. S. Steel Position: The numeric Technology Based Effluent Limits (TBELs) values from the current Permit are retained for several parameters even though calculated TBELs based on recent production data are higher. Compliance with the anti-backsliding provisions of 40 CFR 122.44(l)(1) and (2) is cited as the rationale for this.

(2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

(i) Exceptions—A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if—

(A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation; (B) …"

As part of the permit writing process production based non-BPJ TBELs are based on anticipated production rates for the next permit term. Often this relies on recent production data or projections. These values can fluctuate from term to term and changes in production qualify for the above cited exception to backsliding.

The below cited language from the Fact Sheet for NPDES Permit AS0000019 (February 2020, as Revised February 2021), issued by the U.S. EPA1F 2 demonstrates that changes in production levels constitute an exception from backsliding prohibitions.

"Compliance with Federal Anti-Backsliding Regulations and American Samoa Antidegradation Policy for Proposed Technology-based Effluent Limitations. ELGs provide the basis for technology-based effluent limits in the permit. Section 402(o) of the CWA prohibits the renewal or reissuance of an existing NPDES permit that contains technology-based effluent limits that are less stringent than those established in the previous permit, except as provided in 40 CFR 122.44(l). This is referred to as "antibacksliding." The permit establishes less stringent mass-based technology-based effluent limitations for total suspended solids and oil and grease based on an estimated increase in the daily production level over the term of the permit (ELGs for seafood processors are production based). 40 CFR 122.44(l)(1) allows for backsliding to technology-based effluent limitations in the permit since circumstances on which the previous permit were based, i.e., a lower production of processed tuna than projected in the permit term, have materially and substantially changed since the time the previous permit was issued and would have constituted cause for a permit modification under 40 CFR 122.62(a)."

Requested Change: U. S. Steel is not requesting increased TBELs over those in the current Permit but requests recognition in the Fact Sheet that anti-backsliding does not prohibit increased for the above-described situation: non-BPJ TBELs calculated in accordance with previously enacted ELGs.

Response 15: Under the antibacksliding discussion in section 5.5 of this Fact Sheet, IDEM does recognize that production changes may constitute cause for permit modification, and, therefore, backsliding under 40 CFR 122.44(l)(1) of limits calculated based on previously enacted ELGs. However, in order to apply this provision, the production changes must be considered substantial. Since increased TBELs were not requested, IDEM did not make a determination on whether the calculated increases are substantial for purposes of antibacksliding. IDEM would add further that any increased permit limits would have to satisfy the antidegradation requirements under 327 IAC 2-1.3 before they could be established in the permit.

Comment 16: Issue: Schedule of Compliance Progress Report References: Draft NPDES Permit Part I.G. Page 50 of 78.

U. S. Steel Position: U. S. Steel will not know the remedy to meet the final limits for Formaldehyde in the first 12 months of the permit.

Requested Change: U. S. Steel requests the following changes:

a. The permittee shall submit a written progress report to the Compliance Data Section of the Office of Water Quality (OWQ) twelve (12) months from the effective date of this permit. ~~The progress report shall include a description of the method(s) selected for meeting the newly imposed limitation for formaldehyde, in addition to any other relevant information~~. The progress report shall also include a specific timeline specifying the steps required for meeting the final limits ~~when each of the steps will be taken~~. The new effluent limits for formaldehyde are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date. The permittee shall notify the Compliance Data Section of OWQ as soon as the newly imposed effluent limits for formaldehyde can be met. Upon receipt of such notification by OWQ, the final limits for formaldehyde will become effective, but no later than sixty (60) months from the effective date of this permit. Monitoring and reporting of the effluent for these parameters is required during the interim period.

Response 16: The above statement will remain in the permit. If U.S. Steel does not know the remedy to meet the final limits within 12 months, this information can be included in the progress report.

Comment letter Doug Cannon, Ogden Dunes Town Council,

Comment 1: We believe that the permit should include a statement that indicates that if the final signed Consent Decree is different from the one used to draft the permit that the permit be immediately modified to reflect any changes.

Response 1: The purpose of the Consent Decree, in part, is to make the permittee take the necessary steps to come into compliance with their NPDES permit. The requirements established in a Consent Decree do not normally trigger the need for permit revisions; except where the Consent Decree specifically requires the permittee to request that IDEM include specific Consent Decree provisions in its NPDES permit, such as the Consent Decree requirement that required the permittee to request that the NPDES permit contain the requirements to develop, implement, and review the Operation and Maintenance Plan. This Consent Decree requirement was included in Part VI of the permit.

If the final Consent Decree requires the permittee to request the inclusion of specific requirements in the permit, the permittee will be required to take the steps required by the Consent Decree.

Comment 2: The town also wants to make sure the permit clearly addresses spill response measures required by 327 IAC 2-6.1-7(5) that require U.S. Steel Midwest, upon discovery of a reportable spill to the soil or surface waters of the state, to exercise due diligence and document all attempts to notify all affected downstream users, not just IDEM or the National Response Center.

Response 2: U.S. Steel is required to abide by the notification requirements in the Spill Rule, 327 IAC 2-6.1-7(5), as well as the notification requirements contained in the general conditions of the permit.

Comment 3: On page 27, item (4), the draft permit indicates that: “Contact information must be in locations that are readily accessible and available.” It is our belief that potentially affected downstream users, like the Town of Ogden Dunes, should be listed in the permit and not just “readily accessible and available.” If that change cannot be accommodated, then perhaps change the wording to “readily accessible via electronic communication with hard copy back up located in a designated area.”

Response 3: U.S. Steel is required to abide by the notification requirements in the Spill Rule, 327 IAC 2-6.1-7(5), as well as the notification requirements contained in the general conditions of the permit.

Comment 4: On page 29 of the draft permit, paragraph 6 a. should be revised to add the underlined sentence below:

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. <u>In addition, the facility must take reasonable steps to minimize or prevent the discharge of pollutants until a solution is found:</u>

Response 4: No changes will be made to the permit. Part II.A.2. Duty to Mitigate, requires the permittee to take all reasonable steps to minimize or correct any adverse impact to the environment resulting from noncompliance with this permit as required by 327 IAC 5-2-8(3).

Comment 5: On page 32 of the draft permit, an Annual Routine Facility Inspection is required to be undertaken while a discharge is occurring. The permit directs U.S. Steel Midwest on how to document the findings and where to maintain them. However, a requirement should also be added to send this documentation to IDEM or to make it available during an IDEM inspection.

Response 5: Facilities are required to submit annual stormwater reports to IDEM. It is also a requirement for facilities to have this information readily available during inspections. See section 5.7 of this Fact Sheet for additional information.

Comment 6: On page 69 of the draft permit, item # 7, Availability of Reports, the permit should indicate that the documents will be available through the IDEM Virtual File Cabinet for public inspection.

Response 6: IDEM OWQ uploads all permit applications, permits, and effluent data to the IDEM Virtual File Cabinet. It is not necessary to make this a permit requirement.

Comment 7: U.S. Steel Midwest has applied for and received a Streamlined Mercury Variance (SMV) described starting on p. 77 of the draft permit. They made this application in anticipation of not being able to meet the final limitations for mercury. On page 61 of the Fact Sheet, IDEM states that the goal of SMVs is to reduce effluent levels of mercury towards, and achieve "as soon as practicable, compliance with the mercury Water Quality Based Effluent Limitations (WQBELs) through implementation of a pollutant minimization program." The words "as soon as practicable" are somewhat troubling. We would prefer to see a compliance schedule.

Response 7: In accordance with 327 IAC 5-3.5-2(a), a SMV shall be available for the duration of the NPDES permit issued to a wastewater discharging facility that has a NPDES permit in effect containing a discharge limitation for mercury that cannot be achieved consistently by the facility. Under 327 IAC 5-3.5-7, a SMV may also be renewed. Because a SMV is allowed, by rule, for the duration of the permit and may be renewed, IDEM cannot include a compliance schedule if the permittee is eligible for an SMV.

Comment 8: Also, the SMV is new to this permit. We are curious if SMVs used at other facilities have actually helped them meet WQBELs for mercury?

Response 8: The goal of the PMPP is to reduce the effluent levels of mercury towards, and achieve as soon as practicable, compliance with the mercury WQBELs established for the permitted facility. SMV's have been found to effectively reduce mercury concentrations in industrial facilities.

Comment 9: The diagrams on pages 8-9 of the Fact Sheet should be provided to IDEM in a better resolution. They are of especially poor quality when enlarged.

Response 9: These diagrams were provided to IDEM in full scale. Inserting them into a word document does not allow for full scale images. The full-scale version of these images are available from IDEM.

Comment 10: Also, on page 27 of the Fact Sheet, IDEM stated that the monitoring frequencies for silver, cadmium, nickel and lead have decreased from 2 X Monthly to 1 X Monthly. How this decision was made is explained on page 17 of the Fact Sheet where it states that "the results of the reasonable potential statistical procedure were used to help establish monitoring frequency." We desire to understand how that procedure works and whether both numeric and narrative criteria were considered in the analysis. This is another monitoring frequency that should not be rolled back, in our opinion.

Response 10: The explanation quoted above was contained in section 5.2 of the draft Fact Sheet and has been removed from this final Fact Sheet. This explanation is inaccurate since the reasonable potential statistical procedure was not conducted for Silver, Cadmium, Nickel or Lead. The effluent limitations were established at final Outfall 004 based on TBELs that apply at an internal outfall being less stringent. The monitoring frequencies for Silver, Cadmium, Nickel and Lead were reduced at Outfall 004 because of a record of compliance. The monitoring frequencies for Silver, Cadmium, Nickel and Lead at Outfall 104, 204 and 304 are monthly in the current permit and have not changed.

Comment 11: On page 33 of the Fact Sheet, the permittee has requested and provided justification for a sixty (60) month compliance schedule. IDEM believes that this is a reasonable amount of time to comply with the new water quality-based effluent limitation. The 60-month schedule of compliance has been included in Part I.G. of the permit. Why does IDEM believe this is a “reasonable amount of time?”

Response 11: U.S. Steel was given the maximum amount of time allowed for a schedule of compliance. Based on information submitted by the permittee, which included a timeline and compliance activities, IDEM believes 60 months is reasonable amount of time for the permittee to comply with the new limits for Formaldehyde. Below is the request from the U.S. Steel – Midwest facility.

> Per recent conversations with IDEM, U. S. Steel recognizes that new water quality-based effluent limitations will be proposed for formaldehyde at Outfall 004 in the renewed NPDES Permit. As such, U.S. Steel is providing the following schedule supporting the minimum time period needed to comply with formaldehyde proposed limits at Outfall 004:

Schedule of Compliance Activity	**Activity Duration (months)**	**Cumulative Duration (months)**
Source Investigation	9	9
Pilot Studies / Final Process Selection	6	15
Engineering Design	12	27
Project Approval and Funding	3	30
Contractor Bidding / Selection	3	33
Equipment Procurement / Deliver	12	45
Construction (best to occur between March and October)	12	57
Commissioning / Training / Startup	3	60
Begin Operations		60

U. S. Steel respectfully requests a 60-month schedule of compliance for final formaldehyde water quality-based effluent limitations at Outfall 004.

Comment 12: One final note: To assist users in finding references to specific items in the permit, we believe it would be helpful to have a Table of Contents for the NPDES permit itself. The Fact Sheet has one, why not the permit? This should become standard for all IDEM permits.

Response 12: A table of contents has been added to the permit document.

Comment letter from Paul Labovitz on behalf of the National Park Service

Comment 1: As a neighbor to the USS Midwest Plant, we especially are concerned when it comes to all environmental permits issued. After the 2017 hexavalent chromium spill and ongoing aftermath as well as series of other NPDES related permit exceedances, the Indiana Dunes National Park believes that USS needs to have the strongest permit limits and requirements possible under the law in order to prevent another catastrophic event that did a significant deal of harm to confidence of our visitors and the communities surrounding the park.

Strong enforcement of the NPDES permit program is essential to the health of our visitors, employees, waters, wildlife, and the natural areas that make up our great National Park. The Congressionally mandated purpose as a National Park is "to preserve for the educational, inspirational, and recreational use of the public certain portions of the Indiana Dunes and other areas of scenic, scientific, and historic interest and recreational value." The Indiana Dunes National Park is home to several globally rare ecosystems including extremely rare interdunal pannes which are present adjacent to the USS Midwest Plant. As with all National Park units, we like to say that we are in the "forever business". For us to help fulfil our mission, we rely on the Indiana Department of Environmental Management as a reliable partner to issue strong NPDES permits and hold USS accountable for maintaining a safe and environmentally sound operation.

Response 1: IDEM believes the proposed permit is the strongest possible permit at this time.

Comment letter from Colin Deverell, National Parks Conservation Association; Anna-Lisa Castle, Alliance for the Great Lakes; Kiana Courtney & Jeff Hammons, Environmental Law & Policy Center; Indra Frank, Hoosier Environmental Council; Gary Brown, Izaak Walton League – Porter County Chapter; Natalie Johnson, Save the Dunes; and Mitch McNeil, Surfrider Foundation – Chicago Chapter

Comment 1: Consent Decree Consistency

We appreciate that IDEM has included in the Draft Permit the elements of the 2019 proposed consent decree related to wastewater process and facility maintenance and operations planning. However, IDEM must incorporate into the Draft Permit a reopening clause requiring the permit's immediate revision following the finalization of the consent decree.

The goal of the NPDES permitting program is to eliminate pollutant discharges through reasonable and effective measures. Likewise, the goal of the 2019 revised consent decree proposed by the government is to ensure USS Midwest compliance with the NPDES program and the Clean Water Act. The decree goes further to define what the government believes is necessary in successor permits to ensure compliance, including revisions to the 2016 NPDES permit under which USS Midwest has been operating. IDEM did not require, and the Midwest facility did not request, modification of the 2016 NPDES permit to incorporate all facets of the proposed consent decree.

This Draft Permit was submitted in October 2020, three and a half years after the April 2017 spill, during which USS Midwest spilled nearly forty times the legal limit of toxic hexavalent chromium into Burns Waterway and Lake Michigan, and two years after the entry of the 2018 proposed consent decree. As a result, the requirements of the current 2016 NPDES permit differ from those of the consent decrees despite the stated objective of both decrees to bring the Midwest facility into compliance with the 2016 NPDES permit.

Failure to modify the 2016 NPDES Permit expeditiously contravenes the goal of the NPDES permitting program and is not protective of the water quality and beneficial uses of the natural resources surrounding the Midwest facility, including Indiana Dunes and Lake Michigan. The absence of a final consent decree should not disincentivize IDEM and USS Midwest from acting expeditiously to take steps beyond good faith implementation of consent decree requirements to reach compliance with the CWA and NPDES program.

The Draft Permit must be modified to include a requirement for immediate modification of the Midwest facility's NPDES Permit to be inclusive of, and consistent with, any future consent decrees, court orders, or enforcement actions entered into by US Steel. If the consent decree is finalized in its current form, IDEM will have already implemented the required, but insufficient, changes to bring USS Midwest into compliance. If the decree is altered, this added reopening clause will ensure that the permit is consistent with the final version.

Response 1: The purpose of the Consent Decree, in part, is to make the permittee take the necessary steps to come into compliance with their NPDES permit. The requirements established in a Consent Decree do not normally trigger the need for permit revisions; except where the Consent Decree specifically requires the permittee to request that IDEM include specific Consent Decree provisions in its NPDES permit, such as the Consent Decree requirement that required the permittee to request that the NPDES permit contain the requirements to develop, implement, and review the Operation and Maintenance Plan. This Consent Decree requirement was included in Part VI of the permit.

If the final CD requires the permittee to request the inclusion of specific requirements in the permit, the permittee will be required to submit a modification application to address those changes.

Comment 2: Public Notification

In October 2017, USS discharged illegal amounts of chromium without notifying the public in a timely manner, leaving park recreators, including kayakers, surfers, and other water users, completely unaware of any risk to their health. IDEM cited USS for giving an “unsatisfactory” notification of its May 2019 oil violation, describing their statement as “not timely,” “not directed to potentially affected downstream users,” and “misleading.” To further limit the impacts of potential violations, USS should be required to directly notify the public promptly of violations, such as by installing signs visible to water recreation areas and by providing digital notification to those who request it.

Response 2: U.S. Steel is required to abide by the notification requirements in the Spill Rule, 327 IAC 2-6.1-7(5), as well as the notification requirements contained in the general conditions of the permit.

Comment 3: Chromium Monitoring

The Draft Permit should be revised to eliminate the reopening clause that would allow for the potential reduction of hexavalent and total chromium sampling frequency. Such a clause must not be considered until US Steel applies for renewal of its NPDES permit in five years and has demonstrated a proven track record of effective operation and maintenance (O&M) of its wastewater treatment facilities. This conclusion must be evidenced by cessation of NPDES permit violations for operations and maintenance inadequacies, total chromium discharge violations, and hexavalent chromium violations. The US Steel Midwest facility has not demonstrated such improvements. The facility exceeded its total chromium limit in October 2017 and hexavalent chromium limits in January 2017, October 2017, and October 2019. US Steel has had continued O&M issues with its treatment facilities and violated the current NPDES Permit five times between May 2019 and December 2019 due to O&M inadequacies in its wastewater treatment facilities. Based on continued compliance issues with hexavalent chromium limits and improper wastewater treatment facility O&M, IDEM should reject the inclusion of this reopening clause.

Response 3: A reopening clause only allows a facility the option to request a reduction in hexavalent and total chromium sampling frequency. The reopening clause does not guarantee that a reduction in monitoring frequency would be granted if it was requested by the permittee. If the permittee did request a reduction in monitoring frequency as allowed by the reopening clause, IDEM would evaluate that request using the data available at the time of the request. If IDEM did propose to change the monitoring frequency, the modification would be subject to public notice with an opportunity for a hearing.

Comment 4: Streamlined Mercury Variance

The Draft Permit must be revised to eliminate the streamlined mercury variance as currently drafted. IDEM should require that the Midwest facility achieves the water quality-based effluent limits for mercury determined by IDEM's Reasonable Potential Analysis in a defined time period. As our attached analysis notes, water quality-based effluent limits (WQBEL) are "intended to protect receiving waters of industrial discharges to allow for their beneficial use and are required for any pollutant determined to have a reasonable potential to exceed the water quality criteria of the receiving water." In this case, the receiving waters are Burns Waterway and nearby Lake Michigan, used by boaters, anglers, and swimmers. IDEM determined that discharges at the Midwest facility present the reasonable potential to exceed water quality criteria and therefore would adversely impact Burns Waterway and disallow its full beneficial use. The approach to determining the Interim Mercury Limit is inconsistent with the overall goal of the NPDES permitting program of eliminating, or at least minimizing, pollutant discharges. At a minimum, IDEM should institute reductions in the Interim Mercury Limit over the term of the Draft NPDES Permit that approach the WQBELs to provide an impetus for US Steel to take the necessary action to reduce mercury discharges from the Midwest facility.

Response 4: In accordance with 327 IAC 5-3.5-2(a), a SMV shall be available for the duration of the NPDES permit issued to a wastewater discharging facility that has a NPDES permit in effect containing a discharge limitation for mercury that cannot be achieved consistently by the facility. The interim limit for mercury determined in accordance with 327 IAC 5-3.5-8 applies for the duration of the SMV. Therefore, IDEM cannot develop an interim limit that changes during the permit term. In addition to the interim limit, when an SMV is issued the permit must include the requirements of a pollutant minimization program plan (PMPP). As part of the pollutant minimization program (PMP), the facility is required to identify mercury sources and minimize the discharge of mercury into the environment.

Comment 5: Whole Effluent Toxicity

The Draft Permit should be revised to include stricter chronic toxicity effluent limit to discharges from Outfall 001. In addition, IDEM should require Whole Effluent Toxicity testing for acute and chronic toxicity while the Midwest facility is under its compliance schedule for toxicity reduction.

Response 5: The whole effluent toxicity (WET) limitations were established based on the procedures in 327 IAC 5-2-11.4(c) for developing wasteload allocations and in 327 IAC 5-2-11.6(d) for developing WQBELs. IDEM has no basis for including stricter limitations for WET than those determined in accordance with rule. As allowed under the current permit, IDEM suspended WET testing for the term of the TRE compliance schedule. IDEM plans to honor the decision to suspend WET testing for the remainder of the compliance schedule under the renewal permit.

Comment 6: Metal Sampling Frequencies

IDEM should not reduce the sampling frequency for the metals determined to require water quality-based effluent limits. Based on the recent, ongoing NPDES permit violations and compliance issues by USS Midwest in achieving copper effluent limits and improper wastewater treatment facility maintenance, a sampling frequency reduction is unjustified. A reduction in sampling frequency relaxes the Midwest facility's permit compliance requirements and potential for identifying effluent limit violations potentially causing adverse impacts to the environment and public. Identification of effluent limit violations, especially for the copper daily maximum concentration effluent limit which has consistently been violated, are an impetus for corrective actions, such as improving facility operations and implementing treatment technologies capable of meeting effluent limits.

Response 6: The monitoring frequency for copper at Outfall 004, 104, and 304 was increased to 1 X Weekly. Sampling frequencies for Silver, Nickel, Cadmium and Lead were reduced at Outfall 004 because of a record of compliance. The monitoring frequencies for Silver, Nickel, Cadmium, and Lead at Outfall 104, 204 and 304 are monthly in the current permit and have not changed.

Comment 7: Fish Impingement

IDEM should make two changes to the Draft Permit to limit impacts to the Lake Michigan fishery and Indiana Dunes wildlife. First, IDEM should require US Steel to verify the intake velocity of the cooling water intake through in-stream velocity monitoring and not rely on calculations based on assumptions that are potentially not representative of actual conditions, consistent with US EPA's best technology available. In addition, IDEM should require US Steel to submit a full 316(b) application inclusive of all information required to confirm that these US EPA requirements are being met and that the potential for adverse impacts to fish and aquatic species from the cooling water intake are adequately reduced. Without these changes, the Draft Permit places Lake Michigan's nearshore fishery at risk.

Response 7: The permit requires compliance with the BTA standard for impingement mortality under 40 CFR 125.94(c)(3), which requires the permittee to operate a cooling water intake structure that has a maximum through screen intake velocity of 0.5 feet per second. This regulation provides that the velocity must be monitored at the screen at a minimum frequency of daily; or, in lieu of velocity monitoring at the screen face, the through screen velocity may be calculated using water flow, water depth, and the screen open areas. The permittee does not have a mechanism to directly monitor the velocity at the screen face; therefore, the permit requires the screen velocity to be calculated using water flow, water depth, and the screen open areas, as authorized under these regulations.

The permit requires the permittee to submit the data that they use in these calculations so the calculations can be verified. As the commentor noted, the permittee submitted a reduced 316(b) application instead of a new, complete, 316(b) application. However, through discussions and information requests to the permittee, IDEM was able to obtain sufficient information and was able to determine that the application submitted by the permittee was satisfactory for IDEM's evaluation of the 316(b) requirements.

Comment 8: Formaldehyde Compliance

IDEM should not permit the Midwest facility to operate under the formaldehyde compliance schedule as currently constituted. In the application for this Draft Permit, US Steel requested a sixty-month compliance schedule for the formaldehyde effluent limits and provided IDEM information to justify its request. IDEM determined that sixty months was a reasonable amount of time to achieve the water quality-based effluent limit but provided no basis in the Draft NPDES Permit Fact Sheet to support its determination. IDEM needs to include the information provided by US Steel for justification for its compliance schedule request and its basis for acceptance in the Draft NPDES Permit Fact Sheet to allow the public to be able to fully understand and evaluate the potential threats to the environment and local residents resulting from formaldehyde discharges from the Midwest facility and implementation of the compliance schedule as currently drafted.

Response 8: U.S. Steel was given the maximum amount of time allowed for a schedule of compliance. Based on information submitted by the permittee, which included a timeline and compliance activities, IDEM believes 60 months is reasonable amount of time for the permittee to comply with the new limits for Formaldehyde. Below is the request from the U.S. Steel – Midwest facility.

Per recent conversations with IDEM, U. S. Steel recognizes that new water quality-based effluent limitations will be proposed for formaldehyde at Outfall 004 in the renewed NPDES Permit. As such, U.S. Steel is providing the following schedule supporting the minimum time period needed to comply with formaldehyde proposed limits at Outfall 004:

Schedule of Compliance Activity	**Activity Duration (months)**	**Cumulative Duration (months)**
Source Investigation	9	9
Pilot Studies / Final Process Selection	6	15
Engineering Design	12	27
Project Approval and Funding	3	30
Contractor Bidding / Selection	3	33
Equipment Procurement / Deliver	12	45
Construction (best to occur between March and October)	12	57
Commissioning / Training / Startup	3	60
Begin Operations		60

U. S. Steel respectfully requests a 60-month schedule of compliance for final formaldehyde water quality-based effluent limitations at Outfall 004.

Technical Evaluation Report from Kevin Draganchuk with CEA Engineers

Comment 1: Based on continued compliance issues with hexavalent chromium limits and improper wastewater treatment facility O&M, IDEM should reject the request for reopening that would allow for the potential reduction of hexavalent and total chromium sampling frequency at outfalls 104, 204, and 304 until US Steel applies for renewal of its NPDES permit in five years and has demonstrated a proven track record of effective operation and maintenance of it wastewater treatment facilities evidenced by cessation of NPDES permit violations for O&M inadequacies, total chromium discharge violations, and hexavalent chromium violations.

Response 1: A reopening clause only allows a facility the option to request a reduction in hexavalent and total chromium sampling frequency. The reopening clause does not guarantee that a reduction in monitoring frequency would be granted if it was requested by the permittee. If the permittee did request a reduction in monitoring frequency as allowed by the reopening clause, IDEM would evaluate that request using the data available at the time of the request. If IDEM did propose to change the monitoring frequency, the modification would be subject to public notice with an opportunity for a hearing.

Comment 2: The Draft Permit needs to be modified to include a requirement for immediate modification of the Midwest Plant's NPDES Permit to be inclusive of and consistent with any future consent decrees, court orders, or enforcement actions entered into by US Steel.

Response 2: The purpose of the Consent Decree, in part, is to make the permittee take the necessary steps to come into compliance with their NPDES permit. The requirements established in a Consent Decree do not normally trigger the need for permit revisions; except where the Consent Decree specifically requires the permittee to request that IDEM include specific Consent Decree provisions in its NPDES permit, such as the Consent Decree requirement that required the permittee to request that the NPDES permit contain the requirements to develop, implement, and review the Operation and Maintenance Plan. This Consent Decree requirement was included in Part VI of the permit.

If the final CD requires the permittee to request the inclusion of specific requirements in the permit, the permittee will be required to submit a modification application to address those changes.

Comment 3: IDEM should not permit the Midwest Plant to operate under the SMV as currently constituted. IDEM should require that the Midwest Plant achieves the WQBELs for mercury determined by IDEM's RPA [Reasonable Potential Analysis] in a defined time in order to reduce the risk of adverse impacts resulting from mercury discharges to the environment and public and to be fully protective of the beneficial uses of PBW [Portage-Burns Waterway]. At a minimum, IDEM should institute reductions in the Interim Mercury Limit over the term of the Draft NPDES Permit that approach the WQBELs to provide an impetus for US Steel to take action necessary to reduce mercury discharges from the Midwest Plant.

Response 3: In accordance with 327 IAC 5-3.5-2(a), a SMV shall be available for the duration of the NPDES permit issued to a wastewater discharging facility that has a NPDES permit in effect containing a discharge limitation for mercury that cannot be achieved consistently by the facility. The interim limit for mercury determined in accordance with 327 IAC 5-3.5-8 applies for the duration of the SMV. Therefore, IDEM cannot develop an interim limit that changes during the permit term. In addition to the interim limit, when an SMV is issued the permit must include the requirements of a pollutant minimization program plan (PMPP). As part of the pollutant minimization program (PMP), the facility is required to identify mercury sources and minimize the discharge of mercury into the environment.

Comment 4: IDEM should apply a toxicity effluent limit of 1.0 TUc to discharges from Outfall 001 to be fully protective of PBW. IDEM should require WET testing for acute and chronic toxicity while the Midwest Plant is under the TRE compliance schedule, which may extend for more than two more years if uncompleted until September 2023, and enforce the WQBELs it determined are necessary to be protective of PBW and its beneficial uses.

Response 4: The whole effluent toxicity (WET) limitations were established based on the procedures in 327 IAC 5-2-11.4(c) for developing wasteload allocations and in 327 IAC 5-2-11.6(d) for developing WQBELs. IDEM has no basis for including stricter limitations for WET than those determined in accordance with rule. As allowed under the current permit, IDEM suspended WET testing for the term of the TRE compliance schedule. IDEM plans to honor the decision to suspend WET testing for the remainder of the compliance schedule under the renewal permit.

Comment 5: IDEM should not reduce the sampling frequency for the metals determined to require WQBELs in order to be protective of the beneficial uses of PBW and confirm compliance with the WQBELs.

Response 5: The monitoring frequency for copper at Outfall 004, 104, and 304 was increased to 1 X Weekly. Sampling frequencies for Silver, Nickel, Cadmium and Lead were reduced at Outfall 004 because of a record of compliance. The monitoring frequencies for Silver, Nickel, Cadmium, and Lead at Outfall 104, 204 and 304 are monthly in the current permit and have not changed.

Comment 6: The CWIS through screen intake velocities were calculated based on a flawed and invalid assumption. The calculation assumes that the traveling screens are in there original configuration and conditions, however, the traveling screens have been identified by US Steel as having suffered from deterioration, including complete loss of portions of the traveling screens. IDEM was aware that the traveling screens are no longer in their original configuration and condition when it approved US Steel's operation of the CWIS and determined that it was in compliance with USEPA's BTA requirements.

Modifying the velocity calculations based on new assumptions based on the existing, deteriorated condition of the traveling screens is also a flawed approach and should not be permitted by IDEM due to the inherent uncertainty assumptions result in.

The deteriorated condition of the traveling screens, including portions that are missing, is likely resulting in an increase in the number of fish that are pulled into the 84-inch pipe relative to operation of an intact and undamaged traveling screen. Once inside, it is likely that fish and aquatic species become entrapped in the 84-inch and are unable to escape the CWIS due to velocities in the 84-inch pipe. According to US Steel, its observations when the traveling screens were last in service in 2006, over approximately 15 years ago, was that debris and fish were “typically” absent during backwash and that in the past 25 years of operation fish impingement “did not occur at a significant amount.”

US Steel does not define what “typical” or “significant” levels of fish impingement are. IDEM does not clarify what is meant by these two relative terms in the Draft NPDES Permit Fact Sheet. US Steel needs to report actual data on fish impingement based on its observations during CWIS operations and IDEM needs to include this data in the Draft NPDES Permit Fact Sheet to allow the public to be able to fully understand and evaluate the potential threats to fish and aquatic species caused by impingement at the CWIS and compliance with the USEPA’s BTA requirements. The deteriorated condition of the traveling screens and entrapping velocities of the 84-inch pipe make actual data collection and reporting even more imperative. Reliance on estimates from sonar-based technologies for fish identification rather than on actual data collection is inadequate due to the inherent limitations of sonar-based technology and the deteriorated traveling screens. If necessary to collect the data required to verify compliance with USEPA BTA and ensure that impingement is effectively minimized, US Steel needs to install a new, traveling screen system at the CWIS.

Response 6: The permit requires compliance with the BTA standard for impingement mortality under 40 CFR 125.94(c)(3), which requires the permittee to operate a cooling water intake structure that has a maximum through screen intake velocity of 0.5 feet per second. This regulation provides that the velocity must be monitored at the screen at a minimum frequency of daily; or, in lieu of velocity monitoring at the screen face, the through screen velocity may be calculated using water flow, water depth, and the screen open areas. The permittee does not have a mechanism to directly monitor the velocity at the screen face; therefore, the permit requires the screen velocity to be calculated using water flow, water depth, and the screen open areas, as authorized under these regulations. The permit requires the permittee to submit the data that they use in these calculations so the calculations can be verified.

Under this impingement mortality BTA, a permittee is not required under EPA’s regulations to conduct fish impingement studies. Further, the holes in the screen would decrease the velocity at the screens; therefore, a velocity calculated assuming the screens are intact is a more conservative approach.

Comment 7: IDEM should require US Steel to submit a full 316(b) application inclusive of all of the information required to confirm that USEPA BTA requirements are being met and that the potential for adverse impacts to fish and aquatic species from the CWIS are adequately reduced.

Response 7: As the commentor noted, the permittee submitted a reduced 316(b) application instead of a new, complete, 316(b) application. However, through discussions and information requests to the permittee, IDEM was able to obtain sufficient information and was able to determine that the application submitted by the permittee was satisfactory for IDEM's evaluation of the 316(b) requirements.

Comment 8: IDEM should not permit the Midwest Plant to operate under the formaldehyde compliance schedule as currently constituted. IDEM should begin instituting interim numeric effluent limits in the compliance schedule over the term of the Draft NPDES Permit that approach the formaldehyde WQBELs to provide an impetus for US Steel to take action necessary to reduce formaldehyde discharges from the Midwest Plant and achieve compliance with the WQBELs expeditiously.

Response 8: U.S. Steel was given the maximum amount of time allowed for a schedule of compliance. Based on information submitted by the permittee, which included a timeline and compliance activities, IDEM believes 60 months is reasonable amount of time for the permittee to comply with the new limits for Formaldehyde. Below is the request from the U.S. Steel – Midwest facility.

Per recent conversations with IDEM, U. S. Steel recognizes that new water quality-based effluent limitations will be proposed for formaldehyde at Outfall 004 in the renewed NPDES Permit. As such, U.S. Steel is providing the following schedule supporting the minimum time period needed to comply with formaldehyde proposed limits at Outfall 004:

Schedule of Compliance Activity	**Activity Duration (months)**	**Cumulative Duration (months)**
Source Investigation	9	9
Pilot Studies / Final Process Selection	6	15
Engineering Design	12	27
Project Approval and Funding	3	30
Contractor Bidding / Selection	3	33
Equipment Procurement / Deliver	12	45
Construction (best to occur between March and October)	12	57
Commissioning / Training / Startup	3	60
Begin Operations		60

U. S. Steel respectfully requests a 60-month schedule of compliance for final formaldehyde water quality-based effluent limitations at Outfall 004.

Attachment A
Waste Load Allocation (WLA) report (WLA002530)

State Form 4336

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

Date: February 12, 2021

To: Jennifer Elliot
Industrial NPDES Permits Section

Thru: Nicole Gardner, Chief
Industrial NPDES Permits Section

John Elliott, Reviewer

From: Jennifer Elliot
Industrial NPDES Permits Section

Subject: Wasteload Allocation Report for U.S. Steel – Midwest Plant in Porter County
(IN0000337, WLA002530)

Water quality-based effluent limitations (WQBELs) were calculated for multiple pollutants and a reasonable potential analysis for free cyanide, formaldehyde, mercury and whole effluent toxicity (WET) was conducted for the renewal of the NPDES permit for U.S. Steel – Midwest Plant. The analysis was done for Outfall 004, which discharges to the Portage-Burns Waterway, a tributary to the Indiana portion of the open waters of Lake Michigan. Therefore, the discharge is covered under the rules for the Great Lakes system. The effluent flow for Outfall 004 used in this analysis was 17 MGD.

The Portage-Burns Waterway is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The East Branch of Little Calumet River and its tributaries downstream to Lake Michigan via Burns Ditch (Portage-Burns Waterway) are designated in 327 IAC 2-1.5-5(a)(3)(B) as salmonid waters and shall be capable of supporting a salmonid fishery. The Indiana portion of the open waters of Lake Michigan is classified as an outstanding state resource water (OSRW) in 327 IAC 2-1.5-19(b)(2).

The 2018 assessment unit for the Portage-Burns Waterway is INC0159_02. This assessment unit is on the 2018 303(d) list for PCBs in fish tissue. A TMDL for *E. coli* for the Portage-Burns Waterway was approved by U.S. EPA January 28, 2005, and is part of the Little Calumet/Burns Ditch TMDL. The TMDL requires load reductions from nonpoint sources, but not from point source discharges. The TMDL does not require permit limits for *E. coli* for Outfall 004. A TMDL for *E. coli* for the Lake Michigan shoreline was approved by U.S. EPA on September 30, 2004, and is part of the Lake Michigan Shoreline TMDL.

The calculation of the monthly average and daily maximum projected effluent quality (PEQ) for individual toxic pollutants is included in Table 1. The results of the reasonable potential statistical procedure are included in Table 2. The results show that WQBELs are not required for free cyanide, but they are required for mercury and formaldehyde.

The WQBELs for mercury and formaldehyde calculated for Outfall 004 are included in Table 3. This table also includes WQBELs for the pollutants regulated by Federal Effluent Limitation Guidelines (ELGs) at internal Outfall 304. The WQBELs for the ELG parameters are being provided for comparison to applicable technology-based effluent limitations. Free cyanide is also included in Table 3, even though reasonable potential was not demonstrated, for comparison to the existing WQBELs.

A reasonable potential analysis for Outfall 004, for WET, was done in accordance with the Federal Great Lakes Guidance in 40 CFR Part 132. U.S. EPA overpromulgated Indiana's reasonable potential procedure for WET in 327 IAC 5-2-11.5(c)(1) and Indiana is now required to apply specific portions of the Federal Great Lakes Guidance when conducting reasonable potential analyses for WET. Indiana's requirements are included under 40 CFR Part 132.6. The results of the reasonable potential analysis for WET show that the discharge from Outfall 004 has a reasonable potential to exceed the numeric interpretation of the narrative criterion for acute and chronic WET. Therefore, WQBELs are required for WET.

Once a determination is made that WQBELs are required for WET, the WQBELs are established in accordance with 327 IAC 5-2-11.6(d). This provision allows a case-by case determination of whether to establish a WQBEL for only acute or chronic WET, or WQBELs for both acute and chronic WET, the number of species required for testing and the species required for testing. The purpose of the WLA report is to provide the numerical limits. The numerical limits for acute and chronic WET are included in Table 3. The documentation of the wasteload allocation analysis is included as an attachment.

Documentation of Wasteload Allocation Analysis
For Discharges to the Great Lakes System

Analysis By: Jennifer Elliot
Date: February 12, 2021
Reviewed By: John Elliott
WLA Number: 002530

Facility Information

- **Name:** U.S. Steel – Midwest Plant
- **NPDES Permit Number:** IN0000337
- **Permit Expiration Date:** March 31, 2021
- **County:** Porter
- **Purpose of Analysis:** Recalculate WQBELs for permit renewal using updated flow and conduct reasonable potential analysis for free cyanide, formaldehyde, mercury and WET.
- **Outfall:** 004
- **Facility Operations:** Operations contributing to Outfall 004 include noncontact cooling water, stormwater and wastewater from internal Outfall 304, which includes process wastewater from internal Outfalls 104 and 204.
- **Applicable Effluent Guidelines:** 40 CFR 420.92 – Acid Pickling (TSS, oil & grease, lead and zinc), 40 CFR 420.102 – Cold Forming (TSS, oil & grease, lead, zinc, naphthalene and tetrachloroethylene), 40 CFR 420.112 and 420.114 – Alkaline Cleaning (TSS and oil & grease), 40 CFR 420.122 and 420.124 – Hot Coating (TSS, oil & grease, lead, zinc and hexavalent chromium) and 40 CFR 433.14 – Metal Finishing (cadmium, total chromium, copper, lead, nickel, silver, zinc, total cyanide and TTO)
- **Current Permitted Flow:** 19 MGD
- **Type of Treatment:** None besides the treatment for internal Outfalls 104 and 204.
- **Effluent Flow for WLA Analysis:** 17 MGD (The highest monthly average flow from August 2018 through July 2020 and occurred during August 2018.)
- **Current Effluent Limits:**

Parameter	Monthly Average		Daily Maximum		Measurement Frequency
	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	
Total Residual Chlorine	0.01	1.3	0.02	3.1	Daily
Silver	0.000076	0.012	0.00013	0.021	2 x Monthly
Free Cyanide	0.0075	1.2	0.013	2.1	2 x Monthly
Cadmium	0.0077	1.2	0.013	2.1	2 x Monthly
Copper	0.030	4.7	0.052	8.2	2 x Monthly
Nickel	0.21	33.3	0.36	57.1	2 x Monthly
Lead	0.038	6.0	0.066	10.5	2 x Monthly
Acute WET (TUa) [1]	--	--	Report	--	Quarterly
Chronic WET (TUc) [2]	Report	--	--	--	Quarterly

[1] An acute toxicity reduction evaluation trigger of 1.0 TUa applies to the discharge.
[2] A chronic toxicity reduction evaluation trigger of 1.9 TUc applies to the discharge.

Pollutants of Concern for WLA Analysis

Pollutants of Concern and Type of WLA Analysis		
Parameter	**Type of Analysis**	**Reason for Inclusion on Pollutants of Concern List**
Fluoride	WQBEL	Limited at internal Outfall 304
Cadmium, Hexavalent Chromium, Total Chromium, Copper, Total Cyanide, Lead, Nickel, Silver, Zinc, Naphthalene and Tetrachloroethylene	WQBEL	Federal effluent limitation guidelines apply at internal Outfall 304
Free Cyanide	WQBEL	Limited in current permit and Federal effluent limitation guideline for total cyanide applies at internal Outfall 304
Mercury	RPE	Monitored in current permit.
Formaldehyde	RPE	Form 2C data showed elevated levels
Whole Effluent Toxicity	RPE	Monitored in current permit

Receiving Stream Information

- **Receiving Stream:** Outfall 004 discharges to the Portage-Burns Waterway, about 0.06 miles upstream of the Indiana portion of the open waters of Lake Michigan (See Attachment 1)
- **Drainage Basin:** Lake Michigan

- **Drinking Water Intakes Downstream:** None on Portage-Burns Waterway. There are several public water system intakes in Lake Michigan, but none will impact this analysis.
- **Designated Stream Use:** Portage-Burns Waterway is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The East Branch of the Little Calumet River and its tributaries downstream to Lake Michigan via Burns Ditch (Portage-Burns Waterway) are designated in 327 IAC 2-1.5-5(a)(3)(B) as salmonid waters and shall be capable of supporting a salmonid fishery. Therefore, Portage-Burns Waterway is designated as a salmonid water. 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; and is designated as an industrial water supply.
- **Stream Classification:** The Indiana portion of the open waters of Lake Michigan is classified in 327 IAC 2-1.5-19(b)(2) as an outstanding state resource water (OSRW).
- **12 Digit HUC:** 040400010509
- **Assessment Unit (2018):** INC0159_02 (Portage-Burns Waterway) and INC0163_G1074 (Lake Michigan Shoreline) and INC0163_G1093 (Lake Michigan Shoreline)
- **303(d) List:** The Portage-Burns Waterway (assessment unit INC0159_02) is on the 2018 303(d) list for PCBs in fish tissue. The Lake Michigan Shoreline is on the 2018 303(d) list for mercury in fish tissue and PCBs in fish tissue.
- **TMDL Status:** A TMDL for *E. coli* for Portage-Burns Waterway was approved by U.S. EPA January 28, 2005, and is part of the Little Calumet/Burns Ditch TMDL. A TMDL for *E. coli* for the Lake Michigan shoreline was approved by U.S. EPA on September 30, 2004, and is part of the Lake Michigan Shoreline TMDL.
- **Q7,10 (upstream of facility):** 100 cfs (65 mgd) (USGS gaging station 04095090 Burns Ditch at Portage is on Portage-Burns Waterway at the bridge upstream of Outfall 002. The drainage area at this gage is 331 mi^2, the Q7,10 is 100 cfs, the Q1,10 is 84 cfs, and the harmonic mean flow is 384 cfs. The drainage area and stream design flows were obtained from the book <u>Low-Flow Characteristics for Selected Streams in Indiana</u> by Kathleen K. Fowler and John T. Wilson, published in 2015 by the USGS.)
- **Q1,10 (upstream of facility):** 84 cfs (54 mgd)
- **Q90,10 (upstream of facility):** 206 cfs (133 mgd) (the determination of this value is documented in the January 20, 2016 WLA report)
- **Harmonic Mean Flow (upstream of facility):** 384 cfs (248 mgd)
- **Nearby Dischargers**: There are several dischargers to tributaries of Portage-Burns Waterway upstream of this facility. The Chesterton WWTP (IN0022578), Praxair (IN0043435) and ArcelorMittal Burns Harbor (IN0000175) discharge to East Branch Little Calumet River. The Valparaiso WWTP (IN0024660) and South Haven WWTP (IN0030651) discharge to Salt Creek and several sanitary WWTPs discharge to tributaries of Salt Creek. The Portage WWTP (IN0024368) discharges to Burns Ditch. Only ArcelorMittal, Valparaiso and Portage currently have monitoring data available for metals. All these dischargers contribute to the background concentrations upstream of U.S. Steel - Midwest. However, only the ArcelorMittal

and Portage discharges were specifically considered in the WLA analysis because of the availability of data and their close proximity to U.S. Steel - Midwest.

Calculation of Preliminary Effluent Limitations

The representative background concentration of a pollutant for use in developing wasteload allocations is determined in accordance with 327 IAC 5-2-11.4(a)(8). According to this provision, best professional judgment is to be used to select the one data set that most accurately reflects or estimates background concentrations when data in more than one of the following data sets exist:

(A) Acceptable available water column data.
(B) Water column concentrations estimated through use of acceptable available caged or resident fish tissue data.
(C) Water column concentrations estimated through use of acceptable available or projected pollutant loading data.

The background concentration is calculated as the geometric mean of the selected data set. In the case of U.S. Steel - Midwest, instream data are available from fixed water quality monitoring station BD 1 Burns Ditch at Portage. This station is located at the U.S. Highway 12 Bridge upstream of Outfall 002. Water quality data from fixed station BD 1 were obtained for the period August 2015 through July 2020. Instream data for all of the pollutants of concern are not available from fixed station BD 1 so data were obtained from nearby waterbodies. The Surveys Section conducted quarterly trace metals sampling in Deep River downstream of the Lake George Dam during the period from 2002 through 2006. The data from the trace metals sampling were used for several pollutants that are not monitored at the fixed station and for cadmium and silver which were reported as non-detect at the fixed station. Water quality data were obtained from the Surveys Section database. The time periods chosen for the different data sets are based on the availability of data and the desire to have data for whole years. Fixed station data were limited to the last five years. Based on 327 IAC 5-2-11.4(b)(1), a mixing zone is not allowed for BCCs, so stream data were not required for mercury.

The background concentration of each pollutant based on instream data was determined by calculating the geometric mean of the instream data for the pollutant (327 IAC 5-2-11.4(a)(8)). In 327 IAC 5-2-11.4(a)(8) a procedure is included for calculating background concentrations when the data set includes values below the limit of detection. The fixed station data are actually reported as less than the limit of quantitation (LOQ). Therefore, a procedure based on best professional judgment was used for the fixed station data. The values below the LOQ were set equal to one-half the LOQ and then the geometric mean of the data set was calculated. The determination of background concentrations based on instream data is included in Attachments 2 through 5.

Pollutant loading data for some pollutants of concern are available for the Portage WWTP and pollutant loading data for most of the pollutants of concern in this WLA analysis are available for ArcelorMittal Burns Harbor. However, considering the multiple sources of flow upstream of U.S. Steel - Midwest and the distance between the dischargers, it was decided that the instream data would more accurately reflect the background concentrations. However, the effluent concentrations available for ArcelorMittal and Portage were compared to the background concentrations calculated using the instream data to determine if the background concentration of any pollutant may potentially be underestimated, and if so, whether the potentially higher background concentration would significantly impact the calculation of WQBELs. After reviewing the data for ArcelorMittal and Portage, the background concentrations calculated using the instream data were considered to be acceptable to calculate WQBELs.

The facility provided one background sample for chromium (VI) with a concentration of 0.0718 ug/l as part of their 2020 permit renewal application. After consideration of the trace metals sampling results for chromium (VI), the background concentration was set equal to 0.072 ug/l based on the application data. The background concentration of free cyanide was set equal to zero after consideration of the sampling results for total cyanide at the fixed station and the trace metals sampling results for free cyanide. There are no known upstream sources of formaldehyde, and for naphthalene and tetrachloroethylene, effluent data for ArcelorMittal Burns Harbor, the only known potential source upstream, have shown nondetectable concentrations. Therefore, the background concentrations of these organic chemicals were set equal to zero.

According to 5-2-11.4(a)(13), the 50th percentile downstream hardness is to be used to determine the criteria for those metals whose criteria are dependent on hardness. There is no downstream fixed station, so hardness data were obtained from fixed station BD 1. The 50th percentile hardness calculated using the last five years of data is 265 mg/l. The data are included in Attachment 6.

In addition to the aquatic life, human health and wildlife criteria that apply to all waters within the Great Lakes system, there are criteria in 327 IAC 2-1.5-8(j) that apply specifically to Lake Michigan. For the pollutants of concern, there is a Lake Michigan criterion for fluoride. The criterion for fluoride is more stringent than the aquatic life criteria that apply to Portage-Burns Waterway. In accordance with 327 IAC 5-2-11.4(a)(3), TMDLs, WLAs calculated in the absence of a TMDL, and preliminary WLAs must ensure attainment of applicable water quality standards including all numeric and narrative water quality criteria set forth in 327 IAC 2-1.5-8 and 327 IAC 2-1.5-16, and Tier I criteria and Tier II values established under 327 IAC 2-1.5-11 through 327 IAC 2-1.5-16. Therefore, to ensure that the concentration of fluoride in Portage-Burns Waterway meets the Lake Michigan criterion for this pollutant at the confluence of Portage-Burns Waterway with Lake Michigan, preliminary effluent limitations (PELs) were calculated using the Lake Michigan criterion and 100% dilution of effluent and receiving stream flow. These PELs were compared to the PELs based on the discharge meeting aquatic life, human health and wildlife criteria in Portage-Burns Waterway and the more stringent PELs were used as the applicable PELs.

The coefficient of variation used to calculate monthly average and daily maximum PELs was set equal to the default value of 0.6. The number of samples per month used to calculate monthly average PELs was based on the expected monitoring frequency. For cadmium, lead, nickel, silver, fluoride, free cyanide, formaldehyde, naphthalene and tetrachloroethylene, the number of samples per month was set equal to 2. For the other pollutants, the number of samples per month was set equal to 4. The spreadsheet used to calculate PELs is included in Attachment 7. The applicable PELs for fluoride are based on the Lake Michigan criterion.

<u>Reasonable Potential Analysis for WET</u>

U.S. EPA disapproved the reasonable potential procedure for whole effluent toxicity at 327 IAC 5-2-11.5(c)(1). In place of 5-2-11.5(c)(1), IDEM is required to apply Paragraphs C.1 and D of Procedure 6 in Appendix F of 40 CFR Part 132. The following analysis is based on Paragraphs C.1 and D of Procedure 6 in Appendix F of 40 CFR Part 132.

Effluent Data

The permit renewal effective April 1, 2016, required the U.S. Steel - Midwest Plant to conduct whole effluent toxicity (WET) testing quarterly using *Ceriodaphnia dubia* and fathead minnow. As allowed under the permit, monitoring for fathead minnow was discontinued after three tests. WET data from May 2017 to September 2020 are included in Attachment 8. The first three tests were conducted to demonstrate successful completion of a toxicity reduction evaluation (TRE). Chronic toxicity was calculated using the NOEC and IC25 values.

Reasonable Potential Analysis for Acute WET

The WET of an effluent is or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above the numeric interpretation of the narrative criterion for acute WET at 2-1.5-8(b)(1)(E)(ii) when effluent specific WET data demonstrates that:

(TUa effluent) x (B) x (effluent flow)/(Qad + effluent flow) > AC

where,

TUa effluent = maximum acute WET result
B = multiplying factor from 5-2-11.5(h)
effluent flow = effluent flow used to calculate WQBELs for individual pollutants
Qad = amount of receiving water available for dilution
AC = numeric interpretation of the narrative criterion for acute WET

For U.S. Steel - Midwest, the following apply:

TUa effluent = 6.2 TUa (*Ceriodaphnia dubia*)
B = 1.6 (based on 18 samples and a CV of 0.9)
effluent flow = 17 mgd
Qad = 0.0 mgd (an alternate mixing zone has not been approved for acute WET)
AC = 1.0 TUa (the applicable numeric interpretation of the narrative criterion for acute WET for the case where an alternate mixing zone for acute WET has not been approved)

(6.2 TUa) x (1.6) x (17 mgd)/(0.0 mgd+17 mgd) = 9.9 TUa

The calculated value is greater than 1.0 TUa, so there is reasonable potential for acute WET.

Reasonable Potential Analysis for Chronic WET
The WET of an effluent is or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above the numeric interpretation of the narrative criterion for chronic WET at 2-1.5-8(b)(2)(A)(iv) when effluent specific WET data demonstrates that:

(TUc effluent) x (B) x (effluent flow)/(Qad + effluent flow) > CC

where,

TUc effluent = maximum chronic WET result
B = multiplying factor from 5-2-11.5(h)
effluent flow = effluent flow used to calculate WQBELs for individual pollutants
Qad = amount of receiving water available for dilution
CC = numeric interpretation of the narrative criterion for chronic WET

For U.S. Steel – Midwest, the following apply:

TUc effluent = >15.2 TUc (*Ceriodaphnia dubia*)
B = 2.0 (based on 18 samples and a CV of 1.5)
effluent flow = 17 mgd
Qad = 16.25 mgd (25% of the Q7,10 (65 mgd))
CC = 1.0 TUc

(>15.2 TUc) x (2.0) x (17 mgd)/(16.25 mgd + 17 mgd) = >15.5 TUc

Since the calculated value is greater than 1.0 TUc, there is reasonable potential for chronic WET.

<u>Reasonable Potential Analysis for Individual Pollutants</u>

Calculation of Projected Effluent Quality
A reasonable potential analysis was conducted for free cyanide which is currently limited at Outfall 004. The current limit was established in the 2011 permit renewal based on a reasonable potential analysis conducted with a limited dataset. A reasonable potential analysis was conducted for which is currently monitored at Outfall 004. A reasonable potential analysis was also conducted for formaldehyde based on data reported on Form 2C of the 2020 permit renewal application. A reasonable potential analysis for hexavalent chromium, total chromium, zinc, fluoride, total cyanide, naphthalene and tetrachloroethylene, which are limited at internal Outfall 304, but not monitored at Outfall 004, was not conducted based on a review of Outfall 004 data provided with the permit renewal application and internal Outfall 304 data for these pollutants.

The effluent data used in the reasonable potential analysis were provided by the facility in electronic format and obtained from monthly monitoring reports. Data for the period April 2016 through October 2020 were used in the analysis for mercury. Data for free cyanide from April 2016 through December 2020 were used. Due to the large number of samples, the data for mercury and free cyanide are not included in this report. The facility provided the following data for formaldehyde which were summarized on the Form 2C for Outfall 004: 2.2 mg/l (5-27-2020), <0.05 mg/l (7-27-2020), 0.102 mg/l (8-17-2020) and 0.123 mg/l (8-31-2020). The facility also provided the following data for formaldehyde on the Form 2C for internal Outfall 204: 4.3 mg/l (5-27-2020), 0.075 mg/l (7-27-2020), 0.413 mg/l (8-17-2020) and 0.545 mg/l (8-31-2020). Samples for formaldehyde collected at internal Outfall 104 on the same days as those for Outfall 004 and internal Outfall 204 in May and July 2020 were reported as non-detect. The effluent data include values reported as less than (<) the LOD. These values were assigned the reported less than value. Monthly averages were calculated for mercury and free cyanide for those months where at least two data points were available.

Comparison of PEQs to PELs

The reasonable potential analysis is included in Attachment 9. The results show that a projected effluent quality (PEQ) does not exceed a PEL for free cyanide, but it does for mercury and formaldehyde. Therefore, based on the reasonable potential statistical procedure, water quality-based effluent limitations (WQBELs) are not required for free cyanide, but they are required for mercury and formaldehyde.

Calculation of Water Quality-based Effluent Limitations

The PELs for mercury and formaldehyde in Attachment 7 are based on water quality criteria or values and may be included in an NPDES permit as WQBELs. For each pollutant receiving technology-based effluent limitations (TBELs) and for which water quality criteria or values exist or can be developed, concentration and corresponding mass-based WQBELs were calculated. For U.S. Steel – Midwest the pollutants receiving TBELs for which WQBELs can be calculated are cadmium, hexavalent chromium, total chromium, copper, lead, nickel, silver, zinc, total cyanide, fluoride, naphthalene and tetrachloroethylene. For these pollutants, the PELs in Attachment 7 are based on water quality criteria or values and may be applied as WQBELs. The mass-based WQBELs for Outfall 004 will be compared to the mass-based TBELs at internal Outfall 304. Since the facility is authorized to discharge up to the mass-based TBELs, if the mass-based TBELs exceed the mass-based WQBELs, 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.

List of Attachments

Attachment 1: Map of Outfall Location
Attachments 2 thru 5: Calculation of Background Concentrations
Attachment 6: Calculation of Water Quality Characteristics
Attachment 7: Calculation of Preliminary Effluent Limitations
Attachment 8: Whole Effluent Toxicity Data
Attachment 9: Reasonable Potential to Exceed Analysis for Individual Pollutants

Attachment B
Technology Based Limits

Technology-based Effluent Limitations - TSS

Operation	40 CFR		Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l)		Effluent Limitations (lbs/day	
				Daily Maximum	Monthly Average	Daily Maximum	Monthly Average
304 Acid Pickling	420.92(b)(2)	I	7,548	0.0818	0.035	617.43	264.18
304 Acid Pickling	420.92(b)(4)	I	*1	5.72 (kg/day)	2.45 (kg/day)	12.58	5.39
304 Cold Forming	420.102(a)(2)	J	16,106	0.00626	0.00313	100.82	50.41
304 Cold Forming	420.102(a)3)	J	5,190	0.0751	0.0376	389.77	195.14
304 Cold Forming	420.102(a)(5)	J	2,862	0.1	0.0501	286.2	143.39
304 Alkaline Cleaning	420.112(a)	K	1,990	0.073	0.0313	145.27	62.29
304 Alkaline Cleaning	420.112(b)	K	2,094	0.102	0.0438	213.59	91.72
304 Alkaline Cleaning	420.114(a)	K	1,446	0.0146	0.00626	21.11	9.05
304 Hot Coating	420.122(a)(1)	L	3,533	0.175	0.0751	618.28	265.33
304 Hot Coating	420.124(a)(1)	L	1,278	0.0438	0.0188	55.98	24.03
304 Hot Coating	420.124(c)(1)	L	*1	5.72 (kg/day)	2.45 (kg/day)	12.58	5.39
304 Metal Finishing	433.13(a)		2.3	60	31	115.61	595
					Total	2589.22	1711.32
					Previous Limits	**2290**	**1147**

Technology-based Effluent Limitations - Oil & Grease

Operation	40 CFR		Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l)		Effluent Limitations (lbs/day	
				Daily Maximum	Monthly Average	Daily Maximum	Monthly Average
304 Acid Pickling	420.92(b)(2)	I	7,548	0.035	0.0117	264.18	88.31
304 Acid Pickling	420.92(b)(4)	I	*1	2.45 (kg/day)	0.819 (kg/day)	5.39	1.8
304 Cold Forming	420.102(a)(2)	J	16,106	0.00261	0.00104	42.04	16.75
304 Cold Forming	420.102(a)3)	J	5,190	0.0313	0.0125	162.45	64.88
304 Cold Forming	420.102(a)(5)	J	2,862	0.0417	0.0167	119.35	47.8
304 Alkaline Cleaning	420.112(a)	K	1,990	0.0313	0.0104	62.29	20.7
304 Alkaline Cleaning	420.112(b)	K	2,094	0.0438	0.0146	91.72	30.57
304 Alkaline Cleaning	420.114(a)	K	1,446	0.00626	0.00209	9.05	3.02
304 Hot Coating	420.122(a)(1)	L	3,533	0.0751	0.025	265.33	88.33
304 Hot Coating	420.124(a)(1)	L	1,278	0.0188	0.00626	24.03	8
304 Hot Coating	420.124(c)(1)	L	* 1	2.45 (kg/day)	0.819 (kg/day)	5.39	1.8
304 Metal Finishing	433.13(a)		**2.3	52	26	998.06	499.03
					Total	2049.28	870.99
					Previous Limits	**765**	

Technology-based Effluent Limitations - Chromium

Operation	40 CFR		Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l) Daily Maximum	Monthly Average	Effluent Limitations (lbs/day Daily Maximum	Monthly Average
304 Acid Pickling	420.92(b)(2)	I	7,548	[redacted]			
304 Cold Forming	420.103(a)(2)	J	16,106				
304 Cold Forming	420.103(a)3)	J	5,190				
304 Cold Forming	420.103(a)(5)	J	2,862				
304 Alkaline Cleaning	420.112(a)	K	1,990				
304 Alkaline Cleaning	420.112(b)	K	2,094				
304 Alkaline Cleaning	420.114(a)	K	1,446				
304 Hot Coating	420.122(a)(1)	L	3,533				
304 Hot Coating	420.124(a)(1)	L	1,278				
304 Metal Finishing	433.14(a)		**2.3	2.77	1.71	53.17	32.82
					Total	53.17	32.82
					Previous Limits	30	10
					WQBEL in Mass	92	46

Technology-based Effluent Limitations - Lead

Operation	40 CFR		Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l) Daily Maximum	Monthly Average	Effluent Limitations (lbs/day Daily Maximum	Monthly Average
304 Acid Pickling	420.93(b)(2)	I	7,548	0.000526	0.000175	3.97	1.32
304 Acid Pickling	420.93(b)(4)	I	* 1	0.0368 (kg/day)	0.0123 (kg/day)	0.081	0.027
304 Cold Forming	420.103(a)(2)	J	16,106	0.0000469	0.0000156	0.76	0.25
304 Cold Forming	420.103(a)3)	J	5,190	0.000563	0.000188	2.92	0.98
304 Cold Forming	420.103(a)(5)	J	2,862	0.000751	0.00025	2.15	0.72
304 Alkaline Cleaning	420.112(a)	K	1,990	[redacted]			
304 Alkaline Cleaning	420.112(b)	K	2,094				
304 Alkaline Cleaning	420.114(a)	K	1,446				
304 Hot Coating	420.123(a)(1)	L	3,533	0.00113	0.000376	3.99	1.33
304 Hot Coating	420.124(a)(1)	L	1,278	0.000282	0.0000939	0.36	0.12
304 Hot Coating	420.124(c)(1)	L	* 1	0.0368 (kg/day)	0.0123 (kg/day)	0.081	0.027
304 Metal Finishing	433.14(a)		**2.3	0.69	0.43	13.24	8.25
					Total	27.55	13.02
					Previous Limits	10.5	6
					WQBEL in Mass	9.9	5.8

Technology-based Effluent Limitations - Zinc

Operation	40 CFR		Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l) Daily Maximum	Monthly Average	Effluent Limitations (lbs/day Daily Maximum	Monthly Average
304 Acid Pickling	420.93(b)(2)	I	7,548	0.000701	0.000234	5.29	1.77
304 Acid Pickling	420.93(b)(4)	I	* 1	0.0491 (kg/day)	0.0164 (kg/day)	0.11	0.036
304 Cold Forming	420.103(a)(2)	J	16,106	0.0000313	0.0000104	0.5	0.17
304 Cold Forming	420.103(a)3)	J	5,190	0.000376	0.000125	1.95	0.65
304 Cold Forming	420.103(a)(5)	J	2,862	0.000501	0.000167	1.43	0.48
304 Alkaline Cleaning	420.112(a)	K	1,990	[redacted]			
304 Alkaline Cleaning	420.112(b)	K	2,094				
304 Alkaline Cleaning	420.114(a)	K	1,446				
304 Hot Coating	420.123(a)(1)	L	3,533	0.0015	0.0005	5.3	1.77
304 Hot Coating	420.124(a)(1)	L	1,278	0.000376	0.0000125	0.48	0.16
304 Hot Coating	420.124(c)(1)	L	* 1	0.0491 (kg/day)	0.0164 (kg/day)	0.11	0.036
304 Metal Finishing	433.14(a)		**2.3	2.61	1.48	50.1	28.41
					Total	65.27	33.48
					Previous Limits	30	10
					WQBEL in Mass	77	38

Technology-based Effluent Limitations - Nickel

Operation	40 CFR		Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l) Daily Maximum	Monthly Average	Effluent Limitations (lbs/day Daily Maximum	Monthly Average
304 Acid Pickling	420.92(b)(2)	I	7,548	[redacted]			
304 Cold Forming	420.103(a)(2)	J	16,106				
304 Cold Forming	420.103(a)3)	J	5,190				
304 Cold Forming	420.103(a)(5)	J	2,862				
304 Alkaline Cleaning	420.112(a)	K	1,990				
304 Alkaline Cleaning	420.112(b)	K	2,094				
304 Alkaline Cleaning	420.114(a)	K	1,446				
304 Hot Coating	420.122(a)(1)	L	3,533				
304 Hot Coating	420.124(a)(1)	L	1,278				
304 Metal Finishing	433.14(a)		**2.162	3.98	2.38	71.81	42.92
					Total	71.81	42.92
					Previous Limits	57.1	33.3
					WQBEL in Mass	54	31

Technology-based Effluent Limitations - Napthalene

Operation	40 CFR		Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product) (40 CFR 433 = mg/l) Daily Maximum	Monthly Average	Effluent Limitations (lbs/day) Daily Maximum
304 Acid Pickling	420.92(b)(2)	I	7,548	[redacted]		
304 Cold Forming	420.103(a)(2)	J	16,106	0.0000104	[redacted]	0.17
304 Cold Forming	420.103(a)3)	J	5,190	0.000125	[redacted]	0.65
304 Cold Forming	420.103(a)(5)	J	2,862	0.000167	[redacted]	0.48
304 Alkaline Cleaning	420.112(a)	K	1,990	[redacted]		
304 Alkaline Cleaning	420.112(b)	K	2,094			
304 Alkaline Cleaning	420.114(a)	K	1,446			
304 Hot Coating	420.122(a)(1)	L	3,533			
304 Hot Coating	420.124(a)(1)	L	1,278			
304 Metal Finishing	433.13(a)		**2.3			
					Total	1.3
					Previous Limits	0.86
					WQBEL in Mass	12

Technology-based Effluent Limitations - Tetrachloroethylene

Operation	40 CFR		Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product) (40 CFR 433 = mg/l) Daily Maximum	Monthly Average	Effluent Limitations (lbs/day Daily Maximum
304 Acid Pickling	420.92(b)(2)	I	7,548	[redacted]		
304 Cold Forming	420.103(a)(2)	J	16,106	0.0000156	[redacted]	0.25
304 Cold Forming	420.103(a)3)	J	5,190	0.000188	[redacted]	0.98
304 Cold Forming	420.103(a)(5)	J	2,862	0.00025	[redacted]	0.72
304 Alkaline Cleaning	420.112(a)	K	1,990	[redacted]		
304 Alkaline Cleaning	420.112(b)	K	2,094			
304 Alkaline Cleaning	420.114(a)	K	1,446			
304 Hot Coating	420.122(a)(1)	L	3,533			
304 Hot Coating	420.124(a)(1)	L	1,278			
304 Metal Finishing	433.13(a)		**2.3			
					Total	1.95
					Previous Limits	1.29
					WQBEL in Mass	27

Technology-based Effluent Limitations - Hex Chromium

Operation	40 CFR		Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l) Daily Maximum	Monthly Average	Effluent Limitations (lbs/day Daily Maximum	Monthly Average
304 Acid Pickling	420.92(b)(2)	I	7,548	[redacted]			
304 Cold Forming	420.102(a)(2)	J	16,106	[redacted]			
304 Cold Forming	420.102(a)3)	J	5,190	[redacted]			
304 Cold Forming	420.102(a)(5)	J	2,862	[redacted]			
304 Alkaline Cleaning	420.112(a)	K	1,990	[redacted]			
304 Alkaline Cleaning	420.112(b)	K	2,094	[redacted]			
304 Alkaline Cleaning	420.114(a)	K	1,446	[redacted]			
304 Hot Coating	420.123(a)(1)	L	3,533	0.00015	0.0000501	0.53	0.18
304 Hot Coating	420.124(a)(1)	L	1,278	0.0000376	0.0000125	0.05	0.02
304 Hot Coating	420.124(c)(1)	L	* 1	0.0049 (kg/day)	0.00163 (kg/day)	0.011	0.0036
304 Metal Finishing	433.13(a)		**2.3	[redacted]			
					Total	0.59	0.20
					Previous Limits	0.51	0.17
					WQBEL in Mass	4.5	2.3

Technology-based Effluent Limitations - T. Copper

Operation	40 CFR	Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l) Daily Maximum	Monthly Average	Effluent Limitations (lbs/day Daily Maximum	Monthly Average
304 Metal Finishing	433.14(a)	**2.162	3.38	2.07	60.98	37.35
				Total	60.98	37.35
				Previous Limits	8.2	4.7
				WQBEL in Mass	9.4	4.7

Technology-based Effluent Limitations - T. Cadmium

Operation	40 CFR	Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l)		Effluent Limitations (lbs/day	
			Daily Maximum	Monthly Average	Daily Maximum	Monthly Average
304 Metal Finishing	433.14(a)	**2.162	0.69	0.26	12.45	4.69
				Total	12.45	4.69
				Previous Limits	2.1	1.2
				WQBEL in Mass	2.4	1.4

Technology-based Effluent Limitations - T. Cyanide

Operation	40 CFR	Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l)		Effluent Limitations (lbs/day	
			Daily Maximum	Monthly Average	Daily Maximum	Monthly Average
304 Metal Finishing	433.14(a)	**2.3	1.2	0.65	23.03	12.48
				Total	23.03	12.48
				Previous Limits	7.95	3.41
				WQBEL in Mass	31000	77000

Technology-based Effluent Limitations - T. Silver

Operation	40 CFR	Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l)		Effluent Limitations (lbs/day	
			Daily Maximum	Monthly Average	Daily Maximum	Monthly Average
304 Metal Finishing	433.14(a)	**2.162	0.43	0.24	7.76	4.33
				Total	7.76	4.33
				Previous Limits	0.021	0.012
				WQBEL in Mass	0.024	0.014

Technology-based Effluent Limitations - T. TTO

Operation	40 CFR	Production in 1,000 lbs/day * # scrubbers **flow (MGD)	Multiplication factor: (40 CFR 420 = lbs/1,000 lbs of product)(40 CFR 433 = mg/l)		Effluent Limitations (lbs/day
			Daily Maximum	Monthly Average	Daily Maximum
304 Metal Finishing	433.14(a)	**2.162	2.13	[redacted]	38.43
				Total	38.43
				Previous Limits	38.43

STATE OF INDIANA
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
PUBLIC NOTICE NO. 20210917 – IN0000337 – F
DATE OF NOTICE: SEPTEMBER 17, 2021

The Office of Water Quality issues the following NPDES FINAL PERMIT.

MAJOR – RENEWAL

UNITED STATES STEEL CORPORATION – MIDWEST PLANT, NPDES Permit No. IN0000337, PORTER COUNTY, 6300 U.S. Highway 12, Portage, IN. This industrial facility is a steel mill that discharges 0.38 million gallons daily to the Portage – Burns Waterway via existing permitted outfalls. The discharges consist of non-contact cooling water, treated process wastewaters, and storm water. The facility withdraws its water from Lake Michigan. Permit Manager: Nicole Gardner, 317/232-8707, ngardner@idem.in.gov.

Notice of Right to Administrative Review [Permits]

If you wish to challenge this Permit, you must file a Petition for Administrative Review with the Office of Environmental Adjudication (OEA) and serve a copy of the Petition upon IDEM. The requirements for filing a Petition for Administrative Review are found in IC 4-21.5-3-7, IC 13-15-6-1 and 315 IAC 1-3-2. A summary of the requirements of these laws is provided below.

A Petition for Administrative Review must be filed with the Office of Environmental Adjudication (OEA) within fifteen (15) days of the issuance of this notice (eighteen (18) days if you received this notice by U.S. Mail), and a copy must be served upon IDEM. Addresses are:

Director
Office of Environmental Adjudication
Indiana Government Center North
100 North Senate Avenue - Room N103
Indianapolis, Indiana 46204

Commissioner
Indiana Department of Environmental Management
Indiana Government Center North
100 North Senate Avenue - Room 1301
Indianapolis, Indiana 46204

The Petition must contain the following information:

1. The name, address and telephone number of each petitioner.
2. A description of each petitioner's interest in the Permit.
3. A statement of facts demonstrating that each petitioner is:
    a. a person to whom the order is directed;
    b. aggrieved or adversely affected by the Permit;
    c. entitled to administrative review under any law.
4. The reasons for the request for administrative review.
5. The particular legal issues proposed for review.
6. The alleged environmental concerns or technical deficiencies of the Permit.
7. The Permit terms and conditions that the petitioner believes would be appropriate and would comply with the law.
8. The identity of any persons represented by the petitioner.
9. The identity of the person against whom administrative review is sought.
10. A copy of the Permit that is the basis of the petition.
11. A statement identifying petitioner's attorney or other representative, if any.

Failure to meet the requirements of the law with respect to a Petition for Administrative Review may result in a waiver of your right to seek administrative review of the Permit. Examples are:

1. Failure to file a Petition by the applicable deadline;
2. Failure to serve a copy of the Petition upon IDEM when it is filed; or
3. Failure to include the information required by law.

If you seek to have a Permit stayed during the Administrative Review, you may need to file a Petition for a Stay of Effectiveness. The specific requirements for such a Petition can be found in 315 IAC 1-3-2 and 315 IAC 1-3-2.1.
Pursuant to IC 4-21.5-3-17, OEA will provide all parties with Notice of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action. If you are entitled to Notice under IC 4-21.5-3-5(b) and would like to obtain notices of any pre-hearing conferences, preliminary hearings, hearings, stays, or orders disposing of the review of this action without intervening in the proceeding you must submit a written request to OEA at the address above.
More information on the appeal review process is available on the website for the Office of Environmental Adjudication at http://www.in.gov/oea.

United States Steel Corporation
Law Department
600 Grant Street – Room 1500
Pittsburgh, PA 15219-2800
Phone: 412-433-2855
Email: mamustian@uss.com

Mark A. Mustian
Counsel - Environmental

March 17, 2021
Indiana Department of Environmental Management
IDEM/OWQ/NPDES/PS
100 N. Senate Ave., Rm 1255
Indianapolis, IN 46204

Re: Public Notice No. 20210521-IN0000337

To Whom it may concern:

Attached, please find comments submitted by U. S. Steel in response to the draft NPDES permit for our Midwest Plant. If you have any questions, please feel free to contact me.

Sincerely,

Mark Mustian

Mark Mustian

United States Steel Corporation – Midwest Plant
NPDES Permit No. IN0000337
Pre-Public Draft
Comments Regarding Draft Individual NPDES Permit

1. **Issue: Appropriate statistical techniques for sample results less than the LOQ**

   Reference: Draft NPDES Permit Part I.A. (Outfall 002) Footnote [3]. Pages 2-3 of 78, (Outfall 003) Footnote [3] page 5-6 of 78, (Outfall 004) Footnote [3] Page 9 of 78.

   U. S. Steel Position:

   Permit language is ambiguous and unclear when referencing 'appropriate statistical techniques.' By definition, data below an LOQ cannot be statistically confirmed or distinguished with precision or accuracy. Therefore, the exception cannot be implemented and must be removed.

   Requested Change:

   Footnotes should be restated as follows:

   '…When calculating the monthly average effluent level, 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~~.'

2. **Issue: 40 CFR 136 Reference for Test Procedures**

   Reference: Draft NPDES Permit Part I.C.4 (Test Procedures). Page 22 of 78.

   U. S. Steel Position:

   U. S. Steel recognizes that 327 IAC 5-2-13 specifically references requirements for monitoring including analytical test procedures. These references are contained in 327 IAC 5-2-13(d)(1) which states "Test procedures identified in 40 CFR 136 shall be utilized for pollutants and parameters". Based on the most recent updates to state rules (specifically 327 IAC 1-1-2), references to the Code of Federal Regulations (CFR) within 327 IAC refer to the July 1, 2016, edition. However, significant updates (e.g., rule updates with effective dates of September 27, 2017, and July 19, 2021, have been approved) to federal regulations have been implemented since the July 1, 2016, edition rendering the references within 327 IAC outdated. This section of the permit should be revised to reference the current version of 40 CFR 136. This approach is utilized in the current U. S. Steel Midwest Permit and other Indiana permits (e.g., see Part.I.C.4 of IN0000108).

Requested Change:

U. S. Steel requests that the language in Part I.C.4 be revised as follows (*changes in red italics*):

“The analytical and sampling methods used shall conform to the *current* version of 40 CFR 136 ~~*incorporated by reference in 327 IAC 5*~~. Different but equivalent methods are allowable if they receive the prior written approval of the Commissioner and the U.S. Environmental Protection Agency. When more than one test procedure is approved for the purposes of the NPDES program under 40 CFR 136 for the analysis of a pollutant or pollutant parameter, the test procedure must be sufficiently sensitive as defined at 40 CFR 122.21(e)(3) and 122.44(i)(1)(iv).”

3. **Issue: Test Method Version Information**

References:
Draft NPDES Permit Part I.A.1. (Outfall 002), Footnote [4]. Page 3 of 78.
Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [9]. Page 9 of 78.
Draft NPDES Permit Part I.A.4. (Outfalls 104 & 204), Footnote [4]. Page 13 of 78.
Draft NPDES Permit Part I.A.5. (Outfall 304), Footnote [4]. Page 16 of 78.

U. S. Steel Position:

As indicated in comment #2, significant changes have been made to the 40 CFR 136 list of methods including version (e.g., publication dates and revision numbers) updates to some methods. As such, specific method version information in the listed footnotes either currently conflicts with 40 CFR 136 listings or may conflict with future versions should there be updates to 40 CFR 136 within the permit term. In addition, this would make the methods information consistent throughout the permit (e.g., Part I.A.2 does not include any method version references). This approach has also been utilized in other Indiana NPDES Permits. For example, modifications to IN0000108 (modification effective date January 1, 2021) included removal of the method version information.

Requested Change:

U. S. Steel requests that the specific method version information be removed from each of the listed footnotes.

Part 1.A.1 – remove chlorine method publication dates
Part 1.A.3 – remove chlorine method publication dates and silver method revision numbers and publication dates
Part 1.A.4 – remove cyanide method revision numbers and publication dates
Part 1.A.5 – remove cyanide method revision numbers and publication dates

4. **Issue: Case-Specific LOD/LOQ**

References:

Draft NPDES Permit Part I.A.1. (Outfall 002), Footnote [4]. Page 3 of 78;
Draft NPDES Permit Part I.A.2. (Outfall 003), Footnote [4]. Page 6 of 78;
Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [9]. Page 9 of 78;
Draft NPDES Permit Part I.A.4. (Outfalls 104 & 204), Footnote [4]. Page 13 of 78;
Draft NPDES Permit Part I.A.5. (Outfall 304), Footnote [4]. Page 16 of 78.

U. S. Steel Position:

The second part of Footnote [4] for Outfalls 002 and 003 addresses the ability to determine a case-specific LOD or LOQ and cites 327 IAC 5-2-11.6(h)(2)(B) for determination of the LOD and LOQ. However, while this reference does detail determination of the LOQ and indicates that the LOD is equal to the MDL, it does not address determination of the MDL itself. 40 CFR 136 Appendix B sets forth requirements for MDL determination which could then be used in conjunction with the 327 IAC 5 requirements to set the LOD and LOQ.

Additionally, for the footnotes associated with specific LODs and LOQs for Outfall 004 (Footnote [9]), Outfalls 104 & 204 (Footnote [4]), and Outfall 304 (Footnote [4]), there is no inclusion of any language allowing a case-specific LOD or LOQ. The allowance for case-specific LODs/LOQs is appropriate for these monitoring locations as well as for Outfalls 002 and 003.

Revision of footnotes to reference 40 CFR 136 for the MDL procedure is requested (suggested language below). Significant changes have been made to the 40 CFR 136 list of methods including version (e.g., publication dates and revision numbers) updates to some methods. As such, specific method version information in the listed footnotes either currently conflicts with 40 CFR 136 listings or may conflict with future versions should there be updates to 40 CFR 136 within the permit term. In addition, this would make the methods information consistent throughout the permit (e.g., Part I.A.2 does not include any method version references).

Requested Change:

U. S. Steel requests revision of the footnote language for case-specific LOD/LOQ be revised as follows (revisions in red italics) for Outfalls 002 and 003 (both Footnote [4]). Further, the allowance to develop case-specific LODs/LODs should be applied to all outfalls. Addition of the entire below text to the footnotes for Outfall 004 (Footnote [9]), Outfalls 104 & 204 (Footnote [4]), and Outfall 304 (Footnote [4]) is requested.

"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, and EPA if applicable, 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 as* ~~determined as established~~ prescribed by 327 IAC 5-2-11.6(h)(2)(B). *Other methods may be used if first approved by the Commissioner.*"

5. **Issue: O&G values below detection in NCCW**

   Reference: Draft NPDES Permit Part I.A.1. (Outfalls 002), Footnote [8]. Page 3 of 78; (Outfall 003), Footnote [8]. Page 6 of 78.

   U. S. Steel Position:

   The current permit provides clarifying language that has been omitted from the draft. The existing language provides relevant context on the intent of the requirement and should be retained.

   Requested Change:

   U. S. Steel requests that footnote [8] be changed as follows:

   [8] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l). This requirement is considered sufficient to ensure compliance with narrative water quality criteria in 327 IAC 2-1.5-8(b)(1)(C) which prohibits oil or other substances in amounts sufficient to create a visible film or sheen on the receiving water.

6. **Issue: Outfall 004 Mass Limits**

   Reference: Draft NPDES Permit Part I.A.3. (Outfall 004). Page 8 of 78.

   U. S. Steel Position:

   IDEM indicated several of the Outfall 004 limits have been carried over from the current Permit, as they are more stringent than the preliminary effluent limits (PELs) calculated in the 2021 RPE Evaluation and Waste Load Allocation Determination (henceforth WLA). For most (TRC, Silver, Free Cyanide, Cadmium, and Copper), both the concentration limits and associated mass limits were retained. However, only the concentration limits were retained for Nickel and Lead. For the mass limits, the mass PELs from the 2021 WLA are utilized with the basis being indicated that these were the more stringent of the current limits and PELs from the current WLA. However, quoting 327 IAC 5-2-11.6(g)(2): "[t]he mass loading rates shall be calculated using effluent flow rates that are the same as those used in establishing the concentration-based WQBELs." Since the Nickel and Lead concentration limits from the previous permit were retained, the Nickel and Lead mass limits (which are based on the same flows used to establish the concentration-based WQBELs) from the current Permit should also be retained.

   Requested Change:

   U. S. Steel requests revision of the following mass limits for Outfall 004:

Parameter	Current Draft Permit Mass Limit (lb/d)	Requested Revised Mass Limit (lb/d)
Nickel	31 Monthly Average 54 Daily Max	33.3 Monthly Average 57.1 Daily Max
Lead	5.8 Monthly Average 9.9 Daily Max	6.0 Monthly Average 10.5 Daily Max

7. Issue: Silver Limits and Monitoring Requirements

References:
Draft NPDES Permit Part I.A.3. (Outfall 004). Page 8 of 78;
Draft NPDES Permit Part I.A.4. (Outfalls 104 & 204). Page 12 of 78;
Draft NPDES Permit Part I.A.5 Outfall 304. Page 15 of 78.

U. S. Steel Position:

Silver limitations and monitoring requirements are included in the Permit for Outfall 004 because the metal finishing (40 CFR 433) mass TBELs for Outfall 304 are less stringent than the WQBEL (when converted to mass). However, in determining if there is a reasonable potential to exceed WQBELs for Great Lake system dischargers, the source and nature of the discharge should and can be considered. Quoting 327 IAC 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, the commissioner shall incorporate water quality-based effluent limitations (WQBELs) in an NPDES permit that will ensure compliance with the criterion or value. The commissioner shall exercise best professional judgment, taking into account the:
>
> (1) source and nature of the discharge;
> (2) existing controls on point and nonpoint sources of pollution;
> (3) variability of the pollutant or pollutant parameter in the effluent; and
> (4) where appropriate, dilution of the effluent in the receiving water.
>
> In all cases, the commissioner shall use any valid, relevant, representative information pertaining to the discharge of the pollutant."

While the metal finishing ELGs address Silver, U. S. Steel does not use Silver or Silver solutions as part of its electroplating operations and there is no known source of Silver to wastewaters. Additionally, review of the Outfall 004 data for the current permit cycle shows that there have been no quantifiable[1] detections of Silver. Given these factors and the ability to apply best professional judgement, the Silver limitations and monitoring requirements for Outfall 004 and silver monitoring requirements for Outfalls 104, 204, and 304 are unnecessary.

Requested Change:

U. S. Steel requests that Silver monitoring requirements and limitations for Outfall 004 be removed and that Silver monitoring requirements for Outfalls 104, 204, and 304 be removed.

8. **Issue: Silver limits are below the achievable LOQ**

Reference: Draft NPDES Permit Part I.A.3. (Outfall 004). Footnotes [3], [4], and [5]. Page 9 of 78.

U. S. Steel Position:

Absent removal of the Silver limits and monitoring requirements requested in Comment #7, revision of select Outfall 004 footnotes to address Silver is necessary. As is discussed in Comment #10, the draft Permit detection limits for Silver are not currently achievable. With the currently achievable detection limits (LOD = 0.05 ug/L and LOQ = 0.20 ug/L), the Silver concentration limits (0.13 ug/L as a daily max and 0.076 ug/L as a monthly average) are below the LOQ. As such, Footnotes [3], [4] and [5] should be revised to include Silver.

Requested Change:

U. S. Steel requests that Silver be added to Footnote [3], [4], and [5] and changed as follows. Note that the changes requested in Comment #1 are also included in the suggested language.

[3] The monthly average water quality-based effluent limits (WQBEL) for Total Residual Chlorine *and Silver* ~~*is*~~ are less than the limit of quantitation (LOQ) as specified below (see footnote [9]). 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*~~.

[4] The daily maximum WQBEL for Total Residual Chlorine *and Silver* ~~*is*~~ *are* greater than or equal to the LOD but less than the LOQ as specified below (see footnote [9]). Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ.

[1] Quantifiable = detections at or above the limit of quantification or reporting limit.

[5]	Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 8.5 lbs/day *for Total Residual Chlorine and less than 0.03 lbs/day for Silver.*

9. Issue: Outfall 004 Cyanide Test Methods and Detection Limits

Reference: Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [9]. Page 9 of 78.

U. S. Steel Position:

The methods listed in Footnote [9] should also reflect the use of the Weak Acid Dissociable Cyanide method for compliance monitoring of Free Cyanide. This would be consistent with what is allowed in the current Permit.

In addition, the Draft Permit detection limits for both the OIA-1677-09 and Kelada-01 methods are not currently achievable. U. S. Steel's contract lab is currently achieving an LOD and LOQ of 1.69 ug/L and 2.00 ug/L for the OIA-1677-09 method and 1.1 ug/L and 4.0 ug/L for the Kelada-01 method. These detection limits are sufficiently sensitive to assess compliance with the water quality based effluent limits (7.5 ug/L monthly average and 13 ug/L daily max).

Requested Change:

U. S. Steel requests that Footnote [9] table be changed as follows for the cyanide method listings (requested changes from other comments are not listed below):

Parameter	Test Method	LOD	LOQ
Cyanide, Free	OIA-1677-09	*1.69* ~~*0.5*~~µg/l	*2.00* ~~*1.6*~~µg/l
Cyanide, Free (as WAD)	*4500-CN-I*	*2.5 µg/l*	*5.0 µg/l*
Cyanide, Free	Kelada-01	*1.1* ~~*0.5*~~µg/l	*4.0* ~~*1.6*~~µg/l

10. Issue: Outfall 004 Silver Test Methods and Detection Limits

Reference: Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [9]. Page 9 of 78.

U. S. Steel Position:

The Draft Permit listed Method 200.8 Selective Ion Monitoring (SIM) mode detection limits for Silver (0.005 ug/L MDL/LOD and 0.016 ug/L MDL/LOQ) are not feasibly achievable.

Running ICP-MS in SIM mode is not standard protocol for the environmental industry and instrument software may not be configured with this option. Furthermore, scanning mode was used to determine all of the precision and recovery data outlined in EPA 200.8, Rev 5.4. An updated version of EPA 200.8, Revision 5.5, Table 7 states an MDL/LOD for Total Recoverable Silver as 0.03 ug/L based on additional MDL studies conducted by EPA to verify the MDLs outlined in Revision 5.4. The MDL of 0.03 ug/L would result in an expected

PQL/LOQ of 0.096 ug/L using SIM mode. The additional studies conducted by EPA indicate that the detection limit for Total Recoverable Silver by SIM listed in 200.8 Rev 5.4 Table 7 was unreasonably low.

Further, it is imperative to note that the MDLs/LODs for both the Rev 5.4 and Rev 5.5 were not developed under the current 40 CFR 136 Appendix B procedure ("MDL procedure") for determining method detection limits. In the current MDL procedure, blank detections must now be accounted for in the calculations. This has generally resulted in increased MDLs/LODs over previous MDLs/LODs developed with the older MDL procedure, especially for trace level methods.

At this time, no laboratory in the US has been identified that currently uses the SIM mode for NPDES reporting nor has a laboratory been able to confirm that the listed detection limits are achievable with SIM mode.

To address these concerns, continued use of scanning mode with currently achieved detection limits (0.05 ug/L LOD and 0.20 ug/L LOQ) is requested. These detection limits are lower than those required by the current Permit (0.20 ug/L LOD and 0.64 ug/L LOQ).

Requested Change:

U. S. Steel requests that Footnote [9] table listings for Silver methods be revised as follows.

Parameter	Test Method	LOD	LOQ
Silver	*200.8, Scanning Mode*	*0.05 ug/l*	*0.20 ug/l*
~~*Silver*~~	~~*200.8, Rev. 5.4 (1994) Selection Ion Monitoring*~~	~~*0.005 ug/L*~~	~~*0.016 ug/L*~~

11. Issue: Outfall 004, 104 and 204 Copper Sampling Frequency

Reference: Draft NPDES Permit Part I.A.4. (Outfalls 104 & 204). Page 12 of 78; Part I.A.5. (Outfall 304). Page 15 of 78.

U. S. Steel Position:

In the draft permit Copper sampling frequencies have been increased from the current Permit frequencies (2/month vs. weekly for Outfall 004 and monthly vs. weekly for Outfalls 104 and 204) due to Copper levels in the discharges. As previously communicated to IDEM, it was determined that increased Copper results were related to contamination of samples during lab processing of the samples. The root cause of the contamination was eliminated on February 4, 2021, and data post-February 5, 2021, is considered more representative of current and anticipated future Copper discharges. Comparison of summary statistics for different datasets, shows how the representative data are much lower since elimination of the contamination source.

Dataset	Location	Daily Max (ug/L)	Average (ug/L)	Max Monthly Average (ug/L)	Number of Results
Apr 2016 - Feb 4, 2021	Outfall 004	77	11.1	21	660
Feb 5, 2021 - May 2021		24	2.5	3.1	107
Apr 2016 - Feb 4, 2021	Outfall 104	42	8.2	19	624
Feb 5, 2021 - May 2021		19	0.9	1.5	108
Apr 2016 - Feb 4, 2021	Outfall 204	170	15.2	77	572
Feb 5, 2021 - May 2021		37	6.9	8.2	107

Further, if the Outfall 004 data from February 5, 2021, through May 31, 2021 are utilized in a reasonable potential to exceed (RPE) analysis, no RPE exists for either Total or Dissolved Copper. RPE summaries are shown below and the supporting datasets included as Attachments 1 and 2.

Based on this, the Copper sampling frequency does not need to be changed from the current Permit frequencies (Outfall 004 2/month vs. weekly; Outfalls 104 and 204 monthly vs. weekly).

Outfall 004 Total Copper RPE Summary (2/5/2021 - 5/31/2021 dataset)

Description	Daily Max	Monthly Average
Maximum Value (mg/L)	0.024	0.0031
# of Results	107	4
Coefficient of Variation (CV)	1.2	0.2
Multiplying Factor	1	2.6
Projected Effluent Quality or PEQ (mg/L)	0.024	0.008
Preliminary Effluent Limit or PEL (mg/L)	0.066	0.033
PEQ > PEL?	No	No

Note: PELs from IDEM Feb 2021 Wasteload Allocation Analysis.

Outfall 004 Dissolved Copper RPE Summary (2/5/2021 - 3/31/2021 dataset)

Description	Daily	Monthly Average
Maximum Value (mg/L)	0.003	0.001
# of Results	52	2
Coefficient of Variation (CV)	0.8	0.1
Multiplying Factor	1	3.8
Projected Effluent Quality or PEQ (mg/L)	0.003	0.003
Preliminary Effluent Limit or PEL (mg/L)	0.066	0.033
PEQ > PEL?	No	No

Note: Dissolved PELs developed using same inputs from the IDEM Feb 2021 Wasteload Allocation Analysis.

Requested Change:

U. S. Steel requests that the current Copper sampling frequencies (monthly for Outfalls 104 and 204; 2/month for Outfall 004) be maintained.

12. **Issue: Outfall 004 Footnote Error**

References:
Draft NPDES Permit Part I.A.3. (Outfall 004), Footnote [12]. Pages 8 & 10 of 78.

U. S. Steel Position:

Footnote [12] is associated with Outfall 004 Free Cyanide monitoring requirements in Table 1 on page 8 of the Draft Permit. However, the language of Footnote [12] addresses the timing requirements for mercury monitoring.

Requested Change:

U. S. Steel requests correction of the typographical error by moving Footnote [12] from the Free Cyanide listing in Table 1 to the Mercury listing.

13. **Issue: Outfall 104, 204 & 304 Total Toxic Organics Related Requirements**

References:
Draft NPDES Permit Part I.A.4. (Outfall 104 & 204), Footnote [6]. Page 13 of 78;
Draft NPDES Permit Part I.A.5 (Outfall 304), Footnote [6]. Page 16 of 78.

U. S. Steel Position:

Clarifying language regarding the use of the Certification Statement for Total Toxic Organics (TTO) is needed. The draft Permit footnotes for Total Toxic Organics (TTO) at Outfalls 104, 204, and 304 include both of the following statements:

> *"The Certification Statement may not be used until completion of the Toxic Organic Pollutant Management Plan required by Part I.H of this permit."*
>
> *"However, the certification statement may be used as long as there have been no changes at the facility that would significantly alter the current TOPMP, and the permittee is following the current TOPMP that was developed under the previous permit until the new plan is completed as required by Part I.H of this permit."*

These statements appear contradictory as they are currently worded.

Requested Change:

U. S. Steel recommends revising these statements to include clarifying (in red) language in the TTO footnotes for Outfalls 104, 204, and 304.

"Normally, the Certification Statement may not be used until completion of the Toxic Organic Pollutant Management Plan required by Part I.H of this permit. However, since the Permittee has an existing TOPMP developed under the previous permit, the certification statement may be used as long as there have been no changes at the facility that would significantly alter the current TOPMP, and the permittee is following the current TOPMP that was developed under the previous permit until the new plan is completed as required by Part I.H of this permit."

14. Issue: Outfall 600 Limitation Table and CWIS Requirements

References:
Draft NPDES Permit Part I.A.6. (Outfall 600). Page 18 of 78;
Draft NPDES Permit Part IV. Pages 74 – 76 of 78.

U. S. Steel Position:

The Velocity should only be required to be measured at the compliance point. Due to the fact that Midwest's traveling screens have been abandoned and have shown significant deterioration to the screen panels, the compliance point should be at the intake crib. With compliance at the intake crib, the water depth and open area values (which are part of traveling screen velocity calculations) are not applicable and do not need to be reported.

Requested Change:

U. S. Steel requests that the discharge limitation table for Outfall 600 be changed as indicated below. In addition, U. S. Steel requests revision of the language in Part IV. Cooling Water Intake Structures to also reflect this approach.

DISCHARGE LIMITATIONS [1]

Outfall 600

Parameter	Monthly Average	Daily Maximum	Units	Frequency
Velocity, Off-shore Intake	-------	Report	Feet/second	Daily
~~Velocity; Traveling Screens~~	~~-------~~	~~Report~~	~~Feet/second~~	~~Daily~~
Intake Flow	-------	Report	MGD	Daily
~~Water Depth; Traveling Screens~~	~~-------~~	~~Report~~	~~Feet~~	~~Daily~~
~~Open Area, Traveling Screens~~	~~-------~~	~~Report~~	~~Square feet~~	~~Daily~~

[1] The permittee must calculate the through-screen velocity at ~~both~~ the off-shore intake ~~and at the inoperable traveling screens~~ using water flow~~, water depth,~~ and the ~~screen/~~intake open areas. It is assumed that the open area of the offshore intake will remain 202.75 square feet for the life of this permit. The permittee is required to notify IDEM if it does change.

15. Issue: Anti-backsliding and Technology Based Effluent Limits

Reference: Fact Sheet Page 20.

U. S. Steel Position:

The numeric Technology Based Effluent Limits (TBELs) values from the current Permit are retained for several parameters even though calculated TBELs based on recent production data are higher. Compliance with the anti-backsliding provisions of 40 CFR 122.44(l)(1) and (2) is cited as the rationale for this.

> "Reissued permits. (1) Except as provided in paragraph (l)(2) of this section when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit (unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued and would constitute cause for permit modification or revocation and reissuance under §122.62.)
>
> (2) In the case of effluent limitations established on the basis of Section 402(a)(1)(B) of the CWA, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 304(b) subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.
>
> > (i) Exceptions—A permit with respect to which paragraph (l)(2) of this section applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant, if—
> >
> > (A) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;
> > (B) …"

As part of the permit writing process production based non-BPJ TBELs are based on anticipated production rates for the next permit term. Often this relies on recent production data or projections. These values can fluctuate from term to term and changes in production qualify for the above cited exception to backsliding.

The below cited language from the Fact Sheet for NPDES Permit AS0000019 (February 2020, as Revised February 2021), issued by the U.S. EPA[2] demonstrates that changes in production levels constitute an exception from backsliding prohibitions.

[2] https://www.epa.gov/sites/production/files/2021-02/documents/as0000019-npdes-permit-fs-starkist-samoa-2021-02.pdf

"Compliance with Federal Anti-Backsliding Regulations and American Samoa Antidegradation Policy for Proposed Technology-based Effluent Limitations. ELGs provide the basis for technology-based effluent limits in the permit. Section 402(o) of the CWA prohibits the renewal or reissuance of an existing NPDES permit that contains technology-based effluent limits that are less stringent than those established in the previous permit, except as provided in 40 CFR 122.44(l). This is referred to as "anti-backsliding." The permit establishes less stringent mass-based technology-based effluent limitations for total suspended solids and oil and grease based on an estimated increase in the daily production level over the term of the permit (ELGs for seafood processors are production-based). 40 CFR 122.44(l)(1) allows for backsliding to technology-based effluent limitations in the permit since circumstances on which the previous permit were based, i.e., a lower production of processed tuna than projected in the permit term, have materially and substantially changed since the time the previous permit was issued and would have constituted cause for a permit modification under 40 CFR 122.62(a)."

Requested Change:

U. S. Steel is not requesting increased TBELs over those in the current Permit but requests recognition in the Fact Sheet that anti-backsliding does not prohibit increased for the above described situation: non-BPJ TBELs calculated in accordance with previously enacted ELGs.

16. Issue: Schedule of Compliance Progress Report

References:
Draft NPDES Permit Part I.G. Page 50 of 78.

U. S. Steel Position:

U. S. Steel will not know the remedy to meet the final limits for Formaldehyde in the first 12 months of the permit.

Requested Change:

U. S. Steel requests the following changes:

a. The permittee shall submit a written progress report to the Compliance Data Section of the Office of Water Quality (OWQ) twelve (12) months from the effective date of this permit. ~~The progress report shall include a description of the method(s) selected for meeting the newly imposed limitation for formaldehyde, in addition to any other relevant information.~~ The progress report shall ~~also~~ include a specific timeline specifying the steps required for meeting the final limits ~~when each of the steps will be taken~~. The new effluent limits for formaldehyde are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date. The permittee shall notify the Compliance Data Section of OWQ as soon as the newly imposed effluent limits for formaldehyde can be met. Upon receipt of such notification by OWQ, the final limits for formaldehyde will become effective, but no later than sixty (60) months from the effective date of this permit. Monitoring and reporting of the effluent for these parameters is required during the interim period.

Attachment 1 - Outfall 004 Total Copper Data for RPE Analysis (2/5/2021 - 5/31/2021 Dataset)

Sample Date	Daily Results (mg/L)	Monthly Averages (mg/L)
2/5/2021	0.0061	0.0017
2/6/2021	0.0016	
2/7/2021	0.0024	
2/8/2021	0.0013	
2/9/2021	0.0013	
2/10/2021	0.0012	
2/11/2021	0.0015	
2/12/2021	0.0009	
2/13/2021	0.0012	
2/14/2021	0.0009	
2/15/2021	0.0014	
2/16/2021	0.0020	
2/17/2021	0.0016	
2/18/2021	0.0016	
2/19/2021	0.0021	
2/20/2021	0.0013	
2/21/2021	0.0015	
2/22/2021	0.0009	
2/23/2021	0.0010	
2/24/2021	0.0011	
2/25/2021	0.0037	
2/26/2021	0.0014	
2/27/2021	0.0010	
2/28/2021	0.0008	
3/1/2021	0.0012	0.0031
3/2/2021	0.0017	
3/3/2021	0.0011	
3/4/2021	0.0028	
3/5/2021	0.0016	
3/6/2021	0.0012	
3/7/2021	0.0240	
3/8/2021	0.0003	
3/9/2021	0.0012	
3/10/2021	0.0003	
3/11/2021	0.0011	
3/12/2021	0.0016	
3/13/2021	0.0020	
3/14/2021	0.0010	
3/15/2021	0.0080	
3/16/2021	0.0026	
3/17/2021	0.0043	
3/18/2021	0.0018	
3/19/2021	0.0010	
3/20/2021	0.0009	
3/21/2021	0.0066	
3/22/2021	0.0014	
3/23/2021	0.0008	
3/24/2021	0.0014	
3/25/2021	0.0041	
3/26/2021	0.0013	
3/27/2021	0.0009	
3/28/2021	0.0150	
3/29/2021	0.0016	
3/30/2021	0.0013	
3/31/2021	0.0011	

Attachment 1 - Outfall 004 Total Copper Data for RPE Analysis (2/5/2021 - 5/31/2021 Dataset)

Sample Date	Daily Results (mg/L)	Monthly Averages (mg/L)
4/1/2021	0.0010	0.0024
4/2/2021	0.0009	
4/3/2021	0.0078	
4/4/2021	0.0007	
4/5/2021	0.0010	
4/6/2021	0.0033	
4/7/2021	0.0009	
4/8/2021	0.0009	
4/9/2021	0.0012	
4/10/2021	0.0042	
4/11/2021	0.0012	
4/12/2021	0.0030	
4/13/2021	0.0017	
4/14/2021	0.0019	
4/15/2021	0.0030	
4/16/2021	0.0018	
4/17/2021	0.0014	
4/18/2021	0.0015	
4/19/2021	0.0081	
4/20/2021	0.0027	
4/21/2021	0.0025	
4/22/2021	0.0035	
4/23/2021	0.0013	
4/24/2021	0.0017	
4/25/2021	0.0021	
4/26/2021	0.0042	
4/27/2021	0.0014	
4/28/2021	0.0042	
4/29/2021	0.0017	
4/30/2021	0.0013	
5/1/2021	0.0023	0.0027
5/2/2021	0.0039	
5/3/2021	0.0028	
5/4/2021	0.0041	
5/5/2021	0.0012	
5/6/2021	0.0012	
5/7/2021	0.0015	
5/8/2021	0.0033	
5/9/2021	0.0014	
5/10/2021	0.0012	
5/11/2021	0.0052	
5/12/2021	0.0019	
5/13/2021	0.0031	
5/14/2021	0.0021	
5/15/2021	0.0013	
5/16/2021	0.0053	
5/17/2021	0.0071	
5/18/2021	0.0018	
5/19/2021	0.0027	
5/20/2021	0.0024	
5/21/2021		
5/22/2021		
5/23/2021		
5/24/2021	0.0019	
5/25/2021		
5/26/2021		
5/27/2021		
5/28/2021		
5/29/2021		
5/30/2021		
5/31/2021	0.0011	

Attachment 2 - Outfall 004 Dissolved Copper Data for RPE Analysis (2/5/2021 - 3/31/2021 Dataset)

Sample Date	Daily Results (mg/L)	Monthly Averages (mg/L)
2/5/2021	0.00079	0.0007
2/6/2021	0.00098	
2/7/2021	0.00068	
2/8/2021	0.00086	
2/9/2021	0.00063	
2/10/2021	0.00071	
2/11/2021	0.0010	
2/12/2021	0.00061	
2/13/2021	0.00063	
2/14/2021	0.00053	
2/15/2021	0.00086	
2/16/2021	0.0010	
2/17/2021	0.00088	
2/18/2021	0.0011	
2/19/2021	0.0013	
2/20/2021	0.00074	
2/21/2021	0.00047	
2/22/2021	0.00061	
2/23/2021	0.00058	
2/24/2021	<0.00034	
2/25/2021	<0.00034	
2/26/2021	0.00046	
2/27/2021	<0.00034	
2/28/2021	<0.00034	
3/1/2021	0.00036	0.0009
3/2/2021	0.00058	
3/3/2021	0.0021	
3/4/2021	0.0026	
3/5/2021	0.0011	
3/6/2021	0.0012	
3/7/2021	<0.00034	
3/8/2021	0.0012	
3/9/2021	0.0011	
3/10/2021	0.0034	
3/11/2021	<0.00034	
3/12/2021	0.00058	
3/13/2021	0.00058	
3/14/2021	0.00066	
3/15/2021	0.0032	
3/16/2021	0.00082	
3/17/2021	<0.00034	
3/18/2021	<0.00034	
3/19/2021	<0.00034	
3/20/2021	<0.00034	
3/21/2021	<0.00034	
3/22/2021	<0.00034	
3/23/2021	<0.00034	
3/24/2021	0.00065	
3/25/2021	<0.00034	
3/26/2021	<0.00034	
3/27/2021	<0.00034	
3/28/2021	0.00054	
3/29/2021	---	
3/30/2021	---	
3/31/2021	---	

Note: Collection of dissolved copper ceased on 3/28/2021.

ALLIANCE FOR THE GREAT LAKES・ENVIRONMENTAL LAW & POLICY CENTER・HOOSIER ENVIRONMENTAL COUNCIL・IZAAK WALTON LEAGUE ・ NATIONAL PARKS CONSERVATION ASSOCIATION・SAVE THE DUNES・SURFRIDER FOUNDATION

Comments on US Steel Midwest - Draft NPDES Permit No. IN0000337

June 17, 2021

Richard Hamblin, Permit Manager
IDEM/OWQ/NPDES/PS
100 N Senate Ave., Room 1255
Indianapolis, IN 46204

Dear Mr. Hamblin:

On behalf of our members and supporters the National Parks Conservation Association, Alliance for the Great Lakes, Environmental Law & Policy Center, Hoosier Environmental Council, Izaak Walton League, Save the Dunes, and the Surfrider Foundation respectfully submit these comments concerning the National Pollutant Discharge Elimination System (NPDES) Draft Permit Number IN0000337 (Draft Permit) issued by the Indiana Department of Environmental Management (IDEM) to United States Steel Corporation (USS) for its Midwest Works facility in Portage, Indiana.

Strong enforcement of the goals and tenets of the NPDES program is essential to the health of the people, wildlife, waters, and landscapes of the Great Lakes. With 85 percent of America's fresh surface water, the Great Lakes are a national and international treasure, providing drinking water, jobs, and recreation to more than 40 million United States citizens.

Indiana Dunes National Park, located immediately adjacent to the USS Midwest facility, is especially vulnerable to diminished water quality. The Congressionally mandated purpose of Indiana Dunes National Park, the very reason the park was established, is "to preserve for the educational, inspirational, and recreational use of the public certain portions of the Indiana dunes and other areas of scenic, scientific, and historic interest and recreational value."[1] Indiana Dunes features a variety of natural and cultural features, some of which are globally rare, including dune pannes located at Portage Lakefront, the park site closest to the USS Midwest facility. More than two million people visit Indiana Dunes each year to experience its beaches, waters, and trails. Failure to hold USS accountable at its Midwest site through strong NPDES permitting puts visitor health and safety at risk and endangers the Park Service mission to protect Indiana Dunes in perpetuity.

As IDEM is aware, past violations by USS Midwest have necessitated enforcement action by both IDEM and the US Environmental Protection Agency (EPA). While the results of the government complaint against USS and the Clean Water Act citizen suit brought by the City of Chicago and the Surfrider Foundation are pending, IDEM must take the necessary steps to ensure the protection of Lake Michigan,

[1] See 16 U.S.C. 460u.

Indiana Dunes National Park, and the millions of people who rely on these places for clean drinking water, quality of life, and recreation.

We, the undersigned organizations, have significant concerns with Draft NPDES Permit Number IN0000337 and recommend a series of changes as detailed below. This permit, as currently constructed, is excessively deferential to a facility with a long history of permit violations. Attached to this letter is a technical memorandum completed by CEA Engineers, PC, that further elaborates our concerns.

Consent Decree Consistency

We appreciate that IDEM has included in the Draft Permit the elements of the 2019 proposed consent decree related to wastewater process and facility maintenance and operations planning. However, IDEM must incorporate into the Draft Permit a reopening clause requiring the permit's immediate revision following the finalization of the consent decree.

The goal of the NPDES permitting program is to eliminate pollutant discharges through reasonable and effective measures. Likewise, the goal of the 2019 revised consent decree proposed by the government is to ensure USS Midwest compliance with the NPDES program and the Clean Water Act.[2] The decree goes further to define what the government believes is necessary in successor permits to ensure compliance, including revisions to the 2016 NPDES permit under which USS Midwest has been operating. IDEM did not require, and the Midwest facility did not request, modification of the 2016 NPDES permit to incorporate all facets of the proposed consent decree.

This Draft Permit was submitted in October 2020, three and a half years after the April 2017 spill, during which USS Midwest spilled nearly forty times the legal limit of toxic hexavalent chromium into Burns Waterway and Lake Michigan, and two years after the entry of the 2018 proposed consent decree. As a result, the requirements of the current 2016 NPDES permit differ from those of the consent decrees despite the stated objective of both decrees to bring the Midwest facility into compliance with the 2016 NPDES permit.

Failure to modify the 2016 NPDES Permit expeditiously contravenes the goal of the NPDES permitting program and is not protective of the water quality and beneficial uses of the natural resources surrounding the Midwest facility, including Indiana Dunes and Lake Michigan. The absence of a final consent decree should not disincentivize IDEM and USS Midwest from acting expeditiously to take steps beyond good faith implementation of consent decree requirements to reach compliance with the CWA and NPDES program.

The Draft Permit must be modified to include a requirement for immediate modification of the Midwest facility's NPDES Permit to be inclusive of, and consistent with, any future consent decrees, court orders, or enforcement actions entered into by US Steel. If the consent decree is finalized in its current form, IDEM will have already implemented the required, but insufficient, changes to bring USS Midwest into compliance. If the decree is altered, this added reopening clause will ensure that the permit is consistent with the final version.

Public Notification

The spill/release and notification provisions of the 2019 revised consent decree, entitled "Midwest Facility Spill/Release Evaluation and External Reporting Requirements," should be incorporated into the NPDES permit.

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[2] USDC IN/ND case 2:18-cv-00127, *United States of America and the State of Indiana v. United States Steel Corporation*, Lodged Consent Decree, April 2, 2018, Page 4.

In October 2017, USS discharged illegal amounts of chromium without notifying the public in a timely manner, leaving park recreators, including kayakers, surfers, and other water users, completely unaware of any risk to their health. IDEM cited USS for giving an “unsatisfactory” notification of its May 2019 oil violation, describing their statement as “not timely,” “not directed to potentially affected downstream users,” and “misleading.” To further limit the impacts of potential violations, USS should be required to directly notify the public promptly of violations, such as by installing signs visible to water recreation areas and by providing digital notification to those who request it.

Chromium Monitoring

The Draft Permit should be revised to eliminate the reopening clause that would allow for the potential reduction of hexavalent and total chromium sampling frequency. Such a clause must not be considered until US Steel applies for renewal of its NPDES permit in five years and has demonstrated a proven track record of effective operation and maintenance (O&M) of its wastewater treatment facilities. This conclusion must be evidenced by cessation of NPDES permit violations for operations and maintenance inadequacies, total chromium discharge violations, and hexavalent chromium violations.

The US Steel Midwest facility has not demonstrated such improvements. The facility exceeded its total chromium limit in October 2017 and hexavalent chromium limits in January 2017, October 2017, and October 2019. US Steel has had continued O&M issues with its treatment facilities and violated the current NPDES Permit five times between May 2019 and December 2019 due to O&M inadequacies in its wastewater treatment facilities.

Based on continued compliance issues with hexavalent chromium limits and improper wastewater treatment facility O&M, IDEM should reject the inclusion of this reopening clause.

Streamlined Mercury Variance

The Draft Permit must be revised to eliminate the streamlined mercury variance as currently drafted. IDEM should require that the Midwest facility achieves the water quality-based effluent limits for mercury determined by IDEM’s Reasonable Potential Analysis in a defined time period.

As our attached analysis notes, water quality-based effluent limits (WQBEL) are “intended to protect receiving waters of industrial discharges to allow for their beneficial use and are required for any pollutant determined to have a reasonable potential to exceed the water quality criteria of the receiving water.”[3] In this case, the receiving waters are Burns Waterway and nearby Lake Michigan, used by boaters, anglers, and swimmers.

IDEM determined that discharges at the Midwest facility present the reasonable potential to exceed water quality criteria and therefore would adversely impact Burns Waterway and disallow its full beneficial use. The approach to determining the Interim Mercury Limit is inconsistent with the overall goal of the NPDES permitting program of eliminating, or at least minimizing, pollutant discharges. At a minimum, IDEM should institute reductions in the Interim Mercury Limit over the term of the Draft NPDES Permit that approach the WQBELs to provide an impetus for US Steel to take the necessary action to reduce mercury discharges from the Midwest facility.

Whole Effluent Toxicity

The Draft Permit should be revised to include stricter chronic toxicity effluent limit to discharges from Outfall 001. In addition, IDEM should require Whole Effluent Toxicity testing for acute and chronic toxicity while the Midwest facility is under its compliance schedule for toxicity reduction.

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[3] IDEM NPDES Permit IN0000337 Fact Sheet, page 16.

Failure to require this testing and adherence to the water quality-based effluent limits for acute and chronic toxicity reduces the incentive for USS Midwest to identify and remediate the source of toxicity as soon as possible, since there are no potential penalties or corrective actions resulting from NPDES permit effluent violations until September 2023. Considering the potential for adverse water quality impacts resulting from toxic discharges to Burns Waterway, the potential exists for USS Midwest to continue discharging toxic effluent through September 2023 with all of the accompanying potential adverse impacts to the environment and public.

Metal Sampling Frequencies
IDEM should not reduce the sampling frequency for the metals determined to require water quality-based effluent limits.

Based on the recent, ongoing NPDES permit violations and compliance issues by USS Midwest in achieving copper effluent limits and improper wastewater treatment facility maintenance, a sampling frequency reduction is unjustified. A reduction in sampling frequency relaxes the Midwest facility's permit compliance requirements and potential for identifying effluent limit violations potentially causing adverse impacts to the environment and public. Identification of effluent limit violations, especially for the copper daily maximum concentration effluent limit which has consistently been violated, are an impetus for corrective actions, such as improving facility operations and implementing treatment technologies capable of meeting effluent limits.

Fish Impingement
IDEM should make two changes to the Draft Permit to limit impacts to the Lake Michigan fishery and Indiana Dunes wildlife. First, IDEM should require US Steel to verify the intake velocity of the cooling water intake through in-stream velocity monitoring and not rely on calculations based on assumptions that are potentially not representative of actual conditions, consistent with US EPA's best technology available. In addition, IDEM should require US Steel to submit a full 316(b) application inclusive of all information required to confirm that these US EPA requirements are being met and that the potential for adverse impacts to fish and aquatic species from the cooling water intake are adequately reduced. Without these changes, the Draft Permit places Lake Michigan's nearshore fishery at risk.

Formaldehyde Compliance
IDEM should not permit the Midwest facility to operate under the formaldehyde compliance schedule as currently constituted.

In the application for this Draft Permit, US Steel requested a sixty-month compliance schedule for the formaldehyde effluent limits and provided IDEM information to justify its request. IDEM determined that sixty months was a reasonable amount of time to achieve the water quality-based effluent limit but provided no basis in the Draft NPDES Permit Fact Sheet to support its determination. IDEM needs to include the information provided by US Steel for justification for its compliance schedule request and its basis for acceptance in the Draft NPDES Permit Fact Sheet to allow the public to be able to fully understand and evaluate the potential threats to the environment and local residents resulting from formaldehyde discharges from the Midwest facility and implementation of the compliance schedule as currently drafted.

Conclusion
Indiana Dunes National Park and Lake Michigan are among America's most treasured places, underscored by the stewardship of the National Park Service, the more than two million people who visit Indiana Dunes every year. The Draft Permit must go further to ensure our natural resources, park visitors, and area residents are well protected now and into the future. Thank you for the opportunity to comment.

Respectfully submitted,

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Technical Evaluation Report

Date: June 15, 2021; Revised June 16, 2021

To: Colin Deverell, Midwest Program Manager, National Parks Conservation Association

From: Kevin Draganchuk, P.E., BCEE

Re: US Steel Midwest Plant Draft NPDES Permit – Revision 1

CEA Engineers, P.C. Job No.: J21-11

At the request of National Parks Conservation Association, ("NPCA"), CEA Engineers, P.C. ("CEAPC") evaluated the draft National Pollutant Discharge Elimination System ("NPDES") Draft Permit Number IN0000337 issued April 19, 2021, ("Draft NPDES Permit"), by the State of Indiana Department of Environmental Management ("IDEM") to United States Steel Corporation ("US Steel") to authorize discharges from its industrial facility located in Portage, Indiana ("Midwest Plant") to the Portage-Burns Waterway ("PBW") for compliance with the November 20, 2019, Revised Consent Decree between the State of Indiana ("Indiana") and United States of America ("USA") and US Steel, Case No. 2:18 cv-00127 ("Revised CD"), consistency with recommendations made by NPCA in June 2018 and July 2018 regarding the April 2, 2018, Proposed Consent Decree between Indiana and USA and US Steel ("Proposed CD"), consistency with permitting best practices, and to identify the potential to adverse impacts to the environment and public.

Executive Summary

CEA Engineers, P.C. ("CEAPC") evaluated the draft National Pollutant Discharge Elimination System Draft Permit Number IN0000337 issued April 19, 2021, ("Draft NPDES Permit"), by IDEM to US Steel to authorize discharges from its Portage, Indiana industrial facility ("Midwest Plant") to the Portage-Burns Waterway ("PBW"). PBW is adjacent Indiana Dunes National Park and ultimately discharges to Lake Michigan. CEAPC evaluated the Draft NPDES Permit for consistency with the revised CD lodged in November 2019 in response to a catastrophic spill of chromium containing wastewater in April 2017, comments provided by NPCA in June and July 2018 on the proposed CD lodged in April 2018, and permitting best practices, and to identify the potential to adverse impacts to the environment and public. US Steel is also under an Agreed Order with IDEM related to numerous violations since November 2018 of its current NPDES Permit.

As a result of its evaluation, CEAPC identified numerous shortcomings in the Draft NPDES Permit, including, but not limited to: failure to ensure consistency with court orders US Steel enters into during the life of the Draft NPDES Permit; issuance of a Streamlined Mercury Variance that is lenient, provides little impetus for US Steel to comply with mercury effluent

limits determined to be protective of water quality in PBW, and allows US Steel to continue discharging excessive levels of mercury to its receiving waters; suspension of whole effluent toxicity testing despite the fact that the Midwest Plant had multiple violations in 2020 of its chronic and acute toxicity effluent limits and is required by IDEM to complete a toxicity reduction evaluation; relaxation in the required water quality based effluent limit monitoring frequencies for cadmium, copper, lead, nickel, and silver from bi-monthly to monthly despite numerous recent wastewater treatment facility operational violations and copper daily maximum effluent limit violations; permitting US Steel to request a future reduction in total chromium and hexavalent chromium despite recent numerous recent violations of its total chromium and hexavalent chromium effluent limits; implementation of a lenient compliance schedule for a newly issued effluent limit for formaldehyde that fails to provide impetus for expeditious compliance by US Steel; failures to adequately implement the USEPA's best available technology requirements for preventing fish impingement in its cooling water intake structure ("CWIS"); failure to request from US Steel and include in the Draft NPDES Permit Fact Sheet justification for US Steel's assertions that fish impingement at the CWIS is not a concern; and, failures to include information necessary for the public to adequately ascertain the efficacy of the Draft NPDES Permit and its protectiveness of the environment and public.

CEAPC recommends changes to the Draft NPDES Permit consistent with remedying the shortcomings identified in its evaluation in order to achieve the intended purpose of the NPDES permitting program of reducing pollutant discharges, to allow PBW to achieve its beneficial uses, and to be protective of the environment and public.

Background

The US Steel Midwest Plant is located along the shores of Lake Michigan adjacent to Indiana Dunes National Park ("Indiana Dunes") and discharges non-contact cooling water, treated process wastewaters, and stormwater through permitted outfalls to PBW, which subsequently discharges to Lake Michigan, an Indiana outstanding state water resource located within Indiana Dunes, an aquatic protected area. The Midwest Plant's current NPDES Permit expired March 31, 2021, ("Current NPDES Permit").[1] US Steel submitted a NPDES permit renewal and streamlined mercury variance application to IDEM in October 2020 for the Midwest Plant. IDEM issued the Draft NPDES Permit on April 19, 2021.[2,34]

1 State of Indiana Department of Environmental Management, Authorization to Discharge under the National Pollutant Discharge Elimination System, United States Steel Corporation – Midwest Plant, Permit No. IN0000337, April 1, 2016. (Hereafter, "Current NPDES Permit")

2 Indiana Department of Environmental Management, Public Notice No. 20210419-IN0000337, April 19, 2021. (Hereafter, "IDEM Public Notice")

3 Indiana Department of Environmental Management, National Pollutant Discharge Elimination System Fact Sheet for United States Steel Corporation Midwest Plant, Draft: April 2021. (Hereafter, "Fact Sheet").

4 CEAPC is explicit in referring to a specific NDPES Permit for the Midwest Plant by using the terms "Draft NPDES Permit" and "Current NPDES Permit." When discuss requirements under both permits or in discussion of general NPDES permitting, CEAPC uses the term "NPDES permit(s)".

On April 11, 2017, US Steel discharged process wastewater containing excessive pollutant levels including, but not limited to, chromium and hexavalent chromium into PBW ("April 2017 Spill"). Inspections by United States Environmental Protection Agency ("USEPA") in April 2017 following the April 2017 spill identified numerous deficiencies resulting in adverse environmental impacts to PBW, Indiana Dunes, and Lake Michigan, including NPDES permit effluent limit exceedances, narrative water quality standard ("WQS") violations, monitoring violations, reporting violations, inadequacies in operation and maintenance ("O&M") at the Midwest Plant, and deficiencies in the stormwater pollution prevention plan ("SWPPP") for the Midwest Plant. As a result of the April 2017 Spill and USEPA inspections, the Proposed CD was lodged to remedy the impacts of the April 2017 Spill and prevent similar events in the future. The Revised CD in the matter was subsequently lodged in November 2019, but has not been entered into by the Court as of the issuance of the Draft NPDES Permit or the writing of this Technical Report.[5]

NPCA provided comments on the Proposed CD on June 4, 2018, ("June 2018 Comments") and supplemental comments on July 18, 2018, ("July 2018 Supplemental Comments") regarding numerous concerns related to the ability of the Proposed CD and its compliance requirements to bring the Midwest Plant into compliance with all state and federal environmental laws intended to protect public resources and to prevent future NPDES permit violations, the potential for incidents like the April 2017 Spill, the potential for adverse environmental impacts to Indiana Dunes, PBW, and Lake Michigan, and potential losses to the public resulting from beach closures and environmental degradation caused by incidents like the April .2017 Spill.[6,7] NPCA filed an amicus brief in opposition to the Revised CD in March 2021.[8]

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5 Attachment A, In the United States District Court for the Northern District of Indiana Hammond Division, United States of America and the State of Indiana, v. United States Steel Corporation, Revised Consent Decree, Case No. 2:18 cv-00127, November 20, 2019. (Hereafter, "Revised CD")

6 Earthrise law center, Comments Proposed Consent Decree, United States et al. v. United States Steel Corporation, D.J. Ref. No. 90-5-2-1-06476/2, submitted by National Parks Conservation Association, June 4, 2018. (Hereafter, "NPCA June 2018 Comments")

7 Earthrise law center, Supplemental Comments Proposed Consent Decree, United States et al. v. United States Steel Corporation, D.J. Ref. No. 90-5-2-1-06476/2, submitted by National Parks Conservation Association, July 20, 2018. (Hereafter, "NPCA July 2018 Supplemental Comments")

8 In the United States District Court for the Northern District of Indiana, United States of America and the State of Indiana, Plaintiffs, City of Chicago and the Surfrider Foundation, Intervenor-Plaintiffs v. United States Steel Corporation, Case No. 2:18 cv-00127, National Parks Conservation Association [Proposed] Amicus Curiae Brief in Opposition to Entry of Revised Consent Decree, December 26, 2019. (Hereafter, "NPCA Amicus Brief").

Midwest Plant Permitted Outfalls

The Midwest Plan discharges from permitted outfalls to PBW that require monitoring under its NPDES permits including:[9,10]

- Outfall 002 – discharges non-contact cooling water
- Outfall 003 – discharges non-contact cooling water and stormwater from 20 acres
- Outfall 004 – discharges non-contact cooling water, process wastewater effluent and stormwater from 24.25 acres
- Outfall 104 – internal outfall that discharges process wastewater
- Outfall 204 – internal outfall that discharges process wastewater
- Outfall 304 – internal outfall that discharges process wastewater combined from 104 and 204
- Outfall 006 – created to report cooling water intake data
- Outfall 500 – created as the temperature compliance point and is located at the edge of the mixing zone in PBW

IDEM Agreed Order

Due to numerous Current NPDES Permit and IDEM inspection violations between November 2018 and December 2020, the Midwest Plant entered into an Agreed Order ("AO") with IDEM on May 11, 2021.[11] Table 1 summarizes the violations contained in the AO.

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9 Fact Sheet, page 6.

10 State of Indiana Department of Environmental Management, Authorization to Discharge under the National Pollutant Discharge Elimination System, United States Steel Corporation – Midwest Plant, DRAFT Permit No. IN0000337, April 19, 2021. (Hereafter, "Draft NPDES Permit")

11 Indiana Department of Environmental Management, Adoption of Agreed Order, Case No. 2019-26434-W, Case No. 2019-26665-W, May 11, 2021. (Hereafter, "IDEM AO")

Table 1 - Summary of IDEM AO Violations at Midwest Plant

Date	Outfall	Standard	Pollutant
11/28/2018	Outfall 004	narrative visual	foam and scum
12/18/2018	Outfall 004	narrative visual	foam
5/9/2019	Outfall 004	narrative visual	turbid, discolored effluent; visible sheen and solids
5/9/2019	Outfall 004	public notification	
5/9/2019	Outfall 004	minimize environmental impacts	sulfuric acid
5/9/2019	Outfall 004	provide information to IDEM	sulfuric acid
5/9/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	solids
5/30/2019	Outfall 003	narrative visual	foam
8/8/2019	Outfall 004	narrative visual	oil sheen
8/20/2019	Outfall 004	narrative visual	oil sheen
8/20/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	oil
8/29/2019	Outfall 004	maximum daily concentration effluent limit	copper
9/6/2019	Outfall 004	narrative visual	oil sheen
9/6/2019	Outfall 004	public notification	
9/6/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	oil
9/6/2019	Outfall 004	maintain a current Operations Manual for Final Treatment	
9/6/2019	Outfall 500	reporting	hourly maximum temperature
9/18/2019	Outfall 004	narrative visual	oil sheen
10/13/2019	Outfall 004	maximum daily concentration effluent limit	copper
10/30/2019	Outfall 204/ Outfall 004	minimize environmental impacts	hexavalent chromium
10/30/2019	Outfall 304	maximum daily load effluent limit	hexavalent chromium
10/31/2019	Outfall 004	narrative visual	oil sheen
11/21/2019	Outfall 004	narrative visual	oil sheen and solids
12/3/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	
12/10/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	
8/31/2020	Outfall 004	whole effluent toxicity	toxicity
9/30/2020	Outfall 004	whole effluent toxicity	toxicity
10/26/2020	Outfall 104	monitoring	
11/14/2020	Outfall 004	maximum daily concentration effluent limit	copper
11/28/2020	Outfall 004	maximum daily concentration effluent limit	copper
12/20/2020	Outfall 004	maximum daily concentration effluent limit	cyanide

Revised CD

The Revised CD includes the following NPDES permit related requirements:

- Paragraph 10(f) - US Steel shall, at the time of renewal of its NPDES permit and as part of its application for renewal, submit to IDEM the most current O&M Plan and the renewal application shall include a request that the renewed NPDES permit contain the requirements to develop, implement, and review the O&M Plan as required by Paragraphs 10(a)-(e) of the Revised CD.
- Paragraph 11(c): US Steel shall complete installation of the USEPA and IDEM approved wastewater treatment works monitoring technologies and equipment and begin operating the approved wastewater process monitoring.
- Paragraph 11(d): US Steel shall incorporate visual inspection and maintenance of the USEPA and IDEM approved wastewater process monitoring equipment into its O&M Plan.
- Paragraph 11(e): US Steel shall maintain the results of the approved wastewater process monitoring in accordance with its NPDES permit and shall make such records available to USEPA and IDEM upon request.
    - *CEAPC Comment:* The Draft NPDES Permit includes the requirements of Paragraphs 10(f), 11(c), 11(d), and 11(e) . US Steel submitted with its application the April 15, 2020, 7th Revision of its Wastewater Treatment O&M Manual and Preventive Maintenance Program Plan ("O&M Plan 7th Revision"). Part VI of the Draft NPDES Permit requires implementation and compliance with O&M Plan 7th Revision or future revisions, as required by Paragraph 10 of the Revised CD.[12,13] The Draft NPDES Permit includes requirements for monitoring and reporting records and their provision as required by IDEM and USEPA that are reasonable.[14]
- Paragraph 12(a): By January 31, 2018, US Steel shall perform daily sampling for total and hexavalent chromium at Outfalls 104 and 204.
    a. Hexavalent chromium shall be collected as grab samples for dissolved metals analysis
    b. Total chromium as shall be collected as a 24-hour composite for total recoverable metals analysis

12 Fact Sheet, pages 33-34.
13 Draft NPDES Permit, page 80.
14 Draft NPDES Permit, pages 23 and page 61.

Results must be reported in the DMRs and MMRs submitted pursuant to the NPDES permit.[15]

- *CEAPC Comment:* The Draft NPDES Permit meets all the requirement of paragraph 12(a) regarding hexavalent chromium and total chromium sampling frequency at outfalls 104 and 204 by implementation of daily sampling.[16] Considering the impacts of the April 2017 Spill, the fact that the Midwest Plant exceeded its total chromium limit in October 2017 and hexavalent chromium limits in January 2017, October 2017, and October 2019 at Outfall 304, and the fact that the Midwest Plant has had continued O&M issues with its treatment facilities and violated the Current NPDES Permit five times between May 2019 and December 2019 due to O&M inadequacies in its wastewater treatment facilities, daily sampling for total chromium and hexavalent chromium is reasonable and consistent for identifying potential NPDES permit effluent limit violations and their resulting deleterious effects on PBW.[17,18]

- Paragraph 12(b): US Steel shall, at the time of renewal of its NPDES permit, apply to IDEM for renewal that includes the requirements of Paragraph 12(a) of the Revised CD. US Steel may request a change in monitoring frequency in the application, along with any supporting data.
  - *CEAPC Comment:* US Steel did not request a change in total chromium and hexavalent chromium monitoring frequencies in its application for the Draft NPDES Permit, however, it did request and was granted by IDEM a request for inclusion of a reopening clause in the Draft NPDES Permit that can result in a future relaxation in total chromium and hexavalent chromium effluent monitoring frequencies.[19] US Steel exceeded its total chromium limit in October 2017 and hexavalent chromium limits in January 2017, October 2017, and October 2019 at Outfall 304.[20,21] US Steel has had continued O&M issues with its treatment facilities and violated the Current NPDES Permit five times between May 2019 and December 2019 due to O&M inadequacies in its wastewater treatment

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15 According to Paragraph 12 of the Revised CD, "Due to the nature of the process, there may be instances in which minimal flow occurs over a 24-hour period. During those events, when there is insufficient sample volume (or no sample at all), U. S. Steel shall document NODI code *F – Insufficient flow for sampling* on the DMR and MMR forms for that particular outfall and day. In the event that there is no flow during a 24-hour period, NODI code *C – No discharge* shall be used. Both codes will be deemed acceptable sampling events representative of the volume and nature of the discharge, and count towards the Daily sampling frequency."

16 Draft NPDES Permit, pages 12-14.

17 Fact Sheet, page 27.

18 Indiana Department of Environmental Management, Adoption of Agreed Order, Case No. 2019-26434-W, Case No. 2019-26665-W, May 11, 2021. (Hereafter, "IDEM AO")

19 Fact Sheet, page 27.

20 *Ibid.*

21 IDEM AO.

facilities.[22] Based on continued compliance issues with hexavalent chromium limits and improper wastewater treatment facility O&M, IDEM should reject the request for reopening that would allow for the potential reduction of hexavalent and total chromium sampling frequency at outfalls 104, 204, and 304 until US Steel applies for renewal of its NPDES permit in five years and has demonstrated a proven track record of effective operation and maintenance of it wastewater treatment facilities evidenced by cessation of NPDES permit violations for O&M inadequacies, total chromium discharge violations, and hexavalent chromium violations. Table 1 contains a list of the Midwest Plant's NPDES permit violations from the IDEM Administrative Order.

- Paragraph 30: US Steel must submit all reports required by its NPDES permit to IDEM and USEPA.
    - *CEAPC Comment:* Section C of the Draft NPDES Permit, Monitoring and Reporting, adequately includes the requirements of Paragraph 30 of the Revised CD.[23]

CEAPC Comment

The Draft NPDES Permit does include the requirements of the Revised CD, however, the Revised CD has not been entered by the Court and is potentially subject to change. The Draft Permit does not include a provision requiring immediate modification of the Midwest Plant's NPDES Permit should the provisions of the court-ordered consent decree differ from the Revised CD. Failure to include such a provision results in the potential for two different sets of compliance monitoring requirements for the Midwest Plant and in increase in the potential for reporting, monitoring, and discharge sampling errors and inconsistencies. Failure to include a provision requiring immediate permit modification upon any change in the requirements contained in the court-order consent decree reduces the efficacy Midwest Plant's NPDES permit and results in a failure of the NPDES permit to maximally achieve its intended purpose of reducing pollutant discharges to receiving waters.

NPCA June 2018 Comments

NPCA's June 2018 Comments include the following recommendations regarding compliance with the Revised CD and requirements of the Midwest Plant's NPDES permit.[24]

- The Midwest Plant must immediately modify its NPDES permit to incorporate the requirements of the Revised CD, including all of the operation, maintenance, preventative

22 IDEM AO.
23 Draft NPDES Permit, pages 19-23.
24 The recommendations of the June 2018 Comments have been paraphrased by CEAPC for conciseness, unless otherwise noted with quotations. Unless an excerpt is fully quoted, the term "proposed Consent Decree" in the June 2018 Comments has been changed to "Revised CD" as appropriate, since the Revised CD is the version currently under consideration.

maintenance, wastewater process monitoring plans be incorporated into the NPDES permit.[25]

- The Revised CD requires substantively different monitoring for both hexavalent and total chromium than is required by the Current NPDES permit in 2018. An immediate NPDES permit modification is essential to ensure the efficacy of the consent decree.[26]
- "Allowing U.S. Steel to continue to operate with an outdated permit that does not accurately reflect *all* requirements of the Facility undermines the NPDES permit program itself. Fundamental to the permit program is that the permit, in a single operative document, contains all legal requirements for the Facility's discharge of pollutants."[27]
- "By not incorporating the requirements of the proposed Consent Decree into the permitting process, there is no explicit mechanism for ensuring employees are fully trained. Moreover, there is an express risk that employees will be mis-trained to follow the NPDES Permit rather than the Consent Decree for hexavalent and total chromium monitoring from outfalls 104 and 204. And there is a further risk that employees will not be sufficiently trained at all on the other plans, which under the proposed Consent Decree will never be part of the permit."[28]
- Upon modification all compliance requirements of the Revised CD should be included in the NPDES permit to increase their enforceability, and to increase the compliance transparency for the public.[29]
    - *CEAPC Comment:* IDEM did not require, and the Midwest Plant did not request, modification of the Current NPDES Permit to meet the requirements of the Proposed CD or the Revised CD (collectively, "consent decrees") until its expiration on March 31, 2021, and the corresponding required application for NPDES permit renewal in anticipation of NPDES permit expiration was submitted in October 2020. As a result, the requirements of the Current NPDES Permit differed from those of the consent decrees. Failure to enter the consent decrees in the court disincentivized IDEM and the Midwest Plant to act expeditiously and take steps beyond good faith implementation of consent decree requirements by the Midwest Plant and its application for and development by IDEM of the Draft NPDES Permit. As a result, over three years have passed since lodging of the Proposed CD and issuance of the Draft NPDES Permit by IDEM that incorporates the consent decree compliance requirements deemed necessary to reduce the potential for incidents like the April 2017 Spill, reduce

25 June 2018 Comments, pages 26-27.
26 June 2018 Comments, page 27.
27 June 2018 Comments, page 28.
28 June 2018 Comments, page 29.
29 *Ibid.*

pollutant discharges from the Midwest Plant, and be protective of environment and public. The goal of the NPDES permitting program is to eliminate pollutant discharges through reasonable and effective measures. Failure to modify the Current NPDES Permit expeditiously after lodging of the Proposed CD to include the compliance requirements of the consent decrees contravenes the goal of the NPDES permitting program and was not protective of the water quality and beneficial uses of PBW, the environmental resources surrounding the Midwest Plant, including Lake Michigan and Indiana Dunes, and of the public. The Draft Permit needs to be modified to include a requirement for immediate modification of the Midwest Plant's NPDES Permit to be inclusive of and consistent with any future consent decrees, court orders, or enforcement actions entered into by US Steel.

  - *CEAPC Comment:* The Draft NPDES Permit includes training requirements for the Midwest Plant staff consistent with the requirements of the Revised CD and best practices in the wastewater treatment industry.[30]

- The Revised CD changes the effluent limitation monitoring frequencies for total and hexavalent chromium at outfalls 104 and 204. If the Current NPDES Permit is not modified to include the effluent limitation monitoring frequencies for total and hexavalent chromium at outfalls 104 and 204, uncertainty is created for US Steel and public transparency is precluded.[31]
- By not updating the Current NPDES Permit to match the compliance requirements of the Revised CD and incorporating all of its Clean Water Act-based requirements, a risk of confusion is created that prevents compliance with the more rigorous monitoring required between the NPDES Permit or the Revised CD. Additionally, being in compliance with a NPDES permit in general is considered compliance with the Clean Water Act, even if the NPDES permit is later deemed unlawful or inadequate.[32]
  - *CEAPC Comment:* The Draft NPDES Permit includes the hexavalent chromium and total chromium monitoring frequencies required by the Revised CD and precludes confusion created by two different monitoring requirements.

NPCA July 2018 Supplemental Comments

NPCA's July 2018 Supplemental Comments include the following recommendations regarding compliance with the Proposed CD and requirements of the Current NPDES permit.[33]

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30 Draft NPDES Permit, page 28.
31 *Ibid.*
32 June 2018 Comments, pages 28-29.
33 The recommendations of the July 2018 Supplemental Comments have been paraphrased by CEAPC for conciseness.

- NPCA reiterated its recommendation from its June 2018 Comments that all "substantive" compliance requirements, be incorporated into the NPDES permit and its training requirements.[34]
    - *CEAPC Comment:* IDEM did not require, and the Midwest Plant did not request, modification of the Current NPDES Permit to meet the requirements of the Proposed CD or the Revised CD (collectively, "consent decrees") until its expiration on March 31, 2021, and the corresponding required application for NPDES permit renewal in anticipation of NPDES permit expiration was submitted in October 2020. As a result, the requirements of the Current NPDES Permit differed from those of the consent decrees. Failure to enter the consent decrees in the court disincentivized IDEM and the Midwest Plant to act expeditiously and take steps beyond good faith implementation of consent decree requirements by the Midwest Plant and its application for and development by IDEM of the Draft NPDES Permit. As a result, over three years have passed since lodging of the Proposed CD and issuance of the Draft NPDES Permit by IDEM that incorporates the consent decree compliance requirements deemed necessary to reduce the potential for incidents like the April 2017 Spill, reduce pollutant discharges from the Midwest Plant, and be protective of environment and public. The goal of the NPDES permitting program is to eliminate pollutant discharges through reasonable and effective measures. Failure to modify the Current NPDES Permit expeditiously after lodging of the Proposed CD to include the its compliance requirements contravenes the goal of the NPDES permitting program and was not protective of the water quality and beneficial uses of PBW, the environmental resources surrounding the Midwest Plant, including Lake Michigan and Indiana Dunes, and of the public. The Draft Permit needs to be modified to include a requirement for immediate modification of the Midwest Plant's NPDES Permit to be inclusive of and consistent with any future consent decrees, court orders, or enforcement actions entered into by US Steel.
- US Steel produced a Revised O&M Plan dated June 26, 2018, that did not adequately respond to concerns raised by USEPA and IDEM regarding reference to and documentation of all standard operating procedures regarding tracking maintenance activities. NPCA requested that EPA and IDEM disapprove the Revised O&M Plan and require that each of its concerns are fully addressed and explained.[35]
    - Paragraph 10(f) of the Revised CD requires that the current Midwest Plant O&M Plan is included in the NPDES Permit application and that the NPDES Permit

[34] July 2018 Supplemental Comments, page 7.
[35] July 2018 Supplemental Comments, page 3.

contain the requirements of the Revised CD regarding development, implementation, and review.

- *CEAPC Comment:* US Steel submitted with its application O&M Plan 7th Revision. Part VI of the Draft NPDES Permit requires implementation and compliance with O&M Plan 7th Revision or future revisions, as required by Paragraph 10 of the Revised CD.[36,37]

Streamlined Mercury Variance

IDEM performed a Reasonable Potential Analysis ("RPA") and determined that water quality based effluent limits ("WQBELs") were required at Outfall 004 for mercury discharges in the Draft NPDES Permit consisting of:[38]

- monthly average daily load – 0.00018 lb/day
- daily maximum load – 0.00045 lb/day
- monthly average concentration – 1.3 ng/l
- daily maximum concentration– 3.2 ng/l

In anticipation of not being able to meet the Draft NPDES Permit WQBELs for mercury, US Steel submitted a request for a Streamlined Mercury Variance ("SMV"), including a pollutant minimization program plan (PMPP), which IDEM incorporated into the Draft NPDES Permit.[39,40] The Draft NPDES Permit includes an interim discharge limit for mercury of 18 ng/l calculated on a 12-month rolling average ("Interim Mercury Limit") based on bi-monthly grab samples.[41] The interim limit was determined based on the highest maximum daily discharge effluent concentration for mercury between February 2019 and February 2021.[42]

Prior to issuance of the Draft NPDES Permit, the Midwest Plant had no effluent limits in the Current NPDES Permit for mercury and was required only to report its concentration and load six times a year based on bi-monthly sampling.[43]

CEAPC Comment:

WQBELs are intended to protect receiving waters of industrial discharges to allow for their beneficial use and are required for any pollutant determined to have a reasonable potential to exceed the water quality criteria of the receiving water.[44] IDEM's RPA determined discharges

36 Fact Sheet, pages 33-34.
37 Draft NPDES Permit, page 80.
38 Draft NPDES Permit, page 8.
39 Fact Sheet, page 61.
40 IDEM Public Notice.
41 Draft NPDES Permit, pages 8 -10.
42 Fact Sheet, page 61.
43 Current NPDES Permit.
44 Fact Sheet, page 16.

from Outfall 004 at the Midwest Plant present the reasonable potential to exceed water quality criteria and therefore would adversely impact PBW and disallow the full beneficial use of PBW.

The Interim Mercury Limit under the SMV is not protective of PBW. Basing the Interim Mercury Limit on the highest daily reported mercury concentration over the previous two reporting years is a too lenient to be protective of PBW even though it is consistent with the requirements of Rule 327 Indiana Administrative Code 5-3.5. The Interim Mercury Limit allows the continued discharge of mercury to PBW far exceeding the levels determined by IDEM as protective of the water quality and beneficial uses of PBW. The Interim Mercury Limit is nearly 14 times greater than the monthly average concentration WQBEL and nearly 6 times greater than the daily maximum concentration WQBEL.

SMV compliance requirements for mercury discharges from the Midwest Plant are excessively lenient. The SMV requires only reporting of a daily maximum value and does not set an effluent limitation. The Interim Mercury Limit is based on a 12-month rolling average of the bi-monthly mercury samples, which reduces the impact of mercury discharges exceeding 18 ng/l, a concentration well in excess of what IDEM determined was protective of PBW. As a result of the lenient compliance requirements of the SMV, the Midwest Plant will be able to continue discharging mercury to PBW at excessive and unsafe levels with limited potential for Draft NPDES Permit violations and their associated penalties and corrective measures.

Through implementation of the PMPP, the SMV is intended to allow the Midwest Plant to be able to reduce mercury in its effluent discharges at Outfall 004 to the extent that it will be able to achieve compliance with its WQBELs "as soon as practicable", which is a vague, indeterminate standard.[45] If the Midwest Plant determines that the steps necessary to reduce mercury discharges from Outfall 004 to levels below the WQBELs are impractical, excessive mercury discharges will persist until an unknown time in the future and potentially into perpetuity. The Midwest Plant will be able to apply to renew the SMV when it reapplies for NPDES permit coverage in five years, and if granted by IDEM, excessive, unprotective, and water quality degrading discharges of mercury to PBW will perpetuate along with all of their adverse environmental and beneficial use impacts.

Based on best professional judgment and with the intention of allowing PBW to achieve its beneficial uses, IDEM should not permit the Midwest Plant to operate under the SMV as currently constituted. The approach to determining the Interim Mercury Limit by IDEM through Rule 327 Indiana Administrative Code 5-3.5 is intended to not be punitive on pollutant dischargers through identifying an interim discharge limit for mercury that is readily achievable based on recent sampling results, however, it is inconsistent with the overall goal of the NPDES permitting program of eliminating, or at least minimizing, pollutant discharges. The Interim Mercury Limit will not be lowered over the five-year period the Draft NPDES Permit will be enforced and ultimate achievement of the WQBELs is not required within a defined timeframe,

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[45] Fact Sheet, page 61.

even though the Midwest Plant will be implementing the PMPP to reduce mercury discharges. IDEM should require that the Midwest Plant achieves the WQBELs for mercury determined by IDEM's RPA in a defined time in order to reduce the risk of adverse impacts resulting from mercury discharges to the environment and public and to be fully protective of the beneficial uses of PBW. At a minimum, IDEM should institute reductions in the Interim Mercury Limit over the term of the Draft NPDES Permit that approach the WQBELs to provide an impetus for US Steel to take action necessary to reduce mercury discharges from the Midwest Plant.[46]

Whole Effluent Toxicity

The Midwest Plant violated its Current NPDES permit for whole effluent toxicity ("WET") in August and September 2020.[47,48] Based on USEPA Enforcement and Compliance History Online data ("USEPA ECHO") data, the Midwest Plant violated the Current NPDES Permit for chronic toxicity in June 2020.[49] As a result, the Midwest Facility is under a compliance schedule requiring completion of a toxicity reduction evaluation ("TRE") to identify and remediate the cause of toxicity in its discharges from Outfall 004.[50,51]

Table 2 contains the effluent limit WET violation data from USEPA ECHO and the magnitude of effluent limit exceedances. Chronic WET results reported to USEPA ECHO reached a maximum of eight times greater than the Midwest Plant's NPDES permit limit for October 2020.

46 CEAPC downloaded discharge monitoring reporting data from USEPA Environmental Compliance History Online (USEPA ECHO) for the Midwest Plant, including bi-monthly monitoring results for daily maximum and monthly average concentrations for mercury. USEPA ECHO is reporting mercury concentrations in micrograms/liter ('µg/l"). Specifically, the daily maximum mercury concentration for February 2021 is reported as 1.8 µg/l and in April 2021 as 1.9 µg/l. As detailed, the maximum observed daily maximum mercury concentration value over the past two years used as the basis for the Interim Mercury Limit was 18 nanograms/liter ("ng/l"). Converting the EPA ECHO data from µg/l to ng/l results in maximum daily mercury concentrations of 1,800 ng/l for the February 2021 and 1,900 ng/l. These results would exceed the Interim Mercury Limit by approximately by a factor of 100, which does not appear reasonable based on previous sampling results. It appears that the data was potentially reported incorrectly or the units in the USEPA ECHO data are incorrect. Regardless, CEAPC did not rely on this data as a basis for its evaluation of the SMV.

47 IDEM AO, page 8.

48 Fact Sheet, pages 20-21.

49 United States Environmental Protection Agency, Enforcement and Compliance History Online, Effluent Limit Exceedances Report, IN0000337: US Steel Corp Midwest Plant, Portage, IN 46361287, Monitoring Periods Date Range: 01/01/2018 to 06/30/2021, Accessed June 11, 2021.

50 Fact Sheet, pages 20-21.

51 Draft NPDES Permit, page 41.

Table 2 - Midwest Plant Whole Effluent Toxicity Violations

Monitoring Period Date[52]	WET Test	Discharge Monitoring Report Value	NPDES Permit Limit Value	Unit	Percent Exceedance of Permit Limit
6-30-20	Chronic	3.8	1.9	TUc	200%
9-30-20	Acute	1.3	1	TUa	130%
9-30-20	Chronic	8.2	1.9	TUc	432%
10-30-20	Acute	6.2	1	Tua	620%
10-30-20	Chronic	15.2	1.9	TUc	800%

As part of the Draft NPDES Permit development process, IDEM performed a reasonable potential to exceed analysis at Outfall 004 that determined that a reasonable potential for exceedances of the acute and chronic toxicity exists. IDEM determined that WQBELs for Outfall 004 are required for acute and chronic toxicity consisting of: [53]

- acute daily maximum of 1.0 acute toxic units ("TUa") sampled quarterly as a 24-hour composite
- chronic monthly average of 2.0 chronic toxic units ("TUc") sampled quarterly as a 24-hour composite

Due to being under the TRE compliance schedule resulting from its WET violations in August and September 2020, WET testing has been suspended. The Midwest Plant is required to complete the TRE process by September 1, 2023. WET testing will resume upon completion of the TRE process.[54]

CEAPC Comment:

A chronic toxicity effluent limit of 2.0 TUc allows for effluent proportion of 50% within the test solution resulting in adverse impacts to the indicator organism, indicating pure effluent discharges from Outfall 004 that would meet the 2.0 TUc chronic toxicity effluent limit are likely resulting in the potential for adverse impacts to aquatic species.[55,56] IDEM should apply a chronic toxicity effluent limit of 1.0 TUc to discharges from Outfall 001 to be fully protective of PBW.

Not requiring WET testing while the Midwest Plant is under the TRE compliance schedule is lenient and reduces the urgency for the Midwest Plant to identify the source of toxicity in its

52 CEAPC notes that the dates from USEPA ECHO data and the IDEM AO are inconsistent.
53 Draft NPDES Permit, pages 8.
54 Fact Sheet, pages 20-21.
55 Draft NPDES Permit, page 47.
56 United States Environmental Protection Agency, EPA Regions 8, 9, and 10 Toxicity Training Tool, January 2010.

effluent from Outfall 004 and remediate it, especially considering the magnitude of the NPDES permit exceedances that occurred in 2020 as shown in Table 2. IDEM should require WET testing for acute and chronic toxicity while the Midwest Plant is under the TRE compliance schedule, which may extend for more than two more years if uncompleted until September 2023, and enforce the WQBELs it determined are necessary to be protective of PBW and its beneficial uses. Failure to require WET testing and adherence to the WQBELs for acute and chronic toxicity reduces the impetus for the Midwest Plant to identify and remediate the source of toxicity as soon as possible, since there are no potential penalties or corrective actions resulting from NPDES permit WET effluent violations until September 2023. Considering the potential for adverse water quality impacts resulting from toxic discharges to PBW, the potential exists for the Midwest Plant to continue discharging toxic effluent to PBW through September 2023 with all of the accompanying potential adverse impacts to the environment and public and failure to be fully protective of the beneficial uses of PBW.

Silver, Cadmium, Copper, Nickel, and Lead Sampling Frequencies

WQBELs are required for effluent discharges from Outfall 004 for cadmium, copper, lead, nickel, and silver.[57] Loading-based WQBELs for lead and nickel are more stringent in the Draft NPDES Permit than in the Current NPDES permit.[58,59] The Current NPDES permit requires 24-hour composite sampling for silver, cadmium, copper, nickel, and lead twice a month.[60] The Draft NPDES Permit reduces the sampling frequencies for cadmium, lead, nickel, and silver to monthly based on the results of the reasonable potential statistical analysis performed by IDEM.[61,62] Copper sampling frequency is increased from bi-monthly to weekly.[63]

CEAPC Comment:

US Steel exceeded its maximum daily copper concentration at Outfall 004 on August 29, 2019, October 13, 2019, November 14, 2020, and November 29, 2020, exhibiting a consistent failure to meet the copper WQBEL deemed protective of PBW by IDEM.[64] US Steel has had continued O&M issues with its treatment facilities and violated the Current NPDES Permit five times between May 2019 and December 2019 due to O&M inadequacies in its wastewater treatment facilities.[65] Table 1 contains a list of the NPDES permit violations at the Midwest Plant from the IDEM Administrative Order.

The recent, ongoing NPDES permit violations and compliance issues achieving copper effluent limits and improper wastewater treatment facility O&M increase the potential for exceedances of

57 Fact Sheet, pages 16 and 19.
58 Current NPDES Permit, page 11.
59 NPDES Permit, page 8.
60 Current NPDES Permit, page 11.
61 Draft NPDES Permit, page 8.
62 Fact Sheet, page 17.
63 Draft NPDES Permit, page 8.
64 IDEM AO
65 *Ibid.*

the metals WQBELs at Outfall 004. As a result, IDEM should not reduce the sampling frequency for the metals determined to require WQBELs in order to be protective of the beneficial uses of PBW and confirm compliance with the WQBELs. A reduction in sampling frequency relaxes the Midwest Plant's permit compliance requirements and potential for identifying effluent limit violations potentially causing adverse impacts to the environment and public. Identification of effluent limit violations, especially for the copper daily maximum concentration effluent limit which has consistently been violated, are an impetus for corrective actions, such as improving facility operations and implementing treatment technologies capable of meeting effluent limits.

Cooling Water Intake Structure Fish Impingement

Impingement occurs when fish and other aquatic species are trapped against cooling water intake structure ("CWIS") screens or are pulled into CWIS pipes during water withdrawal. Impingement can result in injury and death to fish and other aquatic organisms.[66,67]

The Midwest Plant CWIS fish impingement prevention technology consists of non-functional traveling screens that IDEM has determined is in accordance with USEPA Best Technology Available ("BTA") for intake structures with a through screen intake velocity determined to be less than 0.5 feet per second ("fps").[68] The Midwest Plant CWIS through screen intake velocity was determined to be 0.42 fps at the maximum observed intake flow rate and 0.22 fps at the average observed intake flow rate. The through screen intake velocities were determined not by actual velocity monitoring by US Steel, but calculated using water flow, water depth, and screen open areas.[69] The calculated velocity was based on the assumption that the traveling screens are in their original configuration and condition.[70] The flow velocity in the 84-inch CWIS pipe that conveys water to the onshore pump stations was determined to be 2.1 fps at the maximum observed intake flow rate and 1.1 fps at the average observed intake flow rate.[71]

The traveling screens at the CWIS have not been operational since 2006 based on US Steel's observations that debris and fish were "typically" absent during backwash and that in the previous 25 years of operation fish impingement "did not occur at a significant amount." Other than routine maintenance, there have been no infrastructure repairs or replacements performed at the CWIS. There currently are no plans to remove or refurbish the traveling screens, since US Steel determined that removal activities posed a significant risk to the intake operations due to the conditions of the traveling screens and US Steel has "indicated" to IDEM that the traveling screens have deteriorated and that "portions of the screen are likely no longer present.[72]

66 Fact Sheet, page 40.
67 United States Environmental Protection Agency, Technical Development Document for the Final Section 316(b) Existing Facilities Rule, EPA-821-R-14-002, May 2014.
68 Fact Sheet, pages 54-55.
69 Fact Sheet, page 46.
70 Fact Sheet, page 55.
71 Fact Sheet, page 46.
72 Face Sheet, page 45.

CEAPC Comments:

The CWIS through screen intake velocities were calculated based on a flawed and invalid assumption. The calculation assumes that the traveling screens are in there original configuration and conditions, however, the traveling screens have been identified by US Steel as having suffered from deterioration, including complete loss of portions of the traveling screens.[73] IDEM was aware that the traveling screens are no longer in their original configuration and condition when it approved US Steel's operation of the CWIS and determined that it was in compliance with USEPA's BTA requirements.[74]

IDEM needs to require US Steel to verify the through screen intake velocity of the CWIS and compliance with the USEPA BTA requirements through in stream velocity monitoring and not rely on calculations based on assumptions that are invalid and result in calculated through screen intake velocities that are potentially not representative of actual conditions. Modifying the velocity calculations based on new assumptions based on the existing, deteriorated condition of the traveling screens is also a flawed approach and should not be permitted by IDEM due to the inherent uncertainty assumptions result in.

The deteriorated condition of the traveling screens, including portions that are missing, is likely resulting in an increase in the number of fish that are pulled into the 84-inch pipe relative to operation of an intact and undamaged traveling screen. Once inside, it is likely that fish and aquatic species become entrapped in the 84-inch and are unable to escape the CWIS due to velocities in the 84-inch pipe.[75] According to US Steel, its observations when the traveling screens were last in service in 2006, over approximately 15 years ago, was that debris and fish were "typically" absent during backwash and that in the past 25 years of operation fish impingement "did not occur at a significant amount."[76]

US Steel does not define what "typical" or "significant" levels of fish impingement are. IDEM does not clarify what is meant by these two relative terms in the Draft NPDES Permit Fact Sheet. US Steel needs to report actual data on fish impingement based on its observations during CWIS operations and IDEM needs to include this data in the Draft NPDES Permit Fact Sheet to allow the public to be able to fully understand and evaluate the potential threats to fish and aquatic species caused by impingement at the CWIS and compliance with the USEPA's BTA requirements. The deteriorated condition of the traveling screens and entrapping velocities of the 84-inch pipe make actual data collection and reporting even more imperative. Reliance on estimates from sonar-based technologies for fish identification rather than on actual data

73 Fact Sheet, page 46.
74 Face Sheet, page 45 and 54-55.
75 Fact Sheet page 47.
76 Fact Sheet, page 45.

collection is inadequate due to the inherent limitations of sonar-based technology and the deteriorated traveling screens. If necessary to collect the data required to verify compliance with USEPA BTA and ensure that impingement is effectively minimized, US Steel needs to install a new, traveling screen system at the CWIS.

In October 2018 US Steel requested permission from IDEM to submit a reduced 316(b) application. IDEM denied US Steel's request in January 2019. In contravention of IDEM's decision regarding its request for submission of a reduced 316(b) application, US Steel submitted a reduced 316(b) application with its NPDES permit renewal application in October 2020. IDEM ultimately accepted the reduced 316(b) application as satisfactorily meeting the needs of IDEM 316(b) evaluation.[77]

Based on the comments related to inadequacies with the CWIS in this Technical Report and US Steel's disregard for IDEM's authority in submitting a reduced 316(b) application despite IDEM's denial of its request to do so, IDEM should require US Steel to submit a full 316(b) application inclusive of all of the information required to confirm that USEPA BTA requirements are being met and that the potential for adverse impacts to fish and aquatic species from the CWIS are adequately reduced.

<u>Formaldehyde Compliance Schedule</u>

The Draft NPDES Permit contains new WQBELs for formaldehyde at Outfall 004.[78,79] US Steel requested a sixty month compliance schedule for the new formaldehyde effluent limits and provided IDEM information to justify its request. IDEM determined that sixty months was a reasonable amount of time to achieve the WQBELs, however provided no basis in the Draft NPDES Permit Fact Sheet to support its determination.[80]

The compliance schedule sets an interim limit requiring only reporting of formaldehyde concentrations and loads in discharges from Outfall 004. No numeric interim effluent limits were included in the sixty month compliance schedule. Progress reports are required at the end of each consecutive 12-month period of Draft NPDES Permit is in place detailing US Steel's progress towards being able to achieve the formaldehyde WQBELs.[81]

<u>CEAPC Comment:</u>

Based on best professional judgment and with the intention of allowing PBW to achieve its beneficial uses of being protective of the environment and public, IDEM should not permit the Midwest Plant to operate under the formaldehyde compliance schedule as currently constituted. The approach to determining if a compliance schedule is reasonable by IDEM through Rule 327 Indiana Administrative Code 5-2-12.1 is intended to not be punitive on pollutant dischargers that

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77 Fact Sheet, page 41.
78 Draft NPDES Permit, page 8.
79 Fact Sheet, pages 19 and 33.
80 Fact Sheet, page 33.
81 Draft NPDES Permit, pages 51-52.

a given new effluent limits to comply with, which can require operational modifications to existing treatment systems or installation of new treatment systems, however, it is inconsistent with the overall goal of the NPDES permitting program of eliminating, or at least minimizing, pollutant discharges. The interim limit consisting of reporting will not be modified until US Steel demonstrates the ability to comply or the sixty month term of the compliance schedule and Draft NPDES Permit come to an end.[82] Conceivably, it may be five years from the effective date of the Draft NPDES Permit until US Steel is required to meet its formaldehyde WQBELs for Outfall 004. IDEM should begin instituting interim numeric effluent limits in the compliance schedule over the term of the Draft NPDES Permit that approach the formaldehyde WQBELs to provide an impetus for US Steel to take action necessary to reduce formaldehyde discharges from the Midwest Plant and achieve compliance with the WQBELs expeditiously.

IDEM failed to include US Steel's justification for requesting a compliance schedule for achievement of its formaldehyde WQBELs for Outfall 004 or its own basis for accepting US Steel's justification in the Draft NPDES Permit. IDEM needs to include the information provided by US Steel for justification for its compliance schedule request and its basis for acceptance in the Draft NPDES Permit Fact Sheet to allow the public to be able to fully understand and evaluate the potential threats to the environment and public resulting from formaldehyde discharges from the Midwest Plant and implementation of the compliance schedule as currently constituted.

[82] Draft NPDES Permit, page 52.

In The Matter Of:

INDIANA DEPARTMENT OF ENVIRONMENTALMANAGEMENT

May 26, 2021

ACCURATE REPORTING OF INDIANA
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BEFORE THE INDIANA DEPARTMENT
OF ENVIRONMENTAL MANAGEMENT

\- - -

PUBLIC HEARING REGARDING

DRAFT NPDES PERMIT RENEWAL

UNITED STATES STEEL MIDWEST

\- - -

PROCEEDINGS

in the above-captioned matter, before Hearing Officer Nicole Gardner, taken before me, Lindy L. Meyer, Jr., a Notary Public in and for the State of Indiana, County of Shelby, via Zoom Conference on Wednesday, May 26, 2021 at 7:46 o'clock p.m.

\- - -

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APPEARANCES:

ON BEHALF OF IDEM:
Nicole Gardner, Hearing Officer
Bruno Pigott, IDEM Commissioner
Jennifer Elliott
Jerry Dittmer
Martha Clark Mettler
Ryan Clem
Sarah Bonick
Paul Higginbotham
Brad Gavin
Catherine Hess

SPEAKERS PRESENT:

Alexis Piscitelli
Doug Cannon

- - -

7:46 o'clock p.m.
May 26, 2021

- - -

THE HEARING OFFICER: We will now begin the formal public hearing portion of the evening.

Will the official reporter designated for this hearing please state your name?

(Reporter sworn.)

THE HEARING OFFICER: Thank you.

My name is Nicole Gardner. I am the Industrial NPDES Permits Section Chief in IDEM's Office of Water Quality, and the Hearing Officer in tonight's public herring. This hearing concerns the Draft National Pollutant Discharge Elimination System Permit, hereafter referred to as the Draft NPDES Permit, for the U.S. Steel Midwest Plant.

IDEM staff in attendance tonight in conjunction with this are: Bruno Pigott, IDEM Commissioner; Martha Clark Mettler, Assistant Commissioner in IDEM's Office of Water Quality; Paul Higginbotham, Deputy Assistant Commissioner in IDEM's Office of Water Quality; Jerry Dittmer, Permits Branch Chief in IDEM's Office of Water Quality; and Jennifer Elliott, the permit writer and a Senior Environmental manager in the Industrial NPDES Permits Section in IDEM's Office of Water Quality.

The purpose of this hearing is to give all interested parties an opportunity to comment on the Draft NPDES Permit for the U.S. Steel Midwest Plant. IDEM staff who are present tonight at this hearing will not be acting as advocates of the NPDES Permit. They will not present any evidence as to why the permit should or should not be issued. IDEM staff want to hear the public's comments and evidence on why the permit should or should not be issued, and on what the permit terms and conditions should be if it is issued.

When presenting your comments, please include facts and evidence, such as dates, discharge amounts, what you have personally observed and when, and what you feel the solution is to any problem and why.

Notice of the time and place of this

hearing was given as required by law by publication in the Northwest Indiana Times newspaper and on IDEM's Web site on April 19th, 2021. Originally the Draft NPDES Permit was to be public noticed for a 45-day comment period, and the comment period ending date was June 3rd, 2021. However, a two-week extension was granted, and the comment period ending date is now June 17th, 2021.

The Draft NPDES Permit and related documents are posted on the IDEM Web site. A written transcript of this hearing will also be made and posted on the Web site.

If you wish to speak tonight and have joined us on-line, you must complete the on-line speaker form. Links to the speaker form are on your screen and in the meeting chat. Separate instructions will be given for those joining by phone.

We ask that anyone making a comment this evening clearly state your name for the record. Please be sure to indicate whether you are appearing for yourself or on behalf of a group or organization. Also please note the capacity in which you appear, such as attorney, officer, or authorized spokesperson.

Please speak clearly and slowly to enable the court reporter to accurately transcribe your comments. Any person who speaks, is recognized at this hearing, or who requests notice will be given notice of the agency's final action, including IDEM's response to all comments submitted. Oral and written statements will be considered and included in the record.

Ryan Clem and Sarah Bonick, with IDEM Media and Communication Services, will use the information provided in speaker forms to call upon those who requested to speak. After all those who've completed speaker forms have spoken, the hearing will open to those joining by phone.

Ryan, will you provide additional instructions for participation, please?

MR. CLEM: Yes. Thanks, Nicole.

So, when Sarah calls on you to speak, please indicate that you are present and ready to provide testimony by using the raised-hand feature, and so, to access that feature, along with the chat feature, at the bottom or top of your screen, depending on your device, there will be a menu bar, and in that menu, there's the raised-hand option.

Using the raised-hand feature will allow us to find you quickly and to unmute your microphone for you to make your comments. If you're going to speak, also please ensure that the name on your Zoom screen matches your speaker form. This will also help us in locating those who are -- whose turn to speak it is and unmute your microphone.

Please do not raise your hand to ask for guidance in navigating Zoom or for other questions. We will respond to provide guidance and technical assistance via the chat function. Please note that any entries you make utilizing the chat feature are not considered public comments and will not be responded to in the final permit documents.

Finally, for those on the phone -- and I think I saw one or two -- you can also raise your hand by pressing star nine, and we will call on you at the appropriate time. When called upon, you'll need to unmute your phone by pressing star six.

And with that, back to you, Nicole.

THE HEARING OFFICER: Thank you.

At this time we will begin taking comments on the Draft NPDES Permit. In consideration of everyone present, we would appreciate it if comments are kept to three minutes or less. If time allows, you may have an additional opportunity to speak later in the hearing. Again, comments should be directed to the substance of the Draft NPDES Permit. Staff will respond in writing to all comments received, but will not be responding to comments during tonight's public hearing.

Ryan or Sarah, will you please begin calling on those who've completed speaker forms?

MS. BONICK: Yes. So, our first speaker is Alexis Piscitelli.

MR. CLEM: Okay. And do you have someone on deck, Sarah, that they can also raise their hand?

MS. BONICK: Yes. Doug Cannon will be next.

MR. CLEM: Okay.

Alexis, you should be able to unmute and speak, Alexis.

MS. PISCITELLI: Thank you.

I'm Alexis Piscitelli, Environmental Director with U.S. Steel. First, I'd like to thank IDEM for their efforts in renewing this permit in a timely manner and allowing me to make a few comments today.

Located along the Burns Waterway, the Midwest Plant employs just under a thousand full-time employees, as well as support other jobs in the region. The Midwest Plant is a steel finishing facility that operates as a part of Gary Works and supplies key customers in the automotive, construction and container industries.

We appreciate IDEM incorporated the increased monitoring requirements included in the draft consent decree as part of the permit renewal.

While the draft permit might not appear overly onerous, there are a few items of technical concern we hope to be able to resolve as part of this public comment period. We have some concerns with flap capability with regards to level of detection. In some cases, the detection levels in the permit are so low that there's not equipment in the region that's capable of meeting the requirements.

Also of concern, sample hold time in the permit can be more restrictive than EPA method, and such short lead times can overburden the lab and potentially lead to invalid results. As part of our technical comments submission, we are suggesting some small language changes to address these issues.

Again, I'd like to thank IDEM for their efforts and for hearing my comments today.

MR. CLEM: Okay. Thanks, Alexis.

Doug Cannon is next.

And Sarah, do we have any others that have signed up to speak?

MS. BONICK: We have no other speakers that have signed up.

MR. CLEM: Okay.

Doug, I'll unmute you now, and if anybody else would like to make comments, please fill out the speaker form and we'll get to you next.

Okay. Doug, you should be able to unmute and make your comments.

MR. CANNON: Okay. I feel special, all by myself here.

My name is Doug Cannon. I'm currently the Town Council President of Ogden Dunes. We are about a couple of hundred yards away from you guys, and we have some concerns, and I'm going to read off some of the bullet points of those concerns.

We have a very well developed Environmental Advisory Board. They are very active and very vigilant, and I'm representing them as well. I've been on the Environmental Advisory Board in the past, but I'm not currently on that, but I am speaking as the President of the Town Council.

So, as a downstream user from the facility, the town has a vested interest in these proceedings, and has been very carefully reviewing the Draft Permit and Fact Sheet for U.S. Steel Midwest.

Indiana American Water, their intake that supplies drinking water to our town through the Ogden Dunes Waterworks, was closed as a preventive measure during the 2017 spill in Burns Waterway. An estimated 350 pounds of total chromium and 300 pounds of hexavalent chromium dumped into Burns Waterway. It was a serious and frightening incident, and our residents will not forget it any time soon.

While we are pleased that the recently released agreed order with IDEM puts U.S. Steel Midwest on the road to compliance with IDEM and addresses some of the violations, the town is very dismayed that this permit is in the process of being renewed while the consent decree with the Department of Justice remains unsigned. Nevertheless, we would like to thank the permit writers for making sure IDEM's promises in the consent decree were addressed in the Draft Permit.

The town also wants to make sure that the permit clearly addresses spill response measures required by 327 IAC 2-6.1-7, subsection (5), that U.S. Steel Midwest, upon discovery of a reportable spill to the soil or surface waters of the state exercises due diligence and documents all attempts to notify all affected downstream users, not just IDEM or the National Response Center. We appreciate what appears to have been better coordination with our Fire Chief, Eric Kurtz, over the past two years, and we hope those calls are now part of the culture of compliance.

On page 27, item 4, the Draft Permit indicates that contact information must be in locations that are readily accessible and available. It is our belief that potentially affected downstream users like the Town of Ogden Dunes should be listed in the permit, and not just readily accessible and available. If that change cannot be accommodated, then perhaps change the wording to "readily accessible via electronic communication, with hard copy backup located in a designated area."

On page 26 of the Fact Sheet, IDEM is requiring increased sampling for total chromium and hexavalent chromium to daily. We thank you for recognizing that these increases were needed. The Fact Sheet provides detail on U.S. Steel's previous violations starting on page 13.

This shows a longstanding and persistent pattern of admitted CWA violations, maintenance failures, and environmental neglect at U.S. Steel's Midwest Plant, a pattern that preceded and post-dated it. We hope that a strong Draft Permit will help stop this pattern of neglect of the environment.

That's all we have for tonight, and we look forward to submitting additional comments prior to the written comment deadline, and I do want to point out that, you know, our concern is -- has a large part to do with doing the right thing.

But the fact that we're -- if you've ever gone out and looked at the Burns Waterway and you see what comes down it -- and we're not just talking the out -- you know, outtakes, you know, what's coming out of the -- what's coming out of U.S. Steel, but also out of Arcelor in the past, and now Cleveland Cliffs, and septics and everything.

The Burns Waterway empties out and often, more often than not, flows directly into the path of our intakes for Indiana Water. And I understand that Indiana Water has filtration and all of those things, but the fact is there's just an unacceptable amount of stuff that is in the water, and it is brown, it is a brown ocean that just comes right out of Burns Waterway.

And so, anything that we can do, anything that you can do, to improve the vigilance of the factory, the employees, the monitoring systems, the levels of acceptable rates of effluents is a real help to us and our health.

So, with that, I appreciate you letting me speak, and I hope for the best. Thank you.

MR. CLEM: Thank you, Doug. Thank you for your comments.

Sarah, do we have any others on deck?

MS. BONICK: No, no other speaker -- speakers have requested.

MR. CLEM: Okay. And I know we do have a couple of folks on the phone, so if those of you on the phone would like to speak, you can press star nine and we can call on you to speak. I know that you may not be able to fill out the speaker form, but we can get your information and receive your comments. So, again, anyone on the phone can press star nine if they would like to make comments.

(No response.)

MR. CLEM: I'm not seeing any others.

Sarah, any others on your end?

MS. BONICK: No, no new requests.

MR. CLEM: Okay.

I think, Nicole, we'll hand it back to you.

THE HEARING OFFICER: Okay. If there is anyone else who would like to make a comment at tonight's hearing, please go ahead and fill out a speaker form if you're on-line, or, as Ryan said, press star nine if you're on the phone to raise your hand. We can pause again to see if anyone else wants to submit a form or raise their hand.

COMM. PIGOTT: And Nikki, it's Bruno. Can people raise their hand if they're interested in making a comment through the raised-hand feature on this?

THE HEARING OFFICER: Ryan?

MR. CLEM: Yeah, I mean if anybody else would like to make a comment, sure, just raise your hand and -- or if you're having trouble with the speaker form or something like that. And then obviously, Nicole will talk about other ways to submit comments as well.

So, I still don't see anything on this end.

MS. BONICK: No new speaker forms either.

THE HEARING OFFICER: Okay.

Well, before concluding this public hearing on the Draft NPDES Permit, I want to remind everyone that written comments must be submitted no later than June 17th, 2021 to the IDEM office located at 100 North Senate Avenue, Indianapolis, Indiana, 46204, or by e-mail to the permit writer.

Also, anyone wishing to receive notice of the agency's final decision and the response to comments should make sure to have completed a speaker form or contact the permit writer via letter or e-mail. The contact information is on your screen.

And do we have a way to put Jennifer's e-mail back up on the screen?

MR. CLEM: It should be up there, and then I also put Jennifer's -- I also put it in the chat. You can access the PowerPoint presentation, information sheet, the Fact Sheet, and the Draft Permit all on the Web site. And additional comments can be e-mailed or mailed to IDEM. That information is on your screen and in the chat.

THE HEARING OFFICER: Thanks, Ryan.

All comments will be taken into consideration in making a final decision on this permit.

This hearing on the Draft NPDES Permit for the U.S. Steel Midwest Plant is now concluded. Thank you for your time and participation.

- - -

Thereupon, the proceedings of
May 26, 2021 were concluded
at 8:03 o'clock p.m.

- - -

CERTIFICATE

I, Lindy L. Meyer, Jr., the undersigned Court Reporter and Notary Public residing in the City of Shelbyville, Shelby County, Indiana, do hereby certify that the foregoing is a true and correct transcript of the proceedings taken by me on Wednesday, May 26, 2021 in this matter and transcribed by me.

____

Lindy L. Meyer, Jr.,
Notary Public in and
for the State of Indiana.

My Commission expires August 26, 2024.
Commission No. NP0690003

2021 Draft NPDES Permit for United States Steel Corporation – Midwest Facility

May 26, 2021

Jennifer Elliot, Permit Writer
Indiana Department of Environmental Management

Purpose of Hearing

- Provide a brief history of the NPDES program
- Characterize the nature of the discharge
- Identify changes from the current NPDES Permit
- Identify specific terms and conditions of the permit
- Provide attendees with information on how to get a copy of the permit
- Outline the next steps for issuance of the renewal permit

NPDES Permits

- In 1972, an amendment to the Federal Water Pollution Control Act, commonly known as the Clean Water Act (CWA), was enacted by Congress to address serious pollution problems affecting the nations rivers, lakes, and coastal waters.
- One of the cornerstones of the CWA was the establishment, in Section 402 of the Act, of the National Pollutant Discharge Elimination System (NPDES) Program. The NPDES Program regulates discharges of pollutants into the nation's waters through the issuance of NPDES permits.

NPDES Permits

Background: NPDES Permitting
NPDES CWA Statutory Framework

- All "point" sources
- "Discharging pollutants"
- Into "waters of the U.S."

→

Must obtain NPDES permit coverage from EPA or an NPDES- authorized State

Individual NPDES Permits

- An individual permit is a permit specifically tailored to an individual facility and is developed based on the information contained in the permit application.

Industrial Permits

- **Major** dischargers are those designated as such by U.S. EPA., in conjunction with the IDEM Commissioner. The designation of an industrial discharger as a major generally involves the consideration of factors relating to a facility's impact on the environment, such as: the nature and quantity of pollutants discharged; the character and assimilative capacity of the receiving water and the presence of toxic pollutants in the discharge
- **Minor** dischargers are those not designated as a major.

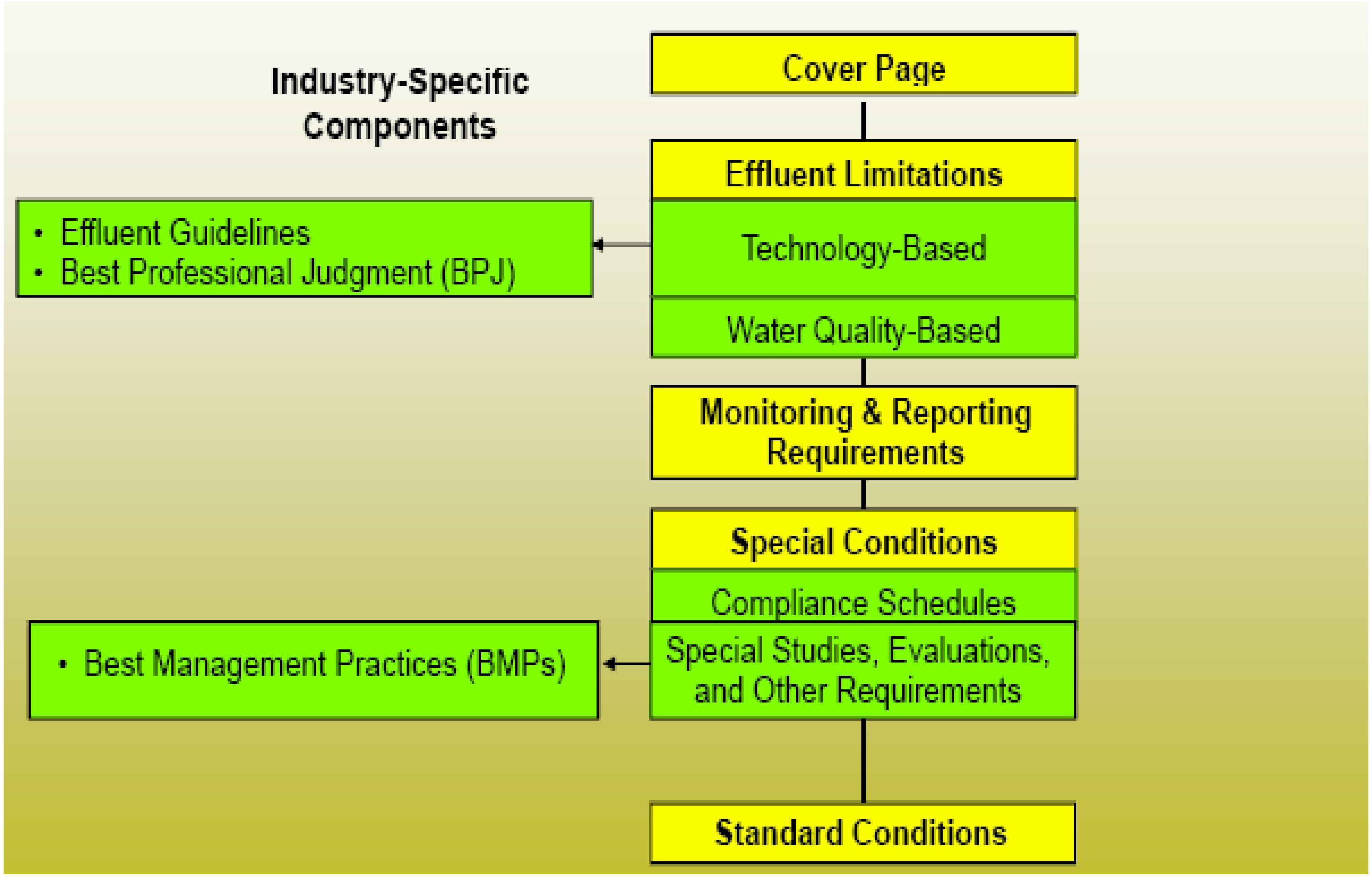
IDEM's Role

- Develops regulations and issues permits to restrict discharges to the environment to safe levels
- Inspects and monitors permitted facilities to ensure compliance with the permits
- Enforces against people who exceed their permit levels or violate regulations
- Educates people on their environmental responsibilities

Permitting Process

- Facility submits applicable permit application
- IDEM reviews application for completeness & accuracy
- IDEM requests additional information as necessary
- IDEM prepares draft permit & justification for proposed permit conditions (Fact Sheet)
- IDEM places draft permit on Public Notice
- IDEM considers & responds to comments and, if warranted, makes changes to draft permit
- IDEM issues final permit

NPDES Permit Components



NPDES Permit Fact Sheets

- NPDES Regulations require permits to include a fact sheet
- What type of information is contained in a permit fact sheet?
  - Principal facts and significant factual, legal, methodological, and policy questions considered in preparing the permit.
  - Brief description of types of activities covered.
  - Types of discharges covered.
  - Rationale for permit requirements, including calculations and analysis.
  - Brief summary of the basis for permit conditions.
  - Complete list of contents available at 327 IAC 5-3-8.

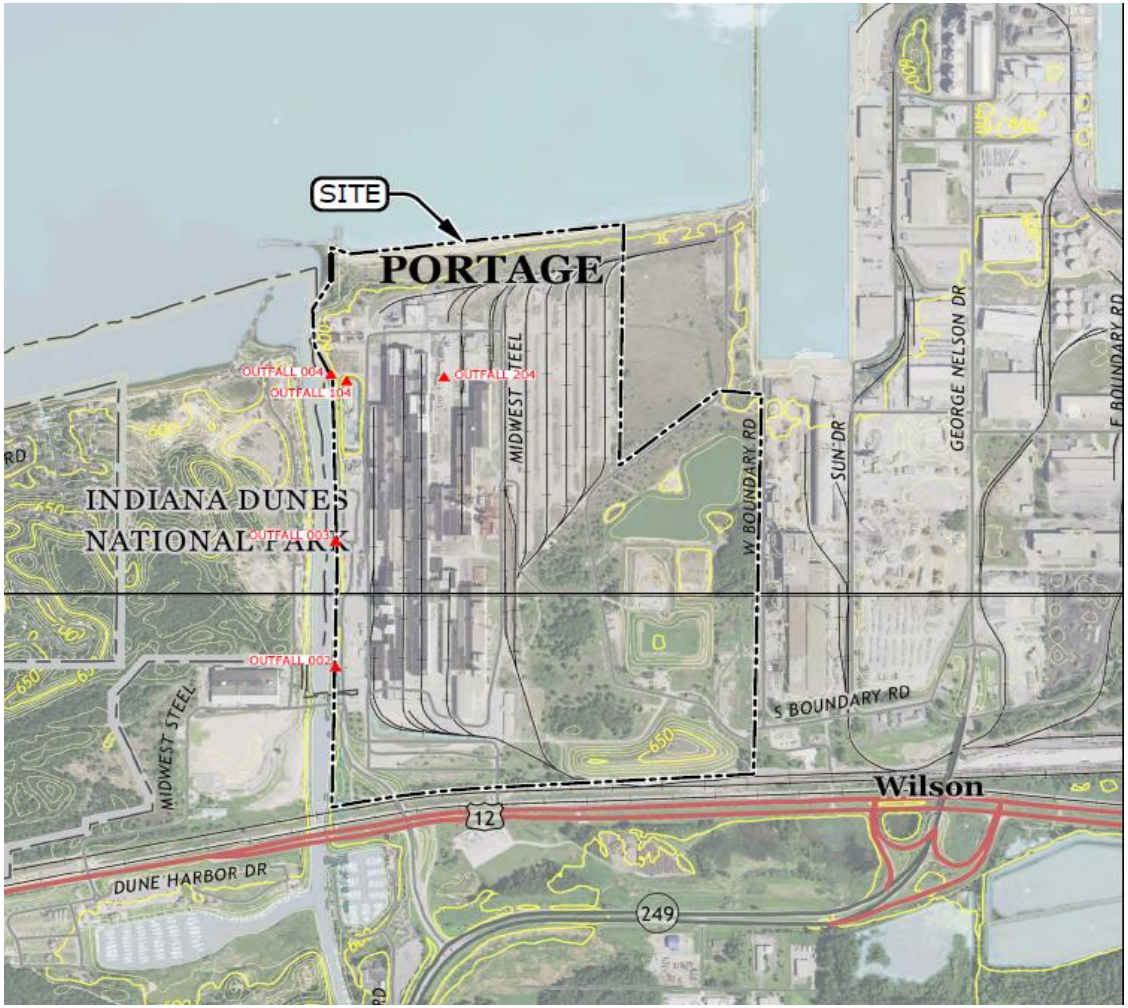
Public Notice Process

- Prior to issuance, the draft permit is placed on public notice for a minimum of 30 days to receive comments from the public and the permittee. During the public notice period, any interested party, including the permittee, may present written comments to IDEM regarding conditions of the permit.
- IDEM provided a 45-day public notice period with a Public Hearing originally.
- IDEM granted a request for a 2-week extended public comment period.

Response to Comments

- IDEM must consider and respond to all comments in conjunction with the issuance of the final permit. If permit conditions are significantly changed in response to the comments, the re-drafted permit may be placed on public notice for an additional period with the opportunity for a public hearing.
- Comments must be submitted in writing and/or provided at the Public Hearing.

United States Steel Corporation Midwest Plant



Effluent Limitations

- Effluent limitations can be water quality based or technology based, whichever are more stringent
- Technology based effluent limitations reflect the minimum level of pollutant treatment/control that must be achieved for various categories of dischargers. Technology based effluent limitations are set forth in Title 40 of the Code of Federal Regulations (CFRs)
- Water quality-based effluent limitations are established to ensure that discharges do not cause or contribute to a violation of state water quality standards. Water quality standards are established to protect human health, wildlife and aquatic life. In Indiana, the state water quality standards are set forth in 327 IAC 2-1.5

Effluent Limitations

- All technology based effluent limits for this facility use 40 CFR 420 – Iron and Steel Manufacturing Point Source Category, and 40 CFR 433 – Metal Finishing Point Source Category.
- All water quality-based effluent limits at Outfall 004 were calculated in a Wasteload Allocation (WLA) Report completed by IDEM.
- Narrative water quality-based limits apply to all outfalls.
- Antidegradation and Antibacksliding procedures utilized per 327 IAC 2-1.3 and 327 IAC 5-2-10(a)(11).

Narrative Water Quality Criteria

327 IAC 2-1.5-8(b)(1)(A)-(E)

All surface waters within the Great Lakes system, at all times and at all places….shall meet the minimum conditions of being free from substances, materials, floating debris, oil, or scum attributable to….industrial….discharges that do any of the following:

(A) Will settle to form putrescent or otherwise objectionable deposits.

(B) Are in amounts sufficient to be unsightly or deleterious.

(C) Produce: (i) color; (ii) visible oil sheen; (iii) odor; or (iv) other conditions in such degree as to create a nuisance.

(D) Are in concentrations or combinations that will cause or contribute to the growth of aquatic plants or algae to such degree as to: (i) create a nuisance; (ii) be unsightly; or (iii) otherwise impair the designated uses.

(E) Are in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill, aquatic life, other animals, plants, or humans…

Monitoring and Reporting Requirements

- Used to evaluate wastewater treatment efficiency and determine compliance with permit conditions
- The parameters that must be monitored and the minimum monitoring frequencies are established based on the source and nature of the discharge.
- The monitoring results are sent to IDEM on a monthly basis on forms referred to as Discharge Monitoring Reports (DMRs) and Monthly Monitoring Reports (MMRs).

Standard Conditions

- Every permit contains conditions that apply to all NPDES permitted facility, and delineate the legal, administrative, and procedural requirements of the permit. The standard conditions that apply to all individual NPDES permits are found in Part II of the permit.

Outfall Descriptions

Outfall #	Receiving Stream	Average Daily Discharge Flow (MGD)
002	Portage-Burns Waterway	0.329
003	Portage-Burns Waterway	15.17
004	Portage-Burns Waterway	17.06
104	Outfall 004 to Portage-Burns Waterway	9.59
204	Outfall 004 to Portage-Burns Waterway	0.21
304	Outfall 004 to Portage-Burns Waterway	NA
500	Instream Compliance Point for Temperature	NA
600	Compliance Point for Through-Screen Velocity limits	NA

Outfall 002

- 0.329 MGD of Storm Water Runoff and Non-Contact Cooling Water to Portage-Burns Waterway
    - No applicable ELGs.
    - Effluent limits for Total Residual Chlorine and pH
    - Reporting requirements for Oil & Grease, TSS, COD, Ammonia (as N), Zinc and Flow.

Outfall 003

- 15.17 MGD of Stormwater and Non-Contact Cooling Water to Portage-Burns Waterway
    - No applicable ELGs.
    - Effluent limits for Total Residual Chlorine and pH
    - Reporting requirements for Oil & Grease, TSS, COD, Ammonia (as N), Zinc, and Flow.

Outfall 004

- 17 MGD of Non-Contact Cooling water, Storm Water and treated process wastewater from Internal Outfalls 104 and 204 (administrative Outfall 304) to Portage-Burns Waterway
    - Effluent limitations for TRC, Silver, Free Cyanide, Cadmium, Copper, Nickel, Lead, Mercury and pH
    - New effluent limitations for Formaldehyde and Acute and Chronic Whole Effluent Toxicity
    - Reporting requirements for Oil & Grease, Hexavalent Chromium, and Flow
    - Mass limits were calculated using a flow of 17 MGD.

Changes at Outfall 004

- Increased monitoring frequency for Copper
  - From 2 X Monthly to 1 X Weekly
  - Due to recent effluent violations
- Decrease in monitoring frequency for Silver, Cadmium, Nickel and Lead.
  - From 2 X Monthly to 1 X Monthly
- New Formaldehyde limits
  - 60 Month Schedule of Compliance
  - Interim reporting only
  - Final limits:
    - Monthly Avg. 20 lbs/day, 0.14 mg/l
    - Daily Max 34 lbs/day, 0.24 mg/l

Changes at Outfall 004

- Lead:
  - More stringent mass limits
    - Monthly Avg. 5.8 lbs/day
    - Daily Max 9.9 lbs/day
    - Based on flow
- Mercury
  - New WQBELs
    - Monthly Average: 0.00018 lbs/day, 1.3 ng/l
    - Daily Maximum: 0.00045 lbs/day, 3.2 ng/l
  - Interim Discharge Limit of 18 ng/l
    - Per the SMV
- Whole Effluent Toxicity
  - New Acute and Chronic Limits
  - 1.0 TUa, 2.0 TUc

Internal Outfalls 104 & 204

- 9.59 MGD and 0.21 MGD to Portage-Burns Waterway
- Outfalls 104 and 204 discharge treated process wastewater, backwash and washdown water, treated Greenbelt II landfill leachate, blowdown from Portside Energy, and the U.S. Steel Midwest intake.
  - Reporting requirements for TSS, Oil & Grease, Total Chromium, Zinc, Lead, Nickel, Cadmium, Copper, Silver, Total Cyanide, Hexavalent Chromium, Naphthalene, Tetrachloroethylene, TTO, Fluoride, and Flow.

Changes at Outfalls 104 & 204

- Increased sampling for Total chromium
  - 5 X weekly to daily
  - Due to April 11, 2017 spill and a limit violation

- Increased sampling for Hexavalent Chromium
  - From weekly to daily
  - Primarily due to the April 11, 2017 spill and limit violations

Outfall 304

- Outfall 304 is a compliance point for sampling at Outfalls 104 and 204 using a flow weighted calculation to determine the reported values.
  - Monitoring requirements for Flow, Lead, Nickel, Cadmium, Copper, and Silver
  - Effluent limitations for TSS, Oil & Grease, Total Chromium, Zinc, Total Cyanide, Hexavalent Chromium, Naphthalene, Tetrachloroethylene, TTO, and Fluoride

Changes at Outfall 304

- Total Chromium
  - Sampling frequency increased from 5 X Weekly to Daily
- Copper
  - Sampling frequency increased from Monthly to 1 X Weekly
  - Due to compliance issues
- Hexavalent Chromium
  - Sampling frequency increased from 1 X Weekly to Daily
  - Due to compliance issues and spill

Compliance Outfall

- Outfall 500 – Compliance Point for Temperature

Parameter	Monthly Average	Daily Maximum	Units	Frequency	Sample Type
Intake Temperature	Report	Report	ºF	1 X Hourly	[1]
Upstream River Temperature	Report	Report	ºF	1 X Hourly	[1]
Outfall 002 Effluent Temperature	Report	Report	ºF	1 X Hourly	[1]
Outfall 003 Effluent Temperature	Report	Report	ºF	1 X Hourly	[1]
Outfall 004 Effluent Temperature	Report	Report	ºF	1 X Hourly	[1]
Downstream River Temperature [2]	Report	Report	ºF	1 X Hourly	[3]
Delta T [4]	-------	Report	ºF	1 X Daily	[5]

- Permittee is approved to use a thermal model to assess compliance with temperature requirements
- Must be reported on MMR and DMR

Temperature Limits-Table 1			
Maximum Instream Water Temperatures (ºF)			
January	February	March	December
50	50	60	57

Temperature Limits-Table 2							
Maximum Instream Water Temperatures (ºF)							
April	May	June	July	August	September	October	November
65	65	70	70	70	65	65	65

Compliance Outfall

- Outfall 600 – New Compliance Point for Through-Screen Velocity

Parameter	Monthly Average	Daily Maximum	Units	Frequency
Velocity, Off-shore Intake	--------	Report	Feet/second	Daily
Velocity; Traveling Screens	--------	0.5	Feet/second	Daily
Intake Flow	--------	Report	MGD	Daily
Water Depth; Traveling Screens	--------	Report	Feet	Daily
Open Area, Traveling Screens	--------	Report	Square feet	Daily

- Must be reported on MMR and DMR

Whole Effluent Toxicity Testing

- Under 327 IAC 2-1.5-8(b), a discharge shall not cause toxicity, as measured by whole effluent toxicity (WET) tests, at any point in the waterbody.
- Under 327 IAC 5-2-11.5(c), IDEM may include WET limits based on a reasonable potential to exceed water quality standards.
- Measure the total toxicity from the final discharge and identify and correct conditions.
- WET testing required at Outfall 004.
  - New acute and chronic whole effluent toxicity limits
  - 1.0 TUa
  - 2.0 TUc

Antibacksliding

- Pursuant to 327 IAC 5-2-10(a)(11), unless an exception applies, a permit may not be renewed, reissued or modified to contain effluent limitations that are less stringent than the comparable effluent limitations in the previous permit.
- No regulatory exceptions apply.
- All limits in this permit are as stringent as the limits in the 2016 permit.

Streamlined Mercury Variances

- Variance from mercury WQBELs pursuant to 327 IAC 5-3.5.
- The facility requested a new streamlined mercury variance (SMV) for Outfall 004
- WQBELs for Mercury are 1.3 ng/l monthly average and 3.2 ng/l daily maximum.
    - Interim limit of 18 ng/l
- Compliance with SMV limit achieved when the average of the measured effluent daily values over the rolling twelve-month period is less than the interim limit.
- Subject to the annual reporting requirements of the Pollutant Minimization Program Plan
    - Requires the permittee to develop and conduct a control strategy for Mercury at Outfall 004.
- Must reapply next renewal.

Storm water

- Parts D., and E. of the permit establish non-numeric effluent limitations and Storm Water Pollution Prevention Plan (SWPPP) requirements.
- Non-numeric effluent limitations include, but not limited to, control measures, best management practices, design considerations, spill prevention and response procedures, employee training, inspections, and annual reporting to IDEM.
- The SWPPP requires the facility to maintain a plan identifying and defining storm water characteristics and the effectiveness of BMPs in place and the documentation of such.

Storm water

- Storm water is not sampled separately at any outfalls. There is no suitable storm water sampling location available that allow for the collection of samples representative of storm water only.
- All storm water commingles with storm water associated with industrial activity at Outfalls 002, 003, and 004.
- Storm water sampling conducted at Outfalls 002 and 003 in lieu of sampling at internal monitoring points.

Cooling Water Intake Structures 316(b)

- 40 CFR 401.14 requires the location, design, construction, and capacity of cooling water intake structures to reflect the best technology available (BTA) for minimizing adverse environmental impact.
- Section 316(b) of the CWA established standards for cooling water intake structures.
    - Impingement – fish and other aquatic organisms are trapped and killed or injured when they are pulled against the intake screens.
    - Entrainment – fish larvae and eggs or other aquatic organisms enter and pass through a cooling water intake structure (CWIS) and into and/or through the system.

Cooling Water Intake Structures 316(b)

- Total design intake flow (DIF) for the facility is 69.12 MGD. Greater than 25% used for cooling water.
- Must submit application demonstrating BTA for impingement and entrainment. 40 CFR 122.21(r)(2)-r(8)
- Impingement and Entrainment Study from 2012 thru 2014.
- Additional Entrainment studies from ArcelorMittal Burns Harbor, and U.S. Steel Gary Works
- IDEM review coordinates with U.S. Fish and Wildlife Service.
- Facility maintains 1 intake, 2800 feet offshore in Lake Michigan.

Cooling Water Intake Structures 316(b)

Impingement BTA Determination

- Facility shall comply with operating a cooling water intake structure that has a maximum actual through-screen intake velocity of 0.5 fps.
- Facility must submit information to IDEM that demonstrates that the maximum intake velocity does not exceed 0.5 fps.

Cooling Water Intake Structures 316(b)

Entrainment BTA Determination

- EPA regulations require the permitting agency to make a site-specific BTA determination. 40 CFR 125.94(d)
- EPA identified "must" consider factors:
    - Number of organisms entrained, emissions changes, land availability, remaining useful plant life, as well as social benefits and costs of available technologies.
- EPA identified "may" consider factors:
    - Entrainment impacts on the waterbody, thermal discharge impacts, credit for flow reductions associated with unit retirements, impacts on reliability of energy delivery, impacts on water consumption, and availability of alternative sources of water.

Cooling Water Intake Structures 316(b)

Entrainment BTA Determination

- As part of 316(b) application, facility submitted
    - Entrainment Performance Studies
    - Comprehensive Technical Feasibility and Cost Evaluation Study
    - Benefits Valuation Study
    - Non-Water Quality Environmental and Other Impacts Study.

- IDEM determines facility meets BTA for entrainment

    - A relatively small number or organisms is likely entrained, due to intake location.

Cooling Water Intake Structures 316(b)

Permit Conditions

- Permittee must notify IDEM of any changes that affect the information taking into account the BTA determination.
- Permittee must calculate the through-screen velocity at off-shore and at the operable traveling screens, daily.
- Velocities and factors used in calculations should be reported on MMR and DMR as Outfall 600
- Permittee must conduct visual or remote inspections during intake operation, at least weekly.
- Permittee must submit annual certification statement.

Consent Decree - pending

- Filed November 20, 2019 (Revised Consent Decree)
- Permittee is required to monitor for Total and Hexavalent Chromium daily, at Outfalls 104 and 204
- Permittee is required to address requirements related to Total and Hexavalent Chromium required by CD in permit renewal.
- No reduction in monitoring frequency for Total Chromium and Hexavalent Chromium in permit renewal but reopening clause included to allow for it in the future.

IDEM Agreed Order

- Purpose is to bring facility back into compliance with their NPDES permit
- The agreed order became effective April 30, 2021
- Addresses violations between November 2018 and December 2020
- Establishes:
  - accelerated notifications to IDEM
  - Requirement for a plan to reduce toxicity of effluent in response to WET test failures
  - Requires enhanced monitoring and reporting

IDEM Agreed Order

- Requires development of a compliance plan and additional action plan
- Facility must demonstrate 12 consecutive months of compliance with the terms and conditions of the permit
- Agreed order establishes a civil penalty and stipulated penalties in cases of failure to complete compliance steps
- Gives the facility the option of completing a supplemental environmental project.
- The fact sheet lists the violations and enforcement actions in as much detail as possible.

Next Steps

- Draft Public Noticed on April 19, 2021
- 45 Day Comment Period
- Extended 2 weeks
- Public comments due June 17, 2021
- IDEM will review public comments and makes necessary permit changes to ensure the final permit meets federal and state requirements
- Permit Issuance
- Period to appeal permit expires 18 days after final issuance

Further Information

Permit Writer:
Jennifer Elliot
Jelliot@idem.in.gov
(317)232-8702

IDEM
OWQ, Mail Code 65-42
NPDES Permits Section
100 N. Senate Ave.
Indianapolis, IN 46204

Copy of the draft permit can be found on IDEM's website at https://www.in.gov/idem/6395.htm

Application for Renewal of NPDES Permit No. IN0000337

Prepared for:

U. S. Steel Midwest Plant

Submitted to:
Industrial Permits Section
Office of Water Management
Indiana Department of Environmental Management

Prepared by:
Ramboll
Arlington, Virginia

Date:
September 2020

Executive Summary

EXECUTIVE SUMMARY

This Executive Summary and subsequent attachments constitute the application by U. S. Steel Corporation – Midwest Plant (U. S. Steel) for renewal of its existing National Pollutant Discharge Elimination System (NPDES) Permit No. IN0000337. This summary contains a brief description of the source of materials contained in this application and a general overview of the renewal request. The NPDES permit application consists of the following required forms:

- IDEM General Information Form
- IDEM Owner-Operator Affidavit Form
- IDEM Request for Information Form
- Identification of Potentially Affected Persons
- Form 2C – applies to all existing industrial facilities with process wastewater
- Form 2F – applicable for stormwater discharges associated with industrial activity
- Listing of Water Treatment Additives
- Application fee

The application also contains information on various other requests:

- Continued use of the estimated metal finishing flows used for determination of the associated current Technology Based Effluent Limits;
- Continued authorization for or associated with the following:
    - Use of the existing approved model and compliance options for thermal discharges;
    - A reopening clause specific to revision of the thermal model;
    - Use of previously approved water treatment additives;
    - Year-round chlorination of intake waters; and,
    - Use of the alternative test method (involving sample filtration) for Whole Effluent Toxicity testing when fathead minnows are the test species.
- Streamlined Mercury Variance Application for Outfall 004;
- Continued recognition that the Cooling Water Intake Structure reflects Best Technology Available for minimizing adverse environmental impacts from impingement mortality and entrainment;
- Specific requirements related to the permit renewal that are contained in the Revised Consent Decree that was filed November 11, 2019 and is currently pending final approval; and
- Removal or reduced monitoring frequency of the specific monitoring requirements and permit limits on the basis that there is no reasonable potential to exceed the applicable water quality criteria.

For convenience, and directly following this summary, there is a listing of documents that provides the general order of the application materials.

OUTFALL INVENTORY

The existing NPDES Permit, which was effective April 1, 2016 authorizes U. S. Steel to discharge treated wastewaters, cooling waters and stormwater via internal and final outfalls to Portage-Burns Waterway[1]. An outfall inventory that includes the type of wastewater discharged and corresponding receiving water is provided in Table ES-1. Renewal is requested for the continued discharge of these waters.

[1] Also known as Burns Waterway.

EFFLUENT LIMIT GUIDELINES

U. S. Steel owns and operates the Midwest Plant, which is a steel coil finishing facility. Principal products include tin mill products and hot-dip galvanized, cold-rolled, and electrical lamination steels that are used by customers in the automotive, construction, container, and electrical markets. The production units/areas where wastewaters are subject to USEPA Effluent Limit Guidelines (ELGs) for the Iron and Steel Manufacturing Point Source Category (40 CFR 420) and Metal Finishing Point Source Category (40 CFR 433) are provided in Table ES-2. Production data and estimated metals finishing process wastewater flows are presented in Table ES-2. For production, the table shows values for the most recent five-year calendar period (2015-2019). The values are based on maximum monthly production (monthly production divided by the number of days in the month) for all except the Cold Forming operations. For Cold Forming operations, the values are from actual daily production figures. U. S. Steel requests continued use of the estimated metal finishing flows used for determination of the current associated Technology Based Effluent Limits; these values remain representative.

OTHER PERMIT RENEWAL ITEMS

Thermal Model

U. S. Steel requests continued recognition of the revised thermal model (Part III.A of the current Permit) to assess compliance with Outfall 500 temperature requirements. There have been no material changes in Midwest Plant operations; therefore, the revised model will continue to provide a highly accurate representation of the water temperature at the compliance point, Outfall 500. Associated with this, U.S. Steel requests that the allowance to alternatively measure (instead of using the model) the temperature at the edge of the mixing zone (300 feet downstream of Outfall 004) for compliance purposes.

U. S. Steel also requests continued incorporation of a specific reopening clause to revise the existing thermal model used to determine compliance with thermal effluent requirements. Consistent with the current Permit reopener (Part II.I.6), any revised model must limit the mixing zone to one-half the width of Portage-Burns Waterway and account for: the range of upstream flows and temperatures and effluent flows and temperatures expected at the site; and the combined effect of the discharges from Outfalls 002, 003, and 004 on the temperature at the edge of the mixing zone. U. S. Steel will notify IDEM with any updates to the model.

Water Treatment Additives (WTAs)

Attachment I contains the list of all approved WTA for use at U. S. Steel. Approval materials (i.e., approval forms with SDSs) for these WTA have been submitted to IDEM previously and are on file with the agency. Approvals for use of new chemicals are not requested at this time. U. S. Steel requests continued approval for the use of the water treatment additives listed in Attachment I.

Year-Round Chlorination

U. S. Steel requests the continued allowance for year-round chlorination of intake waters. U. S. Steel currently chlorinates intake water to treat for zebra mussels and quagga mussels approximately from May through October. Although treatment for zebra mussels is typically only needed during warmer lake conditions due to temperature tolerances, quagga mussels tolerate a wider range of temperatures and therefore can cause issues within the facility piping systems year-round. Lake Michigan temperatures between November and March have not drastically changed in the last five years such that temperatures would not be conducive to colonization. Therefore, U. S. Steel requests continued approval for year-round chlorination of intake waters. All discharges containing non-contact cooling water are dechlorinated before discharge to their respective receiving water.

Whole Effluent Toxicity (WET) Testing

Due to historical pathogen interference in the WET testing program at the Midwest Plant, U. S. Steel requests continued approval from IDEM to use the alternate test method of sample filtration to demonstrate compliance when fathead minnow testing is required[2]. This method is approved by the United States Environmental Protection Agency (USEPA) and, based on prior determination by IDEM, is appropriate for use at the Midwest Plant.

Streamlined Mercury Variance (SMV) Application for Outfall 004

The current Permit contains monitor only requirements for mercury at Outfall 004. Based on the data collected within the current permit cycle, U. S. Steel anticipates the renewed permit will contain water quality based effluent limits for mercury at Outfall 004. As allowed by 327 IAC 5-3.5 (SMV Rule), U. S. Steel is seeking approval of a SMV for Outfall 004. Pursuant to the SMV Rule, U. S. Steel has prepared a draft Pollutant Minimization Program Plan (PMPP). U. S. Steel anticipates executing the required 30-day Public Notice for the PMPP within the fourth quarter of 2020. The PMPP will then be finalized and, as needed, updated to address received comments prior to submission to IDEM as part of full SMV Application. The application will include a narrative statement (with the requested SMV numerical limit), SMV application form, and the finalized PMPP containing the last 2 years of mercury monitoring data and proof of Public Notice materials.

316(b) Requirements

EPA issued final federal Clean Water Section (CWA) 316(b) regulations, effective October 2014. The regulations require facilities with intake capacity greater than 2 million gallons per day (MGD) from surface waters that utilize at least 25% of the water for cooling purposes, to be located, designed, constructed, and operated in a manner that reflects the “best technology available” (BTA) to minimize adverse environmental impact (AEI) from impingement mortality and entrainment. Facilities that withdraw less than 125 MGD are exempt from entrainment characterization requirements.

The U. S. Steel Midwest Plant withdraws greater than 2 MGD but less than 125 MGD from a surface water (Lake Michigan) and utilizes at least 25% of the water withdrawn for cooling purposes. Therefore, the U. S. Steel Midwest Plant is only required to comply with BTA standards to minimize AEI from impingement mortality. U. S. Steel previously provided specific cooling water intake structure (CWIS) information, required pursuant to 40 CFR 122.21(r), to support development of the current NPDES Permit. The information was utilized by IDEM to determine that the CWIS location, design, construction, and capacity reflect BTA for minimizing AEI. Specifically, BTA for minimizing AEI is being met by operating a cooling water intake structure that has a maximum design intake velocity less than or equal to 0.5 fps.

Due to the continued applicability of the previously submitted information, and in accordance with the Part IV.B of current Permit, in October 2018 U. S. Steel requested reduced information submission requirements for this Permit Renewal Application. Attachment II addresses the information required by the Permit for submission including a copy of the previous 2015 materials and information to assist with addressing the “must” and “may” factors (40 CFR 125.98(f)(2) and (3)) associated with entrainment BTA. Based on the information provided within Attachment II, U. S. Steel requests continued recognition that the CWIS reflects BTA for minimizing AEI, and that the information submittal requirements pursuant to 40 CFR 122.21(r) have been satisfied.

Consent Decree Requirements

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[2] Currently the facility is authorized to demonstrate WET testing using the most sensitive species (*Ceriodaphnia dubia*). As such, fathead minnow WET testing is not currently performed.

Pursuant to VI.10.f the Revised Consent Decree that was filed November 20, 2019 (Revised Consent Decree) and is pending final approval by the United States District Court for the Northern District of Indiana, U. S. Steel is required to request incorporation into the renewed permit specific language and requirements pertaining to the Wastewater Operation and Maintenance Plan (O&M Plan). U. S Steel formally requests that the requirements to develop, implement, and review the O&M Plan detailed in VI.10.a-e be incorporated into the renewed Permit. Related, VI.10.f also requires submission of the most current version of the O&M Plan with this renewal application. Attachment III provides the following materials related to these requirements:

- VI.10.a-f of the Revised Consent Decree; and,
- The April 2020 O&M Plan.

In addition, VI.12.b of the Revised Consent Decree requires the permit renewal application to address the requirements related to hexavalent and total chromium monitoring prescribed by VI.12.a of the Revised Consent Decree. VI.12.b also allows for U. S. Steel to request a revised monitoring frequency as part of the permit application. U. S. Steel formally requests incorporation of the VI.12.a requirements into the renewed permit. A reduction in monitoring frequency is not requested at this time, but U. S. Steel requests inclusion of a reopening clause to allow this in the future. Attachment IV provides the following materials:

- VI.12 of the Revised Consent Decree; and,
- Suggested language based on VI.12.b for incorporation into the renewed permit.

Since the Revised Consent Decree is still pending, the above requests are made with the assumption that there are no substantive changes to theses sections in the final approved version. If substantive changes are made, U. S. Steel may revise these requests.

<u>Characterization Information</u>

Attachment 2C-A describes the datasets and data handling practices used for preparation of these application materials and presents in Table 2C-A1 a listing of the analytical methods and associated detection limits required by Form 2C Section V. Table 2C-A2 provides required receiving water and intake data.

This attachment also includes data to support the following requests for removal of limits and reduced monitoring requirements on the basis of no reasonable potential to exceed the water quality based effluent limits. Statistical data summaries for the associated parameters are provided in Table 2C-A3. The requests are as follows:

- Removal of Free Cyanide (as measured by Weak Acid Dissociable Cyanide) monitoring requirements and permit limits for Outfall 004.
- Reduction of the monitoring frequency (from 2/month to 1/month) for Cadmium, Lead, Nickel, and Silver.

Order of Materials

ORDER OF MATERIALS

IDEM General Information Form

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

GENERAL INFORMATION FORM

(TO BE SUBMITTED WITH FORMS 2C, 2D AND 2E)

(Replaces EPA General Form 1)

Revised 4/12/12

1. Name of Facility: U. S. Steel Corporation – Midwest Plant

2. Facility Contact

Name: Timothy L. Sullivan

Address: 6300 US Highway 12

City or Town: Portage State: IN Zip Code: 46368

County: Porter

Telephone: Work: 219-763-5022 Email: TLSullivan@uss.com

3. Certified Operator

Name: Monique Bebley

Certification #: WW021038 Classification: D

Address: One North Broadway Mail Station 70

City or Town: Gary State: IN Zip Code: 46402

Telephone: Work: 219-888-3369 Email: mbebley@uss.com

4. Facility Mailing Address

Street or P.O. Box: 6300 U.S. Highway 12

City or Town: Portage State: IN Zip Code: 46368

5. Facility Location

Street, Route No.,County,Other Specific Identifier: 6300 U.S. Highway 12, Portage, IN 46402

6. Type of Permit Action:

New ___ Renewal _X_ Modification ___

7. EPA I.D. Number: IND016584641

8. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the state? (Form 2B)

Yes ___ No _X_ Form Attached ___

9. Is this a facility which currently results in discharges to waters of the state other than described in 8? (Form 2C-Process Wastewater or Form 2E-Nonprocess Wastewater)

Yes _X_ No ___ Form Attached X

10. Is this a proposed facility (other than described in 8) which will result in a discharge to waters of the state? (Form 2D)

Yes ___ No_X_Form Attached ___

11. SIC Codes (4-digit, in order of priority)

First:	3316	Specify: Cold Rolled Steel_____
Second:	3443	Specify: Tin Mill Products_____
Third:	3325	Specify: Galvanized Steel_____
Fourth:	___	Specify: ___________________

12. Existing Environmental Permits (Identification #)

NPDES (Discharges to Surface Waters): IN0000337

UIC (Underground Injection of Fluids): IN127W0006

RCRA (Hazardous Wastes): INR00010901

PSD (Air Emissions from Proposed Sources): 6409890189

Other: 6409890191 Specify: Air Emissions

Other: _______ Specify: _______________

Other: _________ Specify: _______________

13. Nature of Business (Provide a Brief Description)

U. S. Steel Corporation's Midwest Plant is a manufacturer of steel and related products. Activities conducted involve acid pickling, cold rolling, alkaline cleaning, operation of a sheet temper mill, continuous annealing, electro-galvanizing, and tin electroplating.

14. Map

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluid underground. Include all springs, rivers and other surface water bodies in the map area.

See Figures 1 and 2

15. Signature Block:

This application must be signed by a person in responsible charge to be valid. This signature attests to the following:

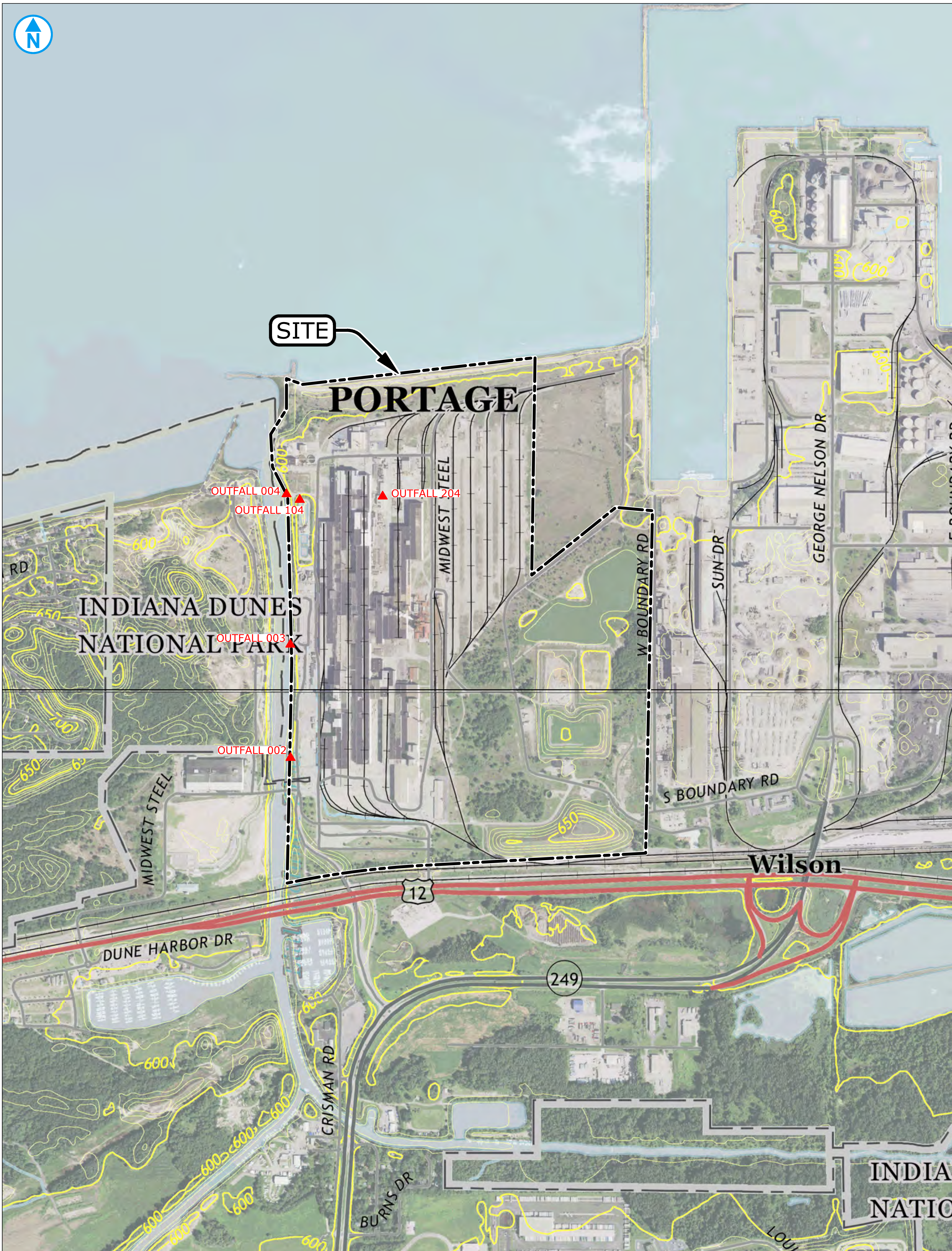
"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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".

David Reaume	Plant Manager
(Printed Name)	(Title)
	September 30th 2020
(Signature)	(Date Signed)

Return Completed Application, Fee and Associated Materials to:
Indiana Department of Environmental Management
Cashiers Office – Mail Code 50-10C
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

General Form Figures

Figure 1. Topographic Site Map
Figure 2. Outfall Location Map



Source
USGS 7.5 MINUTE SERIES TOPOGRAPHICAL QUADRANGLES, CHESTERTON, DUNE ACRES, OGDEN DUNES, AND PORTAGE, INDIANA, 2019
MAP SCALE; 1:24,000. SITE LOCATION; N: 41°37'34.23" W: 87°10'09.37"

Notes
CONTOUR INTERVAL 10 FEET

0 1000 FEET

LEGEND

PROPERTY BOUNDARY (APPROXIMATE)

OUTFALL

TOPOGRAPHIC SITE MAP

U.S. STEEL MIDWEST FACILITY
PORTAGE, INDIANA

FIGURE 1

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

RAMBOLL

C:\CAD Support\USS Midwest\FIGURE 2_OUTFALL SITE MAP_USS MIDWEST_1690017494.dwg

DESIGNER: LENGLE

DATED: 9/14/2020

PROJECT: 1690017494

Notes

* OUTFALL 002S AND OUTFALL 003S ARE THE SAME LOCATIONS BUT SAMPLED QUARTERLY ASSOCIATED WITH QUALIFYING STORM EVENTS

LEGEND

PROPERTY BOUNDARY (APPROXIMATE)

▲ OUTFALL

0 800 FEET

OUTFALL SITE MAP

U.S. STEEL MIDWEST FACILTIY

PORTAGE INDIANA

FIGURE 2

RAMBOLL US CORPORATION
A RAMBOLL COMPANY

RAMBOLL

IDEM Owner-Operator Affidavit Form

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

OWNER/OPERATOR AFFIDAVIT TO DETERMINE THE APPROPRIATE NPDES PERMITTEE(S)

327 IAC 5-2-3(c) requires the operator to apply for and obtain the NPDES permit for the NPDES discharge, unless the operator is an employee of the owner of the facility (in which case it is the owner's responsibility to apply for and obtain the NPDES permit). This is consistent with the federal regulations at 40 CFR 122.21(b). Additionally, pursuant to 327 IAC 5-2-6(c), the permittee is required to notify the IDEM if there is a change in either the ownership or the operation of the wastewater treatment plant.

When an NPDES permittee contracts with a private firm to operate its wastewater treatment plant, and the contractual agreement is one in which the private entity is not an employee of the owner, the permit should be issued to the private firm. Some contractual arrangements may have been made without the knowledge of this rule requirement, and the contract may not have been adequately set up to reflect this private firm as the sole permittee. Or the private contractor may not want to be the sole permittee. Therefore, in such instances EPA has suggested that the permit be issued to both the owner and to the private contractor, as co-permittees.

In order to help us determine who should be listed on the NPDES permit as the permittee(s), please complete the following information:

1. Name of Facility: U. S. Steel Corporation – Midwest Plant
2. NPDES Permit Number: IN00000337
3. Name of Owner: United States Steel Corporation
   (individual or legal business name)

   Mailing Address of Owner: 600 Grant Street, Pittsburgh, PA 15219
4. Name of Operator: Monique Bebley
   (individual or legal business name)

   Mailing Address of Operator: 6300 U.S. Highway 12, Portage, IN 46368
5. Is the operator an employee of the owner: ☒ YES ☐ NO
6. If the answer to #5 is "No", is the operator willing to be the sole permittee?

   ☐ YES ☐ NO ☒ N/A
7. If the answer to #6 is "No", the NPDES permit will be issued to both the owner and the operator as co-permittees.

"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."

(Signature of Owner)

Monique D. Bebley

(Signature of Operator)

Please complete this form and return it to the IDEM, Office of Water Quality, Municipal NPDES Permits
Section 100 North Senate Ave.
Indianapolis, IN 46204

IDEM Request for Information Form

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

REQUEST FOR INFORMATION

We request that you fill in the blanks on this form and return it along with your NPDES PERMIT application. The information provided will be helpful in our personal contact with officials of your municipality, industry, or other facility in assuring prompt delivery of correspondence, etc. Thank you for your cooperation.

I. Current NPDES Permit Number IN0000337
(New applicants will be assigned a number later)

II. WASTEWATER TREATMENT FACILITY LOCATION ADDRESS

Name of Facility: U. S. Steel Corporation – Midwest Plant
Address: 6300 U.S. Highway 12
City: Portage State: IN Zip code: 46368
Telephone: 219-763-5022 Email: TLSullivan@uss.com

III. DISCHARGE MONITORING REPORT (DMR) MAILING ADDRESS (ADDRESS WHERE IDEM IS TO SEND PRE-PRINTED DMRS)

Name: Timothy L. Sullivan Title: Coordinator - Environmental
Address: Midwest Plant, AE-1, 6300 US Highway 12
City: Gary State: IN Zip code: 46368
Telephone: 219-763-5022 Email: TLSullivan@uss.com
Cognizant Official (Representative responsible for completing DMR):
Name: David Reaume Title: Plant Manager

IV. OWNER ADDRESS

Name of Owner: United States Steel Corporation Title: Corporation
Address: 600 Grant Street
City: Pittsburgh State: PA Zip code: 15219
Telephone: N/A Email: N/A

V. WASTEWATER TREATMENT PLANT OPERATOR/SUPERINTENDENT ADDRESS

Name of Operator: Monique Bebley Certificate Number: WW021038
Address: 6300 U.S. Highway 12
City: Portage State: IN Zip code: 46368
Telephone: Work: 219-763-5786 Email: mdbebley@uss.com

Identification of Potentially Affected Persons Form

I. Identification of Potentially Affected Persons

Please list here any and all persons whom you have reason to believe have a substantial or proprietary interest in this matter, or could otherwise be considered to be potentially affected under the law. Failure to notify any person who is later determined to be potentially affected could result in voiding our decision on procedural grounds. To ensure conformance with AOPA and to avoid reversal of a decision, please list all such parties. The letter attached to this form will further explain the requirements under the AOPA. Attach additional names and addresses on a separate sheet of paper, as needed. Please indicate below the type of action you are requesting.

Name: City of Portage	Name: Town of Ogden Dunes
Street address: 6070P Central Avenue	Street address: 115 Hillcrest Road
City/State/ZIP code: Portage, IN 46368	City/State/ZIP code: Portage, IN 46368
Name: Indiana Dunes National Park	Name: Indiana American Water
Street address: 1050 N. Mineral Springs Road	Street address: 153 N. Emerson Ave.
City/State/ZIP code: Chesterton, IN 46304	City/State/ZIP code: Greenwood, IN 46143
Name: Port of Indiana Harbor	Name:
Street address: 6625 S. Boundary Drive	Street address:
City/State/ZIP code: Portage, IN 46368	City/State/ZIP code:
Name:	Name:
Street address:	Street address:
City/State/ZIP code:	City/State/ZIP code:
Name:	Name:
Street address:	Street address:
City/State/ZIP code:	City/State/ZIP code:
Name:	Name:
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City/State/ZIP code:	City/State/ZIP code:
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Street address:	Street address:
City/State/ZIP code:	City/State/ZIP code:
Name:	Name:
Street address:	Street address:
City/State/ZIP code:	City/State/ZIP code:

II. Please complete this form by signing the following statement.

I certify to the best of my knowledge I have listed all potentially affected parties, as defined by IC 4-21.5.			
Signature: *See the General Information Form for the signature*			
Printed name: David Reaume		Date:	
Facility name: U. S. Steel Corporation - Midwest Plant			
Facility address: 6300 U.S. Route 12			
Facility city: Portage	Facility state: Indiana	ZIP code: 46368	

III. Type of Action (check one)

☒ NPDES Permit-327 IAC 5
☐ Pretreatment Permit -327 IAC 5
☐ Construction Permit-327 IAC 3

A $50.00 fee is required for a New permit, a Renewal or a Modification; if this is a renewal or modification request, include NPDES permit No. on check and return to:
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Cashiers Office – Mail Code 50-10C
100 North Senate Avenue
Indianapolis, IN 46204-2251

If No Fee Is Required (Fee has previously been paid), Return To:
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
Office of Water Quality – Mail Code 65-42
Room N1255
Permits Branch
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Table ES-1.
U. S. Steel Midwest Plant Outfall Inventory

Table ES-1. U. S. Steel - Midwest Plant Outfall Inventory

Outfall	North Latitude	West Longitude	Receiving Water	Status	Discharge Type	Permit App Form	General Discharge Flows Summary
002	41-37-23	87-10-33	PBW	Active	NCCW, SW	2C	Stormwater, Non-contact cooling water
003	41-37-35	87-10-33	PBW	Active	NCCW, SW	2C	Stormwater, Non-contact cooling water
004	41-37-51	87-10-33.6	PBW	Active	NCCW, SW, P	2C	Stormwater, Non-contact cooling water, Outfall 304
104	41-37-50.4	87-10-31.7	Outfall 004 (PBW)	Active	P	2C	Treated non-hexavalent chromium process wastewaters (continuous anneal line, No. 1 and 2 tin recoil lines, electrolytic tinning line, chrome line, No. 3 galvanize line. 72-inch galvanizing line, pickle line, combination line, sheet temper mill), backwashes, washdowns, blowdowns from Portside Energy and the facility intake
204	41-37-50.8	87-10-20	Outfall 004 (PBW)	Active	P	2C	Chrome treatment plant effluent (treated Greenbelt II Landfill leachate and hexavalent chromium bearing wastewaters from the Tin Free Steel, Electrolytic Tinning, and Galvanizing Lines)
304	N/A	N/A	Outfall 004 (PBW)	Active	P	N/A	Outfall 104 + Outfall 204
002S*	41-37-23	87-10-33	PBW	Active	NCCW, SW	2F	Stormwater, Non-contact cooling water
003S*	41-37-35	87-10-33	PBW	Active	NCCW, SW	2F	Stormwater, Non-contact cooling water

Notes:
Receiving waters - PBW = Portage-Burns Waterway
Discharge types - P = process, NCCW = non-contact cooling water, SW = stormwater
* Outfall 002S and 003S are the same locations as Outfall 002 and 003. Sampling for 002S and 003S occurs in association with qualifying storm events.

Table ES-2.
Effluent Limitation Guidelines Production Values

Table ES-2. Effluent Limitation Guidelines Production Values

Category	40 CFR Citation	Operation / Units	2015-2019 Maximum Production (1,000 lb/day or # units)
Acid Pickling	420.92(b)(2) HCl Acid Pickling - strip, sheet & plate	80" Pickle Line	7,548
	420.92(b)(4) Fume Scrubbers	Pickle Line Fume Scrubbers	1 unit
Cold Forming	420.102(a)(2) Recirculation - multiple stands	80" Cold Mill 52" Tin Cold Mill	16,106
	420.102(a)(3) Combination	Sheet Temper Mill Double Cold Reduction Mill	5,190
	420.102(a)(5) Direct Application - multiple stands	No. 2 Tin Temper Mill	2,862
Alkaline Cleaning	420.112(a) Batch	Sheet Batch Annealing	1,990
	420.112(b) Continous	Tin Continuous Annealing	2,094
	420.114(a) New Source (Batch or Continous)	Tin Cleaner Line (CLNM)	1,446
Hot Coating	420.122(a)(1) Galvanizing, terne coating & other coatings - Strip, sheet, & misc products	72" Continous Galvanizing Line	3,533
		48" Galvanizing Line	Inactive
	420.122(c) Fume Scrubbers	Fume Scrubber for 72" Cont. Galv. Line	0 units
		Fume Scrubber for 48" Galv. Line	Inactive
	420.124(a)(1) New Source - Galvanizing, terne coating, & other coatings - Strip, sheet, & misc products	No. 3 Continous Galvanizing Line	1,278
	420.124(c) New Source - Fume Scrubbers	Fume Scrubber for No. 3 Cont. Galv. Line	1 unit
Metal Finishing	433.13(a) Best Practicable Control Technology	Electrolytic Tinning Line Tin Free Steel Line	2.3 MGD / 2.162 MGD estimated process wastewater

Notes:

1. Production values based on monthly production totals (converted to estimated daily values) except for the Cold Forming operations. For Cold Forming operations values are direct from daily production totals.

Form 2Cs

Form 2C Pages 1-4

APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER

EXISTING MANUFACTURING, COMMERCIAL, MINING, AND SILVICULTURAL OPERATIONS

(OWQ Industrial NPDES Application 2C)

EPA Identification Number *(copy from Item 1 of Form 1)*
IND016584641

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER *(name)*
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
002	41	37	23	87	10	33	Portage-Burns Waterway
003	41	37	35	87	10	33	Portage-Burns Waterway
004	41	37	51	87	10	33.6	Portage-Burns Waterway
104	41	37	50.4	87	10	31.7	Internal to Outfall 004
204	41	37	50.8	87	10	20	Internal to Outfall 004

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (e.g. for certain mining activities) provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NUMBER	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION	b. AVERAGE FLOW *(Include units)*	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
002	Stormwater runoff and non-contact cooling water	0.15 MGD	Discharge to Surface Water	4-A	
003	Stormwater runoff and non-contact cooling water	13.54 MGD	Discharge to Surface Water	4-A	
004	Conveys 304 discharge, non-contact cooling water, & stormwater runoff	14.69 MGD	Discharge to Surface Water	4-A	
104	Treated non-hexavalent chromium process wastewaters (continuous anneal line, No. 1 and 2 tin recoil lines, electrolytic tinning line, chrome line, No. 3 galvanize line. 72-inch galvanizing line, pickle line, combination line, sheet temper mill), backwashes, washdowns, blowdowns from Portside Energy and the facility intake	9.59 MGD	Flow Equalization and Mixing	1-O	
			API Oil Separation (Skimming)	1-H	
			Dissolved Air Floatation	1-H	
			Settling	1-U	
			Filter Press	5-C	
204	Chrome treatment plant effluent (treated Greenbelt II Landfill leachate and hexavalent chromium bearing wastewaters from the Tin Free Steel, Electrolytic Tinning, and Galvanizing Lines)	0.21 MGD	Flow Equalization/Mixing/Chrome Reduction	1-O	2-L
			Flocculation/Lamella/Coagulation	1-G,2-D	1-U
			Sand Filters/Filter Press	1-R	5-C
304 (Virtual)	Combined Outfall 104 + Outfall 204				
OFFICIAL USE ONLY *(effluent guidelines sub-categories)*					

EPA Identification Number *(copy from Item 1 of Form 1*
IND016584641

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☐ Yes (*complete the following table)* ☒ NO *(go to Section III)*

1. OUTFALL NUMBER	2. OPERATION(s) CONTRIBUTING FLOW	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK *(specify average)*	b. MONTHS PER YEAR *(specify average)*	a. FLOW RATE *(in mgd)*		b. TOTAL VOLUME *(specify with units)*		c. DURATION *(in days)*
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ YES *(complete Item III-B)* ☐ NO *(go to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production (or other measure of operation)?

☒ YES *(complete Item III-C)* ☐ NO *(go to Section IV)*

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guidelines, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS *(list outfall numbers)*
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	
See Table ES-2 for detailed production information.			

IV. IMPROVEMENTS

A. Are you now required by any Federal, State, or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in the application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☒ YES *(complete the following table)* ☐ NO *(go to Section IV)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED
A Revised Consent Decree was filed on 11/20/2019 in US District Court (Northern District of Indiana, Hammond Division). Case No. 2:18 cv-00127. To date, a final ruling has not been issued on the Revised Consent Decree.	004, 104, 204	See Page 1 of this form for detailed descriptions	The Revised Consent Decree includes multiple requirements. Several address evaluations of, and as needed revisions to procedures/practices related to preventive maintenance and existing treatment systems. Changes to these practices have the potential to impact effluent quality.	TBD	TBD

B. Optional : You may attach additional sheets describing any additional water pollutant control programs *(or other environmental projects which may affect your discharges*) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction. ☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

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V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding - Complete one set of tables for each outfall - Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-10.

D. Use the space below to list any of the pollutants listed in Table 2C-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
Formaldehyde	No known source – not used or listed as a SDS component for utilized materials.		

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☒ YES *(list all such pollutants below)* ☐ NO *(go to Item VI-B)*

Chrome
Lead
Zinc
Nickel

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VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☒ YES *(identify the test(s) and describe their purpose below)* ☐ NO *(go to Section VIII)*

Biological Toxicity Testing is currently performed at Outfall 004 in accordance with the current NPDES permit. Both acute and chronic toxicity are assessed using the historically most sensitive species (*Ceriodaphnia dubia*). The results have previously been submitted to IDEM.

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analysis reported in Item V performed by a contract laboratory or consulting firm?

☒ YES *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ NO *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code & no.)*	D. POLLUTANT ANALYZED
ALS Environmental	3352 128th Avenue Holland, Michigan 49424	(616) 399-6070	All

IX. 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 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."

A. NAME & OFFICIAL TITLE *(type or print)*	B. PHONE NO. *(area code & no.)*
David Reaume, Plant Manager	219-763-5511
C. SIGNATURE	**D. DATE SIGNED**
See the General Information Form for the certification signature	

Outfall 002

Form 2C Part V

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V. INTAKE AND EFFLUENT CHARACTERISTICS (Continued from page 3) OUTFALL NO. 002

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
a. Biochemical Oxygen Demand, Carbonaceous Cas No. E10106	2.6	10					1	mg/L	lbs/day					
b. Escherichia coli (E-coli - units in count/100ml) Cas No. I-1000	7.3						1	CFU/100 mL						
Fecal coliform (units in count/100 ml) Cas No. I-1000	9						1	CFU/100 mL						
Chemical Oxygen Demand (COD) Cas No. E10107	< 6.1						1	mg/L						
Dissolved Oxygen (DO) Cas No. E-14539	6.8	27					1	mg/L	lbs/day					
Total Dissolved Solids (TDS) Cas No. E-10173	100	397					1	mg/L	lbs/day					
Total Organic Carbon (TOC) Cas No. E-10195	3.2	13					1	mg/L	lbs/day					
Total Suspended Solids (TSS) Cas No. E-10162	2.2	8.7					1	mg/L	lbs/day					
Ammonia (as N) Cas No. 7664-41-7	0.093	0.37					1	mg/L	lbs/day					
Flow	VALUE 1.18		VALUE 0.39		VALUE 0.15		1583 / 52	MGD		VALUE				
Temperature (Winter) Cas No. E-14540	VALUE 95		VALUE 86		VALUE 68		1184 / 39	°F		VALUE				
Temperature (Summer) Cas No. E-14540	VALUE 85		VALUE 82		VALUE 80		399 / 13	°F		VALUE				
Hardness, Total (as (CaCO3) Cas No. E-11778	90	357					1	mg/L	lbs/day					
pH (S.U.) Cas No. E-10139	MINIMUM 7.1	MAXIMUM 7.9	MINIMUM 7.4	MAXIMUM 7.8			225 / 52	s.u.						

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PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. Pollutants for which you mark column 2-a , you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT	2. MARK (X) a. Be-lieved Pre-sent	2. MARK (X) b. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. (2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	3. UNITS b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	4. a. (2) Mass	4. b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	5. b. Reporting Limit
Bromide Cas No. 7726-95-6		X	< 0.032						1	mg/L						
Chloride Cas No. 1688-70-6	X		11	44					1	mg/L	lbs/day					
Chlorine, Total Residual Cas No. 7782-50-5		X	< 0.02		< 0.02		< 0.02		630 / 25	mg/L						
Color (C.U.) Cas No. E-11712	X		< 2.5						1	p.c.u.						
Fluoride Cas No. 16984-48-8	X		0.20	0.79					1	mg/L	lbs/day					
Nitrate/Nitrite (as N) Cas No. E-10128	X		2.8	11					1	mg/L	lbs/day					
Nitrogen, Total Organic (as N) Cas No. 7727-37-9	X		< 0.78						1	mg/L						
Oil & Grease Cas No. E-10140	X		7.0	19	2.6	5.6	1.5	1.9	226 / 52	mg/L	lbs/day					
Phosphorus, Total Cas No. 7723-14-0	X		0.037	0.15					1	mg/L	lbs/day					
Radioactivity																
(1) Radioactivity: Alpha, Total (pCi/L) Cas No. 12587-46-1		X														
(2) Radioactivity: Beta, Total (pCi/L) Cas No. 12587-47-2		X														
(3) Radioactivity: Radium ,Total (pCi/L) Cas No. 13982-63-3		X														
(4) Radioactivity: Radium 226,Total (pCi/L) Cas No. 13982-63-3		X														
Sulfate (as SO4) Cas No. 14808-79-8	X		22	87					1	mg/L	lbs/day					
Sulfide (as S) Cas No. 18496-25-8		X	< 0.42						1	mg/L						
Sulfite (as SO3) Cas No. 14264-45-3		X	< 2.0						1	mg/L						
Surfactants (MBAS) Cas No. 61-73-4	X		< 0.12						1	mg/L LAS						
Aluminum Cas No. 7429-90-5	X		0.10	0.40					1	mg/L	lbs/day					
Barium Cas No. 7440-39-3	X		0.013	0.052					1	mg/L	lbs/day					
Boron Cas No. 7440-42-8	X		0.015 J	0.058	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Cobalt Cas No. 7440-48-4		X	< 0.00024						1	mg/L						
Iron Cas No. 7439-89-6	X		0.075 J	0.30	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Magnesium Cas No. 7439-95-4	X		7.7	31					1	mg/L	lbs/day					
Molybdenum Cas No. 7439-98-7	X		0.00085	0.0034					1	mg/L	lbs/day					

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1. POLLUTANT	2. MARK (*X*) a. Be-lieved Pre-sent	2. MARK (*X*) b. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	2. EFFLUENT a. Maximum Daily Values (2) Mass	2. EFFLUENT b. Maximum 30 Day Values *(if available)* (1) Concentration	2. EFFLUENT b. Maximum 30 Day Values *(if available)* (2) Mass	2. EFFLUENT c. Long Term Average *(if available)* (1) Concentration	2. EFFLUENT c. Long Term Average *(if available)* (2) Mass	2. EFFLUENT d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	3. UNITS *(specify if blank)* b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (2) Mass	4. INTAKE *(optional)* b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	5. ANALYTICAL METHOD b. **Reporting** Limit
Manganese Cas No. 7439-96-5	X		0.00587	0.023					1	mg/L	lbs/day					
Tin Cas No. 74400-31-5	X		0.00174	0.0069					1	mg/L	lbs/day					
Titanium Cas No. 7440-32-6	X		0.00193	0.0077					1	mg/L	lbs/day					
OTHER CONVENTIONAL																
Kjeldahl Nitrogen, Total Cas No. E-10264		X	< 0.87						1	mg/L						
Nitrate Cas No. 14797-55-8	X		2.9	12					1	mg/L	lbs/day					
Nitrite Cas No. 14797-65-0	X		< 0.016						1	mg/L						

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Part C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2C-2 in the instructions to determine which of the GC/MS fractions you must test for Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. Pollutants for which you mark column 2-a or 2-b, you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and the detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT	2. MARK *(X)* a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis daily / monthly average	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
METALS																	
Antimony Cas No. 7440-36-0			X														
Arsenic Cas No. 7440-38-2			X														
Beryllium Cas No. 7440-41-7			X														
Cadmium Cas No. 7440-43-9			X														
Chromium Cas No. 7440-47-3		X															
Chromium, Hex. (dissolved) Cas No. 18540-29-9		X															
Copper Cas No. 7440-50-8		X															
Lead Cas No. 7439-92-1		X															
Mercury Cas No. 7439-97-6		X															
Nickel Cas No. 7440-02-0		X															
Selenium Cas No. 7782-49-2			X														
Silver Cas No. 7440-22-4			X														
Thallium Cas No. 7440-28-0			X														
Vanadium Cas No. 7440-62-2		X															
Zinc Cas No. 7440-66-6		X		0.021	0.082					1	mg/L	lbs/day					
CYANIDE																	
Cyanide, Free Cas No. 57-12-5			X														
Cyanide, Total Cas No. 57-12-5			X														
TOTAL PHENOLS																	
Phenols, Total (4AAP) Cas No. E-10253			X														
DIOXIN																	
2,3,7,8-Tetrachloro dibenzo-P-Dioxin Cas No. 1746-01-6			X														

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1. POLLUTANT	2. MARK (X) a. Testing Required	2. MARK (X) b. Believed Present	2. MARK (X) c. Believed Absent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	2. EFFLUENT a. Maximum Daily Values (2) Mass	2. EFFLUENT b. Maximum 30 Day Values *(if available)* (1) Concentration	2. EFFLUENT b. Maximum 30 Day Values *(if available)* (2) Mass	2. EFFLUENT c. Long Term Average *(if available)* (1) Concentration	2. EFFLUENT c. Long Term Average *(if available)* (2) Mass	2. EFFLUENT d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	3. UNITS b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	4. INTAKE a. Long Term Average Value (2) Mass	4. INTAKE b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	5. ANALYTICAL METHOD b. **Reporting** Limit
OTHER																	
4-Methylphenol Cas No. 106-44-5			X														
Acetaldehyde Cas No. 75-07-0			X														
Bis(chloromethyl)ether Cas No. 542-88-1			X														
Dibutyl amine * Cas No. 111-92-2			X														
Dimethylpropyl phenol * Cas No. 80-46-6			X														
Formaldehyde Cas No. 5-00-0			X														
Tributyl tin oxide * Cas No. 56-35-9			X														
VOLATILE ORGANIC																	
1,1,2,2-Tetrachloroethane Cas No. 79-34-5			X														
1,1,2-Trichloroethane Cas No. 79-00-5			X														
l,l,l-Trichloroethane Cas No. 71-55-6			X														
1,1-Dichloroethane Cas No. 75-34-3			X														
1,1-Dichloroethene Cas No. 75-35-4			X														
1,2,4-Trimethylbenzene Cas No. 95-63-6			X														
1,2-Dichlorethane Cas No. 107-06-2			X														
1,2-Dichloroethene, Trans Cas No. 156-60-5			X														
1,2-Dichloropropane Cas No. 78-87-5			X														
1,3,5-Trimethylbenzene Cas No. 108-67-8			X														
1,3-Dichloropropane Cas No. 142-28-9			X														
1,3-Dichloropropene, Cis Cas No. 10061-01-5			X														
1,3-Dichloropropene, Trans Cas No. 10061-02-6			X														
1,3-Dichloropropylene Cas No. 542-75-6			X														
2-Butanone (Methyl Ethyl Ketone) Cas No. 78-93-3			X														
2-Chloroethyl vinyl ether Cas No. 110-75-8			X														
Acetone Cas No. 67-64-1			X														
Acrolein Cas No. 1070-20-8			X														
Acrylonitrile Cas No. 107-13-1			X														
Benzene Cas No. 71-43-2			X														
Bromoform Cas No. 75-25-2			X														

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1. POLLUTANT	2. MARK (*X*) a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
Carbon disulfide Cas No. 75-15-0			X														
Carbon Tetrachloride Cas No. 56-23-5			X														
Chlorobenzene Cas No. 108-90-7			X														
Chlorodibromomethane Cas No. 124-48-1			X														
Chloroethane Cas No. 75-00-3			X														
Dichlorobromomethane Cas No. 75-27-4			X														
Dichlorodifluoromethane Cas No. 75-71-8			X														
Ethylbenzene Cas No. 100-41-4			X														
Ethylene glycol Cas No. 107-21-1			X														
Methanol Cas No. 67-56-1			X														
Methyl Bromide (Bromomethane) Cas No. 74-83-9			X														
Methyl chloride (Chloromethane) Cas No. 74-87-3			X														
Methyl tert-butyl ether (MTBE) Cas No. 1634-04-4			X														
Methylamine * Cas No. 74-89-5			X														
Methylene chloride Cas No. 75-09-2			X														
Propylene glycol Cas No. 57-55-6			X														
Tetrachloroethene Cas No. 127-18-4			X														
Trichloroethene Cas No. 79-01-6			X														
Trichlorofluoromethane Cas No. 75-69-4			X														
Toluene Cas No. 108-88-3			X														
Vinyl chloride Cas No. 75-01-4			X														
Xylene Cas No. 1330-20-7			X														
SEMI-VOLATILE ORGANIC-ACID																	
2,4-Dichlorophenol Cas No. 120-83-2			X														
2,4-Dimethylphenol Cas No. 105-67-9			X														
2,4-Dinitrophenol Cas No. 51-28-5			X														
2,4.6-Trichlorophenol Cas No. 88-06-2			X														

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1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS (*specify if blank*)		4. INTAKE (*optional*)			5. ANALYTICAL METHOD (*list method used and detection limit achieved by lab.*)	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values (*if available*) (1) Concentration	(2) Mass	c. Long Term Average (*if available*) (1) Concentration	(2) Mass	d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value (*if available*) (1) Concentration	(2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
2-Chlorophenol Cas No. 95-57-8			X														
2-Nitrophenol Cas No. 88-75-5			X														
4-Nitrophenol Cas No. 100-02-7			X														
4,6-Dinitro-o-cresol (2-methyl-4,6-dinitrophenol) Cas No. 534-52-1			X														
Benzoic acid Cas No. 65-85-0			X														
p-Chloro-m-cresol (4-chloro-3-methylphenol) Cas No. 59-50-7			X														
Pentachlorophenol Cas No. 87-86-5			X														
Phenol Cas No. 108-95-2			X														
SEMI-VOLATILE ORGANIC-BASE																	
1,2,4-Trichlorobenzene Cas No. 120-82-1			X														
1,2-Dichlorobenzene Cas No. 95-50-1			X														
1,2-Diphenylhydrazine Cas No. 122-66-7			X														
1,3-Dichlorobenzene Cas No. 541-73-1			X														
1,4-Dichlorobenzene Cas No. 106-46-7			X														
2-Chloronaphthalene Cas No. 91-58-7			X														
2-Methylnaphthalene Cas No. 91-57-6			X														
2.4-Dinitrotoluene Cas No. 121-14-2			X														
2.6-Dinitrotoluene Cas No. 606-20-2			X														
3,3-Dichlorobenzidine Cas No. 91-94-1			X														
3,4-Benzofluoranthene (benzo(b)fluoranthene) Cas No. 205-99-2			X														
4-Bromophenyl phenyl ether Cas No. 101-55-3			X														
4-Chlorophenyl phenyl ether Cas No. 7005-72-3			X														
Acenaphthene Cas No. 83-32-9			X														
Acenaphthylene Cas No. 208-96-8			X														
Anthracene Cas No. 120-12-7			X														
Benzidine Cas No. 92-87-5			X														
Benzo(a)anthracene Cas No. 56-55-3			X														
Benzo(a)pyrene Cas No. 50-32-8			X														

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641										Outfall Number	002					
1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
Benzo(ghi)perylene Cas No. 191-24-2			X														
Benzo(k)fluoranthene Cas No. 207-06-9			X														
Bis(2-chloroethoxy)methane Cas No. 111-91-1			X														
Bis(2-chloroethyl) ether Cas No. 111-44-4			X														
Bis(2-chloroisopropyl) ether Cas No. 108-60-1			X														
Bis(2-ethylhexyl)phthalate Cas No. 117-81-7			X														
Butyl benzyl phthalate Cas No. 85-68-7			X														
Chrysene Cas No. 218-01-9			X														
Di-n-butyl phthalate Cas No. 84-74-2			X														
Di-n-octyl phthalate Cas No. 117-84-0			X														
Dibenzo(a,h)anthracene Cas No. 53-70-3			X														
Dibenzofuran Cas No. 132-64-9			X														
Diethylphthalate Cas No. 84-66-2			X														
Dimethylphthalate Cas No. 131-11-3			X														
Fluoranthene Cas No. 206-44-0			X														
Fluorene Cas No. 86-73-7			X														
Hexachlorobenzene Cas No. 118-74-1			X														
Hexachlorobutadiene Cas No. 87-68-3			X														
Hexachlorocyclopentadiene Cas No. 77-47-4			X														
Hexachloroethane Cas No. 67-72-1			X														
Indeno(1,2,3-cd) Pyrene Cas No. 193-39-5			X														
Isophorone Cas No. 78-59-1			X														
N-nitrosodi-n-propyl amine Cas No. 621-64-7			X														
N-nitrosodimethyl amine Cas No. 62-75-9			X														
N-nitrosodiphenyl amine Cas No. 86-30-6			X														
Naphthalene Cas No. 91-20-3			X														
Nitrobenzene Cas No. 98-95-3			X														
Phenanthrene Cas No. 85-01-8			X														
Pyrene Cas No. 129-00-0			X														

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641 | Outfall Number 002

1. POLLUTANT	2. MARK *(X)* a. Testing Required	2. MARK b. Believed Present	2. MARK c. Believed Absent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. Maximum 30 Day Values *(if available)* (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. Long Term Average *(if available)* (2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	3. UNITS b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	a. Long Term Average Value *(if available)* (2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
Styrene Cas No. 100-42-5			X														
PESTICIDES																	
2,4-Dichlorophenoxy Acetic Acid Cas No. 94-75-7			X														
Alachlor Cas No. 15972-60-8			X														
Aldrin Cas No. 309-00-2			X														
Atrazine Cas No. 1912-24-9			X														
BHC-Alpha Cas No. 319-84-6			X														
BHC-Beta Cas No. 319-85-7			X														
BHC-Gamma (Lindane) Cas No. 58-89-9			X														
BHC-Delta Cas No. 319-86-8			X														
Chlordane Cas No. 57-74-9			X														
DDD Cas No. 72-54-8			X														
DDE Cas No. 72-55-9			X														
DDT Cas No. 50-29-3			X														
Dieldrin Cas No. 60-57-1			X														
Endosulfan Sulfate Cas No. 1031-07-8			X														
Endosulfan, Alpha Cas No. 959-98-8			X														
Endosulfan, Beta Cas No. 33213-65-9			X														
Endrin Cas No. 72-20-8			X														
Endrin Aldehyde Cas No. 7421-93-4			X														
Heptachlor Cas No. 76-44-8			X														
Heptachlor Epoxide Cas No. 1024-57-3			X														
Methoxychlor Cas No. 72-43-5			X														
Metolachlor Cas No. 51218-45-2			X														
Mirex Cas No. 2385-85-5			X														
Parathion ethyl Cas No. 56-38-2			X														
Parathion methyl Cas No. 56-38-2			X														
Simazine Cas No. 122-34-9			X														

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641											Outfall Number 002						
1. POLLUTANT	2. MARK *(X)*			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
PCB-1242 Cas No. 534469-21-9	X		X	< 0.046						1	ug/L						
PCB-1254 Cas No. 11097-69-1	X		X	< 0.028						1	ug/L						
PCB-1221 Cas No. 11104-28-2	X		X	< 0.046						1	ug/L						
PCB-1232 Cas No. 11141-16-5	X		X	< 0.046						1	ug/L						
PCB-1248 Cas No. 12672-29-6	X		X	< 0.046						1	ug/L						
PCB-1260 Cas No. 11096-82-5	X		X	< 0.028						1	ug/L						
PCB-1016 Cas No. 12674-11-2	X		X	< 0.046						1	ug/L						
Toxaphene Cas No. 8001-35-2			X														
WHOLE EFFLUENT TOXICITY																	
Acute, Freshwater Organisms Cas No. I-1100																	
Chronic Freshwater Organisms Cas No. I-1101																	

ADDITIONAL ANALYSES																	
Chloroform Cas No. 67-66-3			X														
Iron, Dissolved Cas No. 7439-89-6			X	< 0.016						1	mg/L						

Outfall 003

Form 2C Part V

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641

V. INTAKE AND EFFLUENT CHARACTERISTICS (Continued from page 3) | OUTFALL NO. 003

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
a. Biochemical Oxygen Demand, Carbonaceous Cas No. E10106	< 2						1	mg/L						
b. Escherichia coli (E-coli - units in count/100ml) Cas No. I-1000	60.2						1	CFU/100 mL						
Fecal coliform (units in count/100 ml) Cas No. I-1000	200						1	CFU/100 mL						
Chemical Oxygen Demand (COD) Cas No. E10107	< 6.1						1	mg/L						
Dissolved Oxygen (DO) Cas No. E-14539	6.9	2.5					1	mg/L	lbs/day					
Total Dissolved Solids (TDS) Cas No. E-10173	170	61					1	mg/L	lbs/day					
Total Organic Carbon (TOC) Cas No. E-10195	2.9	1					1	mg/L	lbs/day					
Total Suspended Solids (TSS) Cas No. E-10162	1.54 J	0.55					1	mg/L	lbs/day					
Ammonia (as N) Cas No. 7664-41-7	0.0242 J	0.0087	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Flow	VALUE 16.01		VALUE 15.17		VALUE 13.54		1583 / 52	MGD		VALUE				
Temperature (Winter) Cas No. E-14540	VALUE 81		VALUE 75		VALUE 55		1184 / 39	°F		VALUE				
Temperature (Summer) Cas No. E-14540	VALUE 88		VALUE 80		VALUE 77		399 / 13	°F		VALUE				
Hardness, Total (as (CaCO3) Cas No. E-11778	100	36					1	mg/L	lbs/day					
pH (S.U.) Cas No. E-10139	MINIMUM 7.1	MAXIMUM 8.0	MINIMUM 7.4	MAXIMUM 7.9			225 / 52	s.u.						

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641	Outfall Number	003

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. Pollutants for which you mark column 2-a , you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT	2. MARK (*X*)		2. EFFLUENT							3. UNITS (*specify if blank*)		4. INTAKE (*optional*)			5. ANALYTICAL METHOD (*list method used and detection limit achieved by lab.*)	
	a. Be-lieved Pre-sent	b. Be-lieved Ab-sent	a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values (*if available*) (1) Concentration	b. Maximum 30 Day Values (*if available*) (2) Mass	c. Long Term Average (*if available*) (1) Concentration	c. Long Term Average (*if available*) (2) Mass	d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value (*if available*) (1) Concentration	a. Long Term Average Value (*if available*) (2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
Bromide Cas No. 7726-95-6		X	< 0.032						1	mg/L						
Chloride Cas No. 1688-70-6	X		15	5.4					1	mg/L	lbs/day					
Chlorine, Total Residual Cas No. 7782-50-5		X	< 0.02		< 0.02		< 0.02		630 / 25	mg/L						
Color (C.U.) Cas No. E-11712	X		< 2.5						1	p.c.u.						
Fluoride Cas No. 16984-48-8	X		< 0.067						1	mg/L						
Nitrate/Nitrite (as N) Cas No. E-10128	X		2.2	0.79					1	mg/L	lbs/day					
Nitrogen, Total Organic (as N) Cas No. 7727-37-9	X		< 0.85						1	mg/L						
Oil & Grease Cas No. E-10140	X		5.1	639	2.9	309	1.5	169	226 / 52	mg/L	lbs/day					
Phosphorus, Total Cas No. 7723-14-0	X		< 0.011						1	mg/L						
Radioactivity																
(1) Radioactivity: Alpha, Total (pCi/L) Cas No. 12587-46-1		X														
(2) Radioactivity: Beta, Total (pCi/L) Cas No. 12587-47-2		X														
(3) Radioactivity: Radium ,Total (pCi/L) Cas No. 13982-63-3		X														
(4) Radioactivity: Radium 226,Total (pCi/L) Cas No. 13982-63-3		X														
Sulfate (as SO4) Cas No. 14808-79-8	X		63	23					1	mg/L	lbs/day					
Sulfide (as S) Cas No. 18496-25-8		X	< 0.42						1	mg/L						
Sulfite (as SO3) Cas No. 14264-45-3		X	< 2.0						1	mg/L						
Surfactants (MBAS) Cas No. 61-73-4	X		< 0.12						1	mg/L LAS						
Aluminum Cas No. 7429-90-5	X		0.050	0.018					1	mg/L	lbs/day					
Barium Cas No. 7440-39-3	X		0.021	0.0074					1	mg/L	lbs/day					
Boron Cas No. 7440-42-8	X		0.022	0.0078					1	mg/L	lbs/day					
Cobalt Cas No. 7440-48-4		X	< 0.00024						1	mg/L						
Iron Cas No. 7439-89-6	X		0.037 J	0.013	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Magnesium Cas No. 7439-95-4	X		12.4	4.4					1	mg/L	lbs/day					
Molybdenum Cas No. 7439-98-7	X		0.0011 J	0.00038	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641									Outfall Number	003					
1. POLLUTANT	2. MARK *(X)*		2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Be-lieved Pre-sent	b. Be-lieved Ab-sent	a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. Maximum 30 Day Values *(if available)* (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. Long Term Average *(if available)* (2) Mass	d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)* (1) Concentration	a. Long Term Average Value *(if available)* (2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
Manganese Cas No. 7439-96-5	X		0.0020 J	0.00073	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Tin Cas No. 74400-31-5	X		0.00092 J	0.00033	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Titanium Cas No. 7440-32-6	X		< 0.0010						1	mg/L						
OTHER CONVENTIONAL																
Kjeldahl Nitrogen, Total Cas No. E-10264		X	< 0.87						1	mg/L						
Nitrate Cas No. 14797-55-8	X		2.0	0.72					1	mg/L	lbs/day					
Nitrite Cas No. 14797-65-0	X		< 0.016						1	mg/L						

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641	Outfall Number	003

Part C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2C-2 in the instructions to determine which of the GC/MS fractions you must test for Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. Pollutants for which you mark column 2-a or 2-b, you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and the detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS (*specify if blank*)		4. INTAKE (*optional*)			5. ANALYTICAL METHOD (*list method used and detection limit achieved by lab.*)	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values (*if available*) (1) Concentration	b. (2) Mass	c. Long Term Average (*if available*) (1) Concentration	c. (2) Mass	d. No. of Analysis daily / monthly average	a. Concentration	b. Mass	a. Long Term Average Value (*if available*) (1) Concentration	a. (2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
METALS																	
Antimony Cas No. 7440-36-0			X														
Arsenic Cas No. 7440-38-2			X														
Beryllium Cas No. 7440-41-7			X														
Cadmium Cas No. 7440-43-9			X														
Chromium Cas No. 7440-47-3		X															
Chromium, Hex. (dissolved) Cas No. 18540-29-9		X															
Copper Cas No. 7440-50-8		X															
Lead Cas No. 7439-92-1		X															
Mercury Cas No. 7439-97-6		X															
Nickel Cas No. 7440-02-0		X															
Selenium Cas No. 7782-49-2			X														
Silver Cas No. 7440-22-4			X														
Thallium Cas No. 7440-28-0			X														
Vanadium Cas No. 7440-62-2		X															
Zinc Cas No. 7440-66-6		X		0.0046 J	0.0016	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
CYANIDE																	
Cyanide, Free Cas No. 57-12-5			X														
Cyanide, Total Cas No. 57-12-5			X														
TOTAL PHENOLS																	
Phenols, Total (4AAP) Cas No. E-10253			X														
DIOXIN																	
2,3,7,8-Tetrachloro dibenzo-P-Dioxin Cas No. 1746-01-6			X														

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1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS (*specify if blank*)		4. INTAKE (*optional*)			5. ANALYTICAL METHOD (*list method used and detection limit achieved by lab.*)	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values (*if available*)		c. Long Term Average (*if available*)		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value (*if available*)		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
OTHER																	
4-Methylphenol Cas No. 106-44-5			X														
Acetaldehyde Cas No. 75-07-0			X														
Bis(chloromethyl)ether Cas No. 542-88-1			X														
Dibutyl amine * Cas No. 111-92-2			X														
Dimethylpropyl phenol * Cas No. 80-46-6			X														
Formaldehyde Cas No. 5-00-0			X														
Tributyl tin oxide * Cas No. 56-35-9			X														
VOLATILE ORGANIC																	
1,1,2,2-Tetrachloroethane Cas No. 79-34-5			X														
1,1,2-Trichloroethane Cas No. 79-00-5			X														
l,l,l-Trichloroethane Cas No. 71-55-6			X														
1,1-Dichloroethane Cas No. 75-34-3			X														
1,1-Dichloroethene Cas No. 75-35-4			X														
1,2,4-Trimethylbenzene Cas No. 95-63-6			X														
1,2-Dichlorethane Cas No. 107-06-2			X														
1,2-Dichloroethene, Trans Cas No. 156-60-5			X														
1,2-Dichloropropane Cas No. 78-87-5			X														
1,3,5-Trimethylbenzene Cas No. 108-67-8			X														
1,3-Dichloropropane Cas No. 142-28-9			X														
1,3-Dichloropropene, Cis Cas No. 10061-01-5			X														
1,3-Dichloropropene, Trans Cas No. 10061-02-6			X														
1,3-Dichloropropylene Cas No. 542-75-6			X														
2-Butanone (Methyl Ethyl Ketone) Cas No. 78-93-3			X														
2-Chloroethyl vinyl ether Cas No. 110-75-8			X														
Acetone Cas No. 67-64-1			X														
Acrolein Cas No. 1070-20-8			X														
Acrylonitrile Cas No. 107-13-1			X														
Benzene Cas No. 71-43-2			X														
Bromoform Cas No. 75-25-2			X														

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Outfall Number 003

1. POLLUTANT	2. MARK (*X*) a. Testing Required	b. Believed Present	c. Believed Absent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
Carbon disulfide Cas No. 75-15-0			X														
Carbon Tetrachloride Cas No. 56-23-5			X														
Chlorobenzene Cas No. 108-90-7			X														
Chlorodibromomethane Cas No. 124-48-1			X														
Chloroethane Cas No. 75-00-3			X														
Dichlorobromomethane Cas No. 75-27-4			X														
Dichlorodifluoromethane Cas No. 75-71-8			X														
Ethylbenzene Cas No. 100-41-4			X														
Ethylene glycol Cas No. 107-21-1			X														
Methanol Cas No. 67-56-1			X														
Methyl Bromide (Bromomethane) Cas No. 74-83-9			X														
Methyl chloride (Chloromethane) Cas No. 74-87-3			X														
Methyl tert-butyl ether (MTBE) Cas No. 1634-04-4			X														
Methylamine * Cas No. 74-89-5			X														
Methylene chloride Cas No. 75-09-2			X														
Propylene glycol Cas No. 57-55-6			X														
Tetrachloroethene Cas No. 127-18-4			X														
Trichloroethene Cas No. 79-01-6			X														
Trichlorofluoromethane Cas No. 75-69-4			X														
Toluene Cas No. 108-88-3			X														
Vinyl chloride Cas No. 75-01-4			X														
Xylene Cas No. 1330-20-7			X														
SEMI-VOLATILE ORGANIC-ACID																	
2,4-Dichlorophenol Cas No. 120-83-2			X														
2,4-Dimethylphenol Cas No. 105-67-9			X														
2,4-Dinitrophenol Cas No. 51-28-5			X														
2,4.6-Trichlorophenol Cas No. 88-06-2			X														

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641											Outfall Number 003						
1. POLLUTANT	2. MARK (*X*) a. Testing Required	b. Believed Present	c. Believed Absent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
2-Chlorophenol Cas No. 95-57-8			X														
2-Nitrophenol Cas No. 88-75-5			X														
4-Nitrophenol Cas No. 100-02-7			X														
4,6-Dinitro-o-cresol (2-methyl-4,6-dinitrophenol) Cas No. 534-52-1			X														
Benzoic acid Cas No. 65-85-0			X														
p-Chloro-m-cresol (4-chloro-3-methylphenol) Cas No. 59-50-7			X														
Pentachlorophenol Cas No. 87-86-5			X														
Phenol Cas No. 108-95-2			X														
SEMI-VOLATILE ORGANIC-BASE																	
1,2,4-Trichlorobenzene Cas No. 120-82-1			X														
1,2-Dichlorobenzene Cas No. 95-50-1			X														
1,2-Diphenylhydrazine Cas No. 122-66-7			X														
1,3-Dichlorobenzene Cas No. 541-73-1			X														
1,4-Dichlorobenzene Cas No. 106-46-7			X														
2-Chloronaphthalene Cas No. 91-58-7			X														
2-Methylnaphthalene Cas No. 91-57-6			X														
2.4-Dinitrotoluene Cas No. 121-14-2			X														
2.6-Dinitrotoluene Cas No. 606-20-2			X														
3,3-Dichlorobenzidine Cas No. 91-94-1			X														
3,4-Benzofluoranthene (benzo(b)fluoranthene) Cas No. 205-99-2			X														
4-Bromophenyl phenyl ether Cas No. 101-55-3			X														
4-Chlorophenyl phenyl ether Cas No. 7005-72-3			X														
Acenaphthene Cas No. 83-32-9			X														
Acenaphthylene Cas No. 208-96-8			X														
Anthracene Cas No. 120-12-7			X														
Benzidine Cas No. 92-87-5			X														
Benzo(a)anthracene Cas No. 56-55-3			X														
Benzo(a)pyrene Cas No. 50-32-8			X														

EPA Identification Number (copy from Item 1 of Form 1)	IND016584641										Outfall Number	003					
1. POLLUTANT	2. MARK (X)			2. EFFLUENT							3. UNITS (specify if blank)		4. INTAKE (optional)			5. ANALYTICAL METHOD (list method used and detection limit achieved by lab.)	
	a. Testing Required	b. Believed Present	c. Believed Absent	a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values (if available) (1) Concentration	b. Maximum 30 Day Values (if available) (2) Mass	c. Long Term Average (if available) (1) Concentration	c. Long Term Average (if available) (2) Mass	d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value (if available) (1) Concentration	a. Long Term Average Value (if available) (2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
Benzo(ghi)perylene Cas No. 191-24-2			X														
Benzo(k)fluoranthene Cas No. 207-06-9			X														
Bis(2-chloroethoxy)methane Cas No. 111-91-1			X														
Bis(2-chloroethyl) ether Cas No. 111-44-4			X														
Bis(2-chloroisopropyl) ether Cas No. 108-60-1			X														
Bis(2-ethylhexyl)phthalate Cas No. 117-81-7			X														
Butyl benzyl phthalate Cas No. 85-68-7			X														
Chrysene Cas No. 218-01-9			X														
Di-n-butyl phthalate Cas No. 84-74-2			X														
Di-n-octyl phthalate Cas No. 117-84-0			X														
Dibenzo(a,h)anthracene Cas No. 53-70-3			X														
Dibenzofuran Cas No. 132-64-9			X														
Diethylphthalate Cas No. 84-66-2			X														
Dimethylphthalate Cas No. 131-11-3			X														
Fluoranthene Cas No. 206-44-0			X														
Fluorene Cas No. 86-73-7			X														
Hexachlorobenzene Cas No. 118-74-1			X														
Hexachlorobutadiene Cas No. 87-68-3			X														
Hexachlorocyclopentadiene Cas No. 77-47-4			X														
Hexachloroethane Cas No. 67-72-1			X														
Indeno(1,2,3-cd) Pyrene Cas No. 193-39-5			X														
Isophorone Cas No. 78-59-1			X														
N-nitrosodi-n-propyl amine Cas No. 621-64-7			X														
N-nitrosodimethyl amine Cas No. 62-75-9			X														
N-nitrosodiphenyl amine Cas No. 86-30-6			X														
Naphthalene Cas No. 91-20-3			X														
Nitrobenzene Cas No. 98-95-3			X														
Phenanthrene Cas No. 85-01-8			X														
Pyrene Cas No. 129-00-0			X														

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641 | Outfall Number 003

1. POLLUTANT	2. MARK *(X)*			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
Styrene Cas No. 100-42-5			X														
PESTICIDES																	
2,4-Dichlorophenoxy Acetic Acid Cas No. 94-75-7			X														
Alachlor Cas No. 15972-60-8			X														
Aldrin Cas No. 309-00-2			X														
Atrazine Cas No. 1912-24-9			X														
BHC-Alpha Cas No. 319-84-6			X														
BHC-Beta Cas No. 319-85-7			X														
BHC-Gamma (Lindane) Cas No. 58-89-9			X														
BHC-Delta Cas No. 319-86-8			X														
Chlordane Cas No. 57-74-9			X														
DDD Cas No. 72-54-8			X														
DDE Cas No. 72-55-9			X														
DDT Cas No. 50-29-3			X														
Dieldrin Cas No. 60-57-1			X														
Endosulfan Sulfate Cas No. 1031-07-8			X														
Endosulfan, Alpha Cas No. 959-98-8			X														
Endosulfan, Beta Cas No. 33213-65-9			X														
Endrin Cas No. 72-20-8			X														
Endrin Aldehyde Cas No. 7421-93-4			X														
Heptachlor Cas No. 76-44-8			X														
Heptachlor Epoxide Cas No. 1024-57-3			X														
Methoxychlor Cas No. 72-43-5			X														
Metolachlor Cas No. 51218-45-2			X														
Mirex Cas No. 2385-85-5			X														
Parathion ethyl Cas No. 56-38-2			X														
Parathion methyl Cas No. 56-38-2			X														
Simazine Cas No. 122-34-9			X														

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641

Outfall Number 003

1. POLLUTANT	2. MARK (*X*) a. Testing Required	b. Believed Present	c. Believed Absent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. Maximum 30 Day Values *(if available)* (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. Long Term Average *(if available)* (2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	a. Long Term Average Value *(if available)* (2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
PCB-1242 Cas No. 534469-21-9	X		X	< 0.046						1	ug/L						
PCB-1254 Cas No. 11097-69-1	X		X	< 0.028						1	ug/L						
PCB-1221 Cas No. 11104-28-2	X		X	< 0.046						1	ug/L						
PCB-1232 Cas No. 11141-16-5	X		X	< 0.046						1	ug/L						
PCB-1248 Cas No. 12672-29-6	X		X	< 0.046						1	ug/L						
PCB-1260 Cas No. 11096-82-5	X		X	< 0.028						1	ug/L						
PCB-1016 Cas No. 12674-11-2	X		X	< 0.046						1	ug/L						
Toxaphene Cas No. 8001-35-2			X														
WHOLE EFFLUENT TOXICITY																	
Acute, Freshwater Organisms Cas No. I-1100			X														
Chronic Freshwater Organisms Cas No. I-1101			X														

ADDITIONAL ANALYSES																	
Chloroform Cas No. 67-66-3			X														
Iron, Dissolved Cas No. 7439-89-6			X	< 0.016						1	mg/L						

Outfall 004

Form 2C Part V

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641

V. INTAKE AND EFFLUENT CHARACTERISTICS (Continued from page 3) | OUTFALL NO. 004

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
a. Biochemical Oxygen Demand, Carbonaceous Cas No. E10106	7.9	925					1	mg/L	lbs/day					
b. Escherichia coli (E-coli - units in count/100ml) Cas No. I-1000	3						1	CFU/100 mL						
Fecal coliform (units in count/100 ml) Cas No. I-1000	4						1	CFU/100 mL						
Chemical Oxygen Demand (COD) Cas No. E10107	25	2,946					1	mg/L	lbs/day					
Dissolved Oxygen (DO) Cas No. E-14539	6.0	707					1	mg/L	lbs/day					
Total Dissolved Solids (TDS) Cas No. E-10173	390	45,966			370	44,868	2	mg/L	lbs/day					
Total Organic Carbon (TOC) Cas No. E-10195	7.5	884					1	mg/L	lbs/day					
Total Suspended Solids (TSS) Cas No. E-10162	21.6	2,545					1	mg/L	lbs/day					
Ammonia (as N) Cas No. 7664-41-7	0.030	3.51					1	mg/L	lbs/day					
Flow	VALUE 19.5		VALUE 17.35		VALUE 14.69		1154/52	MGD		VALUE				
Temperature (Winter) Cas No. E-14540	VALUE 88		VALUE 81		VALUE 69		1184/39	°F		VALUE				
Temperature (Summer) Cas No. E-14540	VALUE 98		VALUE 91		VALUE 85		368/13	°F		VALUE				
Hardness, Total (as (CaCO3) Cas No. E-11778	220	25,926					1	mg/L	lbs/day					
pH (S.U.) Cas No. E-10139	MINIMUM 7.1	MAXIMUM 8.2	MINIMUM 7.6	MAXIMUM 8.0			1154/52	s.u.						

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641 | Outfall Number 004

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. Pollutants for which you mark column 2-a , you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT	2. MARK (*X*) a. Be-lieved Pre-sent	b. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values (*if available*) (1) Concentration	(2) Mass	c. Long Term Average (*if available*) (1) Concentration	(2) Mass	d. No. of Analysis	3. UNITS (*specify if blank*) a. Concentration	b. Mass	4. INTAKE (*optional*) a. Long Term Average Value (*if available*) (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD (*list method used and detection limit achieved by lab.*) a. Method	b. **Reporting** Limit
Bromide Cas No. 7726-95-6	X		< 0.032						1	mg/L						
Chloride Cas No. 1688-70-6	X		71	8,367					1	mg/L	lbs/day					
Chlorine, Total Residual Cas No. 7782-50-5		X	< 0.02		< 0.02		< 0.02		630/25	mg/L						
Color (C.U.) Cas No. E-11712	X		10						1	p.c.u.						
Fluoride Cas No. 16984-48-8	X		< 0.067						1	mg/L						
Nitrate/Nitrite (as N) Cas No. E-10128	X		0.12	14					1	mg/L	lbs/day					
Nitrogen, Total Organic (as N) Cas No. 7727-37-9	X		< 0.84						1	mg/L						
Oil & Grease Cas No. E-10140	X		23	2,823	2.9	188.6	1.5	197.6	1230/52	mg/L	lbs/day					
Phosphorus, Total Cas No. 7723-14-0	X		0.078	9					1	mg/L	lbs/day					
Radioactivity																
(1) Radioactivity: Alpha, Total (pCi/L) Cas No. 12587-46-1		X														
(2) Radioactivity: Beta, Total (pCi/L) Cas No. 12587-47-2		X														
(3) Radioactivity: Radium ,Total (pCi/L) Cas No. 13982-63-3		X														
(4) Radioactivity: Radium 226,Total (pCi/L) Cas No. 13982-63-3		X														
Sulfate (as SO4) Cas No. 14808-79-8	X		120	14,143			105	12,383	2	mg/L	lbs/day					
Sulfide (as S) Cas No. 18496-25-8	X		0.48 J	57	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Sulfite (as SO3) Cas No. 14264-45-3	X		2.4	386			2.2	261	2	mg/L	lbs/day	Dataset consists of 1 detection and one non-detect result.				
Surfactants (MBAS) Cas No. 61-73-4	X		< 0.12						1	mg/L LAS						
Aluminum Cas No. 7429-90-5	X		0.16	18.50					1	mg/L	lbs/day					
Barium Cas No. 7440-39-3	X		0.018	2.062					1	mg/L	lbs/day					
Boron Cas No. 7440-42-8	X		0.038	4.455					1	mg/L	lbs/day					
Cobalt Cas No. 7440-48-4		X	< 0.00024						1	mg/L						
Iron Cas No. 7439-89-6	X		2.2	254.54					1	mg/L	lbs/day					
Magnesium Cas No. 7439-95-4	X		14	1,650					1	mg/L	lbs/day					
Molybdenum Cas No. 7439-98-7	X		0.0011 J	0.1261					1	mg/L	lbs/day					

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641									Outfall Number	004					
1. POLLUTANT	2. MARK (*X*)		2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Be-lieved Pre-sent	b. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
Manganese Cas No. 7439-96-5	X		0.13	15					1	mg/L	lbs/day					
Tin Cas No. 74400-31-5	X		0.33	39			0.23	28	2	mg/L	lbs/day					
Titanium Cas No. 7440-32-6	X		0.0025 J	0.29	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
OTHER CONVENTIONAL																
Kjeldahl Nitrogen, Total Cas No. E-10264	X		0.99	117					1	mg/L	lbs/day					
Nitrate Cas No. 14797-55-8	X		0.12	14					1	mg/L	lbs/day					
Nitrite Cas No. 14797-65-0	X		< 0.016						1	mg/L						

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641	Outfall Number	004

Part C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2C-2 in the instructions to determine which of the GC/MS fractions you must test for Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. Pollutants for which you mark column 2-a or 2-b, you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and the detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT	2. MARK *(X)*			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Testing Required	b. Believed Present	c. Believed Absent	a. Maximum Daily Values (1) Concentration	a. (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. (2) Mass	d. No. of Analysis daily / monthly average	a. Concentration	b. Mass	a. Long Term Average Value *(if available)* (1) Concentration	a. (2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
METALS																	
Antimony Cas No. 7440-36-0	X	X		0.0042 J	0.50	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Arsenic Cas No. 7440-38-2	X	X		0.0008 J	0.099	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Beryllium Cas No. 7440-41-7	X		X	< 0.0020						1	mg/L						
Cadmium Cas No. 7440-43-9	X	X		0.0035	0.44	0.0033	0.42	0.00020	0.020	471/52	mg/L	lbs/day					
Chromium Cas No. 7440-47-3	X	X		0.014	1.70					1	mg/L	lbs/day					
Chromium, Hex. (dissolved) Cas No. 18540-29-9	X	X		0.0058	0.62	0.00033	0.035	0.000090	0.0090	274/9	mg/L	lbs/day					
Copper Cas No. 7440-50-8	X	X		0.077	8.8	0.019	2.1	0.0095	1.0	472/52	mg/L	lbs/day					
Lead Cas No. 7439-92-1	X	X		0.0099	1.1	0.0017	0.22	0.00052	0.060	471/52	mg/L	lbs/day					
Mercury Cas No. 7439-97-6	X	X		18	0.0021	3.4	0.00044	0.79	0.000080	297/31	ng/L	lbs/day					
Nickel Cas No. 7440-02-0	X	X		0.030	3.2	0.0072	0.76	0.0024	0.27	471/52	mg/L	lbs/day					
Selenium Cas No. 7782-49-2	X		X	< 0.0010						1	mg/L						
Silver Cas No. 7440-22-4	X	X		0.097	0.011	< 0.070	< 0.010	0.048	0.0053	472/52	mg/L	lbs/day					
Thallium Cas No. 7440-28-0	X		X	< 0.00028						1	mg/L						
Vanadium Cas No. 7440-62-2	X	X		< 0.00072						1	mg/L						
Zinc Cas No. 7440-66-6	X	X		0.017	2.0					1	mg/L	lbs/day					
CYANIDE																	
Cyanide, Free Cas No. 57-12-5	X	X		0.0058	0.510	0.002	0.25	0.0015	0.16	467/52	mg/L	lbs/day					
Cyanide, Total Cas No. 57-12-5	X	X		< 0.0020						1	mg/L						
TOTAL PHENOLS																	
Phenols, Total (4AAP) Cas No. E-10253	X		X	< 0.0020						1	mg/L						
DIOXIN																	
2,3,7,8-Tetrachloro dibenzo-P-Dioxin Cas No. 1746-01-6			X														

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1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Testing Required	b. Believed Present	c. Believed Absent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
OTHER																	
4-Methylphenol Cas No. 106-44-5	X	X		0.43 J	0.051	Result is an estimated value between the method detection limit and reporting limit.				1	ug/L	lbs/day					
Acetaldehyde Cas No. 75-07-0	X		X	< 88						1	ug/L						
Bis(chloromethyl)ether Cas No. 542-88-1			X	Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutant List.													
Dibutyl amine * Cas No. 111-92-2			X	*No method available for analysis.													
Dimethylpropyl phenol * Cas No. 80-46-6			X	*No method available for analysis.													
Formaldehyde Cas No. 5-00-0	X	X		2,200	259	2,200	259	620	73.1	4/3	ug/L	lbs/day					
Tributyl tin oxide * Cas No. 56-35-9			X	*No method available for analysis.													
VOLATILE ORGANIC																	
1,1,2,2-Tetrachloroethane Cas No. 79-34-5	X		X	< 0.40						1	ug/L						
1,1,2-Trichloroethane Cas No. 79-00-5	X		X	< 0.46						1	ug/L						
l,l,l-Trichloroethane Cas No. 71-55-6	X		X	< 0.46						1	ug/L						
1,1-Dichloroethane Cas No. 75-34-3	X		X	< 0.44						1	ug/L						
1,1-Dichloroethene Cas No. 75-35-4	X		X	< 0.40						1	ug/L						
1,2,4-Trimethylbenzene Cas No. 95-63-6	X		X	< 0.45						1	ug/L						
1,2-Dichlorethane Cas No. 107-06-2	X		X	< 0.44						1	ug/L						
1,2-Dichloroethene, Trans Cas No. 156-60-5	X		X	< 0.48						1	ug/L						
1,2-Dichloropropane Cas No. 78-87-5	X		X	< 0.48						1	ug/L						
1,3,5-Trimethylbenzene Cas No. 108-67-8	X		X	< 0.65						1	ug/L						
1,3-Dichloropropane Cas No. 142-28-9	X		X	< 0.40						1	ug/L						
1,3-Dichloropropene, Cis Cas No. 10061-01-5	X		X	< 1.0						1	ug/L						
1,3-Dichloropropene, Trans Cas No. 10061-02-6	X		X	< 0.38						1	ug/L						
1,3-Dichloropropylene Cas No. 542-75-6	X		X	< 2.0						1	ug/L						
2-Butanone (Methyl Ethyl Ketone) Cas No. 78-93-3	X	X		1.18 J	0.139	Result is an estimated value between the method detection limit and reporting limit.				1	ug/L	lbs/day					
2-Chloroethyl vinyl ether Cas No. 110-75-8	X		X	< 0.82						1	ug/L						
Acetone Cas No. 67-64-1	X	X		< 6.2						1	ug/L						
Acrolein Cas No. 1070-20-8	X		X	< 7.3						1	ug/L						
Acrylonitrile Cas No. 107-13-1	X		X	< 0.50						1	ug/L						
Benzene Cas No. 71-43-2	X		X	< 0.46						1	ug/L						
Bromoform Cas No. 75-25-2	X		X	< 0.56						1	ug/L						

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641 | Outfall Number 004

1. POLLUTANT	2. MARK (X) a. Testing Required	b. Believed Present	c. Believed Absent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. Maximum 30 Day Values *(if available)* (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. Long Term Average *(if available)* (2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	a. Long Term Average Value *(if available)* (2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
Carbon disulfide Cas No. 75-15-0	X		X	< 0.49						1	ug/L						
Carbon Tetrachloride Cas No. 56-23-5	X		X	< 0.40						1	ug/L						
Chlorobenzene Cas No. 108-90-7	X		X	< 0.40						1	ug/L						
Chlorodibromomethane Cas No. 124-48-1	X		X	< 0.40						1	ug/L						
Chloroethane Cas No. 75-00-3	X		X	< 0.68						1	ug/L						
Dichlorobromomethane Cas No. 75-27-4	X		X	< 0.49						1	ug/L						
Dichlorodifluoromethane Cas No. 75-71-8			X	Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutant List.													
Ethylbenzene Cas No. 100-41-4	X		X	< 0.34						1	ug/L						
Ethylene glycol Cas No. 107-21-1	X		X	< 0.94						1	ug/L						
Methanol Cas No. 67-56-1	X		X	< 0.62						1	ug/L						
Methyl Bromide (Bromomethane) Cas No. 74-83-9	X		X	< 0.90						1	ug/L						
Methyl chloride (Chloromethane) Cas No. 74-87-3	X		X	< 0.83						1	ug/L						
Methyl tert-butyl ether (MTBE) Cas No. 1634-04-4	X		X	< 0.45						1	ug/L						
Methylamine * Cas No. 74-89-5			X	*No method available for analysis.													
Methylene chloride Cas No. 75-09-2	X		X	< 0.86						1	ug/L						
Propylene glycol Cas No. 57-55-6	X		X	< 0.55						1	ug/L						
Tetrachloroethene Cas No. 127-18-4	X		X	< 0.39						1	ug/L						
Trichloroethene Cas No. 79-01-6	X		X	< 0.43						1	ug/L						
Trichlorofluoromethane Cas No. 75-69-4			X	Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutant List.													
Toluene Cas No. 108-88-3	X		X	< 0.45						1	ug/L						
Vinyl chloride Cas No. 75-01-4	X		X	< 0.53						1	ug/L						
Xylene Cas No. 1330-20-7	X		X	< 0.81						1	ug/L						
SEMI-VOLATILE ORGANIC-ACID																	
2,4-Dichlorophenol Cas No. 120-83-2	X		X	< 0.35						1	ug/L						
2,4-Dimethylphenol Cas No. 105-67-9	X		X	< 0.36						1	ug/L						
2,4-Dinitrophenol Cas No. 51-28-5	X		X	< 2.6						1	ug/L						
2,4,6-Trichlorophenol Cas No. 88-06-2	X		X	< 0.25						1	ug/L						

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641	Outfall Number	004

1. POLLUTANT	2. MARK (*X*) a. Testing Required	b. Believed Present	c. Believed Absent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
2-Chlorophenol Cas No. 95-57-8	X		X	< 0.34						1	ug/L						
2-Nitrophenol Cas No. 88-75-5	X		X	< 0.24						1	ug/L						
4-Nitrophenol Cas No. 100-02-7	X		X	< 0.24						1	ug/L						
4,6-Dinitro-o-cresol (2-methyl-4,6-dinitrophenol) Cas No. 534-52-1	X		X	< 0.27						1	ug/L						
Benzoic acid Cas No. 65-85-0	X	X		< 6.2						1	ug/L						
p-Chloro-m-cresol (4-chloro-3-methylphenol) Cas No. 59-50-7	X		X	< 0.26						1	ug/L						
Pentachlorophenol Cas No. 87-86-5	X		X	< 0.97						1	ug/L						
Phenol Cas No. 108-95-2	X		X	< 0.21						1	ug/L						
SEMI-VOLATILE ORGANIC-BASE																	
1,2,4-Trichlorobenzene Cas No. 120-82-1	X		X	< 0.41						1	ug/L						
1,2-Dichlorobenzene Cas No. 95-50-1	X		X	< 0.39						1	ug/L						
1,2-Diphenylhydrazine Cas No. 122-66-7	X		X	< 0.14						1	ug/L						
1,3-Dichlorobenzene Cas No. 541-73-1	X		X	< 0.65						1	ug/L						
1,4-Dichlorobenzene Cas No. 106-46-7	X		X	< 0.32						1	ug/L						
2-Chloronaphthalene Cas No. 91-58-7	X		X	< 0.08						1	ug/L						
2-Methylnaphthalene Cas No. 91-57-6	X		X	< 0.07						1	ug/L						
2.4-Dinitrotoluene Cas No. 121-14-2	X		X	< 0.42						1	ug/L						
2.6-Dinitrotoluene Cas No. 606-20-2	X		X	< 0.11						1	ug/L						
3,3-Dichlorobenzidine Cas No. 91-94-1	X		X	< 0.46						1	ug/L						
3,4-Benzofluoranthene (benzo(b)fluoranthene) Cas No. 205-99-2	X		X	< 0.051						1	ug/L						
4-Bromophenyl phenyl ether Cas No. 101-55-3	X		X	< 0.33						1	ug/L						
4-Chlorophenyl phenyl ether Cas No. 7005-72-3	X		X	< 0.31						1	ug/L						
Acenaphthene Cas No. 83-32-9	X		X	< 0.081						1	ug/L						
Acenaphthylene Cas No. 208-96-8	X		X	< 0.075						1	ug/L						
Anthracene Cas No. 120-12-7	X		X	< 0.028						1	ug/L						
Benzidine Cas No. 92-87-5	X		X	< 2.0						1	ug/L						
Benzo(a)anthracene Cas No. 56-55-3	X		X	< 0.099						1	ug/L						
Benzo(a)pyrene Cas No. 50-32-8	X		X	< 0.044						1	ug/L						

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1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS (*specify if blank*)		4. INTAKE (*optional*)			5. ANALYTICAL METHOD (*list method used and detection limit achieved by lab.*)	
	a. Testing Required	b. Believed Present	c. Believed Absent	a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values (*if available*) (1) Concentration	b. Maximum 30 Day Values (*if available*) (2) Mass	c. Long Term Average (*if available*) (1) Concentration	c. Long Term Average (*if available*) (2) Mass	d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value (*if available*) (1) Concentration	a. Long Term Average Value (*if available*) (2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
Benzo(ghi)perylene Cas No. 191-24-2	X		X	< 0.030						1	ug/L						
Benzo(k)fluoranthene Cas No. 207-06-9	X		X	< 0.048						1	ug/L						
Bis(2-chloroethoxy)methane Cas No. 111-91-1	X		X	< 0.29						1	ug/L						
Bis(2-chloroethyl) ether Cas No. 111-44-4	X		X	< 0.37						1	ug/L						
Bis(2-chloroisopropyl) ether Cas No. 108-60-1	X		X	< 0.23						1	ug/L						
Bis(2-ethylhexyl)phthalate Cas No. 117-81-7	X		X	0.60 J	0.071	Result is an estimated value between the method detection limit and reporting limit.				1	ug/L	lbs/day					
Butyl benzyl phthalate Cas No. 85-68-7	X		X	< 0.30						1	ug/L						
Chrysene Cas No. 218-01-9	X		X	< 0.048						1	ug/L						
Di-n-butyl phthalate Cas No. 84-74-2	X		X	< 0.21						1	ug/L						
Di-n-octyl phthalate Cas No. 117-84-0	X		X	< 0.53						1	ug/L						
Dibenzo(a,h)anthracene Cas No. 53-70-3	X		X	< 0.07						1	ug/L						
Dibenzofuran Cas No. 132-64-9	X		X	< 0.23						1	ug/L						
Diethylphthalate Cas No. 84-66-2	X	X	X	< 0.17						1	ug/L						
Dimethylphthalate Cas No. 131-11-3	X		X	< 0.18						1	ug/L						
Fluoranthene Cas No. 206-44-0	X	X		0.074	0.0087					1	ug/L	lbs/day					
Fluorene Cas No. 86-73-7	X		X	< 0.05						1	ug/L						
Hexachlorobenzene Cas No. 118-74-1	X		X	< 0.44						1	ug/L						
Hexachlorobutadiene Cas No. 87-68-3	X		X	< 0.28						1	ug/L						
Hexachlorocyclopentadiene Cas No. 77-47-4	X		X	< 1.1						1	ug/L						
Hexachloroethane Cas No. 67-72-1	X		X	< 0.21						1	ug/L						
Indeno(1,2,3-cd) Pyrene Cas No. 193-39-5	X		X	< 0.067						1	ug/L						
Isophorone Cas No. 78-59-1	X		X	< 0.34						1	ug/L						
N-nitrosodi-n-propyl amine Cas No. 621-64-7	X		X	< 0.35						1	ug/L						
N-nitrosodimethyl amine Cas No. 62-75-9	X		X	< 0.48						1	ug/L						
N-nitrosodiphenyl amine Cas No. 86-30-6	X		X	< 0.49						1	ug/L						
Naphthalene Cas No. 91-20-3	X	X		< 0.067						1	ug/L						
Nitrobenzene Cas No. 98-95-3	X		X	< 0.26						1	ug/L						
Phenanthrene Cas No. 85-01-8	X		X	< 0.081						1	ug/L						
Pyrene Cas No. 129-00-0	X		X	< 0.036						1	ug/L						

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641	Outfall Number	004

1. POLLUTANT	2. MARK (X) a. Testing Required	2. MARK (X) b. Believed Present	2. MARK (X) c. Believed Absent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. Maximum 30 Day Values *(if available)* (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. Long Term Average *(if available)* (2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	3. UNITS b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	a. Long Term Average Value *(if available)* (2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
Styrene Cas No. 100-42-5	X			< 0.33						1	ug/L						
PESTICIDES																	
2,4-Dichlorophenoxy Acetic Acid Cas No. 94-75-7			X														
Alachlor Cas No. 15972-60-8			X														
Aldrin Cas No. 309-00-2			X														
Atrazine Cas No. 1912-24-9			X														
BHC-Alpha Cas No. 319-84-6			X														
BHC-Beta Cas No. 319-85-7			X														
BHC-Gamma (Lindane) Cas No. 58-89-9			X														
BHC-Delta Cas No. 319-86-8			X														
Chlordane Cas No. 57-74-9			X														
DDD Cas No. 72-54-8			X														
DDE Cas No. 72-55-9			X														
DDT Cas No. 50-29-3			X														
Dieldrin Cas No. 60-57-1			X														
Endosulfan Sulfate Cas No. 1031-07-8			X														
Endosulfan, Alpha Cas No. 959-98-8			X														
Endosulfan, Beta Cas No. 33213-65-9			X														
Endrin Cas No. 72-20-8			X														
Endrin Aldehyde Cas No. 7421-93-4			X														
Heptachlor Cas No. 76-44-8			X														
Heptachlor Epoxide Cas No. 1024-57-3			X														
Methoxychlor Cas No. 72-43-5			X														
Metolachlor Cas No. 51218-45-2			X														
Mirex Cas No. 2385-85-5			X														
Parathion ethyl Cas No. 56-38-2			X														
Parathion methyl Cas No. 56-38-2			X														
Simazine Cas No. 122-34-9			X														

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641											Outfall Number 004						
1. POLLUTANT	2. MARK *(X)*			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
PCB-1242 Cas No. 534469-21-9	X		X	< 0.046						1	ug/L						
PCB-1254 Cas No. 11097-69-1	X		X	< 0.028						1	ug/L						
PCB-1221 Cas No. 11104-28-2	X		X	< 0.046						1	ug/L						
PCB-1232 Cas No. 11141-16-5	X		X	< 0.046						1	ug/L						
PCB-1248 Cas No. 12672-29-6	X		X	< 0.046						1	ug/L						
PCB-1260 Cas No. 11096-82-5	X		X	< 0.028						1	ug/L						
PCB-1016 Cas No. 12674-11-2	X		X	< 0.046						1	ug/L						
Toxaphene Cas No. 8001-35-2			X														
WHOLE EFFLUENT TOXICITY																	
Acute, Freshwater Organisms Cas No. I-1100	X		X	Testing is performed according to the Permit requirements. Data submitted quarterly as required.													
Chronic Freshwater Organisms Cas No. I-1101	X		X	Testing is performed according to the Permit requirements. Data submitted quarterly as required.													

ADDITIONAL ANALYSES																	
Chloroform Cas No. 67-66-3			X	< 0.46						1	mg/L						
Iron, Dissolved Cas No. 7439-89-6			X	0.025 J	3.0	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					

Outfall 104

Form 2C Part V

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641

V. INTAKE AND EFFLUENT CHARACTERISTICS (Continued from page 3)

OUTFALL NO. 104

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
a. Biochemical Oxygen Demand, Carbonaceous Cas No. E10106	13.4	1,020					1	mg/L	lbs/day					
b. Escherichia coli (E-coli - units in count/100ml) Cas No. I-1000	1						1	CFU/100 mL						
Fecal coliform (units in count/100 ml) Cas No. I-1000	2						1	CFU/100 mL						
Chemical Oxygen Demand (COD) Cas No. E10107	20	1,523					1	mg/L	lbs/day					
Dissolved Oxygen (DO) Cas No. E-14539	4.8	362					1	mg/L	lbs/day					
Total Dissolved Solids (TDS) Cas No. E-10173	440	33,503					1	mg/L	lbs/day					
Total Organic Carbon (TOC) Cas No. E-10195	11	838					1	mg/L	lbs/day					
Total Suspended Solids (TSS) Cas No. E-10162	19	1,949	6.1	557	3.8	302	1258/52	mg/L	lbs/day					
Ammonia (as N) Cas No. 7664-41-7	0.019 J	1.45	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Flow	VALUE 17.9		VALUE 10.97		VALUE 9.59		1583/52	MGD		VALUE				
Temperature (Winter) Cas No. E-14540	VALUE 101		VALUE 91		VALUE 77		1183/39	°F		VALUE				
Temperature (Summer) Cas No. E-14540	VALUE 104		VALUE 94		VALUE 90		399/13	°F		VALUE				
Hardness, Total (as (CaCO3) Cas No. E-11778	250	19,036					1	mg/L	lbs/day					
pH (S.U.) Cas No. E-10139	MINIMUM 7.4	MAXIMUM 8.8	MINIMUM 7.9	MAXIMUM 8.1			1170/52	s.u.						

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PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. Pollutants for which you mark column 2-a , you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT	2. MARK *(X)*		2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Be-lieved Pre-sent	b. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
			(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
Bromide Cas No. 7726-95-6		X	< 0.032						1	mg/L						
Chloride Cas No. 1688-70-6	X		140	10,660					1	mg/L	lbs/day					
Chlorine, Total Residual Cas No. 7782-50-5		X	< 0.02						1	mg/L						
Color (C.U.) Cas No. E-11712	X		< 2.5						1	p.c.u.						
Fluoride Cas No. 16984-48-8	X		2.3	203	0.24	19	0.10	7.7	365 / 52	mg/L	lbs/day					
Nitrate/Nitrite (as N) Cas No. E-10128	X		< 0.006						1	mg/L						
Nitrogen, Total Organic (as N) Cas No. 7727-37-9	X		< 0.85						1	mg/L						
Oil & Grease Cas No. E-10140	X		7.0	529	2.9	226	1.8	140	1276/52	mg/L	lbs/day					
Phosphorus, Total Cas No. 7723-14-0	X		0.025 J	1.9	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Radioactivity																
(1) Radioactivity: Alpha, Total (pCi/L) Cas No. 12587-46-1		X														
(2) Radioactivity: Beta, Total (pCi/L) Cas No. 12587-47-2		X														
(3) Radioactivity: Radium ,Total (pCi/L) Cas No. 13982-63-3		X														
(4) Radioactivity: Radium 226,Total (pCi/L) Cas No. 13982-63-3		X														
Sulfate (as SO4) Cas No. 14808-79-8	X		100	7,614					1	mg/L	lbs/day					
Sulfide (as S) Cas No. 18496-25-8	X		< 0.42						1	mg/L						
Sulfite (as SO3) Cas No. 14264-45-3		X	< 2.0						1	mg/L						
Surfactants (MBAS) Cas No. 61-73-4	X		< 0.12						1	mg/L LAS						
Aluminum Cas No. 7429-90-5	X		0.046	3.5					1	mg/L	lbs/day					
Barium Cas No. 7440-39-3	X		0.011	0.80					1	mg/L	lbs/day					
Boron Cas No. 7440-42-8	X		0.025	1.9					1	mg/L	lbs/day					
Cobalt Cas No. 7440-48-4		X	< 0.00024						1	mg/L						
Iron Cas No. 7439-89-6	X		0.78	59					1	mg/L	lbs/day					
Magnesium Cas No. 7439-95-4	X		14	1,081					1	mg/L	lbs/day					
Molybdenum Cas No. 7439-98-7	X		0.0037 J	0.28	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					

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Outfall Number 104

1. POLLUTANT	2. MARK (*X*) a. Be-lieved Pre-sent	b. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
Manganese Cas No. 7439-96-5	X		0.11	8.5					1	mg/L	lbs/day					
Tin Cas No. 74400-31-5	X		0.087	6.6					1	mg/L	lbs/day					
Titanium Cas No. 7440-32-6	X		< 0.0010						1	mg/L						
OTHER CONVENTIONAL																
Kjeldahl Nitrogen, Total Cas No. E-10264	X		< 0.87						1	mg/L						
Nitrate Cas No. 14797-55-8	X		< 0.046						1	mg/L						
Nitrite Cas No. 14797-65-0	X		< 0.016						1	mg/L						

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Part C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2C-2 in the instructions to determine which of the GC/MS fractions you must test for Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. Pollutants for which you mark column 2-a or 2-b, you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and the detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT	2. MARK *(X)*			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. (2) Mass	d. No. of Analysis daily / monthly average	a. Concentration	b. Mass	a. Long Term Average Value *(if available)* (1) Concentration	a. (2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
METALS																	
Antimony Cas No. 7440-36-0	X	X		0.00054 J	0.04	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Arsenic Cas No. 7440-38-2	X	X		0.00048 J	0.037	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Beryllium Cas No. 7440-41-7	X		X	< 0.00200						1	mg/L						
Cadmium Cas No. 7440-43-9	X	X		0.0025	0.20	0.0012	0.080	0.00019	0.020	434/52	mg/L	lbs/day					
Chromium Cas No. 7440-47-3	X	X		2.2	139	0.10	6.4	0.0042	0.31	1421/52	mg/L	lbs/day					
Chromium, Hex. (dissolved) Cas No. 18540-29-9	X	X		0.033	2.4	0.0023	0.16	0.000076	0.0058	1058/52	mg/L	lbs/day					
Copper Cas No. 7440-50-8	X	X		0.034	3.1	0.015	1.1	0.0070	0.58	436/52	mg/L	lbs/day					
Lead Cas No. 7439-92-1	X	X		0.0056	0.38	0.0011	0.090	0.00037	0.030	436/52	mg/L	lbs/day					
Mercury Cas No. 7439-97-6	X	X		< 0.20						1	ng/L						
Nickel Cas No. 7440-02-0	X	X		0.013	1.0	0.013	0.63	0.0021	0.17	436/52	mg/L	lbs/day					
Selenium Cas No. 7782-49-2	X		X	< 0.0010						1	mg/L						
Silver Cas No. 7440-22-4	X	X		0.000070	0.0070	0.000070	0.0060	0.000048	0.0040	436/52	mg/L	lbs/day					
Thallium Cas No. 7440-28-0	X		X	< 0.00028						1	mg/L						
Vanadium Cas No. 7440-62-2	X	X		< 0.00072						1	mg/L						
Zinc Cas No. 7440-66-6	X	X		0.380	29	0.0173	1.5	0.0076	0.60	1352/52	mg/L	lbs/day					
CYANIDE																	
Cyanide, Free Cas No. 57-12-5	X	X		< 0.0020						1	mg/L						
Cyanide, Total Cas No. 57-12-5	X	X		0.081	0.67	0.0022	0.20	0.0020	0.16	1270/522	mg/L	lbs/day					
TOTAL PHENOLS																	
Phenols, Total (4AAP) Cas No. E-10253	X		X	< 0.0020							mg/L						
DIOXIN																	
2,3,7,8-Tetrachloro dibenzo-P-Dioxin Cas No. 1746-01-6			X														

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1. POLLUTANT	2. MARK (*X*) a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
OTHER																	
4-Methylphenol Cas No. 106-44-5	X			1.2	91					1	ug/L	lbs/day					
Acetaldehyde Cas No. 75-07-0	X			< 88						1	ug/L						
Bis(chloromethyl)ether Cas No. 542-88-1			X	Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutant List.													
Dibutyl amine * Cas No. 111-92-2			X	*No method available for analysis.													
Dimethylpropyl phenol * Cas No. 80-46-6			X	*No method available for analysis.													
Formaldehyde Cas No. 5-00-0	X	X		4,267	325	4,267	325	1,325	104	4/3	ug/L	lbs/day					
Tributyl tin oxide * Cas No. 56-35-9			X	*No method available for analysis.													
VOLATILE ORGANIC																	
1,1,2,2-Tetrachloroethane Cas No. 79-34-5	X		X	< 0.40						1	ug/L						
1,1,2-Trichloroethane Cas No. 79-00-5	X		X	< 0.46						1	ug/L						
l,l,l-Trichloroethane Cas No. 71-55-6	X		X	< 0.46						1	ug/L						
1,1-Dichloroethane Cas No. 75-34-3	X		X	< 0.44		< 0.21		< 0.29		3/1	ug/L						
1,1-Dichloroethene Cas No. 75-35-4	X		X	< 0.40		< 0.24		< 0.29		3/1	ug/L						
1,2,4-Trimethylbenzene Cas No. 95-63-6	X		X	< 0.45						1	ug/L						
1,2-Dichlorethane Cas No. 107-06-2	X		X	< 0.44						1	ug/L						
1,2-Dichloroethene, Trans Cas No. 156-60-5	X		X	< 0.48						1	ug/L						
1,2-Dichloropropane Cas No. 78-87-5	X		X	< 0.48		< 0.26		< 0.33		3/1	ug/L						
1,3,5-Trimethylbenzene Cas No. 108-67-8	X		X	< 0.65						1	ug/L						
1,3-Dichloropropane Cas No. 142-28-9	X		X	< 0.40		< 0.24		< 0.29		3/1	ug/L						
1,3-Dichloropropene, Cis Cas No. 10061-01-5	X		X	< 1.0						1	ug/L						
1,3-Dichloropropene, Trans Cas No. 10061-02-6	X		X	< 0.38						1	ug/L						
1,3-Dichloropropylene Cas No. 542-75-6	X		X	< 2.0						1	ug/L						
2-Butanone (Methyl Ethyl Ketone) Cas No. 78-93-3	X		X	< 0.52						1	ug/L						
2-Chloroethyl vinyl ether Cas No. 110-75-8	X		X	< 0.82						1	ug/L						
Acetone Cas No. 67-64-1	X	X		6.7 J	0.51	Result is an estimated value between the method detection limit and reporting limit.				1	ug/L	lbs/day					
Acrolein Cas No. 1070-20-8	X		X	< 7.3		< 4.1		< 5.2		3/1	ug/L						
Acrylonitrile Cas No. 107-13-1	X		X	< 0.50		< 0.38		< 0.42		3/1	ug/L						
Benzene Cas No. 71-43-2	X		X	< 0.46		< 0.25		< 0.32		3/1	ug/L						
Bromoform Cas No. 75-25-2	X		X	< 0.56		< 0.10		< 0.25		3/1	ug/L						

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1. POLLUTANT	2. MARK *(X)* a. Test-ing Re-quired	2. MARK b. Be-lieved Pre-sent	2. MARK c. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. (2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	3. b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	4. a. (2) Mass	4. b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	5. b. **Reporting** Limit
Carbon disulfide Cas No. 75-15-0	X		X	< 0.49						1	ug/L						
Carbon Tetrachloride Cas No. 56-23-5	X		X	< 0.40		< 0.14		< 0.23		3/1	ug/L						
Chlorobenzene Cas No. 108-90-7	X		X	< 0.40		< 0.19		< 0.26		3/1	ug/L						
Chlorodibromomethane Cas No. 124-48-1	X		X	< 0.40		< 0.17		< 0.25		3/1	ug/L						
Chloroethane Cas No. 75-00-3	X		X	< 0.68		< 0.21		< 0.37		3/1	ug/L						
Dichlorobromomethane Cas No. 75-27-4	X		X	< 0.49		< 0.16		< 0.27		3/1	ug/L						
Dichlorodifluoromethane Cas No. 75-71-8			X	Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutant List.													
Ethylbenzene Cas No. 100-41-4	X		X	< 0.34		< 0.22		< 0.26		3/1	ug/L						
Ethylene glycol Cas No. 107-21-1	X		X	< 0.94						1	ug/L						
Methanol Cas No. 67-56-1	X		X	< 0.62						1	ug/L						
Methyl Bromide (Bromomethane) Cas No. 74-83-9	X		X	< 0.90						1	ug/L						
Methyl chloride (Chloromethane) Cas No. 74-87-3	X		X	< 0.83						1	ug/L						
Methyl tert-butyl ether (MTBE) Cas No. 1634-04-4	X		X	< 0.45						1	ug/L						
Methylamine * Cas No. 74-89-5			X	*No method available for analysis.													
Methylene chloride Cas No. 75-09-2	X		X	< 0.86		< 0.64		< 0.71		3/1	ug/L						
Propylene glycol Cas No. 57-55-6	X		X	< 0.55						1	ug/L						
Tetrachloroethene Cas No. 127-18-4	X		X	< 0.30		< 0.30		< 0.28		362/52	ug/L						
Trichloroethene Cas No. 79-01-6	X		X	< 0.43		< 0.34		< 0.37		3	ug/L						
Trichlorofluoromethane Cas No. 75-69-4			X	Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutant List.													
Toluene Cas No. 108-88-3	X		X	< 0.45		< 0.20		< 0.28		3/1	ug/L						
Vinyl chloride Cas No. 75-01-4	X		X	< 0.53		< 0.19		< 0.30		1	ug/L						
Xylene Cas No. 1330-20-7	X		X	< 0.81						1	ug/L						
SEMI-VOLATILE ORGANIC-ACID																	
2,4-Dichlorophenol Cas No. 120-83-2	X		X	< 0.35		< 0.35		< 0.36		3/1	ug/L						
2,4-Dimethylphenol Cas No. 105-67-9	X		X	< 0.36		< 0.36		< 0.36		3/1	ug/L						
2,4-Dinitrophenol Cas No. 51-28-5	X		X	< 2.6		< 0.40		< 1.1		3/1	ug/L						
2,4.6-Trichlorophenol Cas No. 88-06-2	X		X	< 0.25		< 0.25		< 0.25		3/1	ug/L						

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641												Outfall Number	104					
1. POLLUTANT	2. MARK (*X*) a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. (2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	a. (2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
2-Chlorophenol Cas No. 95-57-8	X		X	< 0.23		< 0.23		< 0.23		3/1	ug/L						
2-Nitrophenol Cas No. 88-75-5	X		X	< 0.34		< 0.34		< 0.34		3/1	ug/L						
4-Nitrophenol Cas No. 100-02-7	X		X	< 0.24		< 0.24		< 0.24		3/1	ug/L						
4,6-Dinitro-o-cresol (2-methyl-4,6-dinitrophenol) Cas No. 534-52-1	X		X	< 0.27						1	ug/L						
Benzoic acid Cas No. 65-85-0	X	X		11 J	0.84	Result is an estimated value between the method detection limit and reporting limit.				1	ug/L	lbs/day					
p-Chloro-m-cresol (4-chloro-3-methylphenol) Cas No. 59-50-7	X		X	< 0.26						1	ug/L						
Pentachlorophenol Cas No. 87-86-5	X		X	< 0.97		< 0.97		< 0.97		3/1	ug/L						
Phenol Cas No. 108-95-2	X		X	< 0.21		< 0.21		< 0.21		3/1	ug/L						
SEMI-VOLATILE ORGANIC-BASE																	
1,2,4-Trichlorobenzene Cas No. 120-82-1	X		X	< 0.41		< 0.41		< 0.41		3/1	ug/L						
1,2-Dichlorobenzene Cas No. 95-50-1	X		X	< 0.39		< 0.39		< 0.39		3/1	ug/L						
1,2-Diphenylhydrazine Cas No. 122-66-7	X		X	< 0.14		< 0.14		< 0.14		3/1	ug/L						
1,3-Dichlorobenzene Cas No. 541-73-1	X		X	< 0.65		< 0.65		< 0.65		3/1	ug/L						
1,4-Dichlorobenzene Cas No. 106-46-7	X		X	< 0.32		< 0.32		< 0.32		3/1	ug/L						
2-Chloronaphthalene Cas No. 91-58-7	X		X	< 0.11		< 0.11		< 0.10		3/1	ug/L						
2-Methylnaphthalene Cas No. 91-57-6	X		X	< 0.065						1	ug/L						
2.4-Dinitrotoluene Cas No. 121-14-2	X		X	< 0.42		< 0.42		< 0.42		3/1	ug/L						
2.6-Dinitrotoluene Cas No. 606-20-2	X		X	< 0.11		< 0.11		< 0.11		3/1	ug/L						
3,3-Dichlorobenzidine Cas No. 91-94-1	X		X	< 1.60		< 1.60		< 1.22		3/1	ug/L						
3,4-Benzofluoranthene (benzo(b)fluoranthene) Cas No. 205-99-2	X		X	< 0.070		< 0.070		< 0.064		3/1	ug/L						
4-Bromophenyl phenyl ether Cas No. 101-55-3	X		X	< 0.33		< 0.33		< 0.33		3/1	ug/L						
4-Chlorophenyl phenyl ether Cas No. 7005-72-3	X		X	< 0.31		< 0.31		< 0.31		3/1	ug/L						
Acenaphthene Cas No. 83-32-9	X		X	< 0.110		< 0.11		< 0.10		3/1	ug/L						
Acenaphthylene Cas No. 208-96-8	X		X	< 0.080		< 0.080		< 0.078		3/1	ug/L						
Anthracene Cas No. 120-12-7	X		X	< 0.050		< 0.050		< 0.043		3/1	ug/L						
Benzidine Cas No. 92-87-5	X		X	< 2.0		< 2.0		< 2.0		3/1	ug/L						
Benzo(a)anthracene Cas No. 56-55-3	X		X	< 0.099		< 0.90		< 0.93		3/1	ug/L						
Benzo(a)pyrene Cas No. 50-32-8	X		X	< 0.070		< 0.070		< 0.061		3/1	ug/L						

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641										Outfall Number	104					
1. POLLUTANT	2. MARK *(X)* a. Testing Required	2. MARK *(X)* b. Believed Pre-sent	2. MARK *(X)* c. Believed Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	2. EFFLUENT a. Maximum Daily Values (2) Mass	2. EFFLUENT b. Maximum 30 Day Values *(if available)* (1) Concentration	2. EFFLUENT b. Maximum 30 Day Values *(if available)* (2) Mass	2. EFFLUENT c. Long Term Average *(if available)* (1) Concentration	2. EFFLUENT c. Long Term Average *(if available)* (2) Mass	2. EFFLUENT d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	3. UNITS *(specify if blank)* b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (2) Mass	4. INTAKE *(optional)* b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	5. ANALYTICAL METHOD b. **Reporting** Limit
Styrene Cas No. 100-42-5	X		X	< 0.33						1	ug/L						
PESTICIDES																	
2,4-Dichlorophenoxy Acetic Acid Cas No. 94-75-7			X														
Alachlor Cas No. 15972-60-8			X														
Aldrin Cas No. 309-00-2			X	< 0.0028		< 0.0028		< 0.0028		2/1	ug/L						
Atrazine Cas No. 1912-24-9			X														
BHC-Alpha Cas No. 319-84-6			X	< 0.0012		< 0.0012		< 0.0012		2/1	ug/L						
BHC-Beta Cas No. 319-85-7			X	< 0.0066		< 0.0066		< 0.0066		2/1	ug/L						
BHC-Gamma (Lindane) Cas No. 58-89-9			X	< 0.0015		< 0.0015		< 0.0015		2/1	ug/L						
BHC-Delta Cas No. 319-86-8			X	< 0.0026		< 0.0026		< 0.0026		2/1	ug/L						
Chlordane Cas No. 57-74-9			X	< 0.034		< 0.034		< 0.034		2/1	ug/L						
DDD Cas No. 72-54-8			X	< 0.0012		< 0.0012		< 0.0012		2/1	ug/L						
DDE Cas No. 72-55-9			X	< 0.0017		< 0.0017		< 0.0017		2/1	ug/L						
DDT Cas No. 50-29-3			X	< 0.0017		< 0.0017		< 0.0017		2/1	ug/L						
Dieldrin Cas No. 60-57-1			X	< 0.0022		< 0.0022		< 0.0022		2/1	ug/L						
Endosulfan Sulfate Cas No. 1031-07-8			X	< 0.0015		< 0.0015		< 0.0015		2/1	ug/L						
Endosulfan, Alpha Cas No. 959-98-8			X	< 0.0017		< 0.0017		< 0.0017		2/1	ug/L						
Endosulfan, Beta Cas No. 33213-65-9			X	< 0.0012		< 0.0012		< 0.0012		2/1	ug/L						
Endrin Cas No. 72-20-8			X	< 0.0018		< 0.0018		< 0.0018		2/1	ug/L						
Endrin Aldehyde Cas No. 7421-93-4			X	< 0.0028		< 0.0028		< 0.0028		2/1	ug/L						
Heptachlor Cas No. 76-44-8			X	< 0.0017		< 0.0017		< 0.0017		2/1	ug/L						
Heptachlor Epoxide Cas No. 1024-57-3			X	< 0.012		< 0.012		< 0.012		2/1	ug/L						
Methoxychlor Cas No. 72-43-5			X														
Metolachlor Cas No. 51218-45-2			X														
Mirex Cas No. 2385-85-5			X														
Parathion ethyl Cas No. 56-38-2			X														
Parathion methyl Cas No. 56-38-2			X														
Simazine Cas No. 122-34-9			X														

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1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS (*specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
Benzo(ghi)perylene Cas No. 191-24-2	X		X	< 0.060		< 0.060		< 0.050		3/1	ug/L						
Benzo(k)fluoranthene Cas No. 207-06-9	X		X	< 0.090		< 0.090		< 0.076		3/1	ug/L						
Bis(2-chloroethoxy)methane Cas No. 111-91-1	X		X	< 0.29		< 0.290		< 0.290		3/1	ug/L						
Bis(2-chloroethyl) ether Cas No. 111-44-4	X		X	< 0.37		< 0.370		< 0.370		3/1	ug/L						
Bis(2-chloroisopropyl) ether Cas No. 108-60-1	X		X	< 0.23		< 0.230		< 0.230		3/1	ug/L						
Bis(2-ethylhexyl)phthalate Cas No. 117-81-7	X		X	1.2 J	0.09	Result is an estimated value between the method detection limit and reporting limit.				1	ug/L	lbs/day					
Butyl benzyl phthalate Cas No. 85-68-7	X		X	< 0.30		< 0.30		< 0.30		3/1	ug/L						
Chrysene Cas No. 218-01-9	X		X	< 0.14		< 0.14		< 0.11		3/1	ug/L						
Di-n-butyl phthalate Cas No. 84-74-2	X		X	0.39	30	0.39	30	0.33	25	3/1	ug/L	lbs/day					
Di-n-octyl phthalate Cas No. 117-84-0	X		X	< 0.53		< 0.15		< 0.27		3/1	ug/L						
Dibenzo(a,h)anthracene Cas No. 53-70-3	X		X	< 0.073		< 0.060		< 0.064		3/1	ug/L						
Dibenzofuran Cas No. 132-64-9	X		X	< 0.23						1	ug/L						
Diethylphthalate Cas No. 84-66-2	X	X		0.45 J	0.032	0.31 J	0.023	0.26 J	0.029	3/1	ug/L	lbs/day	Dataset consists of 2 non-detect results and one estimated (J) value.				
Dimethylphthalate Cas No. 131-11-3	X		X	< 0.18		< 0.18		< 0.18		3/1	ug/L						
Fluoranthene Cas No. 206-44-0	X		X	< 0.090		< 0.090		< 0.073		3/1	ug/L						
Fluorene Cas No. 86-73-7	X		X	< 0.090		< 0.090		< 0.077		3/1	ug/L						
Hexachlorobenzene Cas No. 118-74-1	X		X	< 0.44		< 0.44		< 0.44		3/1	ug/L						
Hexachlorobutadiene Cas No. 87-68-3	X		X	< 0.28		< 0.28		< 0.28		3/1	ug/L						
Hexachlorocyclopentadiene Cas No. 77-47-4	X		X	< 1.1		< 1.1		< 1.1		3/1	ug/L						
Hexachloroethane Cas No. 67-72-1	X		X	< 0.21		< 0.21		< 0.21		3/1	ug/L						
Indeno(1,2,3-cd) Pyrene Cas No. 193-39-5	X		X	< 0.090		< 0.090		< 0.082		3/1	ug/L						
Isophorone Cas No. 78-59-1	X		X	< 0.34		< 0.34		< 0.34		3/1	ug/L						
N-nitrosodi-n-propyl amine Cas No. 621-64-7	X		X	< 0.35		< 0.35		< 0.39		3/1	ug/L						
N-nitrosodimethyl amine Cas No. 62-75-9	X		X	< 0.48		< 0.48		< 0.44		3/1	ug/L						
N-nitrosodiphenyl amine Cas No. 86-30-6	X		X	< 0.49		< 0.23		< 0.32		3/1	ug/L						
Naphthalene Cas No. 91-20-3	X	X		0.80	0.053	0.16	0.010	0.08	0.006	361/52	ug/L	lbs/day					
Nitrobenzene Cas No. 98-95-3	X		X	< 0.26		< 0.26		< 0.26		3/1	ug/L						
Phenanthrene Cas No. 85-01-8	X		X	< 0.081		< 0.081		< 0.080		3/1	ug/L						
Pyrene Cas No. 129-00-0	X		X	< 0.080		< 0.080		< 0.065		3/1	ug/L						

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1. POLLUTANT	2. MARK (X) a. Testing Required	b. Believed Present	c. Believed Absent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	a. (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. (2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	a. (2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
PCB-1242 Cas No. 534469-21-9			X	< 0.051						1	ug/L						
PCB-1254 Cas No. 11097-69-1			X	< 0.033						1	ug/L						
PCB-1221 Cas No. 11104-28-2			X	< 0.051						1	ug/L						
PCB-1232 Cas No. 11141-16-5			X	< 0.051						1	ug/L						
PCB-1248 Cas No. 12672-29-6			X	< 0.051						1	ug/L						
PCB-1260 Cas No. 11096-82-5			X	< 0.033						1	ug/L						
PCB-1016 Cas No. 12674-11-2			X	< 0.051						1	ug/L						
Toxaphene Cas No. 8001-35-2			X	< 0.11						1	ug/L						
WHOLE EFFLUENT TOXICITY																	
Acute, Freshwater Organisms Cas No. I-1100																	
Chronic Freshwater Organisms Cas No. I-1101																	

ADDITIONAL ANALYSES																	
Chloroform Cas No. 67-66-3			X	< 0.46		< 0.25		< 0.32		3/1	mg/L						
Iron, Dissolved Cas No. 7439-89-6			X	< 0.016						1	mg/L						

Outfall 204

Form 2C Part V

EPA Identification Number *(copy from Item 1 of Form 1)* IND016584641

V. INTAKE AND EFFLUENT CHARACTERISTICS (Continued from page 3) | OUTFALL NO. 204

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
a. Biochemical Oxygen Demand, Carbonaceous Cas No. E10106	57.4	105					1	mg/L	lbs/day					
b. Escherichia coli (E-coli - units in count/100ml) Cas No. I-1000	25.9						1	CFU/100 mL						
Fecal coliform (units in count/100 ml) Cas No. I-1000	17						1	CFU/100 mL						
Chemical Oxygen Demand (COD) Cas No. E10107	66	121					1	mg/L	lbs/day					
Dissolved Oxygen (DO) Cas No. E-14539	0.36	1					1	mg/L	lbs/day					
Total Dissolved Solids (TDS) Cas No. E-10173	2,700	4,954					1	mg/L	lbs/day					
Total Organic Carbon (TOC) Cas No. E-10195	12	22					1	mg/L	lbs/day					
Total Suspended Solids (TSS) Cas No. E-10162	300	238	21.5	26	4.7	8	1233/52	mg/L	lbs/day					
Ammonia (as N) Cas No. 7664-41-7	0.018	0.03					1	mg/L	lbs/day					
Flow	VALUE 0.65		VALUE 0.32		VALUE 0.21		1583/52	MGD		VALUE				
Temperature (Winter) Cas No. E-14540	VALUE 122		VALUE 100		VALUE 86		1054/52	°F		VALUE				
Temperature (Summer) Cas No. E-14540	VALUE 135		VALUE 106		VALUE 96		376/52	°F		VALUE				
Hardness, Total (as (CaCO3) Cas No. E-11778	140	257					1	mg/L	lbs/day					
pH (S.U.) Cas No. E-10139	MINIMUM 7.3	MAXIMUM 8.6	MINIMUM 7.9	MAXIMUM 8.3			1090/52	s.u.						

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PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. Pollutants for which you mark column 2-a , you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT	2. MARK *(X)*		2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Be-lieved Pre-sent	b. Be-lieved Ab-sent	a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. (2) Mass	d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)* (1) Concentration	a. (2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
Bromide Cas No. 7726-95-6	X		0.59 J	1.1	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Chloride Cas No. 1688-70-6	X		48	88					1	mg/L	lbs/day					
Chlorine, Total Residual Cas No. 7782-50-5		X	< 0.02						1	mg/L						
Color (C.U.) Cas No. E-11712	X		< 2.5						1	p.c.u.						
Fluoride Cas No. 16984-48-8	X		8.6	24	8.6	24	0.95	1.4	317 / 52	mg/L	lbs/day					
Nitrate/Nitrite (as N) Cas No. E-10128	X		< 0.006						1	mg/L						
Nitrogen, Total Organic (as N) Cas No. 7727-37-9	X		< 0.69						1	mg/L						
Oil & Grease Cas No. E-10140	X		5.2	11	1.8	4.1	1.5	2.6	1221/52	mg/L	lbs/day					
Phosphorus, Total Cas No. 7723-14-0	X		0.023 J	0.042	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Radioactivity																
(1) Radioactivity: Alpha, Total (pCi/L) Cas No. 12587-46-1		X														
(2) Radioactivity: Beta, Total (pCi/L) Cas No. 12587-47-2		X														
(3) Radioactivity: Radium ,Total (pCi/L) Cas No. 13982-63-3		X														
(4) Radioactivity: Radium 226,Total (pCi/L) Cas No. 13982-63-3		X														
Sulfate (as SO4) Cas No. 14808-79-8	X		1700	3,119					1	mg/L	lbs/day					
Sulfide (as S) Cas No. 18496-25-8	X		61	112					1	mg/L	lbs/day					
Sulfite (as SO3) Cas No. 14264-45-3	X		160	235			90	136	2	mg/L	lbs/day					
Surfactants (MBAS) Cas No. 61-73-4	X		< 0.12						1	mg/L LAS						
Aluminum Cas No. 7429-90-5	X		0.15	0.28					1	mg/L	lbs/day					
Barium Cas No. 7440-39-3	X		0.013	0.024					1	mg/L	lbs/day					
Boron Cas No. 7440-42-8	X		1.960	3.6					1	mg/L	lbs/day					
Cobalt Cas No. 7440-48-4		X	< 0.00024						1	mg/L						
Iron Cas No. 7439-89-6	X		0.14	0.26					1	mg/L	lbs/day					
Magnesium Cas No. 7439-95-4	X		13	24					1	mg/L	lbs/day					
Molybdenum Cas No. 7439-98-7	X		0.078	0.14					1	mg/L	lbs/day					

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1. POLLUTANT	2. MARK *(X)*		2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Be-lieved Pre-sent	b. Be-lieved Ab-sent	a. Maximum Daily Values (1) Concentration	a. Maximum Daily Values (2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	b. Maximum 30 Day Values *(if available)* (2) Mass	c. Long Term Average *(if available)* (1) Concentration	c. Long Term Average *(if available)* (2) Mass	d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)* (1) Concentration	a. Long Term Average Value *(if available)* (2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
Manganese Cas No. 7439-96-5	X		0.039	0.071					1	mg/L	lbs/day					
Tin Cas No. 74400-31-5	X		0.00065 J	0.0012	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Titanium Cas No. 7440-32-6	X		< 0.0010						1	mg/L						
OTHER CONVENTIONAL																
Kjeldahl Nitrogen, Total Cas No. E-10264	X		< 0.87						1	mg/L						
Nitrate Cas No. 14797-55-8	X		< 0.23						1	mg/L						
Nitrite Cas No. 14797-65-0	X		< 0.082						1	mg/L						

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Part C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2C-2 in the instructions to determine which of the GC/MS fractions you must test for Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. Pollutants for which you mark column 2-a or 2-b, you must provide a minimum of twelve (12) samples (three (3) samples per month for a period of four (4) months). You must use, or require your contract laboratory to use, an analytical method with detection level low enough to provide a detectable value for the pollutant of concern. Please provide the method used and the detection limit achieved by the laboratory. You must provide data or an explanation for the presence of the pollutant in your discharge. Note that there are 7 pages to this part; please review each carefully. Complete one table (all 7 pages) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT	2. MARK *(X)*			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis daily / monthly average	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
METALS																	
Antimony Cas No. 7440-36-0	X	X		0.00035 J	0.00065	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Arsenic Cas No. 7440-38-2	X	X		0.00015 J	0.00028	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					
Beryllium Cas No. 7440-41-7	X		X	< 0.00100						1	mg/L						
Cadmium Cas No. 7440-43-9	X	X		0.0018	0.0034	0.00038	0.00040	0.00017	0.00020	382/52	mg/L	lbs/day					
Chromium Cas No. 7440-47-3	X	X		31	57	1.9	3.6	0.38	0.66	1399/52	mg/L	lbs/day					
Chromium, Hex. (dissolved) Cas No. 18540-29-9	X	X		1.1	0.54	0.044	0.023	0.0012	0.00076	1010/52	mg/L	lbs/day					
Copper Cas No. 7440-50-8	X	X		0.17	0.17	0.077	0.076	0.016	0.016	384/52	mg/L	lbs/day					
Lead Cas No. 7439-92-1	X	X		0.0051	0.01	0.0017	0.002	0.00055	0.001	384/52	mg/L	lbs/day					
Mercury Cas No. 7439-97-6	X	X		6.20	0.000011					1	ng/L	lbs/day					
Nickel Cas No. 7440-02-0	X	X		0.230	0.2	0.021	0.053	0.0066	0.007	384/52	mg/L	lbs/day					
Selenium Cas No. 7782-49-2	X		X	< 0.0010						1	mg/L						
Silver Cas No. 7440-22-4	X	X		0.0013	0.0024	0.000213	0.00028	0.000054	0.000080	384/52	mg/L	lbs/day					
Thallium Cas No. 7440-28-0	X		X	< 0.00028						1	mg/L						
Vanadium Cas No. 7440-62-2	X	X		< 0.00072						1	mg/L						
Zinc Cas No. 7440-66-6	X	X		0.998	1.6	0.0628	0.15	0.0192	0.033	1330/52	mg/L	lbs/day					
CYANIDE																	
Cyanide, Free Cas No. 57-12-5	X	X		0.0034 J	0.006					1	mg/L	lbs/day					
Cyanide, Total Cas No. 57-12-5	X	X		0.032	0.065	0.0034	0.006	0.0023	0.0040	1179/52	mg/L	lbs/day					
TOTAL PHENOLS																	
Phenols, Total (4AAP) Cas No. E-10253	X		X	< 0.0020						1	mg/L						
DIOXIN																	
2,3,7,8-Tetrachloro dibenzo-P-Dioxin Cas No. 1746-01-6			X														

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641										Outfall Number	204					
1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
OTHER																	
4-Methylphenol Cas No. 106-44-5	X			< 0.21						1	ug/L						
Acetaldehyde Cas No. 75-07-0	X			< 88						1	ug/L						
Bis(chloromethyl)ether Cas No. 542-88-1			X	Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutant List.													
Dibutyl amine * Cas No. 111-92-2			X	*No method available for analysis.													
Dimethylpropyl phenol * Cas No. 80-46-6			X	*No method available for analysis.													
Formaldehyde Cas No. 5-00-0	X		X	< 120				< 85		2	ug/L						
Tributyl tin oxide * Cas No. 56-35-9			X	*No method available for analysis.													
VOLATILE ORGANIC																	
1,1,2,2-Tetrachloroethane Cas No. 79-34-5	X		X	< 0.40						1	ug/L						
1,1,2-Trichloroethane Cas No. 79-00-5	X		X	< 0.46						1	ug/L						
l,l,l-Trichloroethane Cas No. 71-55-6	X		X	< 0.46						1	ug/L						
1,1-Dichloroethane Cas No. 75-34-3	X		X	< 0.44		< 0.21		< 0.29		3/1	ug/L						
1,1-Dichloroethene Cas No. 75-35-4	X		X	< 0.40		< 0.24		< 0.29		3/1	ug/L						
1,2,4-Trimethylbenzene Cas No. 95-63-6	X		X	< 0.45						1	ug/L						
1,2-Dichlorethane Cas No. 107-06-2	X		X	< 0.44						1	ug/L						
1,2-Dichloroethene, Trans Cas No. 156-60-5	X		X	< 0.48						1	ug/L						
1,2-Dichloropropane Cas No. 78-87-5	X		X	< 0.48		< 0.26		< 0.33		3/1	ug/L						
1,3,5-Trimethylbenzene Cas No. 108-67-8	X		X	< 0.65						1	ug/L						
1,3-Dichloropropane Cas No. 142-28-9	X		X	< 0.40		< 0.24		< 0.29		3/1	ug/L						
1,3-Dichloropropene, Cis Cas No. 10061-01-5	X		X	< 1.0						1	ug/L						
1,3-Dichloropropene, Trans Cas No. 10061-02-6	X		X	< 0.38						1	ug/L						
1,3-Dichloropropylene Cas No. 542-75-6	X		X	< 2.0						1	ug/L						
2-Butanone (Methyl Ethyl Ketone) Cas No. 78-93-3	X		X	< 0.52						1	ug/L						
2-Chloroethyl vinyl ether Cas No. 110-75-8	X		X	< 0.82						1	ug/L						
Acetone Cas No. 67-64-1	X	X		7.4 J	0.014	Result is an estimated value between the method detection limit and reporting limit.				1	ug/L	lbs/day					
Acrolein Cas No. 1070-20-8	X			< 7.3		< 4.1		< 5.2		3/1	ug/L						
Acrylonitrile Cas No. 107-13-1	X			< 0.50		< 0.38		< 0.42		3/1	ug/L						
Benzene Cas No. 71-43-2	X			< 0.46		< 0.25		< 0.32		3/1	ug/L						
Bromoform Cas No. 75-25-2	X			< 0.56		< 0.10		< 0.25		3/1	ug/L						

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1. POLLUTANT	2. MARK *(X)*			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
Carbon disulfide Cas No. 75-15-0	X		X	< 0.49						1	ug/L						
Carbon Tetrachloride Cas No. 56-23-5	X		X	< 0.40		< 0.14		< 0.23		3/1	ug/L						
Chlorobenzene Cas No. 108-90-7	X		X	< 0.40		< 0.19		< 0.26		3/1	ug/L						
Chlorodibromomethane Cas No. 124-48-1	X		X	< 0.40		< 0.17		< 0.25		3/1	ug/L						
Chloroethane Cas No. 75-00-3	X		X	< 0.68		< 0.21		< 0.37		3/1	ug/L						
Dichlorobromomethane Cas No. 75-27-4	X		X	< 0.49		< 0.16		< 0.27		3/1	ug/L						
Dichlorodifluoromethane Cas No. 75-71-8			X	Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutant List.													
Ethylbenzene Cas No. 100-41-4	X		X	< 0.34		< 0.22		< 0.26		3/1	ug/L						
Ethylene glycol Cas No. 107-21-1	X		X	< 0.94						1	ug/L						
Methanol Cas No. 67-56-1	X		X	< 0.62						1	ug/L						
Methyl Bromide (Bromomethane) Cas No. 74-83-9	X		X	< 0.90						1	ug/L						
Methyl chloride (Chloromethane) Cas No. 74-87-3	X		X	< 0.83						1	ug/L						
Methyl tert-butyl ether (MTBE) Cas No. 1634-04-4	X		X	< 0.45						1	ug/L						
Methylamine * Cas No. 74-89-5			X	*No method available for analysis.													
Methylene chloride Cas No. 75-09-2	X		X	< 0.86		< 0.64		< 0.71		3/1	ug/L						
Propylene glycol Cas No. 57-55-6	X		X	< 0.55						1	ug/L						
Tetrachloroethene Cas No. 127-18-4	X		X	< 0.30		< 0.30		< 0.28		277/52	ug/L						
Trichloroethene Cas No. 79-01-6	X		X	< 0.43		< 0.34		< 0.37		3/1	ug/L						
Trichlorofluoromethane Cas No. 75-69-4			X	Per 46 Federal Register 2264, this analyte was removed from the Priority Pollutant List.													
Toluene Cas No. 108-88-3	X		X	< 0.45		< 0.20		< 0.28		3/1	ug/L						
Vinyl chloride Cas No. 75-01-4	X		X	< 0.53		< 0.19		< 0.30		1	ug/L						
Xylene Cas No. 1330-20-7	X		X	< 0.81						1	ug/L						
SEMI-VOLATILE ORGANIC-ACID																	
2,4-Dichlorophenol Cas No. 120-83-2	X			< 0.35		< 0.35		< 0.36		3/1	ug/L						
2,4-Dimethylphenol Cas No. 105-67-9	X			< 0.36		< 0.36		< 0.36		3/1	ug/L						
2,4-Dinitrophenol Cas No. 51-28-5	X			< 2.6		< 0.40		< 1.1		3/1	ug/L						
2,4.6-Trichlorophenol Cas No. 88-06-2	X			< 0.25		< 0.25		< 0.25		3/1	ug/L						

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641										Outfall Number	204					
1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	a. Method	b. **Reporting** Limit
2-Chlorophenol Cas No. 95-57-8	X		X	< 0.23		< 0.23		< 0.23		3/1	ug/L						
2-Nitrophenol Cas No. 88-75-5	X		X	< 0.34		< 0.34		< 0.34		3/1	ug/L						
4-Nitrophenol Cas No. 100-02-7	X		X	< 0.24		< 0.24		< 0.24		3/1	ug/L						
4,6-Dinitro-o-cresol (2-methyl-4,6-dinitrophenol) Cas No. 534-52-1	X		X	< 0.27						1	ug/L						
Benzoic acid Cas No. 65-85-0	X		X	< 6.2						1	ug/L						
p-Chloro-m-cresol (4-chloro-3-methylphenol) Cas No. 59-50-7	X		X	< 0.26						1	ug/L						
Pentachlorophenol Cas No. 87-86-5	X		X	< 0.97		< 0.97		< 0.97		3/1	ug/L						
Phenol Cas No. 108-95-2	X		X	< 0.21		< 0.21		< 0.21		3/1	ug/L						
SEMI-VOLATILE ORGANIC-BASE																	
1,2,4-Trichlorobenzene Cas No. 120-82-1	X		X	< 0.41		< 0.41		< 0.41		3/1	ug/L						
1,2-Dichlorobenzene Cas No. 95-50-1	X		X	< 0.39		< 0.39		< 0.39		3/1	ug/L						
1,2-Diphenylhydrazine Cas No. 122-66-7	X		X	< 0.14		< 0.14		< 0.14		3/1	ug/L						
1,3-Dichlorobenzene Cas No. 541-73-1	X		X	< 0.65		< 0.65		< 0.65		3/1	ug/L						
1,4-Dichlorobenzene Cas No. 106-46-7	X		X	< 0.32		< 0.32		< 0.32		3/1	ug/L						
2-Chloronaphthalene Cas No. 91-58-7	X		X	< 0.11		< 0.11		< 0.10		3/1	ug/L						
2-Methylnaphthalene Cas No. 91-57-6	X		X	< 0.065						1	ug/L						
2.4-Dinitrotoluene Cas No. 121-14-2	X		X	< 0.42		< 0.42		< 0.42		3/1	ug/L						
2.6-Dinitrotoluene Cas No. 606-20-2	X		X	< 0.11		< 0.11		< 0.11		3/1	ug/L						
3,3-Dichlorobenzidine Cas No. 91-94-1	X		X	< 1.6		< 1.6		< 1.2		3/1	ug/L						
3,4-Benzofluoranthene (benzo(b)fluoranthene) Cas No. 205-99-2	X		X	< 0.070		< 0.070		< 0.064		3/1	ug/L						
4-Bromophenyl phenyl ether Cas No. 101-55-3	X		X	< 0.33		< 0.33		< 0.33		3/1	ug/L						
4-Chlorophenyl phenyl ether Cas No. 7005-72-3	X		X	< 0.31		< 0.31		< 0.31		3/1	ug/L						
Acenaphthene Cas No. 83-32-9	X		X	< 0.110		< 0.11		< 0.10		3/1	ug/L						
Acenaphthylene Cas No. 208-96-8	X		X	< 0.080		< 0.080		< 0.078		3/1	ug/L						
Anthracene Cas No. 120-12-7	X		X	< 0.050		< 0.050		< 0.043		3/1	ug/L						
Benzidine Cas No. 92-87-5	X		X	< 2.0		< 2.0		< 2.0		3/1	ug/L						
Benzo(a)anthracene Cas No. 56-55-3	X		X	< 0.099		< 0.90		< 0.93		3/1	ug/L						
Benzo(a)pyrene Cas No. 50-32-8	X		X	< 0.070		< 0.070		< 0.061		3/1	ug/L						

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641										Outfall Number	204					
1. POLLUTANT	2. MARK (*X*)			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
Benzo(ghi)perylene Cas No. 191-24-2	X		X	< 0.060		< 0.060		< 0.050		3/1	ug/L						
Benzo(k)fluoranthene Cas No. 207-06-9	X		X	< 0.090		< 0.090		< 0.076		3/1	ug/L						
Bis(2-chloroethoxy)methane Cas No. 111-91-1	X		X	< 0.29		< 0.29		< 0.29		3/1	ug/L						
Bis(2-chloroethyl) ether Cas No. 111-44-4	X		X	< 0.37		< 0.37		< 0.37		3/1	ug/L						
Bis(2-chloroisopropyl) ether Cas No. 108-60-1	X		X	< 0.23		< 0.23		< 0.23		3/1	ug/L						
Bis(2-ethylhexyl)phthalate Cas No. 117-81-7	X		X	< 0.40						1	ug/L						
Butyl benzyl phthalate Cas No. 85-68-7	X		X	< 0.30		< 0.30		< 0.30		3/1	ug/L						
Chrysene Cas No. 218-01-9	X		X	< 0.14		< 0.14		< 0.11		3/1	ug/L						
Di-n-butyl phthalate Cas No. 84-74-2	X		X	< 0.21		< 0.21		< 0.21		3/1	ug/L						
Di-n-octyl phthalate Cas No. 117-84-0	X		X	< 0.53		< 0.15		< 0.28		3/1	ug/L						
Dibenzo(a,h)anthracene Cas No. 53-70-3	X		X	< 0.073		< 0.060		< 0.064		3/1	ug/L						
Dibenzofuran Cas No. 132-64-9	X		X	< 0.23						1	ug/L						
Diethylphthalate Cas No. 84-66-2	X	X		0.41 J	0.0007	< 0.17		0.25 J	0.0011	3/1	ug/L	lbs/day	Dataset consists of 2 non-detect results and one estimated (J) value.				
Dimethylphthalate Cas No. 131-11-3	X		X	< 0.18		< 0.18		< 0.18		3/1	ug/L						
Fluoranthene Cas No. 206-44-0	X		X	< 0.090		< 0.090		< 0.073		3/1	ug/L						
Fluorene Cas No. 86-73-7	X		X	< 0.090		< 0.090		< 0.077		3/1	ug/L						
Hexachlorobenzene Cas No. 118-74-1	X		X	< 0.44		< 0.44		< 0.44		3/1	ug/L						
Hexachlorobutadiene Cas No. 87-68-3	X		X	< 0.28		< 0.28		< 0.28		3/1	ug/L						
Hexachlorocyclopentadiene Cas No. 77-47-4	X		X	< 1.1		< 1.1		< 1.1		3/1	ug/L						
Hexachloroethane Cas No. 67-72-1	X		X	< 0.21		< 0.21		< 0.21		3/1	ug/L						
Indeno(1,2,3-cd) Pyrene Cas No. 193-39-5	X		X	< 0.090		< 0.090		< 0.082		3/1	ug/L						
Isophorone Cas No. 78-59-1	X		X	< 0.34		< 0.34		< 0.34		3/1	ug/L						
N-nitrosodi-n-propyl amine Cas No. 621-64-7	X		X	< 0.48		< 0.35		< 0.39		3/1	ug/L						
N-nitrosodimethyl amine Cas No. 62-75-9	X		X	< 0.48		< 0.48		< 0.44		3/1	ug/L						
N-nitrosodiphenyl amine Cas No. 86-30-6	X		X	< 0.49		< 0.23		< 0.32		3/1	ug/L						
Naphthalene Cas No. 91-20-3	X	X		0.00061	0.00089	0.00011	0.00034	0.000073	0.00011	3/1	ug/L	lbs/day					
Nitrobenzene Cas No. 98-95-3	X		X	< 0.26		< 0.26		< 0.26		3/1	ug/L						
Phenanthrene Cas No. 85-01-8	X		X	< 0.081		< 0.081		< 0.080		3/1	ug/L						
Pyrene Cas No. 129-00-0	X	X		0.14	0.00089	< 0.080		0.10	0.00045	3/1	ug/L	lbs/day	Dataset consists of 2 non-detect results and one detection.				

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641	Outfall Number	204

1. POLLUTANT	2. MARK *(X)* a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	2. EFFLUENT a. Maximum Daily Values (1) Concentration	(2) Mass	b. Maximum 30 Day Values *(if available)* (1) Concentration	(2) Mass	c. Long Term Average *(if available)* (1) Concentration	(2) Mass	d. No. of Analysis	3. UNITS *(specify if blank)* a. Concentration	b. Mass	4. INTAKE *(optional)* a. Long Term Average Value *(if available)* (1) Concentration	(2) Mass	b. No. of Analysis	5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)* a. Method	b. **Reporting** Limit
Styrene Cas No. 100-42-5	X		X	< 0.33						1	ug/L						
PESTICIDES																	
2,4-Dichlorophenoxy Acetic Acid Cas No. 94-75-7			X														
Alachlor Cas No. 15972-60-8			X														
Aldrin Cas No. 309-00-2			X	< 0.0028		< 0.0028		< 0.0028		2/1	ug/L						
Atrazine Cas No. 1912-24-9			X														
BHC-Alpha Cas No. 319-84-6			X	< 0.0012		< 0.0012		< 0.0012		2/1	ug/L						
BHC-Beta Cas No. 319-85-7			X	< 0.0066		< 0.0066		< 0.0066		2/1	ug/L						
BHC-Gamma (Lindane) Cas No. 58-89-9			X	< 0.0015		< 0.0015		< 0.0015		2/1	ug/L						
BHC-Delta Cas No. 319-86-8			X	< 0.0026		< 0.0026		< 0.0026		2/1	ug/L						
Chlordane Cas No. 57-74-9			X	< 0.034		< 0.034		< 0.034		2/1	ug/L						
DDD Cas No. 72-54-8			X	< 0.0012		< 0.0012		< 0.0012		2/1	ug/L						
DDE Cas No. 72-55-9			X	< 0.0017		< 0.0017		< 0.0017		2/1	ug/L						
DDT Cas No. 50-29-3			X	< 0.0017		< 0.0017		< 0.0017		2/1	ug/L						
Dieldrin Cas No. 60-57-1			X	< 0.0022		< 0.0022		< 0.0022		2/1	ug/L						
Endosulfan Sulfate Cas No. 1031-07-8			X	< 0.0015		< 0.0015		< 0.0015		2/1	ug/L						
Endosulfan, Alpha Cas No. 959-98-8			X	< 0.0017		< 0.0017		< 0.0017		2/1	ug/L						
Endosulfan, Beta Cas No. 33213-65-9			X	< 0.0012		< 0.0012		< 0.0012		2/1	ug/L						
Endrin Cas No. 72-20-8			X	< 0.0018		< 0.0018		< 0.0018		2/1	ug/L						
Endrin Aldehyde Cas No. 7421-93-4			X	< 0.0028		< 0.0028		< 0.0028		2/1	ug/L						
Heptachlor Cas No. 76-44-8			X	< 0.0017		< 0.0017		< 0.0017		2/1	ug/L						
Heptachlor Epoxide Cas No. 1024-57-3			X	< 0.012		< 0.012		< 0.012		2/1	ug/L						
Methoxychlor Cas No. 72-43-5			X														
Metolachlor Cas No. 51218-45-2			X														
Mirex Cas No. 2385-85-5			X														
Parathion ethyl Cas No. 56-38-2			X														
Parathion methyl Cas No. 56-38-2			X														
Simazine Cas No. 122-34-9			X														

EPA Identification Number *(copy from Item 1 of Form 1)*	IND016584641										Outfall Number	204					
1. POLLUTANT	2. MARK *(X)*			2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*			5. ANALYTICAL METHOD *(list method used and detection limit achieved by lab.)*	
	a. Test-ing Re-quired	b. Be-lieved Pre-sent	c. Be-lieved Ab-sent	a. Maximum Daily Values		b. Maximum 30 Day Values *(if available)*		c. Long Term Average *(if available)*		d. No. of Analysis	a. Concentration	b. Mass	a. Long Term Average Value *(if available)*		b. No. of Analysis	a. Method	b. **Reporting** Limit
				(1) Concentration	(2) Mass	(1) Concentration	(2) Mass	(1) Concentration	(2) Mass				(1) Concentration	(2) Mass			
PCB-1242 Cas No. 534469-21-9	X		X	< 0.051						1	ug/L						
PCB-1254 Cas No. 11097-69-1	X		X	< 0.033						1	ug/L						
PCB-1221 Cas No. 11104-28-2	X		X	< 0.051						1	ug/L						
PCB-1232 Cas No. 11141-16-5	X		X	< 0.051						1	ug/L						
PCB-1248 Cas No. 12672-29-6	X		X	< 0.051						1	ug/L						
PCB-1260 Cas No. 11096-82-5	X		X	< 0.033						1	ug/L						
PCB-1016 Cas No. 12674-11-2	X		X	< 0.051						1	ug/L						
Toxaphene Cas No. 8001-35-2			X	< 0.11						1	ug/L						
WHOLE EFFLUENT TOXICITY																	
Acute, Freshwater Organisms Cas No. I-1100																	
Chronic Freshwater Organisms Cas No. I-1101																	

ADDITIONAL ANALYSES																	
Chloroform Cas No. 67-66-3			X	< 0.46		< 0.25		< 0.32		3/1	mg/L						
Iron, Dissolved Cas No. 7439-89-6			X	0.042 J	0.077	Result is an estimated value between the method detection limit and reporting limit.				1	mg/L	lbs/day					

Attachment 2C-A
Characterization Information

Narrative Summary
Table 2C-A1. Analytical Methods and Detection Limits
Table 2C-A2. Receiving Water and Intake Data
Table 2C-A3. Data Summaries for Specific Requests

ATTACHMENT 2C-A CHARACTERIZATION INFORMATION

Section V of Form 2C requires the presentation of effluent characterization data (concentration and mass) for select constituents. As part of this characterization, a “Believed Absent and Believed Present” assessment for constituents is required in Form 2C Part V-B. U. S. Steel used the following steps to determine whether a constituent would be "Believed Present" in outfall effluent:

1. Is there an identifiable U. S. Steel source of constituent?
2. Is it anticipated that the constituent would not be removed or degraded by the wastewater treatment system?
3. Was a constituent analytically detected (including at an associated internal monitoring point)?

If the answer to any step was "yes", then the constituent was considered to have potential to be present in the discharge.

In regard to sampling and analyses, permit-required conditions were followed. Where no permit requirements were listed, sampling and analyses were conducted according to 40 CFR Part 136. A summary of effluent characterization procedures is provided below.

<u>For all data:</u>

- For outfall temperature, summer was defined as July 1 through September 30 and winter was defined as October 1 through June 30.
- The number of analyses has been presented for both the daily values and the monthly average values.
- Monthly average values were generated only if there was more than one sample in the calendar month. The only exception to this is for mercury where individual values were used as monthly averages when testing only occurred once within a month.
- Mass values were not calculated if all data for a parameter were non-detect.
- Data were reported to the method detection limit; the method detection limit (denoted with a “<” symbol) was conservatively substituted for non-detect results for the purpose of calculating averages.
- Estimated values between the method detection limit and method reporting limit were used as reported. For data not required under the current permit, these values are indicated with a “J” flag.

<u>For parameters currently monitored under the NPDES Permit:</u>

- For both Form 2C and Form 2F, the DMR database from April 1, 2016 to July 31, 2020 was utilized with the following exceptions:
  - Outfall 104 and 204 hexavalent and total chromium data from April 11 – 14, 2017. These data are associated with a leak and are not representative of normal anticipated effluent quality.

<u>For parameters not currently monitored under the NPDES Permit:</u>

- For other required Form 2C data, the majority of samples were collected for the required Form 2C parameters in May 2020. Additional sampling for select parameters and outfall locations also occurred in August and September 2020. As available, data from special sampling programs or process control monitoring from the current permit cycle were also used.

- Outfall samples were collected for the required Form 2F parameters in May 2020. The sample event was associated with a qualifying storm event.
- Samples of intake water (Lake Michigan) and the receiving water (upstream Portage-Burns Waterway) were collected in May 2020.
- As required by Part III.B of the current Permit, PCB samples for the final Outfalls and the Intake were collected on the same day.

Specific Data/Information:

- The analytical methods and detection limits information requested by Section V of Form 2C is included as Table 2C-A1.
- Receiving water (upstream Portage-Burns Waterway) and intake (Lake Michigan) data are presented in Table 2C-A2.
- Form 2C Total Organic Nitrogen (TON) values are calculated from the reported Total Kjeldahl Nitrogen (TKN) and ammonia results by calculating TKN minus ammonia. TKN, which was the higher value (vs. ammonia), was non-detect for all locations. As such, the "<" qualifier is included for TON.
- For the May 2020 sample event, two sets of composite samples (from the same day) for Outfalls 004, 104 and 204 were analyzed using Method 625. One set of samples was from a manual composite (3 grabs over 24 hours) and the other from a 24-hr automatic compositor. In addition, the Outfall 204 auto composite was analyzed twice: once with a 10X dilution and once with no dilution. The Method 625 data were handled as follows.
    - For 004 and 104, the manual and auto composite results were averaged, and the resulting value considered 1 result. Only if both results were non-detect was the non-detect symbol included with the calculated average value. This applies for all Method 625 parameters except bis (2-ethylhexyl) phthalate.
    - For 204, the manual composite and the auto composite results (analyzed without dilution) were averaged, and the resulting value is considered 1 result. Only if both results were non-detect was the non-detect symbol included with the calculated average value. The auto composite results from the 10X dilution were all non-detect and were not used. This applies for all Method 625 parameters except bis (2-ethylhexyl) phthalate.
    - Bis (2-ethylhexyl) phthalate: due to the high potential for incidental contamination from sample tubing used in the auto compositor, only the manual composite (3 grabs over 24 hours collection without use of sample tubing) results are used.
- The Outfall 004 hexavalent chromium dataset (November 1, 2019 – July 31, 2020) included more than one grab sample on the same day for the period of November 1, 2019 – December 20, 2019. For those dates, the average of all results was calculated and used as 1 result for the purposes of generating the Form 2C statistics.

Specific No RPE Data Summaries:

As indicated in the Executive Summary, U. S. Steel is requesting removal of various permit limits and reduced monitoring requirements on the basis of that there is no reasonable potential to exceed the associated water quality criteria. Statistical data summaries for these parameters are presented in Table 2C-A3. Upon request U. S. Steel can provide Excel versions of the datasets utilized to generate the summary table. The following changes to Outfall 004 limits and monitoring requirements are requested:

- Removal of Free Cyanide (as measured by Weak Acid Dissociable Cyanide) limits, and;
- Reduced monitoring frequency (from 2/mo to 1/mo) for Cadmium, Lead, Nickel, and Silver.

Table 2C-A1. Analytical Methods and Detection Limits for Tested Form 2C Parameters

Note: Most commonly achieved limits are shown in the table.

Parameter	Analytical Method	Method Detection Limits	Reporting Limits	Units
PART V. IDEM TABLE A.				
Carbonaceous Biochemical Oxygen Demand (cBOD)	5210 B	2	2	mg/L
Escherichia coli (E-coli)	9223B	1.0	1.0	MPN
Fecal Coliform	9222D	1.0	1.0	CFU
Chemical Oxygen Demand (COD)	410.4	6.1	20	mg/L
Dissolved Oxygen	4500-O G (probe)	0	0	mg/L
Total Dissolved Solids	2540C	22	30	mg/L
Total Organic Carbon (TOC)	5310B, C or D	0.14-2.8	0.5-10	mg/L
Total Suspended Solids (TSS)	2540D	0.3-0.789	2-5.26	mg/L
Ammonia as N	350.1	0.0098	0.032	mg/L
Temperature	2550 B	0.1 sensitivity		°F
Total Hardness	2340C	2.2	5	mg/L
pH	4500-H^+ B	0.1 sensitivity		s.u.
PART V. IDEM TABLE B.				
Bromide	300.0	0.032	0.2	mg/L
Chloride	300.0	0.31-3.1	1-10	mg/L
Chlorine, Total Residual	4500-Cl G	0.01	0.01	mg/L
Color	2120B	2.5	2.5	PCU
Fluoride	300.0	0.067	0.1	mg/L
Nitrate + Nitrite (as N)	353.2 R2.0	0.006	0.1	mg/L
Nitrate	300.0	0.046	0.1	mg/L
Nitrite	300.0	0.016	0.1	mg/L
Nitrogen, Total Organic (as N)	TKN minus Amm-N	dependent on other parameters		mg/L
Total Kjeldahl Nitrogen	4500NH3 G	0.87	1	mg/L
Oil and Grease (hexane)	(Hexane) 1664A	1.3	2	mg/L
Phosphorus (as P), Total	365.1	0.011	0.05	mg/L
Sulfate (as SO4)	300.0	0.28-0.57	5-10	mg/L
Sulfide (as S)	4500-S2 F	0.42	1	mg/L
Sulfite (as SO3)	4500SO3 B	1	2	mg/L
Surfactants (MBAS)	5540 C	0.12	0.4	mg/L
Aluminum, Total	200.8	0.00739	0.01	mg/L
Barium, Total	200.8	0.000402	0.005	mg/L
Boron, Total	200.8	0.0135	0.02	mg/L
Cobalt, Total	200.8	0.000238	0.005	mg/L
Iron, Total	200.8	0.016	0.08	mg/L
Iron, Dissolved	200.8	0.016	0.08	mg/L
Magnesium, Total	200.8	0.0145	0.2	mg/L
Molybdenum, Total	200.8	0.000459	0.005	mg/L
Manganese, Total	200.8	0.000283	0.005	mg/L
Tin, Total	200.8	0.000305	0.002	mg/L
Titanium, Total	200.8	0.00103	0.005	mg/L
PART V. IDEM TABLE C. Priority Pollutant Metals, Cyanide, Phenols				
Antimony, Total	200.8	0.317	5	ug/L
Arsenic, Total	200.8	0.388	5	ug/L
Beryllium, Total	200.8	0.153	2	ug/L
Cadmium, Total	200.8	0.2	0.2	ug/L
Chromium, Total	200.8	0.802	5	ug/L

Table 2C-A1. Analytical Methods and Detection Limits for Tested Form 2C Parameters

Note: Most commonly achieved limits are shown in the table.

Parameter	Analytical Method	Method Detection Limits	Reporting Limits	Units
Chromium, Hexavalent (dissolved)	218.6	0.026	0.25	ug/L
Copper, Total	200.8	0.335	5	ug/L
Lead, Total	200.8	0.148	5	ug/L
Mercury, Total	1631E	0.2	0.5	ng/L
Nickel, Total	200.8	0.578	5	ug/L
Selenium, Total	200.8	1	5	ug/L
Silver, Total	200.8	0.298	5	ug/L
Thallium, Total	200.8	0.283	5	ug/L
Vanadium	200.8	0.724	5	ug/L
Zinc, Total	200.8	1.01	10	ug/L
Cyanide, WAD	4500-CN I	2	5	ug/L
Cyanide, Total	4500-CN E	2	5	ug/L
Phenols, Total ("4AAP Phenolics")	420.4	2	6.4	ug/L
PART V. IDEM TABLE C. Volatile Compounds				
Acetaldehyde	8315A	88	120	ug/L
Formaldehyde	8315A and 1667	43 to 120	50 to 120	ug/L
Ethylene glycol	8015C	0.94	5	mg/L
Methanol	8015C	0.62	5	mg/L
Propylene glycol	8015C	0.55	5	mg/L
Methyl tert-butyl ether (MTBE)	624	0.45	1	ug/L
Xylene	624	0.81	3	ug/L
1,1,1,2-Tetrachloroethane	624	0.40	1	ug/L
1,1,2-Trichloroethane	624	0.46	1	ug/L
1,1,1-Trichloroethane	624	0.46	1	ug/L
1,1-Dichloroethane	624	0.44	1	ug/L
1,1-Dichloroethene	624	0.4	1	ug/L
1,2,4-Trimethylbenzene	624	0.45	1	ug/L
1,2-Dichloroethane	624	0.44	1	ug/L
1,2-Dichloroethylene, Trans	624	0.48	1	ug/L
1,2-Dichloropropane	624	0.48	1	ug/L
1,3,5-Trimethylbenzene	624	0.65	1	ug/L
1,3-Dichloropropane	624	0.4	1	ug/L
1,3-Dichloropropene, Cis	624	0.57	1	ug/L
1,3-Dichloropropene, Trans	624	0.38	1	ug/L
1,3-Dichloropropylene	624	0.57	2	ug/L
2-Butanone (Methyl Ethyl Ketone)	624	0.52	5	ug/L
2-Chloroethylvinyl Ether	624	0.82	1	ug/L
Acetone	624	6.2	10	ug/L
Acrolein	624	7.3	20	ug/L
Acrylonitrile	624	0.5	1	ug/L
Benzene	624	0.46	1	ug/L
Bromoform	624	0.56	1	ug/L
Carbon disulfide	624	0.49	1	ug/L
Carbon Tetrachloride	624	0.4	1	ug/L
Chlorobenzene	624	0.4	1	ug/L
Chlorodibromomethane	624	0.4	1	ug/L
Chloroethane	624	0.68	1	ug/L
Chloroform	624	0.46	1	ug/L
Dichlorobromomethane	624	0.49	1	ug/L
Ethylbenzene	624	0.34	1	ug/L
Methyl Bromide (Bromomethane)	624	0.9	1	ug/L

Table 2C-A1. Analytical Methods and Detection Limits for Tested Form 2C Parameters

Note: Most commonly achieved limits are shown in the table.

Parameter	Analytical Method	Method Detection Limits	Reporting Limits	Units
Methyl Chloride (Chloromethane)	624	0.83	1	ug/L
Methylene Chloride	624	0.86	5	ug/L
Styrene	624	0.33	1	ug/L
Tetrachloroethene	624	0.39	1	ug/L
Trichloroethene	624	0.43	1	ug/L
Toluene	624	0.45	1	ug/L
Vinyl Chloride	624	0.53	1	ug/L
PART V. IDEM TABLE C. Semi-Volatile Organic Acid Compounds				
2,4-Dichlorophenol	625	0.35	5	ug/L
2,4-Dimethylphenol	625	0.36	5	ug/L
2,4-Dinitrophenol	625	2.6	5	ug/L
2,4,6-Trichlorophenol	625	0.25	5	ug/L
2-Chlorophenol	625	0.23	5	ug/L
2-Nitrophenol	625	0.34	5	ug/L
4-Nitrophenol	625	0.24	5	ug/L
4,6-Dinitro-o-cresol (2-methyl-4,6-dinitrophenol)	625	0.27	5	ug/L
Benzoic Acid	625	6.2	20	ug/L
p-Chloro-m-cresol (4-chloro-3-methylphenol)	625	0.26	5	ug/L
Pentachlorophenol	625	0.97	5	ug/L
Phenol	625	0.21	5	ug/L
PART V. IDEM TABLE C. Semi-Volatile Organic Base Compounds				
1,2,4-Trichlorobenzene	625	0.41	5	ug/L
1,2-Dichlorobenzene	625	0.39	5	ug/L
1,2-Diphenyl hydrazine (Azobenzene)	625	0.14	5	ug/L
1,3-Dichlorobenzene	625	0.65	5	ug/L
1,4-Dichlorobenzene	625	0.32	5	ug/L
2-Chloronaphthalene	625	0.075	0.1	ug/L
2-Methylnaphthalene	625	0.065	0.1	ug/L
4-Methylphenol	625	0.21	5	ug/L
2,4-Dinitrotoluene	625	0.42	5	ug/L
2,6-Dinitrotoluene	625	0.11	5	ug/L
3,3'-Dichlorobenzidine	625	0.46	5	ug/L
3,4-Benzofluoranthene (benzo [b] fluoranthene)	625	0.051	0.1	ug/L
4-Bromophenyl Phenyl Ether	625	0.33	5	ug/L
4-Chlorophenyl Phenyl Ether	625	0.31	5	ug/L
Acenaphthene	625	0.081	0.1	ug/L
Acenaphthylene	625	0.075	0.1	ug/L
Anthracene	625	0.028	0.1	ug/L
Benzidine	625	2	10	ug/L
Benzo (a) anthracene	625	0.099	0.1	ug/L
Benzo (a) pyrene	625	0.044	0.1	ug/L
Benzo (ghi) perylene	625	0.03	0.1	ug/L
Benzo (k) fluoranthene	625	0.048	0.1	ug/L
Bis (2-Chloroethoxy) Methane	625	0.29	5	ug/L
Bis (2-Chloroethyl) Ether	625	0.37	5	ug/L
Bis (2-Chloroisopropyl) Ether	625	0.23	5	ug/L

Table 2C-A1. Analytical Methods and Detection Limits for Tested Form 2C Parameters

Note: Most commonly achieved limits are shown in the table.

Parameter	Analytical Method	Method Detection Limits	Reporting Limits	Units
Bis (2-Ethylhexyl) Phthalate	625	0.4	5	ug/L
Butyl Benzyl Phthalate	625	0.3	5	ug/L
Chrysene	625	0.048	0.1	ug/L
Di-N-Butyl Phthalate	625	0.21	5	ug/L
Di-N-Octyl Phthalate	625	0.53	5	ug/L
Dibenzo (a,h) anthracene	625	0.073	0.1	ug/L
Dibenzofuran	625	0.23	5	ug/L
Diethyl Phthalate	625	0.17	5	ug/L
Dimethyl Phthalate	625	0.18	5	ug/L
Fluoranthene	625	0.038	0.1	ug/L
Fluorene	625	0.051	0.1	ug/L
Hexachlorobenzene	625	0.44	5	ug/L
Hexachlorobutadiene	625	0.28	5	ug/L
Hexachlorocyclopentadiene	625	1.1	5	ug/L
Hexachloroethane	625	0.21	5	ug/L
Indeno(1,2,3-cd) pyrene	625	0.067	0.1	ug/L
Isophorone	625	0.34	5	ug/L
N-Nitrosodi-N-propylamine	625	0.35	5	ug/L
N-Nitrosodimethylamine	625	0.48	5	ug/L
N-Nitrosodiphenylamine	625	0.49	5	ug/L
Naphthalene	625	0.067	0.1	ug/L
Nitrobenzene	625	0.26	5	ug/L
Phenanthrene	625	0.081	0.1	ug/L
Pyrene	625	0.036	0.1	ug/L
PART V. IDEM TABLE C. GC/MS Fraction - Pesticides and PCBs				
PCB-1242	608	0.046 - 0.051	0.21	ug/L
PCB-1254	608	0.028 - 0.033	0.21	ug/L
PCB-1221	608	0.046 - 0.051	0.21	ug/L
PCB-1232	608	0.046 - 0.051	0.21	ug/L
PCB-1248	608	0.046 - 0.051	0.21	ug/L
PCB-1260	608	0.028 - 0.033	0.21	ug/L
PCB-1016	608	0.046 - 0.051	0.21	ug/L
Toxaphene	608	0.11	4	ug/L
Aldrin	608	0.0028	0.2	ug/L
alpha-BHC	608	0.0012	0.2	ug/L
beta-BHC	608	0.0066	0.2	ug/L
Chlordane, Technical	608	0.034	1	ug/L
delta-BHC	608	0.0026	0.2	ug/L
Dieldrin	608	0.0022	0.2	ug/L
Endosulfan I	608	0.0017	0.2	ug/L
Endosulfan II	608	0.0012	0.2	ug/L
Endosulfan sulfate	608	0.0015	0.2	ug/L
Endrin	608	0.008	0.2	ug/L
Endrin aldehyde	608	0.0028	0.2	ug/L
gamma-BHC (Lindane)	608	0.0015	0.2	ug/L
Heptachlor	608	0.0017	0.2	ug/L
Heptachlor epoxide	608	0.0012	0.2	ug/L

Table 2C-A2. Receiving Water and Intake Data

Parameter	Portage-Burns Waterway	Intake (Lake Michigan)	Units
Hardness and Metals (required by 327 IAC 5-2-3(q))			
Total Hardness	150	140	mg/L CaCO3
Chromium, Total	0.00202 J	< 0.00080	mg/L
Chromium, Hexavalent (dissolved)	0.0000718	0.00023	mg/L
Copper, Total	0.0217	0.0135	mg/L
Lead, Total	0.00140 J	< 0.00015	mg/L
Mercury, Total	3.4	0.50	**ng/L**
Nickel, Total	0.00193 J	< 0.00058	mg/L
Silver, Total	< 0.00030	< 0.00030	mg/L
Thallium, Total	< 0.00028	< 0.00028	mg/L
Zinc, Total	0.00919 J	0.0112	mg/L
Intake PCB Test Results (required by Part III.B of the current Permit)			
PCB-1242		< 0.046	µg/L
PCB-1254		< 0.028	µg/L
PCB-1221		< 0.046	µg/L
PCB-1232		< 0.046	µg/L
PCB-1248		< 0.046	µg/L
PCB-1260		< 0.028	µg/L
PCB-1016		< 0.046	µg/L

Note:
Additional nearby upstream receiving water (Portage Burns Waterway near the Route 12 bridge) data for these and other parameters are available for the following monitoring stations: 21IND_WQX-1918, USGS-413706087100501, and INSTOR_WQX-1918. The data can be accessed through EPA's Water Quality Portal (https://www.waterqualitydata.us/portal/)

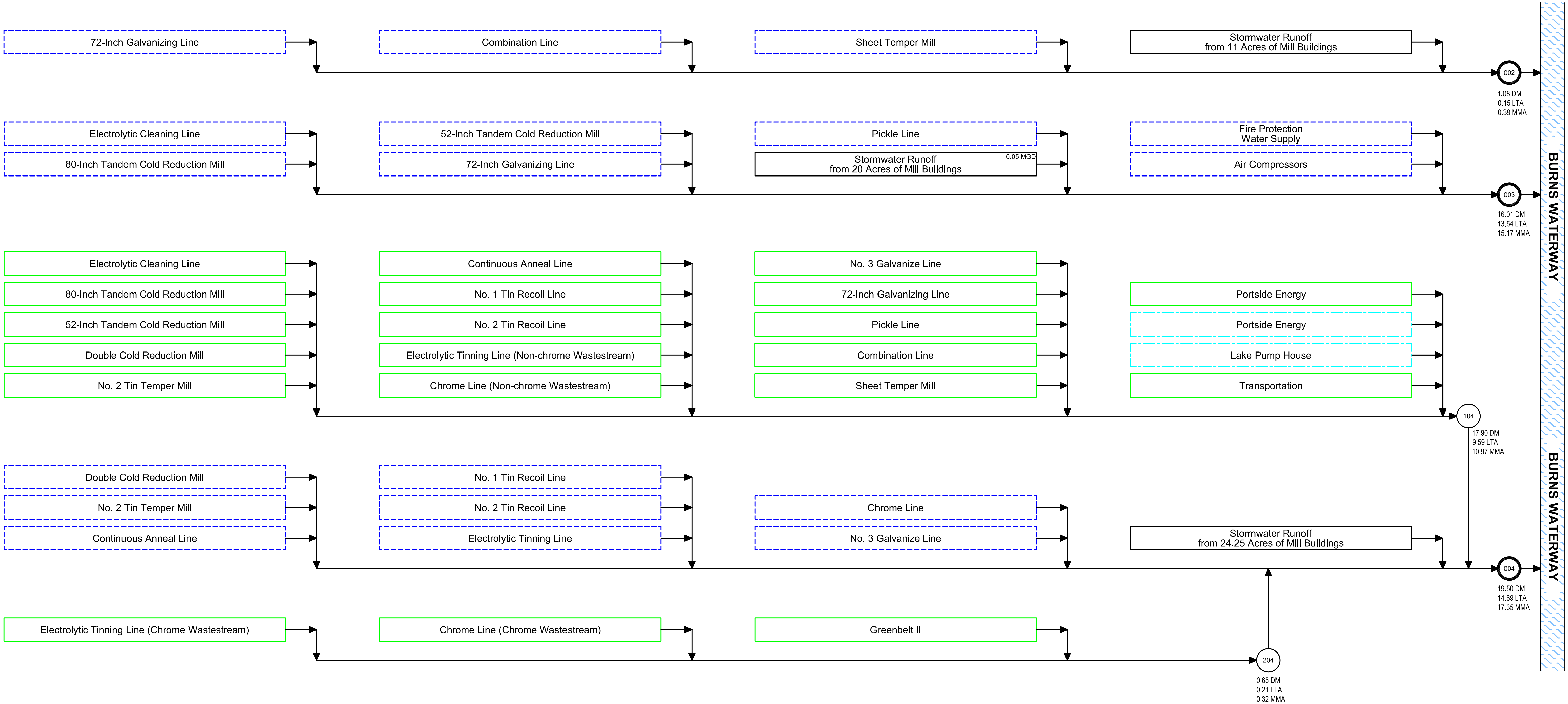
Table 2C-A3. Outfall 004 Data Summaries for no RPE Requests

Statistic	**Free Cyanide (measured as Weak Acid Dissociable Cyanide)** mg/L	**Cadmium** mg/L	**Lead** mg/L	**Nickel** mg/L	**Silver** **ug/L**
Daily Maximum	0.0058	0.0035	0.0099	0.0300	0.097
Number of Results	467	471	471	471	472
Coefficient Of Variation (CV)	0.21	1.49	1.37	1.07	0.21
Max Monthly Average	0.0020	0.0033	0.0016	0.0072	< 0.070
Number of Monthly Averages	52	52	52	52	52
Coefficient Of Variation (CV)	0.19	2.08	0.89	0.61	0.26
Minimum	< 0.0005	< 0.00006	0.00010	< 0.00008	< 0.030
Average	0.0015	0.00021	0.00052	0.0024	0.048

Notes:
Statistics based on the data from the current permit cycle, specifically April 2016 through July 2020.
Current Permit monitoring frequency is twice per month for all listed parameters.
"<" indicates a non-detect value at the method detection limit.

Attachment 2C-B
Flow Diagrams / Treatment Schematics

Line Discharge Diagrams for Outfalls 002, 003, and 004 (MW-LDD)
Outfalls 104 and 204 Wastewater Treatment Processes (MWE-04)

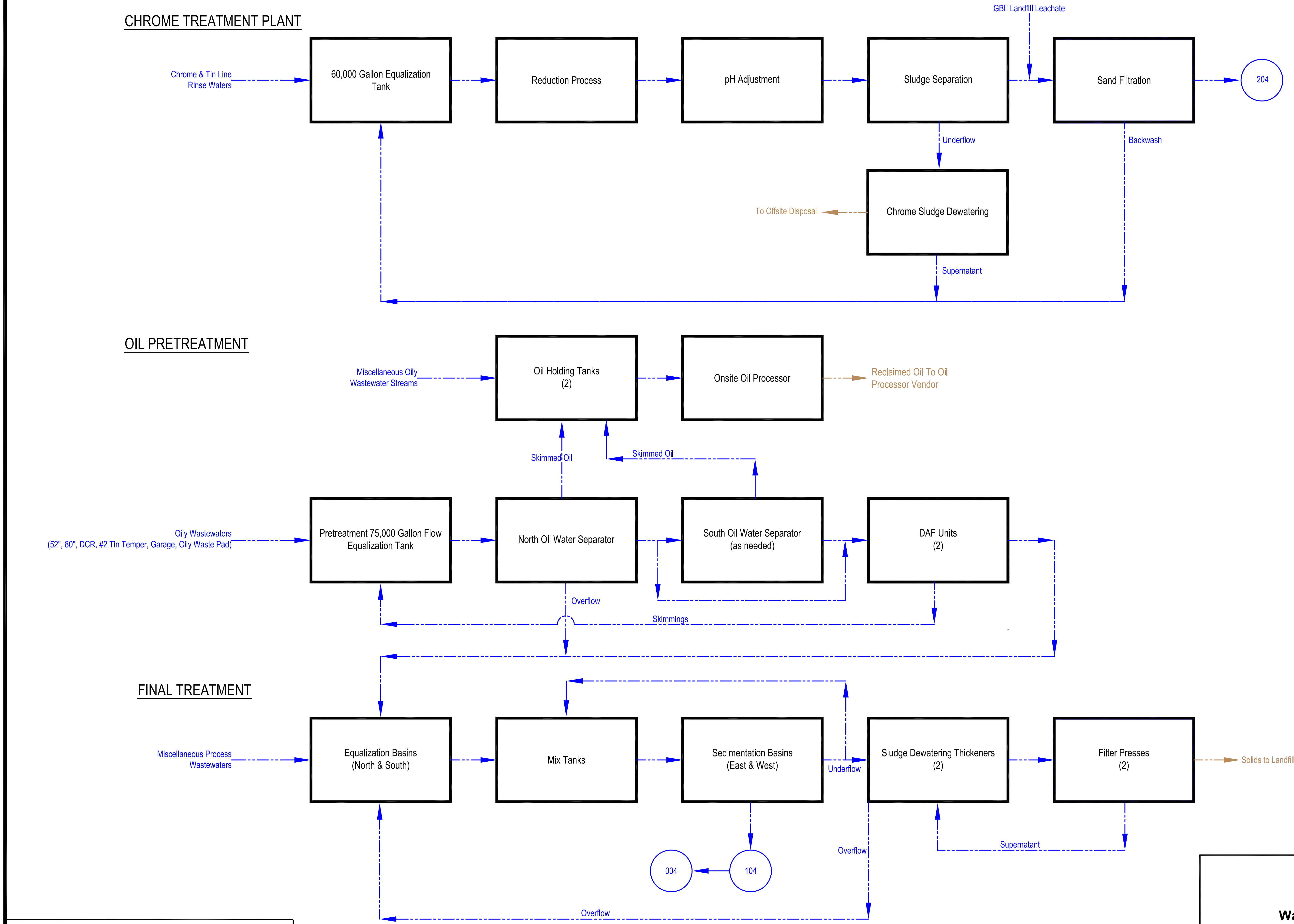


ACRONYMS:
DM = DAILY MAX FLOW
LTA = LONG TERM AVERAGE FLOW
MMA = MAX MONTHLY AVERAGE FLOW

NOTES:
FLOW AVERAGES BASED ON APRIL 2016 THROUGH JULY 2020 FLOW DATA.
ALL FLOW DATA SHOWN ARE MILLION GALLONS PER DAY (MGD).

CONDENSATE	NON-CONTACT COOLING WATER	X PUMP STATION	REVISION DATE:	09/21/2020-rv1
BACKWASH, WASHDOWN, BLOWDOWN		# INTERNAL MONITORING OR DISCHARGE POINT	FILE PATH:	USSMW/Drawings/LDDs
PROCESS WATER		# OUTFALL	FILE NAME:	MW-LDD

FIGURE MW-LDD
U.S. Steel
Midwest Plant Line Discharge Diagram
Internal Outfall Nos. 104 and 204
Discharge Outfall Nos. 002, 003 and 004



PRODUCT OR PROCESS THROUGHPUT	
LIQUID MATERIAL STREAMS	OUTFALL NUMBER
GASEOUS MATERIAL STREAMS	AIR EMISSION SOURCE
SOLID MATERIAL STREAMS	SOLID WASTE STREAM

REVISION DATE:	09/20/2020
FILE PATH:	USSMW/Drawings/PFDs
FILE NAME:	MWE-04.dwg

FIGURE MWE-04
Outfalls 104 and 204
Wastewater Treatment Processes

U. S. Steel - Midwest Plant
Process Flow Diagrams

ST Environmental LLC
PO Box 40129
Austin, TX 78704
Phone: (219) 728 - 6312

Form 2F

Pages 1-3 for Outfalls 002S and 003S
Outfall 002S Pages VII-1 and VII-2
Outfall 003S Pages VII-1 and VII-2

FORM 2F NPDES **EPA**

United States Environmental Protection Agency

Application for Permit To Discharge Stormwater Discharges Associated with Industrial Activity

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (*list*)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (*name*)
	1. DEG	2. MIN	3. SEC	1. DEG	2. MIN	3. SEC	
002S	41	37	23	87	10	33	Portage-Burns Waterway via Outfall 002
003S	41	37	35	87	10	33	Portage-Burns Waterway via Outfall 003

II. Improvements

A. Are you now required by any Federal, State, or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

1. Identification of Conditions, Agreements, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	number	source of discharge		a. req.	b. proj.
N/A					

B. You may attach additional sheets describing any additional water pollution (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction.

III. Site Drainage Map

Attach a site map showing topography (or indicating the outline of drainage areas served by the outfall(s) covered in the application if a topographic map is unavailable) depicting the facility including: each if its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage or disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which receive stormwater discharges from the facility. **See Attachment 2F-III**

 Continued on Page 2

Continued from the Front

IV. Narrative Description of Pollutant Sources

A. For each outfall, provide an estimate of the area (include units) of surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface *(provide units)*	Total Area Drained *(provide units)*	Outfall Number	Area of Impervious Surface *(provide units)*	Total Area Drained *(provide units)*
002S	11 acres	11 acres			
003S	20 acres	20 acres			

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed in the last three years, to minimize contact by these materials with storm water runoff; materials loading and access areas; and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

Appendix B of the facility SWPPP includes tables detailing potential sources of stormwater pollution. Appendix B-1 is the Oil Storage Inventory associated with SPCC requirements and includes information on materials, amounts, locations and type of containmen. Appendix B-2 addresses other potential sources of stormwater pollution. Materials, locations, possible exposure methods and pathways, structural and non-structural control are addressed along with an assessment of the overall risk to stormwater and any planned measures.
Appendix D of the facility SWPPP details where pesticides, herbicides or fertilizers are applied. These materials are applied manually on a seasonal as needed basis by a landscaping consultant. Application of herbicides by plant personnel is only allowed in very small areas as needed with a hand-held sprayer (consumer-scale).

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

Outfall Number	Treatment	List Codes from Table 2F-1

The Appendix B tables of the facility SWPPP provide listings of structural and non-structural controls. Commonly utilized structural controls include: plugged drain(s) in secondary containment dike(s) to prevent drainage of contaminated storm water; secondary containment such dikes, pallets, berms, double walls, etc; berms or diversionary walls/structures or swales; bank erosion control systems (rip-rap, sheet piling or other structures); vegetation along banks and in open areas to prevent erosion and wash out; modified equipment such as valves, piping, flanges, etc. to prevent releases; raised, sealed or plugged storm sewer manhole(s)/inlet(s)/pipe(s) to prevent contaminated storm water from entering the storm sewer. In addition, some stormwater is commingled w/process water and after treatment, discharged as Outfall 104 (see Section 11.1.2 of the SWPPP). Commonly used non-structural controls/practices include: follow procedures for loading and unloading operations; follow procedures for drum and mobile container(s) storage and handling operations; storage of oily and contaminated equipment and spare parts indoors and dispose of obsolete parts and equipment, where possible; truck and equipment washing operations only in designated areas; practice inventory controls for materials that are potential storm water pollutant sources; maintain spill kits in the areas of concern; control traffic through the area to minimize tracking, deposition and runoff; regular inspections of oil storage tank systems in accordance with SPCC Plan; maintain drainage system culverts and piping to prevent flooding (specifically in areas that drain into storm water treatment systems); quarterly SWPPP inspections of designated SW pollution sources; regular maintenance outages and inspections; housekeeping practices. Proper procedures regarding spill response and clean up, spill reporting, and routine maintenance and inspection of spill response/clean-up materials and equipment are outlined in the Gary Complex Integrated Contingency Plan (the Midwest Plant is part of this complex). Oil spill prevention is outlined in the SPCC Plan.

V. Nonstormwater Discharges

A. I certify under penalty of law that the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharges form these outfall(s) are identified in either an accompanying Form 2C or Form 2E application for the outfall.

Name and Official Title *type or print)*	Signature	Date Signed
David Reaume, Plant Manager	See the General Information Form for the signature	See General Form for the date signed

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

There are no stormwater only outfalls associated with this facility. Outfalls 002 and 003 are authorized to discharge stormwater and non-contact cooling water. Outfalls 002S and 003S are same physical location as Outfalls 002 and 003 but sampling for Outfalls 002S and 003S is associated with a qualifying storm event. Characterization data for Outfalls 002 and 003 (which includes periods of dry weather) are presented in the Form 2C.

VI. Significant Leaks or Spills

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutant at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

There have been no reportable spills since January 2018.

Continue on Page 3

EPA ID Number *(Copy from Item I of Form 1)*

Continued from Page 2

VII. Discharge Information

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided.
Tables VII-A, VII-B, and VII-C are included on separate sheets numbered VII-1 and VII-2.

E. Potential discharges not covered by analysis - is any pollutant listed in Table 2F-2, 2F-3, 2F-4 a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

[X] Yes *(list all such pollutants below)* [ ] No *(go to Section IX)*

Adequate information to assess potential stormwater pollutants is provided in the following:

Form 2C, Section V's

Form 2F, Pages VII-1 and VII-2

VIII. Biological Toxicity Testing Data

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

[ ] Yes *(list all such pollutants below)* [X] No *(go to Section IX)*

IX. Contract Analysis Information

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

[X] Yes *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* [ ] No *(go to Section X)*

A. Name	B. Address	C. Area Code & Phone No.	Pollutants Analyzed
ALS - Indiana	3352 128th Avenue Holland, Michigan 49424	(616) 399-6070	All

X. 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.

A. Name & Official Title *(type or print)*	B. Area Code & Phone No.
David Reaume, Plant Manager	219-763-5511
C. Signature	**D. Date Signed**
See the General Information Form for the certification signature	See the General Information Form

Outfall 002S	EPA ID Number *(copy from Item I of Form 1)* IND016584641	Form Approved. OMB No. 2040-0086 Approval expires 5-31-92

VII. Discharge Information ***(Continued from page 3 of Form 2F)***

Part A. You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Oil and Grease	< 1.3 U mg/L	NA		NA	1	SEE ATTACHMENT 2F-III
Carbonaceous Biological	3.4 mg/L	NA		NA	1	
Chemical Oxygen	150 mg/L	NA	28.4	NA	17	
Total Suspended	57 mg/L	NA	20.1	NA	17	
Total Nitrogen	1.79 mg/L	NA		NA	1	
Total Phosphorus	0.0850 mg/L	NA		NA	1	
pH	Minimum (grab)	Maximum (grab)	Minimum (comp)	Maximum (comp)	1	
	7.70	7.70	NA	NA		

Part B. List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in tl facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Note: Part A compounds are not repeated in Part B. Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Nitrate + Nitrite	0.79 mg/L	NA		NA	1	See Above
TKN	1.0 mg/L	NA		NA	1	
Copper	0.00581 mg/L	NA		NA	1	
Lead	0.00268 J mg/L	NA		NA	1	
Zinc	0.240 mg/L	NA	0.048 mg/L	NA	17	
Fluoride	0.10 mg/L	NA		NA	1	
Cadmium, Total	< 0.00200 mg/L	NA		NA	1	
Chromium, Total	0.00591 mg/L	NA		NA	1	
Chromium, Hexavalent (dissolved)	0.204 ug/L	NA		NA	1	
Mercury, Total	3.6 ng/L	NA		NA	1	
Nickel, Total	0.00257 J mg/L	NA		NA	1	
Silver, Total	< 0.000298 mg/L	NA		NA	1	
Cyanide, WAD	< 0.0020 mg/L	NA		NA	1	
Cyanide, Total	< 0.00200 mg/L	NA		NA	1	
Naphthalene	< 0.67 ug/L	NA		NA	1	

Notes: J indicates an estimated value between the method detection limit and the reporting limit. < indicates a non-detect value at the method detection limit.

 Continue on Reverse

Continued from the Front Outfall 002S

Part C. List each pollutant shown in Tables 2F-2. 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Adequate information to assess potential stormwater pollutants is provided in the following:						
	Form 2C, Section V's					
	Form 2F, Pages VII-1 and VII-2					

Part D. Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm *(in minutes)*	3. Total rainfall during storm event *(in inches)*	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event *(gallons/minute or specify units)*	6. Total flow from rain event *(gallons or specify units)*
06/15/16	120	0.81	>72 hours	1,897	241,945
09/26/16	75	0.10	>72 hours	375	29,870
11/02/16	240	2.73	>72 hours	3,197	815,443
03/25/17	45	0.17	<72 hours	1,062	50,779
06/29/17	240	1.10	>72 hours	1,288	328,567
09/19/17	240	1.23	<72 hours	1,440	367,398
12/04/17	40	0.10	>72 hours	703	29,870
03/27/18	180	0.17	>72 hours	265	50,779
05/09/18	30	0.12	>72 hours	1,124	35,844
08/20/18	60	0.34	>72 hours	1,593	101,557
12/01/18	180	0.27	<72 hours	422	80,648
01/07/19	180	0.12	<72 hours	187	35,844
05/16/19	75	0.16	>72 hours	600	47,792
09/22/19	50	0.19	>72 hours	1,068	56,752
11/21/19	120	0.53	>72 hours	1,241	158,309
03/18/20	360	0.45	>72 hours	351	134,414
05/14/20	30	0.27	>72 hours	2,529	80,648

9. Provide a description of the method of flow measurement or estimate.

Maximum flow rate was calculated using the Rational Method - the peak rate of surface outflow from a given watershed is proportional to the watershed area and average rainfall intensity over a period of time just sufficient for all parts of the watershed to contribute to the outflow (Q = C*i*A).

The Total Fllow is calculated using the following equation: =(rainfall inches/12) * drainage area * 7.48
The drainage area is estimated at 479,160 square feet. 7.48 is number of gallons in a cubic foot. The resulting flow unit is gallons.

Outfall 003S

EPA ID Number *(copy from Item I of Form 1)*
IND016584641

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

VII. Discharge Information ***(Continued from page 3 of Form 2F)***

Part A. You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outf
See instructions for additional details.

Pollutant and CAS Number (if available)	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Oil and Grease	< 1.3 U mg/L	NA		NA	1	SEE ATTACHMENT 2F-III
Carbonaceous Biological	2.7 mg/L	NA		NA	1	
Chemical Oxygen	32 mg/L	NA	16.3 mg/L	NA	17	
Total Suspended	47 mg/L	NA	12.8 mg/l	NA	17	
Total Nitrogen	2.33 mg/L	NA		NA	1	
Total Phosphorus	0.0668 mg/L	NA		NA	1	
pH	Minimum (grab)	Maximum (grab)	Minimum (comp)	Maximum (comp)	1	
	7.50	7.50	NA	NA		

Part B. List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in tl
facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit).
Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number (if available)	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Note: Part A compounds are not repeated in Part B. Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Nitrate + Nitrite	0.83 mg/L	NA		NA	1	See Above
TKN	1.5 mg/L	NA		NA	1	
Copper	0.00275 J mg/L	NA		NA	1	
Lead	0.000971 J mg/L	NA		NA	1	
Zinc	1.1 mg/L	NA	0.080 mg/L	NA	17	
Fluoride	0.25 mg/l	NA		NA	1	
Cadmium, Total	< 0.00200 U mg/L	NA		NA	1	
Chromium, Total	0.00205 J mg/L	NA		NA	1	
Chromium, Hexavalent (dissolved)	0.0749 ug/L	NA		NA	1	
Mercury, Total	1.8 ng/L	NA		NA	1	
Nickel, Total	0.00169 J mg/L	NA		NA	1	
Silver, Total	< 0.000298 U mg/L	NA		NA	1	
Cyanide, WAD	< 0.0020 U mg/L	NA		NA	1	
Cyanide, Total	< 0.00200 U mg/L	NA		NA	1	
Naphthalene	< 0.67 U ug/L	NA		NA	1	

Notes: J indicates an estimated value between the method detection limit and the reporting limit. < indicates a non-detect value at the method detection limit.

Continued from the Front   Outfall 003S

Part C.	List each pollutant shown in Tables 2F-2. 2F-3, and 2F-4 that you know or have reason to believe is present. See the instructions for additional details and requirements. Complete one table for each outfall					
Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Adequate information to assess potential stormwater pollutants is provided in the following:						
	Form 2C, Section V's					
	Form 2F, Pages VII-1 and VII-2					

Part D. Provide data for the storm event(s) which resulted in the maximum values for the flow weighted composite sample.

1. Date of Storm Event	2. Duration of Storm *(in minutes)*	3. Total rainfall during storm event *(in inches)*	4. Number of hours between beginning of storm measured and end of previous measurable rain event	5. Maximum flow rate during rain event *(gallons/minute or specify units)*	6. Total flow from rain event *(gallons or specify units)*
06/15/16	120	0.81	>72 hours	3,449	439,899
09/26/16	75	0.10	>72 hours	681	54,309
11/02/16	240	2.73	>72 hours	5,813	1,482,624
03/25/17	45	0.17	<72 hours	1,930	92,325
06/29/17	240	1.10	>72 hours	2,342	597,394
09/19/17	240	1.23	<72 hours	2,619	667,995
12/04/17	40	0.10	>72 hours	1,278	54,309
03/27/18	180	0.17	>72 hours	483	92,325
05/09/18	30	0.12	>72 hours	2,044	65,170
08/20/18	60	0.34	>72 hours	2,896	184,649
12/01/18	180	0.27	<72 hours	767	146,633
01/07/19	180	0.12	<72 hours	341	65,170
05/16/19	75	0.16	>72 hours	1,090	86,894
09/22/19	50	0.19	>72 hours	1,942	103,186
11/21/19	120	0.53	>72 hours	2,257	287,835
03/18/20	360	0.45	>72 hours	639	244,389
05/14/20	30	0.27	>72 hours	4,599	146,633

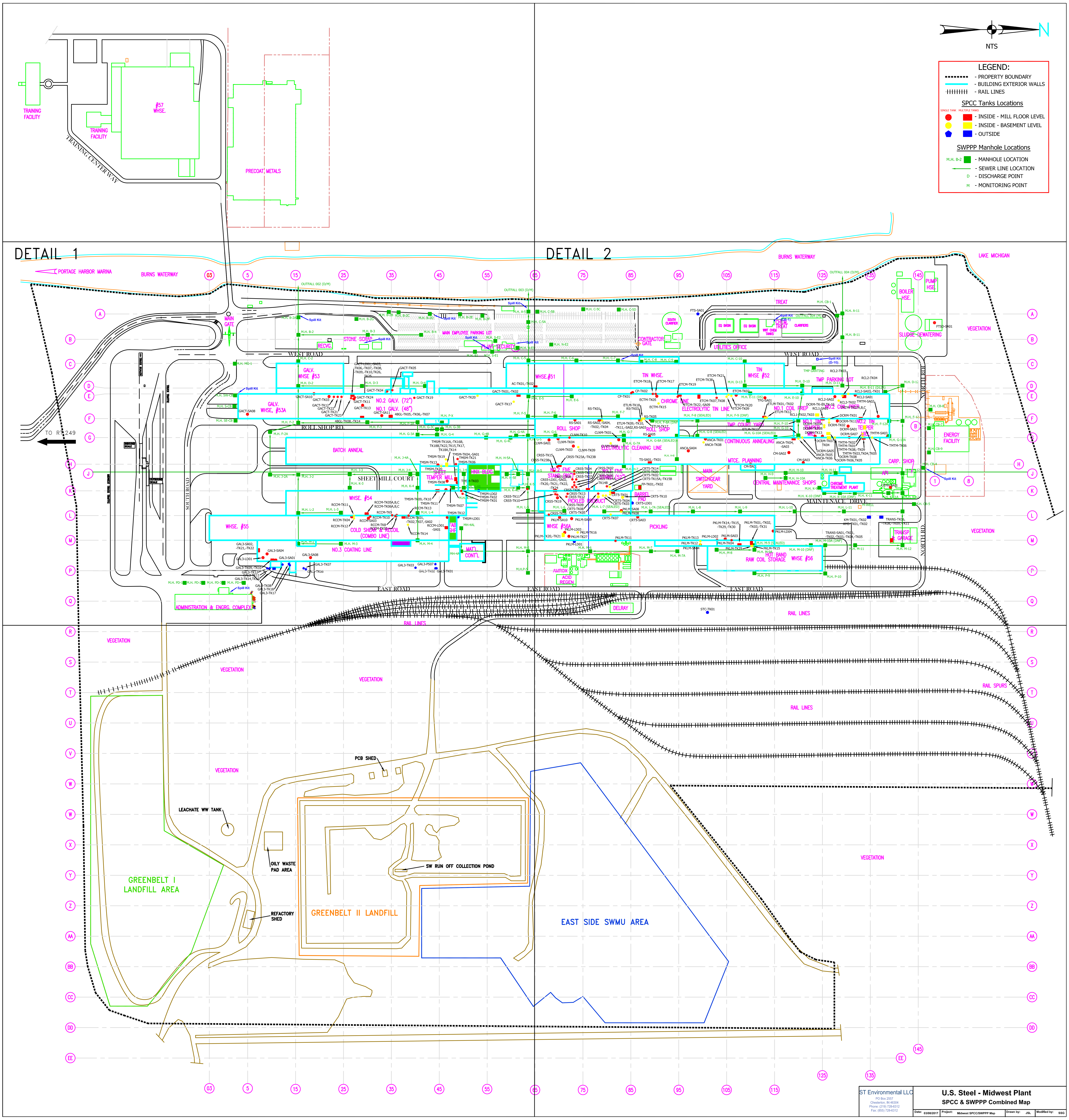
9. Provide a description of the method of flow measurement or estimate.

Maximum flow rate was calculated using the Rational Method - the peak rate of surface outflow from a given watershed is proportional to the watershed area and average rainfall intensity over a period of time just sufficient for all parts of the watershed to contribute to the outflow (Q = C*i*A).

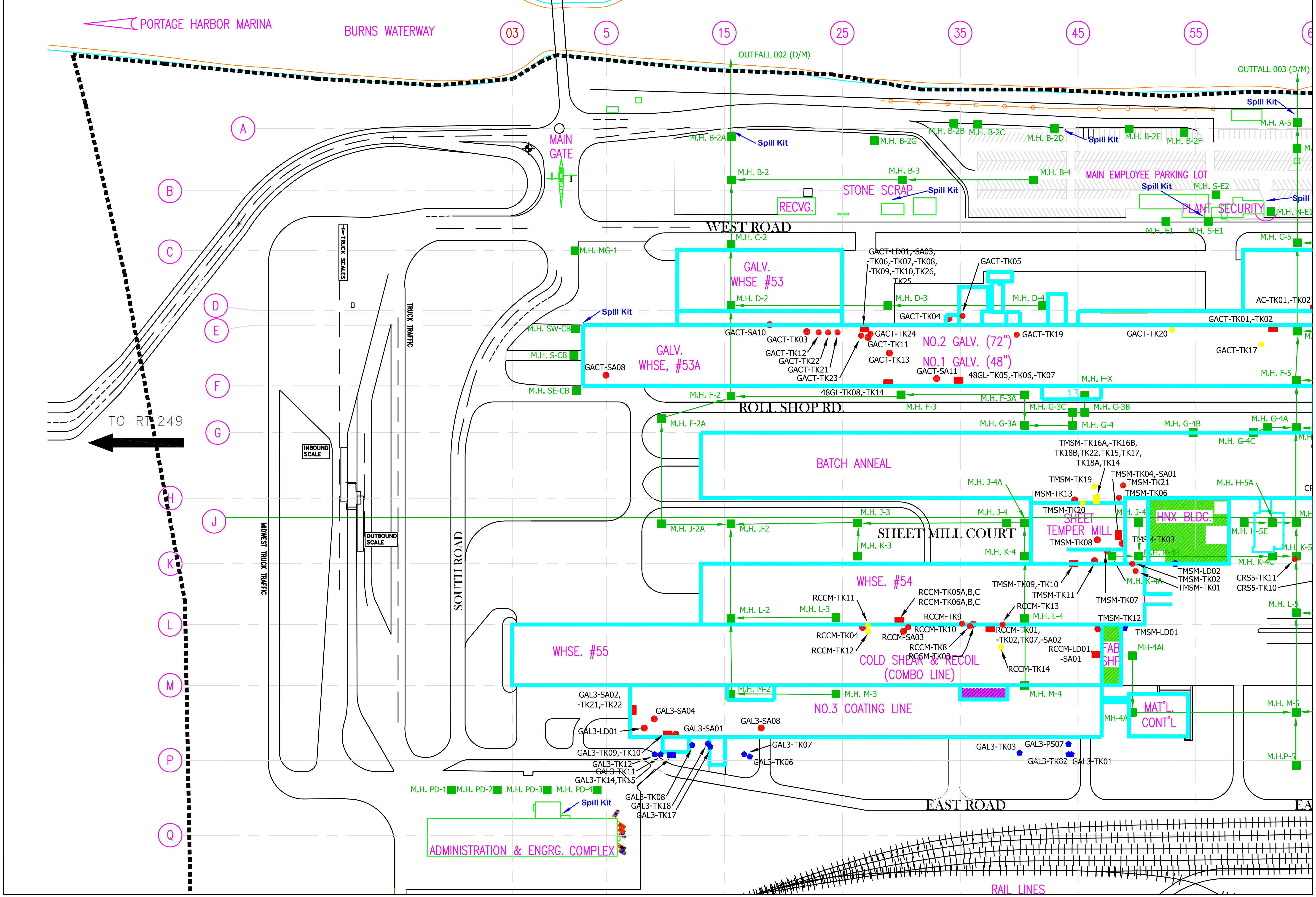
The Total Fllow is calculated using the following equation: =(rainfall inches/12) * drainage area * 7.48
The drainage area is estimated at 871,200 square feet. 7.48 is number of gallons in a cubic foot. The resulting flow unit is gallons.

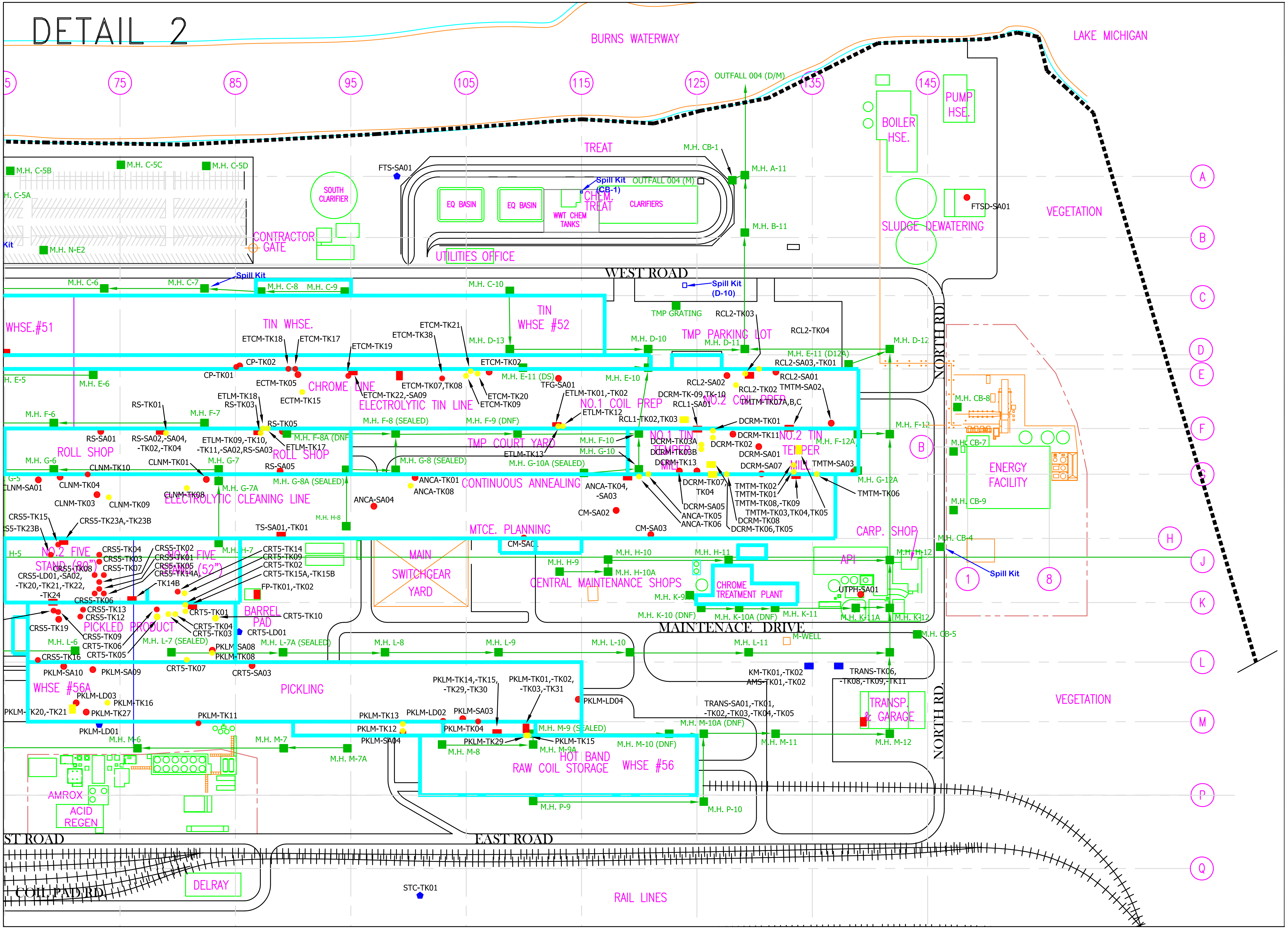
Attachment 2F-III

Combined SPCC and SWPPP Map
Detail 1 Map
Detail 2 Map


NTS
N
LEGEND:
- PROPERTY BOUNDARY
- BUILDING EXTERIOR WALLS
- RAIL LINES
SPCC Tanks Locations
SINGLE TANK
MULTIPLE TANKS
- INSIDE - MILL FLOOR LEVEL
- INSIDE - BASEMENT LEVEL
- OUTSIDE
SWPPP Manhole Locations
M.H. B-2
- MANHOLE LOCATION
- SEWER LINE LOCATION
D
- DISCHARGE POINT
M
- MONITORING POINT
DETAIL 1
DETAIL 2
TRAINING FACILITY
#57 WHSE.
PRECOAT METALS
TRAINING CENTER WAY
PORTAGE HARBOR MARINA
BURNS WATERWAY
LAKE MICHIGAN
TO RT 249
MAIN GATE
WEST ROAD
ROLL SHOP RD.
SHEET MILL COURT
EAST ROAD
MAINTENANCE DRIVE
GALV. WHSE. #53
GALV. WHSE. #53A
NO.2 GALV. (72")
NO.1 GALV. (48")
BATCH ANNEAL
WHSE. #54
WHSE. #55
COLD SHEET & RECOIL (COMBO LINE)
NO.3 COATING LINE
TEMPER MILL
WHSE. #51
ROLL SHOP
TIN WHSE.
CHROME LINE
ELECTROLYTIC TIN LINE
TIN WHSE. #52
TMP PARKING LOT
NO.1 COIL PREP
NO.2 COIL PREP
TMP COURT YARD
CONTINUOUS ANNEALING
ELECTROLYTIC CLEANING LINE
MTCE. PLANNING
MAIN SWITCHGEAR YARD
CENTRAL MAINTENANCE SHOPS
CHROME TREATMENT PLANT
CARP. SHOP
API
PICKLING
WHSE. #56A
PICKLED PRODUCT
HOT BAND RAW COIL STORAGE
WHSE. #56
TRANSP. GARAGE
ENERGY FACILITY
BOILER HSE.
PUMP HSE.
SLUDGE DEWATERING
TREAT
UTILITIES OFFICE
MAIN EMPLOYEE PARKING LOT
STONE SCRAP
RECVG.
SECURITY
CONTRACTOR GATE
MAT'L CONT'L
AMTOX
ACID REGEN
DELRAY
ADMINISTRATION & ENGRG. COMPLEX
RAIL LINES
RAIL SPURS
VEGETATION
PCB SHED
LEACHATE WW TANK
OILY WASTE PAD AREA
SW RUN OFF COLLECTION POND
GREENBELT I LANDFILL AREA
GREENBELT II LANDFILL
REFACTORY SHED
EAST SIDE SWMU AREA
ST Environmental LLC
PO Box 2557
Chesterton, IN 46304
Phone: (219) 728-6312
Fax: (855) 728-6312
U.S. Steel - Midwest Plant
SPCC & SWPPP Combined Map
Date: 03/08/2017
Project: Midwest SPCC/SWPPP Map
Drawn by: JSL
Modified by: SSG

DETAIL 1


PORTAGE HARBOR MARINA
BURNS WATERWAY
OUTFALL 002 (D/M)
OUTFALL 003 (D/M)
MAIN GATE
STONE SCRAP
RECVG.
MAIN EMPLOYEE PARKING LOT
PLANT SECURITY
WEST ROAD
GALV. WHSE #53
GALV. WHSE. #53A
NO.2 GALV. (72")
NO.1 GALV. (48")
ROLL SHOP RD.
BATCH ANNEAL
SHEET MILL COURT
SHEET TEMPER MILL
HNX BLDG.
WHSE. #54
WHSE. #55
COLD SHEAR & RECOIL (COMBO LINE)
NO.3 COATING LINE
MAT'L. CONT'L
TO RT 249
INBOUND SCALE
OUTBOUND SCALE
TRUCK SCALES
TRUCK TRAFFIC
MIDWEST TRUCK TRAFFIC
SOUTH ROAD
EAST ROAD
ADMINISTRATION & ENGRG. COMPLEX
RAIL LINES
Spill Kit


DETAIL 2
BURNS WATERWAY
LAKE MICHIGAN
75
85
95
105
115
125
135
145
OUTFALL 004 (D/M)
TREAT
M.H. CB-1
M.H. A-11
M.H. B-11
BOILER HSE.
PUMP HSE.
M.H. C-5B
M.H. C-5C
M.H. C-5D
M.H. C-5A
M.H. N-E2
SOUTH CLARIFIER
FTS-SA01
Spill Kit
(CB-1)
OUTFALL 004 (M)
EQ BASIN
EQ BASIN
CHEM. TREAT
WWT CHEM TANKS
CLARIFIERS
CONTRACTOR GATE
UTILITIES OFFICE
SLUDGE DEWATERING
FTSD-SA01
VEGETATION
A
B
C
D
E
F
G
H
J
K
L
M
P
Q
WEST ROAD
Spill Kit (D-10)
M.H. C-6
M.H. C-7
M.H. C-8
M.H. C-9
M.H. C-10
TMP GRATING
RCL2-TK03
RCL2-TK04
WHSE.#51
TIN WHSE.
TIN WHSE #52
M.H. D-13
M.H. D-10
M.H. D-11
TMP PARKING LOT
M.H. D-12
M.H. E-11 (D12A)
RCL2-SA03,-TK01
NORTH RD.
ETCM-TK18
ETCM-TK17
ETCM-TK19
ETCM-TK38
ETCM-TK21
CP-TK02
CP-TK01
ETCM-TK02
M.H. E-5
M.H. E-6
ECTM-TK05
CHROME LINE
ETCM-TK07,TK08
M.H. E-11 (DS)
TFG-SA01
M.H. E-10
RCL2-SA02
RCL2-SA01
RCL2-TK02
TMTM-SA02
TMTM-TK07A,B,C
ETLM-TK18
RS-TK03
ECTM-TK15
ETCM-TK22,-SA09
ETCM-TK20
ETCM-TK09
ETLM-TK01,-TK02
DCRM-TK-09,TK-10
ELECTROLYTIC TIN LINE
NO.1 COIL PREP
NO.2 COIL PREP
RCL1-SA01
RS-TK01
M.H. F-6
M.H. F-7
ETLM-TK12
RCL1-TK02,TK03
DCRM-TK01
M.H. F-8 (SEALED)
M.H. F-9 (DNF)
M.H. F-12
M.H. CB-8
RS-TK05
RS-SA01
RS-SA02,-SA04,
-TK02,-TK04
ETLM-TK09,-TK10,
-TK11,-SA02,RS-SA03
M.H. F-8A (DNF)
ETLM-TK17
ROLL SHOP
ROLL SHOP
TMP COURT YARD
ETLM-TK13
M.H. F-10
M.H. G-10
NO.1 TIN TEMPER MILL
DCRM-TK03A
DCRM-TK03B
DCRM-TK13
DCRM-TK02
DCRM-TK11
NO.2 TIN TEMPER MILL
M.H. F-12A
DCRM-SA01
DCRM-SA07
TMTM-SA03
M.H. CB-7
ENERGY FACILITY
M.H. G-6
CLNM-TK10
CLNM-TK01
M.H. G-7
RS-SA05
M.H. G-8 (SEALED)
M.H. G-10A (SEALED)
G-5
CLNM-SA01
CLNM-TK04
M.H. G-7A
M.H. G-8A (SEALED)
ANCA-TK01
ANCA-TK08
CONTINUOUS ANNEALING
ANCA-TK04,
-SA03
DCRM-TK07,
TK04
TMTM-TK02
TMTM-TK01
TMTM-TK08,-TK09
TMTM-TK03,TK04,TK05
M.H. G-12A
TMTM-TK06
M.H. CB-9
CLNM-TK03
CLNM-TK09
CLNM-TK08
ELECTROLYTIC CLEANING LINE
ANCA-SA04
CM-SA02
DCRM-SA05
ANCA-TK05
ANCA-TK06
DCRM-TK08
DCRM-TK06,TK05
CRS5-TK15
CRS5-TK23A,-TK23B
CRS5-TK23B
M.H. H-8
TS-SA01,-TK01
MTCE. PLANNING
CM-SA03
CARP. SHOP
M.H. CB-4
H-5
NO.2 FIVE STAND (80")
CRS5-TK04
CRS5-TK03
CRS5-TK07
CRS5-TK08
CRS5-TK02
CRS5-TK01
CRS5-TK05
CRS5-TK14A
NO.1 FIVE STAND (52")
M.H. H-7
CRT5-TK14
CRT5-TK09
CRT5-TK02
CRT5-TK15A,-TK15B
MAIN SWITCHGEAR YARD
CM-SA01
M.H. H-10
M.H. H-11
M.H. H-12
API
Spill Kit
1
8
CRS5-LD01,-SA02,
-TK20,-TK21,-TK22,
-TK24
TK14B
FP-TK01,-TK02
M.H. H-9
M.H. H-10A
CENTRAL MAINTENANCE SHOPS
CHROME TREATMENT PLANT
UTPH-SA01
CRS5-TK06
M.H. K-9
CRS5-TK13
CRS5-TK12
CRT5-TK01
BARREL PAD
CRT5-TK10
M.H. K-10 (DNF)
M.H. K-10A (DNF)
M.H. K-11
M.H. K-11A
M.H. K-12
CRS5-TK19
PICKLED PRODUCT
CRT5-TK04
CRT5-TK03
CRT5-LD01
MAINTENACE DRIVE
M-WELL
M.H. CB-5
M.H. L-6
CRS5-TK09
CRS5-TK06
M.H. L-7 (SEALED)
PKLM-SA08
M.H. L-7A (SEALED)
M.H. L-8
M.H. L-9
M.H. L-10
M.H. L-11
CRS5-TK16
CRT5-TK05
PKLM-TK08
CRT5-TK07
CRT5-SA03
KM-TK01,-TK02
AMS-TK01,-TK02
TRANS-TK06,
-TK08,-TK09,-TK11
PKLM-SA10
PKLM-SA09
WHSE #56A
PICKLING
PKLM-TK14,-TK15,
-TK29,-TK30
PKLM-TK01,-TK02,
-TK03,-TK31
PKLM-LD03
PKLM-TK16
PKLM-LD04
TRANS-SA01,-TK01,
-TK02,-TK03,-TK04,-TK05
TRANSP. & GARAGE
VEGETATION
PKLM-TK20,-TK21
PKLM-TK27
PKLM-TK11
PKLM-TK13
PKLM-LD02
PKLM-SA03
PKLM-LD01
PKLM-TK12
PKLM-TK04
M.H. M-9 (SEALED)
M.H. M-10A (DNF)
M.H. M-6
M.H. M-7
PKLM-SA04
PKLM-TK29
PKLM-TK15
M.H. M-10 (DNF)
M.H. M-11
M.H. M-12
M.H. M-7A
M.H. M-8
M.H. M-9A
HOT BAND RAW COIL STORAGE
WHSE #56
AMROX ACID REGEN
M.H. P-9
M.H. P-10
ST ROAD
EAST ROAD
DELRAY
COIL PAD RD
STC-TK01
RAIL LINES

Attachment I

Water Treatment Additives Information

ATTACHMENT I. U. S. STEEL MIDWEST - WATER TREATMENT ADDITIVES - OUTFALLS 002, 003, 004

Outfall	Item	Purpose/Application	Area
Outfall 002	Sodium Bisulfite	Dechlorination	Final Discharge to Burns Waterway
	Sodium Hypochlorite	Biocide for Mussel Control	Lake Water Pump Station
Outfall 003	Sodium Bisulfite	Dechlorination	Final Discharge to Burns Waterway
	Sodium Hypochlorite	Biocide for Mussel Control	Lake Water Pump Station
Outfall 004	ChemTreat BL-1307	pH Control	API Interceptor
	ChemTreat CL-240	Antifoam	Final Treatment
	ChemTreat CL-2480	Corrosion Inhibitor	Haskris Coolers
	ChemTreat CL-2865	Corrosion Inhibitor	3CL - Rectifier Closed Loop Cooling
	ChemTreat CL-2875	Corrosion Inhibitor	3CL - Pot Melt Closed Loop Cooling System
	ChemTreat CL-4442	Scale Inhibitor/Dispersant	3CL - Hot Water Rinse System
	ChemTreat FO-120	Antifoam	Final Treatment
	Lime	pH Control / Sludge Dewatering	Final Treatment
	Magnesium Hydroxide	Sludge Dewatering	Final Treatment
	ChemTreat P-817E	Polymer Flocculant	Chrome Treatment / Final Treatment
	ChemTreat P-841L	Coagulant	API Interceptor
	ChemTreat P8905L	Coagulant	API Interceptor
	ChemTreatP-891L	Coagulant	Chrome Treatment / Final Treatment
	ChemTreat S-101	Coagulant	Final Treatment
	Sodium Bisulfite	Dechlorination	Final Discharge to Burns Waterway
	Sodium Hypochlorite	Biocide for Mussel Control	Lake Water Pump Station
	Sulfuric Acid	pH Control	Chrome Treatment / Final Treatment
	Sodium Hydroxide	pH Control	Chrome Treatment
	AB Phycomycin SCP	Algae and Fungus Control	Final Treatment (Sedimentation Basin)
	Hydrogen Peroxide	Algae and Fungus Control; Potable Water Treatment	Final Treatment (Sedimentation Basin); Mix point of Outfall 104 and 004 piping

Note: All SDSs and dosage data have been previously submitted.

Attachment II

316(b) Related 122.21(r) Application Submission Requirements

U. S. STEEL MIDWEST COOLING WATER INTAKE STRUCTURE REQUIREMENTS – 2020 NPDES PERMIT APPLICATION UPDATES 40 CFR §122.21(R)(2) – (R)(8) AND 40 CFR §125.98(F)

Project name	**USS: Midwest NPDES Permit Renewal Support**
Project no.	**1690017494**
Version	**Original**
Date	**September 2020**
Prepared by	**Ramboll US Corporation**

CONTENTS

TABLES

APPENDICES

1. Introduction

The U.S. Steel Midwest Facility ("USS MW") finishes coils received from other U. S. Steel plants into cold rolled, galvanized, chromium or tin-plated strip and sheet products. The USS MW Plant, which withdraws an average[1] of 27 million gallons per day (MGD) from Lake Michigan, is subject to the CWA Section 316(b) Rule ("316(b) Rule") for cooling water intake structures ("CWIS") from existing facilities. The 316(b) Rule became effective on October 14, 2014, under Title 40 of the Code of the Federal Register (CFR) Parts 122 and 125. In accordance with the 316(b) Rule, USS MW meets all of the following applicability thresholds:

- Has a Design Intake Flow (DIF) withdrawal greater than 2 MGD of water from "waters of the U.S.";
- Utilizes at least 25 percent (%) of the water withdrawn for cooling purposes; and,
- Is subject to the NPDES Permit Program.

As per 40 CFR 122.21(r)(1)(ii), applicable facilities are required to provide cooling water intake information to the regulatory authority related to the intake and source water. As an existing facility with surface water intakes withdrawing greater than a DIF of 2 MGD, but withdrawing less than 125 MGD based on cumulative actual intake flow (AIF), and more than 25% of the intake flow used exclusively for cooling purposes, USS MW must address the following required information published in 40 CFR Part 122.21(r)(2) through (r)(8):

- Physical Information for Source Water (§122.21(r)(2))
- Physical description of CWIS (§122.21(r)(3))
- Biological Information for Source Water (§122.21(r)(4))
- Cooling Water System Data (§122.21(r)(5))
- Impingement Mortality BTA Demonstration (§122.21(r)(6))
- Entrainment Performance Studies (§122.21(r)(7))
- Operational Status (§122.21(r)(8))

Pursuant to 40 CFR 125.95(a)(1), existing facilities whose currently effective permit expires after July 14, 2018 are required to submit the information required in applicable sections of 40 CFR 122.21(r) when applying for a subsequent permit. This information was originally submitted to IDEM in August 2015 in the report titled "316(b) Information Request, Application for Renewal of NPDES Permit No. IN0000337, United States Steel Corporation Midwest Plant" (the "August 2015 CWIS Report").

After the initial submission of the 40 CFR 122.21(r) permit application studies, the permittee may request to reduce the information required, if conditions at the facility and in the waterbody remain substantially unchanged since the previous application so long as the relevant previously submitted information remains representative of current source water, intake structure, cooling water system, and operating conditions. Per federal regulations detailed in 40 CFR 125.94(c), the owner or operator of a facility is required to submit its request for reduced cooling water intake structure and waterbody application information to the Director at least two years and six months prior to the expiration of its NPDES permit. USS MW did request reduced application information, based on technical review of select conditions detailed in the August 2015 CWIS Report. This report serves as a supplement to the August 2015 CWIS Report (Appendix 1) and provides updates for applicable conditions.

[1] Average of 2015-2019 intake flows.

Additionally, per Permit Part IV.B.6, USS MW must submit information required to be considered by the Director per 40 CFR 125.98 for the entrainment BTA demonstration with this permit renewal application which includes a qualitative summary of the following:

i. Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federally-listed, threatened and endangered species, and designated critical habitat (e.g., prey base);
ii. Impact of changes in particulate emissions or other pollutants associated with alternate entrainment technologies;
iii. Land availability inasmuch as it relates to the feasibility of entrainment technology;
iv. Remaining useful plant life;
v. Quantified and qualitative social benefits and costs of available entrainment technologies when such information on both benefits and costs is of sufficient rigor to make a decision;
vi. Entrainment impacts on the waterbody;
vii. Thermal discharge impacts;
viii. Credit for reductions in flow associated with the retirement of units occurring within the ten years preceding October 14, 2014;
ix. Impacts on the reliability of energy delivery within the immediate area;
x. Impacts on water consumption; and,
xi. Availability of process water, gray water, waste water, reclaimed water, or other waters of appropriate quantity and quality for reuse as cooling water.

2. Source Water Physical Data [40 CFR §122.21(r)(2)]

The description and water quality regime of Lake Michigan has not changed since the August 2015 CWIS Report.

3. Cooling Water Intake Structure Data [40 CFR §122.21(r)(3)]

The cooling water intake structure configuration has not been modified since the August 2015 CWIS Report, nor are there any plans to change the current intake structure configuration.

4. Source Water Baseline Biological Characterization Data [40 CFR §122.21(r)(4)]

The source water baseline biological characterization information provided in the August 2015 CWIS Report is still considered representative of current conditions. Also, there are no additional Endangered, Threatened, or Rare Species that would be anticipated in the vicinity of USS MW (Appendix 2). Though there have been further impingement and entrainment studies performed for USS Gary Works Lakeside, an intake considered to be similarly representative, no species that would require additional protective measures have been identified. Finally, no additional impingement or entrainment studies have been performed at the USS MW Plant beyond what was conducted previously, and therefore no additional site-specific impingement or entrainment studies are available.

5. Cooling Water System Data [40 CFR §122.21(r)(5)]

The actual intake volumes associated with the USS MW Plant CWIS are reported annually to the Indiana Department of Natural Resources (IDNR) as a Significant Water Withdrawal Facility (SWWF) in Porter County. The surface water withdrawal design rate, identified under Registration No. 01089-EP, is listed as 48,000 gallons per minute (gpm), or 69.12 MGD.

Table 1 updates the intake flows (and associated velocities) from 2015 to 2019. As indicated, the Design Intake Flow (DIF) and Actual Intake Flow (AIF) (5-year average) are 69.1 MGD and 27.0 MGD, respectively. The DIF is based on the wet well pump capacity, as equivalent to the SWWF withdrawal design rate.

With respect to intake velocities, the Design Intake Velocity (DIV) is 0.5 feet per second (fps), assuming a cross-sectional open area of 202.75 square feet, from calculations provided in the August 2015 CWIS Report. As shown in Table 1, velocities from 2015 to 2019 range from 0.1 fps up to a maximum of 0.3 fps.

6. Chosen Method of Compliance with Impingement Mortality Standard [40 CFR §122.21(r)(6)]

USS MW will continue to comply with the Impingement Mortality Standard by operating a cooling water intake structure that has a maximum design intake velocity equal to or less than 0.5 fps.

7. Entrainment Performance Studies [40 CFR §122.21(r)(7)]

As presented in the August 2015 CWIS Report, entrainment of fish larvae and eggs was highly variable and relatively rare at the USS MW Pump Station. The results of entrainment sampling and the subsequent data evaluation demonstrate that entrainment of critical fish eggs, larvae, and other valued ichthyoplankton by the USS Midwest Facility CWIS and equipment is negligible.

8. Operational Status [40 CFR §122.21(r)(8)]

No changes in the operational status described in the 2015 CWIS report is anticipated.

9. Site-Specific Entrainment Requirements (Must and May Factors) [40 CFR §125.98(f)]

The Director must establish site-specific requirements for entrainment after reviewing the information submitted under 40 CFR 122.21(r). These entrainment requirements must reflect the Director's determination of the maximum reduction in entrainment warranted after consideration of factors relevant for determining the best technology available for minimizing adverse environmental impact at each facility. Per Permit Part IV.B.6, USS MW is submitting information required to be considered by the

Director per 40 CFR 125.98(f)(2) ("Must Factors") and (f)(3) ("May Factors") to assist with the entrainment BTA demonstration with this permit renewal application.

9.1 Numbers and types of organisms entrained, including, specifically, the numbers and species (or lowest taxonomic classification possible) of Federally-listed, threatened and endangered species, and designated critical habitat (e.g., prey base) [40 CFR §125.98(f)(2)(i)]

Entrainment characterization studies at the USS MW Plant demonstrated that entrainment of fish juveniles, larvae, and eggs was rare. Specifically, entrainment of any species were observed in only four of the 32 entrainment sampling events. In addition, there were no known Endangered, Threatened, or Rare aquatic species identified during the site-specific impingement and entrainment studies. Finally, there is no Federally-listed designated critical habitat in the vicinity of the intake.

9.2 Impact of changes in particulate emissions or other pollutants associated with alternate entrainment technologies [40 CFR §125.98(f)(2)(ii)]

The installation of additional cooling towers would be expected to result in:

- Significant increases in particulate emissions (e.g., PM, PM-10, and PM-2.5) from the cooling
- towers drift;
- Significant increases in carbon dioxide (CO_2) and other criteria air pollutants from the increase in energy required to operate the cooling towers;
- A potential increase of mists, fog, and icing from the cooling towers evaporation plumes impacting facility safety;
- Impacts to nearby vegetation/structures from drift corrosion; and,
- An increase in the total dissolved solids (TDS) to Lake Michigan due to concentrating pollutants in cooling tower cycles and use of water treatment additives to control corrosion.

9.3 Land availability inasmuch as it relates to the feasibility of entrainment technology [40 CFR §125.98(f)(2)(iii)]

The installation of cooling towers would result in a significant impact to land availability on the USS MW Plant footprint. The land availability is limited given the USS MW Plant proximity to heavily populated industrial and residential areas. The installation of cooling towers within the USS MW Plant's process areas would be complex given the existing limited available space and the need for an additional area that can be used for buffer. The buffer area is required due to safety concerns from the increased potential for mists, fog, and icing (see response to Section 9.2 above).

9.4 Remaining useful plant life [40 CFR §125.98(f)(2)(iv)]

USS MW has operated at this location since the early 1900s and plans to continue operations in the foreseeable future.

9.5 Quantified and qualitative social benefits and costs of available entrainment technologies when such information on both benefits and costs is of sufficient rigor to make a decision [40 CFR §125.98(f)(2)(v)]

USS MW is not required to and has not performed any detailed evaluation of quantified and qualitative social benefits and costs of available entrainment technologies. However, it is anticipated that the installation of cooling towers would result in minimal further reductions in entrainment rates, given the very low rates of entrainment rates already existing based on a review of the site-specific entrainment characterization data (see Section 9.1 response above). Finally, a rigorous evaluation of the quantified and qualitative social benefits and costs are not required pursuant to the Final 316(b) Rule since the USS MW Plant AIFs are less than 125 MGD.

9.6 Entrainment impacts on the waterbody [40 CFR §125.98(f)(3)(i)]

As discussed in the Section 9.1 response above, the entrainment impacts on Lake Michigan from operation of USS MW are expected to be negligible, given the minimal rates of entrainment observed during the site-specific studies.

9.7 Thermal discharge impacts [40 CFR §125.98(f)(3)(ii)]

The potential impact of existing thermal discharges on the receiving water (Portage-Burns Waterway which flows into Lake Michigan) have been assessed utilizing a thermal model. The model accounts for all thermal discharges from the facility (Outfalls 002, 003, and 004) and is used to assess compliance with the in-stream criteria at the edge of the thermal mixing zone. The discharges from the USS MW Plant are in compliance with the applicable NPDES permit limits that address both in-stream criteria and a rise in temperature above upstream values.

9.8 Credit for reductions in flow associated with the retirement of units occurring within the ten years preceding October 14, 2014 [40 CFR §125.98(f)(3)(iii)]

USS MW is continually evaluating water optimization projects but has not retired units that would impact water consumption within the last ten years preceding October 14, 2014.

9.9 Impacts on the reliability of energy delivery within the immediate area [40 CFR §125.98(f)(3)(iv)]

It is unknown if impacts on the reliability of energy delivery with the immediate area from installation of cooling towers would occur. However, it is believed that the impacts would be minimal given the nearby location of the Portside Energy co-generation facility, one of the electricity suppliers for the USS MW Facility.

9.10 Impacts on water consumption [40 CFR §125.98(f)(3)(v)]

It is unknown to the extent by which the installation of cooling towers would affect the water consumption, but it would certainly be expected to increase due to the additional consumptive use from cooling tower evaporation.

9.11 Availability of process water, gray water, waste water, reclaimed water, or other waters of appropriate quantity and quality for reuse as cooling water [40 CFR §125.98(f)(3)(vi)]

There is a lack of availability of process water, gray water, waste water, reclaimed water, or other waters of appropriate quantity and quality for reuse as cooling water. Therefore, this factor is not applicable to USS MW.

TABLES

TABLE 1. USS MW FLOW AND VELOCITY SUMMARY STATISTICS

Statistic	Withdrawal Flow			Velocity
	GPM	GPD	MGD	fps
Design Intake Flow			**69.1**	**0.5**
Min (all data)	10,195	14,681,000	14.7	0.1
Max (all data)	28,649	41,255,000	41.3	0.3
Average (all data)	18,742	26,988,823	27.0	0.2
Actual Intake Flow			**27.0**	**0.2**

Notes:
GPM = gallons per minute; GPD = gallons per day; MGD = million gallons per day; fps = feet per second
Data for 6/29/2017, 10/31/2017, 3/21/2018, 4/28/2018, 4/30/2018 and 12/31/2019 not utilized or included in summary statistics. Recorded values for these dates are questionable.
Monthly Average flows calculated from daily average flow values.

Monthly Average	Withdrawal Flow			Velocity
	GPM	GPD	MGD	fps
Jan-15	19,183	27,623,516	27.6	0.2
Feb-15	19,353	27,868,643	27.9	0.2
Mar-15	18,749	26,999,161	27.0	0.2
Apr-15	18,014	25,939,467	25.9	0.2
May-15	18,260	26,294,258	26.3	0.2
Jun-15	18,538	26,694,433	26.7	0.2
Jul-15	19,183	27,623,258	27.6	0.2
Aug-15	20,196	29,081,839	29.1	0.2
Sep-15	19,729	28,409,433	28.4	0.2
Oct-15	19,497	28,075,419	28.1	0.2
Nov-15	19,266	27,743,500	27.7	0.2
Dec-15	18,838	27,126,323	27.1	0.2
Jan-16	17,968	25,873,935	25.9	0.2
Feb-16	17,700	25,488,517	25.5	0.2
Mar-16	17,981	25,892,097	25.9	0.2
Apr-16	18,596	26,777,667	26.8	0.2
May-16	19,393	27,925,355	27.9	0.2
Jun-16	19,591	28,210,667	28.2	0.2
Jul-16	19,320	27,821,226	27.8	0.2
Aug-16	19,384	27,912,581	27.9	0.2
Sep-16	19,523	28,113,767	28.1	0.2
Oct-16	19,203	27,652,097	27.7	0.2
Nov-16	19,361	27,880,000	27.9	0.2
Dec-16	19,305	27,799,065	27.8	0.2
Jan-17	19,183	27,623,323	27.6	0.2
Feb-17	19,381	27,908,393	27.9	0.2
Mar-17	19,421	27,965,645	28.0	0.2
Apr-17	18,395	26,488,667	26.5	0.2
May-17	18,957	27,298,484	27.3	0.2
Jun-17	19,316	27,814,655	27.8	0.2
Jul-17	19,130	27,547,806	27.5	0.2
Aug-17	19,349	27,863,000	27.9	0.2
Sep-17	19,391	27,923,367	27.9	0.2
Oct-17	18,956	27,296,700	27.3	0.2
Nov-17	18,837	27,125,200	27.1	0.2
Dec-17	18,932	27,262,452	27.3	0.2
Jan-18	18,748	26,997,065	27.0	0.2
Feb-18	18,743	26,990,179	27.0	0.2
Mar-18	18,710	26,942,700	26.9	0.2
Apr-18	18,432	26,542,250	26.5	0.2

Monthly Average	Withdrawal Flow			Velocity
	GPM	GPD	MGD	fps
May-18	18,057	26,001,419	26.0	0.2
Jun-18	18,668	26,882,000	26.9	0.2
Jul-18	19,266	27,742,774	27.7	0.2
Aug-18	19,808	28,522,935	28.5	0.2
Sep-18	19,129	27,545,967	27.5	0.2
Oct-18	18,378	26,463,903	26.5	0.2
Nov-18	17,873	25,736,633	25.7	0.2
Dec-18	17,773	25,593,226	25.6	0.2
Jan-19	17,723	25,521,548	25.5	0.2
Feb-19	17,393	25,046,500	25.0	0.2
Mar-19	17,402	25,058,323	25.1	0.2
Apr-19	17,557	25,282,583	25.3	0.2
May-19	17,597	25,339,710	25.3	0.2
Jun-19	18,480	26,611,600	26.6	0.2
Jul-19	18,730	26,971,032	27.0	0.2
Aug-19	18,307	26,362,516	26.4	0.2
Sep-19	17,923	25,809,800	25.8	0.2
Oct-19	18,043	25,982,097	26.0	0.2
Nov-19	18,152	26,138,300	26.1	0.2
Dec-19	18,171	26,166,233	26.2	0.2

APPENDICES

APPENDIX 1

AUGUST 2015 CWIS REPORT

316(b) Information Request

Application for Renewal of
NPDES Permit No. IN0000337

United States Steel Corporation
Midwest Plant

August 2015

Contents

Attachments

316(b) Requirements

Per Part III.B.2. of the current United States Steel Corporation (U. S. Steel) Midwest Plant (Midwest) NPDES Permit No. IN0000337 (NPDES Permit), Midwest was required to perform, at a significant expense, on-going 2-year entrainment and impingement studies starting in Year 2 of the current Permit to further characterize the nature and extent of the environmental impacts from operation of the Cooling Water Intake Structure (CWIS) in a scientific manner. In addition to directly evaluating the extent of entrainment and impingement impacts over the full range of operating conditions and seasons, Midwest also evaluated the number of fish that are not safely returned back to Lake Michigan and fish behavior in the vicinity of the CWIS traveling screens (via the dual-frequency identification sonar (DIDSON) technology).

Pursuant to Part III.B.2.a and Part III.B.2.b of the NPDES Permit, Midwest conducted fish impingement and entrainment studies at the CWIS during the second (2013) and third (2014) years of the permit. Fish impingement and larvae/egg entrainment samples were collected at the Midwest CWIS from the week of June 25, 2012 through the week of May 19, 2014. A Final Report summarizing results from the two-year impingement and entrainment study was submitted to the Indiana Department of Environmental Management (IDEM) on May 22, 2015 (United States Steel Corporation Impingement and Entrainment Study, May 2015).

Per 40 CFR §125.95(a)(2) "The owner or operator of a facility subject to this subpart whose currently effective permit expires prior to or on July 14, 2018, may request the Director to establish an alternate schedule for the submission of the information required in 40 CFR §122.21(r) when applying for a subsequent permit (consistent with the owner or operator's duty to reapply pursuant to 40 CFR §122.21(d))." Although the currently effective permit expires prior to July 14, 2018 (February 1, 2016), it is U. S. Steel's position that enough information has been collected to fulfill submission requirements in 40 CFR §122.21(r). Furthermore, U. S. Steel requests U. S. Steel requests continued recognition that their existing CWIS represents the best technology available (BTA) to minimize Adverse Environmental Impact in accordance with Section 316(b) of the Clean Water Act.

Submission Requirements for Existing Facilities (40 CFR §122.21(r)(1)(ii)(A))

The owner or operator of an existing facility defined at 40 CFR §125.92(k) must submit to the Director for review the information required under paragraphs (r)(2) and (3) of this section and applicable provisions of paragraphs (r)(4), (5), (6), (7), and (8) of this section.

Source Water Physical Data (40 CFR §122.21(r)(2))

(i) A narrative description and scaled drawings showing the physical configuration of all source water bodies used by your facility, including areal dimensions, depths, salinity and temperature regimes, and other documentation that supports your determination of the water body type where each cooling water intake structure is located;

The Midwest Plant finishes coils received from other U. S. Steel plants into cold rolled, galvanized, chromium or tin plated strip and sheet products. Midwest is authorized to withdraw water for their process and non-contact cooling water needs from one intake. The Midwest Lakeside Pump Station (LSPS) is situated on U. S. Steel property along the southern shore of Lake Michigan. The intake structure is positioned a distance of approximately 2,800 feet offshore and at a lake depth of approximately 35 feet, and is designed with a closed intake conduit that withdraws water from the bottom of Lake Michigan via four intake openings

The area where the intake structure is located receives minimal commercial boat or ship traffic, but is subject to occasional recreational boat activity. Bottom substrates for this portion of the southern shoreline of Lake Michigan consist of sand, the surface of which is unconsolidated and is constantly disrupted by surface wave energy. No critical or significant habitats, such as submerged aquatic vegetation or “sea grass beds,” have been identified in the area of intake structure.

On May 1, 2014 the Midwest NPDES Permit was revised to include an updated thermal temperature model. Included in this revision was a six-month compliance schedule to install continuous temperature monitoring at the intake. Actual intake temperature readings have been collected since October 1, 2014. The monthly average temperature (°F) for data collected from October 2014 to June 2015 at the Midwest LSPS is as follows:

Month	Average Temperature (°F)	Standard Deviation
Jan	33.0	0.85
Feb	32.5	0.33
Mar	35.8	2.42
Apr	45.0	2.93
May	52.6	1.91
Jun	60.4	2.55
Jul		
Aug		
Sep		
Oct	58.8	2.32
Nov	45.0	5.22
Dec	37.3	0.85

Temperature data is also available for the Gary Works (Gary) Lakeside Pump Station (LPS) intake in Gary, Indiana. The Gary LPS receives water from intake openings approximately 3,000 ft off-shore in southern Lake Michigan and 6.5 miles west of the Midwest intake openings. Both the Gary LPS and Midwest LSPS intakes are located at approximately 30 foot depths. While local currents and geography likely induce some spatial and temporal variability, Gary LPS is representative of the general temperature regime of the southern Lake Michigan shoreline. Thus the temperature data from the Gary LPS generally represents the thermal pattern expected for the Midwest LSPS intake water.

The monthly average temperature (°F) for data collected from January 2005 to March 2008 at the Gary LPS is as follows:

Month	Average Temperature (°F)
January	40.2 ± 2.0
February	39.3 ± 4.9
March	36.5 ± 2.1
April	48.4 ± 4.1
May	53.8 ± 1.3
June	64.4 ± 1.5
July	70.6 ± 3.0
August	71.9 ± 7.1
September	70.6 ± 6.6
October	60.0 ± 5.7
November	52.1 ± 5.7
December	42.7 ± 1.6

A similar thermal pattern can be expected for Midwest intake waters.

Scaled drawings showing the physical configuration of Lake Michigan are included in Attachment 1.

(ii) Identification and characterization of the source waterbody's hydrological and geomorphological features, as well as the methods you used to conduct any physical studies to determine your intake's area of influence within the waterbody and the results of such studies;

The hydrologic zone of influence for the Midwest intake is the area surrounding the intake mouth where intake velocity is in excess of local natural lake circulation or wind induced current velocity, or where intake velocity restricts the ability of fish to swim away. Specific distances of influence from the intake mouth are unknown, but expected to be negligible based on the intake volume of water and divers' observations that fish swim freely in and out of the pipe openings. The zone of influence could be variable depending upon seasonal differences and meteorological conditions. A summary of the Midwest intake flows for the previous three years is provided below.

Intake Volume Data in MGD (July 2012 - June 2015)

	2012	2013	2014	2015	Overall
Max	34.39	45.98	36.87	35.26	45.98
Min	17.52	15.88	13.29	17.64	13.29
Avg	27.85	27.60	27.56	26.89	27.48

(iii) Locational maps;

A navigational chart depicting the location of the Midwest intake and outfalls, as well as soundings of Lake Michigan in the vicinity of the Midwest intake, is included in Attachment 1.

(iv) For new offshore oil and gas facilities that are not fixed facilities, a narrative description and/or locational maps providing information on predicted locations within the waterbody during the permit term in sufficient detail for the Director to determine the appropriateness of additional impingement requirements under §125.134(b)(4).

This requirement is not applicable to the Midwest Plant.

Cooling Water Intake Structure Data (40 CFR §122.21(r)(3))

(i) A narrative description of the configuration of each of your cooling water intake structures and where it is located in the water body and in the water column;

The Midwest Plant finishes coils received from other U. S. Steel plants into cold rolled, galvanized, chromium or tin plated strip and sheet products. The Midwest Plant is authorized to withdraw water for their process and non-contact cooling water needs from one intake. The intake is located approximately 2,800 ft. off-shore of the Midwest Plant in the Southern Lake Michigan Basin at a depth of roughly 30 feet.

The Midwest Pump Station intake is designed with a closed intake conduit that withdraws water from the bottom of Lake Michigan via four intake openings (diameter is approximately 8 feet 8 inches each), which are capped with bars spaced approximately 7 inches apart in a grid pattern. An 84-inch diameter pipe transports water from the openings in Lake Michigan to the Midwest LSPS.

The basic infrastructure of the Midwest LSPS includes two wet wells equipped with one vertical traveling screen (1/4 inch mesh) each; four vertical Fairbanks – Morse Deep Well Turbine pumps with a maximum capacity of approximately 12,000 gallons per minute (gpm) or 17.2 million gallons per day (mgd) each; and a distribution manifold to deliver cooling water to all plant areas. Since 2006, there has been no operation of the traveling screens at Midwest Pump Station because at that time it was determined that debris and impinged fish are minimal and do not pose any operational issues.

(ii) Latitude and longitude in degrees, minutes, and seconds for each of your cooling water intake structures;

Latitude and longitude for the Midwest CWIS are as follows:

41° 38’ 22.62” N
87° 10’ 45.30” W

(iii) A narrative description of the operation of each of your cooling water intake structures, including design intake flows, daily hours of operation, number of days of the year in operation and seasonal changes, if applicable;

From November 2007 through October 2008, Midwest LSPS intake volumes average approximately 36.4 MGD. Updated information from July 2012 through June 2015 shows a slight decrease in average intake volume at approximately 27.5 MGD. Typical operation with three pumps running at one time has remained consistent through 2007 to present. The CWIS operates continuously on a year-round basis. Current maintenance includes annual inspection by divers for integrity and condition status of the intake system and normal preventative maintenance inspections of mechanical pump and water distribution components. The traveling screens are currently not in operation.

Outfall 005 was closed in late 1993 and included removing a section of pipe leading to the outfall and physical plugging of the pipe ends with the knowledge and approval of IDEM. This action eliminated the return conduit for backwash from the traveling screens to discharge to Lake Michigan. With approval and knowledge of IDEM in 1995 there were no alternatives implemented to dispose of debris that may have been captured by the traveling screens. Personal conversation by Midwest representatives with personnel employed on-site during 1994 (Al Kirk on 10/3/2008) indicated the decision to discontinue use and plug Outfall 005 without providing an alternative was because debris and impinged fish were typically absent and posed no risk to operations of the Midwest LSPS.

Following closure of Outfall 005, operation of the two traveling screens was performed approximately once every 3-6 months to remove accumulated debris. Debris consisted of a few plastic bags, bio-film, and zebra mussel remains that were removed from the trough in the Midwest LSPS after backwash.

Rotation of the traveling screens was found to be unnecessary and eventually stopped approximately in 2006 as debris and impinged fish were typically absent during backwash. Since 2006, there has been no operation of the traveling screens at the Midwest LSPS because debris and impinged fish are minimal and do not pose any operational issues. Other than routine maintenance, there has been no repair or replacement of infrastructure at the Midwest LSPS.

Currently, the traveling screens at the Midwest LSPS are nonfunctional. Pump operation over the past 25 years has demonstrated debris and fish impingement do not occur. Therefore, Midwest does not currently have plans to refurbish, repair, or remove the infrastructure of the traveling screens. In addition, Midwest has considered complete removal of the traveling screens. However, due to the condition of the screens, removal activities pose a significant risk to the integrity of pump operations at the Midwest LSPS.

Chlorination of the intakes near the openings in Lake Michigan occurs continuously from approximately mid-May to mid-November for zebra mussel controls.

(iv) A flow distribution and water balance diagram that includes all sources of water to the facility, recirculating flows, and discharges;

Midwest Process Flow Diagrams are included in Attachment 2.

(v) *Engineering drawings of the cooling water intake structure*.

Drawings that show the intake structure, the pipe conduit to the Midwest LSPS, and the pump station infrastructure and equipment included are as follows:

Drawing A730-0001	General location, plan and profile of the Lake Michigan intake structure
Drawing A730-0002	Details in inlet structure and piping at intake chamber
Drawing A730-0015	General arrangement and detail of inlet extension
Drawing A730-0019	Subaqueous Intake, Zebra Mussel Control
Drawing A700-0021	Composite of Underground Utilities
Drawing B730-0005	Pump Station #1
Drawing B730-0006	Pump Station #1

Drawings are included in Attachment 3.

Source Water Baseline Biological Characterization Data (40 CFR §122.21(r)(4))

40 CFR §122.21(r)(4): This information is required to characterize the biological community in the vicinity of the CWIS and to characterize the operation of the CWIS. […] This supporting information must include existing data (if they are available). However, you may supplement the data using newly conducted field studies if you choose to do so.

(i) A list of the data in paragraphs (r)(4)(ii) through (vi) of this section that are not available and efforts made to identify sources of the data;

Due to the lack of traveling screens at the Midwest CWIS, a study to determine the actual number or species of impinged fish could not be conducted ((r)(4)(ii - vi)). A DIDSON sonar system was used to estimate the number of fish inside of the CWIS but actual species could not be identified. Impingement and DIDSON data collected at the U. S. Steel Gary Works plant were used to model the potential number of individual fish that may be impinged at the Midwest plant.

No additional previous studies of local or regional fish fauna in the vicinity of the Midwest LSPS were identified.

(ii) A list of species (or relevant taxa) for all life stages and their relative abundance in the vicinity of the cooling water intake structure;

Species found in the vicinity of the intake include organisms common to nearshore waters of the Southern Lake Michigan Basin. Composition and abundance of the organisms will vary spatially depending upon meteorological conditions, life stage, reproduction, and feeding behavior; and vary temporally depending upon season.

Impingement and entrainment data from an existing 1977 316(b) Study (EIA 1978) and a March 2008 impingement study, both performed for the Gary LPS, are representative of the species found in the vicinity of the Midwest intake due to location along the shoreline and comparable distances off shore. A total of 31 different species were identified and reported as impinged during the year-long 316(b) study in 1977. Two species (round goby and yellow perch) were identified from the Gary LPS impinged during the 24-hour March 2008 impingement study.

Additional species in the vicinity of the Midwest Plant CWIS are included in the Midwest Plant Impingement and Entrainment Study Summary Report (Attachment 4).

(iii) Identification of the species and life stages that would be most susceptible to impingement and entrainment. Species evaluated should include the forage base as well as those most important in terms of significance to commercial and recreational fisheries;

Species most susceptible to impact by the Midwest LSPS intake would include those species that typically reside in the shallow waters for reproduction, growth, or trophic purposes on a continual or seasonal basis. The table below depicts the species that were most susceptible based on the impingement data for the Gary LPS from the Gary 1977 316(b) Study.

Species/Life Stage	**Time Period**
Rainbow smelt adult-juvenile	August to January
Rainbow smelt prolarvae to juvenile	April to November
Mottled sculpin adult-juvenile	February to April
Alewife adult-juvenile	March to December
Alewife early prolarvae to postlarvae	April to November
Johnny darter adult-juvenile	April to September
Spoonhead sculpin adult-juvenile	May to July
Yellow perch adult-juvenile	March to November
Yellow perch prolarvae	April to November
Trout perch adult-juvenile	June to December
Trout perch prolarvae	April to November
Nine-spine stickleback adult-juvenile	May to July
Salmon adult-juvenile	October to December
Smallmouth bass prolarvae	April to November

Yellow perch were found to be the most susceptible fish to impingement during the March 2008 Fish Impingement Study at the Gary LPS. However, no fish observations, records of fish impingement, or documents referencing a need to protect against fish impingement were reported or found to be necessary at Midwest during March 2008.

Additional species susceptible to impingement and entrainment are included in the Midwest Plant Impingement and Entrainment Study Summary Report (Attachment 4).

(iv) Identification and evaluation of the primary period of reproduction, larval recruitment, and period of peak abundance for relevant taxa;

Representative data is included in the Midwest Plant Impingement and Entrainment Study Summary Report (Attachment 4).

(v) Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the cooling water intake structure;

Representative data is included in the Midwest Plant Impingement and Entrainment Study Summary Report (Attachment 4).

(vi) Identification of all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at your cooling water intake structures;

As detailed in the Midwest Plant Impingement and Entrainment Study Report (Attachment 4), no threatened or endangered species were encountered; nor were there any species on the Indiana Department of Natural Resources list of species of concern collected during sampling (Indiana Department of Natural Resources 2015).

(vii) Documentation of any public participation or consultation with Federal or State agencies undertaken in development of the plan; and

U. S. Steel submitted to IDEM proposals for conducting a two-year impingement study and two-year entrainment study. The proposals were provided to IDEM at least 90 days prior to the start of the proposed studies (see Attachment 5). No other public participation or consultation with Federal or State agencies was undertaken in development of the plan.

(viii) If you supplement the information requested in paragraph (r)(4)(i) of this section with data collected using field studies, supporting documentation for the Source Water Baseline Characterization must include a description of all methods and quality assurance procedures for sampling, and data analysis including a description of the study area; taxonomic identification of sampled and evaluated biological assemblages (including all life stages of fish and shellfish); and sampling and data analysis methods. The sampling and/or data analysis methods you use must be appropriate for a quantitative survey and based on consideration of methods used in other biological studies performed within the same source water body. The study area should include, at a minimum, the area of influence of the cooling water intake structure.

The Midwest Plant Impingement and Entrainment Study Summary Report (Attachment 4) includes all required methods, quality assurance procedures, and data analysis.

(ix) *In the case of the owner or operator of an existing facility or new unit at an existing facility, the Source Water Baseline Biological Characterization Data is the information in paragraphs (r)(4)(i) through (xii) of this section*.

Information requested in paragraphs (r)(4)(i) through (xii) of this section is enclosed.

(x) For the owner or operator of an existing facility, identification of protective measures and stabilization activities that have been implemented, and a description of how these measures and activities affected the baseline water condition in the vicinity of the intake.

Coastal shoreline fish assemblages in the vicinity of the Midwest Plant and the available habitat in the vicinity of the Midwest CWIS intake crib is limited (Simon and Morris 2012, Jude et al. 2007). Moreover, the distance of the intake crib from the shore likely reduces this area of the lake to planktivorous fish. The configuration of the vertical intake design combined with lake depth is effective in minimizing fish entrainment.

(xi) For the owner or operator of an existing facility, a list of fragile species, as defined at 40 CFR §125.92(m), at the facility. The applicant need only identify those species not already identified as fragile at 40 CFR §125.92(m). New units at an existing facility are not required to resubmit this information if the cooling water withdrawals for the operation of the new unit are from an existing intake.

Fragile species are considered in the Midwest Plant Impingement and Entrainment Study Summary Report (Attachment 4).

(xii) For the owner or operator of an existing facility that has obtained incidental take exemption or authorization for its cooling water intake structure(s) from the U. S. Fish and Wildlife Service or the National Marine Fisheries Service, any information submitted in order to obtain that exemption or authorization may be used to satisfy the permit application information requirement of paragraph 40 CFR §125.95(f) if included in the application.

U. S. Steel has not obtained incidental take exemption or authorization for its CWIS from the U. S. Fish and Wildlife Service or the National Marine Fisheries Service. This requirement is not applicable to the Midwest Plant.

Cooling Water System Data (40 CFR §122.21(r)(5))

i. A narrative description of the operation of the cooling water system and its relationship to cooling water intake structures; the proportion of the design intake flow that is used in the system; the number of days of the year the cooling water system is in operation and seasonal changes in the operation of the system, if applicable; the proportion of design intake flow for contact cooling, non-contact cooling, and process uses; a distribution of water reuse to include cooling water reused as process uses; a distribution of water reuse to include cooling water reused as process water, process water reused for cooling, and the use of gray water for cooling; a description of reductions in total water withdrawals including cooling water intake flow reductions already achieved through minimized process water withdrawals; a description of any cooling water that is used in a manufacturing process either before or after it is used for cooling, including other recycled process water flows; the proportion of the source waterbody withdrawn (on a monthly basis);

The Midwest LSPS intake is designed with a closed intake conduit that withdraws water from the bottom of Lake Michigan via four intake openings (diameter is approximately 8 feet 8 inches each), which are capped with bars spaced approximately 7 inches apart in a grid pattern. The four intake openings are located approximately 2,800 ft off-shore of the U. S. Steel Midwest Facility property in the Southern Lake Michigan Basin. An 84-inch diameter pipe transports water from the openings in Lake Michigan to the Midwest LSPS. Chlorination of the intakes near the openings in Lake Michigan occurs continuously from approximately mid-May to mid-November for zebra mussel control.

The basic infrastructure of the Midwest LSPS includes two wet wells equipped with four vertical wet well pumps. Since 2006, there has been no operation of the traveling screens at the Midwest LSPS because it was determined that debris and impinged fish do not pose a risk to operations of the pumps. Total design withdrawal capacity of the Midwest LSPS is 48,000 GPM, or 69.12 MGD; typical operation is roughly 50% of the design withdrawal capacity. The cooling water system is in operation continuously, 365 days per year.

Additionally based on discharge flows, roughly 30% on average or 45% at maximum of the intake waters are used for contact cooling or other process uses. All other waters are utilized for noncontact cooling purposes. Process flow diagrams of plant operations are included in Attachment 2. Water reuse throughout the Midwest Plant is minimal. Water use at the plant has been minimized to the extent practicable based on water demand at the plant.

ii. Design and engineering calculations prepared by a qualified professional and supporting data to support the description required by paragraph (r)(5)(i) of this section;

The proportion of intake flow that is used in the system for contact cooling, non-contact cooling, and process uses is based on discharge flows as reported in the Permit Renewal Application.

Velocity of the water at the intake structure in Lake Michigan is below the velocity of 0.5 ft/s that is believed to impair fish swimming ability, and is the suggested velocity at the traveling screen location believed to protect fish from mortality due to impingement. Velocity of the water at the opening of the Lake Michigan intake structures was calculated using the equation V = Q/A, where;

V = velocity

Q = volume of water pumped

A = net area of the 4 Lake Michigan intake openings

V = Q / A = (Flow in MGD*1,000,000)/(Area in sq. ft * 7.48 gal / cu. ft * 86400 sec / hr)

PARAMETER	UNITS	SUBMERGED INTAKES
Pump Station In Service?	Y/N	Y
Number of Intakes	#	4
Intake Diameter	inches	104
Intake Area	sq feet	58.99
Number of Intake Bars	#	26
Average Length	inches	92
Average Width	inches	0.5
Intake Bar Area	sq feet	8.31
Net Area Per Intake	sq feet	50.69
Total Area of the Intakes	sq feet	202.75
Maximum Design Intake Flow	**MGD**	**69**
Maximum Design Intake Velocity	**fps**	**0.5**

Based on the maximum (42 MGD), average (36 MGD) and minimum (28 MGD) recorded values at the Midwest LSPS intake flow meters from November 2007 through October 2008 months, the water intake velocity at the mouth of the Lake Michigan intake structures range from 0.3 ft/s (maximum) to 0.2 ft/s (minimum) with an average intake velocity of 0.3 ft/s.

Based on the maximum (46 MGD), average (28 MGD) and minimum (13 MGD) recorded values at the Midwest LSPS intake totalizers from July 2012 through June 2015, the water intake velocity at the mouth of the Lake Michigan intake structures range from 0.4 ft/s (maximum) to 0.1 ft/s (minimum) with an average intake velocity of 0.2 ft/s.

Calculated Intake Velocity in FPS (July 2012 - June 2015)

Intake Velocity (fps)	2012	2013	2014	2015	Overall
Max	0.3	0.4	0.3	0.3	0.4
Min	0.1	0.1	0.1	0.1	0.1
Avg	0.2	0.2	0.2	0.2	0.2

The more recent data collected further supports the initial 2007/2008 data. The magnitude of the calculated velocities at the mouth of the intake structures in Lake Michigan is equal to or less than a velocity of 0.5 ft/s that is believed to impair fish swimming ability and demonstrates the area of hydrologic influence for the Midwest intake structure is negligible.

iii. Description of existing impingement and entrainment technologies or operational measures and a summary of their performance, including but not limited to reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and usage.

The distance of the intake crib from the shore likely reduces this area of the lake to planktivorous fish, and the configuration of the vertical intake design combined with lake depth is effective in minimizing fish entrainment. In addition, the Midwest Plant withdraws and uses less water than other industrial facilities located in the general vicinity of the Midwest Plant on Lake Michigan.

Chosen Method for Impingement Compliance (40 CFR §122.21(r)(6))

The Midwest Plant's chosen method for impingement compliance is to operate a CWIS that has a maximum design intake velocity of 0.5 ft/sec as described in 40 CFR §125.94(c)(2). The Midwest Plant's intake structure has a maximum DIV of 0.5 ft/sec. In addition to the maximum DIV, the average actual intake velocity at Midwest is 0.2 ft/sec, which is well under the 0.5 ft/sec threshold.

Based on these studies, U. S. Steel requests continued recognition that their existing CWIS represents the best technology available (BTA) to minimize Adverse Environmental Impact in accordance with Section 316(b) of the Clean Water Act. There have been no material changes to the existing CWIS nor was there any change in Midwest Plant operations that would result in the need for additional intake flow since the last permit application.

U. S. Steel also requests the termination of any additional impingement and/or entrainment studies until any requested permit modification would result in material changes to the existing CWIS or change in Midwest Plant operations would result in the need for additional intake flow above the thresholds described in 40 CFR §122.21. The Midwest Plant's chosen method of compliance under 40 CFR §122.21(r)(6) does not require additional impingement or entrainment studies to be performed during the next permit term.

Entrainment Performance Studies (40 CFR §122.21(r)(7))

> *The owner or operator of an existing facility must submit any previously conducted studies or studies obtained from other facilities addressing technology efficacy, through-facility entrainment survival, and other entrainment studies. Any such submittals must include a description of each study, together with underlying data, and a summary of any conclusions or results. Any studies conducted at other locations must include an explanation as to why the data from other locations are relevant and representative of conditions at your facility. In the case of studies more than 10 years old, the applicant must explain why the data are still relevant and representative of conditions at the facility and explain how the data should be interpreted using the definition of entrainment at 40 CFR 125.92(h).*

Midwest Plant Impingement and Entrainment Study Report (May 2015)

Entrainment of fish larvae and eggs was highly variable and relatively rare at the Midwest Pump Station. The results of entrainment sampling and the subsequent data evaluation demonstrate that entrainment of critical fish eggs, larvae, and other valued ichthyoplankton by the Midwest Plant CWIS and equipment is negligible. See Attachment 4 for more details.

Midwest Plant Intake Chamber, Intake Pipe, and Wet Well Inspections (2006-2008)

Underwater video from inspections conducted by Sea Brex Marine Inc. during dives in June/July 2006, April/May 2007, and October 2008 was reviewed specifically to record the number of fish encountered during the inspection. Dives in 2006 and 2007 included the intake chamber and the 2800 foot intake pipe, but not the wet well. The October 2008 dives included the wet well and intake chamber only. The results indicated the following:

> June 14, 2006: Pipeline inspection from intake chamber at pumphouse outwards 2000 ft: 34 total fish consisting of 23 live fish 1-3 in. long and 11 dead fish 1-2 in. long. All but 3 fish were gobies.
>
> June 14, 2006: Intake cribs in Lake Michigan inward 1000 ft: 73 total fish consisting of 69 live fish 1-2 in. long. Fish identified included 5 live and 2 dead gobies 1-3 in. long, and one live perch 3 in. long.
>
> July 17 and July 26, 2006: Pumphouse bar rack to intake crib in Lake Michigan: 37 total fish consisting of live fish 1-2 in. long. One fish identified as a goby 1-2 in. long.
>
> April 9, 2007: Pipeline inspection from intake chamber at pumphouse outward 2400 ft: 1 total fish consisting of a dead goby 1-2 in. long.
>
> April 9, 2007: Lake Michigan intake crib inspection: 12 total fish consisting of 11 live fish 1-3 in. long and 1 dead fish 1-2 in. long. Fish identified included 6 live gobies 1-3 in. long and 1 dead goby 1-2 in. long.
>
> May 10-11, 2007: Lake Michigan east and west intake final inspection: 10 total fish consisting of live fish 1-3 in. long. Four fish identified as gobies 1-3 in. long.
>
> October 16, 2008: Intake chamber: 4 total fish consisting of 3 live gobies and 1 dead goby. Wet well: 3 total fish consisting of 2 live gobies and 1 dead goby.

These video count results range from a total of zero to 73 fish depending upon time of inspection and location within the intake system. The video counts of fish demonstrate the variability in fish impingement that can occur over time. It is unknown whether the same fish was encountered more than once and duplicate counted during the video recording of the inspections presented above. However, the video count in combination with available observational information from U. S. Steel personnel demonstrate that fish within the intake system at Midwest LSPS can freely swim about and are unlikely to be impacted by the intake system, pumps, and other infrastructure.

There are no known documents associated with Midwest or its previous owners prior to 2006 that report fish observations, or provide records of fish impingement, or other reports that indicate operational practices, pump or infrastructure maintenance, or changes in operations were necessary at any time due to fish impingement at Midwest LSPS.

Gary Works Lakeside Pump Station Entrainment Studies (1977)

Entrainment data is available for the Gary LPS during the 1977 316(b) study. Sampling was conducted from April 6th through November 1, 1977 and indicated abundance of fish eggs and fish larvae varied among the sampling periods. Entrained fish larvae ranged from zero on several occasions during April, May, and August through November to 44 per 1,000 cubic meters of water (264,100 gallons) on June 6-7, 1977. Entrained fish eggs ranged from zero on several occasions during April, May, and August through November to 3,164 per 1,000 cubic meters on July 15-16, 1977. A total of 135 fish larvae 15,740 fish eggs were collected over the entire sampling period compared to a total of for all samples combined. June and July were peak months for both fish larvae and fish egg entrainment, with higher numbers of fish eggs collected during the 0200-1000 hrs time period. Fish larvae abundance was represented by Alewife (34.1%), minnow (20.7%), unidentified larvae (17.8%), Yellow perch (11.9%), and less than 8% for each of Rainbow smelt, Smallmouth bass, and Trout-perch.

Gary Works Entrainment Studies (2011-2013)

The Lakeside CWIS at Gary Works was chosen to act as a surrogate for the Midwest CWIS because they both have intake pipes located similar distances off-shore in Southern Lake Michigan in roughly 9 meters of water (NOAA 1990). Other pump stations at Gary Works do not have off-shore intakes.

Reports for 316(b) CWIS Entrainment and Impingement Studies were submitted to IDEM between 2012 and 2014 and detailed results for studies between 2011 and 2013. Studies showed that entrainment of fish larvae and eggs was highly variable and relatively rare at the LPS. At the LPS and Gary Works PS #1 sites, a documentation of no entrainment occurred for a minimum of 68 percent of sample events. Entrainment of fish larvae and eggs therefore does not appear to be significant at Gary Works; 70 percent of sampling events found no icthyoplankton at all.

Operational Status (40 CFR §122.21(r)(8))

The owner or operator of an existing facility must submit a description of the operational status of each generating, production, or process unit that uses cooling water, including but not limited to:

i. ***For power production or steam generation, descriptions of individual unit operating status, including age of each unit, capacity utilization rate (or equivalent) for the previous 5 years, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, including identification of any operating unit with a capacity utilization rate of less than 8 percent averaged over a 24-month block contiguous period, and any major upgrades completed within the last 15 years, including but not limited to boiler replacement, condenser replacement, turbine replacement, or changes to fuel type;***

Portside Energy (Portside) is a nested contractor located on the Midwest Plant's site that produces steam and electricity. Portside is tied into Midwest's service water system that receives water from the Midwest LSPS. Portside has 2 auxiliary boilers that are natural gas fired and are rated at 1500 psig and 175,000 #/hr. Portside has one natural gas turbine generator that is rated at 44,370 KW and one non condensing steam turbine generator that is rated at 19,250 KW. They also have a once through steam generator that reduces 1500 psig steam to 25 psig steam. All equipment was installed between 1996 and 1997, with no major upgrades since. Portside operations are relatively constant, only shutting down equipment for required maintenance and inspections. The operations of Portside Energy does not significantly affect the water withdrawal rates at the Midwest LSPS.

ii. ***Descriptions of completed, approved, or scheduled up-rates and Nuclear Regulatory Commission relicensing status of each unit at nuclear facilities;***

This requirement is not applicable to the Midwest Plant.

iii. ***For process units at your facility that use cooling water other than for power production or steam generation, if you intend to use reductions in flow or changes in operations to meet the requirements of 40 CFR 125.94(c), descriptions of individual production processes and product lines, operating status including age of each line, seasonal operation, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors, any major upgrades completed within the last 15 years, and plans or schedules for decommissioning or replacement of process units or production processes and product lines;***

This requirement is not applicable to the Midwest Plant, as reductions in flow or changes in operations are not planned to meet the requirements of 40 CFR 125.94(c).

iv. ***For all manufacturing facilities, descriptions of current and future production schedules,***

Production data from 2010-2014 are included in the attached Table ES-2 in the Permit Renewal Application. No changes are planned to future production scenarios.

v. ***Description of plans or schedules for any new units planned within the next 5 years.***

No new units are planned for the Midwest Plant within the next 5 years.

Entrainment Characterization Study (40 CFR §122.21(r)(9))

Under the Final 316(b) Regulations (specifically 40 CFR §122.21(r)(9)), facilities with actual intake flows greater than 125 million gallons per day are required to evaluate entrainment impacts; U. S. Steel Midwest Plant CWIS is below this threshold with an average actual intake flow of 28 MGD between July 2012 and June 2015. Consequently in addition to this regulatory exemption, the high number of samples with no entrained ichthyoplankton, and the few positive samples dominated by round goby larvae indicate that the impact due to entrainment would be considered negligible. Therefore, U. S. Steel asserts that no further studies and/or evaluations are needed with regard to entrainment at the Midwest CWIS.

Comprehensive Technical Feasibility and Cost, Benefits Valuation Study, Non-Water Quality Impacts Assessment, and Peer Review (40 CFR §122.21(r)(10-13))

Under the Final 316(b) Regulations facilities with actual intake flows greater than 125 million gallons per day are required to evaluate comprehensive technical feasibility and cost, complete a benefits valuation study, non-water quality impacts assessment, and peer review; U. S. Steel Midwest Plant CWIS is below this threshold with an average actual intake flow of 28 MGD between July 2012 and June 2015. Consequently in addition to this regulatory exemption, the high number of samples with no entrained ichthyoplankton, and the few positive samples dominated by round goby larvae indicate that the impact due to entrainment would be considered negligible. Therefore, U. S. Steel asserts that no further studies and/or evaluations are needed with regard to reducing entrainment impacts at the Midwest CWIS.

Summary

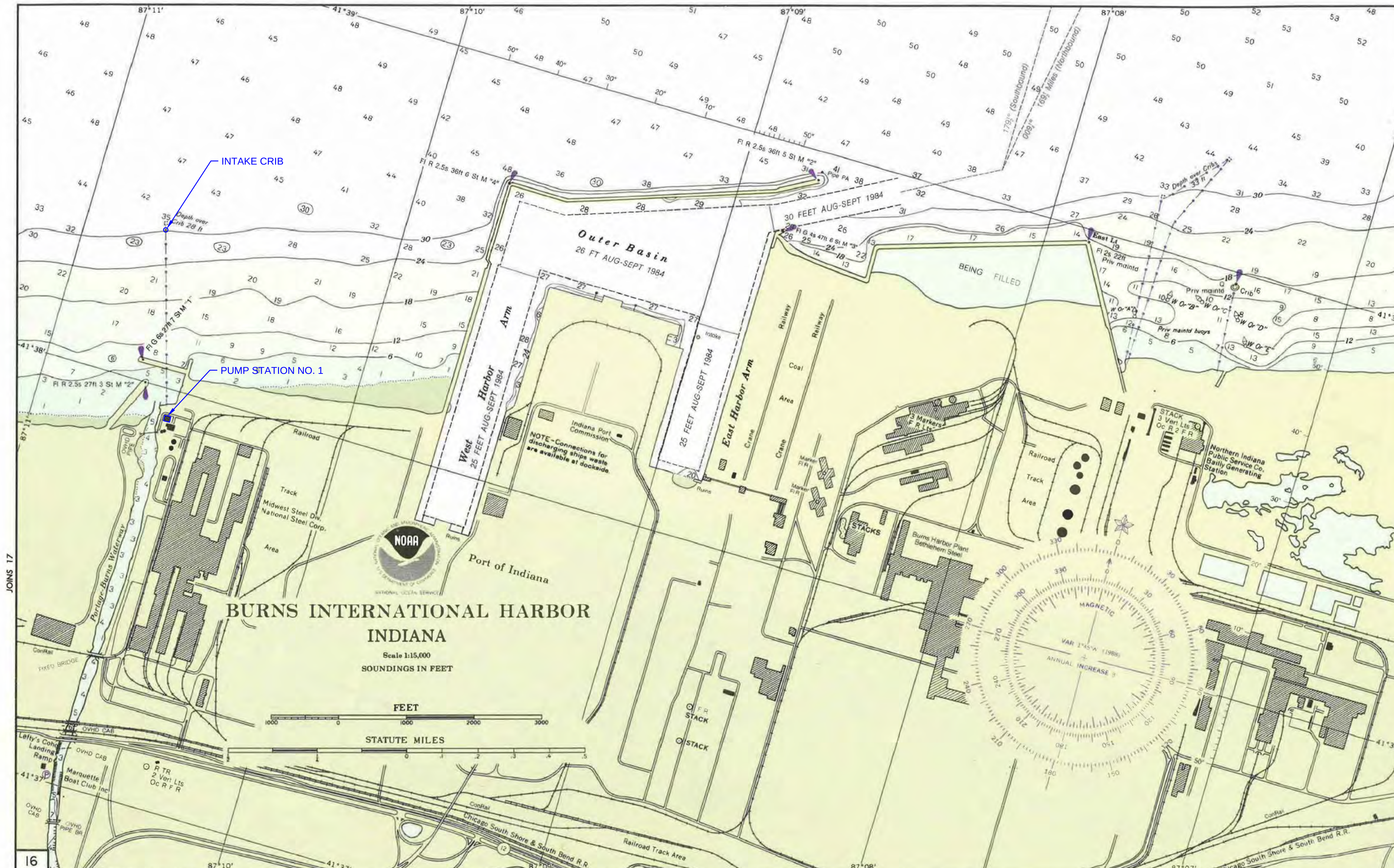
Based on these studies, U. S. Steel requests continued recognition that their existing CWIS represents the best technology available (BTA) to minimize Adverse Environmental Impact in accordance with Section 316(b) of the Clean Water Act. There have been no material changes to the existing CWIS nor was there any change in Midwest Plant operations that would result in the need for additional intake flow since the last permit application.

The average yearly intake volume from 2012 to 2015 of the Midwest Plant is 28 MGD and the maximum yearly volume in the same time period is 46 MGD; therefore, entrainment requirements under 40 CFR §122.21(r)(9-13) are not required. The Midwest Plant's chosen method for impingement compliance, as required by 40 CFR §122.21(r)(6), is to operate a CWIS that has a maximum DIV of 0.5 ft/sec as described in 40 CFR §125.94(c)(2). The Midwest Plant's intake structure has a maximum DIV of 0.5 ft/sec. In addition to the maximum DIV, the average AIV at Midwest is 0.2 ft/sec, which is well under the 0.5 ft/sec threshold. U. S. Steel requests that a BTA determination be made based off of the maximum DIV.

U. S. Steel also requests the termination of any additional impingement and/or entrainment studies until any requested permit modification would result in material changes to the existing CWIS or change in Midwest Plant operations would result in the need for additional intake flow above the thresholds described in 40 CFR §122.21. The Midwest Plant's chosen method of compliance under 40 CFR §122.21(r)(6) does not require additional impingement or entrainment studies to be performed during the next permit term.

Attachment 1

Burns International Harbor Soundings Map
Midwest CWIS Location Map

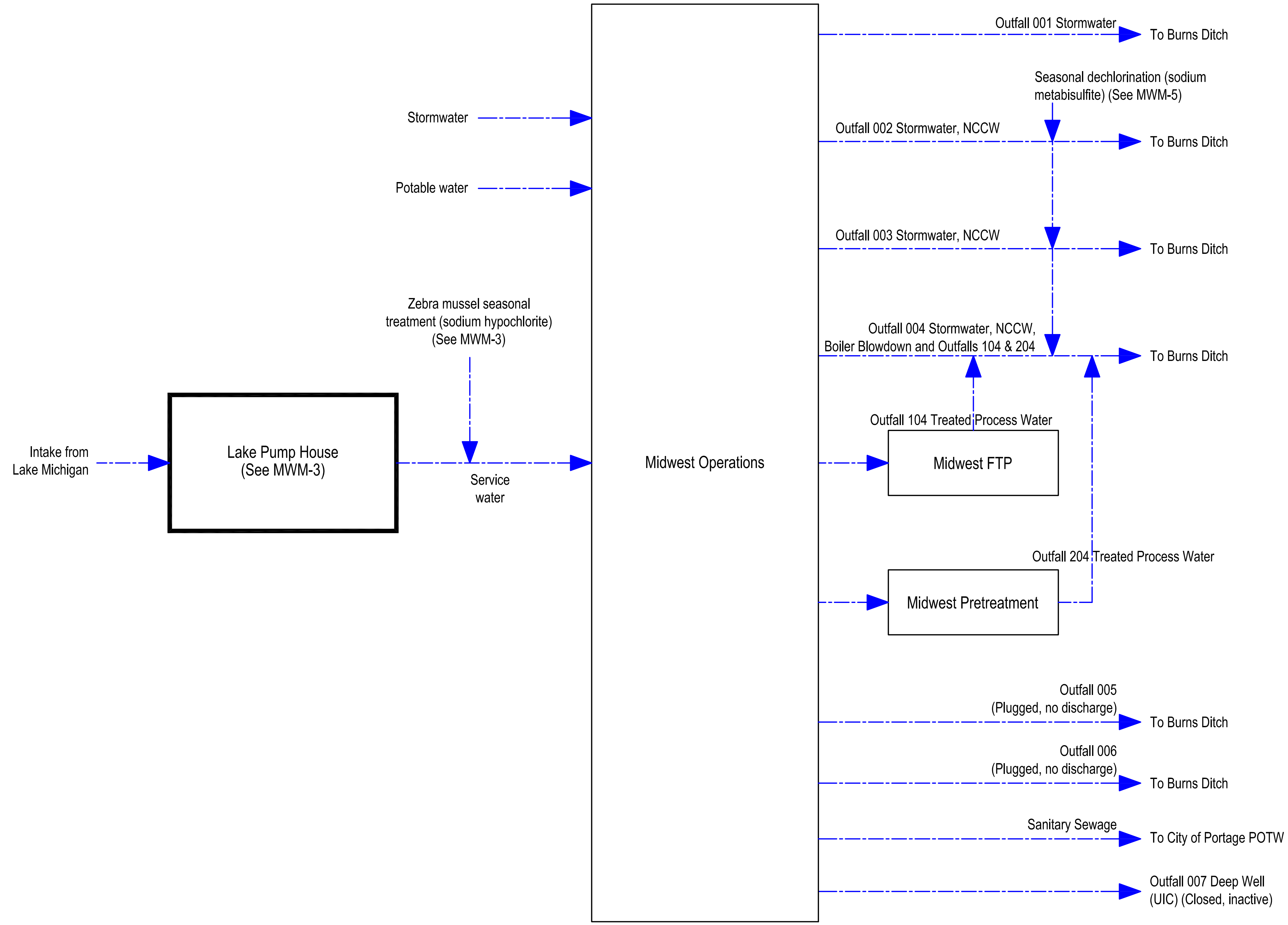


14926 5th Ed., Jan. 20/90


INTAKE CRIB
PUMP STATION NO. 1
APPROX. SCALE (ft.)
0
1250
Aerial photo obtained form Google Earth Pro. Photo taken April 2011

Attachment 2

Midwest Operations Process Flow Diagram – Outfalls



CONFIDENTIAL

PRODUCT OR PROCESS THROUGHPUT			REVIEW DATE:	10/17/2012
LIQUID MATERIAL STREAMS	OUTFALL NUMBER	SEE ASPECT WORKSHEETS FOR INFORMATION.	REVISION DATE:	10/17/2012
GASEOUS MATERIAL STREAMS	AIR EMISSION SOURCE	NON-SIGNIFICANT ENVIRONMENTAL ASPECT	FILE PATH:	USMW/Drawings/PFDs
SOLID MATERIAL STREAMS	SOLID WASTE STREAM	SIGNIFICANT ENVIRONMENTAL ASPECT	FILE NAME:	MWE-03.DWG

FIGURE MWE-03

U.S. Steel - Midwest Operations Process Flow Diagram Outfalls

ST Environmental LLC

209 S. Calumet Ave, Suite 5
Chesterton, IN 46304
Phone: (219) 728 - 6312
Fax: (855) 728 - 6312

Attachment 3

General location, plan and profile of the Lake Michigan intake structure (Drawing A730-0001)

Details in inlet structure and piping at intake chamber (Drawing A730-0002)

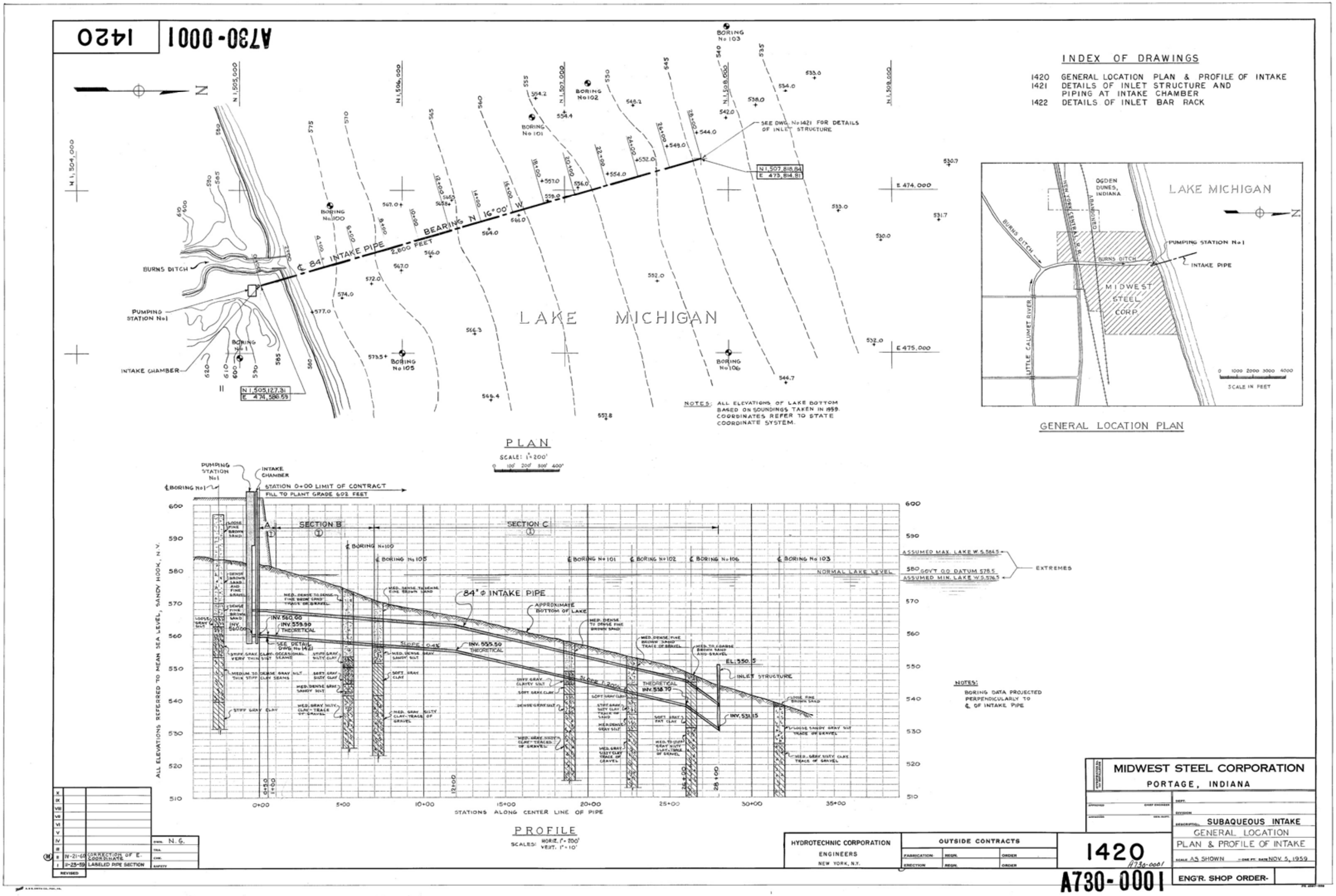
General arrangement and detail of inlet extension (Drawing A730-0015)

Subaqueous Intake, Zebra Mussel Control (Drawing A730-0019)

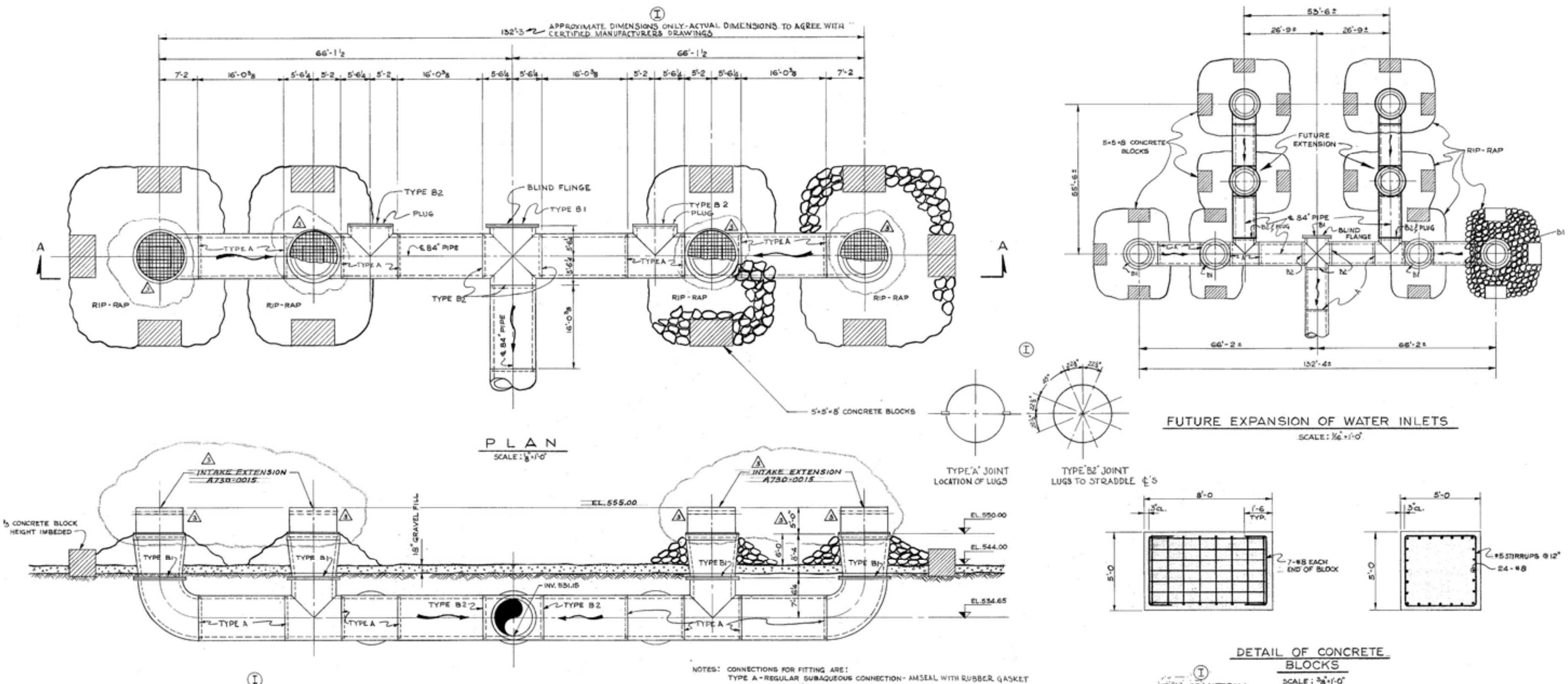
Composite of Underground Utilities (Drawing A700-0021)

Pump Station #1 (Drawing B730-0005)

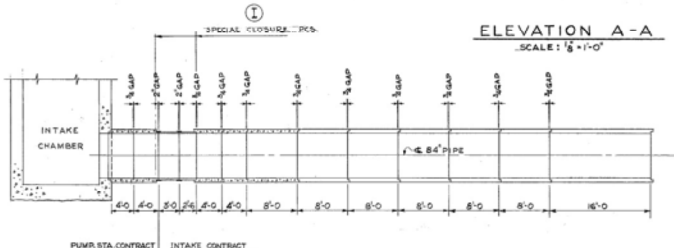
Pump Station #1 (Drawing B730-0006)


1420
A730-0001
INDEX OF DRAWINGS
1420 GENERAL LOCATION PLAN & PROFILE OF INTAKE
1421 DETAILS OF INLET STRUCTURE AND PIPING AT INTAKE CHAMBER
1422 DETAILS OF INLET BAR RACK
BORING No 103
BORING No 102
BORING No 101
BORING No 100
BORING No 1
BORING No 105
BORING No 106
SEE DWG. No 1421 FOR DETAILS OF INLET STRUCTURE
N 1,507,818.84
E 473,814.81
N 1,505,127.31
E 474,380.59
BURNS DITCH
PUMPING STATION No 1
INTAKE CHAMBER
℄ 84" INTAKE PIPE
BEARING N 16°00' W
2,800 FEET
LAKE MICHIGAN
E 474,000
E 475,000
NOTES: ALL ELEVATIONS OF LAKE BOTTOM BASED ON SOUNDINGS TAKEN IN 1959. COORDINATES REFER TO STATE COORDINATE SYSTEM.
PLAN
SCALE: 1"=200'
GENERAL LOCATION PLAN
OGDEN DUNES, INDIANA
NEW YORK CENTRAL R.R.
ABANDONED
BURNS DITCH
LITTLE CALUMET RIVER
MIDWEST STEEL CORP.
PUMPING STATION No 1
INTAKE PIPE
SCALE IN FEET
STATION 0+00 LIMIT OF CONTRACT
FILL TO PLANT GRADE 602 FEET
SECTION B
SECTION C
ASSUMED MAX. LAKE W.S. 584.5
NORMAL LAKE LEVEL
GOV'T O.D. DATUM 578.5
ASSUMED MIN. LAKE W.S. 576.5
EXTREMES
84" ∅ INTAKE PIPE
APPROXIMATE BOTTOM OF LAKE
INV. 560.00
INV. 559.50 THEORETICAL
SEE DETAIL DWG. No 1421
SLOPE .04%
INV. 555.50 THEORETICAL
THEORETICAL INV. 538.70
EL. 550.5
INLET STRUCTURE
INV. 531.15
NOTES: BORING DATA PROJECTED PERPENDICULARLY TO ℄ OF INTAKE PIPE
ALL ELEVATIONS REFERRED TO MEAN SEA LEVEL, SANDY HOOK, N.Y.
STATIONS ALONG CENTER LINE OF PIPE
PROFILE
SCALES: HORIZ. 1"=200' VERT. 1"=10'
II 11-21-60 CORRECTION OF E. COORDINATE
I 2-25-59 LABELED PIPE SECTION
REVISED
DWN. N.G.
HYDROTECHNIC CORPORATION ENGINEERS NEW YORK, N.Y.
OUTSIDE CONTRACTS
MIDWEST STEEL CORPORATION
PORTAGE, INDIANA
SUBAQUEOUS INTAKE
GENERAL LOCATION
PLAN & PROFILE OF INTAKE
SCALE AS SHOWN
DATE NOV. 5, 1959
1420
A730-0001
ENG'R. SHOP ORDER-

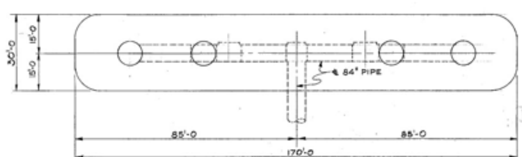
1421 | A730-0002



NOTES: CONNECTIONS FOR FITTING ARE:
TYPE A - REGULAR SUBAQUEOUS CONNECTION - AMSEAL WITH RUBBER GASKET
TYPE B1) FLANGED WITH 32-2"Φ BOLTS WITH 3/16 RUBBER GASKET BOLTS TO STRADDLE ℄'S-125# STD.
TYPE B2) HARNESSED WITH 8-2¼"Φ DRAW BOLTS. AMSEAL WITH RUBBER GASKET
CONNECTIONS NOT MARKED ARE TYPE A.



PIPING AT INTAKE CHAMBER



GRAVEL FILL AREA
SCALE: 1"=20'

BILL OF MATERIAL
FURNISHED BY MIDWEST STEEL CORP.

ITEM NO.	DESCRIPTION	QUANTITY
H	AMSEAL PLUGS	2
I	90° BENDS, AMSEAL & FLANGE	2
J	CROSS, FLANGE & HARNESS JOINTS	1
K	TEES, AMSEAL RUN, FLANGE BRANCH	2
L	TEE, AMSEAL RUN, PLUG BRANCH	2
M	CONES FLANGE CONNECTION	4
N	SCREENS FOR CONES	4
O	BLIND FLANGES - 32 HOLES 84"Φ	1
P	84"Φ GASKETS FOR FLANGES	5
Q	2"Φ BOLTS & NUTS FOR FLANGES	160
R	CONC. SEC. 5'×5'×8'	10
S	84" WALL ADAPTER AMSEAL BELL	1
G	STRAIGHTS: AMSEAL & HARNESS JTS	3
E	SPECIAL CLOSURE PCS.	2
D	BOLTS FOR AMSEAL JTS & HARNESS JTS	1 LOT
A	APPROX. SECT. A - PIPE AMSEAL	700 L.F.
B	APPROX. SECT. B - PIPE AMSEAL	600 L.F.
C	APPROX. SECT. C - PIPE AMSEAL	2100 L.F.
T	[illegible]	4
U	[illegible]	6
V	[illegible]	6
W	SQ. HD BOLTS FOR FLG.	32

REV.	DATE	DESCRIPTION	BY
III	4/10/92	ADDED INTAKE EXTEN.	J.E. SMITH
II	5/25/60	BILL OF MATERIAL	
I	1/27/60	BILL OF MAT'L & JOINTS ADDED	

DWN. S.P.
CHK. A.S.T.

HYDROTECHNIC CORPORATION
ENGINEERS
NEW YORK, N.Y.

OUTSIDE CONTRACTS
FABRICATION | REQN. | ORDER
ERECTION | REQN. | ORDER

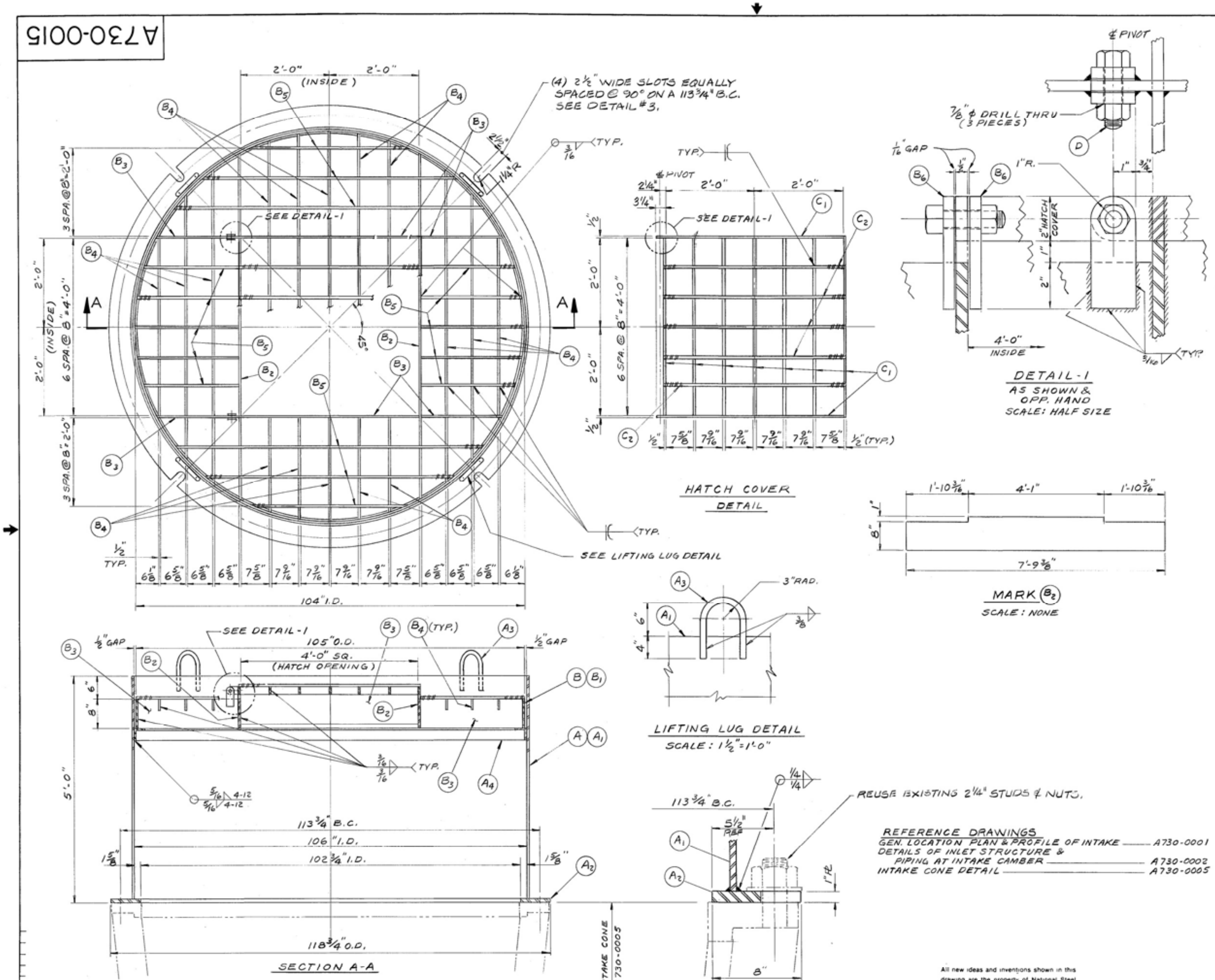
MIDWEST STEEL CORPORATION
PORTAGE, INDIANA

DESCRIPTION: SUBAQUEOUS INTAKE
DETAILS OF INLET STRUCTURE & PIPING AT INTAKE CHAMBER
SCALE: AS SHOWN — DATE: NOV. 5, 1959

1421
A730-0002

ENG'R. SHOP ORDER-

A730-0015



BILL OF MATERIAL

MARK	REQ'D	DESCRIPTION	REMARKS
A-0015	ONE	INTAKE EXTENSION (MAT'L. FOR ONE)	WELDMENT
A_1	2	PL ½ × 60 × 13'-11¼ LG.	(SEE NOTE 5.)
A_2	2	PL 1" × 60 × 9'-11 LG.	(CUT)
A_3	4	BAR 1"φ × 2'-0 LG.	
A_4	2	L 3 × 3 × ½ × 13'-10½ LG.	(SEE NOTE 5.)
B-0015	ONE	GRATE COVER (MAT'L. FOR ONE)	WELDMENT
B_1	2	PL ½ × 8 × 13'-8⅛ LG.	(SEE NOTE 5.)
B_2	2	PL ½ × 9 × 7'-9⅜ LG.	
B_3	20 FT	PL ½ × 8	CUT TO SUIT
B_4	70 LIN. FT.	BAR 3 × ½	CUT TO SUIT
B_5	70 LIN. FT.	#5 RE-BAR	CUT TO SUIT
B_6	4	BAR 2 × ½ × 0'-5 LG.	
C-0015	ONE	HATCH COVER (MAT'L. FOR ONE)	WELDMENT
C_1	50 LIN. FT.	BAR 2 × ½	CUT TO SUIT
C_2	30 LIN. FT.	#5 RE-BAR	CUT TO SUIT
D	2	¾"φ × 2¾" LG. HEX HD. BOLT W/ONE HVY HEX NUT EA.	(FOR ONE HATCH)

NOTES:

1. STRUCTURAL STEEL SHALL BE FABRICATED IN ACCORDANCE WITH THE "MANUAL OF STEEL CONSTRUCTION," LATEST EDITION.
2. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS CODE, LATEST EDITION, USING E70XX ELECTRODES.
3. ALL STRUCTURAL STEEL SHALL CONFORM TO ATSM A36.
4. ALL REINFORCING BARS SHALL CONFORM TO ASTM A706 GRADE 60.
5. PLATE AND ANGLE, HALF SECTIONS TO BE WELDED WITH COMPLETE PENETRATION WELDS.
6. DEBURR ALL SHARP EDGES.
7. FINISHED WELDMENTS TO BE COATED WITH SHERWIN-WILLIAMS COAL TAR EPOXY C-200. SURFACE PREPARATION, PER S-W PRODUCT DATA SHEET E31.
8. TOTAL FINISHED WT. APPROXIMATELY 6,700#.

REFERENCE DRAWINGS

GEN. LOCATION PLAN & PROFILE OF INTAKE A730-0001
DETAILS OF INLET STRUCTURE & PIPING AT INTAKE CAMBER A730-0002
INTAKE CONE DETAIL A730-0005

REVISED			
IV			Dwn JB SMITH
III			Trg
II			Chk
I			Microfilmed
		Engr Request No	

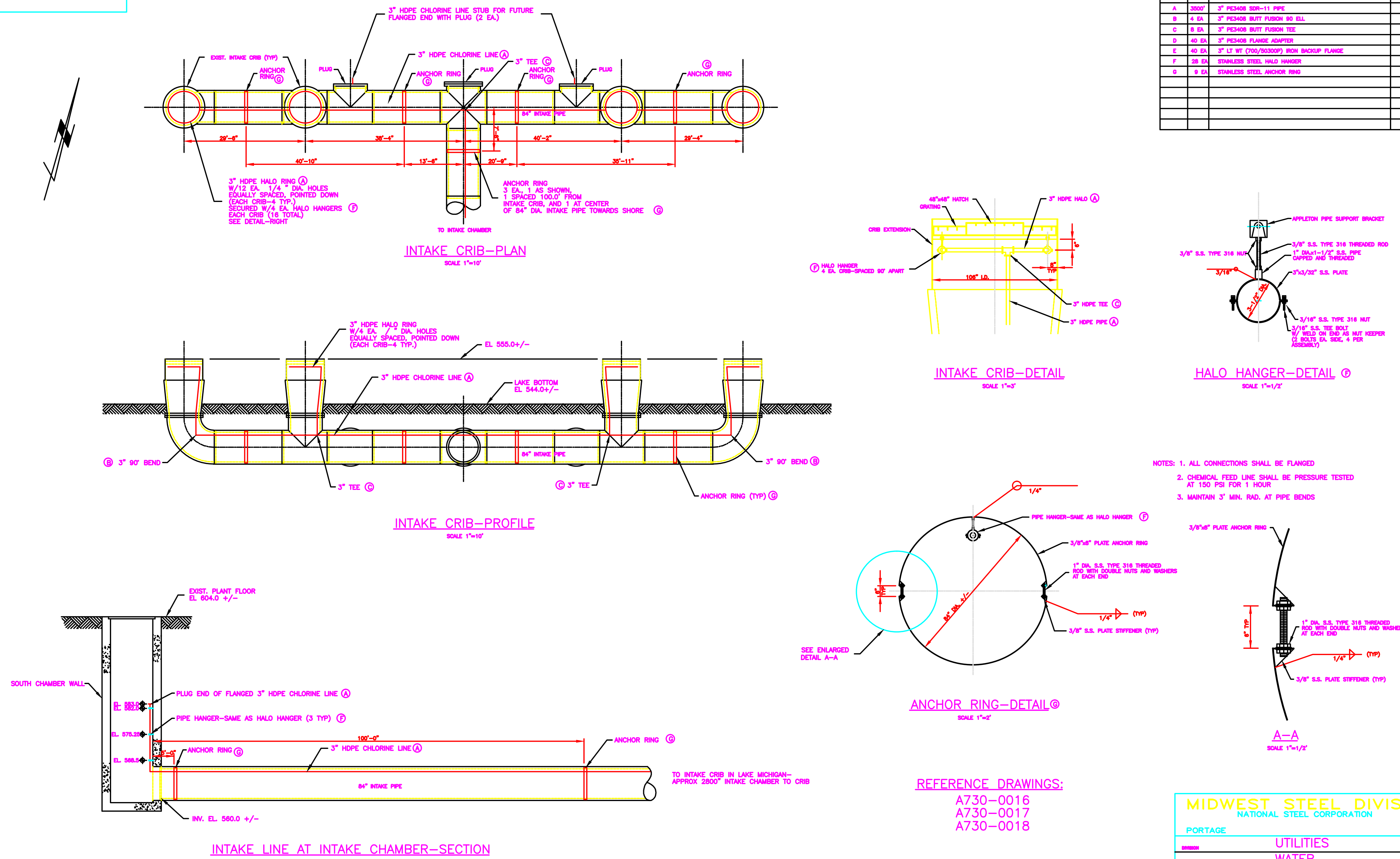
SUPERIOR ENGINEERING CORP
Hammond, IN

PROJECT	SHEET	W.O.
330201	7020	

MIDWEST STEEL DIVISION
NATIONAL STEEL CORPORATION
PORTAGE INDIANA

DIVISION UTILITIES
DEPT WATER
DESCRIPTION SUBAQUEOUS INTAKE
INTAKE EXTENSION
GEN. ARRG'T. & DETAILS
SCALE 1" U.N. = ONE FT. DATE 4-8-92

A730-0015



BILL OF MATERIAL

MARK	REQ'D	DESCRIPTION	REMARKS
A	3500'	3" PE3408 SDR-11 PIPE	
B	4 EA	3" PE3408 BUTT FUSION 90 ELL	
C	8 EA	3" PE3408 BUTT FUSION TEE	
D	40 EA	3" PE3408 FLANGE ADAPTER	
E	40 EA	3" LT WT (700/50300P) IRON BACKUP FLANGE	
F	28 EA	STAINLESS STEEL HALO HANGER	
G	9 EA	STAINLESS STEEL ANCHOR RING	

NOTES:
1. ALL CONNECTIONS SHALL BE FLANGED
2. CHEMICAL FEED LINE SHALL BE PRESSURE TESTED AT 150 PSI FOR 1 HOUR
3. MAINTAIN 3' MIN. RAD. AT PIPE BENDS

REFERENCE DRAWINGS:
A730-0016
A730-0017
A730-0018

Dwn B.A.J.
Trc
Chk
Microfilmed

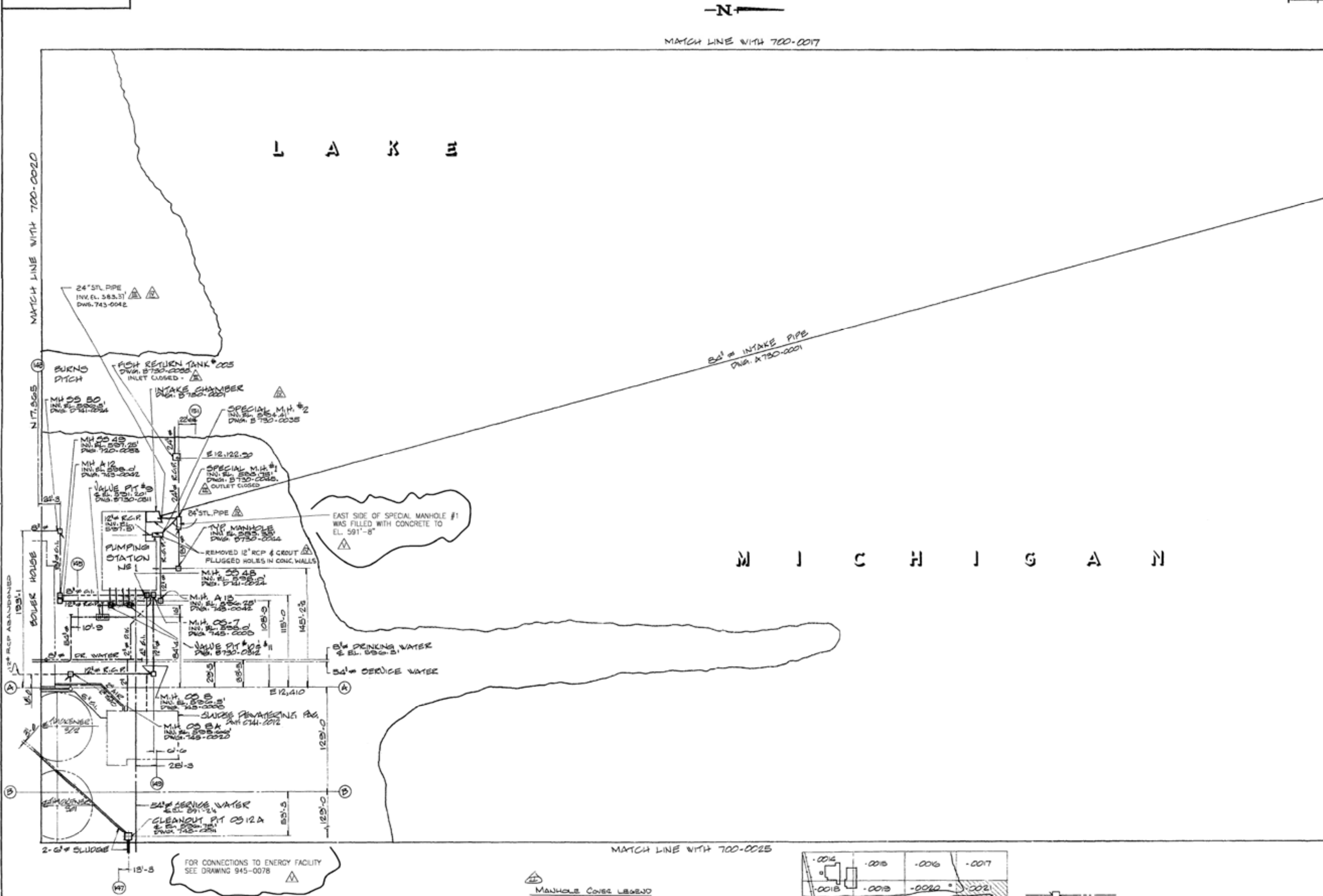
A730-0019

MIDWEST STEEL DIVISION
NATIONAL STEEL CORPORATION
PORTAGE INDIANA

DIVISION UTILITIES
DEPT WATER
DESCRIPTION SERVICE
SUBAQUEOUS INTAKE
ZEBRA MUSSEL CONTROL

SCALE ONE FT. DATE 9-19-94

700-0021



FOR CONNECTIONS TO ENERGY FACILITY SEE DRAWING 945-0078

MANHOLE COVER LEGEND

STORM SEWER —— RED
SANITARY SEWER —— DUNES TAN
DIRTY INDUSTRIAL WASTE —— GREEN

REFERENCE DRAWINGS —
C730-0001 - SERVICE WATER, KEY PLAN
731-0001 - DRINKING WATER, KEY PLAN
7741-0001 - SANITARY SEWERS, KEY PLAN
743-0001 - STORM SEWERS, KEY PLAN
745-0001 - OILY WASTE, KEY PLAN
746-0001 - OUTFALLS, KEY PLAN
A730-0001 - SUBAQUEOUS INTAKE, GEN. ARRG'T.
B730-0001 - PUMPING STATION No 1, GEN. ARRG'M.
C741-0001 - SLUDGE DEWATERING FACILITY
C741-0012 - " " "

KEY PLAN

INDICATES THE SAME INV. EL. BOTH LINES

700 - 0021

MIDWEST STEEL DIVISION
NATIONAL STEEL CORPORATION
PORTAGE INDIANA

DIVISION: UTILITIES
DEPT: GENERAL
DESCRIPTION: COMPOSITE OF UNDERGROUND UTILITIES
SCALE: 1" = 50'-0
DATE: MAY 29 1975

BILL OF MATERIAL

MARK	REQ'D	DESCRIPTION	REMARKS

Attachment 4

Midwest Plant Impingement and Entrainment Study Summary Report

United States Steel Corporation – Gary Works
One North Broadway, MS 70-A
Gary, IN 46402

CERTIFIED MAIL

May 22, 2015

Indiana Department of Environmental Management
Office of Water Quality - NPDES Permits Section
Mail Code 65-42CB
100 North Senate Avenue
Indianapolis, IN 46204-2251

Re: **316(b) Cooling Water Intake Structures**
Two Year Impingement & Entrainment Study – Final Report
United States Steel Corporation Midwest
NPDES Permit No. IN0000337

Pursuant to Part III.B.2.a and Part III.B.2.b. of NPDES Permit IN0000337, United States Steel Corporation Midwest (USS) conducted fish impingement and entrainment studies at the cooling water intake structure (CWIS) during the second (2013) and third (2014) years of the permit. Provided herein is the CWIS study summary including associated fish return evaluation follow up submitted one year after study completion.

Following the conclusion of these studies in May 2014, USEPA issued the final 316(b) rule in the Federal Registrar which became effective October 2014. As such, the study summary is discussed in the context of the Final 316(b) Regulation requirements.

Please do not hesitate to contact me at (219) 888-3369, or via electronic mail at LELegler@uss.com, if you have any questions.

Sincerely,

Lau Legle

Lauren Legler
Environmental Control
United States Steel Corporation
Gary Works, Midwest, East Chicago Tin Operations

Intended for

United States Steel Corporation
Midwest Plant
Portage, IN

Date

May 2015

Project Number

20-30465DD

United States Steel Corporation
Impingement and Entrainment Study



RAMBOLL ENVIRON

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Tables

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Attachments

Ramboll Environ
333 West Wacker Drive
Suite 2700

EXECUTIVE SUMMARY

Clean Water Act (CWA) §316(b) regulations require that the location, design, construction, and capacity of cooling water intake structures reflect the Best Technology Available (BTA) for minimizing adverse environmental impact to fish and shellfish communities. Adverse environmental impacts can be evaluated by sampling fish and their larvae/eggs through impingement and entrainment studies, and subsequently extrapolating annual impacts on fisheries. Impingement occurs when organisms (primarily fish) are pinned against traveling screens or other mechanisms used to deflect debris from entering pumps. Entrainment occurs when very small organisms that can pass through 0.5-inch traveling screens are pulled into a cooling water system into the pumps.

Fish impingement and larvae/egg entrainment samples were collected at the U. S. Steel Midwest (i.e. "Midwest") cooling water intake structure (CWIS) from the week of June 25, 2012 through the week of May 19, 2014. Impingement sampling at the CWIS was conducted using dual-frequency identification sonar (DIDSON) fish imaging technology because travelling screens are not operational at the Midwest Pump Station. Subsequently, DIDSON imaging provides the only means to estimate potential CWIS intake mortality at Midwest. Entrainment was evaluated using a deck-mounted pneumatic pump delivering CWIS intake water into a 200-micron mesh plankton net.

The Key Findings from the 2012-2014 Impingement and Entrainment Studies at U. S. Steel Midwest are:

1. Few fish were observed using DIDSON imaging, which suggests densities of fish are very low in the CWIS. Estimated abundance of small fish ranged from 0 to 53 during the sampling events with the peak occurring during the November 12, 2013 sample event.
2. DIDSON data provided estimates of total length for fish, and only small fish (< 25 cm) were detected.
3. Given the low fish densities observed, specific behaviors related to structural features of the CWIS could not be effectively assessed.
4. Species identification was challenging with DIDSON since many of the species potentially present in the wells have similar body morphologies and swimming behaviors.
5. Entrainment rates were substantially lower than those found at other facilities in the Great Lakes Region.

1. INTRODUCTION

U. S. Steel Midwest Plant (U. S. Steel Midwest), located in Portage, Indiana, finishes coils received from other U. S. Steel plants into cold rolled, galvanized, chromium or tin plated strip and sheet products. U. S. Steel Midwest is authorized to withdraw water for their process and non-contact cooling waters needs from one intake pursuant to National Pollutant Discharge Elimination System (NPDES) Permit IN0000337, which became effective on March 1, 2011 (the "NPDES Permit"). The intake is located approximately 2,800 ft off-shore of the Midwest Plant in the Southern Lake Michigan Basin at a depth of roughly 30 feet. Figure 1 presents the approximate location of the Midwest Pump Station, which withdraws water from the intake location.

U. S. Steel Midwest is required to conduct entrainment and impingement impact studies during the second and third year of the permit term (Parts III.B.2.a. and Part III.B.2.b. of the NPDES Permit IN0000337). The purpose of entrainment and impingement impact studies is to characterize the nature and extent of the environmental impacts from a CWIS on aquatic biota and to demonstrate and support the determination that BTA status exists at U. S. Steel Midwest Plant in accordance with Section 316(b) of the federal Clean Water Act (33. U.S.C. section 1326) and the NPDES Permit. The Sampling Plan submitted to the Indiana Department of Environmental Management (IDEM) stipulated the entrainment and impingement impact studies for the cooling water intake structure (CWIS) at the U. S. Steel Midwest Plant Pump Station begin in June 2012.

The Midwest Pump Station intake is designed with a closed intake conduit that withdraws water from the bottom of Lake Michigan via four intake openings (diameter is approximately 8 feet 8 inches each), which are capped with bars spaced approximately 7 inches apart in a grid pattern. An 84-inch diameter pipe transports water from the openings in Lake Michigan to the Midwest Pump Station. Chlorination of the intakes near the openings in Lake Michigan occurs continuously from approximately mid-May to mid-November for zebra mussel control. The basic infrastructure of the Midwest Pump Station includes two wet wells equipped with four vertical wet well pumps. Since 2006, there has been no operation of the traveling screens at Midwest Pump Station because at that time it was determined that debris and impinged fish do not pose a risk to operations of the pumps.

A typical impingement impact study involves the collection of fish from the fish return system following impingement on the traveling screen array. This is not possible at Midwest Pump Station because the traveling screens are not operational and the fish return system has been blocked due to operational issues (since 2006). As an alternative method to assess impingement impacts to aquatic biota, a 316(b) Study was conducted using dual-frequency identification sonar (DIDSON) imaging technology. The DIDSON technology provided acoustic imagery data for fish within the pump well of the Midwest Pump Station on a real-time basis. Evaluation of the acoustic imagery data provided the basis for estimating the fish abundance, diversity, and temporal variability of the fish community that could potentially be impacted by the CWIS. The impingement portion of this report is provided in Attachment 1.

This report also characterizes the impact that the plant CWIS is having on the entrainment of aquatic biota. Entrainment includes small organisms such as fish and mussel larvae, fish eggs, aquatic insects and plankton that are incorporated within the intake water and are not removed by screens or other filtering mechanisms of the CWIS. Mortality of entrained organisms is typically high from exposure to a high degree of turbulence, abrasion, and often a rapid change in water temperature. Differences in abundance of organisms within the water column that can be entrained are typically associated with fish spawning and other reproductive cycles and life stages, diurnal foraging and migration, or other behavioral patterns. The goal of the entrainment study was to obtain diel samples of entrained organisms during the annual peak reproduction and development periods for the expected population of local fish species

2. METHODS

2.1 Entrainment

Entrainment samples were collected at the Midwest Pump Station (Figure 2). Entrainment samples were collected during 32 sample events over a 24 month period from June 2012 to May 2014 (Table 1). Samples were collected during periods representative of normal operational intake flows. Flows associated with data collection are documented in Table 2.
Samples were taken every other week during the peak spawning months of March through May and October through November, and once a month during February, June through September, and December. Previous entrainment sample results demonstrated (U. S. Steel 1978, U. S. Steel 2011, U. S. Steel 2012) negligible or no icthyoplankton were collected outside of the months of April through August. Although entrainment was not assessed in January, it is anticipated, due to spawning habits of local fish, negligible fish larvae or eggs would be collected during this time frame. Lake water quality (Table 3) and capture results were monitored to adjust the collection periods if necessary. This was done to ensure entrainment samples were collected during the entire spawning period for all species known to be in the vicinity of the CWIS.

Entrainment sample water was obtained using a deck-mounted pneumatic diaphragm pump to minimize physical/mechanical damage to fish larvae and fish eggs. Hoses attached to the pneumatic pump system were lowered into the wet well to mid-depth. The pneumatic pump was metered so that the total volume of water passing through the plankton net per sample period could be recorded. The pneumatic pump was fitted with a meter to record water volume and the pump was set to pump approximately 15 to 25 gallons per minute. Entrainment sample water pumped from the wet well was passed through a 200-micron mesh plankton net with a 0.5-meter diameter opening fitted with a removable sample bucket. The plankton net was submerged within a large holding tank filled with water to reduce injury of any fragile egg masses and fish larvae entering the net.

A meter reading was recorded in the project log book at the beginning and the end of the sample period. All entrainment samples were properly labeled according to sample location, start time of sample collection and elapsed time of sample, date, total volume of sample water collected, and depth of sample collection. All entrainment samples were preserved with weak formalin solution and shipped to EcoAnalysts, Inc. (Moscow, ID) for analysis

2.2 Entrainment Sample and Data Analysis

Entrainment sample analysis focused on identification to the lowest practical taxonomic classification and enumeration of fish larvae, fish eggs, and immature mussels (veligers). However, most of the entrained items were not able to be keyed out to genus and species level due to the limited number of defining physical characteristics of the specimens collected. Other forms of plankton that were monitored included invertebrate zooplankton. Their presence or absence was noted since invertebrate plankton such as pelagic crustaceans and rotifers are typically more common than the fish larvae that feed on them. The presence or absence of invertebrate zooplankton serves as a rough check on the entrainment sampling system.

Entrainment data summaries include the following:

- A listing of identified taxonomic entities (larvae and eggs);
- The total number of larvae and the total number of eggs captured per time period and date;
- The total volume of water sampled and calculation of mean density of organisms per volume of water for each sample period to demonstrate any diel fluctuation;
- Length measurements for captured fish larvae (or older fish) specimens to indicate the maximum size range of entrained organisms.

Daily projections for icthyoplankton entrained were extrapolated by dividing the “lake water gallons per 8-hours” by the “gallons pumped by Sampler per 8-hours,” and multiplying that value by the “icthyoplankton subsample per 24-hours” (Table 4). The “icthyoplankton subsample per 24-hours” was calculated by multiplying “gallons pumped by sampler per 24-hours” by the “icthyoplankton count/gallon pump by the sampler,” and then multiplying that by a factor of three. Although likely overestimations, the “icthyoplankton subsample per 24-hours” projections were then averaged to get a 16 event composite average, and then multiplied by 365 to get an annual rate of entrainment.

2.3 Environmental Factors

A Horiba U-52 Multiparameter water quality meter was used to measure water quality in the cylindrical tank used to hold the plankton net during each sampling event from February through December. The parameters measured were dissolved oxygen concentration, pH, temperature, conductivity, and turbidity.

2.4 Data Quality Assessment and Quality Control Protocols

Quality control methods were used to ensure that samples were valid, met the data quality objectives for the project, and constituted a robust dataset for characterization of the fish community. Some quality control aspects of this project included the use of regional references for fish taxonomy and the use of standardized field data sheets. The following were used to ensure proper data quality control:

- Standardized field notes and data sheets were used to document methods used, level of effort per site, and field conditions.
- All field equipment underwent inspection and was found to be in good operating condition. The water quality meter was calibrated prior to use in the field to ensure consistency and quality of field data. A Horiba U-52 Multiparameter water quality meter was used; for temperature, pH, dissolved oxygen, conductivity, and turbidity, respectively, it has a resolution of 0.01: °C, 0.01 pH, 0.01 mg/L, 0.000 to 0.999 mS/cm:0.001, and 0 to 99.9 NTU: 0.1; and a repeatability of: ±0.1°C, ±0.05 pH, ± 0.1 mg/L, ± 0.05% F.S., ±5% (reading) or ±0.5 NTU (whichever is greater).

Taxonomic identification of entrained specimens was checked with the following QA/QC protocol. All shipments of entrainment samples were shipped to EcoAnalysts, Inc. and processed within the prescribed hold times. In addition, EcoAnalysts, Inc. has an “Icthyoplankton Laboratory Standard Operating Procedures and Quality Assurance Plan” that addresses in-depth the following key technical steps in sample evaluation: (1) Sample Check-In, (2) Sorting Icthyoplankton Samples, (3) Sorting Quality Assurance, (4) Taxonomic Identification of Ichthyoplankton, (5) Taxonomic Data Entry and Quality Assurance, (6) Internal Quality Assurance and Taxonomic Identifications, (7) Data Compilation and Delivery, and (8) Sample Residue Retention and Return.

3. RESULTS

3.1 Impingement

The absence of traveling screens at the Midwest Pump Station required the use of a Dual-frequency Identification Sonar (DIDSON) imagery to study the presence, behavior and status of fish in the Midwest Pump Station well. DIDSON was deployed over a period of 20 sample events beginning in June 2012 and was completed in May 2014. Results and discussion from this study are included in Attachment 1. DIDSON data provide the sole source of information on potential fish impingement and movement within the CWIS. (See Attachment 1)

3.2 Entrainment

Results from the Midwest Pump Station entrainment samples collected during the sample period are shown in Table 4. A total of 32 sample events were executed, 28 of which did not indicate the presence of any icthyoplankton. Even still, entrainment sampling provided sufficient data, for sample events when specimens were found, to develop estimations of icthyoplankton entrained per 24 hours. Samples that were positive for the presence of icthyoplankton were Sample Events #1, #2, #17, and #19. Projections of icthyoplankton per 24-hours ranged from 58 to 1,121. For Sample Events #1-#16, the annual projection of icthyoplankton entrained is 15,667, and for Sample Events #17-#32 the projection is 26,900. These projections are a combination of fish eggs and larvae collected, which includes Actinopterygii (class for ray-finned fishes), Gobidae (family for goby) juveniles, Neogobius melanostomus (species and genus for round goby). Zooplankton (not identified to species) were present during every sample event except Sample Event #1, while the appearance of mussel veligers was more inconsistent. No threatened or endangered species were encountered; nor were there any species on the Indiana Department of Natural Resources list of species of concern collected during sampling (Indiana Department of Natural Resources 2015).

3.3 Environmental Factors

Water quality results are shown for the Midwest Pump Station (Table 2). The pH values at all three pump stations remained relatively consistent (approximately 6.8 to 8.8 s.u.) throughout the sample period, except for one outlier data point (4.0 s.u.) during Sample Event #19 that may be indicative of a malfunctioning meter probe. The temperature readings taken at the Midwest Pump Station reflect the expected seasonal trends. The peak in lake water temperature occurred during Sample Event #2 (26.1 °C), and the minimum occurred during Sample Event #26 (0.2 °C). Dissolved oxygen readings at the pump stations conformed to a predictable inverse relationship with water temperature, falling with increasing temperatures during the summer and increasing with falling temperatures during winter. Dissolved oxygen ranged from 6.5 mg/L to 17.5 mg/L. Conductivity ranged from 0.262 uS to 0.387 uS. Turbidity peaked at 61.7 NTU during Sample Event #11.

4. DISCUSSION

Entrainment of fish larvae and eggs was highly variable and relatively rare at the Midwest Pump Station. At the Midwest Pump Station, roughly 88% of entrainment sample events found no icthyoplankton. A check on entrainment subsampling effectiveness was accomplished by evaluating the presence/absence of zooplankton and mussel veligers in the entrainment samples. Therefore is it believed that the subsampling system was operating effectively since non-icthyoplankton organisms (zooplankton and mussels) were present in the majority of samples.

Environmental conditions were monitored throughout the duration of the study, and confirmed that in all likelihood the Lake Michigan water temperature cycle is a major contributor to influencing the presence of icthyoplankton in the Midwest Pump Station well. The few samples that found ichthyoplankton in 2012 and 2013 were collected during the same eight week period, indicating that temperature has a strong influence on biological activity in the Midwest Pump Station well.

The demand for cooling water at Midwest fluctuates throughout the year, and the high values for icthyoplankton entrained do not correlate with the higher volumes of water being pumped (i.e., more water pumped does not necessarily equate to more fish larvae being entrained). This was exemplified by the fact the largest entrainment event occurred during Sample Event #17 when the second lowest volume of lake water (762,569 gallons per 8-hours) was being pumped through the CWIS.

Projections for annual icthyoplankton entrainment were divided into Year One Sample Events #1-#16 (15,667 fish eggs and larvae) and Year Two Sample Events #17-#32 (26,900 fish eggs and larvae) to allow for comparisons of data on an annual basis. Although there is over a 10,000 fish egg and larvae difference between the two sets of sample events, this spread is not substantially different when put in the context of the variability of the source water populations of fish in Lake Michigan year to year (Madenjian et al. 2005), and the time between sample events. In addition, individual annual projections of annual entrainment rates for Sample Events #1-#16 and Sample Events #17-#32 are substantially lower than those found at other facilities in the Great Lakes Region, which averaged roughly 86.7 million icthyoplankton entrained annually across six different facilities (NYDEC 2010). The results of entrainment sampling and the subsequent data evaluation demonstrate that entrainment of critical fish eggs, larvae, and other valued ichthyoplankton by the Midwest Plant CWIS and equipment is negligible. This is likely due to a variety of factors including the fact that coastal shoreline fish assemblages in the vicinity of the Midwest Plant and the available habitat in the vicinity of the Midwest CWIS intake crib is limited (Simon and Morris 2012, Jude et al. 2007). Moreover, the distance of the intake crib from the shore likely reduces this area of the lake to planktivorous fish.

5. RECOMMENDATIONS/BTA ASSESSMENT

The impingement and entrainment study requirements of the NPDES Permit were developed in the absence of a final Federal Section 316(b) regulation. Since then, USEPA proposed a 316(b) regulation for existing facilities in April 2011 and promulgated a final regulation in August 2014. The Final 316(b) Regulations became effective in October 2014. As such, this section discusses compliance with the impingement and entrainment requirements, including the study requirements, with the Final 316(b) Regulations requirements.

5.1 Impingement

To meet compliance with impingement mortality standards, the Final 316(b) Regulations at 40 CFR 125.94(c) identify the following most common possible compliance alternatives:

1. Implementation of a closed-cycle recirculating system (40 CFR 125.94(c)(1));
2. Operation of a CWIS with a through screen design intake velocity of less than or equal to 0.5 fps (40 CFR 125.94(c)(2));
3. Operation of a CWIS that is operated so that the associated through screen intake velocity is less than or equal to 0.5 fps (40 CFR 125.94(c)(3));
4. Operation of an existing offshore velocity cap (40 CFR 125.94(c)(4));
5. Implementation of modified "fish-friendly" traveling screens with fish return systems (40 CFR 125.94(c)(5));
6. Implementation of a system of technologies that would meet BTA for impingement mortality (40 CFR 125.94(c)(6)); and,
7. Compliance with an annual average impingement mortality standard of 24% (40 CFR 125.94(c)(7)).
8. De minimis rate of impingement (40 CFR 125.94(c)(11))

Fish in the Midwest Plant CWIS are only present at such low densities that modification of the CWIS and associated fish return for impingement control is not warranted. In addition, the absence of any threatened, endangered, or Indiana species of special concern supports the position that impingement of fish is "de minimis" at the Midwest Plant. The study presented in Attachment 1 is supportive of the compliance alternative set out at 40 CFR 125.94(c)(11) and therefore no additional studies, measures, and/or technologies are required to meet the impingement mortality standard pursuant to the Final 316(b) Regulations.

5.2 Entrainment

Under the Final 316(b) Regulations (specifically 40 CFR 122.21(r)(9)), facilities with actual intake flows greater than 125 million gallons per day are required to evaluate entrainment impacts; U. S. Steel Midwest Plant CWIS is below this threshold. Consequently in addition to this regulatory exemption, the high number of samples with no entrained ichthyoplankton, and the few positive samples dominated by round goby larvae indicate that the impact due to entrainment would be considered negligible. Therefore, U. S. Steel asserts that no further studies and/or evaluations are needed with regard to entrainment at the Midwest CWIS.

5.3 Study Requirements

The Final 316(b) Regulations require a facility like the Midwest Plant to submit source water baseline biological data (40 CFR 122.21(r)(4)) and results of an entrainment characterization study (40 CFR 122.21(r)(9)) as part of the next NPDES Permit Renewal Application. U. S. Steel believes these study requirements have been met with the submittal of the information provided in this report and that no further Section 316(b) studies are warranted for the Midwest Plant.

6. REFERENCES

AE95. National Pollutant Discharge Elimination System—Final Regulations To Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities AGENCY: Environmental Protection Agency (EPA). ACTION: Final rule.

Hubbs, C.L., K.F., Lagler, G.R., Smith. 2004. Fishes of the Great Lakes Region revised edition. University of Michigan Press, Ann Arbor, Michigan.

Indiana Department of Natural Resources. 2015. Indiana's State Endangered Species. Indianapolis, IN. <http://www.in.gov/dnr/fishwild/2356.htm>

Jude, David J., Stephen Hensler, Nigel Wattrus, John Janssen, and Paul Webb. 2007 Fish Spawning and Nursery Areas in Harbors and River Mouths with an Assessment of Spawning and Nursery Habitat in Near Shore Lake Michigan Using Mapping Techniques. University of Michigan, Ann Arbor, Michigan. 29 June 2007.

Madenjian, Charles P., Tomas O. Höök, Edward S. Rutherford, Doran M. Mason, Thomas E. Croley II, Emily B. Szalai, and James R. Bence. 2005. Recruitment variability of Alewives in Lake Michigan. Transactions of the American Fisheries Society, Vol 134, Issue 1.

NOAA. 1968. Recreational Chart 14926 Chicago and South Shore of Lake Michigan. U.S. Dept. of Commerce. Riverdale, MD.

NYDEC. 2010. New York State Department of Environmental Conservation Technical Document The Relationship between Cooling Water Capacity Utilization, Electric Generating Capacity Utilization, and Impingement and Entrainment at New York State Steam Electric Generating Facilities: Albany, NY. Accessed Apr 20, 2015. <http://www.dec.ny.gov/docs/fish_marine_pdf/cwisrep2010.pdf >

Simon, T. P. and Morris, C.C. 2012. Structure and function of coastal shoreline fish assemblages of Lake Michigan at the Indiana Dunes National Lakeshore. GLRI #94 Task Agreement #J 6300100405. Indiana University, School of Public and Environmental Affairs, Bloomington.

U. S. EPA. 40 CFR Parts 122 and 125 [EPA–HQ–OW–2008–0667, FRL–9817–3] RIN 2040–20-29342C\PRIN_WP\38823.docx\v1

TABLES

Table 1 2012-2014 Sampling Schedule Entrainment and Impingement Study Results U.S. Steel Midwest Plant, Portage, Indiana				
Date of Activity (week of)	Type of Sample Collected			
	Entrainment		DIDSON	
25-Jun-12	Sample Event #1	x	Sample Event #1	x
24-Jul-12	Sample Event #2	x	---	
14-Aug-12	Sample Event #3	x	---	
10-Sep-12	---	---	Sample Event #2	x
17-Sep-12	Sample Event #4	x	---	
8-Oct-12	Sample Event #5	x	---	
21-Oct-12	Sample Event #6	x	Sample Event #3	x
5-Nov-12	Sample Event #7	x	Sample Event #4	x
26-Nov-12	Sample Event #8	x	Sample Event #5	x
18-Feb-13	Sample Event #9	x	Sample Event #6	x
4-Mar-13	Sample Event #10	x	---	
18-Mar-13	Sample Event #11	x	Sample Event #7	x
1-Apr-13	Sample Event #12	x	---	
15-Apr-13	Sample Event #13	x	Sample Event #8	x
29-Apr-13	Sample Event #14	x	---	
13-May-13	Sample Event #15	x	Sample Event #9	x
27-May-13	Sample Event #16	x	---	
17-Jun-13	Sample Event #17	x	Sample Event #10	x
15-Jul-13	Sample Event #18	x	Sample Event #11	x
19-Aug-13	Sample Event #19	x	Sample Event #12	x
16-Sep-13	Sample Event #20	x	Sample Event #13	x
14-Oct-13	Sample Event #21	x	---	
28-Oct-13	Sample Event #22	x	Sample Event #14a and #14b	*x - x
11-Nov-13	Sample Event #23	x	Sample Event #15	x
25-Nov-13	Sample Event #24	x	---	
9-Dec-13	Sample Event #25	x	Sample Event #16	x
17-Feb-14	Sample Event #26	x	Sample Event #17	x
3-Mar-14	Sample Event #27	x		
17-Mar-14	Sample Event #28	x	Sample Event #18	x
7-Apr-14	Sample Event #29	x		
21-Apr-14	Sample Event #30	x	Sample Event #19	x
5-May-14	Sample Event #31	x		
19-May-14	Sample Event #32	x	Sample Event #20	x
*x - x notes overnight two part sampling event				

Table 2 2012-2014 Volume Pumped for Entrainment Entrainment and Impingement Study Results U.S. Steel Midwest Plant, Portage, Indiana					
Date of Sample Event	**Sample Event**	**Time of Interval of Sample Event (in minutes)**	**Volume Pumped by Sampler**	**Total Lakewater pumped during three calendar day sampling period (gallons)**	**Lakewater Pumped for the Entrainment Sample Event (gallons)**
6/25/2012-6/27/2012	1	2745	69000	Information Not Available	Information Not Available
7/25/2012-7/27/2012	2	2585	16000	90,083,000	53903832.18
8/15/2012-8/17/2012	3	2695	59900	91,996,000	57391023.15
9/19/2012-9/21/2012	4	2520	36000	87,569,000	51081916.67
10/9/2012-10/11/2012	5	2180	31400	81,390,000	41071805.56
10/21/2012-10/24/2012	6	2770	44500	107,795,000	69118553.24
11/5/2012-11/7/2012	7	2500	37030	77,312,000	44740740.74
11/28/2012-11/30/2012	8	2620	67400	85,753,000	52007606.48
2/19/2013-2/21/2013	9	2865	48000	81,339,000	53943572.92
3/5/2013-3/7/2013	10	2780	64000	81,710,000	52581898.15
3/19/2013-321/2013	11	2500	62100	82,749,000	47887152.78
4/2/2013-4/4/2013	12	2745	66500	81,506,000	51790270.83
4/16/2013-4/18/2013	13	2745	70300	82,296,000	52292250
4/29/2013-5/1/2013	14	2610	72100	79,724,000	48166583.33
5/13/2013-5/15/2013	15	3220	90000	83,804,000	62465018.52
5/28/2013-5/30/2013	16	2770	59600	83,635,000	53627071.76
6/17/2013-6/18/2013	17	1710	30600	54,905,000	21733229.17
7/15//2013-7/16/2013	18	1920	40900	54,864,000	24384000
8/20/2013-8/22/2013	19	2760	58300	80,785,000	51612638.89
9/17/2013-9/19/2013	20	2730	49600	87,061,000	55017715.28
10/14/2013-10/16/2013	21	2880	49600	80,726,000	53817333.33
10/28/2013-10/29/2013	22	2880	60900	57,424,000	38282666.67
11/12/2013-11/13/2013	23	1920	31800	55,880,000	24835555.56
11/25/2013-11/27/2013	24	2700	45700	85,008,000	53130000
12/9/2013-12/11/2013	25	2685	48000	85,068,000	52872125
2/18/2014-2/20/2014	26	2927	69300	79,423,000	53812759.49
3/3/2014-3/5/2014	27	2767	56000	78,340,000	50177495.37
3/17/2014-3/19/2014	28	2622	51000	79,478,000	48238730.56
4/7/2014-4/9/2014	29	2580	68900	82,059,000	49007458.33
4/21/2014-4/23/2014	30	2466	52700	84,119,000	48017929.17
5/5/2014-5/7/2014	31	2698	66100	85,951,000	53679582.87
5/19/2014-5/21/2014	32	2480	51600	85,876,000	49299185.19
***Missing value was not monitored by US Steel-Midwest					

Table 3 2012-2014 Water Quality
Entrainment and Impingement Study Results
U.S. Steel Midwest Plant, Portage, Indiana

Sample Event #	Sample Date	Time	pH	Temperature	Dissolved Oxygen	Conductivity	Turbidity
			(su)	(°C)	(mg/L)	(mS/cm)	(NTU)
1	06/25/12	1605	8.38	18.0	9.3	0.327	0.7
	6/27/2012*						
2	07/25/12	1415	8.37	26.1	6.5	0.310	3.8
	07/27/12	0900	8.07		8.9	0.322	18.9
3	8/15/2012*	1530	8.36	23.2	7.9	0.330	3.3
	08/17/12	0748	8.28	21.8	9.0	0.332	7.2
4	9/19/2012*						
	09/21/12	0835	7.95	19.5	8.4	0.311	3..7
5	10/09/12	2105	8.55	15.3	10.2	0.321	15.6
	10/11/12	0930	8.25	14.3	8.7	0.313	9.5
6	10/21/12	0910	7.59	13.8	8.1	0.308	2.6
	10/24/12	0905	7.55	14.5	8.0	0.319	0.3
7	11/05/12	1455	7.65	9.1	9.7	0.325	51.6
	11/07/12	0830	6.80	8.6	8.4	0.316	28.5
8	11/28/12	1550	8.13	6.9	14.4	0.299	10.7
	11/30/12	1130	8.02	6.7	11.1	0.307	0.1
9	02/19/13	1520	6.87	1.1	17.5	0.332	0.0
	2/21/2013*						
10	03/05/13	1015	8.25	1.3	16.0	0.345	52.3
	03/07/13	0830	7.22	0.5	13.7	0.358	58.5
11	03/19/13	1515	7.58	2.9	15.9	0.329	61.7
	03/21/13	0855	8.19	0.9	12.7	0.338	41.7
12	04/02/13	1000	7.86	3.7	12.5	0.333	51.1
	04/04/13	0745	7.83	3.7	11.8	0.341	21.2
13	04/16/13	1100	8.34	8.0	12.1	0.378	6.6
	04/18/13	0845	8.20	7.8	12.2	0.312	0.0
14	04/29/13	1450	8.28	8.5	12.2	0.323	1.5
	05/01/13	1000	8.23	9.1	11.0	0.306	0.0
15	05/13/13	1030	8.41	10.8	9.8	0.309	0.0
	05/15/13	1600	8.61	10.5	12.9	0.298	14.4
16	05/28/13	1120	8.12	13.1	10.6	0.296	20.4
	05/30/13	0930	8.34	12.8	10.5	0.294	27.4
17	06/17/13	1030	8.03	19.2	9.0	0.289	0.0
	06/18/13	1500	7.77	18.8	9.2	0.276	0.0
18	07/15/13	0815	7.95	18.3	10.1	0.275	0.0
	07/16/13	1615	8.26	19.3	9.1	0.313	2.4
19	08/20/13	1030	8.80	21.2	8.4	0.325	0.0
	08/22/13	0810	4.01 *	22.3	8.2	0.320	1.2
20	9/17/2013	1030	8.34	20.0	8.1	0.318	11.2
	9/19/2013	0800	8.34	20.1	8.2	0.318	0.0
21	10/14/2013	1030	8.02	10.7	9.8	0.315	0.1
	10/16/2013	1030	8.02	12.1	9.2	0.321	0.0
22	10/28/2013	1030	8.41	12.0	8.0	0.359	13.9
	10/29/2013	2230	7.92	11.0	10.9	0.319	7.7
23	11/12/2013	0800	7.46	9.7	10.8	0.312	17.0
	11/13/2013	1600	8.33	8.3	13.9	0.332	32.2
24	11/25/2013	1345	8.19	6.5	11.6	0.324	17.1

Table 3 2012-2014 Water Quality
Entrainment and Impingement Study Results
U.S. Steel Midwest Plant, Portage, Indiana

Sample Event #	Sample Date	Time	pH	Temperature	Dissolved Oxygen	Conductivity	Turbidity
	11/27/2013	1045	8.13	4.9	10.6	0.324	5.3
25	12/9/2013	1430	8.46	3.1	15.5	0.320	0.0
	12/11/2013	1115	8.23	1.9	12.5	0.332	4.9
26	2/18/2014	1423	8.01	0.2	14.8	0.365	0.0
	2/22/2014	1310	8.14	0.4	13.4	0.387	0.0
27	3/3/2014	1137	7.90	0.6	14.0	0.364	0.0
	3/3/2014	1030	7.01	0.5	14.6	0.378	0.0
28	3/17/2014	1148	7.78	0.8	11.8	0.324	0.0
	3/19/2014	0630	7.35	1.2	12.4	0.362	0.0
29	4/7/2014	1350	7.68	4.8	12.2	0.335	0.0
	4/9/2014	0850	7.56	4.3	13.5	0.325	0.0
30	4/21/2014	1350	8.54	7.6	13.1	0.276	0.0
	4/23/2014	0644	7.50	8.1	12.8	0.313	0.0
31	5/5/2014	1045	7.55	9.9	11.6	0.370	3.4
	5/7/2014	0647	7.44	8.1	12.2	0.308	1.4
32	5/19/2014	1310	8.44	11.2	11.5	0.262	0.5
	5/21/2014	0630	7.79	11.2	12.7	0.298	0.1

*Dates with missing water quality data when the Horiba was not functioning properly or are outliers possibly indicative of malfuncitoning meter probe.

Table 4 2012-2014 Entrainment Study Results
Entrainment and Impingement Study Results
U.S. Steel Midwest Plant, Portage, Indiana

Sample Event	Date Collected	Lake Water Gallons per 8-hours *	Total Icthyoplankton Counted per Subsample	Icthyoplankton Projected per 24-hours	Fish Larvae / eggs	Mussel Veligers	Zooplankton
1	6/27/2012	1,251,153	4	218	2 *Actinopterygii* eggs; 2 *Gobiidae* juveniles	Absent; juveniles present	Present
2	7/27/2012	1,251,153	2	469	2 *Neogobius melanostomus* juveniles	Non-viable; pediveligers present	Present
3	8/17/2012	1,277,722	0	0	None	Present	Present
4	9/21/2012	1,216,236	0	0	None	Pediveligers present	Present
5	10/11/2012	1,130,417	0	0	None	Pediveligers present	Present
6	10/23/2012	1,497,153	0	0	None	Present	Present
7	11/7/2012	1,073,778	0	0	None	Present	Present
8	11/30/2012	1,191,014	0	0	None	Present	Present
9	2/21/2013	1,129,708	0	0	None	None	Present
10	3/7/2013	1,134,861	0	0	None	Non-viable	Present
11	3/21/2013	1,149,292	0	0	None	None	Present
12	4/4/2013	1,132,028	0	0	None	Non-viable	Present
13	4/18/2013	1,143,000	0	0	None	Non-viable	Present
14	5/1/2013	1,107,278	0	0	None	Empty shells only	Present
15	5/15/2013	1,163,944	0	0	None	Empty shells only	Present
16	5/30/2013	1,161,597	0	0	None	None	None
17	6/18/2013	762,569	15	1121	15 *Actinopterygii* eggs	Empty shells only	Present
18	7/16/2013	762,000	0	0	None	Pediveligers present	Present
19	8/22/2013	1,122,014	1	58	1 *Neogobius melanostomus*	Present	Present
20	9/19/2013	1,209,181	0	0	None	Present	Present
21	10/16/2013	1,121,194	0	0	None	Present	Present
22	10/29/2013	797,556	0	0	None	Present	Present
23	11/13/2013	776,111	0	0	None	Non-viable	Present
24	11/27/2013	1,180,667	0	0	None	Non-viable	Present
25	12/13/2013	1,181,500	0	0	None	Present	Present
26	2/20/2014	1,103,097	0	0	None	Present	Present
27	3/5/2014	1,088,056	0	0	None	Non-viable	Present
28	3/19/2014	1,103,861	0	0	None	Non-viable	Present
29	4/9/2014	1,139,708	0	0	None	None	Present
30	4/23/2014	1,168,319	0	0	None	None	Present
31	5/7/2014	1,193,764	0	0	None	None	Present
32	5/21/2014	1,192,722	0	0	None	None	None

Note: highlighted data indicate events when icthyoplankton was observed in the sample.

*Sample Event 1 Lake Water Gallons per 8 hour borrowed from Sample Event 2 because data was unavailable.

FIGURES

JOINS 17

14926 5th Ed., Jan. 20/90


INTAKE CRIB
PUMP STATION NO. 1
Aerial photo obtained form Google Earth Pro. Photo taken April 2011
APPROX. SCALE (ft.)
0
1250

ATTACHMENT 1

U.S.S. Midwest
316(b) Special Studies
Phase 1: DIDSON Acoustic
Imagery Studies

Prepared for:
United States Steel Corporation
Midwest Plant
Portage, IN

Prepared by:

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Stevenson, WA

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Arlington, VA

Date:
April 2015

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Executive Summary

The feasibility and testing of Dual-frequency Identification Sonar (DIDSON) to estimate fish abundance and describe fish behaviors in cooling water intake structures (CWIS) at the Midwest Plant was assessed through periodic sampling from June, 2012 through May, 2014. DIDSON data were collected at the Midwest CWIS at multiple locations, depths, and aiming orientations during 21 sample dates. Results demonstrated that DIDSON was effective for detecting and imaging fish within the intake structures. Fish were observed to be present in low numbers in 18 sampling events, and not present during three sampling events (June and September in 2012 and March in 2013). Only small fish ($\leq$ 25 cm) were observed. Estimated abundance per event of small fish ranged from zero to 53 fish with peak abundance during the November 6, 2012 and November 12, 2013 sample dates. Temporal expansion of per event estimates to obtain annual estimates indicated the mean annual abundance ranged from about 28,000 fish to about 34,000 fish.

Compliance of 316(b) rules requires assessment of fish impingement mortality at industrial CWISs. This is problematic for the Midwest CWIS since travelling screens are absent from the facility; as a result physical screen impingement cannot be measured directly. However, hypothetical impingement may be estimated using data collected from a nearby CWIS of similar capacity. The relationship between the number of impinged fish and estimated abundance of fish entering the wet well based on sampling at Lakeside CWIS at U.S. Steel Gary Works in 2012 and 2013 was used as a surrogate for the Midwest CWIS system. Subsequently, hypothetical impingement for the Midwest CWIS was estimated to be less than 0.4 fish per 24-hour period.

Fish within the CWIS may be considered the equivalent of impinged fish to allow for comparisons to other CWIS on the Great Lakes. Such comparisons provide a way to assess the relative impact of the Midwest CWIS on fish mortality. The annual abundance estimates for the Midwest CWIS are low compared to annual impingement estimates for some Great Lakes facilities, but are comparable to and higher than some estimates from other Great Lakes facilities.

This investigation demonstrated the effectiveness of DIDSON sampling for assessing distribution and abundance of fish in the Midwest CWIS. The information provided by DIDSON imagery data contributes to the understanding of the effects of pump station operations on aquatic biota. The results of this study suggest that DIDSON can be successfully deployed to further assess the effects of CWIS operations on the Lake Michigan fishery.

Introduction

Impingement and entrainment investigations at the U.S. Steel Corporation Midwest Plant CWIS were initiated in June 2012. A typical fish impingement study involves the collection of fish from the fish return system following physical impingement on travelling screens and subsequent wash-down cycles. This is not possible at the Midwest CWIS because the travelling screens are not operational and the fish return system has been blocked since 2006. A series of sample events, the "316(b) Special Studies" were undertaken to test the feasibility of utilizing DIDSON to describe abundance, distribution and behavior of fish in the Midwest CWIS in an effort to comply with CWA §316(b) as specified in the NPDES permit for Midwest. These studies occurred during five sample events from June through November 2012, 12 sample events from February through December 2013, and four sample events from February through May 2014. Evaluation of the acoustic imagery data provided the basis for estimating the abundance of fish that had the potential to be impinged.

Objectives

The goal of the 316(b) Special Studies was to evaluate the feasibility of deploying DIDSON for sampling fish within the Midwest CWIS. To achieve this goal, the following questions were addressed:

- Are there fish in the CWIS pre-well (structure located outside of pump station) and/or in the primary well inside the pump station?
- Can the fish in the CWIS be identified to species?
- Although travelling screens are not present in the Midwest CWIS, can fish impingement mortality still be assessed?
- Are their behaviors or other factors that make some fish more or less susceptible to impingement than others?

Methods

Data Collection

During 21 sample events (Table 1) a standard DIDSON unit was attached to an aluminum pole and lowered down into various locations in the primary well and pre-well at Midwest to acquire data on distribution, abundance and behavior of fish. The data collection system consisted of the DIDSON sonar, data transmission cable, topside control box, Ethernet cable, laptop computer loaded with Sound Metrics data acquisition software, and external hard drives (Photo 1).

June 2012 Sample Event

The Midwest CWIS was sampled by lowering the DIDSON into three locations sequentially:

1) through a hatch above the primary well that is upstream of the travelling screen bays, where screens were previously located (Photo 2),

2) through a hatch (site where entrainment sampling was conducted) above the primary well between the pumps and the travelling screen bays (Photo 3), and

3) through a hatch above the pre-well (Photo 4).

The DIDSON was positioned near the bottom at each primary well location (Figure 1). At the hatch upstream of the travelling screen bays, the DIDSON was aimed to collect data in three different orientations (north, south and east; the west direction was obstructed by a wall). At the location downstream of the travelling screen bays, the DIDSON was aimed to collect data in three different orientations (east, west, and south; the north direction was obstructed by a wall). At the pre-well, the DIDSON was positioned at three elevations (near bottom, mid-depth, and near surface) and aimed to collect data primarily with a south orientation (Figure 2). For the initial June 2012 sample, a total of 158 minutes of data were collected (108 minutes at primary well locations and 50 minutes at pre-well locations).

<u>September 2012-May 2014 Sample Events</u>

Data were collected during daytime periods for all sample events except for May 15, and October 29, 2013 when samples were collected after sunset. Data were typically collected for 30 minutes at each deployment location/orientation and depth using a frame rate of 10 frames per second in successive 20-minute files. The data were ported directly to external hard drives and backed up to additional hard drives at the end of each day.

After June 2012, all data were collected from the primary well hatch upstream of the travelling screen bays and in the pre-well (Figures 1 and 2). The hatch downstream of the travelling screen bays afforded limited field-of-view due to structural features of the primary well that obstructed the imagery. Data were collected from the primary well hatch in two orientations (north and east) and at three elevations (near bottom, mid-depth, and near the surface; Figure 3). Sample window lengths (longitudinal distance of the field-of-view) of 2.5, 5, and 10 meters were used for collecting data in the primary well. For pre-well sampling after June 2012, the DIDSON was positioned at three elevations (near bottom, mid-depth, and near the surface; Figure 4) and aimed to collect data primarily with a south orientation. Sample window lengths of 2.5 and 5 meters were used for pre-well data collection.

Data Processing/Analysis

All DIDSON data files were processed manually by playing back the files using Sound Metric's DIDSON playback software (SMC 2012). Data processing entailed noting the presence and density of fish at each location. Manual review also involved noting the presence and location of physical features of the CWIS. Total lengths of fish were estimated using the software's sizing tool, and fish were classified as small (≤ 25 cm) or large (> 25 cm). Any fish behaviors observed were noted regarding presence or absence of schooling, predator/prey interactions, and interaction with flows and/or structures.

The number of fish at the Midwest CWIS was based on an estimate of the total numbers present of each size class. Estimates of fish abundance were calculated by counting the number of individuals present for each size class at each elevation (near-surface, mid-depth, and near-bottom) and orientation (south and east for primary well samples and south for pre-well samples). The highest numbers of individual fish observed at any one time were summed by size class across elevations sampled and then averaged for each orientation. The mean numbers of fish by size class were then spatially expanded based on the ratio of sampled versus un-sampled water volume at each location.

The sample volume (volume of water covered with DIDSON sampling beams) was calculated based on the starting range and sample window length of the trapezoid-shaped field-of-view with a 14 degree vertically expanding beam pattern. When structural features within the CWIS (e.g., floors, walls) obstructed the field-of-view, the volume that was obstructed was estimated and subtracted from the estimated volume of the trapezoid to obtain the estimated sample volume.

The volume of water within each structure was estimated to determine the proportional spatial coverage provided by DIDSON sampling. The volumes were all approximated based on design drawings and detection ranges of various structural boundaries in the CWIS from the DIDSON data, and measured water depth. Uniform depths were assumed within each structure, but may not be correct given the presence of silt and sand deposition at different locations within the CWIS.

Example Calculation from November 6, 2012 Sample Event

If a total of one small fish was observed across three elevations inside the primary well with a north orientation, five small fish were observed across three elevations inside the primary well with an east orientation, and two small fish were observed across three elevations in the pre-well, the average for the inside north orientation would be 0.33 fish (1/3), 1.66 fish (5/3) for the inside east orientation and 0.66 fish (2/3) for the pre-well. The sum of the means would be 2.7 fish. Given a sample volume of 27.8 m^3 and an estimated pump primary well and pre-well volume of 557 m^3, the ratio of well volume to sample volume would be 20.2 (or 557/27.8). Estimated abundance of small fish would then be calculated as 2.65 x 20 = 54 fish (See Tables 2 and 3).

Estimating Impingement and Mortality

Since the Midwest CWIS does not have operational travelling screens in its primary well, screen impingement cannot be measured directly. However, hypothetically small fish impingement can be estimated by developing a model based on the number of impinged fish and estimated abundance of fish observed during sampling at the Lakeside CWIS at U. S. Steel Gary Works (Gary Works) in 2012 and 2013. The Lakeside CWIS at Gary Works was chosen to act as a surrogate for the Midwest CWIS because they both have intake pipes located similar distances off-shore in Southern Lake Michigan in roughly 9 meters of water (NOAA 1990). Other pump stations at Gary Works do not have off-shore intakes. Conventional impingement sampling and fish abundance sampling using DIDSON methods were conducted concurrently during 11 sample events at Lakeside CWIS in 2012 and 2013 (LGL and Environ 2014). A plot of these data indicates a positive, but weak relationship (R^2 value 0.36), between the abundance of fish in the well and fish impingement (Figure 5). Removal of a single outlying data point from the plot results in a strong R^2 value (0.84) describing the relationship between abundance and impingement at the Lakeside CWIS (Figure 5). Removal of the outlier may be justified given its deviation from the apparent trend of the remaining data points. The equation describing the slope of the trend line from the revised plot was used to estimate hypothetical fish impingement at the Midwest CWIS.

For the purposes of this evaluation, fish observed within the CWIS are conservatively assumed to be impinged. For comparative purposes, it would be instructive to contrast estimated abundance of fish in the Midwest CWIS to estimates of impingement at other CWISs located on the Great Lakes. Impingement estimates are typically reported on an annual basis (e.g., NYDEC 2010). To obtain comparable annual estimates for the Midwest CWIS based on DIDSON results the following post-processing steps were taken: 1) for each sample event the abundance estimate was temporally expanded to a daily estimate based on the ratio of sampled vs un-sampled time; 2) daily estimates were temporally expanded to annual estimates by multiplying by 365; 3) mean annual estimates were calculated for each year.

Quality Assurance and Quality Control

Quality control methods were used to ensure that samples were collected and processed to meet the data quality objectives for the project. Quality control measures used during data acquisition and data processing included:

- Field notes and data sheets were used to document methods used, level of effort per site, and field conditions. All data sheets were filled out completely with legible writing, titled with the project name; company name, and initials for each crew member. All field equipment underwent inspection and was found to be in good operating condition.
- Notes regarding data collection dates, sample intervals, and data collection parameters used were cross-referenced with actual time and date stamps and system parameters associated with the raw data. Any discrepancies between field notes and raw data were resolved in discussions between field crew and personnel responsible for data review.
- Results from data processing were initially recorded on data review forms and then input into Excel spread sheets. Spread sheets were cross-referenced against the data review forms to ensure that transposition errors did not occur.

Results/Discussion

Sampling below the hatch upstream of the travelling screen bays provided good spatial coverage in north (Figure 6) and east (Figure 7) orientations since there were no major physical obstructions with these orientations. As noted above, sampling downstream of the travelling screen bays (location of ongoing entrainment sampling) showed that this area was confined with respect to the volume in which DIDSON data could be collected (Figure 8) due to the presence of physical features obstructing the field-of-view. Results from the pre-well sampling demonstrated good spatial coverage relative to the total volume available to sample. Figure 9 shows an example of imagery obtained with DIDSON at the pre-well.

In 2012 no fish were observed during the June and September sample events, and densities up to 5 fish per sample location were observed during the October and November sample events (Table 2). Only small fish ($\leq$ 25 cm) were detected at the Midwest CWIS. Small fish were observed near the bottom in the primary well with both north and east orientations, and in the pre-well. The only near-surface fish were observed in the primary well with the east orientation during the November 6 sample event (one fish was observed near structure about 2.5 m in range). Estimated abundance of small fish per sample event ranged from 0 to 54, with the peak occurring during the November 6 sample event (Table 3; Figure 10).

In 2013 no fish were observed during the March sample event and fish densities up to 7 fish per sample location were observed during all other sample events at the Midwest CWIS (Table 4). As in 2012, only small fish were detected. Small fish were observed at all elevations in both the primary well and pre-well. Estimated abundance of small fish per sample event ranged from 0 to 53 with the peak occurring during the November 12 sample event (Table 5; Figure 10).

Fish densities up to 2 fish per sample location were observed in 2014, and only small fish were detected (Table 6). Fish were observed near the bottom and at mid-depth, but not near the surface in 2014. Estimated abundance of small fish per sample event ranged from 8 to 25 with the peak occurring during the March 18 sample event (Table 7; Figure 10).

Estimations of fish impingement or impingement mortality are also very low after using the modeling relationship developed for the Lakeside CWIS. Applying this model to the 2012 through 2014 estimates of small fish abundance indicates hypothetical impingement was less than 0.4 fish per 24-hours (Figure 11).

Mean annual abundance estimates for the Midwest CWIS ranged from about 28,000 to about 34,000 fish (Table 8). As discussed above, comparisons between Midwest and other CWIS on the Great Lakes are made possible because it is conservatively assumed that fish within the CWIS are considered the equivalent of impinged fish. Such comparisons provide a way to assess the relative impact of the Midwest CWIS on fish mortality. The annual abundance estimates for the Midwest CWIS are quite low compared to annual impingement estimates for some Great Lakes facilities such as Dunkirk Steam Station on Lake Erie (62.8 million fish), and Nine Mile Point Station (1.1 million fish) and Fitzpatrick Station (239,000 fish) both on Lake Ontario (NYDEC 2010). However the Midwest estimates are comparable to the Lake Ontario Ginna Station estimate (36,000 fish) and higher than other estimates from Lake Ontario projects including AES Somerset (12,000 fish) and Oswego Steam Station (1,000 fish).

Effectiveness of Methods

DIDSON sampling at the Midwest CWIS demonstrated its effectiveness for assessing distributions of fish in the primary well and pre-well structures. Few fish were observed with DIDSON, which suggests densities of fish are very low in the CWIS. DIDSON data also provided estimates of total length of fish. However, specific behaviors related to structural features of the CWIS could not be effectively assessed due to the low fish densities observed. Given that travelling screens are not installed at the Midwest CWIS, DIDSON provides the only means to estimate the relationship between fish abundance and potential impingement mortality. The method however is not without limitations; species identification is challenging with DIDSON since many of the species potentially present in the wells have similar body morphologies and swimming behaviors. The only species that could be identified was the round goby (*Neogobius melanostomus*), which is a benthic species that typically moves around in hopping motions. These motions were evident in DIDSON imagery. One round goby was observed along the bottom of the pre-well during the November 30, 2012 sample event, two individuals of this species were observed along the bottom of the primary well during the April 18, 2013 sample event, and one was observed along the bottom of the primary well during the May 20, 2014 sample event.

Tables

Table 1. Date, time interval, and duration for each DIDSON sample event collected at Midwest intake systems from 2012 through 2014.

Date of Sample Event	Time Intervals of Sample Event	Duration of Sample Event (minutes)
June 28-29, 2012	1713-1901, 1002-1052	158
September 13, 2012	1003-1410, 1459-1606	314
October 24, 2012	1018-1356, 1508-1711	341
November 6, 2012	0842-1210, 1348-1530	310
November 30, 2012	0932-1317, 1407-1546	324
February 21, 2013	0946-1312, 1402-1550	314
March 21, 2013	0840-1238, 1352-1535	341
April 18, 2013	0800-0941, 1012-1337	306
May 15-16, 2013	0802-0945, 2210-0143	316
June 18, 2013	0838-1210, 1246-1433	319
July 16, 2013	0833-1016, 1046-1402	299
August 21, 2013	0821-1000, 1024-1344	299
September, 19 2013	0814-0951, 1015-1338	300
October 29, 2013	1104-1246, 1307-1622	297
October 29-30, 2013	1915-2230, 2254-0036	297
November 12, 2013	0853-1034, 1052-1413	302
December 10, 2013	0832-1012, 1040-1358	298
February 19, 2014	0915-1056, 1120-1436	297
March 18, 2014	0855-1033, 1104-1436	310
April 22, 2014	0820-1004, 1033-1409	320
May 20, 2014	0822-1008, 1036-1358	308

Table 2. Estimated numbers of fish observed with DIDSON sampling at U. S. Steel Midwest CWIS in 2012. Numbers of fish are shown by location, sampling orientation, sample depth and fish size; fish are classified as small (≤ 25 cm) or large (> 25 cm). Cells in the table marked with 'X' indicate that data were not collected at those locations and elevations.

	June 28-29, 2012						September 13, 2012						October 24, 2012					
	Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Bottom	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Mid	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Surface	X	X	X	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Mean	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0

	November 6, 2012						November 30, 2012					
	Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Bottom	1	0	2	0	2	0	0	0	0	0	1	0
Mid	0	0	0	0	0	0	0	0	0	0	0	0
Surface	0	0	3	0	0	0	0	0	0	0	0	0
Total	1	0	5	0	2	0	0	0	0	0	1	0
Mean	0.3	0.0	1.7	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.3	0.0

Table 3. Estimated sum of the means (sum of all mean numbers of fish across sampling locations), sample volume, total water volume in wells, percent sample coverage, expansion factor and estimated abundance of fish by 2012 sample date for the Midwest CWIS. Fish are classified as small (≤ 25 cm) or large (> 25 cm).

	June 28-29, 2012		September 13, 2012		October 24, 2012		November 6, 2012		November 30, 2012	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Means Sum	0.0	0.0	0.0	0.0	0.3	0.0	2.7	0.0	0.3	0.0
Sample Volume (m^3)	27.8		27.8		27.8		27.8		10.6	
Estimated Volume (m^3)	562.4		562.4		562.4		562.4		562.4	
Percent Coverage	4.9%		4.9%		4.9%		4.9%		1.9%	
Expansion Factor	20.2		20.2		20.2		20.2		53.1	
Estimated No. Fish	0	0	0	0	7	0	54	0	18	0

Table 4. Estimated numbers of fish observed with DIDSON sampling at U. S. Steel Midwest CWIS in 2013. Numbers of fish are shown by location, sampling orientation, sample depth and fish size; fish are classified as small (≤ 25 cm) or large (> 25 cm).

	February 21, 2013						March 21, 2013						April 18, 2013					
	Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Bottom	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Mid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Surface	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Mean	0.7	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0

	May 15-16, 2013						June 18, 2013						July 16, 2013					
	Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Bottom	0	0	3	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0
Mid	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Surface	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	3	0	2	0	0	0	1	0	0	0	1	0	0	0	1	0
Mean	0.0	0.0	1.0	0.0	0.7	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0

	August 21, 2013						September 19, 2013						October 29, 2013 (Day)					
	Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Bottom	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Mid	0	0	0	0	3	0	1	0	0	0	1	0	0	0	0	0	0	0
Surface	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	3	0	1	0	0	0	1	0	0	0	1	0	0	0
Mean	0.0	0.0	0.0	0.0	1.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.3	0.0	0.0	0.0

	October 29, 2013 (NIght)						November 12, 2013						December 10, 2013					
	Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Bottom	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Mid	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0
Surface	0	0	0	0	0	0	5	0	0	0	0	0	4	0	0		0	0
Total	0	0	1	0	1	0	7	0	0	0	1	0	4	0	1	0	0	0
Mean	0.0	0.0	0.3	0.0	0.3	0.0	2.3	0.0	0.0	0.0	0.3	0.0	1.3	0.0	0.3	0.0	0.0	0.0

Table 5. Estimated sum of the means (sum of all mean numbers of fish across sampling locations), sample volume, total water volume in wells, percent sample coverage, expansion factor and estimated abundance of fish by 2013 sample date for the Midwest CWIS. Fish are classified as small (≤ 25 cm) or large (> 25 cm).

	February 21, 2013		March 21, 2013		April 18, 2013		May 15-16, 2013		June 18, 2013		July 16, 2013	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Means Sum	1.3	0.0	0	0	0.7	0	1.7	0	0.3	0	0.7	0
Sample Volume (m^3)	27.6		27.8		27.8		27.8		27.8		27.8	
Estimated Volume (m^3)	526.5		526.5		571.9		540.8		602.3		587.0	
Percent Coverage	5.2%		5.3%		4.9%		5.1%		4.6%		4.7%	
Expansion Factor	19.1		18.9		20.6		19.5		21.7		21.1	
Estimated No. Fish	25	0	0	0	14	0	32	0	7	0	14	0

	August 21, 2013		September 19, 2013		October 29, 2013 (Day)		October 29, 2013 (Night)		November 12, 2013		December 10, 2013	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Means Sum	1.0	0	0.7	0.0	0.3	0.0	0.7	0.0	2.7	0.0	1.7	0.0
Sample Volume (m^3)	27.8		22.3		27.8		27.8		27.8		27.8	
Estimated Volume (m^3)	549.0		579.4		579.4		579.4		556.9		534.0	
Percent Coverage	5.1%		3.8%		4.8%		4.8%		5.0%		5.2%	
Expansion Factor	19.7		26.0		20.8		20.8		20.0		19.2	
Estimated No. Fish	20	0	17	0	7	0	14	0	53	0	32	0

Table 6. Estimated numbers of fish observed with DIDSON sampling at U. S. Steel Midwest CWIS in 2014. Numbers of fish are shown by location, sampling orientation, sample depth and fish size; fish are classified as small (≤ 25 cm) or large (> 25 cm).

	February 19, 2014						March 18, 2014					
	Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Bottom	0	0	0	0	2	0	1	0	1	0	0	0
Mid	0	0	0	0	0	0	0	0	0	0	2	0
Surface	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	0	1	0	1	0	2	0
Mean	0.0	0.0	0.0	0.0	0.7	0.0	0.3	0.0	0.3	0.0	0.7	0.0

	April 22, 2014						May 20, 2014					
	Inside - North		Inside-East		Prewell		Inside - North		Inside-East		Prewell	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
Bottom	0	0	1	0	0	0	2	0	0	0	0	0
Mid	0	0	0	0	0	0	0	0	0	0	0	0
Surface	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	0	2	0	0	0	0	0
Mean	0.0	0.0	0.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0

Table 7. Estimated sum of the means (sum of all mean numbers of fish across sampling locations), sample volume, total water volume in wells, percent sample coverage, expansion factor and estimated abundance of fish by 2014 sample date for the Midwest CWIS. Fish are classified as small (≤ 25 cm) or large (> 25 cm).

	February 19, 2014		March 18, 2014		April 22, 2014		May 20, 2014	
	Small	Large	Small	Large	Small	Large	Small	Large
Means Sum	0.7	0.0	1.3	0.0	0.3	0.0	0.7	0.0
Sample Volume (m^3)	27.8		27.8		27.8		22.3	
Estimated Volume (m^3)	556.9		511.1		632.6		533.6	
Percent Coverage	5.0%		5.4%		4.4%		4.2%	
Expansion Factor	20.0		18.4		22.8		23.9	
Estimated No. Fish	13	0	25	0	8	0	16	0

Table 8. Daily, yearly and mean annual abundance estimates based on DIDSON sampling in Midwest CWIS in 2012-2014.

Sample Date	Abundance Estimate per Event	Minutes Sampled	Temporal Expansion Factor	Abundance Estimate per Day	Abundance Estimate per Year	Mean Abundance Estimate per Year
Jun_28,29_2012	0	158	9.1	0.0	0	26,110.1
Sep_13_2012	0	314	4.6	0.0	0	
Oct_24_2012	6.7	341	4.2	28.5	10,393.9	
Nov_6_2012	53.9	310	4.6	250.6	91,466.7	
Nov_30_2012	17.7	324	4.4	78.6	28,689.9	
Feb_21_2013	25.4	314	4.6	116.6	42,574.9	34,010.9
Mar_21_2013	0.0	341	4.2	0.0	0	
Apr_18_2013	13.7	306	4.7	64.5	23,556.9	
May_15_2013	32.4	316	4.6	147.7	53,927.3	
Jun_18_2013	7.2	319	4.5	32.6	11,899.0	
Jul_16_2013	14.1	299	4.8	67.8	24,744.9	
Aug_21_2013	19.7	299	4.8	95.1	34,714.6	
Sep_19_2013	17.3	300	4.8	83.3	30,392.5	
Oct_29_2013 (day)	6.9	297	4.8	33.7	12,294.5	
Oct_29_2013 (night)	13.9	297	4.8	67.4	24,589.0	
Nov_12_2013	53.4	302	4.8	254.7	92,971.4	
Dec_10_2013	32.0	298	4.8	154.7	56,465.6	
Feb_19_2014	13.4	297	4.8	64.8	23,634.2	26,219.2
Mar_18_2014	24.5	310	4.6	113.9	41,561.7	
Apr_22_2014	7.6	320	4.5	34.1	12,458.6	
May_20_2014	16.0	308	4.7	74.6	27,222.3	

Photos

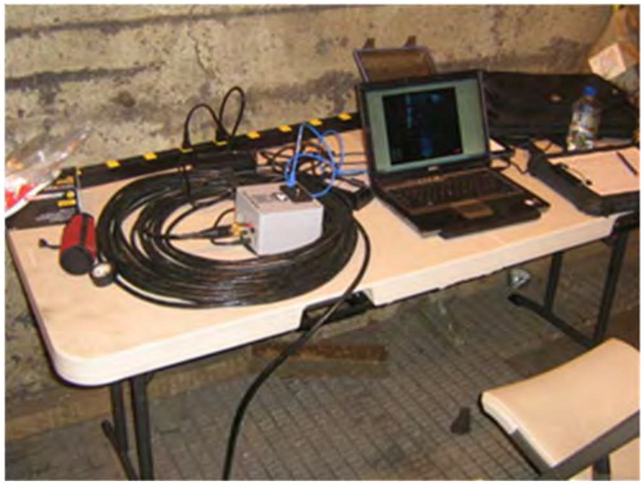

Photo 1. Photograph showing the topside components of the DIDSON data collection system used during Phase 1 of the 316(b) Special Studies conducted at Midwest CWIS in 2012 through 2014.

Photo 2. Deployment hatch location under which DIDSON sampling occurred at Midwest primary well to collect data in the area upstream of the travelling screen bays in 2012 through 2014.

Photo 3. Deployment hatch location under which DIDSON sampling occurred at Midwest primary well to collect data in the area downstream of the travelling screen bays in June 2012.

Photo 4. Photograph showing the DIDSON deployed in the pre-well at the Midwest CWIS in June, 2012.

Figures

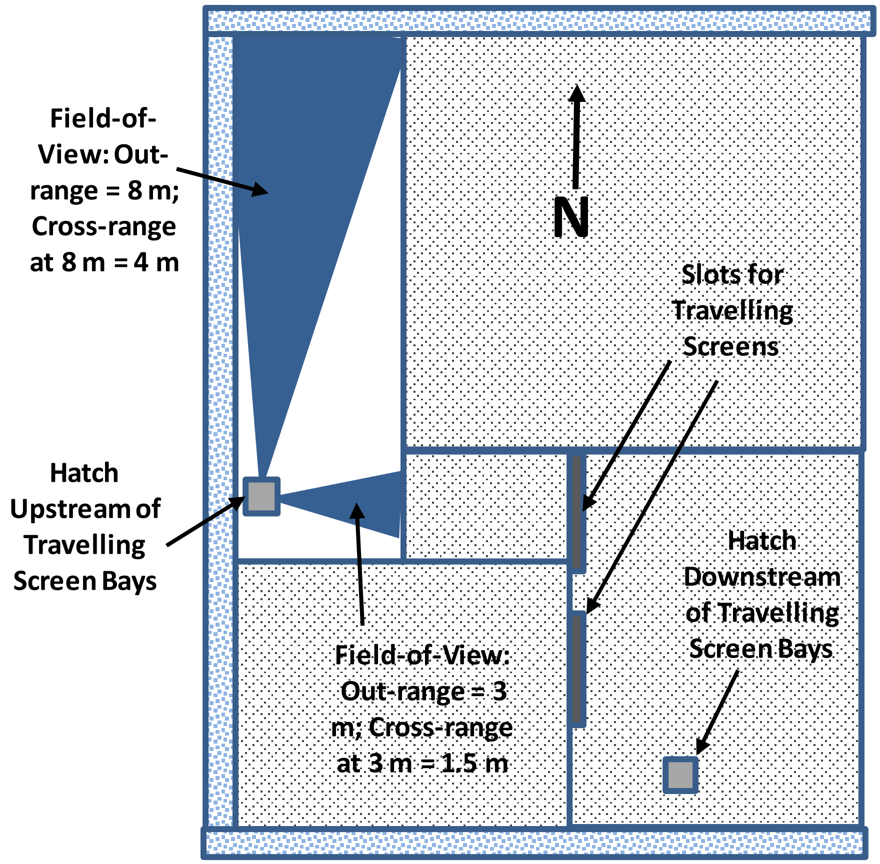

Figure 1. Partial plan view of Midwest CWIS showing conceptual DIDSON sample volumes (shown in dark blue triangles) used to estimate fish abundance and distribution in the primary well in 2012-2014. Initial sampling from the hatch downstream of the travelling screen bays indicated that data could not be effectively acquired from that location due to structures impeding the field-of-view. Gray cross-hatched areas depict areas in which DIDSON sampling could not be conducted due to impedance by structures or lack of access. Figure not to scale.

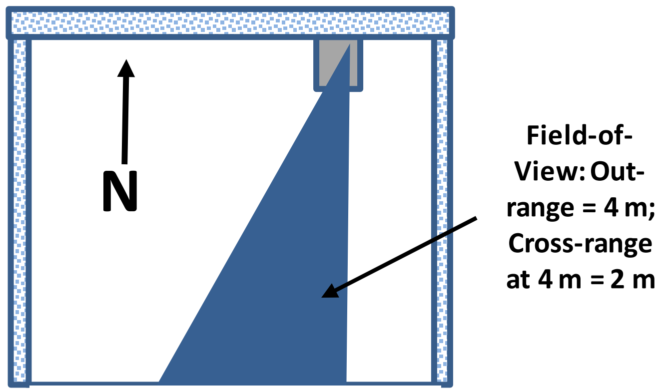

Figure 2. Partial plan view of Midwest CWIS showing conceptual DIDSON sample volumes (shown in dark blue triangles) used to estimate fish abundance and distribution in the pre-well in 2012-2014. Figure not to scale.

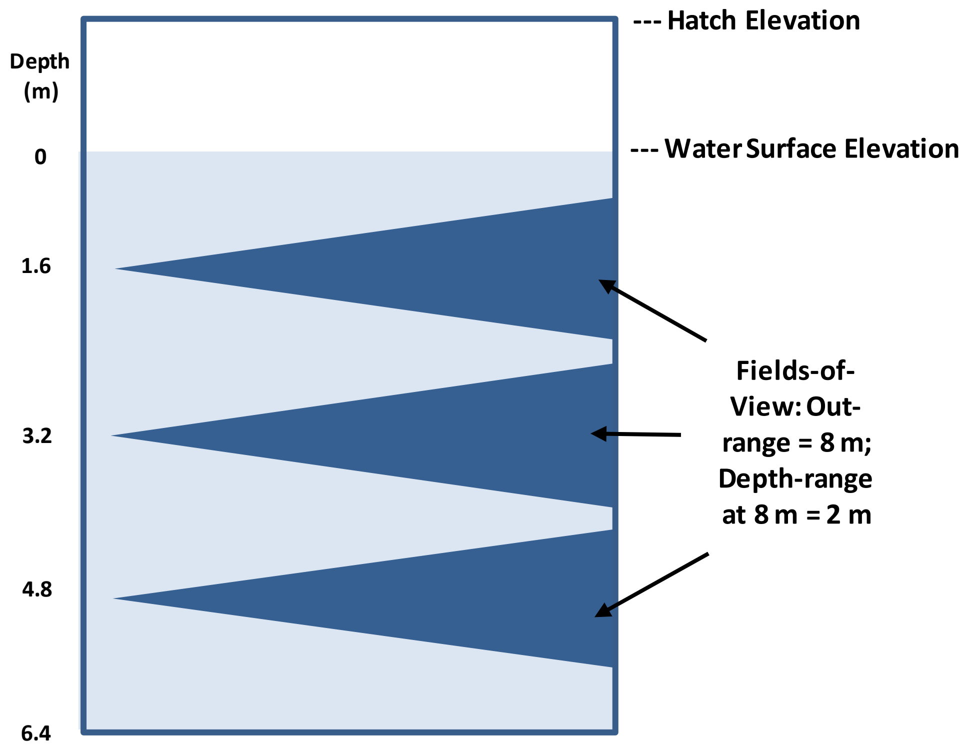

Figure 3. Conceptual cross-sectional drawing of the Midwest CWIS showing DIDSON sample volumes (shown in dark blue triangles) for the north orientation at near-surface, middle and near-bottom elevations sampled in the primary well in 2012-2014. Figure not to scale.

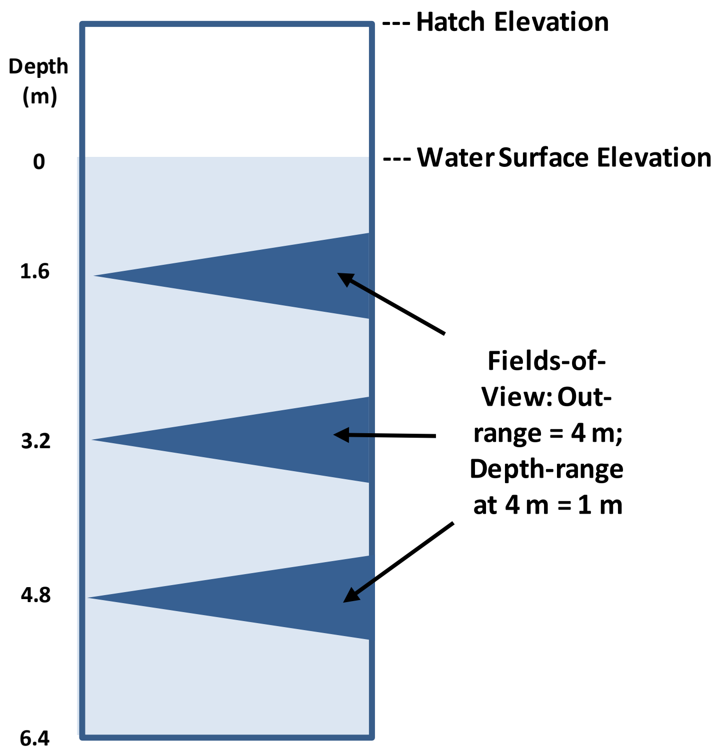

Figure 4. Conceptual cross-sectional drawing of the Midwest CWIS showing DIDSON sample volumes (shown in dark blue triangles) at near-surface, middle and near-bottom elevations sampled in the pre-well in 2012-2014. Figure not to scale.

Lakeside Gary Works

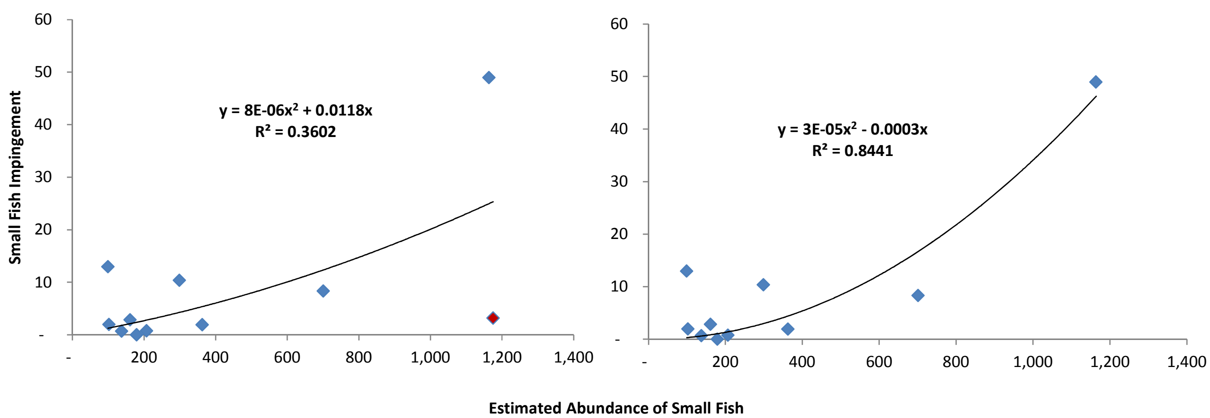

Figure 5. Scatter plots of the number of impinged small fish (from physical sampling) and estimated abundance of small fish (from DIDSON sampling) for Lakeside Gary Works CWIS sample dates in 2012 and 2013 (LGL and Environ 2014). The plot on the left includes all data points from the 2012 and 2013 sampling at the Lakeside CWIS. The plot on the right shows all data points with the exception of an outlier that was removed (that data point shown in red in the left plot). A 2nd order polynomial trend line was fit to the data and forced through the origin. Equations describing the trend lines and the R^2 values describing the strength of the relationships are shown for each plot.

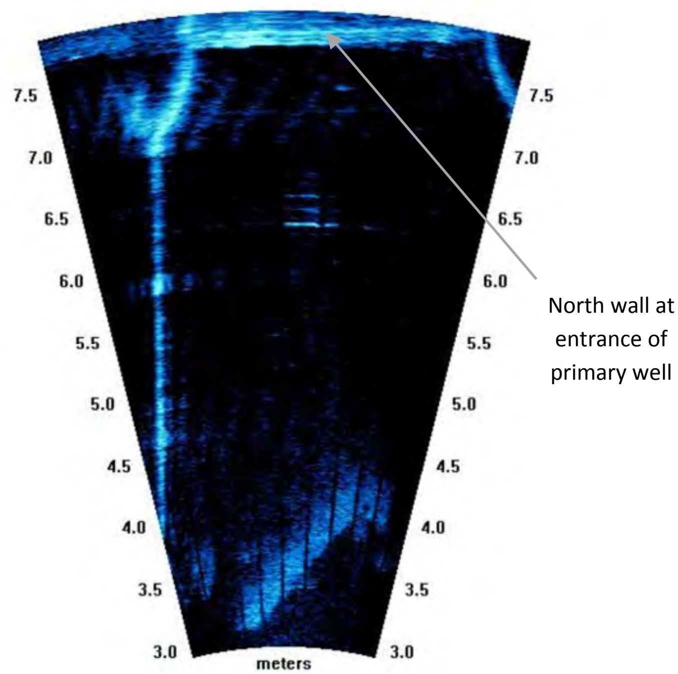

Figure 6. Still image of DIDSON data from the primary well area upstream of the travelling screen bays at Midwest CWIS from near bottom depth looking north. The well's north wall is visible at about 8 m in range. Range increments are shown in 0.5-m marks along edge of figure.

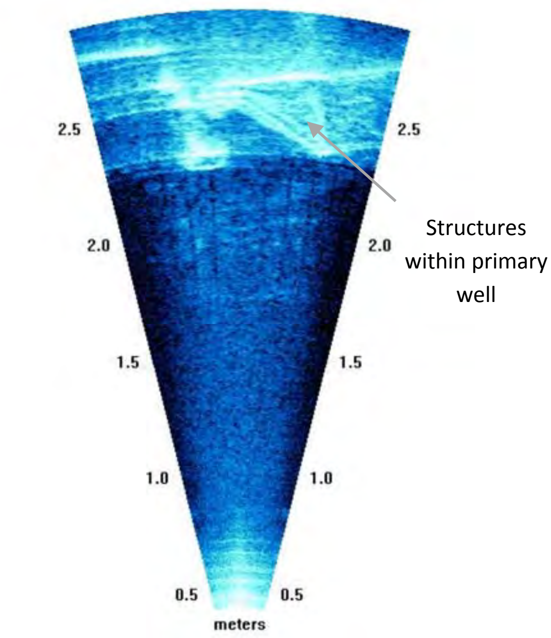

Figure 7. Still image of DIDSON data from the primary well area upstream of the travelling screen bays at Midwest CWIS at mid-depth looking east. Structural features within the well are visible at about 2.5 m in range. Range increments are shown in 0.5-m marks along edge of figure.

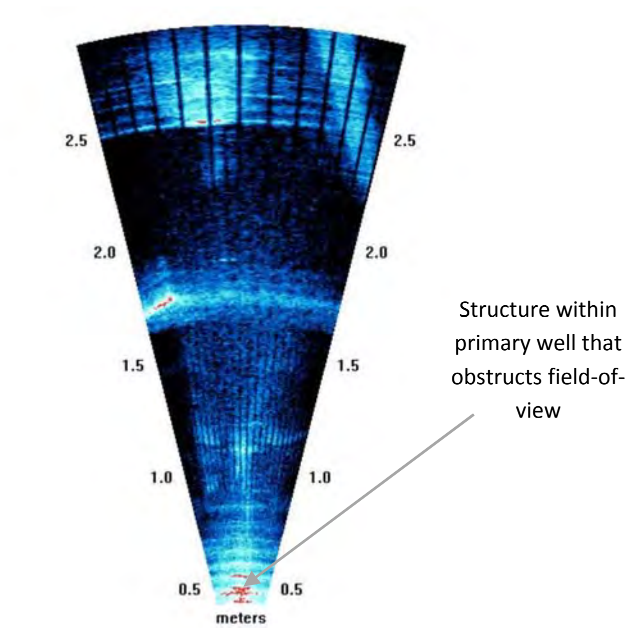

Figure 8. Still image of DIDSON data from the primary well area downstream of the travelling screen bays at Midwest CWIS from near bottom depth looking west towards the location where the screens would be located. Structural features are shown to obstruct the field-of-view. Range increments are shown in 0.5-m marks along edge of figure.

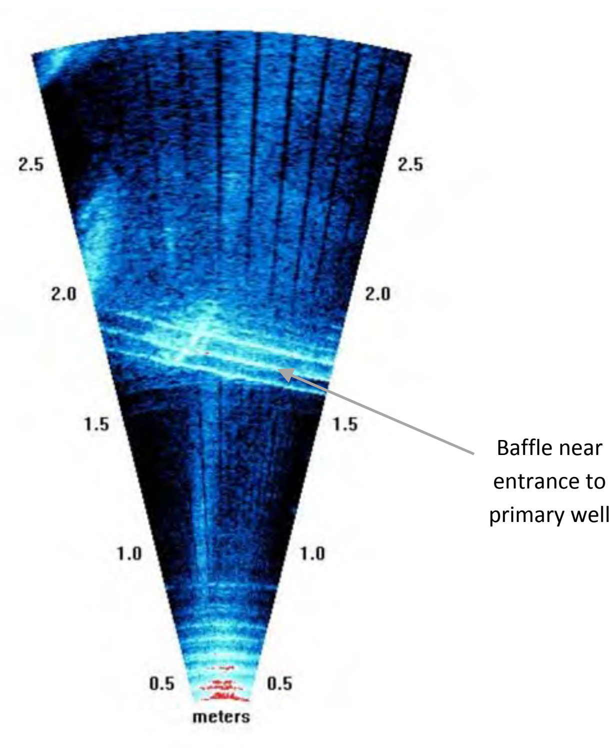

Figure 9. Still image of DIDSON data from the pre-well at Midwest CWIS at near bottom depth looking towards the intake to the primary well. A baffle structure is visible at about mid-range in the image. Range increments are shown in 0.5-m marks along edge of figure.

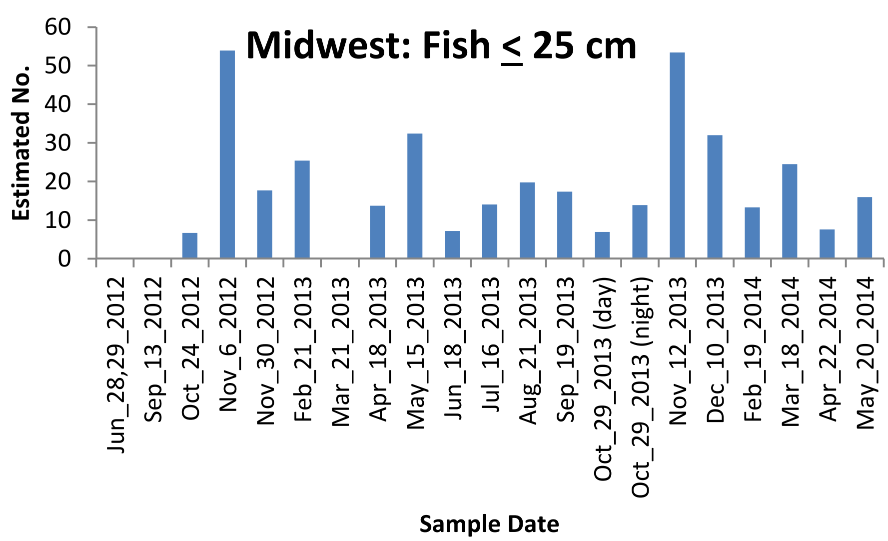

Figure 10. Estimated abundance of small fish present per sample event in the Midwest CWIS during sample dates in 2012 through 2014.

APPENDIX 2

PORTER COUNTY, INDIANA ENDANGERED, THREATENED, AND RARE SPECIES LIST

Indiana County Endangered, Threatened and Rare Species List

County: Porter

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Alasmidonta viridis	Slippershell Mussel		SSC	G4G5	S3
Eurynia dilatata	Spike		SSC	G5	S4
Plethobasus cyphyus	Sheepnose	LE	SE	G3	S1
Venustaconcha ellipsiformis	Ellipse			G4	S2
Villosa iris	Rainbow		SSC	G5	S3
Insect: Coleoptera (Beetles)					
Nicrophorus americanus	American Burying Beetle	LE	SX	G3	SX
Insect: Diptera					
Mydas tibialis	Golden Legged Mydas Fly		ST	GNR	S1S2
Insect: Homoptera					
Bruchomorpha dorsata			SR	GNR	S2
Bruchomorpha oculata			SR	GNR	SNR
Chlorotettix fallax	Deceptive Chlorotettix Leafhopper		SR	GNR	S1S2
Cosmotettix bilineatus	Two-lined cosmotettix		SR	GNR	S1S2
Flexamia pyrops	The Long-nose Three-awn Leafhopper		ST	GNR	S1
Flexamia reflexus	Indiangrass Flexamia		SR	GNR	S1S2
Graminella mohri	Mohr's Switchgrass Leafhopper		SE	GNR	S1
Mesamia nigridorsum	Black-banded Sunflower Leafhopper		WL	GNR	S2S3
Mesamia straminea	Helianthus Leafhopper		SE	GNR	S1
Philaenarcys killa	Great Lakes dune spittlebug		SR	GNR	S2S3
Polyamia caperata	Little Bluestem Polyamia		SR	GNR	S2
Polyamia herbida	The Prairie Panic Grass Leafhopper		ST	GNR	S2
Polyamia obtecta	Sand Panic Grass Leafhopper		WL	GNR	S2S3
Prairiana kansana	The Kansas Prairie Leafhopper		SE	GNR	S1
Prosapia ignipectus	Red-legged Spittle Bug		SR	G4	S2
Insect: Lepidoptera (Butterflies & Moths)					
Acleris curvalana	Blueberry Leaftier		SR	GNR	SNR
Acleris semipurpurana	Oak Leaftier Moth		SR	GNR	SNR
Aethes patricia			SE	G3G4	S1
Agrotis stigmosa	Spotted Dart Moth		ST	G4	S1S2
Agrotis vetusta	Old Man Dart		SR	G5	S2
Ancylis semiovana			SR	GNR	S2S3
Apamea burgessi	A Noctuid Moth		ST	G4	S1
Apamea indocilis	The Spastic Apamea		ST	G5	S1S3
Apamea lutosa	Opalescent Apamea		SE	GNR	S1
Apamea nigrior	Black-dashed Apamea		SR	G5	S2S3

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Indiana County Endangered, Threatened and Rare Species List

County: Porter

Species Name	Common Name	FED	STATE	GRANK	SRANK
Apamea relicina	A Noctuid Moth		ST	G4	S1S2
Apantesis virguncula	Little Virgin Tiger Moth		SR	G5	S1S2
Atrytonopsis hianna	Dusted Skipper		ST	G4G5	S2S3
Boloria selene myrina	Silver-bordered Fritillary		ST	G5T5	S2S3
Boloria selene nebraskensis	The Nebraska Silver Bordered Fritillary		SE	G5T3T4	S2S3
Callophrys irus	Frosted Elfin	C	SE	G3	S1S2
Callophrys polios	Hoary Elfin		SX	G5	SX
Capis curvata	Curved Halter Moth		ST	G5	S2S3
Caradrina meralis	The Rare Sand Quaker		ST	G5	S2
Caradrina multifera	Dune rustic		ST	GNR	S1S2
Catocala gracilis	Graceful Underwing		SR	G5	S2S3
Catocala praeclara	Praeclara Underwing		SR	G5	S2S3
Chrysanympha formosa	The Huckleberry Looper Moth		SR	G5	S1S3
Coenochroa bipunctella	Sand Dune Panic Grass Moth		SR	GNR	S2S3
Coenochroa illibella	Dune Panic Grass Moth		SR	GNR	S2S3
Crambus bidens	Forked Grass-veneer		SR	GNR	SNR
Crambus girardellus	Orange-striped Sedge Moth		SR	GNR	S2S3
Cyclophora pendulinaria	Sweetfern Geometer		SR	G5	SNR
Cycnia collaris			ST	G4	S2S3
Dargida rubripennis	The Pink Streak		ST	G3G4	S1
Dichagyris acclivis	A Noctuid Moth		ST	G4G5	S2
Digrammia eremiata	The Goat's Rue Looper		SR	G4	S2S3
Erynnis martialis	Mottled Duskywing		WL	G3	S3
Erynnis persius persius	Persius Duskywing		SE	G5T1T3	S1
Eubaphe meridiana	Little Beggar Moth		SR	G4	S2
Euchloe olympia	Olympia Marble		ST	G5	S2S3
Eucoptocnemis fimbriaris	Fringed Dart		ST	G4	S1
Eucosma ochroterminana	Buff-tipped Eucosma		SR	GNR	SNR
Eucosma ornatula			SR	GNR	SNR
Eucosma striatana	Striated Eucosma		SR	G5	SNR
Euphyes bimacula	Two-spotted Skipper		ST	G4	S1S2
Euxoa albipennis	White-striped Dart		SR	G4G5	S1S3
Euxoa aurulenta	Dune Cutworm		ST	G5	S2
Fagitana littera	The Marsh Fern Moth		ST	G4	S1S2
Feltia manifesta	The Record Keeper Moth		SR	G4	S3S4
Grammia anna	Anna's tiger moth		SR	G5	S2S3
Grammia figurata	The Figured Grammia		SR	G5	S2S3
Grammia phyllira	The Sand Barrens Grammia		SR	G4	S2S3

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
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Indiana County Endangered, Threatened and Rare Species List

County: Porter

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Hadena capsularis	The Starry Campion Capsule Moth		SR	G5	S1S2
Hadena ectypa	The Starry Campion Moth		ST	G3G4	S1S3
Hemaris gracilis	The Blueberry Clearwing Sphinx		SR	G3G4	S1S2
Hesperia leonardus	Leonard's Skipper		ST	G4	S2S3
Lesmone detrahens	Detracted Owlet		SR	G5	S2
Lethe eurydice fumosus	Smoky-eyed Brown		SE	G5T3T4	S1
Leucania amygdalina	Salt Marsh Wainscot		SR	GNR	S2
Leucania inermis	Unarmed Wainscot		SR	G5	S2S3
Lycaeides melissa samuelis	Karner Blue	LE	SE	G2	S1
Lycaena helloides	Purplish Copper		ST	G5	S2S3
Macalla zelleri	Zeller's Macalla		SR	GNR	SNR
Macrochilo absorptalis	Slant-lined Owlet		SR	G4G5	S2S3
Macrochilo hypocritalis	Twin-dotted Macrochilo		SR	G4	S2
Macrochilo louisiana	Louisiana Macrochilo		ST	G4	S1S2
Melanchra assimilis	Black Arches Moth		SE	G5	S1S2
Melanomma auricinctaria	Huckleberry Eye-spot Moth		SR	G4	S2S3
Meropleon ambifusca	Newman's Brocade		ST	G3G4	S1S2
Meropleon diversicolor	Multicolored Sedgeminer		SR	G5	S2S3
Metanema determinata	Dark Metanema		SR	G5	SNR
Metanema inatomaria	Pale Metanema		SR	G5	SNR
Nola cilicoides	Blurry-patched Nola Moth		SR	G5	SNR
Nola pustulata	Sharp-blotched Nola		SR	G4	SNR
Odontosia elegans	Elegant Prominent		SR	G5	S1S2
Oligia obtusa	A Noctuid Moth		SE	G4	S1
Paectes abrostolella	The Barrens Paectes Moth		SR	G4	S2S3
Papaipema cerina	Golden Borer Moth		ST	G2G4	S1
Papaipema leucostigma	Columbine Borer		ST	G4G5	S1S2
Papaipema lysimachiae	The St. John's Wort Borer Moth		SR	G4G5	S1S3
Papaipema maritima	The Giant Sunflower Borer Moth		ST	G3	S2
Papaipema silphii	Silphium Borer Moth		ST	G3G4	S2
Papaipema speciosissima	The Royal Fern Borer Moth		ST	G4	S2S3
Parasa indetermina	Stinging Rose Caterpillar Moth		SR	G4	S1S2
Peoria gemmatella	Gemmed Cordgrass Borer		SE	GNR	S1
Peoria tetradella			SR	GNR	SNR
Photedes enervata	The Many-lined Cordgrass Moth		ST	G4	S1
Photedes inops	Spartina Borer Moth		SR	G3G4	S2S3
Poanes viator viator	Big Broad-winged Skipper		ST	G5T4	S2
Polygonia progne	Gray Comma		ST	G5	S2S3
Problema byssus	Bunchgrass Skipper		ST	G4	S1S2

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Indiana County Endangered, Threatened and Rare Species List

County: Porter

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Protorthodes incincta	Saturn quaker		SR	GNR	S2
Pygarctia spraguei	Sprague's Pygartic		SR	G5	S1S2
Pyla arenaeola	A Pyralid Moth		SE	GNR	S1
Pyrausta laticlavia	The Southern Purple Mint Moth		SR	GNR	S1S2
Resapamea stipata	The Four-lined Cordgrass Borer		SE	G4	S1
Schinia indiana	Phlox Moth		SE	G2G4	S1
Schinia septentrionalis	Northern Flower Moth		SR	G3G4	S2S3
Sciota dammersi	Leadplant Leafwebber Moth		SE	GNR	S1
Scirpophaga perstrialis	Reed-boring Crambid Moth		SR	GNR	SNR
Sitochroa dasconalis	Pearly Indigo Borer		ST	GNR	S1S2
Sphinx luscitiosa	The Luscious Willow Sphinx		SR	G4G5	S1S2
Tampa dimediatella	Red-striped Panic Grass Moth		ST	GNR	S2S3
Tricholita notata	Marked Noctuid		ST	G5	S1S2
Virbia opella	Tawny Virbia		SR	G5	S2S3
Zomaria interruptolineana	Broken-lined Zomaria		SR	GNR	SNR
Insect: Odonata (Dragonflies & Damselflies)					
Rhionaeschna mutata	Spatterdock Darner		ST	G4	S2S3
Sympetrum semicinctum	Band-winged Meadowhawk		SR	G5	S2S3
Insect: Orthoptera					
Chloealtis conspersa	Sprinkled Locust		SR	G5	S2S3
Conocephalus saltans	Prairie Meadow Katydid		SR	G5	S1S2
Hesperotettix viridis pratensis	Snakeweed Grasshopper		SR	G5T5	S1S2
Melanoplus viridipes viridipes	Green-legged Spur-throated Grasshopper		SR	G4	S2
Neoconocephalus exiliscanorus	Slightly Musical Conehead		SR	GNR	SNR
Neoconocephalus nebrascensis	Nebraska Conehead		SR	GNR	S1S2
Orphulella pelidna	Spotted-wing Grasshopper		SE	G5	S1
Pseudopomala brachyptera	Bunch Grass Locust		ST	G5	S1
Psinidia fenestralis	Sand Locust		SR	G5	S2
Trimerotropis maritima	Seaside Grasshopper		ST	G5	S1S2
Fish					
Acipenser fulvescens	Lake Sturgeon		SE	G3G4	S1
Rhinichthys cataractae	Longnose Dace		SSC	G5	S2
Amphibian					
Ambystoma laterale	Blue-spotted Salamander		SSC	G5	S2
Hemidactylium scutatum	Four-toed Salamander		SSC	G5	S2
Necturus maculosus	Common mudpuppy		SSC	G5	S2
Reptile					
Clemmys guttata	Spotted Turtle	C	SE	G5	S2
Clonophis kirtlandii	Kirtland's Snake		SE	G2	S2

Indiana County Endangered, Threatened and Rare Species List

County: Porter

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Emydoidea blandingii	Blanding's Turtle	C	SE	G4	S2
Kinosternon subrubrum subrubrum	Eastern Mud Turtle		SE	G5T5	S2
Opheodrys vernalis	Smooth Green Snake		SE	G5	S2
Sistrurus catenatus	Eastern Massasauga	LT	SE	G3	S2
Thamnophis butleri	Butler's Garter Snake		SE	G4	S1
Thamnophis proximus proximus	Western Ribbon Snake		SSC	G5T5	S3
Bird					
Ammodramus henslowii	Henslow's Sparrow		SE	G4	S3B
Ardea alba	Great Egret		SSC	G5	S1B
Asio otus	Long-eared Owl			G5	S2
Bartramia longicauda	Upland Sandpiper		SE	G5	S3B
Botaurus lentiginosus	American Bittern		SE	G5	S2B
Buteo platypterus	Broad-winged Hawk		SSC	G5	S3B
Circus hudsonius	Northern Harrier		SE	G5	S2
Cistothorus palustris	Marsh Wren		SE	G5	S3B
Cistothorus platensis	Sedge Wren		SE	G5	S3B
Dendroica virens	Black-throated Green Warbler			G5	S2B
Empidonax alnorum	Alder Flycatcher			G5	S2B
Falco peregrinus	Peregrine Falcon		SSC	G4	S2B
Gallinula galeata	Common gallinule		SE	G5	S3B
Haliaeetus leucocephalus	Bald Eagle		SSC	G5	S2
Ixobrychus exilis	Least Bittern		SE	G4G5	S3B
Lanius ludovicianus	Loggerhead Shrike		SE	G4	S3B
Mniotilta varia	Black-and-white Warbler		SSC	G5	S1S2B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Rallus elegans	King Rail		SE	G4	S1B
Rallus limicola	Virginia Rail		SE	G5	S3B
Setophaga cerulea	Cerulean Warbler		SE	G4	S3B
Setophaga citrina	Hooded Warbler		SSC	G5	S3B
Sturnella neglecta	Western Meadowlark		SSC	G5	S2B
Vermivora chrysoptera	Golden-winged Warbler	C	SE	G4	S1B
Wilsonia canadensis	Canada Warbler			G5	S2B
Mammal					
Lasiurus borealis	Eastern Red Bat		SSC	G3G4	S4
Lasiurus cinereus	Hoary Bat		SSC	G3G4	S4
Mustela nivalis	Least Weasel		SSC	G5	S2?
Myotis lucifugus	Little Brown Bat	C	SE	G3	S2
Myotis septentrionalis	Northern Long Eared Bat	LT	SE	G1G2	S2S3
Myotis sodalis	Indiana Bat	LE	SE	G2	S1
Perimyotis subflavus	Tricolored Bat		SE	G2G3	S2S3

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County: Porter

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Reithrodontomys megalotis	Western Harvest Mouse			G5	S2
Spermophilus franklinii	Franklin's Ground Squirrel		SE	G5	S2
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Actaea rubra ssp. rubra	red baneberry		ST	G5T5	S1?
Amelanchier humilis	running serviceberry		SE	G5	S1
Aralia hispida	bristly sarsaparilla		SE	G5	S1
Arctostaphylos uva-ursi	bearberry		ST	G5	S3
Aristida longespica var. geniculata	slim-spike three-awn grass		WL	G5T5?	S3
Aristida tuberculosa	seabeach needlegrass		ST	G5	S3
Betula populifolia	gray birch		WL	G5	S1
Bidens beckii	Beck's water-marigold		SE	G5	S1
Botrychium matricariifolium	chamomile grape-fern		ST	G5	S3
Botrychium simplex	least grape-fern		SE	G5	S1
Brachyelytrum aristosum	northern shorthusk		SE	G5	S1
Buchnera americana	bluehearts		SE	G5?	S1
Carex alata	broadwing sedge		WL	G5	S3
Carex alopecoidea	foxtail sedge		SE	G5	S1
Carex atherodes	awned sedge		SE	G5	S1
Carex atlantica ssp. atlantica	Atlantic sedge		SE	G5T5	S1
Carex atlantica ssp. capillacea	Howe's sedge		SE	G5T5?	S1
Carex aurea	golden-fruited sedge		ST	G5	S3
Carex brunnescens	brownish sedge		ST	G5	S2
Carex castanea	chestnut colored sedge		SE	G5	SU
Carex cephaloidea	thinleaf sedge		ST	G5	S2
Carex conoidea	prairie gray sedge		ST	G5	S2
Carex debilis var. rudgei	white-edge sedge		WL	G5T5	S3
Carex eburnea	ebony sedge		ST	G5	S3
Carex echinata	little prickly sedge		SE	G5	S1
Carex flava	yellow sedge		ST	G5	S2
Carex folliculata	long sedge		ST	G5	S3
Carex garberi	elk sedge		SE	G5	S1
Carex leptonervia	finely-nerved sedge		SE	G5	S1
Carex limosa	mud sedge		SE	G5	S1
Carex pedunculata	longstalk sedge		WL	G5	S3
Carex projecta	necklace sedge		SE	G5	SU
Carex seorsa	weak stellate sedge		ST	G5	S3
Chimaphila umbellata ssp. cisatlantica	pipsissewa		SE	G5T5	S1
Chrysosplenium americanum	American golden-saxifrage		ST	G5	S2
Circaea alpina	small enchanter's nightshade		SX	G5	SX

Indiana County Endangered, Threatened and Rare Species List

County: Porter

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Cirsium hillii	Hill's thistle		SE	G3	S1
Cirsium pitcheri	dune thistle	LT	SE	G2G3	S1
Clintonia borealis	Clinton's lily		SE	G5	S1
Cornus amomum ssp. amomum	silky dogwood		SE	G5	S1
Cornus canadensis	bunchberry		SE	G5	S1
Cornus rugosa	roundleaf dogwood		ST	G5	S3
Cyperus houghtonii	Houghton's nutsedge		SE	G4?	S2
Cypripedium candidum	small white lady's-slipper		ST	G4	S3
Cypripedium parviflorum var. makasin	small yellow lady's-slipper		ST	G5T4T5	S3
Dactylorhiza viridis	long-bract green orchid		SE	G5	S1
Danthonia compressa	flattened oatgrass		SE	G5	SU
Dendrolycopodium hickeyi	Hickey's clubmoss		ST	G5	S3
Dendrolycopodium obscurum	tree clubmoss		ST	G5	S3
Dichanthelium boreale	northern witchgrass		ST	G5	S3
Dichanthelium leibergii	Leiberg's witchgrass		ST	G4	S2
Dichanthelium mattamuskeetense	panic-grass		SX	G4?	SX
Didiplis diandra	water-purslane		SE	G5	S1
Diervilla lonicera	northern bush-honeysuckle		WL	G5	S3
Diphasiastrum tristachyum	deep-root clubmoss		ST	G5	S2
Drosera intermedia	spoon-leaved sundew		ST	G5	S3
Dryopteris clintoniana	Clinton's woodfern		SE	G5	S1
Eleocharis geniculata	capitate spike-rush		ST	G5	S2
Eleocharis melanocarpa	black-fruited spike-rush		ST	G4	S2
Eleocharis microcarpa	small-fruited spike-rush		SE	G5	S1
Eleocharis robbinsii	Robbins' spikerush		ST	G4G5	S2
Epigaea repens	trailing arbutus		ST	G5	S3
Eriocaulon aquaticum	pipewort		SE	G5	S1
Eriophorum angustifolium	narrow-leaved cotton-grass		ST	G5	S3
Euphorbia polygonifolia	seaside spurge		ST	G5?	S2
Eurybia furcata	forked aster		ST	G3	S3
Fimbristylis puberula	Carolina fimbry		SE	G5	S1
Fuirena pumila	dwarf umbrella-sedge		ST	G4	S2
Gentiana alba	yellow gentian		ST	G4	S3
Gentiana puberulenta	downy gentian		SE	G4G5	S1
Geranium bicknellii	Bicknell's northern cranesbill		SE	G5	S1
Glyceria grandis	American manna-grass		SE	G5	S1
Hudsonia tomentosa	sand-heather		ST	G5	S2
Huperzia lucidula	shining clubmoss		WL	G5	S3
Hypericum adpressum	creeping St. John's-wort		SE	G3	S1
Hypericum pyramidatum	great St. John's-wort		ST	G4T4	S2

Indiana County Endangered, Threatened and Rare Species List

County: Porter

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Hypericum swinkianum	Swink's St. John's-wort		SE	GNR	SU
Juglans cinerea	butternut		ST	G3	S2
Juncus articulatus	jointed rush		SE	G5	S1
Juncus balticus var. littoralis	Baltic rush		WL	G5T5	S3
Juncus militaris	bayonet rush		SE	G5	S1
Juncus pelocarpus	brown-fruited rush		SE	G5	S1
Juncus scirpoides	scirpus-like rush		ST	G5	S2
Juniperus communis var. depressa	ground juniper		ST	G5T5	S3
Lathyrus japonicus	beach peavine		SE	G5	S1
Lathyrus ochroleucus	pale vetchling peavine		SE	G5	S1
Lathyrus venosus	smooth veiny pea		SE	G5	S1
Lechea stricta	upright pinweed		SX	G4?	SX
Lemna minuta	least duckweed		SE	G4	S1
Lemna valdiviana	pale duckweed		SE	G5	S1
Linnaea borealis	twinflower		SX	G5	SX
Linum striatum	ridged yellow flax		WL	G5	S3
Lipocarpha drummondii	Drummond's hemicarpha		SE	G4G5	S1
Ludwigia sphaerocarpa	globe-fruited false-loosestrife		SE	G5	S1
Lycopodiella inundata	northern bog clubmoss		ST	G5	S2
Lycopodiella subappressa	northern appressed bog clubmoss		SE	G2	S1
Melampyrum lineare	American cow-wheat		SE	G5	S1
Mikania scandens	climbing hempweed		SE	G5	S1
Milium effusum	tall millet-grass		ST	G5	S1
Minuartia michauxii var. michauxii	Michaux's stitchwort		ST	G5T5	S2
Myosotis laxa	smaller forget-me-not		ST	G5	S2
Myriophyllum pinnatum	cutleaf water-milfoil		SE	G5	S1
Myriophyllum verticillatum	whorled water-milfoil		ST	G5	S3
Najas gracillima	thread-like naiad		ST	G5?	S3
Oligoneuron album	prairie goldenrod		ST	G5	S3
Orobanche fasciculata	clustered broomrape		SE	G4G5	S1
Orthilia secunda	one-sided wintergreen		SX	G5	SX
Oryzopsis asperifolia	white-grained mountain-ricegrass		SE	G5	S1
Panax quinquefolius	American ginseng		WL	G3G4	S3
Panax trifolius	dwarf ginseng		WL	G5	S3
Panicum verrucosum	warty panic-grass		ST	G4	S2
Patis racemosa	black-fruit mountain-ricegrass		ST	G5	S3
Perideridia americana	eastern eulophus		SE	G4	S1
Persicaria careyi	Carey's smartweed		ST	G4	S2
Persicaria opelousana	northeastern smartweed		ST	G5TNRQ	S2
Persicaria robustior	stout smartweed		SE	G4G5	SU

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Indiana County Endangered, Threatened and Rare Species List

County: Porter

Species Name	Common Name	FED	STATE	GRANK	SRANK
Phemeranthus rugospermus	prairie fame-flower		SE	G3G4	S1
Pinus banksiana	jack pine		ST	G5	S3
Pinus strobus	eastern white pine		ST	G5	S3
Piptatheropsis pungens	slender mountain-ricegrass		SE	G5	S1
Piptochaetium avenaceum	blackseed needlegrass		ST	G5	S3
Plantago cordata	heart-leaved plantain		SE	G4	S1
Platanthera aquilonis	leafy northern green orchid		ST	G5	S2
Platanthera ciliaris	yellow-fringe orchid		SE	G5	S1
Platanthera clavellata	small green woodland orchid		WL	G5	S3
Platanthera hookeri	Hooker's Orchid		SX	G4	SX
Platanthera psycodes	small purple-fringe orchid		ST	G5	S3
Poa alsodes	grove meadow grass		ST	G4G5	S3
Poa paludigena	bog bluegrass		ST	G3G4	S3
Polygala paucifolia	gay-wing milkwort		SE	G5	S1
Polygonum articulatum	eastern jointweed		ST	G5	S3
Populus balsamifera	balsam poplar		SE	G5	S1
Potamogeton epihydrus	nuttall pondweed		SE	G5	S1
Potamogeton pulcher	spotted pondweed		ST	G5	S2
Potamogeton pusillus	slender pondweed		WL	G5	S2
Potamogeton richardsonii	redheadgrass		ST	G5	S3
Potamogeton strictifolius	straight-leaf pondweed		ST	G5	S2
Potamogeton vaseyi	Vasey's pondweed		SE	G4	S1
Potentilla anserina	silverweed		ST	G5	S2
Prenanthes crepidinea	nodding rattlesnake-root		WL	G4	S2
Prunus pensylvanica	fire cherry		ST	G5	S3
Pyrola americana	American wintergreen		ST	G5	S2
Rhexia mariana var. mariana	Maryland meadow beauty		ST	G5T5	S1
Rhus aromatica var. arenaria	beach sumac		ST	G5T3Q	S3
Rhynchospora fusca	brown beakrush		SX	G4G5	SX
Rhynchospora macrostachya	tall beaked-rush		ST	G4	S3
Rhynchospora nitens	short-beaked bald-rush		SE	G4?	S1
Rhynchospora recognita	globe beaked-rush		SE	G5?	S1
Rhynchospora scirpoides	long-beaked baldrush		ST	G4	S3
Salix cordata	heartleaf willow		SE	G4	S1
Sceptridium multifidum	leathery grape-fern			G5	SX
Sceptridium oneidense	blunt-lobe grape-fern		WL	G4	S3
Schoenoplectiella hallii	Hall's bulrush	C	SE	G2G3	S1
Schoenoplectiella purshiana	weakstalk bulrush		ST	G4G5	S3
Schoenoplectiella smithii	Smith's Bulrush		ST	G5?	S2
Schoenoplectus subterminalis	water bulrush		ST	G5	S3

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Indiana County Endangered, Threatened and Rare Species List

County: Porter

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Schoenoplectus torreyi	Torrey's Bulrush		SE	G5?	S1
Scirpus expansus	bulrush		SE	G4	S1
Scleria reticularis	reticulated nutrush		ST	G4	S2
Selaginella rupestris	ledge spike-moss		SE	G5	S1
Sisyrinchium montanum	strict blue-eyed-grass		SE	G5	S1
Solidago simplex var. gillmanii	sticky goldenrod		ST	G5T3?	S2
Sorbus decora	northern mountain-ash		SX	G5	SX
Sparganium androcladum	branching bur-reed		ST	G4G5	S2
Spiranthes lucida	shining ladies'-tresses		ST	G4	S3
Spiranthes magnicamporum	Great Plains ladies'-tresses		SE	G3G4	S1
Styrax americanus	American snowbell		ST	G5	S3
Symphyotrichum boreale	rushlike aster		ST	G5	S2
Symphyotrichum sericeum	western silvery aster		ST	G5	S2
Thalictrum pubescens	tall meadowrue		ST	G5	S3
Thuja occidentalis	northern white cedar		SE	G5	S1
Trichostema dichotomum	forked bluecurl		WL	G5	S3
Trillium cernuum var. macranthum	nodding trillium		SE	G5T4	S1
Turritis glabra	tower-mustard		WL	G5	S3
Utricularia cornuta	horned bladderwort		SE	G5	S1
Utricularia minor	lesser bladderwort		ST	G5	S1
Utricularia purpurea	purple bladderwort		ST	G5	S3
Utricularia subulata	zigzag bladderwort		ST	G5	S2
Vaccinium oxycoccos	small cranberry		ST	G5	S2
Valerianella chenopodiifolia	goose-foot corn-salad		WL	G4	S3
Viburnum opulus var. americanum	highbush-cranberry		SE	G5T5	S1
Viola primulifolia	primrose-leaf violet		ST	G5	S3
Woodwardia areolata	netted chainfern		ST	G5	S3
Xyris difformis	Carolina yellow-eyed grass		ST	G5	S2
High Quality Natural Community					
Forest - floodplain wet-mesic	Wet-mesic Floodplain Forest		SG	G3?	S3
Forest - upland dry Northwestern Morainal	Northwestern Morainal Dry Upland Forest		SG	GNR	S1
Forest - upland dry-mesic Northwestern Morainal	Northwestern Morainal Dry-mesic Upland Forest		SG	GNR	S1
Forest - upland mesic Northwestern Morainal	Northwestern Morainal Mesic Upland Forest		SG	GNR	S1
Lake - lake	Lake		SG	GNR	S2
Lake - pond	Pond		SG	GNR	SNR
Prairie - dry-mesic	Dry-mesic Prairie		SG	G3	S2
Prairie - mesic	Mesic Prairie		SG	G2	S2
Prairie - sand dry	Dry Sand Prairie		SG	G3	S2

Indiana County Endangered, Threatened and Rare Species List

County: Porter

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Prairie - sand dry-mesic	Dry-mesic Sand Prairie		SG	G3	S3
Prairie - sand wet-mesic	Wet-mesic Sand Prairie		SG	G1?	S2
Prairie - wet	Wet Prairie		SG	G3	S1
Primary - dune lake	Foredune		SG	G3	S1
Rhynchospora capitellata - Rhexia virginica - Rhynchospora scirpoides - Schoenoplectiella hallii Marsh	Inland Coastal Plain Marsh		SG	G2?	SNR
Savanna - sand dry	Dry Sand Savanna		SG	G2?	S2
Savanna - sand dry-mesic	Dry-mesic Sand Savanna		SG	G2?	S2S3
Wetland - fen	Fen		SG	G3	S3
Wetland - fen forested	Forested Fen		SG	G3	S1
Wetland - marsh	Marsh		SG	GU	S4
Wetland - meadow sedge	Sedge Meadow		SG	G3?	S1
Wetland - panne	Panne		SG	G2	S1
Wetland - swamp shrub	Shrub Swamp		SG	GU	S2
Other Significant Feature					
Piping Plover Critical Habitat Area	Piping Plover Critical Habitat Area			GNR	SNR

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Attachment III
Revised Consent Decree Section VI.10 Related Materials

Revised Consent Decree Section VI.10
April 2020 O&M Plan

10. Facility Wastewater Operation and Maintenance Plan.

a. By no later than April 15, 2018, U. S. Steel shall develop a comprehensive Wastewater Operation & Maintenance Plan ("O&M Plan") for the Facility and submit to EPA and IDEM for review and approval in accordance with Section VIII (Review and Approval of Submittals). The O&M Plan shall ensure that U. S. Steel shall at all times properly operate and maintain all wastewater treatment process equipment used to treat wastewater at the Facility, and provide personnel to carry out the operation, maintenance, repair, and testing functions required to achieve and maintain compliance with the conditions of the Permit. In addition, the O&M Plan shall include:

i. a list of Permit requirements;

ii. a description of, and operation information for, all wastewater treatment process equipment;

iii. job descriptions or operating duties of assigned personnel;

iv. laboratory requirements;

v. record keeping requirements;

vi. references to all pertinent operation and maintenance forms, as-built plans, standard operating procedures, and manufacturer's manuals; and

vii. a plan for proper routine visual inspection, cleaning, and maintenance of outfall channels.

b. U. S. Steel shall implement the O&M Plan upon approval by EPA and IDEM in accordance with Section VIII (Review and Approval of Submittals).

c. <u>Preventive Maintenance Program Plan</u>. U. S. Steel shall develop a Preventive Maintenance Program Plan designed to help prevent breakdowns, reduce wear, improve efficiency and extend the life of its wastewater infrastructure. By no later than April 15, 2018, U. S. Steel shall submit the Preventive Maintenance Program Plan to EPA and IDEM for review and approval in accordance with Section VIII (Review and Approval of Submittals). The Preventive Maintenance Program Plan shall be submitted as part of the Wastewater O&M Plan. At a minimum, the Preventive Maintenance Program shall consist of procedures and/or methodologies for:

i. periodic inspection, including schedules, for asset vulnerability assessment, lubrication, adjustment and/or other servicing of machinery, equipment and structures; and

ii. recording of repairs, alterations and replacements to its wastewater treatment infrastructure.

d. U. S. Steel shall implement the Preventive Maintenance Program Plan upon approval by EPA and IDEM in accordance with Section VIII (Review and Approval of Submittals).

e. At least once every 12 months, U. S. Steel shall review the components of the O&M Plan to determine if modifications are necessary to insure proper operation and maintenance of the wastewater treatment process equipment used to treat wastewater at the Facility. The results of the review shall be documented in a report that shall be retained within the O&M Plan. U. S. Steel shall submit this report along with the first semi-annual report due after completion of the annual O&M Plan review, pursuant to Paragraph 27, below.

f. U. S. Steel shall, at the time of renewal of its Permit and as part of its application for renewal, submit to IDEM the most current O&M Plan that includes the requirements of Paragraph 10(a)-(e) above. The renewal application shall include a request that the renewed Permit contain the requirements to develop, implement, and review the O&M Plan pursuant to Paragraph 10(a)-(e) above.

United States Steel Corporation
Midwest Plant
Portage, Indiana

Wastewater Treatment
O & M Manual and
Preventative Maintenance Program Plan

Effective Date: 04-15-2020
Revision 7

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PREFACE

REVISION LOG

Revision Number	Revision Date	Sections Revised
0	04/13/2018	Initial Plan
1	06/26/2018	II.B.4, II.C.4, II.D.4, II.E.4, III, IV, V, VI, VII,
2	10/04/2018	II.B.5, II.C.5, II.D.5, II.E.5, VIII, Appendix IV
3	10/26/2018	VI, II.D.5
4	11/14/2018	II.A, II.G, VI
5	04/15/2019	Annual Review: Appendix III
6	05/28/2019	Incorporation of approved wastewater process monitoring equipment: Distribution Log, II.C.5, II.D.5, III
7	4/15/2020	Annual Review: II.B, II.G.1, II.G.2, II.F.1, MWM-03, MWM-04, MWE-03, Appendix IV

DISTRIBUTION LOG

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O & M Manual and Preventative Maintenance Program Plan

Introduction

This Operation and Maintenance Manual and Preventative Maintenance Program Plan (Manual) for the Midwest Plant's Wastewater Treatment Facilities is intended to satisfy the requirements set forth in the Consent Decree dated April 2, 2018. This document also supersedes and replaces the existing Chrome Plant Containment Trench Operating and Maintenance Plan.

I. National Pollutant Discharge Elimination System (NPDES) Permit Overview

Midwest is authorized to discharge into the waters of the State of Indiana under the National Pollutant Discharge Elimination System (NPDES) Permit No. IN0000337 (Permit). The State of Indiana is authorized by the United States Environmental Protection Agency (USEPA) to administer the NPDES program. The Indiana Department of Environmental Management (IDEM) is the state agency responsible for administering and enforcing Midwest's NPDES permit. NPDES permits are issued for a 5-year period but can generally be administratively extended as long as the application for renewal was submitted complete and on time. The Permit is a legal document and all requirements, limits and conditions must be adhered to while the Permit is in effect. Any violation of Permit conditions could result in civil or criminal action.

This section of the Manual contains a summary of Permit requirements. This is only a summary and is not intended to substitute for the actual language of the Permit. The actual Permit language should be consulted for compliance (see Appendix I).

Generally speaking, the Permit consists of four parts, as described below in Parts I.A through Part I.D of this Manual.

I.A. NPDES Part I: Limits, Monitoring and Reporting Requirements

Part I of the NPDES permit contains the following subsections that pertain to the limits, monitoring and reporting requirements that apply to Midwest:

- Part I.A – Effluent Limitations and Monitoring Requirements – This subsection contains the numerical limits for the constituents to be monitored at each outfall.
- Part I.B – Narrative Water Quality Standards – This subsection details the narrative water quality standards such as oil sheens, odor, color, etc. that must be monitored.
- Part I.C – Monitoring and Reporting - This subsection further describes the discharge monitoring and reporting requirements within the Permit. The Midwest Facility uses a certified third-party laboratory to collect, analyze and report all required samples. Data is summarized on Daily Monitoring Reports (DMR) as well as Monthly Monitoring Reports (MMR), which are required to be submitted electronically each month. The DMR and MMR are signed by U. S. Steel prior to submittal to IDEM and USEPA.
- Part I.D – Storm Water Monitoring and Non-Numeric Effluent Limits – This subsection contains the non-numeric Permit conditions, including the inspection requirements associated with the Facility's storm water discharges.
- Part I.E – Storm Water Pollution Prevention Plan (SWPPP) – This subsection outlines the required content and implementation of the Facility's SWPPP.
- Part I.F – Chronic Biomonitoring Program Requirements – This subsection outlines the Permit's whole effluent toxicity testing requirements and the components of the subsequent toxicity reduction evaluation schedule of compliance, as needed.
- Part I.G – Pollution Minimization Program – This subsection sets forth the goals and requirements of the pollution minimization program for applicable pollutants
- Part I.H – Toxic Organic Pollutant Management Plan – This subsection identifies the requirement for the Facility to submit a toxic organic management plan and also identifies the components of the plan.

- Part I.I – Reopening Clauses – This subsection outlines the circumstances under which the Permit may be modified or revoked.
- Part I.J – Reporting Requirements for Solvents, Degreasing Agents, Rolling Oils, Water Treatment Chemicals and Biocides – This subsection outlines the Facility's annual requirement to report the quantity of certain chemicals that are used at the Facility and also the amount of those chemicals that may be present in any of the Facility's outfalls.
- Part I.K – Schedule of Compliance – This subsection identifies the schedule of tasks required to achieve compliance with the effluent limitations for Lead and Nickel at Outfall 004.

Refer to Appendix I.A. for NPDES Permit Section Part I – Effluent Limits, Monitoring, & Conditions.

I.B. NPDES Part II: Standard Conditions

Part II contains the following standard conditions that apply to all NPDES permits, including the Facility's Permit:

- Part II.A – General Conditions – This subsection includes descriptions of the duties to comply, mitigate adverse effects on the environmental and reapply for the Permit. It also covers civil penalties, causes for modifying, revoking or terminating a permit, toxic pollutant obligations, wastewater treatment plant operator certification requirements, and Facility inspections by IDEM.
- Part II.B – Management Requirements – This subsection pertains to the requirements for operating and maintaining treatment systems and also the procedures and conditions under which bypasses and upsets are permitted,
- Part II.C – Reporting Requirements – This subsection pertains to reporting requirements associated with planned changes to the Facility or its discharges, as well as other requirements regarding compliance/noncompliance reporting, signatory requirements and changes in the discharge of toxic substances.

Refer to Appendix I.B. for NPDES Permit Section Part II – Standard Permit Conditions.

I.C. NPDES Part III: Other Requirements

Part III of the Permit contains requirements regarding the discharges of thermal effluent and polychlorinated biphenyls (PCBs)

Refer to Appendix I.C. for NPDES Permit Section Part III – Other Requirements.

I.D. NPDES Part IV: Cooling Water Intake Structures

Part IV of the Permit contains requirements that are associated with the cooling water intake structures located at the Midwest Facility. These requirements are primarily related to the Best Technology Available (BTA) determination and the associated requirements to submit certain reports and information to IDEM.

Refer to Appendix I.C. for NPDES Permit Section Part IV – Cooling Water Intake Structures.

II. Description of Wastewater Treatment and Associated Process Equipment

II.A. Total Treatment Overview

The Midwest wastewater treatment facilities are designed to handle the wastewater streams generated by the various production lines for flat rolled steel. These lines include:

- Pickle line for removal of oxides with acid;
- Tandem lines to reduce strip thickness;
- Electrolytic cleaning for oil removal;
- Annealing for increased steel ductility;
- Temper lines for increasing coil hardness;
- Galvanizing lines for zinc coating; and,
- Coating lines including tin and chrome plating.

As shown on Figure MWE-04, the Midwest Plant has five wastewater treatment systems: (1) an Oil Pretreatment System, (2) a Chrome Treatment Plant (Chrome Plant), (3) a Final Treatment Plant (Final Treat), (4) sludge dewatering, and (5) zebra mussel control. As explained in greater detail below, oil-containing wastewater streams are discharged primarily to the Oil Pretreatment System where oil is separated through the API's, decanting and centrifuge. The separated oil is sent offsite for recycling to a licensed oil processor. The wastewater flows from the oil separation system to the Final Treatment Plant.

Wastewater systems that contain chromium are collected in dedicated conveyances that becomes the influent to the Chrome Treatment Plant. This facility reduces hexavalent chrome to trivalent chrome so that it can be removed from the wastewater. The effluent from this facility is discharged through NPDES Internal Outfall 204 and ultimately discharges through NPDES Outfall 004 into Burns Waterway.

The remaining wastewater streams (non-chromium) and the discharge from the Oil Pretreatment System and sludge dewatering facilities flow into the Final Treat. Additionally, some backwash and non-contact cooling water is also sent to the Final Treat. Wastewaters entering the Final Treatment Plant are treated through this system to adjust pH, remove solids and remove any remaining oil. The effluent from this facility is discharged through NPDES Internal Outfall 104 and ultimately through NPDES Outfall 004 into Burns Waterway.

The sludge dewatering facility receives underflow solids from the Final Treatment Plant and uses filter presses to dewater the sludge for disposal in the onsite permitted landfill (Greenbelt II). The wastewater from the pressed sludge/solids is returned to the Final Treatment Plant influent.

Midwest also has a Zebra and Quagga Mussel control water treatment program. This treatment program is a process that chlorinates all the service water pumped into the plant beginning in June and ending in October to kill mussel veligers (larvae). The chlorinated service water is dechlorinated prior to discharge from the Midwest NPDES permitted outfalls.

For the purposes of this O&M Manual and Preventative Maintenance Program Plan, all equipment in each specific area was evaluated with respect to the influence it would have on wastewater operations if a failure occurred. Only those with significant influence on operations were considered key equipment and included in this manual. Other equipment, such as pumps, which have redundancy and/or inline back-up units built into the operations do not present a significant risk to the wastewater operations and therefore, were not included in this manual.

II.B. Oil Pretreatment System

1. Process Description

   Wastewaters containing animal fat, vegetable oil, mineral oil and petroleum-based oils are processed through the Oil Pretreatment System (APIs) where oils are removed prior to discharge into the Final Treatment Plant.

Oily wastewaters flow into the Oil Interceptor 75,000-gallon Equalization (EQ) Tank. From here, the wastewater flows into the North Interceptor Mix Tank for additions of polymers and/or tannins to chemically aid oil separation. Effluent from the Mix Tank is split between the North Oil Interceptor's East and West basins where oil is skimmed off and sent to the Oil Holding Tanks. The skimmed effluent wastewaters then flow to either the Final Treatment Plant or to the South Oil Interceptor.

Effluent from the North Oil Interceptor to the South Oil Interceptor flows into the South Mix Tank that feeds the oily wastewaters into the South Oil Interceptor (Monroe) where oil is skimmed off and sent to the Oil Holding Tanks. The skimmed effluent wastewaters then flow into the Dissolved Air Filtration (DAF) units for additional oil removal. The oil removed in the DAF units is sent back to the E.Q. Tank. DAF effluent wastewaters flow into the Final Treatment Plant.

The Oil Holding Tanks (North and South) are heated to improve oil separation and the decant water is returned to the EQ Tank. The oil is pumped to a centrifuge for final oil separation. The centrifuged oil is collected in an Oil Storage Tank for offsite recycling at a licensed oil processing facility. The clean water discharge from the centrifuge flows back into the EQ Tank.

2. Process Flow Diagrams

Refer to Appendix II for Process Flow Diagrams:

- USS Process Flow Diagram No. MWE-03 Outfalls
- USS Process Flow Diagram No. MWE-04 Outfalls 104 and 204 Wastewater Treatment Processes
- USS Process Flow Diagram No. MWM-04 Pretreatment Area
- Chemtreat Graphic No. KV291 API Oil Interceptor
- Chemtreat Graphic No. ML1457 Monroe API Oil Interceptor

3. Equipment Description

a. Oil EQ Tank – Tank with a capacity of 75,000 gallons which receives oily wastewater from the Oil Waste Pad Sump, the 80" and 52" Mills, the DCR Mill and the Tin Mill Temper Mill.

b. North Oil Interceptor – Named API Oil Interceptors East and West each with a capacity of 111,000 gallons.

c. North Oil Interceptor Tanks – Named North Oil Holding Tank and South Oil Holding Tank each with a capacity of 30,000 gallons.

d. South Oil Interceptor – Named Monroe API with a capacity of 16,000 gallons.

e. Dissolved Air Floatation Units – Named DAF East and West each with a capacity of 18,000 gallons.

f. Centrifuge – An Alfa-Laval centrifuge with a processing rate of 3,000-5,000 gallons per Day, which can produce approximately 1,000-1,650 gallons of finished oil (or equivalent) per Day.

g. Centrifuge Oil Tank – Receives oil from the centrifuge with a capacity of 5,000 gallons.

4. Operating Procedure(s)

Procedure Description	Procedure Number
Oil Separation Process Overview	NSCS-M-P-7093-02-45
Handling Oil and Chemicals Shipped	NSCS-M-P-7091-56

Procedure Description	Procedure Number
Greenbelt Landfill, Oil Waste Pad	NSCS-M-P-7094-19
Incompatible Wastes	UT03-17
Oil Recovery System	NSCS-M-P-7093-02-13
Oil Separation Process Control Practices	NSCS-M-P-7093-02-46

5. Preventive Maintenance Program

Equipment	Maintenance Description	Frequency
EQ Tank	Visual Inspection	Semi-annual
EQ Tank	Non-Destructive Testing	Every 10 years
North Interceptors	Visual Inspection	Semi-annual
North Interceptors	Sludge depth	Annual
North Interceptor Oil Tanks	Visual Inspection	Semi-annual
North Interceptor Oil Tanks	Non-Destructive Testing	Every 10 years
South Interceptors	Visual Inspection	Semi-annual
South Interceptors	Non-Destructive Testing	Every 10 years
South Interceptor screw and chain motors	Motor thermal check	Quarterly
DAF	Visual Inspection	Semi-annual
DAF	Non-Destructive Testing	Every 10 years
DAF air blower motor	Motor thermal check	Quarterly
Key Equipment	Lubrication Inspection	Quarterly
Centrifuge (Contractor operated)	Contractor	Contractor

6. Key Equipment Calibration

Instrument Description	Calibration Schedule
Oil Holding Tanks Temperature Probe	Quarterly
Oil Holding Tank Level Control	Quarterly

7. Forms
- Form 7010-01 Dump Log Sheet
- Form 7091-10 Basin Skimming Log Sheet
- Form 7093-10 Interceptor Log Sheet
- Form 7010-14 Utilities WWT Report

II.C. Chrome Treatment Plant

1. Process Description

Wastewater systems containing chrome and chrome rinse waters are collected in dedicated conveyances which are directed into the 60,000-gallon Equalization Tank. Additionally, intermittent basement sump flow from the tin production areas is also sent to the Equalization Tank. The Equalization Tank feeds wastewater to one of two parallel chrome treatment systems. The first step of chrome reduction treatment process converts hexavalent chrome (Cr^{+6}) to trivalent chrome (Cr^{+3}) in the Reduction Tank. Sulfuric acid and sodium bisulfite are reagents added to and mixed with the wastewater to facilitate the reduction of chrome. From the Reduction Tank, the wastewater flows into the pH Adjustment Tank where the pH is raised to precipitate the reduced chrome into chrome floc. The wastewater flows from the pH Adjustment Tank into a “fast” mix tank, which is part of the lamella clarifier, where coagulant polymer is added to agglomerate the floc particles. The agglomerated flow continues into the “slow” Mix Tank, also integral to the lamella clarifier, where flocculant polymer is added to create larger particles. The flocculated wastewater then flows through the Lamella Clarifier where the flocculated solids settle and the clean effluent flows into a continuous backwash sand filter. The effluent from the filter goes into a holding tank. The effluent is discharged through NPDES Internal Outfall 204 and ultimately discharged through NPDES Outfall 004 into Burns Waterway.

The settled solids from the Lamella Clarifier are pumped into a sludge holding tank which feeds the chrome filter press. The pressed sludge is removed in waste boxes to an offsite licensed disposal facility. The supernatant from the filter press and the backwash from the filters along with any washdown or extraneous waters throughout the process are collected in a building sump and returned to the Equalization Tank for processing.

2. Process Flow Diagrams

Refer to Appendix II for Process Flow Diagrams:

- USS Process Flow Diagram No. MWE-03 Outfalls
- USS Process Flow Diagram No. MWE-04 Outfalls 104 and 204 Wastewater Treatment Processes
- USS Process Flow Diagram No. MWM-04 Pretreatment Area
- Chemtreat Graphic No. AG2002 Chrome Treatment Plant

3. Equipment Description

- Equalization Tank – Tank which receives process wastewater from the Tin and Tin-Free Process Lines with a capacity of 60,000 gallons
- Chrome Reduction Tanks – Two tanks, one for each train, each with a capacity of 11,090 gallons
- Sulfuric Acid Tank – Tank with a capacity of 6,400 gallons
- Sodium Bisulfite Tanks – Two tanks, which can feed either Train, each with a capacity of 7,000 gallons
- pH Adjustment Tank – Two tanks, one for each Train, each with a capacity of 5,430 gallons
- Sodium Hydroxide Tank – Tank with a capacity of 7,000 gallons
- Coagulant Tank – Tank with a capacity of 1,100 gallons
- Flocculant Tank – Tank with a capacity of 540 gallons, which feeds a make-up system
- Lamella Clarifier – Two clarifiers, one for each train, each equipped with a Fast Mixing Tank, and Slow Mixing Tank and 1,135 ft^2 of plate area
- Sand Filters – Two Dynasand Filter 100 ft^2 systems, one for each Train
- Sludge Holding Tank – Tank with a capacity of 5,000 gallons
- Filter Press – Plate and frame filter press

4. Operating Procedure(s)

Procedure Description	Procedure Number
Chrome Wastewater Treatment Plant Overview	NSCS-M-P-7093-02-03
pH Testing – Chrome Plant	NSCS-M-P-7093-02-08
Trench System	NSCS-M-P-7093-02-11
ORP Analysis and Testing	NSCS-M-P-7093-02-17
Testing Conductivity	NSCS-M-P-7093-02-26
Hexavalent Chrome Test Hach DR	NSCS-M-P-7093-02-32

Procedure Description	Procedure Number
Unknown High or Low Incoming pH, Strong Chrome, Unusual Water	NSCS-M-P-7093-02-42
Chrome Treat with Sodium Bisulfite	UT04-10
Indexing Sludge Cake From Sludge Presses	UT05-05
Chrome Treatment Process Control Practices	NSCS-M-P-7093-02-48

5. Preventive Maintenance Program

Equipment	Maintenance Description	Frequency
Lamella Clarifiers A and B	Inspection	Annually
Lamella Clarifiers A and B	Non-Destructive Testing	5 Years
Dyna Sand Filters A and B	Inspection	Annually
Dyna Sand Filters A and B	Check Filter Media Level and Maintain Level as Required	Semi-Annual
Filter Press	Inspection	Semi-Annual
EQ Tank	Inspection	Semi-Annual
EQ Tank	Non-Destructive Testing	5 Years
Chrome Reduction Tanks A and B	Inspection	Semi-Annual
pH Adjustment Tanks A and B	Inspection	Semi-Annual
Holding Tank	Inspection	Semi-Annual
Sludge Holding Tank	Inspection	Semi-Annual
Sludge Holding Tank	Non-Destructive Testing	10 Years
Mixer Motors	Thermal Checks	Quarterly
Chrome Trench	Chrome Test on Water in Trench	Daily
Chrome Trench	Inspection	Quarterly
Chrome Trench	Full Inspection with all covers pulled	Annually
Chrome Trench Piping	Non-Destructive Testing	10-years
Chrome Line Transfer Piping	Inspection	Semi-Annual
Chrome Line Transfer Piping	Non-Destructive Testing	10-years
Chrome Line Transfer Trench	Inspection	Semi-Annual
Chrome Line Evaporators	Inspection	Semi-Annual
Key Equipment	Lubrication Inspection	Quarterly

Key Equipment Calibration

Instrument Description	Calibration Schedule
60k EQ Tank Inlet ORP	Monthly
60k EQ Tank Inlet pH	Monthly
60k EQ Tank Inlet Conductivity	Monthly
60k EQ Tank Level Transmitter	Yearly

Instrument Description	Calibration Schedule
Reduction Tanks A and B ORP	Semimonthly
Reduction Tanks A and B pH	Semimonthly
Train A and B Influent Flowmeters	Annually
Greenbelt II Flow Meter	Annually
Chrome Sump Flow Meter	Annually
Adjustment Tanks A and B pH	Semimonthly
Lamellas A and B pH	Semimonthly
Lamellas A and B Turbidity Meters	Quarterly
Chrome Line Plater Basement Sump Conductivity Meters	Quarterly
Tin Line Chemtreat Basement Sump Conductivity Meters	Quarterly
Chrome Trench Sump Conductivity	Quarterly
Chrome Trench Sump Level Control	Quarterly
Chrome Wastewater Transfer Pipe Flowmeters	Annually
Sulfuric Acid Tank Level Transmitter	Yearly
Sodium Hydroxide Tank Level Transmitter	Yearly
Sodium Bisulfite Tanks A and B Level Transmitters	Yearly

6. Forms
- Form 7093-03 Pretreat Log Sheet
- Form 7010-01 Mill Dump Report
- Form 7010-14 Utilities WWT Report

II.D. Final Treatment Plant

1. Process Description

Wastewater from the Oil Pretreatment System, sludge dewater, process wastewater from several operating mills, basement sumps and miscellaneous small water sources enter the two equalization basins at the front of the Final Treatment Plant. These basins use air agitation to mix these influent streams and help remove any remaining oil from the wastewater. Separated oils are then skimmed, concentrated and shipped off site.

At the mix tank, the wastewater is pH adjusted, as necessary, using acids and/or lime slurry. Polymer is also added at this time, as is compressed air, in order to complete the mixing of all the constituents. After chemical additions and mixing, the wastewater flows into the flocculation section of the sedimentation basin where additional chemical treatment is performed and the larger solids form. The flow continues into the sedimentation basin where the large solids settle to the bottom of the basins and are collected by drag flights and cross collectors and concentrated into hoppers. The solids from the hoppers are pumped to the Sludge Dewater Facility for processing and disposal. Also, a portion of the solids are recirculated to the Mix Tank as a "seed" flow. This flow helps the flocculation and sedimentation steps by creating less need for chemical additions in the process as the additional large solids provides “bulking” and helps keep the pH in the proper range by allowing more use of the lime for reaction. Any floating oils and/or solids are skimmed by flights into a collection tube where they are pumped into the Oil Separation Tank. Finally, the treated water overflows through a weir into a discharge flume. There, defoamer may be added as needed, and the effluent flows through a

Parshall Flume for flow determination prior to discharge through NPDES Outfall 104. This flow combines with the flow from NPDES Outfall 204 and non-contact cooling water and discharges into the Burns Waterway through NPDES Outfall 004.

2. Process Flow Diagrams

Refer to Appendix II for Process Flow Diagrams:

- USS Process Flow Diagram No. MWE-03 Outfalls
- USS Process Flow Diagram No. MWE-04 Outfalls 104 and 204 Wastewater Treatment Processes
- USS Process Flow Diagram No. MWM-05 Final Treatment Plant
- Chemtreat Graphic No. KV289 Final Treatment Plant

3. Equipment Description

- EQ Basins – Two EQ Basins (north and south) receive process water from the Sheet Division and wastewater from Oil Removal/Recycle. Each basin is approximately 285,000 gallons.
- Sulfuric Acid Tank – Tank with a capacity of 6,350 gallons
- Lime Tanks – Named North and South Lime Tanks each with a capacity of 22,500 gallons
- Air Mix Tanks – Named East and West Air Mix Tank contain submerged blower mixers with a combined capacity of 50,700 gallons
- Flocculent Tank – Tank with a capacity of 1,550 gallons
- Starch Tank – Tank with a capacity of 1,550 gallons
- Flocculation Area – Area which receives water via a distribution channel from the Air Mix Tank
- Sedimentation Basins – Two Sedimentation Basins (east and west) are separated from the flocculation area by cross collectors. The Basins each have a capacity of approximately 1,000,000 gallons
- Defoamer Tank – Tank with a capacity of 1,000 gallons

4. Operating Procedure(s)

Procedure Description	**Procedure Number**
Final Treatment Overview including monitoring treatment plant conditions, reviewing test information, handling chemicals, and performing lab tests	NSCS-M-P-7091_01
Routine Inspection	NSCS-M-P-7091-02
Settleable Solids Test	NSCS-M-P-7091-04
Turbidity Test	NSCS-M-P-7091-06
pH Testing, pH Bird Baths, pH Cross Checks	NSCS-M-P-7091-07
Equalization Basins	NSCS-M-P-7091-09
Mix Tank and Coagulant Aid	NSCS-M-P-7091-10
Sedimentation Tank	NSCS-M-P-7091-12
Antifoam	NSCS-M-P-7091-14
High Turbidity at Outfall 104/004	NSCS-M-P-7091-21
Polymer System	NSCS-M-P-7091-22
Wastewater Flow Control	NSCS-M-P-7091-30
Lime Slurry Roto dips	UT02-01
Making Up Polymer Tank	UT02-25
Securing Sludge Sample	UT02-29

Procedure Description	Procedure Number
Final Treatment Process Control Practices	NSCS-M-P-7093-02-47

5. Preventive Maintenance Program

Equipment	Maintenance Description	Frequency
North EQ Basin	Inspection	Semi-Annual
South EQ Basin	Inspection	Semi-Annual
Mix Tank Area	Inspection	Annually
Sedimentation Basins	Inspection	Annually
Cross Collectors	Inspection	Annually
Scrapers and Skimmers	Inspection	Annually
Wastewater Skimming Decant Tank	Inspection	Semi-Annual
Wastewater Skimming Decant Tank	Non-Destructive Testing	10 Years
Air Blower Motors	Thermal Testing	Quarterly
Mixer Motors	Thermal Testing	Quarterly
Acid Trench (PKL wastewater)	Inspection	Semi-Annual
Acid Trench Piping (PKL wastewater)	Inspection	Semi-Annual
Key Equipment	Lubrication Inspection	Quarterly

Key Equipment Calibration

Instrument Description	Calibration Schedule
EQ Basin pH Probe	Semimonthly
Pre-mix pH probe	Semimonthly
Mix Tank pH Probe	Semimonthly
Sulfuric Acid Flowmeter	Annually
Sludge Pump Flowmeter	Annually
Outfall 104 Flowmeter	Annually

6. Forms

- Form 7010-01 Mill Dump
- Form 7091-01 Final Treatment Plant Daily Operating Report
- Form 7091-10 Equal Basin and North End Skimming
- Form 7010-14 Utilities wastewater treatment report

II.E. Sludge Dewatering

1. Process Description

Underflow sludge from the Final Treatment Plant sedimentation basins is pumped and metered into a sludge splitter box. The flow from the splitter box is directed into one of two gravity thickeners. At the gravity thickeners, the sludge is concentrated, and the lime slurry is added for bulking and pH control. Thickener rakes operate continuously. The thickener overflows through V notch weirs and the supernatant effluent returns to the Final Treatment Plant equalization basins. The thickened underflow is metered and pumped to one of two filter presses. The filter press cycle of sludge followed by compressed air is then performed. The water pressed out returns to the Final Treatment EQ Basins and the dried sludge is dropped into a sludge box for disposal at the onsite landfill.

2. Process Flow Diagrams

Refer to Appendix II for Process Flow Diagrams:

- USS Process Flow Diagram No. MWE-03 Outfalls
- USS Process Flow Diagram No. MWE-04 Outfalls 104 and 204 Wastewater treatment Processes
- USS Process Flow Diagram No. MWM-05 Final Treatment Area
- Chemtreat Graphic No. KV293 Sludge Dewatering Plant

3. Equipment Description

- Thickener Tanks – Two Tanks named East and West Thickener Tanks each with a capacity of 285,000 gallons.
- Lime Tank – Tank with a capacity of 104,000 dry pounds.
- Mix Tank – Tank equipped with a blower mixer to slake lime.
- Filter Presses – Two plate and frame filter presses named North and South Filter Press each equipped with 120 plates.

4. Operating Procedure(s)

Procedure Description	**Procedure Number**
Gravity Thickening	NSCS-M-P-7094-01
Filter Presses	NSCS-M-P-7094-02
Recording Turn Information	NSCS-M-P-7094-03
Testing pH	NSCS-M-P-7094-06
Percent Solids Test	NSCS-M-P-7094-07
#1 and #2 Gravity Thickeners	NSCS-M-P-7094-10
Cake Thickness	NSCS-M-P-7094-11
Filter Cloth Replacement ND Plate Cleaning	NSCS-M-P-7094-16
Indexing Sludge Cake from Sludge Presses	UT05-05
Plate Washing	UT05-07
Determining Sludge Levels in Thickeners	UT05-10
Sludge Dewatering Process Control Practices	NSCS-M-P-7093-02-49

5. Preventive Maintenance Program

Equipment	**Maintenance Description**	**Frequency**
East Thickener	Inspection	Annually
East Thickener	Non-Destructive Testing	10 Year
West Thickener	Inspection	Annually
West Thickener	Non-Destructive Testing	10 Year
East Drive/Rake	Inspection	Annually
West Drive/Rake	Inspection	Annually
Driver Motors	Thermal Scan	Quarterly
Mixer Motors	Thermal Scan	Quarterly
North Filter Press	Inspection	Semi-Annual
South Filter Press	Inspection	Semi-Annual
Key Equipment	Lubrication Inspection	Quarterly

6. Forms

- Form 7094-02 Sludge dewatering plant log sheet

II.F. Zebra Mussel Control

1. Process Description

Sodium Hypochlorite (bleach) is added to the intake for Lake Michigan water used throughout the Midwest Plant to control the proliferation of Zebra and Quagga mussels. Treatment for mussel control begins when the lake water temperature reaches 60° F.

Initially, a “kill” cycle is run for about 20 days. This cycle runs bleach 24 hours per day (chlorination) at a measured residual concentration in the system of approximately 0.5 ppm. After the initial “kill” cycle, a maintenance cycle begins which runs the bleach feed for 3 to 5 hours per day (chlorination). It is this maintenance cycle that prevents the mussels from growing and reproducing in the service water system.

Prior to beginning chlorination of the service water system as described above, a dechlorination system is initiated at each outfall to ensure that chlorinated water is not returned to Lake Michigan. Each outfall has been calculated to determine the dechlorination rate required for removal of chlorine from the discharge water. Sodium bisulfite is fed into the chlorinated wastewater to facilitate dechlorination at a constant rate throughout the Zebra mussel season. A third-party contractor conducts daily analysis to ensure there is no chlorine residual remaining in the effluent. The program remains in effect until the water temperature falls below 54° F at which time the bleach feed is terminated. The dechlorination process, including sampling, continues for at least two days after the termination of the bleach feed. Total residual chlorine values are included in the monthly monitoring report sent to IDEM.

2. Process Flow Diagrams

- USS Process Flow Diagram No. MWE-03 Outfalls
- USS Process Flow Diagram No. MWE-04 Outfalls 104 and 204 Wastewater Treatment Processes
- USS Process Flow Diagram No. MWM-03 Lake Pump House ChemTreat Graphic No. KV294 Outfalls/Service Water Treatment (Zebra Mussels)

3. Equipment Description

- Control instrument – bleach flow meter for incoming service water.
- Control instrument – sodium bisulfite totalizer at discharge Outfalls 002, 003 and 004.

All critical equipment is tested and calibrated by the responsible contractor prior to use each season.

II.G. Job Descriptions - WWT Assigned Personnel

1. Training

U. S. Steel has an Environmental Management System which is certified by an independent party to meet the requirements of the ISO14001:2015 Standard. All training with regards to employee competency and job task training is conducted in accordance with the specifications of ISO14001:2015. Specific procedures, equipment and additional responsibilities, as well as an acknowledgement of received training can be found in the Job Qualifications Record (JQR). Sample JQR’s can be found in Appendix IV. Each JQR lists the training requirements as well as acknowledgement from the trainer, trainee and responsible manager. Each employee has their own specific JQR for each position they have been trained on. The JQR’s are maintained by the Utilities Department Document Custodian.

2. Chrome Plant Operator – (Advanced Position)

This operator has primary responsibility for the treatment of chrome bearing wastewater from plant operations and the effluent discharged through NPDES Outfall 204. This operator is familiar with the water treatment process at the Chrome Treatment Plant including; wastewater collection systems, flow control, chemical additions, reduction of metals (specifically hexavalent chrome to trivalent chrome), pH control, solids removal, pumping, dewatering, and filtration. The operator shall work safely with an environmental awareness of their industrial work environment. The operator is responsible for completing and recording rounds according to procedure. They must operate and maintain the facility by the review of operating information, as well as make proper decisions based on this information, operational knowledge and experience. The operator must understand the legal responsibilities and obligations of this position. The chrome treatment operator must also have been trained as a Utility Helper and Final Treatment Plant Operator.

3. Final Treatment Plant Operator – (Intermediate Position)

This operator has primary responsibility for the treatment of process wastewaters from the plant operations and the effluent discharged through NPDES Outfall 104. This operator is familiar with the water treatment process at the Final Treatment Plant and all associated instrumentation including; flow control, chemical additions, starting, operating and stopping equipment as required for air addition, mixing, sludge separation, collection and transfer, and final discharge. The operator shall work safely with an environmental awareness of their industrial work environment. The operator is responsible to complete and report rounds and operate and maintain the facility by review of operating information, as well as make proper decisions based on this information, operational knowledge and experience. This operator must understand the legal responsibilities and obligations of this position. The Final Treatment Plant Operator must also have been trained as a Utilities Helper.

4. Sludge Dewatering Plant Operator – (Advanced Position)

This operator has primary responsibility for the treatment and dewatering of underflow sludge from the Final Treatment Plant. This operator is familiar with the thickening, pumping, filter pressing and disposal of the underflow sludge created through the wastewater treatment process. The operator shall work safely with an environmental awareness of their industrial work environment. The operator is responsible for completing and recording rounds according to procedure. They must operate and maintain the facility by the review of operating information, as well as make proper decisions based on this information, operational knowledge and experience. The operator must understand the legal responsibilities and obligations of this position. The Sludge Dewatering Operator must also have been trained as a Utility Helper and Final Treatment Plant Operator.

5. Utilities Helper – (Entry Position)

This position has primary responsibility for the Oil Pretreatment System and assists other treatment operations as assigned. This operator is familiar with the oil separation process at the Chrome Treatment and Final Treatment Plants including process flows and chemical additions. This operator understands the legal responsibilities and obligations of the position. The operator shall work safely with an environmental awareness of their industrial work environment. The operator is responsible to completing and recording rounds according to procedure. They must operate and maintain the facility by the review of operating information, as well as make proper decisions based on this information, operational knowledge and experience.

6. Instrument Repairman

U.S. Steel utilizes in-house, trained personnel to facilitate instrumentation requirements. These employees maintain instruments for the Utilities Department including wastewater treatment facilities. These employees are responsible for low voltages up to 480 V. They diagnose, repair, calibrate and test instrumentation, including: pneumatic and electrical control devices, burner management systems, HVAC and programmable logic controllers. Instrument technicians are trained to read and understand electrical drawings and ladder logic to facilitate any required maintenance.

7. Mechanical Repairman

U.S. Steel utilizes in-house, trained personnel to facilitate mechanical maintenance. These employees are specifically assigned to the utility's areas, including wastewater treatment facilities. They are responsible for the diagnoses, testing and repairs to rotating and mechanical equipment, piping and utility systems. They are proficient in burning and welding techniques, as well as rigging and operation of mobile equipment.

8. Electrical Repairman

U.S. Steel utilizes in-house trained personnel to facilitate electrical maintenance. These employees are specifically assigned to maintain the utilities areas, including the wastewater treatment facilities. They have responsibility for multiple voltage equipment from 24V. to 13,800 V. They maintain and repair equipment including transformers, motors, controls and electrical panels. They are trained to troubleshoot and test electrical equipment, pull and terminate wiring, and make repairs in accordance with national electrical code standards. Electrical maintenance personnel assume the lead position in any cross-functional maintenance projects.

9. Centrifuge Operator – (Contractor)

Midwest has assigned the primary responsibility for the final processing of wastewater oil skimmings to achieve an oil product for recycling to a third-party vendor. A centrifuge has been installed and is being used to achieve the recyclable oil specification. The selected vendor is familiar with centrifuge operations and oil recycling and distribution. Vendor responsibilities include: inventory control and throughput; feed rates; material transfer including temperature control; centrifuge operations; cleaning of all feed and discharge lines; and centrifuge maintenance. The vendor is responsible for finished material removal from the facility and all recycle distributions. This vendor has been instructed to communicate any operations issues to U. S. Steel personnel and understands the legal responsibilities and obligations of spill control and potential impacts to the environment.

10. Zebra / Quagga Mussel Control Personnel – (Contractor)

Midwest has assigned the primary responsibilities for the chemical treatment of Zebra and Quagga Mussel to a third-party vendor who provides water treatment chemicals and service for the Midwest Facility. U.S. Steel personnel provide oversite of the operation and the third-party laboratory provides all required NPDES sampling and reporting.

The onsite chemical vendor is familiar with the treatment program including: delivery of required sodium hypochlorite and sodium bisulfite, determining start and stop times for all cycles of the program, establishing the required feed rates for chlorination and dechlorination, maintaining usage rates and inventory of chemicals, taking total residual chlorine (TRC) colorimetric tests at the internal and final discharges to ensure target TRC levels are maintained and inspecting feed equipment and communicating any issues to U. S. Steel personnel. The vendor must understand the legal responsibilities and obligations of this program and its impacts to the environment.

11. Chemical Supplier – (Contractor)

This Chemical Supplier recommends water treatment products and is responsible for the ordering and delivery of wastewater treatment chemicals. They monitor chemical consumption and chemical tank levels, provide field testing as needed, and communicate and document treatment results. This vendor provides an account manager and trained, qualified personnel who have technical water treatment backgrounds and experience in steel operations, specifically at the Midwest Facility. Further, all vendor employees are trained in U. S. Steel requirements including immediate notification to U. S. Steel personnel of any issues, and maintaining an understanding of the legal responsibilities and obligations of spill control, operational issues and other potential impacts to the environment.

12. Sample Collection and Analysis – (Contractor)

Midwest has assigned the primary responsibility for NPDES field services and analysis to a third-party vendor. This vendor provides all NPDES and groundwater sampling, operation and maintenance of required monitoring, sampling and flow monitoring equipment, sample transport to the laboratory per required procedures and all field analysis and report preparation as required by the NPDES permit. This vendor provides a project manager and trained, qualified personnel who are familiar with all sampling protocols for permits, orders and agency requirements associated with the Midwest Facility. Further, all vendor employees are trained in U. S. Steel requirements, including immediate notification to U. S. Steel personnel of any issues. The vendor employees must understand the legal responsibilities and obligations of spill control, operational issues and other potential impacts to the environment.

III. Laboratory Requirements

Midwest has assigned primary responsibility for NPDES sampling and analytical testing to an EPA certified third-party laboratory. This testing includes analysis of all NPDES required testing as well as operation and maintenance of all NPDES lab and field instruments. The third-party is responsible for proper operation and calibration of all instruments. The third-party is required to calibrate the following outfall flow meters annually:

Instrument Description	Instrument Type	Calibration Schedule
Outfall 002 Flow Meter	Area-Velocity Probe	Annually
Outfall 003 Flow Meter	Area-Velocity Probe	Annually
Outfall 004 Flow Meter	Area-Velocity Probe	Annually

The contracted laboratory is directly associated with the field services group that collects the samples for analysis. U. S. Steel requires that the laboratory meet all the regulatory requirements. All analytical methods are approved by standard methods and undergo validation prior to their approval for use in the laboratory. The laboratory NELAP certifications are included in Appendix III. The approval methods contain criteria for quality control and performance throughout all stages of analysis including sample preparation. The laboratory also performs internal audits of all systems by a quality assurance manager at each facility. Accreditation, certification and licensing bodies also perform audits to ensure laboratory conformance to all standards and regulations. The vendor has achieved accreditation from NELAC and various other industry programs including:

- EPA and OECD Good Laboratory Practices
- National Environmental Laboratory Accreditation Program
- U.S. Environmental Protection Agency
- North American Proficiency Testing Program
- National Voluntary Laboratory Accreditation Program

The vendor has been instructed to immediately notify U. S. Steel personnel when any analysis exceeds NPDES permit or U. S. Steel internal limits. The vendor must understand the legal responsibilities of the permits, orders and impacts to the environment.

IV. Recordkeeping Requirements

U. S. Steel complies with the recordkeeping requirements of this Operating and Maintenance Manual / Preventative Maintenance Program and the Permit by maintaining the appropriate data and records for a minimum of five years.

All preventative Maintenance and calibration activities are tracked by an electronic maintenance management system. Currently, U. S. Steel uses Oracle Enterprise Business Suite, Enterprise Asset Management and Viziya Scheduler as the electronic maintenance management system. Work required, including frequency of the activity, is entered into the electronic maintenance management system. Once a task becomes due, a work order is generated by the electronic management system. A maintenance planner then directs the work order to the appropriate manager who schedules and assigns the task to maintenance personnel. Once the tasks are complete, the planner then documents the activity in the electronic system.

V. Plan for Inspection, Cleaning and Maintenance of Outfall Channels

The final outfalls are visually observed on a daily basis by a third party. The visual observations include water quality and physical condition of the outfall. If debris or structural deficiency is noted in the outfall channel, appropriate measures will be taken to return the outfall to normal operating condition. Midwest will also conduct scheduled annual maintenance inspections of the outfall structures. These inspections will be documented in the electronic maintenance management system.

A third-party contractor is responsible for flow measurements at the final Outfalls (002, 003, 004). They maintain and calibrate each flow meter per manufacturer recommendations. The flow meters are capable of accurate readings in varying flow conditions.

VI. Preventive Maintenance Program Plan

U. S. Steel conducts a Preventative Maintenance Program designed to help prevent breakdowns, reduce wear, improve efficiency and extend the life of its wastewater treatment infrastructure. Schedules for preventative maintenance inspections and testing are integrated into this Operating and Maintenance Manual for each wastewater treatment system at the facility. The calibration schedules for key equipment and infrastructure for each treatment system are also provided above. All preventative maintenance activities will be documented in an electronic maintenance management system. If preventative maintenance activities indicate the need for corrective action, a work order will be initiated and documented in the electronic management system. Refer to Section IV of this manual for specific recordkeeping requirements.

VII. Review of O&M Plan and Preventative Maintenance Program Plan

At least annually, U. S. Steel will review the O&M Manual, including the Preventative Maintenance Program, to determine whether modifications to the Manual are necessary for the proper operation and maintenance of the wastewater treatment process equipment. The results of the review will be documented and kept with the O&M Manual. The results will also be submitted along with the semiannual report.

As per section 11.d of the Consent Decree, U. S. Steel will incorporate into the O&M and Preventative Maintenance plan all additional equipment included in the Enhanced Monitoring Plan within 5 months of approval of said plan. The modification to the plan will be documented and kept with the O&M Manual. The results will also be submitted along with the semi-annual report.

VIII. Appendices

All appendices are for reference only. Material referenced in the appendices can be changed without revising the O&M plan. Document control practices encourage the use of referencing material as needed to avoid duplication and use of material that is not the latest revision. Refer to the electronic versions for the most up to date information. The most current versions can be found at the locations described below:

- Appendix I – NPDES Permit IN0000337
  - IDEM Virtual File Cabinet - https://vfc.idem.in.gov/DocumentSearch.aspx

- Appendix II – Process Flow Diagrams
  - Midwest Electronic Archive – Contact Environmental Control

- Appendix III – Laboratory Certifications
  - ALS Environmental – Valparaiso, 2400 Cumberland Dr., Valparaiso, IN 46383
  - Ramboll Environ, 201 Summit View Drive, Suite 300, Brentwood, TN 37027

- Appendix IV – Job Qualification Records (JQRs)
  - Midwest Document Management System or the Document Custodian

Appendix I.A.
NPDES Permit Part I
Effluent Limits, Monitoring, & Conditions

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 002. The discharge is limited to non-contact cooling water and storm water. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Portage-Burns Waterway. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1] [2] [10]

Outfall 002

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	-----	-	1 x Weekly	24 Hour Total
Oil and Grease[8]	-----	--------	-------	-----	Report	mg/l	1 x Weekly	Grab
Total Residual Chlorine (TRC)[3,4,6]	0.04	0.09[5]	lbs/day	0.01	0.02	mg/l	Daily[7]	Grab
TSS	------	--------	-------	-----	Report	mg/l	Quarterly[9]	Grab
COD	------	--------	-------	-----	Report	mg/l	Quarterly[9]	Grab
Ammonia	------	--------	-------	-----	Report	mg/l	Quarterly[9]	Grab
Zinc[11]	------	--------	-------	-----	Report	mg/l	Quarterly[9]	Grab

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	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 including dosage rates contributing to this Outfall, 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 monthly average water quality based effluent limit (WQBEL) for Total Residual Chlorine is less than the limit of quantitation (LOQ) as specified below. 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.

[4] The daily maximum WQBEL for Total Residual 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.

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	Test Method	LOD	LOQ
Chlorine	4500-Cl-D,E or 4500-Cl-G	0.02 mg/l	0.06 mg/l

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.

[5] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 0.26 lbs/day.

[6] See Part I.G for the Pollutant Minimization Program requirements.

[7] Monitoring for TRC shall be 1 X Daily during Zebra and Quagga mussel intake chlorination, and continue for three (3) additional days after Zebra and Quagga mussel treatment has been completed.

[8] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l). This limit is considered sufficient to ensure compliance with narrative water quality criteria in 327 IAC 2-1.5-8(b)(1)(C) which prohibits oil or other substances in amounts sufficient to create a visible film or sheen on the receiving water.

[9] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[10] The Storm Water Monitoring and Non Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[11] The permittee shall measure and report the identified metal in <u>total recoverable</u> form.

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 Outfall 003. The discharge is limited to non-contact cooling water and storm water. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Portage-Burns Waterway. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1] [2] [10]

Outfall 003

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring Requirements	
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	-----	-	1 x Weekly	24 Hour Total
Oil and Grease[8]	-----	--------	-------	-----	Report	mg/l	1 x Weekly	Grab
Total Residual Chlorine (TRC)[3,4,6]	1.14	2.27[5]	lbs/day	0.01	0.02	mg/l	Daily[7]	Grab
TSS	------	--------	-------	-----	Report	mg/l	Quarterly[9]	Grab
COD	------	--------	-------	-----	Report	mg/l	Quarterly[9]	Grab
Ammonia	------	--------	-------	-----	Report	mg/l	Quarterly[9]	Grab
Zinc[11]	------	--------	-------	-----	Report	mg/l	Quarterly[9]	Grab

Table 2

	Quality or Concentration			Monitoring Requirements	
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	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 including dosage rates contributing to this Outfall, 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 monthly average water quality based effluent limit (WQBEL) for Total Residual Chlorine is less than the limit of quantitation (LOQ) as specified below. 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.

[4] The daily maximum WQBEL for Total Residual 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.

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	Test Method	LOD	LOQ
Chlorine	4500-Cl-D,E or 4500-Cl-G	0.02 mg/l	0.06 mg/l

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.

[5] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 6.82 lbs/day.

[6] See Part I.G for the Pollutant Minimization Program requirements.

[7] Monitoring for TRC shall be 1 X Daily during Zebra and Quagga mussel intake chlorination, and continue for three (3) additional days after Zebra and Quagga mussel treatment has been completed.

[8] If oil and grease is measured in the effluent in significant quantities, the source of such discharge is to be investigated and eliminated. The facility is required to investigate and eliminate any significant or measured concentration of oil and grease (quantities in excess of 5 mg/l). The intent of this requirement is to assure that oil and grease is not added to once-through cooling water in measurable quantities (5 mg/l). This limit is considered sufficient to ensure compliance with narrative water quality criteria in 327 IAC 2-1.5-8(b)(1)(C) which prohibits oil or other substances in amounts sufficient to create a visible film or sheen on the receiving water.

[9] All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches and at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event.

For each sample taken, the permittee shall record the duration and total rainfall of the storm event, the number of hours between beginning of the storm measured and the end of the previous measurable rain event, and the outside temperature at the time of sampling.

A grab sample shall be taken during the first thirty (30) minutes of the discharge (or as soon thereafter as practicable).

[10] The Storm Water Monitoring and Non Numeric Effluent Limits and the Storm Water Pollution Prevention Plan (SWPPP) requirements can be found in Part I.D. and I.E. of this permit.

[11] The permittee shall measure and report the identified metal in total recoverable form.

3. 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 004. The discharge is limited to process waste water from internal outfalls 104 and 204. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge but prior to entry into Portage-Burns Waterway. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS [1] [2]
Outfall 004

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	-----	-	5 x Weekly	24 Hour Total
Oil and Grease	-----	--------	-------	-----	Report	mg/l	5 x Weekly	Grab
Total Residual Chlorine (TRC)[3,4,6,9]	1.3	3.1[5]	lbs/day	0.01	0.02	mg/l	Daily[12]	Grab
Silver [3,4,6,7,9]	0.012	0.021[5]	lbs/day	0.076	0.13	ug/l	2 X Monthly	24 Hr Comp
F. Cyanide[8,9]	1.2	2.1	lbs/day	0.0075	0.013	mg/l	2 X Monthly	Grab
Cadmium[7]	1.2	2.1	lbs/day	0.0077	0.013	mg/l	2 X Monthly	24 Hr Comp
Copper [7]	4.7	8.2	lbs/day	0.030	0.052	mg/l	2 X Monthly	24 Hr Comp
Nickel[7][14]								
Interim	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24 Hr. Comp
Final	33.3	57.1	lbs/day	0.21	0.36	mg/l	2 X Monthly	24 Hr Comp
Lead [7][14]								
Interim	Report	Report	lbs/day	Report	Report	mg/l	2 X Monthly	24 Hr. Comp
Final	6.0	10.5	lbs/day	0.038	0.066	mg/l	2 X Monthly	24 Hr Comp
Mercury[7,9]	Report	Report	lbs/day	Report	Report	ng/l	6 X Yearly[13]	Grab
Whole Effluent Toxicity [10]	------	See Part I.F of the permit for Whole Effluent Toxicity Testing requirements.				TUc	Quarterly [11]	24 Hr Comp

Table 2

	Quality or Concentration			Monitoring	Requirements
	Daily	Daily		Measurement	Sample
Parameter	Minimum	Maximum	Units	Frequency	Type
pH	6.0	9.0	s.u.	5 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 including dosage rates contributing to this Outfall, 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 monthly average water quality based effluent limit (WQBEL) for Total Residual Chlorine and Silver is less than the limit of quantitation (LOQ) as specified below (see footnote [9]). 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.

[4] The daily maximum WQBEL for Total Residual Chlorine and Silver is greater than or equal to the LOD but less than the LOQ as specified below (see footnote [9]). Compliance with the daily maximum limit will be demonstrated if the observed effluent concentrations are less than the LOQ.

<u>Case-Specific LOD/LOQ</u>

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.

[5] Compliance with the daily maximum mass value will be demonstrated if the calculated mass value is less than 9.51 lbs/day for Total Residual Chlorine and 0.1 lbs/day for Silver.

[6] See Part I.G for the Pollutant Minimization Program requirements.

[7] The permittee shall measure and report the identified metal in <u>total recoverable</u> form.

[8] 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.

[9] 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	Test 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
Cyanide, Free	4500-CN-I	2.5 ug/l	5.0 ug/l
Mercury	1631, Revision E	0.2 ng/l	0.5 ng/l

[10] See Part I.F of the permit for Whole Effluent Toxicity Testing requirements.

[11] 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.

[12] Monitoring for TRC shall be 1 X Daily during Zebra and Quagga mussel intake chlorination, and continue for three (3) additional days after Zebra and Quagga mussel treatment has been completed.

[13] 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.

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

4 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 Outfalls 104 and 204. The discharge is limited to process waste water. Samples taken in compliance with the monitoring requirements below shall be taken at a point representative of the discharge and prior to commingling. Such discharge shall be limited and monitored by the permittee as specified below:

DISCHARGE LIMITATIONS

Outfalls 104 and 204

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	-----	-	5 x Weekly	24 Hour Total
TSS	Report	Report	lbs/day	Report	Report	mg/l	5 x Weekly	24-Hr Comp
Oil and Grease	----------	Report	lbs/day	Report	Report	mg/l	5 x Weekly	3 grabs/24-Hr Comp[1]
T. Chromium[2]	Report	Report	lbs/day	Report	Report	mg/l	5 x Weekly	24-Hr Comp
Zinc[2]	Report	Report	lbs/day	Report	Report	mg/l	5 x Weekly	24-Hr Comp
Lead[2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
Nickel[2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
Cadmium[2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
Copper [2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
Silver[2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
T. Cyanide[3]	Report	Report	lbs/day	Report	Report	mg/l	5 x Weekly	Grab
Hex. Chromium[4]	Report	Report	lbs/day	Report	Report	mg/l	Weekly	Grab
Naphthalene	----------	Report	lbs/day	----------	Report	mg/l	Monthly	Grab
Tetrachloro-Ethylene	----------	Report	lbs/day	Report	Report	mg/l	Monthly	Grab
Total Toxic Organics[5]	----------	Report	lbs/day	----------	Report	mg/l	Monthly	24 Hr-Comp
Fluoride	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24 Hr-Comp

[1] A minimum of three (3) grab samples shall be collected at equally spaced time intervals 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.

[2] The permittee shall measure and report the identified metal in <u>total recoverable</u> form.

[3] 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.

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	Test Method	LOD	LOQ
Cyanide, Total	335.4 or 4500 CN-E	5 ug/l	16 ug/l

Upon demonstration to IDEM that "no Sulfides" are present at the effected internal and/or final outfalls and IDEM has reviewed and approved the demonstration, the permittee may collect samples by 24-Hr. Composite.

[4] Hexavalent Chromium shall be measured and reported as dissolved 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.

[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.H of this permit. However, the certification statement may be used as long as there have been no changes at the facility that would significantly alter the current TOPMP, and the permittee is following the current TOPMP that was developed under the previous permit until the new plan is completed as required by Part I.H 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.

5. The permittee is authorized to discharge from the outfalls 104 and 204 and report (combined total) as Outfall 304. The discharge is limited to process waste water and chrome wastewaters which includes the Greenbelt II Landfill. Such discharge shall be limited and monitored by the permittee as specified below:

<u>DISCHARGE LIMITATIONS</u> [6]
Outfall 304

Table 1

	Quantity or Loading			Quality or Concentration			Monitoring	Requirements
	Monthly	Daily		Monthly	Daily		Measurement	Sample
Parameter	Average	Maximum	Units	Average	Maximum	Units	Frequency	Type
Flow	Report	Report	MGD	----	-----	-	5 x Weekly	24 Hour Total
TSS	1147	2290	lbs/day	Report	Report	mg/l	5 x Weekly	24-Hr Comp
Oil and Grease	----------	765	lbs/day	Report	Report	mg/l	5 x Weekly	3 grabs/24-Hr Comp[1]
T. Chromium[2]	10.0	30.0	lbs/day	Report	Report	mg/l	5 x Weekly	24-Hr Comp
Zinc[2]	10.0	30.0	lbs/day	Report	Report	mg/l	5 x Weekly	24-Hr Comp
Lead[2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
Nickel[2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
Cadmium[2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
Copper [2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
Silver[2]	Report	Report	lbs/day	Report	Report	mg/l	Monthly	24-Hr Comp
T. Cyanide[3]	3.41	7.95	lbs/day	Report	Report	mg/l	5 x Weekly	Grab
Hex. Chromium[4]	0.17	0.51	lbs/day	Report	Report	mg/l	Weekly	Grab
Naphthalene	----------	0.86	lbs/day	----------	Report	mg/l	Monthly	Grab
Tetrachloro-Ethylene	----------	1.29	lbs/day	Report	Report	mg/l	Monthly	Grab
Total Toxic Organics[5]	----------	38.43	lbs/day	----------	Report	mg/l	Monthly	24 Hr-Comp
Fluoride	150	400	lbs/day	Report	Report	mg/l	Monthly	24 Hr-Comp

[1] A minimum of three (3) grab samples shall be collected at equally spaced time intervals 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.

[2] The permittee shall measure and report the identified metal in <u>total recoverable</u> form.

[3] 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.

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	Test Method	LOD	LOQ
Cyanide, Total	335.4 or 4500 CN-E	5 ug/l	16 ug/l

Upon demonstration to IDEM that “no Sulfides” are present at the effected internal and/oir final outfalls and IDEM has reviewed and approved the demonstration, the permittee may collect samples by 24-Hr. composite.

[4] Hexavalent Chromium shall be measured and reported as dissolved 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.

[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.H of this permit. However, the certification statement may be used as long as there have been no changes at the facility that would significantly alter the current TOPMP, and the permittee is following the current TOPMP that was developed under the previous permit until the new plan is completed as required by Part I.H 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.

[6] The reported mass for each parameter shall be calculated as a sum of mass in lbs/day of both internal Outfalls 104 and 204 and reported as 304. Samples for discharges from Outfalls 104 and 204 shall be taken on the same day.

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. All reports shall be either be mailed to IDEM, Office of Water Quality, Compliance Data Section, 100 North Senate Ave., Indianapolis, Indiana 46204-2251 or submitted electronically by using the NetDMR application, upon registration and approval receipt. Electronically submitted reports (using NetDMR) have the same deadline as mailed reports. After December 31, 2016, all reports shall be submitted using NetDMR and paper reports will no longer be accepted. 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 equally spaced time intervals 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 5 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. <u>Test Procedures</u>

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
18^{th}, 19^{th}, or 20^{th} 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.

d. The following analytical method and limits of detection and limits of quanititation shall be used:

Parameter [3]	Method [1]	Concentration (in ug/l)	
		LOD	(LOQ or ML)
Ammonia	SM 4500-NH3-G, EPA 350.1 (undistilled)	10	32
	SM 4500-NH3-G (w/prep SM 4500-NH3-B) (distilled)	50	160
Cadmium	200.8	0.5	1.6
Chlorine	4500-Cl-D,E or 4500-Cl-G	20	60
Copper	200.8	0.5	1.6
Fluoride	SM 4500-F-C (Ion Selective Mode)	31	100
	300.0	100	320
Lead	200.8	0.31	1.0
Mercury [2]	1631	0.0002	0.0005
Naphthalene	610 (HPLC)	0.2	0.64
Naphthalene	610 MS, EPA625	2.0	6.4
Nickel	3113B	1	3.2
	200.8	0.5	1.6
Phenols			
	420.4	2	6.4
Selenium	200.8	1	3.2
Silver	3113B	0.2	0.64
Tetrachloroethylene	624	0.4	1.3
Total Suspended Solids	SM 2540 D	640	2000
Zinc	3120B	3.3	10
	200.8	1.8	5.7

5. <u>Recording of Results</u>

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

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

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

c. The date(s) and time(s) analyses were performed;

d. The person(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such measurements and analyses.

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) and Monthly Monitoring Report (MMR). 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 EFFLUENT LIMITS

Within twelve (12) months of the effective date of this permit, the permittee shall implement the non-numeric permit conditions in this Section of the permit for the entire site as it relates to storm water associated with industrial activity regardless which outfall the storm water is discharged from.

1. Control Measures and Effluent Limits

In the technology-based limits included in Part D.2-4., 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.

2. Control Measures

Select, design, install, and implement control measures (including best management practices) to address the selection and design considerations in Part D.3 to meet the non-numeric effluent limits in Part D.4. 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 in accordance with the corrective action requirements in Part I.D.6. 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.

3. 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 groundwater 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.

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

a. Minimize Exposure

Minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) 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:

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, store materials in appropriate containers, identify and control all on-site sources of dust to minimize stormwater contamination from the deposition of dust on areas exposed to precipitation, keep all dumpsters under cover or fit with a lid that must remain closed when not in use, and 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.

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 storm water 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;

(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) 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 for erosion and sediment control, 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/stormwater/2363.htm
and
http://water.epa.gov/polwaste/npdes/stormwater/Stormwater-Pollution-Prevention-Plans-for-Construction-Activities.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. 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.

The following personnel must understand the requirements of Part I.D. and Part I.E. of this permit and their specific responsibilities with respect to those requirements: Personnel who are responsible for the design, installation, maintenance, and/or repair of controls (including pollution prevention measures); personnel responsible for the storage and handling of chemicals and materials that could become contaminants in stormwater discharges; personnel who are responsible for conducting and documenting monitoring and inspections related to storm water; and personnel who are responsible for taking and documenting corrective actions as required in Part I.D.6.

Personnel must be trained in at least the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections): an overview of what is in the SWPPP; spill response procedures, good housekeeping, maintenance requirements, and material management practices; the location of all controls on the site required by this permit, and how they are to be maintained; the proper procedures to follow with respect to the permit's pollution prevention requirements; and when and how to conduct inspections, record applicable findings, and take corrective actions.

i. 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;
Foundation or footing drains where flows are not contaminated with process materials;

Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from cooling towers (e.g., "piped cooling tower blowdown or drains);
Vehicle wash- waters where uncontaminated water without detergents or solvents is utilized; and

j. Dust Generation and Vehicle Tracking of Industrial Materials

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

5. Annual Review

At least once every 12 months, you must submit an Annual Report which includes the following: the results or a summary of your past year's routine facility inspection documentation and quarterly visual assessment documentation; information copied or summarized from the corrective action documentation required (if applicable). If corrective action is not yet completed at the time of submission of this Annual Report, you must describe the status of any outstanding corrective action(s); benchmark monitoring results, the rationale for why you believe that no further pollutant reductions are achievable (i.e., technologically available and economically practicable and achievable in light of best industry practices); and any incidents of noncompliance observed or, if there is no noncompliance, a certification signed by a responsible corporate officer, general partner or the proprietor, executive officer or ranking elected official, stating the facility is in compliance with this permit. You must also submit the report to the Industrial NPDES Permit Section on an annual basis.

6. Corrective Actions – Conditions Requiring Review

a. If any of the following conditions occur, you must review your SWPPP to determine if and where revisions may need to be made to eliminate the condition and prevent its reoccurrence:

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

(2) Your control measures are not stringent enough for the discharge to meet applicable water quality standards;

(3) A required control measure was never installed, was installed incorrectly, or is not being properly operated or maintained;

(4) Visual assessments indicate obvious signs of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam); or

(5) The average of four sampling results exceeds a benchmark.

b. If the following condition occurs, 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:

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.

7. <u>Corrective Action Deadlines</u>

If additional changes are necessary, a new or modified control must be installed and made operational, or a repair completed, before the next storm event if possible, and within 45 calendar days from the time of discovery by a member of the Stormwater Pollution Prevention Team. If it is infeasible to complete the installation or repair within 45 calendar days, , the reason(s) must be documented. A schedule for completing the work must also be identified, which must be done as soon as practicable after the 45-day timeframe but no longer than 90 days after discovery.

Where corrective actions result in changes to any of the controls or procedures documented in the SWPPP, the SWPPP must be modified accordingly within 14 calendar days of completing corrective action work.

These time intervals are not grace periods, but are schedules considered reasonable for documenting 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.

8. <u>Corrective Action Report</u>

The existence of any of the conditions listed in Part I.D.6 must be documented within 24 hours of a member of the Stormwater Pollution Prevention Team becoming aware of such condition. The following information must be included in the documentation:

(a) Identification and description of the condition triggering the need for corrective action review. For any spills or leaks, include the following information: a description of the incident including material, date/time, amount, location, and reason for spill, and any leaks, spills or other releases that resulted in discharges of pollutants to waters of U.S., through stormwater or otherwise;

(b) Date the condition was identified; and

(c) A discussion of whether the triggering condition requires corrective action. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures taken to prevent the reoccurrence of such releases.

You must also document the corrective actions taken that occurred as a result of the conditions listed in Part I.D.6. within 45 days from the time of discovery by a member of the Stormwater Pollution Prevention Team of any of those conditions. Provide the dates when each corrective action was initiated and completed (or is expected to be completed). If applicable, document why it is infeasible to complete necessary installations or repairs within the 45-day timeframe and document your schedule for installing the controls and making them operational as soon as practicable after the 45-day timeframe.

9. Inspections

(a) Routine Facility Inspections

During normal facility operating hours you must conduct inspections of areas of the facility covered by the requirements in this permit, including the following:

(1) Areas where industrial materials or activities are exposed to stormwater;
(2) Areas identified in the SWPPP and those that are potential pollutant sources;
(3) Areas where spills and leaks have occurred in the past 3 years.
(4) Discharge points; and
(5) Control measures used to comply with the effluent limits contained in this permit.

Inspections must be conducted at least quarterly (i.e., once each calendar quarter), or in some instances more frequently (e.g., monthly), as appropriate. Increased frequency may be appropriate for some types of equipment, processes and stormwater control measures, or areas of the facility with significant activities and materials exposed to stormwater. At least one of your routine inspections must be conducted during a period when a stormwater discharge is occurring.

Inspections must be performed by qualified personnel (as defined in Appendix A) with at least one member of your stormwater pollution prevention team participating. Inspectors must consider the results of visual and analytical monitoring (if any) for the past year when planning and conducting inspections.

During the inspection you must examine or look out for the following:

(6) Industrial materials, residue or trash that may have or could come into contact with stormwater;
(7) Leaks or spills from industrial equipment, drums, tanks and other containers;
(8) Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;
(9) Tracking or blowing of raw, final or waste materials from areas of no exposure to exposed areas; and
(10) Control measures needing replacement, maintenance or repair.

As part of conducting your routine facility inspections at least quarterly, address all potential sources of pollutants, including (if applicable) air pollution control equipment.

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 losses due to wind or stormwater runoff.

During an inspection occurring during a stormwater discharge, control measures implemented to comply with effluent limits must be observed to ensure they are functioning correctly. Discharge outfalls must also be observed during this inspection. If such discharge locations are inaccessible, nearby downstream locations must be inspected.

(b) Routine Facility Inspection Documentation

The findings of facility inspections must be documented and the report maintained with your SWPPP. Findings must be summarized in the annual report. Document all findings, including but not limited to, the following information:

(1) The inspection date and time;
(2) The name(s) and signature(s) of the inspector(s);
(3) Weather information;
(4) All observations relating to the implementation of control measures at the facility, including:
    (a) A description of any discharges occurring at the time of the inspection;
    (b) Any previously unidentified discharges and/or pollutants from the site;
    (c) Any evidence of, or the potential for, pollutants entering the drainage system;
    (d) Observations regarding the physical condition of and around all outfalls including any flow dissipation devices, and evidence of pollutants in discharges and/or the receiving water;
    (e) Any control measures needing maintenance, repairs, or replacement;
(5) Any additional control measures needed to comply with the permit requirements; and
(6) Any incidents of noncompliance observed.

Any corrective action required as a result of a routine facility inspection must be performed consistent with Part I.D.6. of this permit.

If the discharge was visual assessed, as required in Part I.D.9.c., during the facility inspection, you may include the results of the assessment with the report required in Part I.D.9.a., as long as all components of both types of inspections are included in the report.

(c) Quarterly Visual Assessment Procedures

Once each quarter for the entire permit term, you must collect a stormwater sample from each outfall and conduct a visual assessment of each of these samples. These samples are not required to be collected consistent with 40 CFR Part 136 procedures but should be collected in such a manner that the samples are representative of the stormwater discharge. Guidance on monitoring is available at:

http://water.epa.gov/polwaste/npdes/stormwater/EPA-Multi-Sector-General-Permit-MSGP.cfm

The visual assessment must be made:

(1) Of a sample in a clean, clear glass, or plastic container, and examined in a well-lit area;
(2) On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and you must document why it was not possible to take samples within the first 30 minutes. In the case of snowmelt, samples must be taken during a period with a measurable discharge from your site; and
(3) For storm events, on discharges that occur at least 72 hours (3 days) from the previous discharge. The 72-hour (3-day) storm interval does not apply if you document that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period.

You must visually inspect or observe the sample for the following water quality characteristics:

(4) Color;
(5) Odor;
(6) Clarity (diminished);
(7) Floating solids;
(8) Settled solids;
(9) Suspended solids;
(10) Foam;
(11) Oil sheen; and
(12) Other obvious indicators of stormwater pollution.

Whenever the visual assessment shows stormwater discharges are not in compliance with narrative water quality criteria, initiate the corrective action procedures in Part I.D.6.

(d) Quarterly Visual Assessment Documentation

Results of visual assessments must be documented and the documentation maintained onsite with the SWPPP. Documentation of the visual assessment must include, but is not be limited to:

(1) Sample location(s);
(2) Sample collection date and time, and visual assessment date and time for each sample;
(3) Personnel collecting the sample and performing visual assessment, and their signatures;

(4) Nature of the discharge (i.e., runoff or snowmelt);
(5) Results of observations of the stormwater discharge;
(6) Probable sources of any observed stormwater contamination; and
(7) If applicable, why it was not possible to take samples within the first 30 minutes.

Any corrective action required as a result of a quarterly visual assessment must be performed consistent with Part I.D.6. of this permit.

(e) Exceptions to Quarterly Visual Assessments

(1) Adverse Weather Conditions: When adverse weather conditions prevent the collection of samples during the quarter, you must take a substitute sample during the next qualifying storm event. Documentation of the rationale for no visual assessment for the quarter must be included with your SWPPP records. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make sampling impractical, such as extended frozen conditions.

(2) Snow: In areas subject to snow, if possible, at least one quarterly visual assessment must capture snowmelt discharge, taking into account the exception described above for climates with irregular stormwater runoff.

E. STORM WATER POLLUTION PREVENTION PLAN

1. <u>Development of Plan</u>

Within 12 months from the effective date of this permit, the permittee is required to review and update the current Storm Water Pollution Prevention Plan (SWPPP) for the permitted facility. The SWPPP does not contain effluent limitations. The SWPPP is intended to document the selection, design, and installation of control measures. As distinct from the SWPPP, the additional documentation requirements are intended to document the implementation (including inspection, maintenance, monitoring, and corrective action) of the permit requirements. 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)(14)) 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. <u>Contents</u>

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

a. <u>Pollution Prevention Team</u> – The SWWPPP must identify the staff members (by name or title) that comprise the facility's stormwater pollution prevention team as well as their individual responsibilities. The stormwater pollution prevention team is responsible for overseeing development of the SWPPP, any later modifications to it, and for compliance with permit Parts I.D. and I.E. of this permit. Each member of the stormwater pollution prevention team must have ready access to either an electronic or paper copy of applicable portions of this permit, the most updated copy of the SWPPP, other relevant documents or information that must be kept with the SWPPP.

b. <u>Site Description</u> – As a minimum, the plan shall contain the following:

(1) *Activities at the Facility.* Provide a description of the nature of the industrial activities at your facility.

(2) *General location map*. Provide a general location map (e.g., U.S. Geological Survey (USGS) quadrangle map) with enough detail to identify the location of your facility and all receiving waters for your stormwater discharges.

(3) *Site map.* Provide a map showing:

(A) Boundaries of the property and the size of the property in acres;
(B) Location and extent of significant structures and impervious surfaces;
(C) Directions of stormwater flow (use arrows);
(D) Locations of all stormwater control measures;
(E) Locations of all receiving waters, including wetlands, in the immediate vicinity of your facility. Indicate which

waterbodies are listed as impaired and which are identified by the State of Indiana or EPA as Tier 2 or Tier 2.5 waters;

(F) Locations of all stormwater conveyances including ditches, pipes, and swales;

(G) Locations of potential pollutant sources identified;

(H) Locations where significant spills or leaks identified have occurred;

(I) Locations of all stormwater monitoring points;

(J) Locations of stormwater inlets and outfalls, with a unique identification code for each outfall (e.g., Outfall No. 1, No. 2), indicating if you are treating one or more outfalls as “substantially identical”, and an approximate outline of the areas draining to each outfall;

(K) If applicable, municipal separate storm sewer systems and where your stormwater discharges to them;

(L) Areas of federally-listed critical habitat for endangered or threatened species, if applicable.

(M) Locations of the following activities where such activities are exposed to precipitation: o fueling stations;

i. vehicle and equipment maintenance and/or cleaning areas;
ii. loading/unloading areas;
iii. locations used for the treatment, storage, or disposal of wastes;
iv. liquid storage tanks;
v. processing and storage areas;
vi. immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
vii. transfer areas for substances in bulk; and
viii. machinery

(N) Locations and sources of run-on to your site from adjacent property that contains significant quantities of pollutants.

(O) Identify in the SWPPP where any of the following activities may be exposed to precipitation or surface runoff: 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 operations, etc., and could result in a discharge of pollutants to waters of the United States.

(P) Include in the inventory of 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 are possible .

(c) Potential Pollutant Sources:

The SWPPP must document areas at your facility where industrial materials or activities are exposed to stormwater or from which allowable non-stormwater discharges may be released. Industrial materials or activities include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final products, and waste products. *Material handling activities* include, but are not limited to: the storage, loading and unloading, transportation, disposal, or conveyance of any raw material, intermediate product, final product or waste product. For structures located in areas of industrial activity, you must be aware that the structures themselves are potential sources of pollutants. This could occur, for example, when metals such as aluminum or copper are leached from the structures as a result of acid rain.

For each area identified, the description must include:

(1) *Activities in the Area.* A list of the industrial activities exposed to stormwater (e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams).

(2) *Pollutants.* A list of the pollutant(s) or pollutant constituents (e.g., crankcase oil, zinc, sulfuric acid, and cleaning solvents) associated with each identified activity, which could be exposed to rainfall or snowmelt and could be discharged from your facility. The pollutant list must include all significant materials that have been handled, treated, stored, or disposed, and that have been exposed to stormwater in the three years prior to the date the SWPPP is prepared or amended.

(3) *Spills and Leaks.* The SWPPP must document where potential spills and leaks could occur that could contribute pollutants to stormwater discharges, and the corresponding outfall(s) that

would be affected by such spills and leaks. The SWPPP must document all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a stormwater conveyance, in the three years prior to the date the SWPPP is prepared or amended.

(4) *Non-Storm water Discharges* – The SWPPP must document that you have evaluated for the presence of non-storm water discharges not authorized by an NPDES permit. 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:

(A) The date of the evaluation;

(B) A description of the evaluation criteria used;

(C) A list of the outfalls or onsite drainage points that were directly observed during the evaluation; and

(D) The action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), or documentation that a separate NPDES permit was obtained. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge.

(5) Salt Storage - The location of any storage piles containing salt used for deicing or other commercial or industrial purposes must be documented in the SWPPP.

(6) Sampling Data - All stormwater discharge sampling data collected at your facility during the previous permit term must be summarized in the SWPPP.

(7) Description of Control Measures to Meet Technology-Based Effluent Limits.

The location and type of control measures you have specifically chosen and/or designed to comply with Permit Part I.D. must be documented in the SWPPP.

Regarding your control measures, the following must be documented as appropriate:

(a) How the selection and design considerations of control measures were addressed.
(b) How the control measures address the pollutant sources identified.

(d) Schedules and Procedures

The following must be documented in your SWPPP:

(1) Good Housekeeping – A schedule for regular pickup and disposal of waste materials, along with routine inspections for leaks and conditions of drums, tanks and containers;

(2) Maintenance – Preventative maintenance procedures, including regular inspections, testing, maintenance and repair of all control measures to avoid situations that may result in leaks, spills, and other releases, and any back-up practices in place should a runoff event occur while a control measure is off-line. The SWPPP shall include the schedule or frequency for maintaining all control measures used to comply with the storm water requirements.

(3) Spill Prevention and Response Procedures – Procedures for preventing and responding to spills and leaks, including notification procedures. For preventing spills, include in your SWPPP the control measures for material handling and storage, and the procedures for preventing spills that can contaminate stormwater. Also specify cleanup equipment, procedures and spill logs, as appropriate, in the event of spills. You may reference the existence of other plans for Spill Prevention Control and Countermeasure (SPCC) developed for the facility under Section 311 of the CWA or BMP programs otherwise required by an NPDES permit for the facility, provided that you keep a copy of that other plan onsite and make it available for review;

(4) Erosion and Sediment Control – If you use polymers and/or other chemical treatments as part of your controls, you must identify the polymers and/or chemicals used and the purpose; and

(5) Employee Training – The elements of your employee training plan shall include all, but not be limited to, the requirements set forth in Permit Part.I.D., and also the following:

(a) The content of the training; The frequency/schedule of training for employees who have duties in areas of industrial activities subject to this permit;
(b) A log of the dates on which specific employees received training.

(e) <u>Pertaining to Inspections</u>

You must document in your SWPPP your procedures for performing, as appropriate, the types of inspections specified by this permit, including:

(a) Routine facility inspections and;
(b) Quarterly visual assessment of stormwater discharges.

For each type of inspection performed, your SWPPP must identify:

(c) Person(s) or positions of person(s) responsible for inspection;
(d) Schedules for conducting inspections, including tentative schedule for irregular stormwater runoff discharges; and
(e) Specific items to be covered by the inspection, including schedules for specific outfalls.

(f) <u>Pertaining to Monitoring</u>

You must document in your SWPPP your procedures for conducting the five types of analytical monitoring specified by this permit, where applicable to your facility, including Benchmark monitoring;

For each type of monitoring, your SWPPP must document:

(a) Locations where samples are collected, including any determination that two or more outfalls are substantially identical;
(b) Parameters for sampling and the frequency of sampling for each parameter;
(c) Schedules for monitoring at your facility, including schedule for alternate monitoring periods for climates with irregular stormwater runoff;

(d) Any numeric control values (benchmarks, effluent limitations guidelines, TMDL-related requirements, or other requirements) applicable to discharges from each outfall; and

(e) Procedures (e.g., responsible staff, logistics, laboratory to be used) for gathering storm event data.

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

(1) The SWPPP shall be prepared in accordance with good engineering practices and to industry standards. The SWPPP may be developed by either a person on your staff or a third party you hire, and it shall be certified in accordance with the signature requirements, under Part II.C.6.

(2) You must retain a complete copy of your current SWPPP required by this permit at the facility in any accessible format. A complete SWPPP includes any documents incorporated by reference and all documentation supporting your permit eligibility pursuant to Part 5.2.6 of this permit, as well as your signed and dated certification page. Regardless of the format, the SWPPP must be immediately available to facility employees, EPA, a state or tribe, the operator of an MS4 receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) at the time of an onsite inspection. Your current SWPPP or certain information from your current SWPPP described below must also be made available to the public (except any confidential business information (CBI) or restricted information, but you must clearly identify those portions of the SWPPP that are being withheld from public access.

(3) Where your SWPPP refers to procedures in other facility documents, such as a Spill Prevention, Control and Countermeasure (SPCC) Plan or an Environmental Management System (EMS), copies of the relevant portions of those documents must be kept with your SWPPP.

F. 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 1 of this section describes the testing procedures, Part 2 describes the Toxicity Reduction Evaluation (TRE) which is only required if the effluent demonstrated toxicity, as described in section 1.f.

1. Whole Effluent Toxicity Tests

The permittee shall continue with their current schedule for the series of bioassay tests described below to monitor the toxicity of the discharge from Outfall 004. If toxicity is demonstrated as defined under section 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 Permit 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

(1) 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.

(2) 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 dubia* 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 section f.3. below. The analysis detailed under Part I.A. 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 section b. above shall be conducted **quarterly** for the duration of the permit. After three tests have been completed, and if no toxicity is demonstrated, 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 under section f., the permittee is required to conduct a toxicity reduction evaluation (TRE) as specified in Section 2.

e. Reporting

(1) Results shall be reported according to EPA 821-R-02-013, October 2002, Section 10 (Report Preparation). The completed report for each test shall be submitted to the Compliance Data Section of IDEM no later than 60 days after completion of the test.

In lieu of mailing reports, reports may be submitted to IDEM electronically as an e-mail attachment. E-mails should be sent to wwreports@idem.in.gov.

(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 **1.9** 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 1, section 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 Section 2 above and reduce the toxicity to acceptable levels as soon as possible, but no later than three years after the date of determination of toxicity.

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 section 1.d. above for more specifics on this topic), and conduct chronic tests quarterly for the duration of the permit.

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

f. In lieu of mailing reports, reports may be submitted to IDEM electronically via e-mail. E-mails should be sent to wwreports@idem.in.gov.

G. POLLUTION MINIMIZATION PROGRAM

The permittee is required to develop and conduct a pollutant minimization program (PMP) for each pollutant with a WQBEL below the LOQ. This permit contains a WQBEL below the LOQ for Total Residual Chlorine and Silver.

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. Potential sources of the pollutant shall be monitored on a semi-annual basis. Quarterly monitoring of the influent of the wastewater treatment system is also required. The permittee may request a reduction in this monitoring requirement after four quarters of monitoring data.

(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 pollution 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 pollution 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 pollution minimization program, the following factors may be considered:

(1) Significance of sources.

(2) Economic and technical feasibility.

(3) Treatability.

H. TOXIC ORGANIC POLLUTANT MANAGEMENT PLAN

In order to use the Certification Statement for Total Toxic Organics on Pages 15 and 17 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.

Upon review by IDEM of the above report the Permittee may be required to perform additional specific monitoring for toxic organics, or may be allowed to use the Certification Statement.

I. 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 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.

5. to comply with any applicable standards, regulations and requirements issued or approved under section 316(b) of the Clean Water Act.

6. to allow for the existing thermal model whereby the permit may be reopened to include such a provision for compliance. Any revision to the existing model must limit the mixing zone to one-half the width of Portage-Burns Waterway and account for: the range of the upstream flows and temperature and effluent flows and temperature expected at the site; and the combined effect of the discharges from Outfall 002, 003 and 004 on the temperature at the edge of the mixing zone.

J. REPORTING REQUIREMENTS FOR SOLVENTS, DEGREASING AGENTS, ROLLING OILS, WATER TREATMENT CHEMICALS AND BIOCIDES
Annually, US Steel Midwest Plant will report, as part of the forth monthly Discharge Monitoring Report of the following year, the total quantity (lbs/yr) of each solvent, degreasing agent, water treatment chemical, rolling oil and biocide that was purchased for that year and which can be present in any outfall regulated by this permit. This reporting requirement includes all surfactants, anionic cationic and non-ionic, which may be used in part or wholly as a constituent in these compounds.

US Steel Midwest Plant may submit the annual SARA 312 chemical inventory report, in lieu of a separate chemical report, by the end of the first quarter of each year.

US Steel Midwest Plan will maintain these files for a period of ten (10) years. Files will include the Material Safety Data Sheet, FIFRA Label for each biocide, chemical name and CAS number for each compound used. If these compounds contain proprietary material, US Steel Midwest Plant may maintain this information in a separate file that can be accessed by U.S. EPA or IDEM personnel with appropriate authority.

K. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the effluent limitations specified for Nickel and Lead at Outfall 004 in accordance with the following schedule:

   a. The permittee shall submit a written progress report to the Compliance Data Section of the Office of Water Quality (OWQ) twelve

(12) months from the effective date of this permit. The progress report shall include a description of the progress the permittee has made in characterizing discharges.

b. The permittee shall submit a written progress report to the Compliance Data Section of the Office of Water Quality (OWQ) twenty-one (21) months from the effective date of this permit. The progress report shall include a description of the method(s) selected for meeting the newly imposed limitation for Nickel and Lead, in addition to any other relevant information. The progress report shall also include a specific time line specifying when each of the steps will be taken. The new effluent limits for Nickel and Lead are deferred for the term of this compliance schedule, unless the new effluent limits can be met at an earlier date. The permittee shall notify the Compliance Data Section of OWQ as soon as the newly imposed effluent limits for Nickel and Lead can be met. Upon receipt of such notification by OWQ, the final limits for Nickel and Lead will become effective, but no later than fifty four (54) months from the effective date of this permit. Monitoring and reporting of the effluent for these parameters is required during the interim period.

c. The permittee shall submit a subsequent progress report thirty-three (33) and forty five (45) months from the effective date of this permit. This report shall include detailed information on the steps the permittee has taken to achieve compliance with the final effluent limitations and whether the permittee is meeting the time line set out in the initial progress report.

d. The permittee shall comply with the final effluent limitations for Nickel and Lead at outfall 004 fifty-four (54) months from the effective date of this permit.

PART II

STANDARD CONDITIONS FOR NPDES PERMITS

A. GENERAL CONDITIONS

1. <u>Duty to Comply</u>

Appendix I.B.
NPDES Permit Part II
Standard Permit Conditions

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.

Under the terms of the proposed Federal E-Reporting Rule, the permittee may be required to submit its application for renewal electronically in the future.

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; and

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. <u>Permit Actions</u>

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. <u>State Laws</u>

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. <u>Penalties for Violation of Permit Conditions</u>

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 Environmental Rules 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.

Pursuant to IC 13-30-10-1.5(l), an offense under IC 13-30-10-1.5(k) 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. <u>Penalties for Tampering or Falsification</u>

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. <u>Toxic Pollutants</u>

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. <u>Wastewater treatment plant and certified operators</u>

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. <u>Construction Permit</u>

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, 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 into an OSRW

This permit prohibits the permittee from undertaking any action that would result in the following:

a. A new or increased discharge of a bioaccumulative chemical of concern (BCC), other than mercury.

b. A new or increased discharge of mercury or a new or increased permit limit for a regulated pollutant that is not a BCC unless one of the following is completed prior to the commencement of the action:

(1) 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 2-1.3-2(50). 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 permittee to do the following:

(i) Submit an antidegradation demonstration in accordance with 327 IAC 2-1.3-5; and
(ii) Implement or fund a water quality improvement project in the watershed of the OSRW that results in an overall improvement in water quality in the OSRW in accordance with 327 IAC 2-1.3-7.

(2) An antidegradation demonstration is submitted to and approved by the Commissioner in accordance with 327 IAC 2-1.3-5 and 327 IAC 2-1.3-6 and the permittee implements or funds a water quality improvement project in the watershed of the OSRW that results in an overall improvement in water quality in the OSRW in accordance with 327 IAC 2-1.3-7.

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. However, under 327 IAC 2-6.1-3(1), when the constituents of the bypass are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

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. If a complete fax or e-mail submittal is provided within 24 hours of the time that the permittee became aware of the unanticipated bypass event, then that report will satisfy both the oral and written reporting requirement. E-mails should be sent to wwreports@idem.in.gov.

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. <u>Upset Conditions</u>

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;

(2) The permitted facility was at the time being properly operated;

(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. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

d. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof pursuant to 40 CFR 122.41(n)(4).

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 "Discharge 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. However, under 327 IAC 2-6.1-3(1), when the constituents of the discharge that is in noncompliance are regulated by this permit, and death or acute injury or illness to animals or humans does not occur, the reporting requirements of 327 IAC 2-6.1 do not apply.

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;

d. Violation of a maximum daily discharge limitation for any of the following toxic pollutants:

Cadmium, Hex. Chromium, T. Chromium, Copper, T. Cyanide, Lead, Nickel, Silver, Zinc, Naphthalene, Tetrachloro-ethylene, and Total Toxic Organics.

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/Overflow Report" (State Form 48373) or a "Noncompliance 24-Hour Notification Report" (State Form 54215), whichever is appropriate, to IDEM at (317) 232-8637 or wwreports@idem.in.gov. If a complete fax or e-mail 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.

Upon its effectiveness, the proposed Federal E-Reporting Rule will require these reports to be submitted electronically.

4. Other Compliance/Noncompliance Reporting

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;

The permittee shall also give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements; and

All reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

Upon its effectiveness, the proposed Federal E-Reporting Rule will require these reports to be submitted electronically.

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.

   (4) Under the proposed Federal E-Reporting Rule, a method will be developed for submittal of all affected reports and documents using electronic signatures that is compliant with the Cross-Media Electronic Reporting Regulation (CROMERR). Enrollment and use of NetDMR currently provides for CROMERR-compliant report submittal.

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. <u>Availability of Reports</u>

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. <u>Penalties for Falsification of Reports</u>

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. <u>Changes in Discharge of Toxic Substances</u>

Pursuant to 40 CFR 122.42(a)(1), 40 CFR 122.42(a)(2), and 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, on a routine or frequent basis, 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).

Appendix I.C.
NPDES Permit Part III
Other Requirements

PART III
Other Requirements

A. Thermal Effluent Requirements

The combined effect of the effluent from Outfall 002, 003, and 004 shall comply with the following:

1. There shall be no rise in the temperature in Portage-Burns Waterway of greater than 2 ºF, as determined from upstream temperature and downstream temperature at the edge of the mixing zone.

2. The downstream temperature in ºF at the edge of the mixing zone shall not exceed the maximum limits in Temperature Table 1 below during more than one percent (1%) of the hours in the twelve (12) month period ending with any month: at no time shall the downstream temperature in ºF at the edge of the mixing zone exceed the maximum limits in Temperate table by more than 3 ºF:

Temperature Table 1
Maximum Instream Water Temperatures

	Jan	Feb	Mar	Dec
ºF	50	50	60	57

3. The number of hours where the downstream temperature at the edge of the mixing zone exceeds the maximum limits in Temperature Table 1 and the number of days where the downstream temperature exceeds the maximum limits in Temperature Table 1 by more than 3 ºF shall be reported on the state monthly monitoring report and the federal discharge monitoring report.

4. The cumulative number of hours where the downstream temperature at the edge of the mixing zone exceeds the maximum limits in Temperature Table 1 during the most recent twelve (12) months period shall be reported on the state monthly monitoring report and federal discharge monitoring report every month. The most recent twelve (12) months shall include the current month and the previous eleven (11) month.

5. The downstream temperature in ºF at the edge of the mixing zone shall not exceed the maximum limits in Temperature Table 2 below at any time:

Temperature Table 2
Maximum In-Stream Water Temperatures

Apr	May	Jun	Jul	Aug	Sep	Oct	Nov

ºF	65	65	70	70	70	65	65	65

6. The provisions of paragraph 5 above shall be inapplicable at any time when the upstream temperature is within 2 ºF of the maximum limitation for that day.

7. The mixing zone is the area in Portage-Burns Waterway extending laterally from Outfall 002 to one-half the width of Portage-Burns Waterway and to a distance of 300 feet downstream of Outfall 004.

8. In order to verify compliance with the above limitations, the permittee is required to report the following information as Outfall 500:

Parameter	Monthly Av.	Daily Max.	Units	Frequency	Sample Type
Intake Temp.	Report	Report	ºF	1 x Hourly	[1]
Upstream River Temp.	Report	Report	ºF	1 x Hourly	[1]
Outfall 002 Effluent	Report	Report	ºF	1 x Hourly	[1]
Outfall 003 Effluent	Report	Report	ºF	1 x Hourly	[1]
Outfall 004 Effluent	Report	Report	ºF	1 x Hourly	[1]
Downstream River Temp[2]	Report	Report	ºF	1 x Hourly	[3]
Delta T [4]	------	Report	ºF	1 x Daily	[5]

[1] Monitoring and reporting of temperature is to occur on a continuous basis. Temperature measurements shall be recorded continuously in one hour intervals and the highest single recorded hourly measurement shall be reported on the federal discharge monitoring report as the maximum daily temperature of that month.

[2] The following equation shall be used to calculate the downstream river temperature using concurrent hourly temperature and flow measurements:

$$T_d = \alpha * T_u * \frac{Q_u}{Q_t} + \gamma * T_2 * \frac{Q_2}{Q_t} + \delta * T_3 * \frac{Q_3}{Q_t} + \varepsilon * T_4 * \frac{Q_4}{Q_t}$$

where:

T_d = hourly downstream river temperature (°F)
T_u = hourly river temperature upstream of Outfall 002 (°F)
T_2 = hourly outfall 002 temperature (°F)
T_3 = hourly outfall 003 temperature (°F)
T_4 = hourly outfall 004 temperature (°F)
Q_u = the 24-hour rolling average flow in Portage-Burns Waterway measured upstream of Outfall 002 (MGD); this flow shall be calculated on an hourly basis as the average of the current hourly flow measurement and the previous 23 hourly flow measurements
Q_2 = hourly outfall 002 flow (MGD)
Q_3 = hourly outfall 003 flow (MGD)
Q_4 = hourly outfall 004 flow (MGD)
$Q_t = Q_u + Q_2 + Q_3 + Q_4$
$\alpha, \gamma, \delta, \varepsilon$ = regression model coefficients approved by the Commissioner.

Alternatively, the permittee may measure the temperature at the edge of the mixing zone approximately 300 feet downstream of Outfall 004. Temperature measurements shall be taken at mid-stream and at a depth of approximately one meter below the water's surface. An annotation shall be made on the state monthly monitoring report each day this option is used.

[3] Monitoring and reporting of temperature is to occur on a continuous basis. Temperature measurements shall be recorded continuously in one hour intervals and the total number of hours above the corresponding maximum limits in Part III.A.2 for the twelve (12) months shall be reported. The twelve (12) months shall include the current month and the previous elven (11) months. The highest single recorded hourly measurement shall be reported on the federal discharge monitoring report as a maximum daily temperature of that month.

[4] This is the difference each day between the maximum upstream and maximum downstream (peak) temperature.

[5] Calculated maximum

[6] The following narrative requirements for temperature shall apply outside the mixing zone:

a. There shall be no abnormal temperature changes that may adversely affect aquatic life unless caused by natural conditions.
b. The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained.

B. POLYCHLORINATED BIPHENYL (PCB)

There shall be no discharge of polychlorinated biphenyl (PCB) compounds attributable to facility operations such as those historically used in transformer fluids. In order to determine compliance with the PCB discharge prohibition, the permittee shall provide the following PCB data with the next NPDES permit renewal application for at least one sample taken from each final outfall. The corresponding facility water intakes shall be monitored at the same time as the final outfalls.

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

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

Appendix I.D.
NPDES Permit Part IV
Cooling Water Intake Structures

Part IV
Cooling Water Intake Structures

A. Best Technology Available (BTA) Determination

In accordance with 40 CFR 401.14, the location, design, construction and capacity of cooling water intake structures of any point source for which a standard is established pursuant to section 301 or 306 of the Act shall reflect the best technology available for minimizing adverse environmental impact.

The EPA promulgated a Clean Water Act (CWA) section 316(b) regulation on August 15, 2014, that establishes standards for cooling water intake structures. 79 Fed. Reg. 48300-439 (August 15, 2014). The regulation establishes best technology available standards to reduce impingement and entrainment of aquatic organisms at existing power generation and manufacturing facilities and it became effective on October 14, 2014.

USS Midwest submitted the information required by 40 CFR 122.21(r) (2) through (r) (8) with the permit application as required by Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326) to IDEM.

Based on available information, IDEM has made a Best Technology Available (BTA) determination that the existing cooling water intake structures represent best technology available to minimize adverse environmental impact in accordance with Section 316(b) of the federal Clean Water Act (22 U.S.C section1326) at this time. This determination will be reassessed at the next permit reissuance to ensure that the CWISs continue to meet the requirements of Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326).

B. Permit Requirements

In accordance with 40 CFR 125.95(a)(1), the permittee must submit to the IDEM the information required in the applicable provisions of 40 CFR 122.21(r) when applying for a subsequent permit (consistent with the permittee's duty to reapply pursuant to 40 CFR 122.21(d)). Per 40 CFR 125.95(c) after the initial submission of the 40 CFR 122.21(r) permit application studies after October 14, 2014 the permittee may, in subsequent permit applications, request to reduce the information required, if conditions at the facility and in the waterbody remain substantially unchanged since the previous application so long as the relevant previously submitted information remains representative of current source water, intake structure, cooling water system, and operating conditions. The permittee must submit its request for reduced cooling water intake structure and waterbody application information to the IDEM at least two years and six months prior to the expiration of its NPDES permit. The permittee's request must identify each element of the application requirements that it determines has not substantially changed since the previous permit application and the basis for the determination. IDEM has the discretion to accept or reject any part of the request. The permittee shall comply with requirements below:

1. In accordance with 40 CFR 125.98(b)(1), nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.

2. At all times properly operate and maintain the intake equipment and incorporate management practices and operational measures necessary to ensure proper operation of the CWIS.

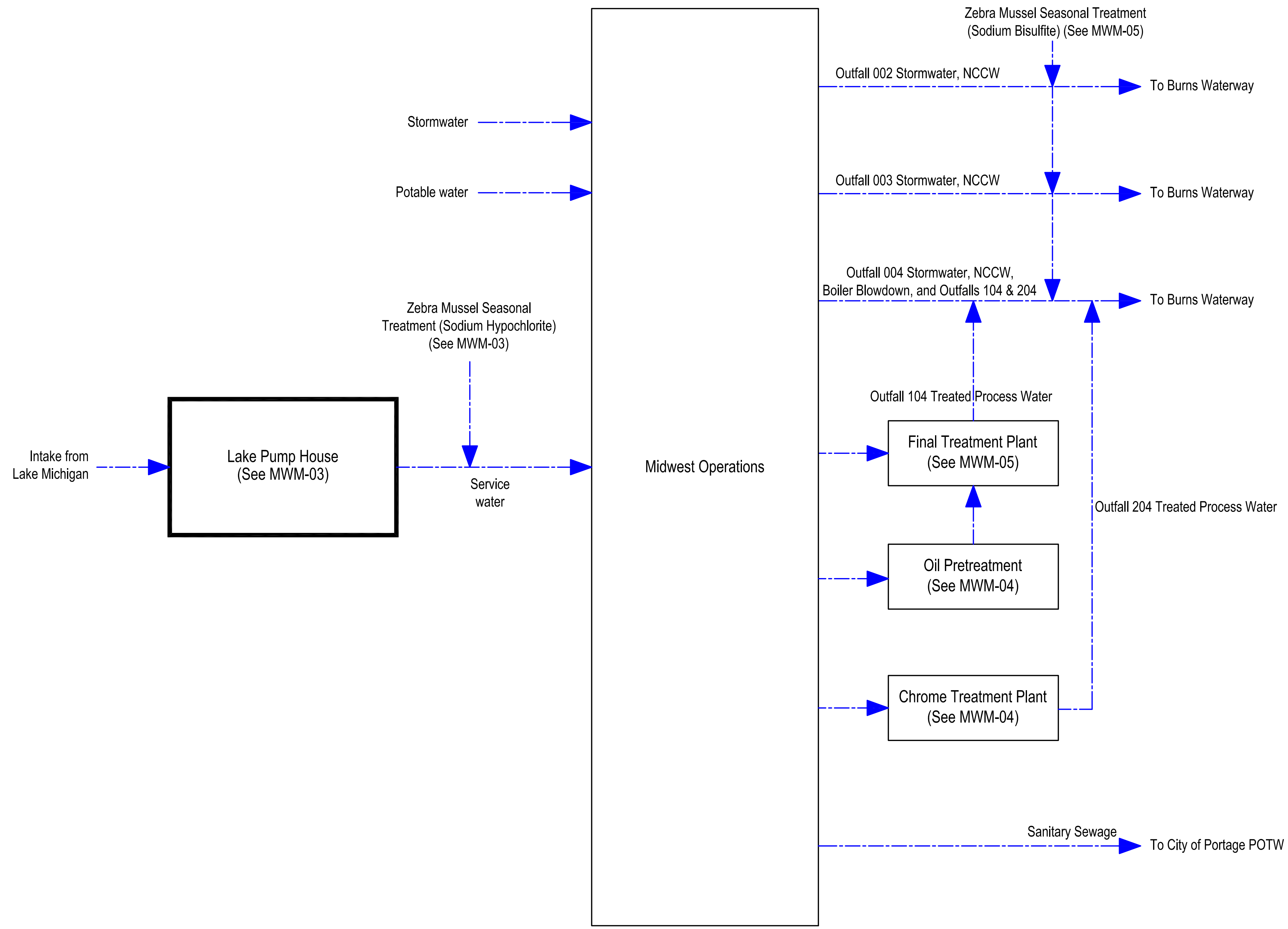
3. Provide advance notice to IDEM of any proposed changes to the CWIS or proposed changes to operations at the facility that affect the information taken into account in the current BTA evaluation.

4. There shall be no discharge of debris from intake screen washing which will settle to form objectionable deposits which are in amounts sufficient to be unsightly or deleterious, or which will produce colors or odors constituting a nuisance.

5. All required reports shall be submitted to the IDEM, Office of Water Quality, NPDES Permits Branch.

6. Submit the information required to be considered by the Director per 40 CFR 125.98 to assist IDEM with the fact sheet or statement of basis for entrainment BTA, as soon as practicable, but no later than with the application for the next permit renewal.

Appendix II
Process Flow Diagrams

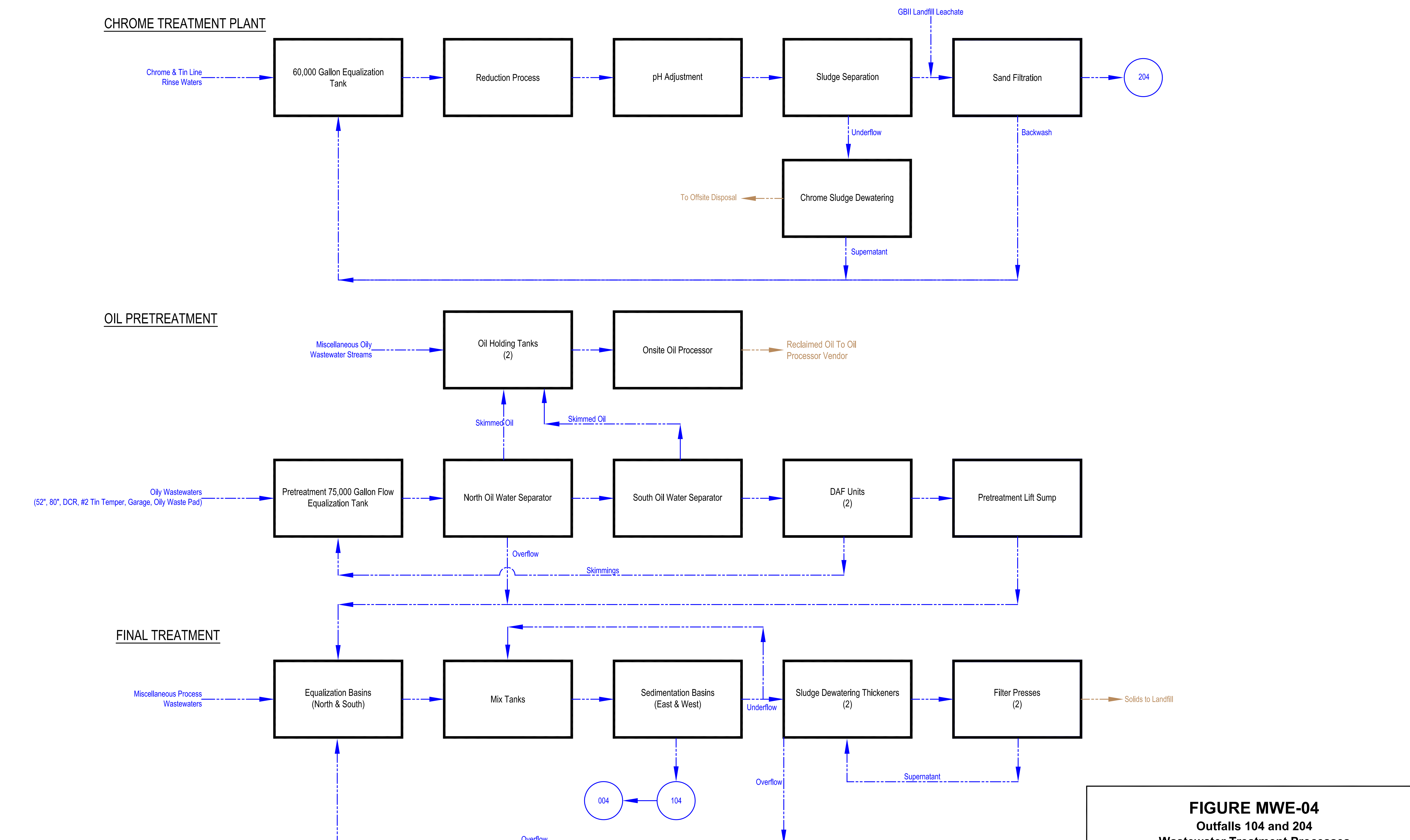


PRODUCT OR PROCESS THROUGHPUT					
LIQUID MATERIAL STREAMS	OUTFALL NUMBER		REVISION DATE:	04/13/2018	
GASEOUS MATERIAL STREAMS	AIR EMISSION SOURCE		FILE PATH:	USMW/Drawings/PFDs	
SOLID MATERIAL STREAMS	SOLID WASTE STREAM		FILE NAME:	MWE-03.DWG	

FIGURE MWE-03
Outfalls

U. S. Steel - Midwest Plant
Process Flow Diagrams

ST Environmental LLC
PO Box 40129
Austin, TX 78704
Phone: (219) 728 - 6312



PRODUCT OR PROCESS THROUGHPUT			
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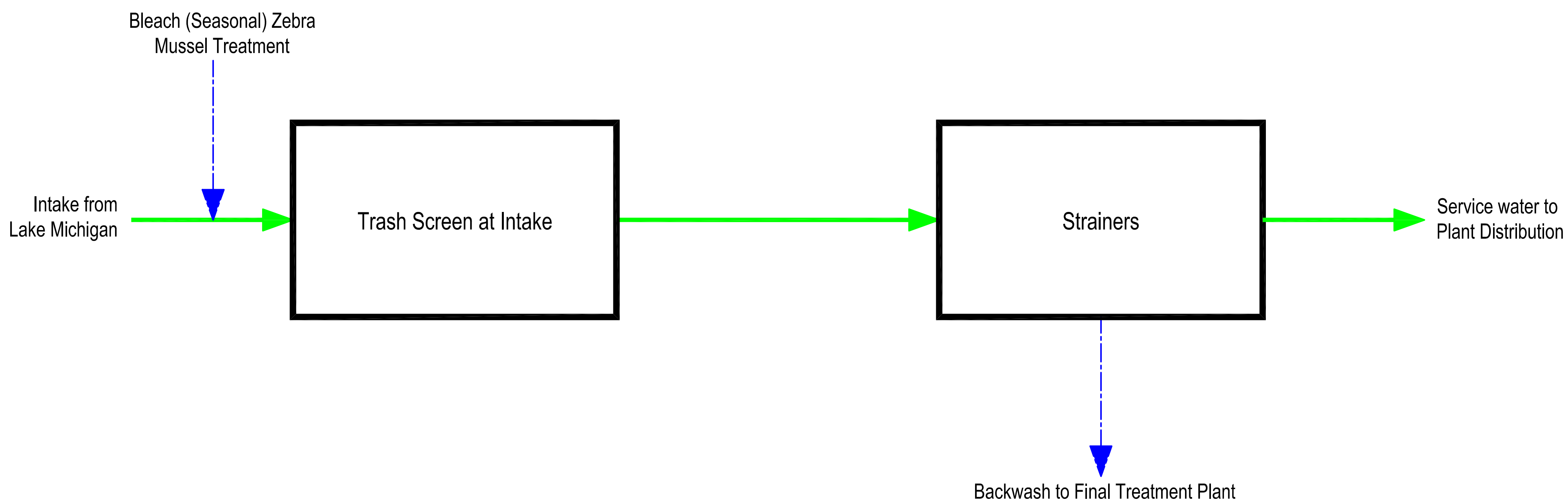
GASEOUS MATERIAL STREAMS	AIR EMISSION SOURCE	FILE PATH:	USSMW/Drawings
SOLID MATERIAL STREAMS	SOLID WASTE STREAM	FILE NAME:	MWE-04.dwg

FIGURE MWE-04
Outfalls 104 and 204
Wastewater Treatment Processes

U. S. Steel - Midwest Plant
Process Flow Diagrams

ST Environmental LLC
PO Box 2557
Chesterton, IN 46304
Phone: (219) 728 - 6312



PRODUCT OR PROCESS THROUGHPUT				
LIQUID MATERIAL STREAMS	OUTFALL NUMBER		REVISION DATE:	04/15/2020
GASEOUS MATERIAL STREAMS	AIR EMISSION SOURCE		FILE PATH:	USSMW/Drawings/PFDs
SOLID MATERIAL STREAMS	SOLID WASTE STREAM		FILE NAME:	MWM-03.DWG

FIGURE MWM-03

Lake Pump House

U. S. Steel - Midwest Plant
Process Flow Diagrams

ST Environmental LLC
PO Box 40129
Austin, TX 78704
Phone: (219) 728 - 6312

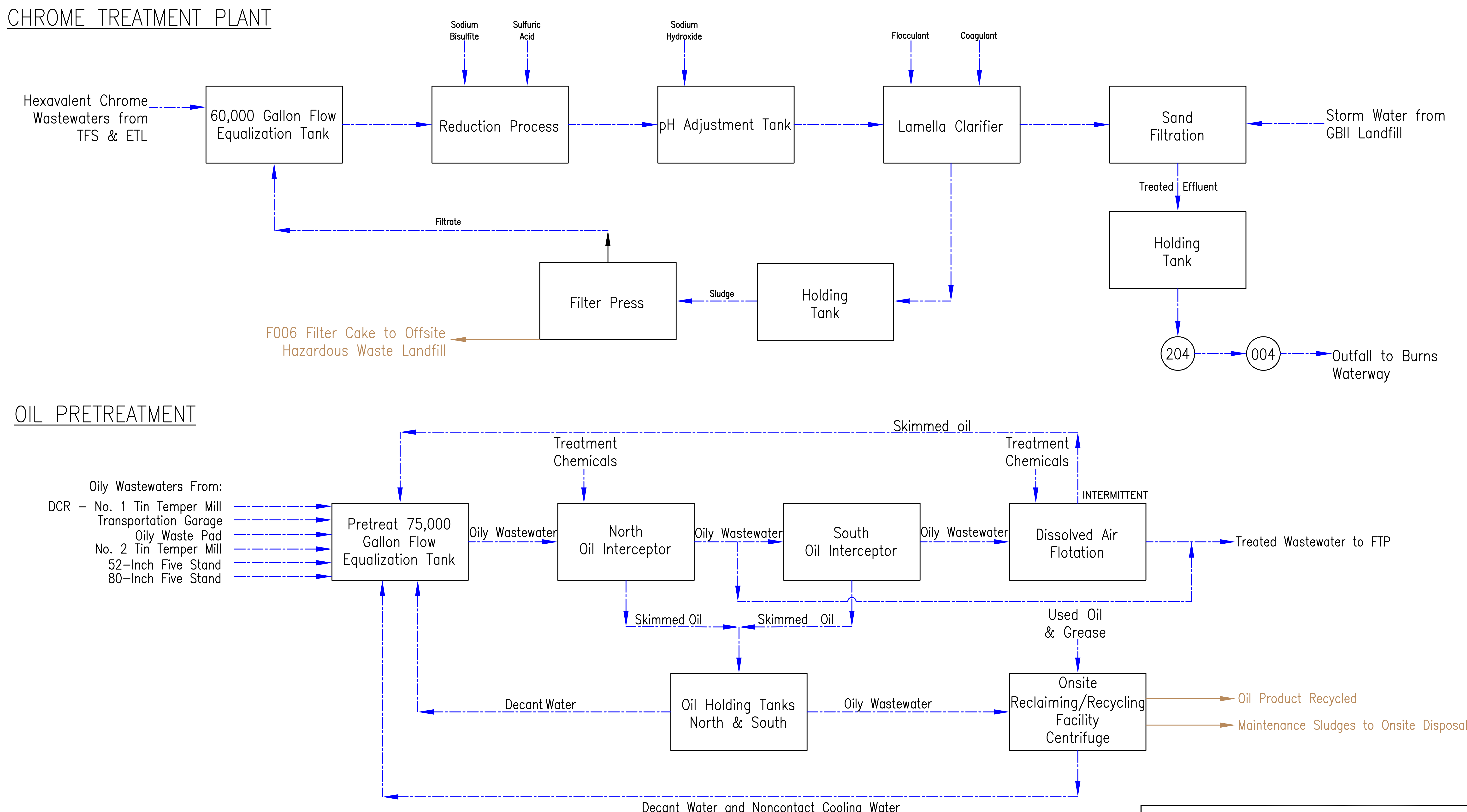


FIGURE MWM-04

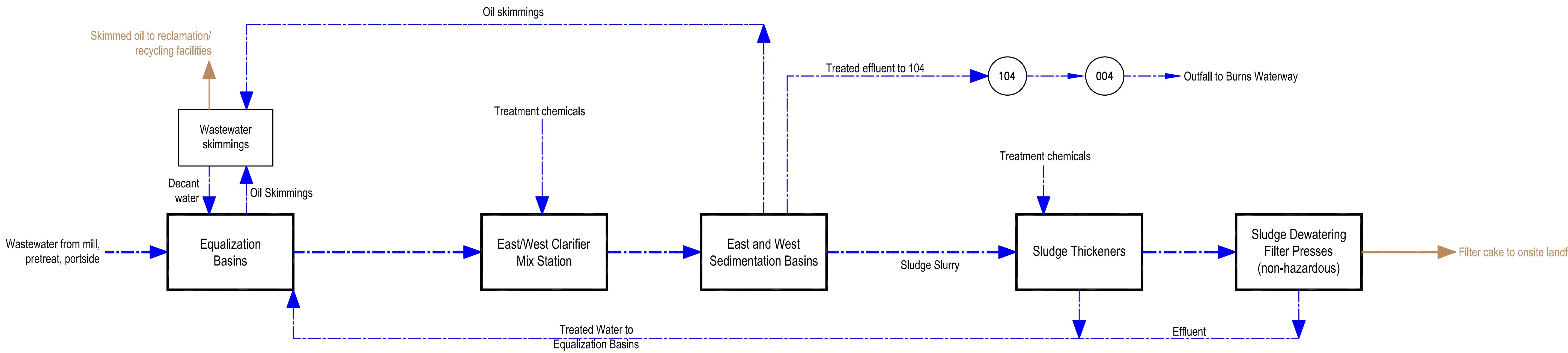
Pre-Treatment Area

PRODUCT OR PROCESS THROUGHPUT			
LIQUID MATERIAL STREAMS	OUTFALL NUMBER	REVISION DATE:	04/15/2020
GASEOUS MATERIAL STREAMS	AIR EMISSION SOURCE	FILE PATH:	USSMW/Drawings/PFDs
SOLID MATERIAL STREAMS	SOLID WASTE STREAM	FILE NAME:	MWM-04.DWG

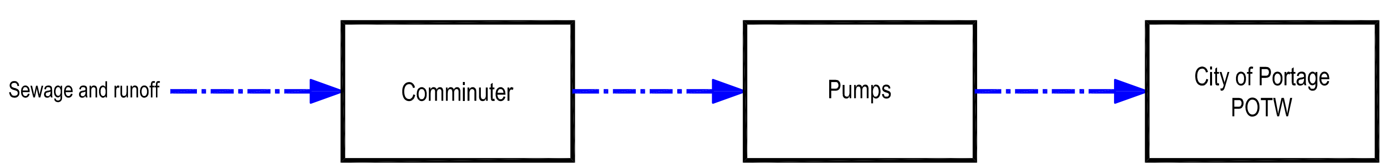
U. S. Steel - Midwest Plant
Process Flow Diagrams

ST Environmental LLC
PO Box 40129
Austin, TX 78704
Phone: (219) 728 - 6312

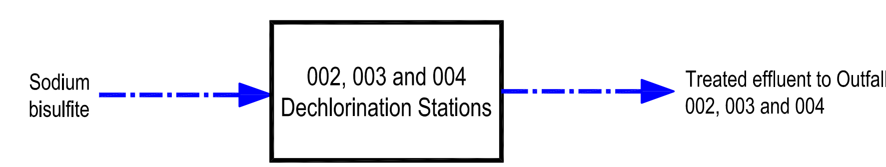
Final Treatment Plant



Sanitary Sewer Treatment



Dechlorination Stations

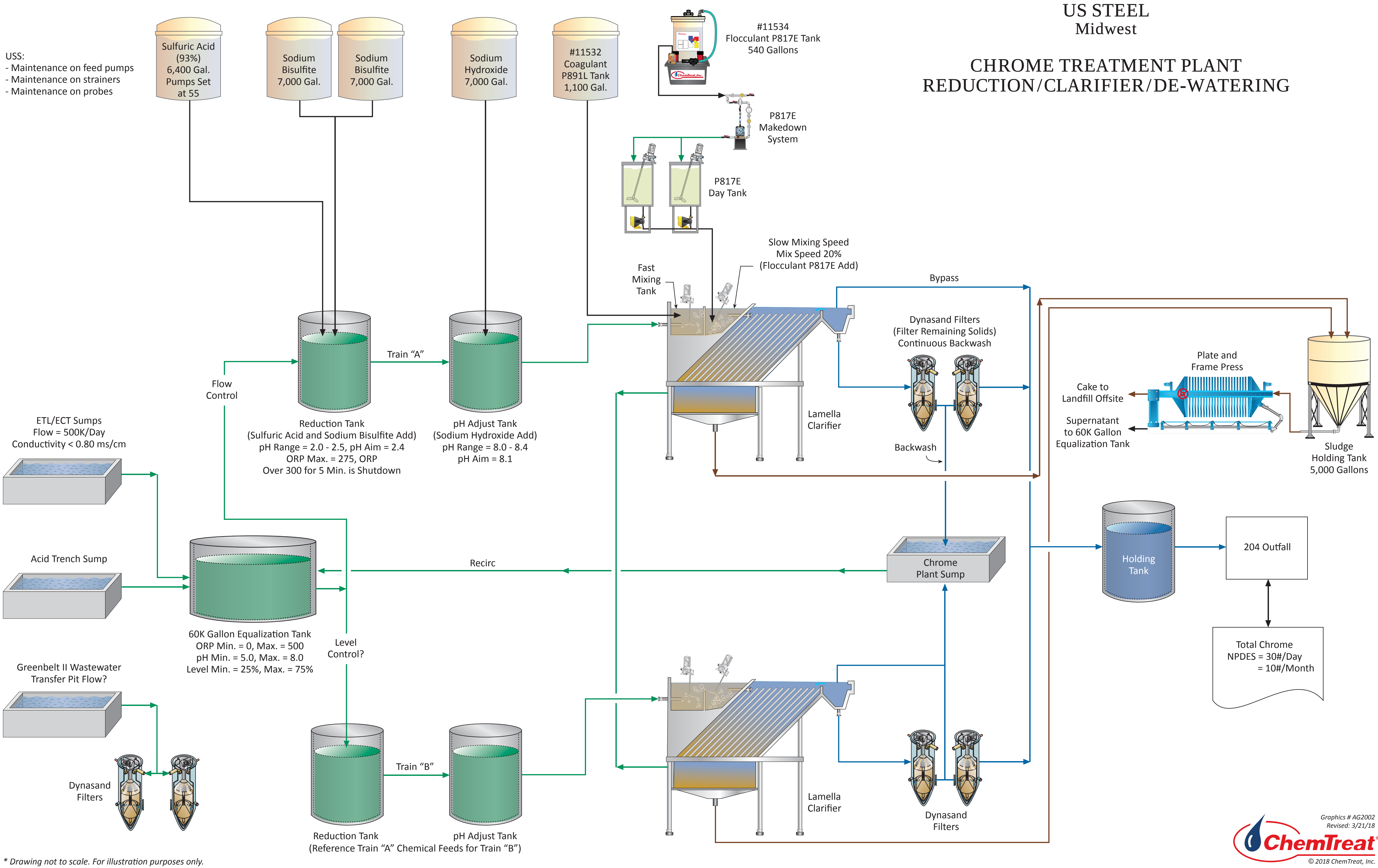


PRODUCT OR PROCESS THROUGHPUT			
LIQUID MATERIAL STREAMS	OUTFALL NUMBER	REVISION DATE:	04/12/2018
GASEOUS MATERIAL STREAMS	AIR EMISSION SOURCE	FILE PATH:	USSMW/Drawings/PFDs
SOLID MATERIAL STREAMS	SOLID WASTE STREAM	FILE NAME:	MWM-05.DWG

Figure MWM-05
Final Treatment Plant
Wastewater, Sanitary Sewer & Dechlorination Treatment

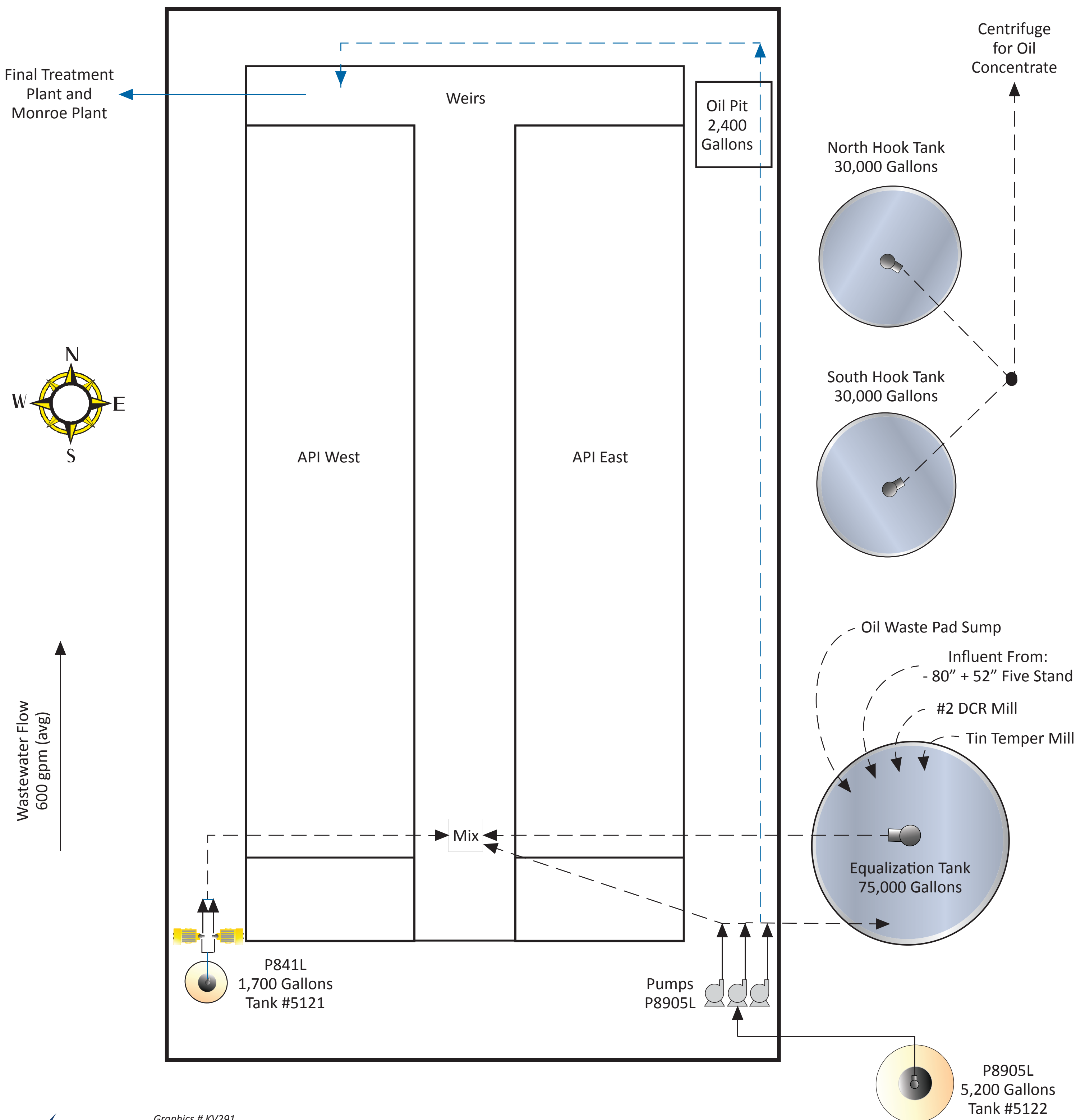
U. S. Steel - Midwest Plant
Process Flow Diagrams

ST Environmental LLC
PO Box 2557
Chesterton, IN 46304
Phone: (219) 728 - 6312


US STEEL
Midwest
CHROME TREATMENT PLANT
REDUCTION/CLARIFIER/DE-WATERING
USS:
- Maintenance on feed pumps
- Maintenance on strainers
- Maintenance on probes
Sulfuric Acid (93%) 6,400 Gal. Pumps Set at 55
Sodium Bisulfite 7,000 Gal.
Sodium Bisulfite 7,000 Gal.
Sodium Hydroxide 7,000 Gal.
#11532 Coagulant P891L Tank 1,100 Gal.
#11534 Flocculant P817E Tank 540 Gallons
P817E Makedown System
P817E Day Tank
Slow Mixing Speed Mix Speed 20% (Flocculant P817E Add)
Fast Mixing Tank
Bypass
Dynasand Filters (Filter Remaining Solids) Continuous Backwash
Plate and Frame Press
Cake to Landfill Offsite
Supernatant to 60K Gallon Equalization Tank
Sludge Holding Tank 5,000 Gallons
Train "A"
Flow Control
Reduction Tank (Sulfuric Acid and Sodium Bisulfite Add) pH Range = 2.0 - 2.5, pH Aim = 2.4 ORP Max. = 275, ORP Over 300 for 5 Min. is Shutdown
pH Adjust Tank (Sodium Hydroxide Add) pH Range = 8.0 - 8.4 pH Aim = 8.1
Lamella Clarifier
Backwash
ETL/ECT Sumps Flow = 500K/Day Conductivity < 0.80 ms/cm
Acid Trench Sump
Recirc
Chrome Plant Sump
Holding Tank
204 Outfall
60K Gallon Equalization Tank ORP Min. = 0, Max. = 500 pH Min. = 5.0, Max. = 8.0 Level Min. = 25%, Max. = 75%
Level Control?
Total Chrome NPDES = 30#/Day = 10#/Month
Greenbelt II Wastewater Transfer Pit Flow?
Dynasand Filters
Train "B"
Lamella Clarifier
Dynasand Filters
Reduction Tank
pH Adjust Tank
(Reference Train "A" Chemical Feeds for Train "B")
Graphics # AG2002 Revised: 3/21/18
ChemTreat
© 2018 ChemTreat, Inc.
* Drawing not to scale. For illustration purposes only.

US STEEL
Midwest

API OIL INTERCEPTOR BUILDING AT PRE-TREAT

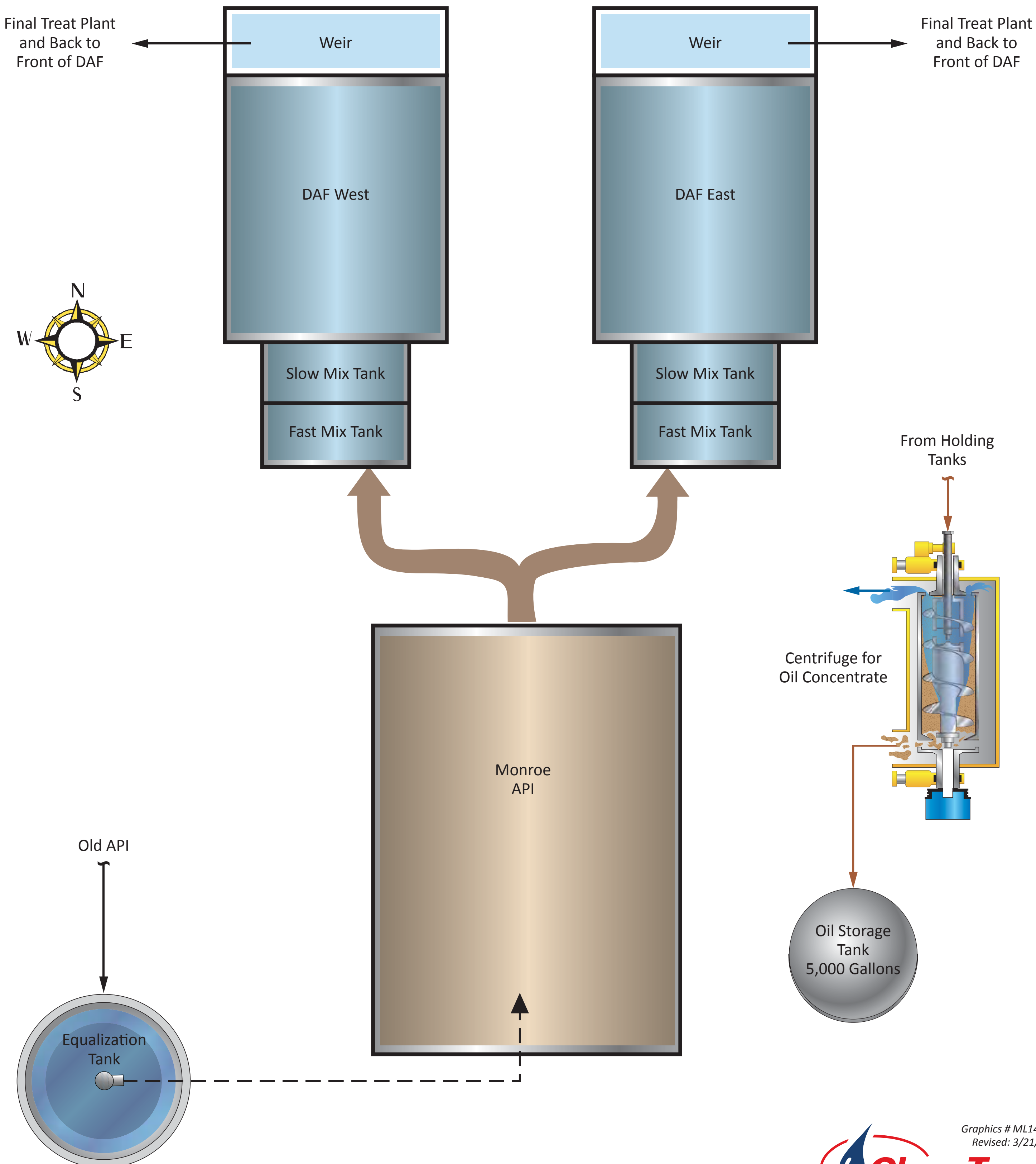


Graphics # KV291
Revised: 3/21/18

* Drawing not to scale. For illustration purposes only.

US STEEL
Midwest

NEW API OIL INTERCEPTOR BUILDING AT PRE-TREAT

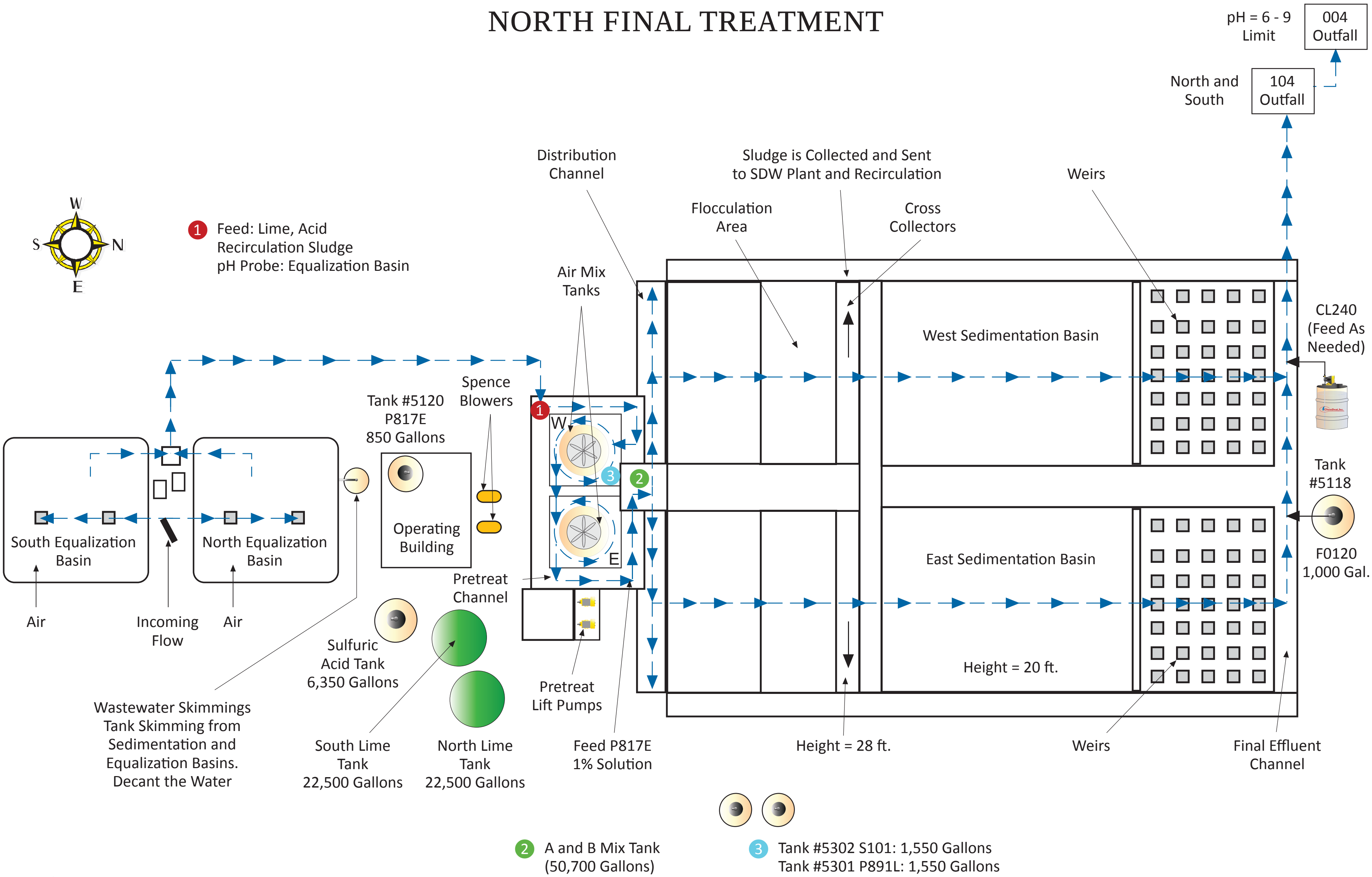


** Drawing not to scale. For illustration purposes only.*

Graphics # ML1457
Revised: 3/21/18

US STEEL
Midwest

NORTH FINAL TREATMENT

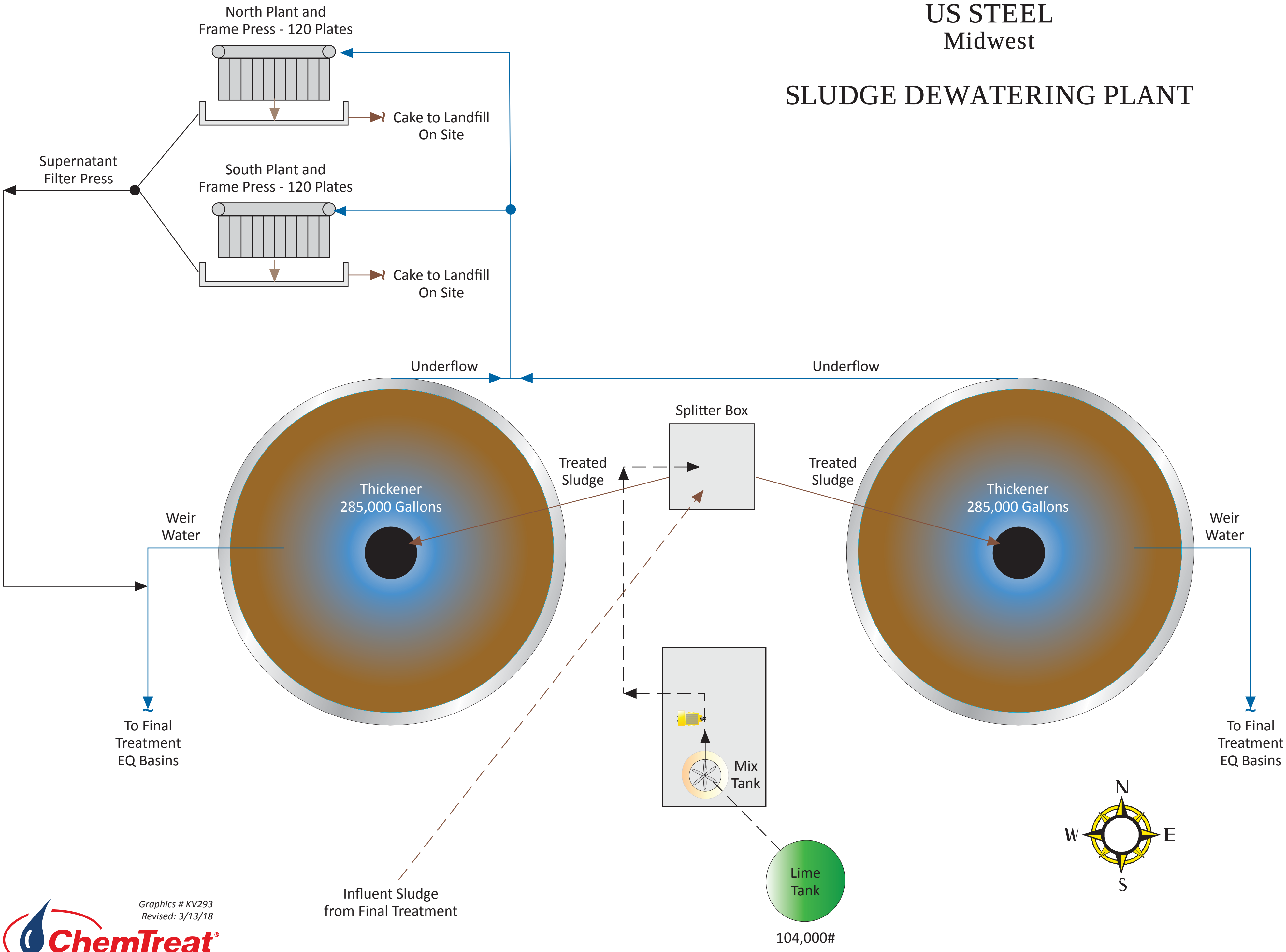


Graphics # KV289
Revised: 3/13/18

* Drawing not to scale. For illustration purposes only.

US STEEL
Midwest

SLUDGE DEWATERING PLANT

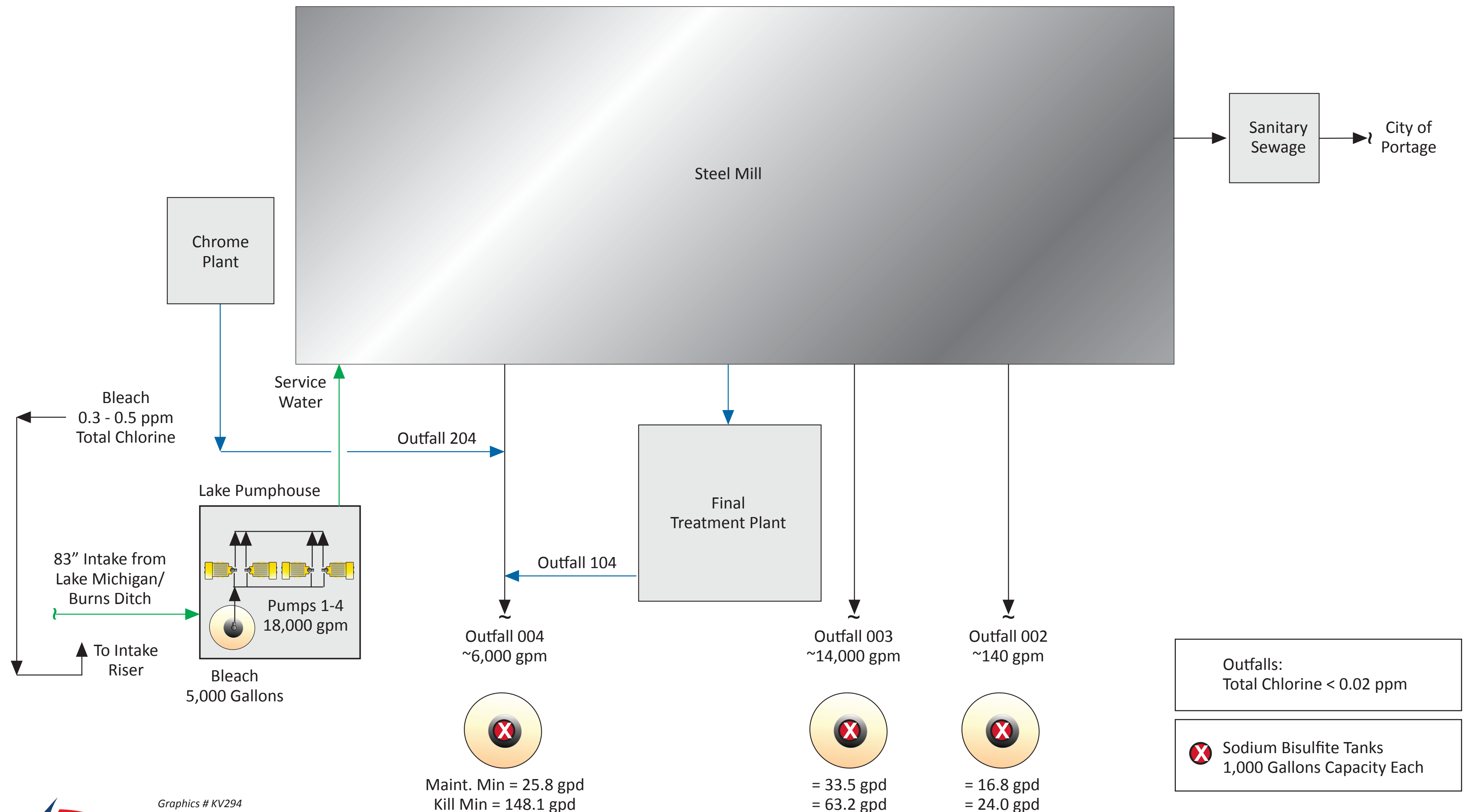


Graphics # KV293
Revised: 3/13/18

* Drawing not to scale. For illustration purposes only.

US STEEL
Midwest

OUTFALLS/SERVICE WATER TREATMENT (ZEBRA MUSSELS)



Graphics # KV294
Revised: 3/21/18

** Drawing not to scale. For illustration purposes only.*

Appendix III
Laboratory Certifications

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Is hereby granting a Louisiana Environmental Laboratory Accreditation to

Ramboll US Corporation
201 Summit View Dr Ste 300
Brentwood, Tennessee 37027

Agency Interest No. 30735
Activity No. ACC20200001

According to the Louisiana Administrative Code, Title 33, Part I, Subpart 3, LABORATORY ACCREDITATION, the State of Louisiana formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed in the attachment.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part I, Subpart 3 requirements and agrees to adapt to any changes in the requirements. It also acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part I and the 2009 TNI Standard by which the laboratory was assessed. Please contact the Department of Environmental Quality, Louisiana Environmental Laboratory Accreditation Program (LELAP) to verify the laboratory's scope of accreditation and accreditation status.

Accreditation by the State of Louisiana is not an endorsement or a guarantee of validity of the data generated by the laboratory. Accreditation of the environmental laboratory does not imply that a product, process, system, or person is approved by LELAP. To be accredited initially and maintain accreditation, the laboratory agrees to participate in two single-blind, single-concentration PT studies, where available, per year for each field of testing for which it seeks accreditation or maintains accreditation as required in LAC 33:I.4711.

Cheryl Sonnier Nolan
Administrator
Public Participation and Permit Support Services Division

Issued Date: 15 July 2020

Effective Date: **July 1, 2020**
Expiration Date: **June 30, 2021**
Certificate Number: 02061

LELAP

STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Effective Date: July 1, 2020

Ramboll US Corporation
AI Number: 30735
Activity No.: ACC20200001
Expiration Date: June 30, 2021

201 Summit View Dr Ste 300, Brentwood, Tennessee 37027

Certificate Number: 02061

Air Emissions

Analyte	Method Name	Method Code	Type	AB
NONE	NONE	NONE	NONE	NONE

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
3315 - Ceriodaphnia dubia	EPA 1002	10115001	NELAP	LA
3472 - IC25 Biomass	EPA 1003	10115205	NELAP	LA
3477 - NOEC Biomass	EPA 1003	10115205	NELAP	LA
3315 - Ceriodaphnia dubia	EPA 2000	10213602	NELAP	LA
3340 - Cyprinella leedsi	EPA 2000	10213602	NELAP	LA
3460 - LC50 Survival	EPA 2000	10213602	NELAP	LA
3410 - Pimephales promelas	EPA 2000	10213602	NELAP	LA
3470 - IC25 (ON) Growth	EPA 1000.0 - Fathead minnow, 7-day Chronic, daily renewal, MHSF 25°C	10214207	NELAP	LA
3482 - IC25 Survival	EPA 1000.0 - Fathead minnow, 7-day Chronic, daily renewal, MHSF 25°C	10214207	NELAP	LA
3475 - NOEC (ON) Growth	EPA 1000.0 - Fathead minnow, 7-day Chronic, daily renewal, MHSF 25°C	10214207	NELAP	LA
3465 - NOEC Survival	EPA 1000.0 - Fathead minnow, 7-day Chronic, daily renewal, MHSF 25°C	10214207	NELAP	LA
3460 - LC50 Survival	EPA 2002.0	10214581	NELAP	LA
3315 - Ceriodaphnia dubia	EPA 2002 Ceriodaphnia dubia Acute MHSF 25°C	10214809	NELAP	LA
3460 - LC50 Survival	EPA 2002 Ceriodaphnia dubia Acute MHSF 25°C	10214809	NELAP	LA
3480 - IC25 Reproduction	EPA 1002.0 - Ceriodaphnia dubia, 7-day Chronic, daily renewal, MHSF 25°C	10215006	NELAP	LA
3482 - IC25 Survival	EPA 1002.0 - Ceriodaphnia dubia, 7-day Chronic, daily renewal, MHSF 25°C	10215006	NELAP	LA
3485 - NOEC Reproduction	EPA 1002.0 - Ceriodaphnia dubia, 7-day Chronic, daily renewal, MHSF 25°C	10215006	NELAP	LA
3465 - NOEC Survival	EPA 1002.0 - Ceriodaphnia dubia, 7-day Chronic, daily renewal, MHSF 25°C	10215006	NELAP	LA
3460 - LC50 Survival	EPA 2021.0 - Daphnia magna, 48-hr Acute, nonrenewal, MHSF 25°C	10215415	NELAP	LA
3355 - Daphnia pulex	EPA 2021 Daphnia pulex Acute	10215608	NELAP	LA
3460 - LC50 Survival	EPA 2021.0 - Daphnia pulex, 48hr Acute, nonrenewal, MHSF 25°C	10215619	NELAP	LA
3325 - Chronic toxicity	EPA 1000.0	10252605	NELAP	LA
3470 - IC25 (ON) Growth	EPA 1000.0	10252605	NELAP	LA
3482 - IC25 Survival	EPA 1000.0	10252605	NELAP	LA
3475 - NOEC (ON) Growth	EPA 1000.0	10252605	NELAP	LA
3465 - NOEC Survival	EPA 1000.0	10252605	NELAP	LA
3410 - Pimephales promelas	EPA 1000.0	10252605	NELAP	LA
3325 - Chronic toxicity	EPA 1002.0	10253006	NELAP	LA
3480 - IC25 Reproduction	EPA 1002.0	10253006	NELAP	LA
3482 - IC25 Survival	EPA 1002.0	10253006	NELAP	LA

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
3485 - NOEC Reproduction	EPA 1002.0	10253006	NELAP	LA
3465 - NOEC Survival	EPA 1002.0	10253006	NELAP	LA
3472 - IC25 Biomass	EPA 1003.0 - Green Algae, 4-day Chronic, nonrenewal, 20% DMW 25°C	10253200	NELAP	LA
3477 - NOEC Biomass	EPA 1003.0 - Green Algae, 4-day Chronic, nonrenewal, 20% DMW 25°C	10253200	NELAP	LA
3420 - Selenastrum capricornutum	EPA 1003.0 - Green Algae, 4-day Chronic, nonrenewal, 20% DMW 25°C	10253200	NELAP	LA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
NONE	NONE	NONE	NONE	NONE

Biological Tissue

Analyte	Method Name	Method Code	Type	AB
NONE	NONE	NONE	NONE	NONE

State of Florida
Department of Health, Bureau of Public Health Laboratories
This is to certify that

E871119

ALS ENVIRONMENTAL - VALPARAISO
2400 CUMBERLAND DRIVE
VALPARAISO, IN 46383

has complied with Florida Administrative Code 64E-1,
for the examination of environmental samples in the following categories

NON-POTABLE WATER - GENERAL CHEMISTRY, NON-POTABLE WATER - METALS

Continued certification is contingent upon successful on-going compliance with the NELAC Standards and FAC Rule 64E-1 regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and are on file at the Bureau of Public Health Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

Date Issued: July 01, 2020 Expiration Date: June 30, 2021

Patty A. Lewandowski, MBA, MT(ASCP)
Chief Bureau of Public Health Laboratories
DH Form 1697, 7/04
NON-TRANSFERABLE E871119-08-07/01/2020
Supersedes all previously issued certificates

Ron DeSantis
Governor

Laboratory Scope of Accreditation

Attachment to Certificate #: E871119-08, expiration date June 30, 2021. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E871119** EPA Lab Code: **IN01817** **(616) 399-6070**

E871119
ALS Environmental - Valparaiso
2400 Cumberland Drive
Valparaiso, IN 46383

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aluminum	EPA 200.8	Metals	NELAP	12/14/2017
Aluminum	EPA 6020	Metals	NELAP	12/14/2017
Ammonia as N	EPA 350.1	General Chemistry	NELAP	1/1/2016
Ammonia as N	SM 4500-NH3 G (19th,20th,21st Ed.)/UV-VIS	General Chemistry	NELAP	1/1/2016
Antimony	EPA 200.8	Metals	NELAP	12/14/2017
Antimony	EPA 6020	Metals	NELAP	12/14/2017
Arsenic	EPA 200.8	Metals	NELAP	1/1/2016
Arsenic	EPA 6020	Metals	NELAP	1/1/2016
Barium	EPA 200.8	Metals	NELAP	1/1/2016
Barium	EPA 6020	Metals	NELAP	1/1/2016
Beryllium	EPA 200.8	Metals	NELAP	1/1/2016
Beryllium	EPA 6020	Metals	NELAP	1/1/2016
Biochemical oxygen demand	SM 5210 B	General Chemistry	NELAP	1/1/2016
Cadmium	EPA 200.8	Metals	NELAP	1/1/2016
Cadmium	EPA 6020	Metals	NELAP	1/1/2016
Calcium	EPA 200.8	Metals	NELAP	1/1/2016
Calcium	EPA 6020	Metals	NELAP	1/1/2016
Carbonaceous BOD (CBOD)	SM 5210 B	General Chemistry	NELAP	1/1/2016
Chemical oxygen demand	EPA 410.4	General Chemistry	NELAP	12/14/2017
Chromium	EPA 200.8	Metals	NELAP	1/1/2016
Chromium	EPA 6020	Metals	NELAP	1/1/2016
Chromium VI	EPA 218.6	General Chemistry	NELAP	11/22/2019
Chromium VI	EPA 7196	General Chemistry	NELAP	1/1/2016
Chromium VI	EPA 7199	General Chemistry	NELAP	11/22/2019
Chromium VI	SM 3500-Cr B (20th/21st/22nd Ed.)/UV-VIS	General Chemistry	NELAP	1/1/2016
Cobalt	EPA 200.8	Metals	NELAP	12/14/2017
Cobalt	EPA 6020	Metals	NELAP	12/14/2017
Copper	EPA 200.8	Metals	NELAP	1/1/2016
Copper	EPA 6020	Metals	NELAP	1/1/2016
Cyanide	SM 4500-CN E	General Chemistry	NELAP	1/1/2016
Iron	EPA 200.8	Metals	NELAP	1/1/2016
Iron	EPA 6020	Metals	NELAP	1/1/2016
Lead	EPA 200.8	Metals	NELAP	1/1/2016
Lead	EPA 6020	Metals	NELAP	1/1/2016

Laboratory Scope of Accreditation

Attachment to Certificate #: E871119-08, expiration date June 30, 2021. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: **E871119** EPA Lab Code: **IN01817** **(616) 399-6070**

E871119
ALS Environmental - Valparaiso
2400 Cumberland Drive
Valparaiso, IN 46383

Matrix: **Non-Potable Water**

Analyte	Method/Tech	Category	Certification Type	Effective Date
Magnesium	EPA 200.8	Metals	NELAP	1/1/2016
Magnesium	EPA 6020	Metals	NELAP	1/1/2016
Manganese	EPA 200.8	Metals	NELAP	12/14/2017
Manganese	EPA 6020	Metals	NELAP	12/14/2017
Molybdenum	EPA 200.8	Metals	NELAP	12/14/2017
Molybdenum	EPA 6020	Metals	NELAP	12/14/2017
Nickel	EPA 200.8	Metals	NELAP	1/1/2016
Nickel	EPA 6020	Metals	NELAP	1/1/2016
Nitrate as N	EPA 353.2	General Chemistry	NELAP	12/14/2017
Nitrate-nitrite	EPA 353.2	General Chemistry	NELAP	12/14/2017
Nitrite as N	EPA 353.2	General Chemistry	NELAP	12/14/2017
Oil & Grease	EPA 1664	General Chemistry	NELAP	1/1/2016
Phosphorus, total	EPA 365.1	General Chemistry	NELAP	12/14/2017
Potassium	EPA 200.8	Metals	NELAP	1/1/2016
Potassium	EPA 6020	Metals	NELAP	1/1/2016
Residue-nonfilterable (TSS)	SM 2540 D	General Chemistry	NELAP	1/1/2016
Selenium	EPA 200.8	Metals	NELAP	1/1/2016
Selenium	EPA 6020	Metals	NELAP	1/1/2016
Silver	EPA 200.8	Metals	NELAP	1/1/2016
Silver	EPA 6020	Metals	NELAP	1/1/2016
Sodium	EPA 200.8	Metals	NELAP	1/1/2016
Sodium	EPA 6020	Metals	NELAP	1/1/2016
Thallium	EPA 200.8	Metals	NELAP	12/14/2017
Thallium	EPA 6020	Metals	NELAP	12/14/2017
Total phenolics	EPA 420.4	General Chemistry	NELAP	1/1/2016
Vanadium	EPA 200.8	Metals	NELAP	12/14/2017
Vanadium	EPA 6020	Metals	NELAP	12/14/2017
Weak acid dissociable cyanide	SM 4500 CN-I	General Chemistry	NELAP	1/1/2016
Zinc	EPA 200.8	Metals	NELAP	1/1/2016
Zinc	EPA 6020	Metals	NELAP	1/1/2016

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program. **Issue Date: 7/1/2020** **Expiration Date: 6/30/2021**

STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY
NELAP - RECOGNIZED

ENVIRONMENTAL LABORATORY ACCREDITATION

is hereby granted to

ALS Environmental-IN
2400 Cumberland Dr.
Valparaiso, IN 46383

NELAP ACCREDITED

Accreditation Number #200087

According to the Illinois Administrative Code, Title 35, Subtitle A, Chapter II, Part 186, ACCREDITATION OF LABORATORIES FOR DRINKING WATER, WASTEWATER AND HAZARDOUS WASTES ANALYSIS, the State of Illinois formally recognizes that this laboratory is technically competent to perform the environmental analyses listed on the scope of accreditation detailed below.

The laboratory agrees to perform all analyses listed on this scope of accreditation according to the Part 186 requirements and acknowledges that continued accreditation is dependent on successful ongoing compliance with the applicable requirements of Part 186. Please contact the Illinois EPA Environmental Laboratory Accreditation Program (IL ELAP) to verify the laboratory's scope of accreditation and accreditation status. Accreditation by the State of Illinois is not an endorsement or a guarantee of validity of the data generated by the laboratory.

Primary Accrediting Authority:Florida

Celeste M. Crowley

Celeste M. Crowley
Supervisor
Environmental Laboratory Accreditation Program

Certificate No: 2000872020-1
Expiration Date: 5/5/2021
Issued On: 5/6/2020

State of Illinois
Environmental Protection Agency
Awards the Certificate of Approval to:

ALS Environmental-IN
2400 Cumberland Dr.
Valparaiso, IN 46383

The Illinois Environmental Laboratory Accreditation Program encourages all clients and data users to verify the most current scope of accreditation for ALS Environmental-IN.

Certificate No.: 2000872020-1

	Primary AB
Field of Testing /Matrix: ***CWA (Non Potable Water)***	
Method EPA 1664A (SGT-HEM)	
Oil & Grease	FL
Method EPA 200.8 Rev: 5.4	
Aluminum	FL
Antimony	FL
Arsenic	FL
Barium	FL
Beryllium	FL
Cadmium	FL
Calcium	FL
Chromium	FL
Cobalt	FL
Copper	FL
Iron	FL
Lead	FL
Magnesium	FL
Manganese	FL
Molybdenum	FL
Nickel	FL
Potassium	FL
Selenium	FL
Silver	FL
Sodium	FL
Thallium	FL
Vanadium	FL
Zinc	FL
Method EPA 218.6 Rev: 3.3	
Chromium VI	FL
Method EPA 350.1 Rev: 2	
Ammonia	FL
Method EPA 353.2 Rev: 2	
Nitrate	FL
Nitrate plus Nitrite as N	FL
Nitrite as N	FL
Method EPA 365.1 Rev: 2	
Phosphorus	FL
Method EPA 410.4 Rev: 2	
Chemical oxygen demand	FL

Field of Testing /Matrix: ***CWA (Non Potable Water)***

Method EPA 420.4 Rev: 1	
Total phenolics	FL
Method SM 2540 D-1997	
Residue-nonfilterable (TSS)	FL
Method SM 3500-Cr B-2009	
Chromium VI	FL
Method SM 4500-CN¯ E-1999	
Cyanide	FL
Method SM 4500-NH3 D-1997 Rev: 21st ED	
Ammonia	FL
Method SM 5210 B-2001	
Biochemical oxygen demand	FL
Carbonaceous BOD, CBOD	FL

Field of Testing /Matrix: ***RCRA (Non Potable Water)***

Method EPA 6020A Rev: 1

Aluminum	FL
Antimony	FL
Arsenic	FL
Barium	FL
Beryllium	FL
Cadmium	FL
Calcium	FL
Chromium	FL
Cobalt	FL
Copper	FL
Iron	FL
Lead	FL
Magnesium	FL
Manganese	FL
Molybdenum	FL
Nickel	FL
Potassium	FL
Selenium	FL
Silver	FL
Sodium	FL
Thallium	FL
Vanadium	FL
Zinc	FL

Method EPA 7196A Rev: 1

Chromium VI	FL

Method EPA 7199 Rev: 0

Chromium VI	FL

End of Scope of Accreditation

Minnesota Department of Health

Environmental Laboratory Accreditation Program

Issues accreditation to

State Laboratory ID: 026-999-449

EPA Lab Code: MI00028

ALS Environmental

3352 128th Avenue

Holland, MI 49424-9263

for fields of accreditation listed on the laboratory's accompanying Scope of Certification in accordance with the provisions in Minnesota Laws and Rules.

Continued accreditation is contingent upon successful on-going compliance with Minnesota Statutes 144.97 to 144.98, 2009 TNI Standard and applicable Minnesota Rules 4740.2010 to 4740.2120. The laboratory's Scope of Certification cites the specific programs, methods, analytes and matrices for which MDH issues this accreditation.

This certificate is valid proof of accreditation only when associated with its accompanying Scope of Certification.

The Scope of Certification and reports of on-site assessments are on file at the Minnesota Department of Health, 601 Robert Street North, Saint Paul, Minnesota. Customers may verify the laboratory's accreditation status in Minnesota by contacting MNELAP at (651) 201-5324.

Effective Date: 07/10/2020

Expires: 12/31/2020

Certificate Number: 1889720

Issued under the authority delegated by the Commissioner of Health, State of Minnesota

Environmental Laboratory Accreditation Program
Scope of Certification

THIS LISTING OF FIELDS OF ACCREDITATION MUST BE ACCOMPANIED BY CERTIFICATE NUMBER: 1889720

State Laboratory ID: 026-999-449 **EPA Lab Code: MI00028** **Issue Date: 7/10/2020**
Expiration Date: 12/31/2020

ALS Environmental
3352 128th Avenue
Holland, MI 49424-9263

Clean Water Program

ASTM D7511-09

Preparation Techniques: Digestion, In-Line UV;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	ASTM D7511-09	Total Cyanide	NPW	MN	

EPA 120.1

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 120.1	Conductivity	NPW	MN	

EPA 160.4

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 160.4	Residue-volatile	NPW	MN	

EPA 1664A (HEM)

Preparation Techniques: Extraction, solid phase (SPE);

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 1664A (HEM)	Oil & Grease	NPW	MN	

EPA 1664A (SGT-HEM)

Preparation Techniques: Extraction, solid phase (SPE);

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 1664A (SGT-HEM)	Oil & Grease	NPW	MN	

EPA 300.0

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 300.0	Bromide	NPW	MN	
CWP	EPA 300.0	Chloride	NPW	MN	
CWP	EPA 300.0	Fluoride	NPW	MN	
CWP	EPA 300.0	Nitrate as N	NPW	MN	
CWP	EPA 300.0	Nitrate-nitrite	NPW	MN	
CWP	EPA 300.0	Nitrite as N	NPW	MN	
CWP	EPA 300.0	Sulfate	NPW	MN	

EPA 325.2

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 325.2	Chloride	NPW	MN	

EPA 335.4

Preparation Techniques: Distillation, micro;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 335.4	Total Cyanide	NPW	MN	

EPA 350.1

Preparation Techniques: Distillation, micro;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 350.1	Ammonia as N	NPW	MN	

EPA 353.2

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 353.2	Nitrate-nitrite	NPW	MN	
CWP	EPA 353.2	Nitrite as N	NPW	MN	

EPA 353.2 (calc.)

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 353.2 (calc.)	Nitrate as N	NPW	MN	

EPA 365.1

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 365.1	Orthophosphate as P	NPW	MN	
CWP	EPA 365.1	Total Phosphorus	NPW	MN	

EPA 410.4

Preparation Techniques: Digestion, hotplate or HotBlock;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 410.4	Chemical oxygen demand	NPW	MN	

EPA 420.4

Preparation Techniques: Distillation, MIDI;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 420.4	Total Phenolics	NPW	MN	

Hach 10360

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	Hach 10360	Biochemical oxygen demand	NPW	MN	
CWP	Hach 10360	Carbonaceous BOD, CBOD	NPW	MN	

Kelada 01

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	Kelada 01	Total Cyanide	NPW	MN	

OIA 1677-09

Preparation Techniques: Distillation, micro;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	OIA 1677-09	Available Cyanide	NPW	MN	
CWP	OIA 1677-09	Free cyanide	NPW	MN	

SM 2130 B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2130 B-2011	Turbidity	NPW	MN	

SM 2310 B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2310 B-2011	Acidity, as CaCO3	NPW	MN	

SM 2320 B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2320 B-2011	Alkalinity as CaCO3	NPW	MN	

SM 2340 C-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2340 C-2011	Total hardness as CaCO3	NPW	MN	

SM 2510 B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2510 B-2011	Conductivity	NPW	MN	

SM 2540 B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2540 B-2011	Residue-total	NPW	MN	

SM 2540 C-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2540 C-2011	Residue-filterable (TDS)	NPW	MN	

SM 2540 D-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2540 D-2011	Residue-nonfilterable (TSS)	NPW	MN	

SM 2540 E-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2540 E-2011	Residue-volatile	NPW	MN	

SM 2540 F-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2540 F-2011	Residue-settleable	NPW	MN	

SM 4500-Cl G-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-Cl G-2011	Total residual chlorine	NPW	MN	

SM 4500-Cl^- C-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-Cl^- C-2011	Chloride	NPW	MN	

SM 4500-Cl^- E-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-Cl^- E-2011	Chloride	NPW	MN	

SM 4500-CN^- E-2011

Preparation Techniques: Distillation, micro;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-CN^- E-2011	Total Cyanide	NPW	MN	

SM 4500-CN^- G-2011

Preparation Techniques: Distillation, micro;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-CN^- G-2011	Amenable cyanide	NPW	MN	

SM 4500-H+ B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-H+ B-2011	pH	NPW	MN	

SM 4500-NH3 G-2011

Preparation Techniques: Distillation, micro;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-NH3 G-2011	Ammonia as N	NPW	MN	
CWP	SM 4500-NH3 G-2011	Kjeldahl nitrogen - total	NPW	MN	

SM 4500-$NO2^-$ B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-$NO2^-$ B-2011	Nitrite as N	NPW	MN	

SM 4500-NO3¯ F-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-NO3¯ F-2011	Nitrate as N	NPW	MN	
CWP	SM 4500-NO3¯ F-2011	Nitrate-nitrite	NPW	MN	

SM 4500-P E-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-P E-2011	Orthophosphate as P	NPW	MN	
CWP	SM 4500-P E-2011	Total Phosphorus	NPW	MN	

SM 4500-S2¯ F-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-S2¯ F-2011	Sulfide	NPW	MN	

SM 4500-SO4¯ E-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 4500-SO4¯ E-2011	Sulfate	NPW	MN	

SM 5210 B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 5210 B-2011	Biochemical oxygen demand	NPW	MN	
CWP	SM 5210 B-2011	Carbonaceous BOD, CBOD	NPW	MN	

SM 5310 C-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 5310 C-2011	Total Organic Carbon	NPW	MN	

SM 5540 C-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 5540 C-2011	Surfactants - MBAS	NPW	MN	

EPA 1631E

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 1631E	Mercury	NPW	MN	

EPA 200.7

Preparation Techniques: Digestion, microwave-assisted; Digestion, hotplate or HotBlock;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 200.7	Aluminum	NPW	MN	
CWP	EPA 200.7	Antimony	NPW	MN	
CWP	EPA 200.7	Arsenic	NPW	MN	
CWP	EPA 200.7	Barium	NPW	MN	
CWP	EPA 200.7	Beryllium	NPW	MN	
CWP	EPA 200.7	Boron	NPW	MN	
CWP	EPA 200.7	Cadmium	NPW	MN	
CWP	EPA 200.7	Calcium	NPW	MN	
CWP	EPA 200.7	Chromium	NPW	MN	
CWP	EPA 200.7	Cobalt	NPW	MN	
CWP	EPA 200.7	Copper	NPW	MN	
CWP	EPA 200.7	Iron	NPW	MN	
CWP	EPA 200.7	Lead	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 200.7	Magnesium	NPW	MN	
CWP	EPA 200.7	Manganese	NPW	MN	
CWP	EPA 200.7	Molybdenum	NPW	MN	
CWP	EPA 200.7	Nickel	NPW	MN	
CWP	EPA 200.7	Potassium	NPW	MN	
CWP	EPA 200.7	Selenium	NPW	MN	
CWP	EPA 200.7	Silver	NPW	MN	
CWP	EPA 200.7	Sodium	NPW	MN	
CWP	EPA 200.7	Thallium	NPW	MN	
CWP	EPA 200.7	Tin	NPW	MN	
CWP	EPA 200.7	Titanium	NPW	MN	
CWP	EPA 200.7	Total chromium	NPW	MN	
CWP	EPA 200.7	Total hardness as CaCO3	NPW	MN	
CWP	EPA 200.7	Vanadium	NPW	MN	
CWP	EPA 200.7	Zinc	NPW	MN	

EPA 200.8

Preparation Techniques: Digestion, microwave-assisted; Digestion, hotplate or HotBlock;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 200.8	Aluminum	NPW	MN	
CWP	EPA 200.8	Antimony	NPW	MN	
CWP	EPA 200.8	Arsenic	NPW	MN	
CWP	EPA 200.8	Barium	NPW	MN	
CWP	EPA 200.8	Beryllium	NPW	MN	
CWP	EPA 200.8	Boron	NPW	MN	
CWP	EPA 200.8	Cadmium	NPW	MN	
CWP	EPA 200.8	Calcium	NPW	MN	
CWP	EPA 200.8	Chromium	NPW	MN	
CWP	EPA 200.8	Cobalt	NPW	MN	
CWP	EPA 200.8	Copper	NPW	MN	
CWP	EPA 200.8	Iron	NPW	MN	
CWP	EPA 200.8	Lead	NPW	MN	
CWP	EPA 200.8	Magnesium	NPW	MN	
CWP	EPA 200.8	Manganese	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 200.8	Molybdenum	NPW	MN	
CWP	EPA 200.8	Nickel	NPW	MN	
CWP	EPA 200.8	Potassium	NPW	MN	
CWP	EPA 200.8	Selenium	NPW	MN	
CWP	EPA 200.8	Silver	NPW	MN	
CWP	EPA 200.8	Sodium	NPW	MN	
CWP	EPA 200.8	Strontium	NPW	MN	
CWP	EPA 200.8	Thallium	NPW	MN	
CWP	EPA 200.8	Tin	NPW	MN	
CWP	EPA 200.8	Titanium	NPW	MN	
CWP	EPA 200.8	Vanadium	NPW	MN	
CWP	EPA 200.8	Zinc	NPW	MN	

EPA 245.1

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 245.1	Mercury	NPW	MN	

SM 2340 B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 2340 B-2011	Total hardness as CaCO3	NPW	MN	

SM 3500-Cr B-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
CWP	SM 3500-Cr B-2011	Chromium VI	NPW	MN	

EPA 608

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE);

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 608	4,4'-DDD	NPW	MN	
CWP	EPA 608	4,4'-DDE	NPW	MN	
CWP	EPA 608	4,4'-DDT	NPW	MN	
CWP	EPA 608	Aldrin	NPW	MN	
CWP	EPA 608	alpha-BHC (alpha-Hexachlorocyclohexane)	NPW	MN	
CWP	EPA 608	Aroclor-1016 (PCB-1016)	NPW	MN	
CWP	EPA 608	Aroclor-1221 (PCB-1221)	NPW	MN	
CWP	EPA 608	Aroclor-1232 (PCB-1232)	NPW	MN	
CWP	EPA 608	Aroclor-1242 (PCB-1242)	NPW	MN	
CWP	EPA 608	Aroclor-1248 (PCB-1248)	NPW	MN	
CWP	EPA 608	Aroclor-1254 (PCB-1254)	NPW	MN	
CWP	EPA 608	Aroclor-1260 (PCB-1260)	NPW	MN	
CWP	EPA 608	beta-BHC (beta-Hexachlorocyclohexane)	NPW	MN	
CWP	EPA 608	Chlordane (tech.)	NPW	MN	
CWP	EPA 608	delta-BHC	NPW	MN	
CWP	EPA 608	Dieldrin	NPW	MN	
CWP	EPA 608	Endosulfan I	NPW	MN	
CWP	EPA 608	Endosulfan II	NPW	MN	
CWP	EPA 608	Endosulfan sulfate	NPW	MN	
CWP	EPA 608	Endrin	NPW	MN	
CWP	EPA 608	Endrin aldehyde	NPW	MN	
CWP	EPA 608	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	NPW	MN	
CWP	EPA 608	Heptachlor	NPW	MN	
CWP	EPA 608	Heptachlor epoxide	NPW	MN	
CWP	EPA 608	Toxaphene (Chlorinated camphene)	NPW	MN	

EPA 608.3 GC-ECD

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE);

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 608.3 GC-ECD	4,4'-DDD	NPW	MN	
CWP	EPA 608.3 GC-ECD	4,4'-DDE	NPW	MN	
CWP	EPA 608.3 GC-ECD	4,4'-DDT	NPW	MN	
CWP	EPA 608.3 GC-ECD	Aldrin	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 608.3 GC-ECD	alpha-BHC (alpha-Hexachlorocyclohexane)	NPW	MN	
CWP	EPA 608.3 GC-ECD	Aroclor-1016 (PCB-1016)	NPW	MN	
CWP	EPA 608.3 GC-ECD	Aroclor-1221 (PCB-1221)	NPW	MN	
CWP	EPA 608.3 GC-ECD	Aroclor-1232 (PCB-1232)	NPW	MN	
CWP	EPA 608.3 GC-ECD	Aroclor-1242 (PCB-1242)	NPW	MN	
CWP	EPA 608.3 GC-ECD	Aroclor-1248 (PCB-1248)	NPW	MN	
CWP	EPA 608.3 GC-ECD	Aroclor-1254 (PCB-1254)	NPW	MN	
CWP	EPA 608.3 GC-ECD	Aroclor-1260 (PCB-1260)	NPW	MN	
CWP	EPA 608.3 GC-ECD	beta-BHC (beta-Hexachlorocyclohexane)	NPW	MN	
CWP	EPA 608.3 GC-ECD	Chlordane (tech.)	NPW	MN	
CWP	EPA 608.3 GC-ECD	delta-BHC	NPW	MN	
CWP	EPA 608.3 GC-ECD	Dieldrin	NPW	MN	
CWP	EPA 608.3 GC-ECD	Endosulfan I	NPW	MN	
CWP	EPA 608.3 GC-ECD	Endosulfan II	NPW	MN	
CWP	EPA 608.3 GC-ECD	Endosulfan sulfate	NPW	MN	
CWP	EPA 608.3 GC-ECD	Endrin	NPW	MN	
CWP	EPA 608.3 GC-ECD	Endrin aldehyde	NPW	MN	
CWP	EPA 608.3 GC-ECD	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	NPW	MN	
CWP	EPA 608.3 GC-ECD	Heptachlor	NPW	MN	
CWP	EPA 608.3 GC-ECD	Heptachlor epoxide	NPW	MN	
CWP	EPA 608.3 GC-ECD	Toxaphene (Chlorinated camphene)	NPW	MN	

EPA 612

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE);

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 612	Hexachlorobenzene	NPW	MN	
CWP	EPA 612	Hexachlorobutadiene	NPW	MN	
CWP	EPA 612	Hexachlorocyclopentadiene	NPW	MN	

EPA 625

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE);

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 625	1,2,4-Trichlorobenzene	NPW	MN	
CWP	EPA 625	2,4,5-Trichlorophenol	NPW	MN	
CWP	EPA 625	2,4,6-Trichlorophenol	NPW	MN	
CWP	EPA 625	2,4-Dichlorophenol	NPW	MN	
CWP	EPA 625	2,4-Dimethylphenol	NPW	MN	
CWP	EPA 625	2,4-Dinitrophenol	NPW	MN	
CWP	EPA 625	2,4-Dinitrotoluene (2,4-DNT)	NPW	MN	
CWP	EPA 625	2,6-Dinitrotoluene (2,6-DNT)	NPW	MN	
CWP	EPA 625	2-Chloronaphthalene	NPW	MN	
CWP	EPA 625	2-Chlorophenol	NPW	MN	
CWP	EPA 625	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	NPW	MN	
CWP	EPA 625	2-Nitrophenol	NPW	MN	
CWP	EPA 625	3,3'-Dichlorobenzidine	NPW	MN	
CWP	EPA 625	4-Bromophenyl phenyl ether	NPW	MN	
CWP	EPA 625	4-Chloro-3-methylphenol	NPW	MN	
CWP	EPA 625	4-Chlorophenyl phenylether	NPW	MN	
CWP	EPA 625	4-Nitrophenol	NPW	MN	
CWP	EPA 625	Acenaphthene	NPW	MN	
CWP	EPA 625	Acenaphthylene	NPW	MN	
CWP	EPA 625	Anthracene	NPW	MN	
CWP	EPA 625	Benzidine	NPW	MN	
CWP	EPA 625	Benzo(a)anthracene	NPW	MN	
CWP	EPA 625	Benzo(a)pyrene	NPW	MN	
CWP	EPA 625	Benzo(g,h,i)perylene	NPW	MN	
CWP	EPA 625	Benzo(k)fluoranthene	NPW	MN	
CWP	EPA 625	Benzo[b]fluoranthene	NPW	MN	
CWP	EPA 625	bis(2-Chloroethoxy)methane	NPW	MN	
CWP	EPA 625	bis(2-Chloroethyl) ether	NPW	MN	
CWP	EPA 625	bis(2-Chloroisopropyl) ether	NPW	MN	
CWP	EPA 625	Butyl benzyl phthalate	NPW	MN	
CWP	EPA 625	Chrysene	NPW	MN	
CWP	EPA 625	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	NPW	MN	
CWP	EPA 625	Di-n-butyl phthalate	NPW	MN	
CWP	EPA 625	Di-n-octyl phthalate	NPW	MN	
CWP	EPA 625	Dibenz(a,h) anthracene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 625	Diethyl phthalate	NPW	MN	
CWP	EPA 625	Dimethyl phthalate	NPW	MN	
CWP	EPA 625	Fluoranthene	NPW	MN	
CWP	EPA 625	Fluorene	NPW	MN	
CWP	EPA 625	Hexachlorobenzene	NPW	MN	
CWP	EPA 625	Hexachlorobutadiene	NPW	MN	
CWP	EPA 625	Hexachlorocyclopentadiene	NPW	MN	
CWP	EPA 625	Hexachloroethane	NPW	MN	
CWP	EPA 625	Indeno(1,2,3-cd) pyrene	NPW	MN	
CWP	EPA 625	Isophorone	NPW	MN	
CWP	EPA 625	n-Nitrosodi-n-propylamine	NPW	MN	
CWP	EPA 625	n-Nitrosodimethylamine	NPW	MN	
CWP	EPA 625	n-Nitrosodiphenylamine	NPW	MN	
CWP	EPA 625	Naphthalene	NPW	MN	
CWP	EPA 625	Nitrobenzene	NPW	MN	
CWP	EPA 625	Pentachlorophenol	NPW	MN	
CWP	EPA 625	Phenanthrene	NPW	MN	
CWP	EPA 625	Phenol	NPW	MN	
CWP	EPA 625	Pyrene	NPW	MN	

EPA 625.1

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE);

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 625.1	1,2,4-Trichlorobenzene	NPW	MN	
CWP	EPA 625.1	2,2'-Oxybis(1-chloropropane),bis(2-Chloro-1-methylethyl)ether	NPW	MN	
CWP	EPA 625.1	2,4,5-Trichlorophenol	NPW	MN	
CWP	EPA 625.1	2,4,6-Trichlorophenol	NPW	MN	
CWP	EPA 625.1	2,4-Dichlorophenol	NPW	MN	
CWP	EPA 625.1	2,4-Dimethylphenol	NPW	MN	
CWP	EPA 625.1	2,4-Dinitrophenol	NPW	MN	
CWP	EPA 625.1	2,4-Dinitrotoluene (2,4-DNT)	NPW	MN	
CWP	EPA 625.1	2,6-Dinitrotoluene (2,6-DNT)	NPW	MN	
CWP	EPA 625.1	2-Chloronaphthalene	NPW	MN	
CWP	EPA 625.1	2-Chlorophenol	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 625.1	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	NPW	MN	
CWP	EPA 625.1	2-Nitrophenol	NPW	MN	
CWP	EPA 625.1	3,3'-Dichlorobenzidine	NPW	MN	
CWP	EPA 625.1	4-Bromophenyl phenyl ether	NPW	MN	
CWP	EPA 625.1	4-Chloro-3-methylphenol	NPW	MN	
CWP	EPA 625.1	4-Chlorophenyl phenylether	NPW	MN	
CWP	EPA 625.1	4-Nitrophenol	NPW	MN	
CWP	EPA 625.1	Acenaphthene	NPW	MN	
CWP	EPA 625.1	Acenaphthylene	NPW	MN	
CWP	EPA 625.1	Anthracene	NPW	MN	
CWP	EPA 625.1	Benzo(a)anthracene	NPW	MN	
CWP	EPA 625.1	Benzo(a)pyrene	NPW	MN	
CWP	EPA 625.1	Benzo(g,h,i)perylene	NPW	MN	
CWP	EPA 625.1	Benzo(k)fluoranthene	NPW	MN	
CWP	EPA 625.1	Benzo[b]fluoranthene	NPW	MN	
CWP	EPA 625.1	bis(2-Chloroethoxy)methane	NPW	MN	
CWP	EPA 625.1	bis(2-Chloroethyl) ether	NPW	MN	
CWP	EPA 625.1	Butyl benzyl phthalate	NPW	MN	
CWP	EPA 625.1	Chrysene	NPW	MN	
CWP	EPA 625.1	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	NPW	MN	
CWP	EPA 625.1	Di-n-butyl phthalate	NPW	MN	
CWP	EPA 625.1	Di-n-octyl phthalate	NPW	MN	
CWP	EPA 625.1	Dibenz(a,h) anthracene	NPW	MN	
CWP	EPA 625.1	Diethyl phthalate	NPW	MN	
CWP	EPA 625.1	Dimethyl phthalate	NPW	MN	
CWP	EPA 625.1	Fluoranthene	NPW	MN	
CWP	EPA 625.1	Fluorene	NPW	MN	
CWP	EPA 625.1	Hexachlorobenzene	NPW	MN	
CWP	EPA 625.1	Hexachlorobutadiene	NPW	MN	
CWP	EPA 625.1	Hexachlorocyclopentadiene	NPW	MN	
CWP	EPA 625.1	Hexachloroethane	NPW	MN	
CWP	EPA 625.1	Indeno(1,2,3-cd) pyrene	NPW	MN	
CWP	EPA 625.1	Isophorone	NPW	MN	
CWP	EPA 625.1	n-Nitrosodi-n-propylamine	NPW	MN	
CWP	EPA 625.1	n-Nitrosodimethylamine	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 625.1	n-Nitrosodiphenylamine	NPW	MN	
CWP	EPA 625.1	Naphthalene	NPW	MN	
CWP	EPA 625.1	Nitrobenzene	NPW	MN	
CWP	EPA 625.1	Pentachlorophenol	NPW	MN	
CWP	EPA 625.1	Phenanthrene	NPW	MN	
CWP	EPA 625.1	Phenol	NPW	MN	
CWP	EPA 625.1	Pyrene	NPW	MN	

EPA 624

Preparation Techniques: Purge and trap;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 624	1,1,1-Trichloroethane	NPW	MN	
CWP	EPA 624	1,1,2,2-Tetrachloroethane	NPW	MN	
CWP	EPA 624	1,1,2-Trichloroethane	NPW	MN	
CWP	EPA 624	1,1-Dichloroethane	NPW	MN	
CWP	EPA 624	1,1-Dichloroethylene	NPW	MN	
CWP	EPA 624	1,2-Dichlorobenzene	NPW	MN	
CWP	EPA 624	1,2-Dichloroethane (Ethylene dichloride)	NPW	MN	
CWP	EPA 624	1,2-Dichloropropane	NPW	MN	
CWP	EPA 624	1,3-Dichlorobenzene	NPW	MN	
CWP	EPA 624	1,4-Dichlorobenzene	NPW	MN	
CWP	EPA 624	1,4-Dioxane (1,4- Diethyleneoxide)	NPW	MN	
CWP	EPA 624	2-Chloroethyl vinyl ether	NPW	MN	
CWP	EPA 624	Acrylonitrile	NPW	MN	
CWP	EPA 624	Benzene	NPW	MN	
CWP	EPA 624	Bromodichloromethane	NPW	MN	
CWP	EPA 624	Bromoform	NPW	MN	
CWP	EPA 624	Carbon tetrachloride	NPW	MN	
CWP	EPA 624	Chlorobenzene	NPW	MN	
CWP	EPA 624	Chlorodibromomethane	NPW	MN	
CWP	EPA 624	Chloroethane (Ethyl chloride)	NPW	MN	
CWP	EPA 624	Chloroform	NPW	MN	
CWP	EPA 624	cis-1,3-Dichloropropene	NPW	MN	
CWP	EPA 624	Ethylbenzene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 624	Methyl bromide (Bromomethane)	NPW	MN	
CWP	EPA 624	Methyl chloride (Chloromethane)	NPW	MN	
CWP	EPA 624	Methylene chloride (Dichloromethane)	NPW	MN	
CWP	EPA 624	Tetrachloroethylene (Perchloroethylene)	NPW	MN	
CWP	EPA 624	Toluene	NPW	MN	
CWP	EPA 624	trans-1,2-Dichloroethylene	NPW	MN	
CWP	EPA 624	trans-1,3-Dichloropropylene	NPW	MN	
CWP	EPA 624	Trichloroethene (Trichloroethylene)	NPW	MN	
CWP	EPA 624	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	NPW	MN	
CWP	EPA 624	Vinyl chloride	NPW	MN	

EPA 624.1

Preparation Techniques: Purge and trap;

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 624.1	1,1,1-Trichloroethane	NPW	MN	
CWP	EPA 624.1	1,1,2,2-Tetrachloroethane	NPW	MN	
CWP	EPA 624.1	1,1,2-Trichloroethane	NPW	MN	
CWP	EPA 624.1	1,1-Dichloroethane	NPW	MN	
CWP	EPA 624.1	1,1-Dichloroethylene	NPW	MN	
CWP	EPA 624.1	1,2,4-Trichlorobenzene	NPW	MN	
CWP	EPA 624.1	1,2-Dibromo-3-chloropropane (DBCP)	NPW	MN	User Defined HN-VMS-001 Rev. 08
CWP	EPA 624.1	1,2-Dichlorobenzene	NPW	MN	
CWP	EPA 624.1	1,2-Dichloroethane (Ethylene dichloride)	NPW	MN	
CWP	EPA 624.1	1,2-Dichloropropane	NPW	MN	
CWP	EPA 624.1	1,3-Dichlorobenzene	NPW	MN	
CWP	EPA 624.1	1,4-Dichlorobenzene	NPW	MN	
CWP	EPA 624.1	1,4-Dioxane (1,4- Diethyleneoxide)	NPW	MN	
CWP	EPA 624.1	2-Butanone (Methyl ethyl ketone, MEK)	NPW	MN	
CWP	EPA 624.1	2-Chloroethyl vinyl ether	NPW	MN	
CWP	EPA 624.1	4-Methyl-2-pentanone (MIBK)	NPW	MN	
CWP	EPA 624.1	Acetone	NPW	MN	
CWP	EPA 624.1	Acrolein (Propenal)	NPW	MN	
CWP	EPA 624.1	Acrylonitrile	NPW	MN	
CWP	EPA 624.1	Benzene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
CWP	EPA 624.1	Bromodichloromethane	NPW	MN	
CWP	EPA 624.1	Bromoform	NPW	MN	
CWP	EPA 624.1	Carbon tetrachloride	NPW	MN	
CWP	EPA 624.1	Chlorobenzene	NPW	MN	
CWP	EPA 624.1	Chlorodibromomethane	NPW	MN	
CWP	EPA 624.1	Chloroethane (Ethyl chloride)	NPW	MN	
CWP	EPA 624.1	Chloroform	NPW	MN	
CWP	EPA 624.1	cis-1,3-Dichloropropene	NPW	MN	
CWP	EPA 624.1	Ethyl acetate	NPW	MN	
CWP	EPA 624.1	Ethylbenzene	NPW	MN	
CWP	EPA 624.1	Isopropylbenzene	NPW	MN	
CWP	EPA 624.1	m+p-xylene	NPW	MN	
CWP	EPA 624.1	Methyl bromide (Bromomethane)	NPW	MN	
CWP	EPA 624.1	Methyl chloride (Chloromethane)	NPW	MN	
CWP	EPA 624.1	Methylene chloride (Dichloromethane)	NPW	MN	
CWP	EPA 624.1	o-Xylene	NPW	MN	
CWP	EPA 624.1	tert-Butyl alcohol	NPW	MN	
CWP	EPA 624.1	Tetrachloroethylene (Perchloroethylene)	NPW	MN	
CWP	EPA 624.1	Tetrahydrofuran (THF)	NPW	MN	
CWP	EPA 624.1	Toluene	NPW	MN	
CWP	EPA 624.1	trans-1,2-Dichloroethylene	NPW	MN	
CWP	EPA 624.1	trans-1,3-Dichloropropylene	NPW	MN	
CWP	EPA 624.1	Trichloroethene (Trichloroethylene)	NPW	MN	
CWP	EPA 624.1	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	NPW	MN	
CWP	EPA 624.1	Vinyl chloride	NPW	MN	
CWP	EPA 624.1	Xylene (total)	NPW	MN	

Resource Conservation Recovery Program

MPCA Guidance PFAS

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	MPCA Guidance PFAS	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	MPCA Guidance PFAS	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS)	SCM	MN	
RCRP	MPCA Guidance PFAS	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	NPW	MN	
RCRP	MPCA Guidance PFAS	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS)	SCM	MN	
RCRP	MPCA Guidance PFAS	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	NPW	MN	
RCRP	MPCA Guidance PFAS	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS)	SCM	MN	
RCRP	MPCA Guidance PFAS	Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	SCM	MN	
RCRP	MPCA Guidance PFAS	Hexafluoropropyleneoxide dimer acid (HFPO-DA) (GenX)	NPW	MN	
RCRP	MPCA Guidance PFAS	N-Ethylperfluorooctane sufonamido acetic acid NEtFOSAA)	NPW	MN	
RCRP	MPCA Guidance PFAS	N-Ethylperfluorooctane sufonamido acetic acid NEtFOSAA)	SCM	MN	
RCRP	MPCA Guidance PFAS	N-Ethylperfluorooctane sulfonamide (EtFOSAm)	NPW	MN	
RCRP	MPCA Guidance PFAS	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)	NPW	MN	
RCRP	MPCA Guidance PFAS	N-Methylperfluorooctane sulfonamide (MeFOSA)	NPW	MN	
RCRP	MPCA Guidance PFAS	N-Methylperfluorooctane sulfonamido acetic acid (N-MeFOSAA)	NPW	MN	
RCRP	MPCA Guidance PFAS	N-Methylperfluorooctane sulfonamido acetic acid (N-MeFOSAA)	SCM	MN	
RCRP	MPCA Guidance PFAS	N-Methylperfluorooctane sulfonamido ethanol (N_MeFOSE)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorobutane sulfonic acid (PFBS)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorobutane sulfonic acid (PFBS)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorobutanoic acid (PFBA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorobutanoic acid (PFBA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorodecane sulfonate (PFDS)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorodecane sulfonate (PFDS)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorodecanoic acid (PFDA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorodecanoic acid (PFDA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorododecane sulfonic acid (PFDoS)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorododecanoic acid (PFDOA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorododecanoic acid (PFDOA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluoroheptane sulfonate (PFHpS)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluoroheptane sulfonic acid (PFHpS)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluoroheptanoic acid (PFHpA)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	MPCA Guidance PFAS	Perfluoroheptanoic acid (PFHpA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorohexadecanoic acid (PFHXDA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorohexane sulfonic acid (PFHxS)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorohexane sulfonic acid (PFHxS)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorohexanoic acid (PFHxA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorohexanoic acid (PFHxA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorononane sulfonic acid (PFNS)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorononane sulfonic acid (PFNS)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorononanoic acid (PFNA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorononanoic acid (PFNA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorooctadecanoic acid (PFODA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorooctane sulfonamide (PFOSAm)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorooctane sulfonamide (PFOSAm)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorooctane sulfonic acid (PFOS)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorooctane sulfonic acid (PFOS)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorooctanoic acid (PFOA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorooctanoic acid (PFOA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluoropentane sulfonic acid (PFPeS)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluoropentane sulfonic acid (PFPeS)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluoropentanoic acid (PFPeA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluoropentanoic acid (PFPeA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorotetradecanoic acid (PFTDA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorotetradecanoic acid (PFTDA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluorotridecanoic acid (PFTrDA)	NPW	MN	
RCRP	MPCA Guidance PFAS	Perfluorotridecanoic acid (PFTrDA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluoroundecanoic acid (PFUDA)	SCM	MN	
RCRP	MPCA Guidance PFAS	Perfluoroundecanoic acid (PFUDA)	NPW	MN	

EPA 7.3.3.2

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 7.3.3.2	Reactive Cyanide	SCM	MN	

EPA 7.3.4.2

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 7.3.4.2	Reactive sulfide	SCM	MN	

EPA 7196A

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 7196A	Chromium VI	NPW	MN	
RCRP	EPA 7196A	Chromium VI	SCM	MN	

EPA 9012B

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9012B	Amenable cyanide	NPW	MN	
RCRP	EPA 9012B	Amenable cyanide	SCM	MN	
RCRP	EPA 9012B	Cyanide	NPW	MN	
RCRP	EPA 9012B	Cyanide	SCM	MN	

EPA 9014

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9014	Free cyanide	NPW	MN	

EPA 9030B

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9030B	Sulfide	SCM	MN	
RCRP	EPA 9030B	Sulfide	NPW	MN	

EPA 9034

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9034	Sulfide	SCM	MN	

EPA 9040C

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9040C	pH	NPW	MN	

EPA 9045D

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9045D	pH	NPW	MN	
RCRP	EPA 9045D	pH	SCM	MN	

EPA 9050A

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9050A	Conductivity	NPW	MN	

EPA 9056A

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9056A	Bromide	NPW	MN	
RCRP	EPA 9056A	Bromide	SCM	MN	
RCRP	EPA 9056A	Chloride	SCM	MN	
RCRP	EPA 9056A	Chloride	NPW	MN	
RCRP	EPA 9056A	Fluoride	SCM	MN	
RCRP	EPA 9056A	Fluoride	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9056A	Nitrate	NPW	MN	
RCRP	EPA 9056A	Nitrate	SCM	MN	
RCRP	EPA 9056A	Nitrite	NPW	MN	
RCRP	EPA 9056A	Nitrite	SCM	MN	
RCRP	EPA 9056A	Sulfate	NPW	MN	
RCRP	EPA 9056A	Sulfate	SCM	MN	

EPA 9060A

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9060A	Total Organic Carbon	NPW	MN	

EPA 9066

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9066	Total Phenolics	SCM	MN	
RCRP	EPA 9066	Total Phenolics	NPW	MN	

EPA 9071B

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9071B	Oil & Grease	SCM	MN	

Kelada 01

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	Kelada 01	Free cyanide	NPW	MN	

SM 2540 G-2011

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	SM 2540 G-2011	Residue-total	SCM	MN	
RCRP	SM 2540 G-2011	Residue-volatile	SCM	MN	

SM 4500-NH3 G-2011

Preparation Techniques: Distillation, micro;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	SM 4500-NH3 G-2011	Ammonia as N	SCM	MN	

EPA 6010C

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, EPA 1311 TCLP, non-volatiles; Digestion, microwave-assisted; Digestion, hotplate or HotBlock;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6010C	Aluminum	SCM	MN	
RCRP	EPA 6010C	Aluminum	NPW	MN	
RCRP	EPA 6010C	Antimony	SCM	MN	
RCRP	EPA 6010C	Antimony	NPW	MN	
RCRP	EPA 6010C	Arsenic	SCM	MN	
RCRP	EPA 6010C	Arsenic	NPW	MN	
RCRP	EPA 6010C	Barium	SCM	MN	
RCRP	EPA 6010C	Barium	NPW	MN	
RCRP	EPA 6010C	Beryllium	NPW	MN	
RCRP	EPA 6010C	Beryllium	SCM	MN	
RCRP	EPA 6010C	Boron	SCM	MN	
RCRP	EPA 6010C	Boron	NPW	MN	
RCRP	EPA 6010C	Cadmium	NPW	MN	
RCRP	EPA 6010C	Cadmium	SCM	MN	
RCRP	EPA 6010C	Calcium	NPW	MN	
RCRP	EPA 6010C	Calcium	SCM	MN	
RCRP	EPA 6010C	Chromium	SCM	MN	
RCRP	EPA 6010C	Chromium	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6010C	Cobalt	NPW	MN	
RCRP	EPA 6010C	Cobalt	SCM	MN	
RCRP	EPA 6010C	Copper	SCM	MN	
RCRP	EPA 6010C	Copper	NPW	MN	
RCRP	EPA 6010C	Iron	SCM	MN	
RCRP	EPA 6010C	Iron	NPW	MN	
RCRP	EPA 6010C	Lead	SCM	MN	
RCRP	EPA 6010C	Lead	NPW	MN	
RCRP	EPA 6010C	Lithium	NPW	MN	
RCRP	EPA 6010C	Lithium	SCM	MN	
RCRP	EPA 6010C	Magnesium	SCM	MN	
RCRP	EPA 6010C	Magnesium	NPW	MN	
RCRP	EPA 6010C	Manganese	NPW	MN	
RCRP	EPA 6010C	Manganese	SCM	MN	
RCRP	EPA 6010C	Molybdenum	NPW	MN	
RCRP	EPA 6010C	Molybdenum	SCM	MN	
RCRP	EPA 6010C	Nickel	NPW	MN	
RCRP	EPA 6010C	Nickel	SCM	MN	
RCRP	EPA 6010C	Potassium	SCM	MN	
RCRP	EPA 6010C	Potassium	NPW	MN	
RCRP	EPA 6010C	Selenium	NPW	MN	
RCRP	EPA 6010C	Selenium	SCM	MN	
RCRP	EPA 6010C	Silver	NPW	MN	
RCRP	EPA 6010C	Silver	SCM	MN	
RCRP	EPA 6010C	Sodium	NPW	MN	
RCRP	EPA 6010C	Sodium	SCM	MN	
RCRP	EPA 6010C	Strontium	SCM	MN	
RCRP	EPA 6010C	Strontium	NPW	MN	
RCRP	EPA 6010C	Thallium	SCM	MN	
RCRP	EPA 6010C	Thallium	NPW	MN	
RCRP	EPA 6010C	Tin	NPW	MN	
RCRP	EPA 6010C	Tin	SCM	MN	
RCRP	EPA 6010C	Titanium	NPW	MN	
RCRP	EPA 6010C	Titanium	SCM	MN	
RCRP	EPA 6010C	Vanadium	NPW	MN	
RCRP	EPA 6010C	Vanadium	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6010C	Zinc	SCM	MN	
RCRP	EPA 6010C	Zinc	NPW	MN	

EPA 6010D (Rev 2014)

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, EPA 1311 TCLP, non-volatiles; Digestion, microwave-assisted; Digestion, hotplate or HotBlock;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6010D (Rev 2014)	Aluminum	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Aluminum	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Antimony	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Antimony	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Arsenic	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Arsenic	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Barium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Barium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Beryllium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Beryllium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Boron	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Boron	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Cadmium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Cadmium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Calcium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Calcium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Chromium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Chromium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Cobalt	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Cobalt	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Copper	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Copper	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Iron	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Iron	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Lead	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Lead	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Lithium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Lithium	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6010D (Rev 2014)	Magnesium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Magnesium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Manganese	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Manganese	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Molybdenum	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Molybdenum	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Nickel	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Nickel	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Potassium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Potassium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Selenium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Selenium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Silver	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Silver	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Sodium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Sodium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Strontium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Strontium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Thallium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Thallium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Tin	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Tin	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Titanium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Titanium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Vanadium	NPW	MN	
RCRP	EPA 6010D (Rev 2014)	Vanadium	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Zinc	SCM	MN	
RCRP	EPA 6010D (Rev 2014)	Zinc	NPW	MN	

EPA 6020A

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, EPA 1311 TCLP, non-volatiles; Digestion, microwave-assisted; Digestion, hotplate or HotBlock;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6020A	Aluminum	SCM	MN	
RCRP	EPA 6020A	Aluminum	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6020A	Antimony	SCM	MN	
RCRP	EPA 6020A	Antimony	NPW	MN	
RCRP	EPA 6020A	Arsenic	SCM	MN	
RCRP	EPA 6020A	Arsenic	NPW	MN	
RCRP	EPA 6020A	Barium	NPW	MN	
RCRP	EPA 6020A	Barium	SCM	MN	
RCRP	EPA 6020A	Beryllium	NPW	MN	
RCRP	EPA 6020A	Beryllium	SCM	MN	
RCRP	EPA 6020A	Boron	SCM	MN	
RCRP	EPA 6020A	Boron	NPW	MN	
RCRP	EPA 6020A	Cadmium	NPW	MN	
RCRP	EPA 6020A	Cadmium	SCM	MN	
RCRP	EPA 6020A	Calcium	NPW	MN	
RCRP	EPA 6020A	Calcium	SCM	MN	
RCRP	EPA 6020A	Chromium	SCM	MN	
RCRP	EPA 6020A	Chromium	NPW	MN	
RCRP	EPA 6020A	Cobalt	NPW	MN	
RCRP	EPA 6020A	Cobalt	SCM	MN	
RCRP	EPA 6020A	Copper	NPW	MN	
RCRP	EPA 6020A	Copper	SCM	MN	
RCRP	EPA 6020A	Iron	NPW	MN	
RCRP	EPA 6020A	Iron	SCM	MN	
RCRP	EPA 6020A	Lead	SCM	MN	
RCRP	EPA 6020A	Lead	NPW	MN	
RCRP	EPA 6020A	Magnesium	NPW	MN	
RCRP	EPA 6020A	Magnesium	SCM	MN	
RCRP	EPA 6020A	Manganese	NPW	MN	
RCRP	EPA 6020A	Manganese	SCM	MN	
RCRP	EPA 6020A	Molybdenum	NPW	MN	
RCRP	EPA 6020A	Molybdenum	SCM	MN	
RCRP	EPA 6020A	Nickel	SCM	MN	
RCRP	EPA 6020A	Nickel	NPW	MN	
RCRP	EPA 6020A	Potassium	SCM	MN	
RCRP	EPA 6020A	Potassium	NPW	MN	
RCRP	EPA 6020A	Selenium	SCM	MN	
RCRP	EPA 6020A	Selenium	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6020A	Silver	NPW	MN	
RCRP	EPA 6020A	Silver	SCM	MN	
RCRP	EPA 6020A	Sodium	NPW	MN	
RCRP	EPA 6020A	Sodium	SCM	MN	
RCRP	EPA 6020A	Strontium	NPW	MN	
RCRP	EPA 6020A	Strontium	SCM	MN	
RCRP	EPA 6020A	Thallium	SCM	MN	
RCRP	EPA 6020A	Thallium	NPW	MN	
RCRP	EPA 6020A	Tin	NPW	MN	
RCRP	EPA 6020A	Tin	SCM	MN	
RCRP	EPA 6020A	Titanium	NPW	MN	
RCRP	EPA 6020A	Titanium	SCM	MN	
RCRP	EPA 6020A	Vanadium	SCM	MN	
RCRP	EPA 6020A	Vanadium	NPW	MN	
RCRP	EPA 6020A	Zinc	NPW	MN	
RCRP	EPA 6020A	Zinc	SCM	MN	

EPA 6020B (Rev 2014)

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, EPA 1311 TCLP, non-volatiles; Digestion, microwave-assisted; Digestion, hotplate or HotBlock;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6020B (Rev 2014)	Aluminum	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Aluminum	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Antimony	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Antimony	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Arsenic	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Arsenic	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Barium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Barium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Beryllium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Beryllium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Boron	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Boron	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Cadmium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Cadmium	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6020B (Rev 2014)	Calcium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Calcium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Chromium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Chromium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Cobalt	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Cobalt	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Copper	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Copper	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Iron	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Iron	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Lead	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Lead	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Lithium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Lithium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Magnesium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Magnesium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Manganese	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Manganese	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Molybdenum	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Molybdenum	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Nickel	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Nickel	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Potassium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Potassium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Selenium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Selenium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Silver	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Silver	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Sodium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Sodium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Strontium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Strontium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Thallium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Thallium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Thorium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Tin	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 6020B (Rev 2014)	Tin	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Titanium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Titanium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Uranium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Uranium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Vanadium	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Vanadium	NPW	MN	
RCRP	EPA 6020B (Rev 2014)	Zinc	SCM	MN	
RCRP	EPA 6020B (Rev 2014)	Zinc	NPW	MN	

EPA 7470A

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 7470A	Mercury	NPW	MN	

EPA 7471B

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 7471B	Mercury	SCM	MN	

EPA 8011

Preparation Techniques: Extraction, micro;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8011	1,2-Dibromo-3-chloropropane (DBCP)	NPW	MN	
RCRP	EPA 8011	1,2-Dibromoethane (EDB, Ethylene dibromide)	NPW	MN	

EPA 8081A

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, separatory funnel liquid-liquid (LLE); Extraction, EPA 1311 TCLP, non-volatiles; Extraction, pressurized fluid (PFE); Extraction, soxhlet; Extraction, ultrasonic; Extraction, microwave; Extraction, Micro;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8081A	4,4'-DDD	SCM	MN	
RCRP	EPA 8081A	4,4'-DDD	NPW	MN	
RCRP	EPA 8081A	4,4'-DDE	NPW	MN	
RCRP	EPA 8081A	4,4'-DDE	SCM	MN	
RCRP	EPA 8081A	4,4'-DDT	NPW	MN	
RCRP	EPA 8081A	4,4'-DDT	SCM	MN	
RCRP	EPA 8081A	Aldrin	SCM	MN	
RCRP	EPA 8081A	Aldrin	NPW	MN	
RCRP	EPA 8081A	alpha-BHC (alpha-Hexachlorocyclohexane)	SCM	MN	
RCRP	EPA 8081A	alpha-BHC (alpha-Hexachlorocyclohexane)	NPW	MN	
RCRP	EPA 8081A	alpha-Chlordane	SCM	MN	
RCRP	EPA 8081A	alpha-Chlordane	NPW	MN	
RCRP	EPA 8081A	beta-BHC (beta-Hexachlorocyclohexane)	NPW	MN	
RCRP	EPA 8081A	beta-BHC (beta-Hexachlorocyclohexane)	SCM	MN	
RCRP	EPA 8081A	Chlordane (tech.)	SCM	MN	
RCRP	EPA 8081A	Chlordane (tech.)	NPW	MN	
RCRP	EPA 8081A	delta-BHC	NPW	MN	
RCRP	EPA 8081A	delta-BHC	SCM	MN	
RCRP	EPA 8081A	Dieldrin	SCM	MN	
RCRP	EPA 8081A	Dieldrin	NPW	MN	
RCRP	EPA 8081A	Endosulfan I	SCM	MN	
RCRP	EPA 8081A	Endosulfan I	NPW	MN	
RCRP	EPA 8081A	Endosulfan II	SCM	MN	
RCRP	EPA 8081A	Endosulfan II	NPW	MN	
RCRP	EPA 8081A	Endosulfan sulfate	SCM	MN	
RCRP	EPA 8081A	Endosulfan sulfate	NPW	MN	
RCRP	EPA 8081A	Endrin	SCM	MN	
RCRP	EPA 8081A	Endrin	NPW	MN	
RCRP	EPA 8081A	Endrin aldehyde	SCM	MN	
RCRP	EPA 8081A	Endrin aldehyde	NPW	MN	
RCRP	EPA 8081A	Endrin ketone	SCM	MN	
RCRP	EPA 8081A	Endrin ketone	NPW	MN	
RCRP	EPA 8081A	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8081A	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	SCM	MN	
RCRP	EPA 8081A	gamma-Chlordane	SCM	MN	
RCRP	EPA 8081A	gamma-Chlordane	NPW	MN	
RCRP	EPA 8081A	Heptachlor	SCM	MN	
RCRP	EPA 8081A	Heptachlor	NPW	MN	
RCRP	EPA 8081A	Heptachlor epoxide	SCM	MN	
RCRP	EPA 8081A	Heptachlor epoxide	NPW	MN	
RCRP	EPA 8081A	Methoxychlor	SCM	MN	
RCRP	EPA 8081A	Methoxychlor	NPW	MN	
RCRP	EPA 8081A	Toxaphene (Chlorinated camphene)	NPW	MN	
RCRP	EPA 8081A	Toxaphene (Chlorinated camphene)	SCM	MN	

EPA 8081B

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, separatory funnel liquid-liquid (LLE); Extraction, EPA 1311 TCLP, non-volatiles; Extraction, pressurized fluid (PFE); Extraction, micro; Extraction, soxhlet; Extraction, ultrasonic; Extraction, microwave;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8081B	4,4'-DDD	SCM	MN	
RCRP	EPA 8081B	4,4'-DDD	NPW	MN	
RCRP	EPA 8081B	4,4'-DDE	NPW	MN	
RCRP	EPA 8081B	4,4'-DDE	SCM	MN	
RCRP	EPA 8081B	4,4'-DDT	NPW	MN	
RCRP	EPA 8081B	4,4'-DDT	SCM	MN	
RCRP	EPA 8081B	alpha-BHC (alpha-Hexachlorocyclohexane)	NPW	MN	
RCRP	EPA 8081B	alpha-BHC (alpha-Hexachlorocyclohexane)	SCM	MN	
RCRP	EPA 8081B	alpha-Chlordane	NPW	MN	
RCRP	EPA 8081B	alpha-Chlordane	SCM	MN	
RCRP	EPA 8081B	beta-BHC (beta-Hexachlorocyclohexane)	NPW	MN	
RCRP	EPA 8081B	beta-BHC (beta-Hexachlorocyclohexane)	SCM	MN	
RCRP	EPA 8081B	Chlordane (tech.)	NPW	MN	
RCRP	EPA 8081B	Chlordane (tech.)	SCM	MN	
RCRP	EPA 8081B	delta-BHC	NPW	MN	
RCRP	EPA 8081B	delta-BHC	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8081B	Dieldrin	SCM	MN	
RCRP	EPA 8081B	Dieldrin	NPW	MN	
RCRP	EPA 8081B	Endosulfan I	SCM	MN	
RCRP	EPA 8081B	Endosulfan I	NPW	MN	
RCRP	EPA 8081B	Endosulfan II	NPW	MN	
RCRP	EPA 8081B	Endosulfan II	SCM	MN	
RCRP	EPA 8081B	Endosulfan sulfate	SCM	MN	
RCRP	EPA 8081B	Endosulfan sulfate	NPW	MN	
RCRP	EPA 8081B	Endrin	NPW	MN	
RCRP	EPA 8081B	Endrin	SCM	MN	
RCRP	EPA 8081B	Endrin aldehyde	SCM	MN	
RCRP	EPA 8081B	Endrin aldehyde	NPW	MN	
RCRP	EPA 8081B	Endrin ketone	NPW	MN	
RCRP	EPA 8081B	Endrin ketone	SCM	MN	
RCRP	EPA 8081B	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	SCM	MN	
RCRP	EPA 8081B	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	NPW	MN	
RCRP	EPA 8081B	gamma-Chlordane	SCM	MN	
RCRP	EPA 8081B	gamma-Chlordane	NPW	MN	
RCRP	EPA 8081B	Heptachlor	SCM	MN	
RCRP	EPA 8081B	Heptachlor	NPW	MN	
RCRP	EPA 8081B	Heptachlor epoxide	NPW	MN	
RCRP	EPA 8081B	Heptachlor epoxide	SCM	MN	
RCRP	EPA 8081B	Methoxychlor	SCM	MN	
RCRP	EPA 8081B	Methoxychlor	NPW	MN	
RCRP	EPA 8081B	Toxaphene (Chlorinated camphene)	NPW	MN	
RCRP	EPA 8081B	Toxaphene (Chlorinated camphene)	SCM	MN	

EPA 8082

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, separatory funnel liquid-liquid (LLE); Extraction, EPA 1311 TCLP, non-volatiles; Extraction, pressurized fluid (PFE); Extraction, soxhlet; Extraction, ultrasonic; Extraction, microwave; Extraction, Micro;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8082	Aroclor-1016 (PCB-1016)	SCM	MN	
RCRP	EPA 8082	Aroclor-1016 (PCB-1016)	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8082	Aroclor-1221 (PCB-1221)	SCM	MN	
RCRP	EPA 8082	Aroclor-1221 (PCB-1221)	NPW	MN	
RCRP	EPA 8082	Aroclor-1232 (PCB-1232)	SCM	MN	
RCRP	EPA 8082	Aroclor-1232 (PCB-1232)	NPW	MN	
RCRP	EPA 8082	Aroclor-1242 (PCB-1242)	NPW	MN	
RCRP	EPA 8082	Aroclor-1242 (PCB-1242)	SCM	MN	
RCRP	EPA 8082	Aroclor-1248 (PCB-1248)	NPW	MN	
RCRP	EPA 8082	Aroclor-1248 (PCB-1248)	SCM	MN	
RCRP	EPA 8082	Aroclor-1254 (PCB-1254)	SCM	MN	
RCRP	EPA 8082	Aroclor-1254 (PCB-1254)	NPW	MN	
RCRP	EPA 8082	Aroclor-1260 (PCB-1260)	NPW	MN	
RCRP	EPA 8082	Aroclor-1260 (PCB-1260)	SCM	MN	
RCRP	EPA 8082	Aroclor-1262 (PCB-1262)	NPW	MN	
RCRP	EPA 8082	Aroclor-1262 (PCB-1262)	SCM	MN	
RCRP	EPA 8082	Aroclor-1268 (PCB-1268)	NPW	MN	
RCRP	EPA 8082	Aroclor-1268 (PCB-1268)	SCM	MN	

EPA 8082A

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, separatory funnel liquid-liquid (LLE); Extraction, EPA 1311 TCLP, non-volatiles; Extraction, pressurized fluid (PFE); Extraction, micro; Extraction, soxhlet; Waste Dilution (EPA 3580A); Extraction, ultrasonic; Extraction, microwave;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8082A	Aroclor-1016 (PCB-1016)	NPW	MN	
RCRP	EPA 8082A	Aroclor-1016 (PCB-1016)	SCM	MN	
RCRP	EPA 8082A	Aroclor-1221 (PCB-1221)	SCM	MN	
RCRP	EPA 8082A	Aroclor-1221 (PCB-1221)	NPW	MN	
RCRP	EPA 8082A	Aroclor-1232 (PCB-1232)	NPW	MN	
RCRP	EPA 8082A	Aroclor-1232 (PCB-1232)	SCM	MN	
RCRP	EPA 8082A	Aroclor-1242 (PCB-1242)	SCM	MN	
RCRP	EPA 8082A	Aroclor-1242 (PCB-1242)	NPW	MN	
RCRP	EPA 8082A	Aroclor-1248 (PCB-1248)	SCM	MN	
RCRP	EPA 8082A	Aroclor-1248 (PCB-1248)	NPW	MN	
RCRP	EPA 8082A	Aroclor-1254 (PCB-1254)	SCM	MN	
RCRP	EPA 8082A	Aroclor-1254 (PCB-1254)	NPW	MN	
RCRP	EPA 8082A	Aroclor-1260 (PCB-1260)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8082A	Aroclor-1260 (PCB-1260)	NPW	MN	

EPA 8082A (Rev 2007)

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, separatory funnel liquid-liquid (LLE); Extraction, pressurized fluid (PFE); Extraction, micro; Extraction, soxhlet; Waste Dilution (EPA 3580A); Extraction, ultrasonic; Extraction, microwave;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8082A (Rev 2007)	Aroclor-1262 (PCB-1262)	NPW	MN	
RCRP	EPA 8082A (Rev 2007)	Aroclor-1262 (PCB-1262)	SCM	MN	
RCRP	EPA 8082A (Rev 2007)	Aroclor-1268 (PCB-1268)	NPW	MN	
RCRP	EPA 8082A (Rev 2007)	Aroclor-1268 (PCB-1268)	SCM	MN	

EPA 8141A

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE); Extraction, pressurized fluid (PFE); Extraction, soxhlet;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8141A	Dimethoate	NPW	MN	
RCRP	EPA 8141A	Disulfoton	NPW	MN	
RCRP	EPA 8141A	Famphur	NPW	MN	
RCRP	EPA 8141A	Methyl parathion (Parathion, methyl)	NPW	MN	
RCRP	EPA 8141A	Parathion, ethyl	NPW	MN	
RCRP	EPA 8141A	Phorate	NPW	MN	
RCRP	EPA 8141A	Sulfotepp	NPW	MN	
RCRP	EPA 8141A	Thionazin (Zinophos)	NPW	MN	

EPA 8151A

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, separatory funnel liquid-liquid (LLE); Extraction, EPA 1311 TCLP, non-volatiles; Extraction, ultrasonic;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8151A	2,4,5-T	SCM	MN	
RCRP	EPA 8151A	2,4,5-T	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8151A	2,4-D	NPW	MN	
RCRP	EPA 8151A	2,4-D	SCM	MN	
RCRP	EPA 8151A	Silvex (2,4,5-TP)	SCM	MN	
RCRP	EPA 8151A	Silvex (2,4,5-TP)	NPW	MN	

EPA 8270C

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, separatory funnel liquid-liquid (LLE); Extraction, EPA 1311 TCLP, non-volatiles; Extraction, pressurized fluid (PFE); Extraction, soxhlet; Extraction, microwave;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270C	1,2,4-Trichlorobenzene	NPW	MN	
RCRP	EPA 8270C	1,2,4-Trichlorobenzene	SCM	MN	
RCRP	EPA 8270C	1,2-Dichlorobenzene	NPW	MN	
RCRP	EPA 8270C	1,2-Dichlorobenzene	SCM	MN	
RCRP	EPA 8270C	1,3-Dichlorobenzene	SCM	MN	
RCRP	EPA 8270C	1,3-Dichlorobenzene	NPW	MN	
RCRP	EPA 8270C	1,4-Dichlorobenzene	NPW	MN	
RCRP	EPA 8270C	1,4-Dichlorobenzene	SCM	MN	
RCRP	EPA 8270C	1,4-Dioxane (1,4- Diethyleneoxide)	SCM	MN	
RCRP	EPA 8270C	1,4-Dioxane (1,4- Diethyleneoxide)	NPW	MN	
RCRP	EPA 8270C	2,4,5-Trichlorophenol	NPW	MN	
RCRP	EPA 8270C	2,4,5-Trichlorophenol	SCM	MN	
RCRP	EPA 8270C	2,4,6-Trichlorophenol	SCM	MN	
RCRP	EPA 8270C	2,4,6-Trichlorophenol	NPW	MN	
RCRP	EPA 8270C	2,4-Dichlorophenol	NPW	MN	
RCRP	EPA 8270C	2,4-Dichlorophenol	SCM	MN	
RCRP	EPA 8270C	2,4-Dimethylphenol	NPW	MN	
RCRP	EPA 8270C	2,4-Dimethylphenol	SCM	MN	
RCRP	EPA 8270C	2,4-Dinitrophenol	SCM	MN	
RCRP	EPA 8270C	2,4-Dinitrophenol	NPW	MN	
RCRP	EPA 8270C	2,4-Dinitrotoluene (2,4-DNT)	NPW	MN	
RCRP	EPA 8270C	2,4-Dinitrotoluene (2,4-DNT)	SCM	MN	
RCRP	EPA 8270C	2,6-Dichlorophenol	SCM	MN	
RCRP	EPA 8270C	2,6-Dichlorophenol	NPW	MN	
RCRP	EPA 8270C	2,6-Dinitrotoluene (2,6-DNT)	NPW	MN	
RCRP	EPA 8270C	2,6-Dinitrotoluene (2,6-DNT)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270C	2-Chloronaphthalene	SCM	MN	
RCRP	EPA 8270C	2-Chloronaphthalene	NPW	MN	
RCRP	EPA 8270C	2-Chlorophenol	NPW	MN	
RCRP	EPA 8270C	2-Chlorophenol	SCM	MN	
RCRP	EPA 8270C	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	SCM	MN	
RCRP	EPA 8270C	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	NPW	MN	
RCRP	EPA 8270C	2-Methylaniline (o-Toluidine)	NPW	MN	
RCRP	EPA 8270C	2-Methylnaphthalene	NPW	MN	
RCRP	EPA 8270C	2-Methylnaphthalene	SCM	MN	
RCRP	EPA 8270C	2-Methylphenol (o-Cresol)	NPW	MN	
RCRP	EPA 8270C	2-Methylphenol (o-Cresol)	SCM	MN	
RCRP	EPA 8270C	2-Nitroaniline	SCM	MN	
RCRP	EPA 8270C	2-Nitroaniline	NPW	MN	
RCRP	EPA 8270C	2-Nitrophenol	SCM	MN	
RCRP	EPA 8270C	2-Nitrophenol	NPW	MN	
RCRP	EPA 8270C	3,3'-Dichlorobenzidine	SCM	MN	
RCRP	EPA 8270C	3,3'-Dichlorobenzidine	NPW	MN	
RCRP	EPA 8270C	3-Methylphenol (m-Cresol)	SCM	MN	
RCRP	EPA 8270C	3-Methylphenol (m-Cresol)	NPW	MN	
RCRP	EPA 8270C	3-Nitroaniline	SCM	MN	
RCRP	EPA 8270C	3-Nitroaniline	NPW	MN	
RCRP	EPA 8270C	4-Bromophenyl phenyl ether	SCM	MN	
RCRP	EPA 8270C	4-Bromophenyl phenyl ether	NPW	MN	
RCRP	EPA 8270C	4-Chloro-3-methylphenol	SCM	MN	
RCRP	EPA 8270C	4-Chloro-3-methylphenol	NPW	MN	
RCRP	EPA 8270C	4-Chloroaniline	SCM	MN	
RCRP	EPA 8270C	4-Chloroaniline	NPW	MN	
RCRP	EPA 8270C	4-Chlorophenyl phenylether	NPW	MN	
RCRP	EPA 8270C	4-Chlorophenyl phenylether	SCM	MN	
RCRP	EPA 8270C	4-Methylphenol (p-Cresol)	SCM	MN	
RCRP	EPA 8270C	4-Methylphenol (p-Cresol)	NPW	MN	
RCRP	EPA 8270C	4-Nitroaniline	SCM	MN	
RCRP	EPA 8270C	4-Nitroaniline	NPW	MN	
RCRP	EPA 8270C	4-Nitrophenol	NPW	MN	
RCRP	EPA 8270C	4-Nitrophenol	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270C	Acenaphthene	NPW	MN	
RCRP	EPA 8270C	Acenaphthene	SCM	MN	
RCRP	EPA 8270C	Acenaphthylene	NPW	MN	
RCRP	EPA 8270C	Acenaphthylene	SCM	MN	
RCRP	EPA 8270C	Aniline	NPW	MN	
RCRP	EPA 8270C	Aniline	SCM	MN	
RCRP	EPA 8270C	Anthracene	NPW	MN	
RCRP	EPA 8270C	Anthracene	SCM	MN	
RCRP	EPA 8270C	Benzo(a)anthracene	SCM	MN	
RCRP	EPA 8270C	Benzo(a)anthracene	NPW	MN	
RCRP	EPA 8270C	Benzo(a)pyrene	SCM	MN	
RCRP	EPA 8270C	Benzo(a)pyrene	NPW	MN	
RCRP	EPA 8270C	Benzo(g,h,i)perylene	SCM	MN	
RCRP	EPA 8270C	Benzo(g,h,i)perylene	NPW	MN	
RCRP	EPA 8270C	Benzo(k)fluoranthene	NPW	MN	
RCRP	EPA 8270C	Benzo(k)fluoranthene	SCM	MN	
RCRP	EPA 8270C	Benzo[b]fluoranthene	NPW	MN	
RCRP	EPA 8270C	Benzo[b]fluoranthene	SCM	MN	
RCRP	EPA 8270C	bis(2-Chloroethoxy)methane	SCM	MN	
RCRP	EPA 8270C	bis(2-Chloroethoxy)methane	NPW	MN	
RCRP	EPA 8270C	bis(2-Chloroethyl) ether	SCM	MN	
RCRP	EPA 8270C	bis(2-Chloroethyl) ether	NPW	MN	
RCRP	EPA 8270C	bis(2-Chloroisopropyl) ether	NPW	MN	
RCRP	EPA 8270C	bis(2-Chloroisopropyl) ether	SCM	MN	
RCRP	EPA 8270C	Butyl benzyl phthalate	SCM	MN	
RCRP	EPA 8270C	Butyl benzyl phthalate	NPW	MN	
RCRP	EPA 8270C	Chrysene	NPW	MN	
RCRP	EPA 8270C	Chrysene	SCM	MN	
RCRP	EPA 8270C	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	SCM	MN	
RCRP	EPA 8270C	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	NPW	MN	
RCRP	EPA 8270C	Di-n-butyl phthalate	SCM	MN	
RCRP	EPA 8270C	Di-n-butyl phthalate	NPW	MN	
RCRP	EPA 8270C	Di-n-octyl phthalate	NPW	MN	
RCRP	EPA 8270C	Di-n-octyl phthalate	SCM	MN	
RCRP	EPA 8270C	Dibenz(a,h) anthracene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270C	Dibenz(a,h) anthracene	SCM	MN	
RCRP	EPA 8270C	Dibenzofuran	NPW	MN	
RCRP	EPA 8270C	Dibenzofuran	SCM	MN	
RCRP	EPA 8270C	Diethyl phthalate	NPW	MN	
RCRP	EPA 8270C	Diethyl phthalate	SCM	MN	
RCRP	EPA 8270C	Dimethyl phthalate	NPW	MN	
RCRP	EPA 8270C	Dimethyl phthalate	SCM	MN	
RCRP	EPA 8270C	Fluoranthene	SCM	MN	
RCRP	EPA 8270C	Fluoranthene	NPW	MN	
RCRP	EPA 8270C	Fluorene	NPW	MN	
RCRP	EPA 8270C	Fluorene	SCM	MN	
RCRP	EPA 8270C	Hexachlorobenzene	NPW	MN	
RCRP	EPA 8270C	Hexachlorobenzene	SCM	MN	
RCRP	EPA 8270C	Hexachlorobutadiene	SCM	MN	
RCRP	EPA 8270C	Hexachlorobutadiene	NPW	MN	
RCRP	EPA 8270C	Hexachlorocyclopentadiene	SCM	MN	
RCRP	EPA 8270C	Hexachlorocyclopentadiene	NPW	MN	
RCRP	EPA 8270C	Hexachloroethane	SCM	MN	
RCRP	EPA 8270C	Hexachloroethane	NPW	MN	
RCRP	EPA 8270C	Indeno(1,2,3-cd) pyrene	SCM	MN	
RCRP	EPA 8270C	Indeno(1,2,3-cd) pyrene	NPW	MN	
RCRP	EPA 8270C	Isophorone	NPW	MN	
RCRP	EPA 8270C	Isophorone	SCM	MN	
RCRP	EPA 8270C	n-Nitrosodi-n-propylamine	SCM	MN	
RCRP	EPA 8270C	n-Nitrosodi-n-propylamine	NPW	MN	
RCRP	EPA 8270C	n-Nitrosodimethylamine	NPW	MN	
RCRP	EPA 8270C	n-Nitrosodimethylamine	SCM	MN	
RCRP	EPA 8270C	n-Nitrosodiphenylamine	SCM	MN	
RCRP	EPA 8270C	n-Nitrosodiphenylamine	NPW	MN	
RCRP	EPA 8270C	Naphthalene	NPW	MN	
RCRP	EPA 8270C	Naphthalene	SCM	MN	
RCRP	EPA 8270C	Nitrobenzene	NPW	MN	
RCRP	EPA 8270C	Nitrobenzene	SCM	MN	
RCRP	EPA 8270C	Pentachlorophenol	NPW	MN	
RCRP	EPA 8270C	Pentachlorophenol	SCM	MN	
RCRP	EPA 8270C	Phenanthrene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270C	Phenanthrene	SCM	MN	
RCRP	EPA 8270C	Phenol	SCM	MN	
RCRP	EPA 8270C	Phenol	NPW	MN	
RCRP	EPA 8270C	Pyrene	SCM	MN	
RCRP	EPA 8270C	Pyrene	NPW	MN	
RCRP	EPA 8270C	Pyridine	SCM	MN	
RCRP	EPA 8270C	Pyridine	NPW	MN	

EPA 8270C SIM

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE); Extraction, pressurized fluid (PFE); Extraction, ultrasonic; Extraction, microwave;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270C SIM	2-Methylnaphthalene	NPW	MN	
RCRP	EPA 8270C SIM	2-Methylnaphthalene	SCM	MN	
RCRP	EPA 8270C SIM	Acenaphthene	NPW	MN	
RCRP	EPA 8270C SIM	Acenaphthene	SCM	MN	
RCRP	EPA 8270C SIM	Acenaphthylene	SCM	MN	
RCRP	EPA 8270C SIM	Acenaphthylene	NPW	MN	
RCRP	EPA 8270C SIM	Anthracene	NPW	MN	
RCRP	EPA 8270C SIM	Anthracene	SCM	MN	
RCRP	EPA 8270C SIM	Benzo(a)anthracene	SCM	MN	
RCRP	EPA 8270C SIM	Benzo(a)anthracene	NPW	MN	
RCRP	EPA 8270C SIM	Benzo(a)pyrene	SCM	MN	
RCRP	EPA 8270C SIM	Benzo(a)pyrene	NPW	MN	
RCRP	EPA 8270C SIM	Benzo(g,h,i)perylene	SCM	MN	
RCRP	EPA 8270C SIM	Benzo(g,h,i)perylene	NPW	MN	
RCRP	EPA 8270C SIM	Benzo(k)fluoranthene	NPW	MN	
RCRP	EPA 8270C SIM	Benzo(k)fluoranthene	SCM	MN	
RCRP	EPA 8270C SIM	Benzo[b]fluoranthene	NPW	MN	
RCRP	EPA 8270C SIM	Benzo[b]fluoranthene	SCM	MN	
RCRP	EPA 8270C SIM	Chrysene	SCM	MN	
RCRP	EPA 8270C SIM	Chrysene	NPW	MN	
RCRP	EPA 8270C SIM	Dibenz(a,h) anthracene	NPW	MN	
RCRP	EPA 8270C SIM	Dibenz(a,h) anthracene	SCM	MN	
RCRP	EPA 8270C SIM	Fluoranthene	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270C SIM	Fluoranthene	NPW	MN	
RCRP	EPA 8270C SIM	Fluorene	SCM	MN	
RCRP	EPA 8270C SIM	Fluorene	NPW	MN	
RCRP	EPA 8270C SIM	Indeno(1,2,3-cd) pyrene	NPW	MN	
RCRP	EPA 8270C SIM	Indeno(1,2,3-cd) pyrene	SCM	MN	
RCRP	EPA 8270C SIM	Naphthalene	NPW	MN	
RCRP	EPA 8270C SIM	Naphthalene	SCM	MN	
RCRP	EPA 8270C SIM	Phenanthrene	SCM	MN	
RCRP	EPA 8270C SIM	Phenanthrene	NPW	MN	
RCRP	EPA 8270C SIM	Pyrene	NPW	MN	
RCRP	EPA 8270C SIM	Pyrene	SCM	MN	

EPA 8270D

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, separatory funnel liquid-liquid (LLE); Extraction, EPA 1311 TCLP, non-volatiles; Extraction, pressurized fluid (PFE); Extraction, micro; Extraction, soxhlet; Extraction, ultrasonic; Extraction, microwave;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D	1,1'-Biphenyl (BZ-0)	NPW	MN	
RCRP	EPA 8270D	1,1'-Biphenyl (BZ-0)	SCM	MN	
RCRP	EPA 8270D	1,2,4,5-Tetrachlorobenzene	NPW	MN	
RCRP	EPA 8270D	1,2,4,5-Tetrachlorobenzene	SCM	MN	
RCRP	EPA 8270D	1,2,4-Trichlorobenzene	SCM	MN	
RCRP	EPA 8270D	1,2,4-Trichlorobenzene	NPW	MN	
RCRP	EPA 8270D	1,2-Dichlorobenzene	NPW	MN	
RCRP	EPA 8270D	1,2-Dichlorobenzene	SCM	MN	
RCRP	EPA 8270D	1,2-Dinitrobenzene	SCM	MN	
RCRP	EPA 8270D	1,2-Dinitrobenzene	NPW	MN	
RCRP	EPA 8270D	1,2-Diphenylhydrazine	SCM	MN	
RCRP	EPA 8270D	1,2-Diphenylhydrazine	NPW	MN	
RCRP	EPA 8270D	1,3,5-Trinitrobenzene (1,3,5-TNB)	NPW	MN	
RCRP	EPA 8270D	1,3,5-Trinitrobenzene (1,3,5-TNB)	SCM	MN	
RCRP	EPA 8270D	1,3-Dichlorobenzene	SCM	MN	
RCRP	EPA 8270D	1,3-Dichlorobenzene	NPW	MN	
RCRP	EPA 8270D	1,3-Dinitrobenzene (1,3-DNB)	NPW	MN	
RCRP	EPA 8270D	1,3-Dinitrobenzene (1,3-DNB)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D	1,4-Dichlorobenzene	NPW	MN	
RCRP	EPA 8270D	1,4-Dichlorobenzene	SCM	MN	
RCRP	EPA 8270D	1,4-Dinitrobenzene	SCM	MN	
RCRP	EPA 8270D	1,4-Dinitrobenzene	NPW	MN	
RCRP	EPA 8270D	1,4-Dioxane (1,4- Diethyleneoxide)	SCM	MN	
RCRP	EPA 8270D	1,4-Dioxane (1,4- Diethyleneoxide)	NPW	MN	
RCRP	EPA 8270D	1,4-Naphthoquinone	SCM	MN	
RCRP	EPA 8270D	1,4-Naphthoquinone	NPW	MN	
RCRP	EPA 8270D	1-Methylnaphthalene	NPW	MN	
RCRP	EPA 8270D	1-Methylnaphthalene	SCM	MN	
RCRP	EPA 8270D	1-Naphthylamine	SCM	MN	
RCRP	EPA 8270D	1-Naphthylamine	NPW	MN	
RCRP	EPA 8270D	2,2'-Oxybis(1-chloropropane),bis(2-Chloro-1-methylethyl)ether	SCM	MN	
RCRP	EPA 8270D	2,3,4,6-Tetrachlorophenol	NPW	MN	
RCRP	EPA 8270D	2,3,4,6-Tetrachlorophenol	SCM	MN	
RCRP	EPA 8270D	2,3,5,6-Tetrachlorophenol	NPW	MN	
RCRP	EPA 8270D	2,3,5,6-Tetrachlorophenol	SCM	MN	
RCRP	EPA 8270D	2,4,5-Trichlorophenol	SCM	MN	
RCRP	EPA 8270D	2,4,5-Trichlorophenol	NPW	MN	
RCRP	EPA 8270D	2,4,6-Trichlorophenol	SCM	MN	
RCRP	EPA 8270D	2,4,6-Trichlorophenol	NPW	MN	
RCRP	EPA 8270D	2,4-Dichlorophenol	SCM	MN	
RCRP	EPA 8270D	2,4-Dichlorophenol	NPW	MN	
RCRP	EPA 8270D	2,4-Dimethylphenol	NPW	MN	
RCRP	EPA 8270D	2,4-Dimethylphenol	SCM	MN	
RCRP	EPA 8270D	2,4-Dinitrophenol	NPW	MN	
RCRP	EPA 8270D	2,4-Dinitrophenol	SCM	MN	
RCRP	EPA 8270D	2,4-Dinitrotoluene (2,4-DNT)	SCM	MN	
RCRP	EPA 8270D	2,4-Dinitrotoluene (2,4-DNT)	NPW	MN	
RCRP	EPA 8270D	2,6-Dichlorophenol	SCM	MN	
RCRP	EPA 8270D	2,6-Dichlorophenol	NPW	MN	
RCRP	EPA 8270D	2,6-Dinitrotoluene (2,6-DNT)	SCM	MN	
RCRP	EPA 8270D	2,6-Dinitrotoluene (2,6-DNT)	NPW	MN	
RCRP	EPA 8270D	2-Acetylaminofluorene	SCM	MN	
RCRP	EPA 8270D	2-Acetylaminofluorene	NPW	MN	
RCRP	EPA 8270D	2-Chloronaphthalene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D	2-Chloronaphthalene	SCM	MN	
RCRP	EPA 8270D	2-Chlorophenol	SCM	MN	
RCRP	EPA 8270D	2-Chlorophenol	NPW	MN	
RCRP	EPA 8270D	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	NPW	MN	
RCRP	EPA 8270D	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	SCM	MN	
RCRP	EPA 8270D	2-Methylaniline (o-Toluidine)	SCM	MN	
RCRP	EPA 8270D	2-Methylnaphthalene	NPW	MN	
RCRP	EPA 8270D	2-Methylnaphthalene	SCM	MN	
RCRP	EPA 8270D	2-Methylphenol (o-Cresol)	NPW	MN	
RCRP	EPA 8270D	2-Methylphenol (o-Cresol)	SCM	MN	
RCRP	EPA 8270D	2-Naphthylamine	NPW	MN	
RCRP	EPA 8270D	2-Naphthylamine	SCM	MN	
RCRP	EPA 8270D	2-Nitroaniline	NPW	MN	
RCRP	EPA 8270D	2-Nitroaniline	SCM	MN	
RCRP	EPA 8270D	2-Nitrophenol	NPW	MN	
RCRP	EPA 8270D	2-Nitrophenol	SCM	MN	
RCRP	EPA 8270D	2-Picoline (2-Methylpyridine)	SCM	MN	
RCRP	EPA 8270D	2-Picoline (2-Methylpyridine)	NPW	MN	
RCRP	EPA 8270D	3,3'-Dichlorobenzidine	NPW	MN	
RCRP	EPA 8270D	3,3'-Dichlorobenzidine	SCM	MN	
RCRP	EPA 8270D	3,3'-Dimethylbenzidine	SCM	MN	
RCRP	EPA 8270D	3,3'-Dimethylbenzidine	NPW	MN	
RCRP	EPA 8270D	3-Methylcholanthrene	SCM	MN	
RCRP	EPA 8270D	3-Methylcholanthrene	NPW	MN	
RCRP	EPA 8270D	3-Methylphenol (m-Cresol)	NPW	MN	
RCRP	EPA 8270D	3-Methylphenol (m-Cresol)	SCM	MN	
RCRP	EPA 8270D	3-Nitroaniline	SCM	MN	
RCRP	EPA 8270D	3-Nitroaniline	NPW	MN	
RCRP	EPA 8270D	4,6-Dinitro-2-methylphenol	NPW	MN	
RCRP	EPA 8270D	4,6-Dinitro-2-methylphenol	SCM	MN	
RCRP	EPA 8270D	4-Aminobiphenyl	SCM	MN	
RCRP	EPA 8270D	4-Aminobiphenyl	NPW	MN	
RCRP	EPA 8270D	4-Bromophenyl phenyl ether	NPW	MN	
RCRP	EPA 8270D	4-Bromophenyl phenyl ether	SCM	MN	
RCRP	EPA 8270D	4-Chloro-3-methylphenol	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D	4-Chloro-3-methylphenol	SCM	MN	
RCRP	EPA 8270D	4-Chloroaniline	NPW	MN	
RCRP	EPA 8270D	4-Chloroaniline	SCM	MN	
RCRP	EPA 8270D	4-Chlorophenyl phenylether	NPW	MN	
RCRP	EPA 8270D	4-Chlorophenyl phenylether	SCM	MN	
RCRP	EPA 8270D	4-Dimethyl aminoazobenzene	SCM	MN	
RCRP	EPA 8270D	4-Dimethyl aminoazobenzene	NPW	MN	
RCRP	EPA 8270D	4-Methylphenol (p-Cresol)	SCM	MN	
RCRP	EPA 8270D	4-Methylphenol (p-Cresol)	NPW	MN	
RCRP	EPA 8270D	4-Nitroaniline	SCM	MN	
RCRP	EPA 8270D	4-Nitroaniline	NPW	MN	
RCRP	EPA 8270D	4-Nitrophenol	SCM	MN	
RCRP	EPA 8270D	4-Nitrophenol	NPW	MN	
RCRP	EPA 8270D	4-Nitroquinoline 1-oxide	SCM	MN	
RCRP	EPA 8270D	5-Nitro-o-toluidine	SCM	MN	
RCRP	EPA 8270D	5-Nitro-o-toluidine	NPW	MN	
RCRP	EPA 8270D	7,12-Dimethylbenz(a) anthracene	NPW	MN	
RCRP	EPA 8270D	7,12-Dimethylbenz(a) anthracene	SCM	MN	
RCRP	EPA 8270D	a-a-Dimethylphenethylamine	NPW	MN	
RCRP	EPA 8270D	a-a-Dimethylphenethylamine	SCM	MN	
RCRP	EPA 8270D	Acenaphthene	NPW	MN	
RCRP	EPA 8270D	Acenaphthene	SCM	MN	
RCRP	EPA 8270D	Acenaphthylene	SCM	MN	
RCRP	EPA 8270D	Acenaphthylene	NPW	MN	
RCRP	EPA 8270D	Acetophenone	SCM	MN	
RCRP	EPA 8270D	Acetophenone	NPW	MN	
RCRP	EPA 8270D	Aniline	SCM	MN	
RCRP	EPA 8270D	Aniline	NPW	MN	
RCRP	EPA 8270D	Anthracene	SCM	MN	
RCRP	EPA 8270D	Anthracene	NPW	MN	
RCRP	EPA 8270D	Aramite	SCM	MN	
RCRP	EPA 8270D	Aramite	NPW	MN	
RCRP	EPA 8270D	Atrazine	SCM	MN	
RCRP	EPA 8270D	Atrazine	NPW	MN	
RCRP	EPA 8270D	Benzal chloride	SCM	MN	
RCRP	EPA 8270D	Benzaldehyde	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D	Benzaldehyde	NPW	MN	
RCRP	EPA 8270D	Benzidine	SCM	MN	
RCRP	EPA 8270D	Benzidine	NPW	MN	
RCRP	EPA 8270D	Benzo(a)anthracene	NPW	MN	
RCRP	EPA 8270D	Benzo(a)anthracene	SCM	MN	
RCRP	EPA 8270D	Benzo(a)pyrene	NPW	MN	
RCRP	EPA 8270D	Benzo(a)pyrene	SCM	MN	
RCRP	EPA 8270D	Benzo(g,h,i)perylene	SCM	MN	
RCRP	EPA 8270D	Benzo(g,h,i)perylene	NPW	MN	
RCRP	EPA 8270D	Benzo(k)fluoranthene	SCM	MN	
RCRP	EPA 8270D	Benzo(k)fluoranthene	NPW	MN	
RCRP	EPA 8270D	Benzo[b]fluoranthene	SCM	MN	
RCRP	EPA 8270D	Benzo[b]fluoranthene	NPW	MN	
RCRP	EPA 8270D	Benzoic acid	NPW	MN	
RCRP	EPA 8270D	Benzoic acid	SCM	MN	
RCRP	EPA 8270D	Benzyl alcohol	SCM	MN	
RCRP	EPA 8270D	Benzyl alcohol	NPW	MN	
RCRP	EPA 8270D	bis(2-Chloroethoxy)methane	SCM	MN	
RCRP	EPA 8270D	bis(2-Chloroethoxy)methane	NPW	MN	
RCRP	EPA 8270D	bis(2-Chloroethyl) ether	NPW	MN	
RCRP	EPA 8270D	bis(2-Chloroethyl) ether	SCM	MN	
RCRP	EPA 8270D	bis(2-Chloroisopropyl) ether	SCM	MN	
RCRP	EPA 8270D	bis(2-Chloroisopropyl) ether	NPW	MN	
RCRP	EPA 8270D	Butyl benzyl phthalate	SCM	MN	
RCRP	EPA 8270D	Butyl benzyl phthalate	NPW	MN	
RCRP	EPA 8270D	Caprolactam	NPW	MN	
RCRP	EPA 8270D	Caprolactam	SCM	MN	
RCRP	EPA 8270D	Carbazole	NPW	MN	
RCRP	EPA 8270D	Carbazole	SCM	MN	
RCRP	EPA 8270D	Chlorobenzilate	NPW	MN	
RCRP	EPA 8270D	Chlorobenzilate	SCM	MN	
RCRP	EPA 8270D	Chrysene	NPW	MN	
RCRP	EPA 8270D	Chrysene	SCM	MN	
RCRP	EPA 8270D	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	NPW	MN	
RCRP	EPA 8270D	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D	Di-n-butyl phthalate	SCM	MN	
RCRP	EPA 8270D	Di-n-butyl phthalate	NPW	MN	
RCRP	EPA 8270D	Di-n-octyl phthalate	NPW	MN	
RCRP	EPA 8270D	Di-n-octyl phthalate	SCM	MN	
RCRP	EPA 8270D	Diallate	NPW	MN	
RCRP	EPA 8270D	Diallate	SCM	MN	
RCRP	EPA 8270D	Dibenz(a, h) acridine	SCM	MN	
RCRP	EPA 8270D	Dibenz(a,h) anthracene	NPW	MN	
RCRP	EPA 8270D	Dibenz(a,h) anthracene	SCM	MN	
RCRP	EPA 8270D	Dibenzofuran	SCM	MN	
RCRP	EPA 8270D	Dibenzofuran	NPW	MN	
RCRP	EPA 8270D	Diethyl phthalate	NPW	MN	
RCRP	EPA 8270D	Diethyl phthalate	SCM	MN	
RCRP	EPA 8270D	Dimethyl phthalate	NPW	MN	
RCRP	EPA 8270D	Dimethyl phthalate	SCM	MN	
RCRP	EPA 8270D	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	SCM	MN	
RCRP	EPA 8270D	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	NPW	MN	
RCRP	EPA 8270D	Diphenylamine	NPW	MN	
RCRP	EPA 8270D	Diphenylamine	SCM	MN	
RCRP	EPA 8270D	Ethyl methanesulfonate	SCM	MN	
RCRP	EPA 8270D	Ethyl methanesulfonate	NPW	MN	
RCRP	EPA 8270D	Fluoranthene	SCM	MN	
RCRP	EPA 8270D	Fluoranthene	NPW	MN	
RCRP	EPA 8270D	Fluorene	NPW	MN	
RCRP	EPA 8270D	Fluorene	SCM	MN	
RCRP	EPA 8270D	Hexachlorobenzene	SCM	MN	
RCRP	EPA 8270D	Hexachlorobenzene	NPW	MN	
RCRP	EPA 8270D	Hexachlorobutadiene	NPW	MN	
RCRP	EPA 8270D	Hexachlorobutadiene	SCM	MN	
RCRP	EPA 8270D	Hexachlorocyclopentadiene	NPW	MN	
RCRP	EPA 8270D	Hexachlorocyclopentadiene	SCM	MN	
RCRP	EPA 8270D	Hexachloroethane	NPW	MN	
RCRP	EPA 8270D	Hexachloroethane	SCM	MN	
RCRP	EPA 8270D	Hexachloropropene	NPW	MN	
RCRP	EPA 8270D	Hexachloropropene	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D	Indeno(1,2,3-cd) pyrene	NPW	MN	
RCRP	EPA 8270D	Indeno(1,2,3-cd) pyrene	SCM	MN	
RCRP	EPA 8270D	Isodrin	SCM	MN	
RCRP	EPA 8270D	Isodrin	NPW	MN	
RCRP	EPA 8270D	Isophorone	SCM	MN	
RCRP	EPA 8270D	Isophorone	NPW	MN	
RCRP	EPA 8270D	Isosafrole	NPW	MN	
RCRP	EPA 8270D	Isosafrole	SCM	MN	
RCRP	EPA 8270D	Kepone	SCM	MN	
RCRP	EPA 8270D	Kepone	NPW	MN	
RCRP	EPA 8270D	Methapyrilene	SCM	MN	
RCRP	EPA 8270D	Methapyrilene	NPW	MN	
RCRP	EPA 8270D	Methyl methanesulfonate	SCM	MN	
RCRP	EPA 8270D	Methyl methanesulfonate	NPW	MN	
RCRP	EPA 8270D	n-Nitroso-di-n-butylamine	SCM	MN	
RCRP	EPA 8270D	n-Nitroso-di-n-butylamine	NPW	MN	
RCRP	EPA 8270D	n-Nitrosodi-n-propylamine	SCM	MN	
RCRP	EPA 8270D	n-Nitrosodi-n-propylamine	NPW	MN	
RCRP	EPA 8270D	n-Nitrosodiethylamine	NPW	MN	
RCRP	EPA 8270D	n-Nitrosodiethylamine	SCM	MN	
RCRP	EPA 8270D	n-Nitrosodimethylamine	NPW	MN	
RCRP	EPA 8270D	n-Nitrosodimethylamine	SCM	MN	
RCRP	EPA 8270D	n-Nitrosodiphenylamine	NPW	MN	
RCRP	EPA 8270D	n-Nitrosodiphenylamine	SCM	MN	
RCRP	EPA 8270D	n-Nitrosomethylethalamine	SCM	MN	
RCRP	EPA 8270D	n-Nitrosomethylethalamine	NPW	MN	
RCRP	EPA 8270D	n-Nitrosomorpholine	SCM	MN	
RCRP	EPA 8270D	n-Nitrosomorpholine	NPW	MN	
RCRP	EPA 8270D	n-Nitrosopiperidine	SCM	MN	
RCRP	EPA 8270D	n-Nitrosopiperidine	NPW	MN	
RCRP	EPA 8270D	n-Nitrosopyrrolidine	NPW	MN	
RCRP	EPA 8270D	n-Nitrosopyrrolidine	SCM	MN	
RCRP	EPA 8270D	Naphthalene	NPW	MN	
RCRP	EPA 8270D	Naphthalene	SCM	MN	
RCRP	EPA 8270D	Nitrobenzene	SCM	MN	
RCRP	EPA 8270D	Nitrobenzene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D	Pentachlorobenzene	NPW	MN	
RCRP	EPA 8270D	Pentachlorobenzene	SCM	MN	
RCRP	EPA 8270D	Pentachloroethane	NPW	MN	
RCRP	EPA 8270D	Pentachloroethane	SCM	MN	
RCRP	EPA 8270D	Pentachloronitrobenzene	NPW	MN	
RCRP	EPA 8270D	Pentachloronitrobenzene	SCM	MN	
RCRP	EPA 8270D	Pentachlorophenol	NPW	MN	
RCRP	EPA 8270D	Pentachlorophenol	SCM	MN	
RCRP	EPA 8270D	Phenacetin	NPW	MN	
RCRP	EPA 8270D	Phenacetin	SCM	MN	
RCRP	EPA 8270D	Phenanthrene	SCM	MN	
RCRP	EPA 8270D	Phenanthrene	NPW	MN	
RCRP	EPA 8270D	Phenol	NPW	MN	
RCRP	EPA 8270D	Phenol	SCM	MN	
RCRP	EPA 8270D	Pronamide (Kerb)	NPW	MN	
RCRP	EPA 8270D	Pronamide (Kerb)	SCM	MN	
RCRP	EPA 8270D	Pyrene	NPW	MN	
RCRP	EPA 8270D	Pyrene	SCM	MN	
RCRP	EPA 8270D	Pyridine	SCM	MN	
RCRP	EPA 8270D	Pyridine	NPW	MN	
RCRP	EPA 8270D	Quinoline	SCM	MN	
RCRP	EPA 8270D	Quinoline	NPW	MN	
RCRP	EPA 8270D	Safrole	NPW	MN	
RCRP	EPA 8270D	Safrole	SCM	MN	

EPA 8270D SIM

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE); Extraction, pressurized fluid (PFE); Extraction, ultrasonic; Extraction, microwave;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D SIM	1-Methylnaphthalene	NPW	MN	
RCRP	EPA 8270D SIM	1-Methylnaphthalene	SCM	MN	
RCRP	EPA 8270D SIM	2-Methylnaphthalene	NPW	MN	
RCRP	EPA 8270D SIM	2-Methylnaphthalene	SCM	MN	
RCRP	EPA 8270D SIM	Acenaphthene	NPW	MN	
RCRP	EPA 8270D SIM	Acenaphthene	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270D SIM	Acenaphthylene	SCM	MN	
RCRP	EPA 8270D SIM	Acenaphthylene	NPW	MN	
RCRP	EPA 8270D SIM	Anthracene	NPW	MN	
RCRP	EPA 8270D SIM	Anthracene	SCM	MN	
RCRP	EPA 8270D SIM	Benzo(a)anthracene	SCM	MN	
RCRP	EPA 8270D SIM	Benzo(a)anthracene	NPW	MN	
RCRP	EPA 8270D SIM	Benzo(a)pyrene	NPW	MN	
RCRP	EPA 8270D SIM	Benzo(a)pyrene	SCM	MN	
RCRP	EPA 8270D SIM	Benzo(g,h,i)perylene	SCM	MN	
RCRP	EPA 8270D SIM	Benzo(g,h,i)perylene	NPW	MN	
RCRP	EPA 8270D SIM	Benzo(k)fluoranthene	NPW	MN	
RCRP	EPA 8270D SIM	Benzo(k)fluoranthene	SCM	MN	
RCRP	EPA 8270D SIM	Benzo[b]fluoranthene	SCM	MN	
RCRP	EPA 8270D SIM	Benzo[b]fluoranthene	NPW	MN	
RCRP	EPA 8270D SIM	Chrysene	NPW	MN	
RCRP	EPA 8270D SIM	Chrysene	SCM	MN	
RCRP	EPA 8270D SIM	Dibenz(a,h) anthracene	NPW	MN	
RCRP	EPA 8270D SIM	Dibenz(a,h) anthracene	SCM	MN	
RCRP	EPA 8270D SIM	Fluoranthene	NPW	MN	
RCRP	EPA 8270D SIM	Fluoranthene	SCM	MN	
RCRP	EPA 8270D SIM	Fluorene	SCM	MN	
RCRP	EPA 8270D SIM	Fluorene	NPW	MN	
RCRP	EPA 8270D SIM	Indeno(1,2,3-cd) pyrene	SCM	MN	
RCRP	EPA 8270D SIM	Indeno(1,2,3-cd) pyrene	NPW	MN	
RCRP	EPA 8270D SIM	Naphthalene	NPW	MN	
RCRP	EPA 8270D SIM	Naphthalene	SCM	MN	
RCRP	EPA 8270D SIM	Phenanthrene	NPW	MN	
RCRP	EPA 8270D SIM	Phenanthrene	SCM	MN	
RCRP	EPA 8270D SIM	Pyrene	NPW	MN	
RCRP	EPA 8270D SIM	Pyrene	SCM	MN	

EPA 8270E

Preparation Techniques: Extraction, EPA 1312 SPLP, non-volatiles; Extraction, separatory funnel liquid-liquid (LLE); Extraction, EPA 1311 TCLP, non-volatiles; Extraction, pressurized fluid (PFE); Extraction, micro; Waste Dilution (EPA 3580A); Extraction, ultrasonic; Extraction, microwave;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270E	1,1'-Biphenyl (BZ-0)	NPW	MN	
RCRP	EPA 8270E	1,1'-Biphenyl (BZ-0)	SCM	MN	
RCRP	EPA 8270E	1,2,4,5-Tetrachlorobenzene	SCM	MN	
RCRP	EPA 8270E	1,2,4,5-Tetrachlorobenzene	NPW	MN	
RCRP	EPA 8270E	1,2,4-Trichlorobenzene	SCM	MN	
RCRP	EPA 8270E	1,2,4-Trichlorobenzene	NPW	MN	
RCRP	EPA 8270E	1,2-Dichlorobenzene	NPW	MN	
RCRP	EPA 8270E	1,2-Dichlorobenzene	SCM	MN	
RCRP	EPA 8270E	1,2-Dinitrobenzene	SCM	MN	
RCRP	EPA 8270E	1,2-Dinitrobenzene	NPW	MN	
RCRP	EPA 8270E	1,2-Diphenylhydrazine	SCM	MN	
RCRP	EPA 8270E	1,2-Diphenylhydrazine	NPW	MN	
RCRP	EPA 8270E	1,3,5-Trinitrobenzene (1,3,5-TNB)	NPW	MN	
RCRP	EPA 8270E	1,3,5-Trinitrobenzene (1,3,5-TNB)	SCM	MN	
RCRP	EPA 8270E	1,3-Dichlorobenzene	NPW	MN	
RCRP	EPA 8270E	1,3-Dichlorobenzene	SCM	MN	
RCRP	EPA 8270E	1,3-Dinitrobenzene (1,3-DNB)	NPW	MN	
RCRP	EPA 8270E	1,3-Dinitrobenzene (1,3-DNB)	SCM	MN	
RCRP	EPA 8270E	1,4-Dichlorobenzene	SCM	MN	
RCRP	EPA 8270E	1,4-Dichlorobenzene	NPW	MN	
RCRP	EPA 8270E	1,4-Dinitrobenzene	SCM	MN	
RCRP	EPA 8270E	1,4-Dinitrobenzene	NPW	MN	
RCRP	EPA 8270E	1,4-Dioxane (1,4- Diethyleneoxide)	NPW	MN	
RCRP	EPA 8270E	1,4-Dioxane (1,4- Diethyleneoxide)	SCM	MN	
RCRP	EPA 8270E	1,4-Naphthoquinone	NPW	MN	
RCRP	EPA 8270E	1,4-Naphthoquinone	SCM	MN	
RCRP	EPA 8270E	1-Methylnaphthalene	NPW	MN	
RCRP	EPA 8270E	1-Methylnaphthalene	SCM	MN	
RCRP	EPA 8270E	1-Naphthylamine	NPW	MN	
RCRP	EPA 8270E	1-Naphthylamine	SCM	MN	
RCRP	EPA 8270E	2,2'-Oxybis(1-chloropropane),bis(2-Chloro-1-methylethyl)ether	NPW	MN	
RCRP	EPA 8270E	2,2'-Oxybis(1-chloropropane),bis(2-Chloro-1-methylethyl)ether	SCM	MN	
RCRP	EPA 8270E	2,3,4,6-Tetrachlorophenol	SCM	MN	
RCRP	EPA 8270E	2,3,4,6-Tetrachlorophenol	NPW	MN	
RCRP	EPA 8270E	2,3,5,6-Tetrachlorophenol	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270E	2,3,5,6-Tetrachlorophenol	SCM	MN	
RCRP	EPA 8270E	2,4,5-Trichlorophenol	NPW	MN	
RCRP	EPA 8270E	2,4,5-Trichlorophenol	SCM	MN	
RCRP	EPA 8270E	2,4,6-Trichlorophenol	SCM	MN	
RCRP	EPA 8270E	2,4,6-Trichlorophenol	NPW	MN	
RCRP	EPA 8270E	2,4-Dichlorophenol	SCM	MN	
RCRP	EPA 8270E	2,4-Dichlorophenol	NPW	MN	
RCRP	EPA 8270E	2,4-Dimethylphenol	SCM	MN	
RCRP	EPA 8270E	2,4-Dimethylphenol	NPW	MN	
RCRP	EPA 8270E	2,4-Dinitrophenol	NPW	MN	
RCRP	EPA 8270E	2,4-Dinitrophenol	SCM	MN	
RCRP	EPA 8270E	2,4-Dinitrotoluene (2,4-DNT)	NPW	MN	
RCRP	EPA 8270E	2,4-Dinitrotoluene (2,4-DNT)	SCM	MN	
RCRP	EPA 8270E	2,6-Dichlorophenol	NPW	MN	
RCRP	EPA 8270E	2,6-Dichlorophenol	SCM	MN	
RCRP	EPA 8270E	2,6-Dinitrotoluene (2,6-DNT)	NPW	MN	
RCRP	EPA 8270E	2,6-Dinitrotoluene (2,6-DNT)	SCM	MN	
RCRP	EPA 8270E	2-Acetylaminofluorene	NPW	MN	
RCRP	EPA 8270E	2-Acetylaminofluorene	SCM	MN	
RCRP	EPA 8270E	2-Chloronaphthalene	NPW	MN	
RCRP	EPA 8270E	2-Chloronaphthalene	SCM	MN	
RCRP	EPA 8270E	2-Chlorophenol	SCM	MN	
RCRP	EPA 8270E	2-Chlorophenol	NPW	MN	
RCRP	EPA 8270E	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	NPW	MN	
RCRP	EPA 8270E	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	SCM	MN	
RCRP	EPA 8270E	2-Methylaniline (o-Toluidine)	NPW	MN	
RCRP	EPA 8270E	2-Methylaniline (o-Toluidine)	SCM	MN	
RCRP	EPA 8270E	2-Methylnaphthalene	SCM	MN	
RCRP	EPA 8270E	2-Methylnaphthalene	NPW	MN	
RCRP	EPA 8270E	2-Methylphenol (o-Cresol)	SCM	MN	
RCRP	EPA 8270E	2-Methylphenol (o-Cresol)	NPW	MN	
RCRP	EPA 8270E	2-Naphthylamine	SCM	MN	
RCRP	EPA 8270E	2-Naphthylamine	NPW	MN	
RCRP	EPA 8270E	2-Nitroaniline	SCM	MN	
RCRP	EPA 8270E	2-Nitroaniline	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270E	2-Nitrophenol	NPW	MN	
RCRP	EPA 8270E	2-Nitrophenol	SCM	MN	
RCRP	EPA 8270E	2-Picoline (2-Methylpyridine)	SCM	MN	
RCRP	EPA 8270E	2-Picoline (2-Methylpyridine)	NPW	MN	
RCRP	EPA 8270E	3,3'-Dichlorobenzidine	SCM	MN	
RCRP	EPA 8270E	3,3'-Dichlorobenzidine	NPW	MN	
RCRP	EPA 8270E	3,3'-Dimethylbenzidine	SCM	MN	
RCRP	EPA 8270E	3,3'-Dimethylbenzidine	NPW	MN	
RCRP	EPA 8270E	3-Methylcholanthrene	SCM	MN	
RCRP	EPA 8270E	3-Methylcholanthrene	NPW	MN	
RCRP	EPA 8270E	3-Methylphenol (m-Cresol)	NPW	MN	
RCRP	EPA 8270E	3-Methylphenol (m-Cresol)	SCM	MN	
RCRP	EPA 8270E	3-Nitroaniline	NPW	MN	
RCRP	EPA 8270E	3-Nitroaniline	SCM	MN	
RCRP	EPA 8270E	4-Aminobiphenyl	NPW	MN	
RCRP	EPA 8270E	4-Aminobiphenyl	SCM	MN	
RCRP	EPA 8270E	4-Bromophenyl phenyl ether	NPW	MN	
RCRP	EPA 8270E	4-Bromophenyl phenyl ether	SCM	MN	
RCRP	EPA 8270E	4-Chloro-3-methylphenol	SCM	MN	
RCRP	EPA 8270E	4-Chloro-3-methylphenol	NPW	MN	
RCRP	EPA 8270E	4-Chloroaniline	SCM	MN	
RCRP	EPA 8270E	4-Chloroaniline	NPW	MN	
RCRP	EPA 8270E	4-Chlorophenyl phenylether	NPW	MN	
RCRP	EPA 8270E	4-Chlorophenyl phenylether	SCM	MN	
RCRP	EPA 8270E	4-Dimethyl aminoazobenzene	NPW	MN	
RCRP	EPA 8270E	4-Dimethyl aminoazobenzene	SCM	MN	
RCRP	EPA 8270E	4-Methylphenol (p-Cresol)	SCM	MN	
RCRP	EPA 8270E	4-Methylphenol (p-Cresol)	NPW	MN	
RCRP	EPA 8270E	4-Nitroaniline	SCM	MN	
RCRP	EPA 8270E	4-Nitroaniline	NPW	MN	
RCRP	EPA 8270E	4-Nitrophenol	NPW	MN	
RCRP	EPA 8270E	4-Nitrophenol	SCM	MN	
RCRP	EPA 8270E	4-Nitroquinoline 1-oxide	SCM	MN	
RCRP	EPA 8270E	5-Nitro-o-toluidine	NPW	MN	
RCRP	EPA 8270E	5-Nitro-o-toluidine	SCM	MN	
RCRP	EPA 8270E	7,12-Dimethylbenz(a) anthracene	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270E	7,12-Dimethylbenz(a) anthracene	NPW	MN	
RCRP	EPA 8270E	a-a-Dimethylphenethylamine	SCM	MN	
RCRP	EPA 8270E	a-a-Dimethylphenethylamine	NPW	MN	
RCRP	EPA 8270E	Acenaphthene	SCM	MN	
RCRP	EPA 8270E	Acenaphthene	NPW	MN	
RCRP	EPA 8270E	Acenaphthylene	SCM	MN	
RCRP	EPA 8270E	Acenaphthylene	NPW	MN	
RCRP	EPA 8270E	Acetophenone	NPW	MN	
RCRP	EPA 8270E	Acetophenone	SCM	MN	
RCRP	EPA 8270E	Aniline	NPW	MN	
RCRP	EPA 8270E	Aniline	SCM	MN	
RCRP	EPA 8270E	Anthracene	SCM	MN	
RCRP	EPA 8270E	Anthracene	NPW	MN	
RCRP	EPA 8270E	Aramite	NPW	MN	
RCRP	EPA 8270E	Aramite	SCM	MN	
RCRP	EPA 8270E	Atrazine	NPW	MN	
RCRP	EPA 8270E	Atrazine	SCM	MN	
RCRP	EPA 8270E	Benzal chloride	SCM	MN	
RCRP	EPA 8270E	Benzaldehyde	NPW	MN	
RCRP	EPA 8270E	Benzaldehyde	SCM	MN	
RCRP	EPA 8270E	Benzidine	SCM	MN	
RCRP	EPA 8270E	Benzidine	NPW	MN	
RCRP	EPA 8270E	Benzo(a)anthracene	SCM	MN	
RCRP	EPA 8270E	Benzo(a)anthracene	NPW	MN	
RCRP	EPA 8270E	Benzo(a)pyrene	SCM	MN	
RCRP	EPA 8270E	Benzo(a)pyrene	NPW	MN	
RCRP	EPA 8270E	Benzo(g,h,i)perylene	SCM	MN	
RCRP	EPA 8270E	Benzo(g,h,i)perylene	NPW	MN	
RCRP	EPA 8270E	Benzo(k)fluoranthene	SCM	MN	
RCRP	EPA 8270E	Benzo(k)fluoranthene	NPW	MN	
RCRP	EPA 8270E	Benzo[b]fluoranthene	SCM	MN	
RCRP	EPA 8270E	Benzo[b]fluoranthene	NPW	MN	
RCRP	EPA 8270E	Benzoic acid	SCM	MN	
RCRP	EPA 8270E	Benzoic acid	NPW	MN	
RCRP	EPA 8270E	Benzyl alcohol	SCM	MN	
RCRP	EPA 8270E	Benzyl alcohol	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270E	bis(2-Chloroethoxy)methane	NPW	MN	
RCRP	EPA 8270E	bis(2-Chloroethoxy)methane	SCM	MN	
RCRP	EPA 8270E	bis(2-Chloroethyl) ether	SCM	MN	
RCRP	EPA 8270E	bis(2-Chloroethyl) ether	NPW	MN	
RCRP	EPA 8270E	bis(2-Chloroisopropyl) ether	NPW	MN	
RCRP	EPA 8270E	bis(2-Chloroisopropyl) ether	SCM	MN	
RCRP	EPA 8270E	Butyl benzyl phthalate	SCM	MN	
RCRP	EPA 8270E	Butyl benzyl phthalate	NPW	MN	
RCRP	EPA 8270E	Caprolactam	SCM	MN	
RCRP	EPA 8270E	Caprolactam	NPW	MN	
RCRP	EPA 8270E	Carbazole	NPW	MN	
RCRP	EPA 8270E	Carbazole	SCM	MN	
RCRP	EPA 8270E	Chlorobenzilate	SCM	MN	
RCRP	EPA 8270E	Chlorobenzilate	NPW	MN	
RCRP	EPA 8270E	Chrysene	SCM	MN	
RCRP	EPA 8270E	Chrysene	NPW	MN	
RCRP	EPA 8270E	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	SCM	MN	
RCRP	EPA 8270E	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	NPW	MN	
RCRP	EPA 8270E	Di-n-butyl phthalate	NPW	MN	
RCRP	EPA 8270E	Di-n-butyl phthalate	SCM	MN	
RCRP	EPA 8270E	Di-n-octyl phthalate	SCM	MN	
RCRP	EPA 8270E	Di-n-octyl phthalate	NPW	MN	
RCRP	EPA 8270E	Diallate	SCM	MN	
RCRP	EPA 8270E	Diallate	NPW	MN	
RCRP	EPA 8270E	Dibenz(a, h) acridine	SCM	MN	
RCRP	EPA 8270E	Dibenz(a,h) anthracene	SCM	MN	
RCRP	EPA 8270E	Dibenz(a,h) anthracene	NPW	MN	
RCRP	EPA 8270E	Dibenzofuran	SCM	MN	
RCRP	EPA 8270E	Dibenzofuran	NPW	MN	
RCRP	EPA 8270E	Diethyl phthalate	NPW	MN	
RCRP	EPA 8270E	Diethyl phthalate	SCM	MN	
RCRP	EPA 8270E	Dimethyl phthalate	NPW	MN	
RCRP	EPA 8270E	Dimethyl phthalate	SCM	MN	
RCRP	EPA 8270E	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270E	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	NPW	MN	
RCRP	EPA 8270E	Diphenylamine	SCM	MN	
RCRP	EPA 8270E	Diphenylamine	NPW	MN	
RCRP	EPA 8270E	Ethyl methanesulfonate	NPW	MN	
RCRP	EPA 8270E	Ethyl methanesulfonate	SCM	MN	
RCRP	EPA 8270E	Fluoranthene	NPW	MN	
RCRP	EPA 8270E	Fluoranthene	SCM	MN	
RCRP	EPA 8270E	Fluorene	SCM	MN	
RCRP	EPA 8270E	Fluorene	NPW	MN	
RCRP	EPA 8270E	Hexachlorobenzene	NPW	MN	
RCRP	EPA 8270E	Hexachlorobenzene	SCM	MN	
RCRP	EPA 8270E	Hexachlorobutadiene	NPW	MN	
RCRP	EPA 8270E	Hexachlorobutadiene	SCM	MN	
RCRP	EPA 8270E	Hexachlorocyclopentadiene	SCM	MN	
RCRP	EPA 8270E	Hexachlorocyclopentadiene	NPW	MN	
RCRP	EPA 8270E	Hexachloroethane	SCM	MN	
RCRP	EPA 8270E	Hexachloroethane	NPW	MN	
RCRP	EPA 8270E	Hexachloropropene	NPW	MN	
RCRP	EPA 8270E	Hexachloropropene	SCM	MN	
RCRP	EPA 8270E	Indeno(1,2,3-cd) pyrene	SCM	MN	
RCRP	EPA 8270E	Indeno(1,2,3-cd) pyrene	NPW	MN	
RCRP	EPA 8270E	Isodrin	SCM	MN	
RCRP	EPA 8270E	Isodrin	NPW	MN	
RCRP	EPA 8270E	Isophorone	NPW	MN	
RCRP	EPA 8270E	Isophorone	SCM	MN	
RCRP	EPA 8270E	Isosafrole	SCM	MN	
RCRP	EPA 8270E	Isosafrole	NPW	MN	
RCRP	EPA 8270E	Kepone	SCM	MN	
RCRP	EPA 8270E	Kepone	NPW	MN	
RCRP	EPA 8270E	Methapyrilene	NPW	MN	
RCRP	EPA 8270E	Methapyrilene	SCM	MN	
RCRP	EPA 8270E	Methyl methanesulfonate	NPW	MN	
RCRP	EPA 8270E	Methyl methanesulfonate	SCM	MN	
RCRP	EPA 8270E	n-Nitroso-di-n-butylamine	NPW	MN	
RCRP	EPA 8270E	n-Nitroso-di-n-butylamine	SCM	MN	
RCRP	EPA 8270E	n-Nitrosodi-n-propylamine	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270E	n-Nitrosodi-n-propylamine	NPW	MN	
RCRP	EPA 8270E	n-Nitrosodiethylamine	SCM	MN	
RCRP	EPA 8270E	n-Nitrosodiethylamine	NPW	MN	
RCRP	EPA 8270E	n-Nitrosodimethylamine	SCM	MN	
RCRP	EPA 8270E	n-Nitrosodimethylamine	NPW	MN	
RCRP	EPA 8270E	n-Nitrosodiphenylamine	NPW	MN	
RCRP	EPA 8270E	n-Nitrosodiphenylamine	SCM	MN	
RCRP	EPA 8270E	n-Nitrosomethylethalamine	NPW	MN	
RCRP	EPA 8270E	n-Nitrosomethylethalamine	SCM	MN	
RCRP	EPA 8270E	n-Nitrosomorpholine	NPW	MN	
RCRP	EPA 8270E	n-Nitrosomorpholine	SCM	MN	
RCRP	EPA 8270E	n-Nitrosopiperidine	NPW	MN	
RCRP	EPA 8270E	n-Nitrosopiperidine	SCM	MN	
RCRP	EPA 8270E	n-Nitrosopyrrolidine	NPW	MN	
RCRP	EPA 8270E	n-Nitrosopyrrolidine	SCM	MN	
RCRP	EPA 8270E	Naphthalene	NPW	MN	
RCRP	EPA 8270E	Naphthalene	SCM	MN	
RCRP	EPA 8270E	Nitrobenzene	SCM	MN	
RCRP	EPA 8270E	Nitrobenzene	NPW	MN	
RCRP	EPA 8270E	Pentachlorobenzene	SCM	MN	
RCRP	EPA 8270E	Pentachlorobenzene	NPW	MN	
RCRP	EPA 8270E	Pentachloroethane	SCM	MN	
RCRP	EPA 8270E	Pentachloroethane	NPW	MN	
RCRP	EPA 8270E	Pentachloronitrobenzene	NPW	MN	
RCRP	EPA 8270E	Pentachloronitrobenzene	SCM	MN	
RCRP	EPA 8270E	Pentachlorophenol	SCM	MN	
RCRP	EPA 8270E	Pentachlorophenol	NPW	MN	
RCRP	EPA 8270E	Phenacetin	NPW	MN	
RCRP	EPA 8270E	Phenacetin	SCM	MN	
RCRP	EPA 8270E	Phenanthrene	NPW	MN	
RCRP	EPA 8270E	Phenanthrene	SCM	MN	
RCRP	EPA 8270E	Phenol	NPW	MN	
RCRP	EPA 8270E	Phenol	SCM	MN	
RCRP	EPA 8270E	Pronamide (Kerb)	SCM	MN	
RCRP	EPA 8270E	Pronamide (Kerb)	NPW	MN	
RCRP	EPA 8270E	Pyrene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8270E	Pyrene	SCM	MN	
RCRP	EPA 8270E	Pyridine	SCM	MN	
RCRP	EPA 8270E	Pyridine	NPW	MN	
RCRP	EPA 8270E	Quinoline	SCM	MN	
RCRP	EPA 8270E	Quinoline	NPW	MN	
RCRP	EPA 8270E	Safrole	SCM	MN	
RCRP	EPA 8270E	Safrole	NPW	MN	

EPA 1010A

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 1010A	Ignitability	SCM	MN	

EPA 9095B

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 9095B	Paint Filter Liquids Test	SCM	MN	

EPA 8015C

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE); Extraction, pressurized fluid (PFE); Extraction, micro; Extraction, ultrasonic;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8015C	Ethanol	NPW	MN	
RCRP	EPA 8015C	Isobutyl alcohol (2-Methyl-1-propanol)	NPW	MN	
RCRP	EPA 8015C	Isopropyl alcohol (2-Propanol, Isopropanol)	NPW	MN	
RCRP	EPA 8015C	Methanol	NPW	MN	
RCRP	EPA 8015C	n-Butyl alcohol (1-Butanol, n-Butanol)	NPW	MN	
RCRP	EPA 8015C	tert-Butyl alcohol	NPW	MN	

EPA 8015D

Preparation Techniques: Extraction, separatory funnel liquid-liquid (LLE); Purge and trap; Extraction, pressurized fluid (PFE); Extraction, micro; Extraction, soxhlet; Extraction, ultrasonic; Extraction, Microwave;

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8015D	Diesel range organics (DRO)	SCM	MN	
RCRP	EPA 8015D	Diesel range organics (DRO)	NPW	MN	
RCRP	EPA 8015D	Ethylene glycol	NPW	MN	
RCRP	EPA 8015D	Gasoline range organics (GRO)	NPW	MN	
RCRP	EPA 8015D	Gasoline range organics (GRO)	SCM	MN	
RCRP	EPA 8015D	Propylene Glycol	NPW	MN	

EPA 8260B

Preparation Techniques: Purge and trap; Extraction, EPA 1312 SPLP, zero headspace (ZHE); Extraction, EPA 1311 TCLP, zero headspace (ZHE);

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260B	1,1,1,2-Tetrachloroethane	SCM	MN	
RCRP	EPA 8260B	1,1,1,2-Tetrachloroethane	NPW	MN	
RCRP	EPA 8260B	1,1,1-Trichloroethane	SCM	MN	
RCRP	EPA 8260B	1,1,1-Trichloroethane	NPW	MN	
RCRP	EPA 8260B	1,1,2,2-Tetrachloroethane	SCM	MN	
RCRP	EPA 8260B	1,1,2,2-Tetrachloroethane	NPW	MN	
RCRP	EPA 8260B	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	SCM	MN	
RCRP	EPA 8260B	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NPW	MN	
RCRP	EPA 8260B	1,1,2-Trichloroethane	SCM	MN	
RCRP	EPA 8260B	1,1,2-Trichloroethane	NPW	MN	
RCRP	EPA 8260B	1,1-Dichloroethane	NPW	MN	
RCRP	EPA 8260B	1,1-Dichloroethane	SCM	MN	
RCRP	EPA 8260B	1,1-Dichloroethylene	NPW	MN	
RCRP	EPA 8260B	1,1-Dichloroethylene	SCM	MN	
RCRP	EPA 8260B	1,1-Dichloropropene	SCM	MN	
RCRP	EPA 8260B	1,1-Dichloropropene	NPW	MN	
RCRP	EPA 8260B	1,2,3-Trichlorobenzene	SCM	MN	
RCRP	EPA 8260B	1,2,3-Trichlorobenzene	NPW	MN	
RCRP	EPA 8260B	1,2,3-Trichloropropane	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260B	1,2,3-Trichloropropane	SCM	MN	
RCRP	EPA 8260B	1,2,3-Trimethylbenzene	NPW	MN	
RCRP	EPA 8260B	1,2,3-Trimethylbenzene	SCM	MN	
RCRP	EPA 8260B	1,2,4-Trichlorobenzene	NPW	MN	
RCRP	EPA 8260B	1,2,4-Trichlorobenzene	SCM	MN	
RCRP	EPA 8260B	1,2,4-Trimethylbenzene	SCM	MN	
RCRP	EPA 8260B	1,2,4-Trimethylbenzene	NPW	MN	
RCRP	EPA 8260B	1,2-Dibromo-3-chloropropane (DBCP)	NPW	MN	
RCRP	EPA 8260B	1,2-Dibromo-3-chloropropane (DBCP)	SCM	MN	
RCRP	EPA 8260B	1,2-Dibromoethane (EDB, Ethylene dibromide)	SCM	MN	
RCRP	EPA 8260B	1,2-Dibromoethane (EDB, Ethylene dibromide)	NPW	MN	
RCRP	EPA 8260B	1,2-Dichlorobenzene	NPW	MN	
RCRP	EPA 8260B	1,2-Dichlorobenzene	SCM	MN	
RCRP	EPA 8260B	1,2-Dichloroethane (Ethylene dichloride)	NPW	MN	
RCRP	EPA 8260B	1,2-Dichloroethane (Ethylene dichloride)	SCM	MN	
RCRP	EPA 8260B	1,2-Dichloropropane	NPW	MN	
RCRP	EPA 8260B	1,2-Dichloropropane	SCM	MN	
RCRP	EPA 8260B	1,3,5-Trichlorobenzene	SCM	MN	
RCRP	EPA 8260B	1,3,5-Trimethylbenzene	SCM	MN	
RCRP	EPA 8260B	1,3,5-Trimethylbenzene	NPW	MN	
RCRP	EPA 8260B	1,3-Dichlorobenzene	SCM	MN	
RCRP	EPA 8260B	1,3-Dichlorobenzene	NPW	MN	
RCRP	EPA 8260B	1,3-Dichloropropane	NPW	MN	
RCRP	EPA 8260B	1,3-Dichloropropane	SCM	MN	
RCRP	EPA 8260B	1,4-Dichlorobenzene	SCM	MN	
RCRP	EPA 8260B	1,4-Dichlorobenzene	NPW	MN	
RCRP	EPA 8260B	1,4-Dioxane (1,4- Diethyleneoxide)	NPW	MN	
RCRP	EPA 8260B	1,4-Dioxane (1,4- Diethyleneoxide)	SCM	MN	
RCRP	EPA 8260B	2,2-Dichloropropane	SCM	MN	
RCRP	EPA 8260B	2,2-Dichloropropane	NPW	MN	
RCRP	EPA 8260B	2-Butanone (Methyl ethyl ketone, MEK)	SCM	MN	
RCRP	EPA 8260B	2-Butanone (Methyl ethyl ketone, MEK)	NPW	MN	
RCRP	EPA 8260B	2-Chloroethyl vinyl ether	NPW	MN	
RCRP	EPA 8260B	2-Chloroethyl vinyl ether	SCM	MN	
RCRP	EPA 8260B	2-Chlorotoluene	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260B	2-Chlorotoluene	NPW	MN	
RCRP	EPA 8260B	2-Hexanone	SCM	MN	
RCRP	EPA 8260B	2-Hexanone	NPW	MN	
RCRP	EPA 8260B	2-Methylnaphthalene	SCM	MN	
RCRP	EPA 8260B	2-Methylnaphthalene	NPW	MN	
RCRP	EPA 8260B	4-Chlorotoluene	NPW	MN	
RCRP	EPA 8260B	4-Chlorotoluene	SCM	MN	
RCRP	EPA 8260B	4-Isopropyltoluene (p-Cymene)	NPW	MN	
RCRP	EPA 8260B	4-Isopropyltoluene (p-Cymene)	SCM	MN	
RCRP	EPA 8260B	4-Methyl-2-pentanone (MIBK)	NPW	MN	
RCRP	EPA 8260B	4-Methyl-2-pentanone (MIBK)	SCM	MN	
RCRP	EPA 8260B	Acetone	NPW	MN	
RCRP	EPA 8260B	Acetone	SCM	MN	
RCRP	EPA 8260B	Acetonitrile	NPW	MN	
RCRP	EPA 8260B	Acetonitrile	SCM	MN	
RCRP	EPA 8260B	Acrolein (Propenal)	NPW	MN	
RCRP	EPA 8260B	Acrolein (Propenal)	SCM	MN	
RCRP	EPA 8260B	Acrylonitrile	SCM	MN	
RCRP	EPA 8260B	Acrylonitrile	NPW	MN	
RCRP	EPA 8260B	Allyl chloride (3-Chloropropene)	NPW	MN	
RCRP	EPA 8260B	Allyl chloride (3-Chloropropene)	SCM	MN	
RCRP	EPA 8260B	Benzene	SCM	MN	
RCRP	EPA 8260B	Benzene	NPW	MN	
RCRP	EPA 8260B	Benzyl chloride	NPW	MN	
RCRP	EPA 8260B	Benzyl chloride	SCM	MN	
RCRP	EPA 8260B	Bromobenzene	NPW	MN	
RCRP	EPA 8260B	Bromobenzene	SCM	MN	
RCRP	EPA 8260B	Bromochloromethane	SCM	MN	
RCRP	EPA 8260B	Bromochloromethane	NPW	MN	
RCRP	EPA 8260B	Bromodichloromethane	SCM	MN	
RCRP	EPA 8260B	Bromodichloromethane	NPW	MN	
RCRP	EPA 8260B	Bromoform	NPW	MN	
RCRP	EPA 8260B	Bromoform	SCM	MN	
RCRP	EPA 8260B	Carbon disulfide	SCM	MN	
RCRP	EPA 8260B	Carbon disulfide	NPW	MN	
RCRP	EPA 8260B	Carbon tetrachloride	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260B	Carbon tetrachloride	NPW	MN	
RCRP	EPA 8260B	Chlorobenzene	SCM	MN	
RCRP	EPA 8260B	Chlorobenzene	NPW	MN	
RCRP	EPA 8260B	Chlorodibromomethane	SCM	MN	
RCRP	EPA 8260B	Chlorodibromomethane	NPW	MN	
RCRP	EPA 8260B	Chloroethane (Ethyl chloride)	SCM	MN	
RCRP	EPA 8260B	Chloroethane (Ethyl chloride)	NPW	MN	
RCRP	EPA 8260B	Chloroform	SCM	MN	
RCRP	EPA 8260B	Chloroform	NPW	MN	
RCRP	EPA 8260B	Chloroprene (2-Chloro-1,3-butadiene)	NPW	MN	
RCRP	EPA 8260B	Chloroprene (2-Chloro-1,3-butadiene)	SCM	MN	
RCRP	EPA 8260B	cis-1,2-Dichloroethylene	SCM	MN	
RCRP	EPA 8260B	cis-1,2-Dichloroethylene	NPW	MN	
RCRP	EPA 8260B	cis-1,3-Dichloropropene	SCM	MN	
RCRP	EPA 8260B	cis-1,3-Dichloropropene	NPW	MN	
RCRP	EPA 8260B	Cyclohexane	NPW	MN	
RCRP	EPA 8260B	Cyclohexane	SCM	MN	
RCRP	EPA 8260B	Di-isopropylether (DIPE)	SCM	MN	
RCRP	EPA 8260B	Di-isopropylether (DIPE)	NPW	MN	
RCRP	EPA 8260B	Dibromomethane (Methylene bromide)	SCM	MN	
RCRP	EPA 8260B	Dibromomethane (Methylene bromide)	NPW	MN	
RCRP	EPA 8260B	Dichlorodifluoromethane (Freon-12)	SCM	MN	
RCRP	EPA 8260B	Dichlorodifluoromethane (Freon-12)	NPW	MN	
RCRP	EPA 8260B	Diethyl ether	NPW	MN	
RCRP	EPA 8260B	Diethyl ether	SCM	MN	
RCRP	EPA 8260B	Ethyl acetate	NPW	MN	
RCRP	EPA 8260B	Ethyl acetate	SCM	MN	
RCRP	EPA 8260B	Ethyl methacrylate	SCM	MN	
RCRP	EPA 8260B	Ethyl methacrylate	NPW	MN	
RCRP	EPA 8260B	Ethylbenzene	NPW	MN	
RCRP	EPA 8260B	Ethylbenzene	SCM	MN	
RCRP	EPA 8260B	Hexachlorobutadiene	SCM	MN	
RCRP	EPA 8260B	Hexachlorobutadiene	NPW	MN	
RCRP	EPA 8260B	Hexachloroethane	NPW	MN	
RCRP	EPA 8260B	Hexachloroethane	SCM	MN	
RCRP	EPA 8260B	Iodomethane (Methyl iodide)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260B	Iodomethane (Methyl iodide)	NPW	MN	
RCRP	EPA 8260B	Isobutyl alcohol (2-Methyl-1-propanol)	SCM	MN	
RCRP	EPA 8260B	Isobutyl alcohol (2-Methyl-1-propanol)	NPW	MN	
RCRP	EPA 8260B	Isopropylbenzene	SCM	MN	
RCRP	EPA 8260B	Isopropylbenzene	NPW	MN	
RCRP	EPA 8260B	m+p-xylene	NPW	MN	
RCRP	EPA 8260B	m+p-xylene	SCM	MN	
RCRP	EPA 8260B	Methacrylonitrile	NPW	MN	
RCRP	EPA 8260B	Methacrylonitrile	SCM	MN	
RCRP	EPA 8260B	Methyl acetate	NPW	MN	
RCRP	EPA 8260B	Methyl acetate	SCM	MN	
RCRP	EPA 8260B	Methyl bromide (Bromomethane)	NPW	MN	
RCRP	EPA 8260B	Methyl bromide (Bromomethane)	SCM	MN	
RCRP	EPA 8260B	Methyl chloride (Chloromethane)	SCM	MN	
RCRP	EPA 8260B	Methyl chloride (Chloromethane)	NPW	MN	
RCRP	EPA 8260B	Methyl methacrylate	NPW	MN	
RCRP	EPA 8260B	Methyl methacrylate	SCM	MN	
RCRP	EPA 8260B	Methyl tert-butyl ether (MTBE)	SCM	MN	
RCRP	EPA 8260B	Methyl tert-butyl ether (MTBE)	NPW	MN	
RCRP	EPA 8260B	Methylcyclohexane	SCM	MN	
RCRP	EPA 8260B	Methylcyclohexane	NPW	MN	
RCRP	EPA 8260B	Methylene chloride (Dichloromethane)	SCM	MN	
RCRP	EPA 8260B	Methylene chloride (Dichloromethane)	NPW	MN	
RCRP	EPA 8260B	n-Butyl alcohol (1-Butanol, n-Butanol)	NPW	MN	
RCRP	EPA 8260B	n-Butyl alcohol (1-Butanol, n-Butanol)	SCM	MN	
RCRP	EPA 8260B	n-Butylbenzene	SCM	MN	
RCRP	EPA 8260B	n-Butylbenzene	NPW	MN	
RCRP	EPA 8260B	n-Heptane	SCM	MN	
RCRP	EPA 8260B	n-Heptane	NPW	MN	
RCRP	EPA 8260B	n-Hexane	SCM	MN	
RCRP	EPA 8260B	n-Hexane	NPW	MN	
RCRP	EPA 8260B	n-Propylbenzene	SCM	MN	
RCRP	EPA 8260B	n-Propylbenzene	NPW	MN	
RCRP	EPA 8260B	Naphthalene	SCM	MN	
RCRP	EPA 8260B	Naphthalene	NPW	MN	
RCRP	EPA 8260B	o-Xylene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260B	o-Xylene	SCM	MN	
RCRP	EPA 8260B	sec-Butylbenzene	NPW	MN	
RCRP	EPA 8260B	sec-Butylbenzene	SCM	MN	
RCRP	EPA 8260B	Styrene	SCM	MN	
RCRP	EPA 8260B	Styrene	NPW	MN	
RCRP	EPA 8260B	T-amylmethylether (TAME)	NPW	MN	
RCRP	EPA 8260B	T-amylmethylether (TAME)	SCM	MN	
RCRP	EPA 8260B	tert-Butyl alcohol	SCM	MN	
RCRP	EPA 8260B	tert-Butyl alcohol	NPW	MN	
RCRP	EPA 8260B	tert-Butylbenzene	NPW	MN	
RCRP	EPA 8260B	tert-Butylbenzene	SCM	MN	
RCRP	EPA 8260B	Tetrachloroethylene (Perchloroethylene)	NPW	MN	
RCRP	EPA 8260B	Tetrachloroethylene (Perchloroethylene)	SCM	MN	
RCRP	EPA 8260B	Tetrahydrofuran (THF)	SCM	MN	
RCRP	EPA 8260B	Tetrahydrofuran (THF)	NPW	MN	
RCRP	EPA 8260B	Toluene	SCM	MN	
RCRP	EPA 8260B	Toluene	NPW	MN	
RCRP	EPA 8260B	trans-1,2-Dichloroethylene	SCM	MN	
RCRP	EPA 8260B	trans-1,2-Dichloroethylene	NPW	MN	
RCRP	EPA 8260B	trans-1,3-Dichloropropylene	NPW	MN	
RCRP	EPA 8260B	trans-1,3-Dichloropropylene	SCM	MN	
RCRP	EPA 8260B	trans-1,4-Dichloro-2-butene	SCM	MN	
RCRP	EPA 8260B	trans-1,4-Dichloro-2-butene	NPW	MN	
RCRP	EPA 8260B	Trichloroethene (Trichloroethylene)	SCM	MN	
RCRP	EPA 8260B	Trichloroethene (Trichloroethylene)	NPW	MN	
RCRP	EPA 8260B	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	NPW	MN	
RCRP	EPA 8260B	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	SCM	MN	
RCRP	EPA 8260B	Vinyl acetate	SCM	MN	
RCRP	EPA 8260B	Vinyl acetate	NPW	MN	
RCRP	EPA 8260B	Vinyl chloride	SCM	MN	
RCRP	EPA 8260B	Vinyl chloride	NPW	MN	
RCRP	EPA 8260B	Xylene (total)	SCM	MN	
RCRP	EPA 8260B	Xylene (total)	NPW	MN	

EPA 8260C

Preparation Techniques: Purge and trap; Extraction, EPA 1312 SPLP, zero headspace (ZHE); Extraction, EPA 1311 TCLP, zero headspace (ZHE);

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260C	1,1,1,2-Tetrachloroethane	SCM	MN	
RCRP	EPA 8260C	1,1,1,2-Tetrachloroethane	NPW	MN	
RCRP	EPA 8260C	1,1,1-Trichloroethane	NPW	MN	
RCRP	EPA 8260C	1,1,1-Trichloroethane	SCM	MN	
RCRP	EPA 8260C	1,1,2,2-Tetrachloroethane	NPW	MN	
RCRP	EPA 8260C	1,1,2,2-Tetrachloroethane	SCM	MN	
RCRP	EPA 8260C	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NPW	MN	
RCRP	EPA 8260C	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	SCM	MN	
RCRP	EPA 8260C	1,1,2-Trichloroethane	SCM	MN	
RCRP	EPA 8260C	1,1,2-Trichloroethane	NPW	MN	
RCRP	EPA 8260C	1,1-Dichloroethane	NPW	MN	
RCRP	EPA 8260C	1,1-Dichloroethane	SCM	MN	
RCRP	EPA 8260C	1,1-Dichloroethylene	SCM	MN	
RCRP	EPA 8260C	1,1-Dichloroethylene	NPW	MN	
RCRP	EPA 8260C	1,1-Dichloropropene	NPW	MN	
RCRP	EPA 8260C	1,1-Dichloropropene	SCM	MN	
RCRP	EPA 8260C	1,2,3-Trichlorobenzene	SCM	MN	
RCRP	EPA 8260C	1,2,3-Trichlorobenzene	NPW	MN	
RCRP	EPA 8260C	1,2,3-Trichloropropane	NPW	MN	
RCRP	EPA 8260C	1,2,3-Trichloropropane	SCM	MN	
RCRP	EPA 8260C	1,2,3-Trimethylbenzene	SCM	MN	
RCRP	EPA 8260C	1,2,3-Trimethylbenzene	NPW	MN	
RCRP	EPA 8260C	1,2,4-Trichlorobenzene	NPW	MN	
RCRP	EPA 8260C	1,2,4-Trichlorobenzene	SCM	MN	
RCRP	EPA 8260C	1,2,4-Trimethylbenzene	NPW	MN	
RCRP	EPA 8260C	1,2,4-Trimethylbenzene	SCM	MN	
RCRP	EPA 8260C	1,2-Dibromo-3-chloropropane (DBCP)	NPW	MN	
RCRP	EPA 8260C	1,2-Dibromo-3-chloropropane (DBCP)	SCM	MN	
RCRP	EPA 8260C	1,2-Dibromoethane (EDB, Ethylene dibromide)	SCM	MN	
RCRP	EPA 8260C	1,2-Dibromoethane (EDB, Ethylene dibromide)	NPW	MN	
RCRP	EPA 8260C	1,2-Dichlorobenzene	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260C	1,2-Dichlorobenzene	NPW	MN	
RCRP	EPA 8260C	1,2-Dichloroethane (Ethylene dichloride)	SCM	MN	
RCRP	EPA 8260C	1,2-Dichloroethane (Ethylene dichloride)	NPW	MN	
RCRP	EPA 8260C	1,2-Dichloropropane	SCM	MN	
RCRP	EPA 8260C	1,2-Dichloropropane	NPW	MN	
RCRP	EPA 8260C	1,3,5-Trimethylbenzene	NPW	MN	
RCRP	EPA 8260C	1,3,5-Trimethylbenzene	SCM	MN	
RCRP	EPA 8260C	1,3-Dichlorobenzene	NPW	MN	
RCRP	EPA 8260C	1,3-Dichlorobenzene	SCM	MN	
RCRP	EPA 8260C	1,3-Dichloropropane	SCM	MN	
RCRP	EPA 8260C	1,3-Dichloropropane	NPW	MN	
RCRP	EPA 8260C	1,4-Dichlorobenzene	NPW	MN	
RCRP	EPA 8260C	1,4-Dichlorobenzene	SCM	MN	
RCRP	EPA 8260C	1,4-Dioxane (1,4- Diethyleneoxide)	SCM	MN	
RCRP	EPA 8260C	1,4-Dioxane (1,4- Diethyleneoxide)	NPW	MN	
RCRP	EPA 8260C	2,2-Dichloropropane	NPW	MN	
RCRP	EPA 8260C	2,2-Dichloropropane	SCM	MN	
RCRP	EPA 8260C	2-Butanone (Methyl ethyl ketone, MEK)	SCM	MN	
RCRP	EPA 8260C	2-Butanone (Methyl ethyl ketone, MEK)	NPW	MN	
RCRP	EPA 8260C	2-Chloroethyl vinyl ether	NPW	MN	
RCRP	EPA 8260C	2-Chloroethyl vinyl ether	SCM	MN	
RCRP	EPA 8260C	2-Chlorotoluene	SCM	MN	
RCRP	EPA 8260C	2-Chlorotoluene	NPW	MN	
RCRP	EPA 8260C	2-Hexanone	SCM	MN	
RCRP	EPA 8260C	2-Hexanone	NPW	MN	
RCRP	EPA 8260C	2-Methylnaphthalene	NPW	MN	
RCRP	EPA 8260C	2-Methylnaphthalene	SCM	MN	
RCRP	EPA 8260C	2-Nitropropane	SCM	MN	
RCRP	EPA 8260C	2-Nitropropane	NPW	MN	
RCRP	EPA 8260C	4-Chlorotoluene	NPW	MN	
RCRP	EPA 8260C	4-Chlorotoluene	SCM	MN	
RCRP	EPA 8260C	4-Isopropyltoluene (p-Cymene)	SCM	MN	
RCRP	EPA 8260C	4-Isopropyltoluene (p-Cymene)	NPW	MN	
RCRP	EPA 8260C	4-Methyl-2-pentanone (MIBK)	NPW	MN	
RCRP	EPA 8260C	4-Methyl-2-pentanone (MIBK)	SCM	MN	
RCRP	EPA 8260C	Acetone	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260C	Acetone	SCM	MN	
RCRP	EPA 8260C	Acetonitrile	SCM	MN	
RCRP	EPA 8260C	Acetonitrile	NPW	MN	
RCRP	EPA 8260C	Acrolein (Propenal)	SCM	MN	
RCRP	EPA 8260C	Acrolein (Propenal)	NPW	MN	
RCRP	EPA 8260C	Acrylonitrile	SCM	MN	
RCRP	EPA 8260C	Acrylonitrile	NPW	MN	
RCRP	EPA 8260C	Allyl chloride (3-Chloropropene)	SCM	MN	
RCRP	EPA 8260C	Allyl chloride (3-Chloropropene)	NPW	MN	
RCRP	EPA 8260C	Benzene	SCM	MN	
RCRP	EPA 8260C	Benzene	NPW	MN	
RCRP	EPA 8260C	Benzyl chloride	NPW	MN	
RCRP	EPA 8260C	Benzyl chloride	SCM	MN	
RCRP	EPA 8260C	Bromobenzene	NPW	MN	
RCRP	EPA 8260C	Bromobenzene	SCM	MN	
RCRP	EPA 8260C	Bromochloromethane	NPW	MN	
RCRP	EPA 8260C	Bromochloromethane	SCM	MN	
RCRP	EPA 8260C	Bromodichloromethane	SCM	MN	
RCRP	EPA 8260C	Bromodichloromethane	NPW	MN	
RCRP	EPA 8260C	Bromoform	NPW	MN	
RCRP	EPA 8260C	Bromoform	SCM	MN	
RCRP	EPA 8260C	Carbon disulfide	SCM	MN	
RCRP	EPA 8260C	Carbon disulfide	NPW	MN	
RCRP	EPA 8260C	Carbon tetrachloride	NPW	MN	
RCRP	EPA 8260C	Carbon tetrachloride	SCM	MN	
RCRP	EPA 8260C	Chlorobenzene	SCM	MN	
RCRP	EPA 8260C	Chlorobenzene	NPW	MN	
RCRP	EPA 8260C	Chlorodibromomethane	SCM	MN	
RCRP	EPA 8260C	Chlorodibromomethane	NPW	MN	
RCRP	EPA 8260C	Chloroethane (Ethyl chloride)	NPW	MN	
RCRP	EPA 8260C	Chloroethane (Ethyl chloride)	SCM	MN	
RCRP	EPA 8260C	Chloroform	NPW	MN	
RCRP	EPA 8260C	Chloroform	SCM	MN	
RCRP	EPA 8260C	Chloroprene (2-Chloro-1,3-butadiene)	NPW	MN	
RCRP	EPA 8260C	Chloroprene (2-Chloro-1,3-butadiene)	SCM	MN	
RCRP	EPA 8260C	cis-1,2-Dichloroethylene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260C	cis-1,2-Dichloroethylene	SCM	MN	
RCRP	EPA 8260C	cis-1,3-Dichloropropene	NPW	MN	
RCRP	EPA 8260C	cis-1,3-Dichloropropene	SCM	MN	
RCRP	EPA 8260C	Di-isopropylether (DIPE)	SCM	MN	
RCRP	EPA 8260C	Di-isopropylether (DIPE)	NPW	MN	
RCRP	EPA 8260C	Dibromochloromethane	NPW	MN	
RCRP	EPA 8260C	Dibromochloromethane	SCM	MN	
RCRP	EPA 8260C	Dibromomethane (Methylene bromide)	SCM	MN	
RCRP	EPA 8260C	Dibromomethane (Methylene bromide)	NPW	MN	
RCRP	EPA 8260C	Dichlorodifluoromethane (Freon-12)	NPW	MN	
RCRP	EPA 8260C	Dichlorodifluoromethane (Freon-12)	SCM	MN	
RCRP	EPA 8260C	Diethyl ether	NPW	MN	
RCRP	EPA 8260C	Diethyl ether	SCM	MN	
RCRP	EPA 8260C	Ethyl acetate	NPW	MN	
RCRP	EPA 8260C	Ethyl acetate	SCM	MN	
RCRP	EPA 8260C	Ethyl methacrylate	SCM	MN	
RCRP	EPA 8260C	Ethyl methacrylate	NPW	MN	
RCRP	EPA 8260C	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)	SCM	MN	
RCRP	EPA 8260C	Ethylbenzene	SCM	MN	
RCRP	EPA 8260C	Ethylbenzene	NPW	MN	
RCRP	EPA 8260C	Hexachlorobutadiene	SCM	MN	
RCRP	EPA 8260C	Hexachlorobutadiene	NPW	MN	
RCRP	EPA 8260C	Hexachloroethane	SCM	MN	
RCRP	EPA 8260C	Hexachloroethane	NPW	MN	
RCRP	EPA 8260C	Iodomethane (Methyl iodide)	SCM	MN	
RCRP	EPA 8260C	Iodomethane (Methyl iodide)	NPW	MN	
RCRP	EPA 8260C	Isobutyl alcohol (2-Methyl-1-propanol)	SCM	MN	
RCRP	EPA 8260C	Isobutyl alcohol (2-Methyl-1-propanol)	NPW	MN	
RCRP	EPA 8260C	Isopropylbenzene	NPW	MN	
RCRP	EPA 8260C	Isopropylbenzene	SCM	MN	
RCRP	EPA 8260C	m+p-xylene	NPW	MN	
RCRP	EPA 8260C	m+p-xylene	SCM	MN	
RCRP	EPA 8260C	Methacrylonitrile	SCM	MN	
RCRP	EPA 8260C	Methacrylonitrile	NPW	MN	
RCRP	EPA 8260C	Methyl bromide (Bromomethane)	NPW	MN	
RCRP	EPA 8260C	Methyl bromide (Bromomethane)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260C	Methyl chloride (Chloromethane)	SCM	MN	
RCRP	EPA 8260C	Methyl chloride (Chloromethane)	NPW	MN	
RCRP	EPA 8260C	Methyl methacrylate	SCM	MN	
RCRP	EPA 8260C	Methyl methacrylate	NPW	MN	
RCRP	EPA 8260C	Methyl tert-butyl ether (MTBE)	SCM	MN	
RCRP	EPA 8260C	Methyl tert-butyl ether (MTBE)	NPW	MN	
RCRP	EPA 8260C	Methylcyclohexane	NPW	MN	
RCRP	EPA 8260C	Methylcyclohexane	SCM	MN	
RCRP	EPA 8260C	Methylene chloride (Dichloromethane)	NPW	MN	
RCRP	EPA 8260C	Methylene chloride (Dichloromethane)	SCM	MN	
RCRP	EPA 8260C	n-Butylbenzene	SCM	MN	
RCRP	EPA 8260C	n-Butylbenzene	NPW	MN	
RCRP	EPA 8260C	n-Heptane	NPW	MN	
RCRP	EPA 8260C	n-Heptane	SCM	MN	
RCRP	EPA 8260C	n-Hexane	NPW	MN	
RCRP	EPA 8260C	n-Hexane	SCM	MN	
RCRP	EPA 8260C	n-Propylbenzene	NPW	MN	
RCRP	EPA 8260C	n-Propylbenzene	SCM	MN	
RCRP	EPA 8260C	Naphthalene	SCM	MN	
RCRP	EPA 8260C	Naphthalene	NPW	MN	
RCRP	EPA 8260C	o-Xylene	NPW	MN	
RCRP	EPA 8260C	o-Xylene	SCM	MN	
RCRP	EPA 8260C	p-Isopropyltoluene	NPW	MN	
RCRP	EPA 8260C	p-Isopropyltoluene	SCM	MN	
RCRP	EPA 8260C	Propionitrile (Ethyl cyanide)	SCM	MN	
RCRP	EPA 8260C	Propionitrile (Ethyl cyanide)	NPW	MN	
RCRP	EPA 8260C	sec-Butylbenzene	SCM	MN	
RCRP	EPA 8260C	sec-Butylbenzene	NPW	MN	
RCRP	EPA 8260C	Styrene	SCM	MN	
RCRP	EPA 8260C	Styrene	NPW	MN	
RCRP	EPA 8260C	T-amylmethylether (TAME)	NPW	MN	
RCRP	EPA 8260C	T-amylmethylether (TAME)	SCM	MN	
RCRP	EPA 8260C	tert-Butyl alcohol	SCM	MN	
RCRP	EPA 8260C	tert-Butyl alcohol	NPW	MN	
RCRP	EPA 8260C	tert-Butylbenzene	NPW	MN	
RCRP	EPA 8260C	tert-Butylbenzene	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260C	Tetrachloroethylene (Perchloroethylene)	SCM	MN	
RCRP	EPA 8260C	Tetrachloroethylene (Perchloroethylene)	NPW	MN	
RCRP	EPA 8260C	Tetrahydrofuran (THF)	SCM	MN	
RCRP	EPA 8260C	Tetrahydrofuran (THF)	NPW	MN	
RCRP	EPA 8260C	Toluene	NPW	MN	
RCRP	EPA 8260C	Toluene	SCM	MN	
RCRP	EPA 8260C	trans-1,2-Dichloroethylene	SCM	MN	
RCRP	EPA 8260C	trans-1,2-Dichloroethylene	NPW	MN	
RCRP	EPA 8260C	trans-1,3-Dichloropropylene	SCM	MN	
RCRP	EPA 8260C	trans-1,3-Dichloropropylene	NPW	MN	
RCRP	EPA 8260C	trans-1,4-Dichloro-2-butene	SCM	MN	
RCRP	EPA 8260C	trans-1,4-Dichloro-2-butene	NPW	MN	
RCRP	EPA 8260C	Trichloroethene (Trichloroethylene)	NPW	MN	
RCRP	EPA 8260C	Trichloroethene (Trichloroethylene)	SCM	MN	
RCRP	EPA 8260C	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	SCM	MN	
RCRP	EPA 8260C	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	NPW	MN	
RCRP	EPA 8260C	Vinyl acetate	NPW	MN	
RCRP	EPA 8260C	Vinyl acetate	SCM	MN	
RCRP	EPA 8260C	Vinyl chloride	NPW	MN	
RCRP	EPA 8260C	Vinyl chloride	SCM	MN	
RCRP	EPA 8260C	Xylene (total)	SCM	MN	
RCRP	EPA 8260C	Xylene (total)	NPW	MN	

EPA 8260D

Preparation Techniques: Purge and trap; Extraction, EPA 1312 SPLP, zero headspace (ZHE); Extraction, EPA 1311 TCLP, zero headspace (ZHE);

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260D	1,1,1,2-Tetrachloroethane	NPW	MN	
RCRP	EPA 8260D	1,1,1,2-Tetrachloroethane	SCM	MN	
RCRP	EPA 8260D	1,1,1-Trichloroethane	NPW	MN	
RCRP	EPA 8260D	1,1,1-Trichloroethane	SCM	MN	
RCRP	EPA 8260D	1,1,2,2-Tetrachloroethane	SCM	MN	
RCRP	EPA 8260D	1,1,2,2-Tetrachloroethane	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260D	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	SCM	MN	
RCRP	EPA 8260D	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NPW	MN	
RCRP	EPA 8260D	1,1,2-Trichloroethane	SCM	MN	
RCRP	EPA 8260D	1,1,2-Trichloroethane	NPW	MN	
RCRP	EPA 8260D	1,1-Dichloroethane	SCM	MN	
RCRP	EPA 8260D	1,1-Dichloroethane	NPW	MN	
RCRP	EPA 8260D	1,1-Dichloroethylene	NPW	MN	
RCRP	EPA 8260D	1,1-Dichloroethylene	SCM	MN	
RCRP	EPA 8260D	1,1-Dichloropropene	NPW	MN	
RCRP	EPA 8260D	1,1-Dichloropropene	SCM	MN	
RCRP	EPA 8260D	1,2,3-Trichlorobenzene	NPW	MN	
RCRP	EPA 8260D	1,2,3-Trichlorobenzene	SCM	MN	
RCRP	EPA 8260D	1,2,3-Trichloropropane	NPW	MN	
RCRP	EPA 8260D	1,2,3-Trichloropropane	SCM	MN	
RCRP	EPA 8260D	1,2,3-Trimethylbenzene	NPW	MN	
RCRP	EPA 8260D	1,2,3-Trimethylbenzene	SCM	MN	
RCRP	EPA 8260D	1,2,4-Trichlorobenzene	NPW	MN	
RCRP	EPA 8260D	1,2,4-Trichlorobenzene	SCM	MN	
RCRP	EPA 8260D	1,2,4-Trimethylbenzene	SCM	MN	
RCRP	EPA 8260D	1,2,4-Trimethylbenzene	NPW	MN	
RCRP	EPA 8260D	1,2-Dibromo-3-chloropropane (DBCP)	SCM	MN	
RCRP	EPA 8260D	1,2-Dibromo-3-chloropropane (DBCP)	NPW	MN	
RCRP	EPA 8260D	1,2-Dibromoethane (EDB, Ethylene dibromide)	NPW	MN	
RCRP	EPA 8260D	1,2-Dibromoethane (EDB, Ethylene dibromide)	SCM	MN	
RCRP	EPA 8260D	1,2-Dichlorobenzene	SCM	MN	
RCRP	EPA 8260D	1,2-Dichlorobenzene	NPW	MN	
RCRP	EPA 8260D	1,2-Dichloroethane (Ethylene dichloride)	NPW	MN	
RCRP	EPA 8260D	1,2-Dichloroethane (Ethylene dichloride)	SCM	MN	
RCRP	EPA 8260D	1,2-Dichloropropane	SCM	MN	
RCRP	EPA 8260D	1,2-Dichloropropane	NPW	MN	
RCRP	EPA 8260D	1,3,5-Trimethylbenzene	SCM	MN	
RCRP	EPA 8260D	1,3,5-Trimethylbenzene	NPW	MN	
RCRP	EPA 8260D	1,3-Dichlorobenzene	SCM	MN	
RCRP	EPA 8260D	1,3-Dichlorobenzene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260D	1,3-Dichloropropane	SCM	MN	
RCRP	EPA 8260D	1,3-Dichloropropane	NPW	MN	
RCRP	EPA 8260D	1,4-Dichlorobenzene	SCM	MN	
RCRP	EPA 8260D	1,4-Dichlorobenzene	NPW	MN	
RCRP	EPA 8260D	1,4-Dioxane (1,4- Diethyleneoxide)	SCM	MN	
RCRP	EPA 8260D	1,4-Dioxane (1,4- Diethyleneoxide)	NPW	MN	
RCRP	EPA 8260D	2,2-Dichloropropane	SCM	MN	
RCRP	EPA 8260D	2,2-Dichloropropane	NPW	MN	
RCRP	EPA 8260D	2-Butanone (Methyl ethyl ketone, MEK)	SCM	MN	
RCRP	EPA 8260D	2-Butanone (Methyl ethyl ketone, MEK)	NPW	MN	
RCRP	EPA 8260D	2-Chloroethyl vinyl ether	SCM	MN	
RCRP	EPA 8260D	2-Chloroethyl vinyl ether	NPW	MN	
RCRP	EPA 8260D	2-Chlorotoluene	NPW	MN	
RCRP	EPA 8260D	2-Chlorotoluene	SCM	MN	
RCRP	EPA 8260D	2-Hexanone	NPW	MN	
RCRP	EPA 8260D	2-Hexanone	SCM	MN	
RCRP	EPA 8260D	2-Methylnaphthalene	SCM	MN	
RCRP	EPA 8260D	2-Methylnaphthalene	NPW	MN	
RCRP	EPA 8260D	2-Nitropropane	NPW	MN	
RCRP	EPA 8260D	2-Nitropropane	SCM	MN	
RCRP	EPA 8260D	4-Chlorotoluene	NPW	MN	
RCRP	EPA 8260D	4-Chlorotoluene	SCM	MN	
RCRP	EPA 8260D	4-Isopropyltoluene (p-Cymene)	NPW	MN	
RCRP	EPA 8260D	4-Isopropyltoluene (p-Cymene)	SCM	MN	
RCRP	EPA 8260D	4-Methyl-2-pentanone (MIBK)	NPW	MN	
RCRP	EPA 8260D	4-Methyl-2-pentanone (MIBK)	SCM	MN	
RCRP	EPA 8260D	Acetone	NPW	MN	
RCRP	EPA 8260D	Acetone	SCM	MN	
RCRP	EPA 8260D	Acetonitrile	SCM	MN	
RCRP	EPA 8260D	Acetonitrile	NPW	MN	
RCRP	EPA 8260D	Acrolein (Propenal)	NPW	MN	
RCRP	EPA 8260D	Acrolein (Propenal)	SCM	MN	
RCRP	EPA 8260D	Acrylonitrile	NPW	MN	
RCRP	EPA 8260D	Acrylonitrile	SCM	MN	
RCRP	EPA 8260D	Allyl chloride (3-Chloropropene)	NPW	MN	
RCRP	EPA 8260D	Allyl chloride (3-Chloropropene)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260D	Benzene	SCM	MN	
RCRP	EPA 8260D	Benzene	NPW	MN	
RCRP	EPA 8260D	Benzyl chloride	NPW	MN	
RCRP	EPA 8260D	Benzyl chloride	SCM	MN	
RCRP	EPA 8260D	Bromobenzene	SCM	MN	
RCRP	EPA 8260D	Bromobenzene	NPW	MN	
RCRP	EPA 8260D	Bromochloromethane	SCM	MN	
RCRP	EPA 8260D	Bromochloromethane	NPW	MN	
RCRP	EPA 8260D	Bromodichloromethane	NPW	MN	
RCRP	EPA 8260D	Bromodichloromethane	SCM	MN	
RCRP	EPA 8260D	Bromoform	NPW	MN	
RCRP	EPA 8260D	Bromoform	SCM	MN	
RCRP	EPA 8260D	Carbon disulfide	NPW	MN	
RCRP	EPA 8260D	Carbon disulfide	SCM	MN	
RCRP	EPA 8260D	Carbon tetrachloride	SCM	MN	
RCRP	EPA 8260D	Carbon tetrachloride	NPW	MN	
RCRP	EPA 8260D	Chlorobenzene	SCM	MN	
RCRP	EPA 8260D	Chlorobenzene	NPW	MN	
RCRP	EPA 8260D	Chlorodibromomethane	NPW	MN	
RCRP	EPA 8260D	Chlorodibromomethane	SCM	MN	
RCRP	EPA 8260D	Chloroethane (Ethyl chloride)	SCM	MN	
RCRP	EPA 8260D	Chloroethane (Ethyl chloride)	NPW	MN	
RCRP	EPA 8260D	Chloroform	NPW	MN	
RCRP	EPA 8260D	Chloroform	SCM	MN	
RCRP	EPA 8260D	Chloroprene (2-Chloro-1,3-butadiene)	NPW	MN	
RCRP	EPA 8260D	Chloroprene (2-Chloro-1,3-butadiene)	SCM	MN	
RCRP	EPA 8260D	cis-1,2-Dichloroethylene	NPW	MN	
RCRP	EPA 8260D	cis-1,2-Dichloroethylene	SCM	MN	
RCRP	EPA 8260D	cis-1,3-Dichloropropene	NPW	MN	
RCRP	EPA 8260D	cis-1,3-Dichloropropene	SCM	MN	
RCRP	EPA 8260D	Di-isopropylether (DIPE)	NPW	MN	
RCRP	EPA 8260D	Di-isopropylether (DIPE)	SCM	MN	
RCRP	EPA 8260D	Dibromomethane (Methylene bromide)	NPW	MN	
RCRP	EPA 8260D	Dibromomethane (Methylene bromide)	SCM	MN	
RCRP	EPA 8260D	Dichlorodifluoromethane (Freon-12)	NPW	MN	
RCRP	EPA 8260D	Dichlorodifluoromethane (Freon-12)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260D	Diethyl ether	NPW	MN	
RCRP	EPA 8260D	Diethyl ether	SCM	MN	
RCRP	EPA 8260D	Ethyl acetate	SCM	MN	
RCRP	EPA 8260D	Ethyl acetate	NPW	MN	
RCRP	EPA 8260D	Ethyl methacrylate	NPW	MN	
RCRP	EPA 8260D	Ethyl methacrylate	SCM	MN	
RCRP	EPA 8260D	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)	SCM	MN	
RCRP	EPA 8260D	Ethylbenzene	SCM	MN	
RCRP	EPA 8260D	Ethylbenzene	NPW	MN	
RCRP	EPA 8260D	Hexachlorobutadiene	NPW	MN	
RCRP	EPA 8260D	Hexachlorobutadiene	SCM	MN	
RCRP	EPA 8260D	Hexachloroethane	NPW	MN	
RCRP	EPA 8260D	Hexachloroethane	SCM	MN	
RCRP	EPA 8260D	Iodomethane (Methyl iodide)	NPW	MN	
RCRP	EPA 8260D	Iodomethane (Methyl iodide)	SCM	MN	
RCRP	EPA 8260D	Isobutyl alcohol (2-Methyl-1-propanol)	SCM	MN	
RCRP	EPA 8260D	Isobutyl alcohol (2-Methyl-1-propanol)	NPW	MN	
RCRP	EPA 8260D	Isopropylbenzene	NPW	MN	
RCRP	EPA 8260D	Isopropylbenzene	SCM	MN	
RCRP	EPA 8260D	m+p-xylene	SCM	MN	
RCRP	EPA 8260D	m+p-xylene	NPW	MN	
RCRP	EPA 8260D	Methacrylonitrile	SCM	MN	
RCRP	EPA 8260D	Methacrylonitrile	NPW	MN	
RCRP	EPA 8260D	Methyl bromide (Bromomethane)	SCM	MN	
RCRP	EPA 8260D	Methyl bromide (Bromomethane)	NPW	MN	
RCRP	EPA 8260D	Methyl chloride (Chloromethane)	NPW	MN	
RCRP	EPA 8260D	Methyl chloride (Chloromethane)	SCM	MN	
RCRP	EPA 8260D	Methyl methacrylate	NPW	MN	
RCRP	EPA 8260D	Methyl methacrylate	SCM	MN	
RCRP	EPA 8260D	Methyl tert-butyl ether (MTBE)	NPW	MN	
RCRP	EPA 8260D	Methyl tert-butyl ether (MTBE)	SCM	MN	
RCRP	EPA 8260D	Methylcyclohexane	SCM	MN	
RCRP	EPA 8260D	Methylcyclohexane	NPW	MN	
RCRP	EPA 8260D	Methylene chloride (Dichloromethane)	SCM	MN	
RCRP	EPA 8260D	Methylene chloride (Dichloromethane)	NPW	MN	
RCRP	EPA 8260D	n-Butylbenzene	NPW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260D	n-Butylbenzene	SCM	MN	
RCRP	EPA 8260D	n-Heptane	NPW	MN	
RCRP	EPA 8260D	n-Heptane	SCM	MN	
RCRP	EPA 8260D	n-Hexane	SCM	MN	
RCRP	EPA 8260D	n-Hexane	NPW	MN	
RCRP	EPA 8260D	n-Propylbenzene	NPW	MN	
RCRP	EPA 8260D	n-Propylbenzene	SCM	MN	
RCRP	EPA 8260D	Naphthalene	NPW	MN	
RCRP	EPA 8260D	Naphthalene	SCM	MN	
RCRP	EPA 8260D	o-Xylene	NPW	MN	
RCRP	EPA 8260D	o-Xylene	SCM	MN	
RCRP	EPA 8260D	Propionitrile (Ethyl cyanide)	SCM	MN	
RCRP	EPA 8260D	Propionitrile (Ethyl cyanide)	NPW	MN	
RCRP	EPA 8260D	sec-Butylbenzene	SCM	MN	
RCRP	EPA 8260D	sec-Butylbenzene	NPW	MN	
RCRP	EPA 8260D	Styrene	NPW	MN	
RCRP	EPA 8260D	Styrene	SCM	MN	
RCRP	EPA 8260D	T-amylmethylether (TAME)	SCM	MN	
RCRP	EPA 8260D	T-amylmethylether (TAME)	NPW	MN	
RCRP	EPA 8260D	tert-Butyl alcohol	NPW	MN	
RCRP	EPA 8260D	tert-Butyl alcohol	SCM	MN	
RCRP	EPA 8260D	tert-Butylbenzene	SCM	MN	
RCRP	EPA 8260D	tert-Butylbenzene	NPW	MN	
RCRP	EPA 8260D	Tetrachloroethylene (Perchloroethylene)	SCM	MN	
RCRP	EPA 8260D	Tetrachloroethylene (Perchloroethylene)	NPW	MN	
RCRP	EPA 8260D	Tetrahydrofuran (THF)	SCM	MN	
RCRP	EPA 8260D	Tetrahydrofuran (THF)	NPW	MN	
RCRP	EPA 8260D	Toluene	SCM	MN	
RCRP	EPA 8260D	Toluene	NPW	MN	
RCRP	EPA 8260D	trans-1,2-Dichloroethylene	NPW	MN	
RCRP	EPA 8260D	trans-1,2-Dichloroethylene	SCM	MN	
RCRP	EPA 8260D	trans-1,3-Dichloropropylene	SCM	MN	
RCRP	EPA 8260D	trans-1,3-Dichloropropylene	NPW	MN	
RCRP	EPA 8260D	trans-1,4-Dichloro-2-butene	SCM	MN	
RCRP	EPA 8260D	trans-1,4-Dichloro-2-butene	NPW	MN	
RCRP	EPA 8260D	Trichloroethene (Trichloroethylene)	SCM	MN	

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA 8260D	Trichloroethene (Trichloroethylene)	NPW	MN	
RCRP	EPA 8260D	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	SCM	MN	
RCRP	EPA 8260D	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	NPW	MN	
RCRP	EPA 8260D	Vinyl acetate	SCM	MN	
RCRP	EPA 8260D	Vinyl acetate	NPW	MN	
RCRP	EPA 8260D	Vinyl chloride	SCM	MN	
RCRP	EPA 8260D	Vinyl chloride	NPW	MN	
RCRP	EPA 8260D	Xylene (total)	SCM	MN	
RCRP	EPA 8260D	Xylene (total)	NPW	MN	

EPA RSK-175 (GC/FID)

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
RCRP	EPA RSK-175 (GC/FID)	Ethane	NPW	MN	
RCRP	EPA RSK-175 (GC/FID)	Ethene	NPW	MN	
RCRP	EPA RSK-175 (GC/FID)	Methane	NPW	MN	

Safe Drinking Water Program

EPA 537.1

Preparation Techniques: Extraction, solid phase (SPE);

Program	Method	Analyte	Matrix	Primary	SOP
SDWP	EPA 537.1	N-Ethylperfluorooctane sufonamido acetic acid NEtFOSAA)	DW	MN	
SDWP	EPA 537.1	N-Methylperfluorooctane sulfonamido acetic acid (N-MeFOSAA)	DW	MN	
SDWP	EPA 537.1	Perfluorobutane sulfonic acid (PFBS)	DW	MN	
SDWP	EPA 537.1	Perfluorodecanoic acid (PFDA)	DW	MN	
SDWP	EPA 537.1	Perfluorododecanoic acid (PFDOA)	DW	MN	
SDWP	EPA 537.1	Perfluoroheptanoic acid (PFHpA)	DW	MN	
SDWP	EPA 537.1	Perfluorohexane sulfonic acid (PFHxS)	DW	MN	
SDWP	EPA 537.1	Perfluorohexanoic acid (PFHxA)	DW	MN	
SDWP	EPA 537.1	Perfluorononanoic acid (PFNA)	DW	MN	

Program	Method	Analyte	Matrix	Primary	SOP
SDWP	EPA 537.1	Perfluorooctane sulfonic acid (PFOS)	DW	MN	
SDWP	EPA 537.1	Perfluorooctanoic acid (PFOA)	DW	MN	
SDWP	EPA 537.1	Perfluorotetradecanoic acid (PFTDA)	DW	MN	
SDWP	EPA 537.1	Perfluorotridecanoic acid (PFTrDA)	DW	MN	
SDWP	EPA 537.1	Perfluoroundecanoic acid (PFUDA)	DW	MN	

Underground Storage Tank Program

WI(95) DRO

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
USTP	WI(95) DRO	Diesel range organics (DRO)	SCM	MN	
USTP	WI(95) DRO	Diesel range organics (DRO)	NPW	MN	

WI(95) GRO

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
USTP	WI(95) GRO	Gasoline range organics (GRO)	SCM	MN	
USTP	WI(95) GRO	Gasoline range organics (GRO)	NPW	MN	

WI(95) GRO

Preparation Techniques: N/A

Program	Method	Analyte	Matrix	Primary	SOP
USTP	WI(95) GRO	Petroleum Volatile Organic Compounds (PVOC)	SCM	MN	
USTP	WI(95) GRO	Petroleum Volatile Organic Compounds (PVOC)	NPW	MN	

Note: Method beginning with "SM" refer to the approved editions of Standard methods for the Examination of Water and Wastes. Approved methods are listed in the applicable parts of Title 40 of the Code of Federal Regulations (including its subsequent Federal Register updates), MN Statutes and Rules, and state-issued permits.

Appendix IV
Job Qualification Records (JQRs)

Midwest Plant
Job Qualification Record
Utility – Final Treat Operator LG2

Employee Name: ____________________ **Division:** ____________________

Payroll Number: ____________________ **Areas:** ____________________

Job Functions: **Final Treat Operator**

Specific training requirements for each function are listed below.

==

	Trainer's Initials	Date:
(Final Treat Operator)		
Technical Skills		
Final Treat Process Flow Drwg	________	________
Outfalls Process Flow Drwg	________	________
Legal Responsibilities	________	________
Standard Operating Procedures (SOP'S)		
NSCS-M-P-7010-01 Release, Spills, Leaks, Dumps/Washdown	________	________
NSCS-M-P-7091-01 Final Treat Process Overview	________	________
NSCS-M-P-7091-02 Routine Inspection	________	________
NSCS-M-P-7091-04 Settleable Solids Test	________	________
NSCS-M-P-7091-06 Iron and Turbidity Test	________	________
NSCS-M-P-7091-07 pH Testing, pH Bird Baths, pH Cross Checks	________	________
NSCS-M-P-7091-09 Equalization Basins	________	________
NSCS-M-P-7091-10 Mix Tank and Coagulant Aid	________	________
NSCS-M-P-7091-12 Sedimentation Tank	________	________
NSCS-M-P-7091-14 Antifoam	________	________
NSCS-M-P-7091-15 Lime Slurry Tanks	________	________
NSCS-M-P-7091-17 Sulfuric Acid Storage Tank	________	________
NSCS-M-P-7091-18 Winterization	________	________
NSCS-M-P-7091-21 High Turbidity @ Outfall 104/004	________	________
NSCS-M-P-7091-22 Polymer System	________	________
NSCS-M-P-7091-27 Fisher Computer	________	________
NSCS-M-P-7091-30 Wastewater Flow Control	________	________
NSCS-M-P-7091-32 Chemtreat P817E…Unloading	________	________
NSCS-M-G-7091-01 Receiving Sulfuric Acid	________	________
NSCS-M-G-7091-02 Receiving Bulk Lime Slurry	________	________
NSCS-M-G-7091-04 Receiving Antifoam	________	________
NSCS-M-P-7093-02-32 Hexavalent Chrome Test (HACH)	________	________
NSCS-M-P-7093-02-47 Final Treat Process Control Practices	________	________

Midwest Plant
Job Qualification Record
Utility – Final Treat Operator LG2

	Trainer's Initials	Date:
Safe Job Procedures (SJP'S, SJG'S)		
UT02-01 Lime Slurry Rotodips	________	________
UT02-03 Lime Truck Unloading	________	________
UT02-25 Making Up Polymer Tank	________	________
UT02-28 Unloading Acid	________	________
UT02-29 Securing Sludge Sample	________	________
<u>On The Job Training</u>		
Work safely with an environmental awareness and concern in an industrial work Environment.	________	________
Observe, monitor and maintain all treatment plant conditions, and other UT facilities and review test information and make decisions on the proper operation and control of the various processes.	________	________
Handle sludges, oils, chemicals, and perform clean up, housekeeping, general labor duties.	________	________
Perform lab tests, secure samples of waste water, sludges, and chemicals and related monitoring.	________	________
Operate Fisher Computer System	________	________
Operate/ maintain mechanical equipment at North Final Treat.	________	________
<u>Written Reports</u>		
Log Sheet 7010-01 Release, Spills, Leaks, Dumps/Washdowns	________	________
Log Sheet 7091-01 Final Treat Daily Operating Report	________	________
Log Sheet 7091-10 Equal Basin and North End Skimming	________	________
Safety 0011 – Lock Placement and Verification Form	________	________
Log Sheet 7010-14 Utilities WWT Report	________	________

Midwest Plant
Job Qualification Record
Utility – Final Treat Operator LG2

	Trainer's Initials	Date:
Supplemental Training		
Basic Operator/Assist Maintenance Skills Training	_______	_______
Must be qualified and signed off as a UT Helper	_______	_______
Environmental Training for Final Treatment Operations	_______	_______

==

I verify that I have received the above training for the function of UT Final Treat Operator

Employee's Signature ________________________________ **Date** __________

This employee has been observed performing the above job and is qualified to perform the function of UT Final Treat Operator

Area Manager or Designee Signature ________________________________ **Date** __________

Midwest Plant
Job Qualification Record
Utility – Chrome Treatment Plant LG 3

Employee Name: ____________________________ **Division:** ____

Payroll Number: ____________________________ **Areas:** ____

Job Functions: **Pretreat Plant**

Upon completion of training for each function, check appropriate box and sign-off when employee has been observed performing a function above and is qualified/competent to perform this function.

Specific training requirements for each function are listed below.

===

	Trainer's Initials	Date:
(Operator Tech 1)		
Technical Skills		
Oil Waste Process Flow Drwg	________	________
Chrome Treat Process Flow Drwg	________	________
Outfalls Process Flow Drwg	________	________
Chemtreat Drawings Chrome	________	________
Standard Operating Procedures (SOP'S)		
NSCS-M-P-7010-01 Release, Spills, Leaks, Dumps/Washdown	________	________
NSCS-M-P-7093-02-01 Permission to Dump	________	________
NSCS-M-P-7093-02-03 Chrome Wastewater Treatment Plant Overview	________	________
NSCS-M-P-7093-02-08 pH Testing - Chrome Plant	________	________
NSCS-M-P-7093-02-11 Trench System	________	________
NSCS-M-P-7093-02-13 Oil Recovery System	________	________
NSCS-M-P-7093-02-17 ORP Analysis and Testing	________	________
NSCS-M-P-7093-02-18 Sulfuric Acid Unloading at Pretreat	________	________
NSCS-M-P-7093-02-19 Housekeeping	________	________
NSCS-M-P-7093-02-20 Winterizing Pretreat	________	________
NSCS-M-P-7093-02-26 Testing Conductivity	________	________
NSCS-M-P-7093-02-27 Vac Trucks Delivery Wastewater	________	________
NSCS-M-P-7093-02-32 Hexavalent Chrome Test Hach DR	________	________
NSCS-M-P-7093-02-35 Sodium Bisulfite, Unloading	________	________
NSCS-M-P-7093-02-39 Unloading-ChemTreat P841L, Tannin	________	________
NSCS-M-P-7093-02-40 Unloading-ChemTreat P8905L, PAC	________	________
NSCS-M-P-7093-02-41 Unloading-Chemtreat Inc BL126	________	________
NSCS-M-P-7093-02-42 Unknown High or Low Incoming pH, Strong Chrome, Unusual Wastewater	________	________
NSCS-M-G-7093-02-01 Receiving 66 Baumee Sulfuric Acid	________	________
NSCS-M-G-7093-02-04 Receiving 50% Caustic Soda	________	________
NSCS-M-G-7093-02-09 50% Caustic Soda Safety Handling	________	________
NSCS-M-G-7093-02-13 Receiving -ChemTreat P841L Tannin	________	________
NSCS-M-G-7093-02-14 Receiving - ChemTreat P8905L, PAC	________	________
NSCS-M-G-7093-02-15 Receiving - Sodium Bisulfite, Chemtreat BL-126	________	________
NSCS-M-P-7093-02-48 Chrome Treatment Process Control Practices	________	________

Midwest Plant
Job Qualification Record
Utility – Chrome Treatment Plant LG 3

	Trainer's Initials	**Date:**
Safe Job Procedures (SJP'S)		
UT04-09 First Response To A Virgin Acid Leak	________	________
UT04-10 Chrome Treat with Sodium Bisulfite	________	________
UT05-04 Closing 480 Volt Switch	________	________
UT05-05 Indexing Sludge Cake From Sludge Presses	________	________
UT05-07 Plate Washing	________	________
UT05-08 Cloth Washing Pump	________	________
UT05-09 Filter Press Lockout Procedure for Drip Trays	________	________
UT05-11 E-Stops	________	________
UT05-12 Filter Press Chute Cleaning	________	________
UT05-13 Filter Press Trough Cleaning	________	________
UT05-17 Changing Press Filter Cloths And Membranes	________	________
UT05-18 Indexing Sludge Cake From Sludge Presses	________	________
<u>On The Job Training</u>		
Work safely with an environmental awareness and concern in an industrial work Environment.	________	________
Function as lead treatment plant operator and provide decision making, problem solving, And leadership, to all of the treatment plant job positions on an as needed basis.	________	________
Observe, monitor and maintain all treatment plant conditions, other UT facilities and review test information and make decisions on the proper operation and control of the various processes.	________	________
Handle sludges, oils, chemicals, and perform clean up, housekeeping, general labor duties.	________	________
Perform lab tests, secure samples of waste water, sludges, and chemicals, and related monitoring.	________	________
Operate Fisher Provox Computer in manual and automatic control.	________	________
Operate/ maintain mechanical equipment at Pretreat.	________	________
Maintain records, interpret them, change and read chart recorders and respond to alarms.	________	________
<u>Written Reports</u>		
Log Sheet 7010-01 Release, Spills, Leaks, Dumps/Washdowns	________	________
Form 7093-03 Pretreat Log Sheet	________	________
Form 7093-10 Pretreat API Oily Wastewater Interceptor Log Sheet	________	________
Form 7093-15 Pretreat Chrome Press	________	________
Form 7010-14 Utilities WWT Report	________	________

Midwest Plant
Job Qualification Record
Utility – Chrome Treatment Plant LG 3

Supplemental Training

Basic Operator/Assist Maintenance Skills Training ________ ________

Must be Qualified as UT Helper ________ ________

Must be Qualified as Final Treat Operator ________ ________

Environmental Training Pretreatment Operations ________ ________

==

I verify that I have received the above training for the function of UT Pretreat Plant Operator.

Employee's Signature ______________________________________ **Date** _____________

This employee has been observed performing the above job and is qualified to perform the function of UT Pretreat Plant Operator.

Area Manager or Designee Signature ______________________________________ **Date** _____________

Form #: JQR-Utility LG 3 PTP
Revised: 4-14-20

Midwest Plant
Job Qualification Record
Utility – Sludge Dewater Plant LG 3

Employee Name: ___________________________ **Division:** ____

Payroll Number: ___________________________ **Areas:** ____

Job Functions: **Sludge Dewater Plant**

Upon completion of training for each function, check appropriate box and sign-off when employee has been observed performing a function above and is qualified/competent to perform this function.

Specific training requirements for each function are listed below.
===

(Operator Tech 1)

Technical Skills

	Trainer's Initials	Date:
Final Treat Process Flow Drwg	________	________
Sludge Dewater Process Flow Drwg	________	________
Chemtreat Drwg	________	________
Legal Responsibilities	________	________

Standard Operating Procedures (SOP'S)

	Trainer's Initials	Date:
NSCS-M-P-7010-01 Release, Spills, Leaks, Dumps/Washdown	________	________
NSCS-M-P-7094-01 Gravity Thickening	________	________
NSCS-M-P-7094-02 Filter Presses	________	________
NSCS-M-P-7094-03 Recording Turn Information	________	________
NSCS-M-P-7094-04 Basement Sludge Pumps	________	________
NSCS-M-P-7094-05 Safety	________	________
NSCS-M-P-7094-06 Testing pH	________	________
NSCS-M-P-7094-07 Percent Solids Test	________	________
NSCS-M-P-7094-09 Sludge Hauling	________	________
NSCS-M-P-7094-10 #1 and #2 Gravity Thickeners	________	________
NSCS-M-P-7094-11 Cake Thickness	________	________
NSCS-M-P-7094-14 Sludge Dewatering – Routine Inspection	________	________
NSCS-M-P-7094-16 Filter Cloth Replacement & Plate Clean.	________	________
NSCS-M-P-7094-18 Landfill Operation Perm. Waste Types	________	________
NSCS-M-P-7094-21 Bulk Hydrated Lime Unloading in Silo	________	________
NSCS-M-P-7094-24 Bulk Hydrated Lime Silo and Mix Tank	________	________
NSCS-M-G-7094-01 Receiving Bulk Hydrated Lime	________	________
NSCS-M-G-7094-02 Flow Meter for GPM from Final Treat	________	________
NSCS-M-P-7093-02-49 Sludge Dewatering Process Control Practices	________	________

Midwest Plant
Job Qualification Record
Utility – Sludge Dewater Plant LG 3

	Trainer's Initials	Date:
Safe Job Procedures (SJP'S, SJG'S)		
UT05-02 Entering Dewatering Pit, Thickener Valve Pits	_______	_______
UT05-03 Sludge Dewatering PLT - Hoists and Cranes	_______	_______
UT05-05 Indexing Sludge Cake From Sludge Presses	_______	_______
UT05-07 Plate Washing	_______	_______
UT05-08 Cloth Washing Pump	_______	_______
UT05-09 Filter Press Lockout Procedure for Drip Trays	_______	_______
UT05-10 Determining Sludge Levels in Thickeners	_______	_______
UT05-11 E-Stops	_______	_______
UT05-12 Filter Press Chute Cleaning	_______	_______
UT05-13 Filter Press Trough Cleaning	_______	_______
UT05-14 Valve Changes in Dewatering Plant Basement	_______	_______
UT05-17 Changing Press Filter Cloths And Membranes	_______	_______
UT05-18 Indexing Sludge Cake From Sludge Presses	_______	_______
UT05-19 North or South Press Bombay Doors	_______	_______
On The Job Training		
Work safely with an environmental awareness and concern in an industrial work Environment.	_______	_______
Function as lead treatment plant operator and provide decision making, problem solving, And leadership, to all of the treatment plant job positions on an as needed basis.	_______	_______
Observe, monitor and maintain all treatment plant conditions, other UT facilities and review test information and make decisions on the proper operation and control of the various processes.	_______	_______
Handle sludges, oils, chemicals, and perform clean up, housekeeping, general labor duties.	_______	_______
Perform lab tests, secure samples of waste water, sludges, chemicals, and related monitoring.	_______	_______
Operate/maintain mechanical equipment at Sludge Dewater or Assist Maintenance as required.	_______	_______

Form #: JQR-Utility LG 3 SDP
Revised: 4-14-20

Midwest Plant
Job Qualification Record
Utility – Sludge Dewater Plant LG 3

	Trainer's Initials	Date:
Maintain records, interpret them, change and read chart recorders and respond to alarms.	________	________

Written Reports

Log Sheet 7010-01 Release, Spills, Leaks, Dumps/Washdowns	________	________
Form 7094-02 Sludge Dewatering Plant Log Sheet	________	________

Supplemental Training

Basic Operator/Assist Maintenance Skills Training	________	________
Environmental Training as UT Helper	________	________
Environmental Training Final Treatment Operator	________	________
Environmental Training Sludge Dewatering Operator	________	________

I verify that I have received the above training for the function of UT Sledge Dewater Plant

Employee's Signature ______________________________ **Date** ____________

This employee has been observed performing the above job and is qualified to perform the function of UT Sledge Dewater Plant

Area Manager or Designee Signature ______________________________ **Date** ____________

Form #: JQR-Utility LG 3 SDP
Revised: 4-14-20

Midwest Plant
Job Qualification Record
Utilities – UT Helper - Labor Grade 2

Employee Name: ____________________________ **Division:** ____

Payroll Number: ____________________________ **Areas:** ____

Job Functions: **UT Helper**

Specific training requirements for each function are listed below.

===

	Trainer's Initials	Date:
(UT Helper – Utilities Department)		
Technical Skills		
Oil Separation Process Flow Drwg	______	______
Final Treat Process Flow Drwg	______	______
Outfalls - (Chemtreat/Drawings)	______	______
Legal Responsibilities	______	______
Standard Operating Procedures (SOP'S)		
NSCS-M-P-7010-01 Release, Spills, Leaks, Dumps/Washdown	______	______
NSCS-M-P-7093-02-13 Oil Recovery System	______	______
NSCS-M-P-7093-02-45 Oil Separation Process Overview	______	______
NSCS-M-P-7093-02-46 Oil Separation Process Control Practices	______	______
NSCS-M-P-7010-46 Alarms AE-1 and 2 Sewage Stations	______	______
NSCS-M-G-7091-04 Receiving Chemtreat FO120 Antifoam	______	______
NSCS-M-G-7091-06 Sulfuric Acid Safety and Handling	______	______
NSCS-M-P-7091-35 Unloading Chemtreat FO120 Antifoam	______	______
NSCS-M-P-7091-51 Barrel Pad Procedures	______	______
NSCS-M-P-7091-52 Cleaning with Safety Clean or Solvent	______	______
NSCS-M-P-7091-55 Chemtreat BL126 Unloading	______	______
NSCS-M-P-7091-56 Handling Oils and Chemicals Shipped	______	______
NSCS-M-P-7094-19 Greenbelt Landfill, Oily Waste Pad	______	______
Safe Job Procedures (SJP'S, SJG'S)		
UT01-01 Closing Large Valve	______	______
UT01-02 Closing Plug Valve	______	______
UT01-03 Shutting Steam Valves	______	______
UT01-04 Opening/ Closing Main Steam Valves	______	______
UT01-05 Steaming Out Gas Lines	______	______
UT01-15 Notification of Chemical Spill	______	______
UT01-16 Clean Up of Chemical Spill	______	______
UT01-21 Operation of Snow Blower	______	______
UT03-08 Cleaning with Solvent	______	______
UT03-09 Handling a Heavy Drum	______	______
UT03-10 Floor Washing	______	______
UT03-15 Fueling a Gasoline Driven Pump	______	______

Form #: JQR-Utility UT Helper LG2
Revised: 4-14-20

UT03-17 Incompatible Wastes ________ ________

	Trainer's Initials	Date:

On The Job Training

Skimming the Equalization Basins	________	________
Operate/ maintain mechanical equipment at Barrel Pad	________	________
Skimming the Pre-Treat Interceptor	________	________
Skimming the Sedimentation Basins	________	________
Equalization Basin Level Management	________	________
Chemical Handling	________	________
Chemtreat S101 Dilution and Mixing of Buk Delivery	________	________
Blowing out the Lime Lines to the Storage Tanks	________	________
Oily waste pad decanting	________	________
Cleaning the Scum and Oil Strainer	________	________
Greenbelt Flow Control/Valve Positioning	________	________
Decant Oil Storage Tank Final Treat	________	________
Decant Oil Storage Tank(s) Pre-Treat	________	________
Loading the Oil Tanker	________	________
Assist in miscellaneous duties assign by managers. (i.e. … fire watch)	________	________

Miscellaneous Requirements

Work safely with an environmental awareness and concern in an industrial work environment. ________ ________

Investigate production units and the Utilities Department for leaks and other anomalies. ________ ________

Assist with monitoring all treatment plant conditions. Maintain all UT facilities by review of information and make decisions on proper operation and control of the various processes. ________ ________

Information for consideration:

Sludge Samples, Blower Amp's, Iron Content, Mix Tank Air, Turbidity,
Chemical Feeds Pumps, EQ Basin pH (Basement), Lift Pumps, Mix Tank pH (Basement)
Cross Collectors, 104 Effluent, Skimmer Flight Drives, Final Effluent,
Wiers/Water Levels, Sludge Flow, Antifoam, Roto-Dips, Floc/Floculator Drives

Assist in miscellaneous duties assigned by managers and perform housekeeping duties including:

Roll up hoses, ________ ________
Assist Maintenance
Empty Trash as needed
Sweep as needed
Replace oil socks as needed
Maintain inventory as needed (Bottled water, paper towels, cups, etc)
Weed/Plant control as needed
Snow control as needed
Painting as directed

Midwest Plant
Job Qualification Record
Utilities – UT Helper - Labor Grade 2

	Trainer's Initials	Date:
Written Reports		
Form 7010-01 Release, Spills, Leaks, Dumps/Washdowns	________	________
Form 7091-10 Basin Skimming Log Sheet	________	________
Form 7093-10 Interceptor Log Sheet	________	________
Form 7010-14 Utilities WWT Report	________	________
Supplemental Training		
Basic Operator/Assist Maintenance Skills Training	________	________
Environmental Training for UT Helper Operations	________	________

I verify that I have received the above training for the function of UT HELPER

Employee's Signature ______________________________ **Date** __________

This employee has been observed performing the above job and is qualified to perform the function of UT HELPER

Area Manager or Designee Signature ______________________________ **Date** __________

Form #: JQR-Utility UT Helper LG2
Revised: 4-14-20

Attachment IV
Revised Consent Decree Section VII.12 Related Materials

Revised Consent Decree Section VII.12
Suggested Language for Renewed Permit

12. Hexavalent /Total Chromium Monitoring.

a. By no later than January 31, 2018, U. S. Steel shall sample Daily for total and hexavalent chromium at Outfalls 104 and 204. Hexavalent chromium shall be measured and reported as dissolved metal and total chromium shall be measured and reported as total recoverable metal. The hexavalent chromium sample type shall be grab method and the total chromium shall be by 24-hour composite. Sample analysis for hexavalent chromium shall be performed according to EPA Method 218.6 rev 3.3 (40 C.F.R. § 136.3, Table IB), and the analytical and sampling methods used shall comply with all other requirements specified in the Method and 40 C.F.R. § 136. The analytical and sampling methods used for total chromium shall comply with 40 C.F.R. § 136. U. S. Steel shall include the results of the Hexavalent/Total Chromium Monitoring in its Discharge Monitoring Reports ("DMRs") and Monthly Monitoring Reports ("MMRs") submitted pursuant to the Permit. Due to the nature of the process, there may be instances in which minimal flow occurs over a 24-hour period. During those events, when there is insufficient sample volume (or no sample at all), U. S. Steel shall document NODI code *F – Insufficient flow for sampling* on the DMR and MMR forms for that particular outfall and day. In the event that there is no flow during a 24-hour period, NODI code *C – No discharge* shall be used. Both codes will be deemed acceptable sampling events representative of the volume and nature of the discharge, and count towards the Daily sampling frequency.

b. U. S. Steel shall, at the time of renewal of its Permit, submit an application to IDEM for renewal that includes the requirements of Paragraph 12(a). U. S. Steel may request a change in monitoring frequency in the application, along with any supporting data.

Suggested Language for Renewed Permit
(Related to Revised Consent Decree Section VI.12)

VI.12.b of the Revised Consent Decree requires the permit renewal application to address the requirements related to hexavalent and total chromium monitoring prescribed by VI.12.a of the Revised Consent Decree (filed with the United States District Court for the Northern District of Indiana on 11/20/19). U. S. Steel formally requests incorporation of the VI.12.a requirements into the renewed permit and provides the following proposed revisions and suggested language for total and hexavalent chromium at Part I.A.4 and Part I.A.5 of the Permit.

- Revised monitoring frequency for total and hexavalent chromium from 5 x Weekly to Daily.
- Specific footnotes for Total Chromium
  - The permittee shall measure and report the identified metal in total recoverable metal.
- Specific footnotes for Hexavalent Chromium
  - Hexavalent Chromium shall be measured and reported as dissolved 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.
  - Hexavalent Chromium analysis shall be performed using EPA Method 218.6, revision 3.3 unless a different version is approved for use under 40 CFR 136.
- Footnotes for both Total and Hexavalent Chromium
  - In instances when there is insufficient sample volume (or no sample at all), the permittee shall document NODI code F (Insufficient flow for sampling) on the Discharge Monitoring Reports and Monthly Monitoring Reports for the impacted outfall. Appropriate use of this code will be deemed an acceptable event and count towards the required daily sampling frequency.
  - In instances when there is no flow during a 24-hour period, the permittee shall document NODI code C (No Discharge) on the Discharge Monitoring Reports and Monthly Monitoring Reports for the impacted outfall. Appropriate use of this code will be deemed an acceptable event and count towards the required daily sampling frequency.

VI.12.a also requires inclusion of language to ensure the analytical and sampling methods for both total and hexavalent comply with 40 CFR 136. The language in Part I.C.4 of the current permit already addresses this requirement: “The analytical and sampling methods used shall conform to the current version of 40 CFR 136.”

VI.12.b also allows for U. S. Steel to request a revised monitoring frequency as part of the permit application. At this time, U. S. Steel is not requesting a reduction in monitoring frequency but does request that specific reopening clause be included in the renewed permit that the permittee to request a performance-based reduction in the required monitoring frequency for total and hexavalent chromium.

INDUSTRIAL STREAMLINED MERCURY VARIANCE (SMV) APPLICATION
State Form 52111 (5-05)
Approved by State Board of Accounts, 2005
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Indiana Department of Environmental Management
Office of Water Quality – Mail Code 65-42
NPDES Permits Branch
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

PART ONE: General Information

Name of Facility U.S. Steel Midwest Plant		
Facility Address 6300 US Highway 12		
City or Town Portage		
State Indiana	ZIP Code 46368	County Lake
National Pollutant Discharge Elimination System (NPDES) Permit No.: IN0000337		
Name of Person in Responsible Charge Ladislav Halaj		
Title Plant Manager		
Address 6300 US Highway 12		
City or Town Portage		
State Indiana	ZIP Code 46368	
Name of Primary Contact Person Brandon Miller		
Address One North Broadway		
City or Town Gary		
State Indiana	ZIP code 46402	Telephone No. 219.888.3369
E-mail Address (if available) bsmiller@uss.com		
NPDES Outfall(s) Affected by Streamlined Mercury Variance Request: 004		
Receiving Stream(s) Affected by Streamlined Mercury Variance Request: Burns Waterway		
Average Daily Flow: Outfall 04 = 14.6 MGD long term avg, 17.4 MGD maximum monthly avg, 19.5 MGD daily max (Apr 2016 – Oct 2020)		
Provide a brief description of all operations contributing to the permitted discharge(s): See Section 1.3 of the PMPP		

SIGNATURE BLOCK

This application must be signed by a person in responsible charge (see 327 IAC 5-2-22) to be valid. This signature attests to the following:

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.

Printed Name Ladislav Halaj	Title Plant Manager
Signature	Date Signed *(month, day, year)* 02/05/2021

Return the completed SMV application package (Parts I - V) and $50 application fee (see IC 13-18-20-12(a)(4)) to mailing address listed above.

PART TWO – POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) INVENTORY/IDENTIFICATION

A. Provide a preliminary inventory of potential uses and sources of mercury in all buildings and departments, as well as a preliminary identification of known mercury-bearing equipment, wastestreams, and mercury storage sites. The following checklist* includes many of the chemicals, equipment, locations, etc. where mercury may be present at your site. For the purpose of satisfying the requirements of this section, you may submit the completed checklist as a preliminary inventory/identification. While the checklist is intended to facilitate the inventory/identification process, it should not be considered as all-inclusive for purposes of establishing a complete inventory. *(see 327 IAC 5-3.5-9(a)(1) and 327 IAC 5-3.5-9(a)(2))*

LABORATORY EQUIPMENT

☐ Manometers	☐ Ion exchange cartridges for lab water purification system
☐ Barometers	☐ Hanging mercury drop electrodes for polarographic analyzers
☐ Thermometers	☐ Mercury Hallow Cathode lamp for AA analysis

LABORATORY CHEMICALS

☐ COD analysis reagent *(mercuric sulfate)*	☐ Mercury or mercurous chloride
☐ TKN and TP analysis digestion reagents	☐ Mercury iodide
☐ Nessler reagent	☐ Mercury nitrate
☐ Mercury analytical standards	☐ Mercury (II) oxide
☐ Gas chromatograph sample interferences *(elemental mercury)*	☐ Mercury (II) sulfate
☐ Sodium hypochlorite *(Clorox)*	☐ Merthiolate

BULK CHEMICALS

☐ Phosphorus removal chemicals	☒ Chlorine
☒ Dechlorination chemicals	☒ Sodium hypochlorite
☒ Sludge thickening polymers	☒ Sulfuric acid
☐ Potassium hydroxide	☐ Nitric acid
☒ Sodium hydroxide	☒ Ferric or ferrous chloride
☒ Sodium chloride	☐ Pickling liquor *(for phosphorus removal)*

PROCESS CONTROL AND MEASURING EQUIPMENT

☐ Accustats	☐ Ring balances
☐ Barometers	☐ Shunt trips
☐ Counterweights	☐ Steam flow meters
☐ Elemental mercury for refilling mercury-containing equipment	☐ Stokes gauges
	Switches and relays:
☐ Flow meters	☐ Displacement plunger relays
☐ Gas regulators and meters	☐ Mercoid control switches
☐ Gyroscopes	☐ Pressure control switches *(mounted on bourdon tube or diaphragm)*
☐ Hydrometers with thermometers	☐ Relay switches
☐ Level and rotation sensors	☐ Mercury wetted relays
☐ Manometers, pressure gauges and vacuum gauges	☐ Mercury displacement relays (found in motors)
☐ Mercury-sealed pistons	☐ Sump pump, bilge pump and other float controls
☐ Permeters	☐ Tilt switches
☐ Pressure-trols	☐ Thermometers *(including industrial dial face thermostats with capillary tubes)*
☐ Pyrometers	☐ Thermostats and thermoregulators
☐ Rectifiers	☐ Transmitters

BUILDINGS

☐ DC watt-hour meters	Hydronic and warm air controls with tilt switches such as:
☐ Flame sensors *(found in the pilot light and burner assembly on gas-fired furnaces, boilers, unit heaters and space heaters)*	☐ Aquastats
	☐ Pressurestats
	☐ Firestats
	☐ Fan limit controls
* This checklist was borrowed from the Delta Institute	☐ Pressure/flow controls on air handling units.

PART TWO (CONTINUED)

BUILDINGS *(continued)*	
Switches and relays:	
☐ Fire alarm box switches	☐ Mercury displacement relays *(found in lighting, resistance heating and motors)*
☐ Silent light switches	
☐ Relay switches	☐ Sump pump, bilge pump, flow monitor, float switches, and other float controls
☐ Mercury wetted relays	
	☐ Tilt switches
Phosphorus removal chemicals:	
☐ Ferric or ferrous chloride	
☐ Pickling liquor	
☐Thermostats	
BEARINGS AND SEALS	
☐ Trickling filter Pivot Arm Bearings *(mercury bearings/water seals)*	
LAMPS	
☒ Fluorescent	☒ Mercury vapor lamps
☒ High-pressure sodium	☒ Metal halide
☐ Mercury arc	☐ Ultraviolet disinfection
BATTERIES	
☒ Mercury-zinc *(button)* batteries	☒ Mercury alkaline batteries
☒ Mercury-cadmium batteries	☒ Mercury oxide batteries
PAINT	
☐ Old latex-paint (pre-1990)	☐ Marine paint
FIRST AID/MEDICAL	
☐ Mercurochrome	☐ Thermometers
☐ Sphygmomanometers	☐ Thimerosal *(contained in eye wash)*
OTHER	
☐ Old pesticides, fungicides and herbicides	☐ Fleet vehicles may contain ABS, convenience and trunk lighting switches and HID headlamps
☐ Tree root growth control products	
☒ Computer monitors	
COLLECTION SYSTEM	
☐ Lift station equipment	☐ Sewer lines with accumulated mercury
☐ Traps with accumulated mercury	☐ Other mercury containing equipment
☐ Sumps with accumulated mercury	☐ Mercury-containing chemicals used and/or stored on-site
MERCURY STORAGE SITES	
☐ Elemental mercury	☐ Mercury-containing items collected for disposal

B. Provide a plan and schedule for providing a complete inventory initiated under Section A. above. *(see 327 IAC 5-3.5-9(a)(1))* The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application.

A complete inventory should include an estimate of quantities *(i.e., volume of chemicals used annually, or numbers of mercury containing equipment)* for each item identified in Part II.A. Additionally, a complete inventory should include documentation from chemical suppliers and equipment suppliers of the mercury content in your most commonly purchased items. Mercury may not be present in a concentration great enough to appear on an MSDS, yet still contribute to the overall level of mercury in the influent.

See PMPP

* This checklist was borrowed from the Delta Institute

PART THREE - POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) PLANNED ACTIVITIES

A. Provide a list of planned activities to be conducted to eliminate or minimize the release of mercury to waters of the state. The list of planned activities may consider technical and economic feasibility and must include, at a minimum: *(see 327 IAC 5-3.5-9(a)(3))*

1. A review of purchasing policies and procedures.

See PMPP

2. Necessary training and awareness for facility staff.

See PMPP

3. Evaluation of alternatives to the use of any mercury-containing equipment or materials.

See PMPP

4. Other specific activities designed to reduce or eliminate mercury loadings.

See PMPP

5. An identification of the facility's responsibilities under P.L.225-2001 *(also known as House Enrolled Act 1901 of the 2001 legislative session)*. P.L.225-2001 outlines the restrictions on the sale or supply of mercury-added novelties, mercury-added products, and mercury commodities, and on the use or purchase of mercury commodities, compounds, or mercury-added instructional equipment and materials by public and non-public schools. In order to satisfy the requirement of this part, include a written statement that attests to the fact that an identification of the responsibilities under P.L.225-2001 has been undertaken.

See PMPP

B. For each planned activity identified under section A. above, include the following: *(see 327 IAC 5-3.5-9(a)(4))*

1. The goal to be accomplished.

See PMPP

2. A measure of performance.

See PMPP

3. A schedule for action. The schedule required under this part should be expressed in terms of months from the date of NPDES permit issuance, renewal, or modification that incorporates the approved SMV. It is recommended that the schedule required under this part be developed in conjunction with the other schedules for action required by the SMV application.

See PMPP

C. Provide an identification of the resources and staff necessary to implement the Pollutant Minimization Program Plan (PMPP). *(see 327 IAC 5-3.5-9(a)(6))* The identification should indicate the source and amount of funding available to implement the PMPP, as well as the number and position of employees that will be devoted to PMPP implementation.

See PMPP

PART FOUR – MERCURY MONITORING DATA

Provide all available influent and effluent mercury data for the two-year period preceding submittal of this application. Additionally, provide any information on mercury in biosolids for the two-year period preceding submittal of this application, if available. The data may be supplied on a separate form, but must include results for each individual sample *(including unit of measurement and U.S. EPA method)*, the date the sample was taken, and the analytical laboratory where the analysis was performed. *(see 327 IAC 5-3.5-9(a)(5))*

Influent

Date *(month, day, year)*	Result	ng/l	U.S. EPA Method	Analytical Laboratory
See Attachment IV of PMPP				

PART FOUR (CONTINUED)

Effluent

Date *(month, day, year)*	Result	ng/l	U.S. EPA Method	Analytical Laboratory
See Attachment IV of PMPP				

Biosolids

Date *(month, day, year)*	Result	Unit	U.S. EPA Method	Analytical Laboratory
No mercury monitoring of relevant biosolids associated with this outfall.				

PART FIVE – POLLUTANT MINIMIZATION PROGRAM PLAN (PMPP) ADDITIONAL REQUIREMENTS

A. <u>Proof of Public Notice Activities</u>: Provide proof of the public notice activities identified below: ***(see 327 IAC 5-3.5-9(c))***
For the notice of availability required under Section A.1. provide a copy of the notice as it appears in the newspaper. For the posting requirements under Section A.2. attest to that fact that the information was posted as required in a written statement.

1. Publish notice of the availability of the draft pollutant minimization program plan (PMPP) in a daily or weekly newspaper of general circulation throughout the area affected by the discharge.

2. Post a copy of the information required by this section at the following:

   a. Principal office of the municipality or political subdivision affected by the facility or discharge.
   b. The United States post office.
   c. If one is available, the library serving those premises.

3. All notices published under this section shall contain the following information: *(see 327 IAC 5-3.5-9(d))*

   a. The name and address of the applicant that prepared the PMPP.
   b. A general description of the elements of the PMPP.
   c. A brief description of the activities or operations that result in the discharge for which an SMV is being requested.
   d. A brief description of the purpose of this notice and the comment procedures.
   e. The name of a contact person, a mailing address, an Internet address, if available, and a telephone number where interested persons may obtain additional information and a copy of the PMPP.

   See PMPP

4. The applicant shall do the following: *(see 327 IAC 5-3.5-9(e))*

   a. Provide a minimum comment period of thirty (30) days.
   b. Include a copy of the comments received and the applicant's responses to those comments in the SMV application submitted to the department.

B. <u>Annual Reports:</u> Provide a schedule for the submission of the annual reports required under 327 IAC 5-3.5-9(a)(8). Generally, the annual reports should be submitted each year on the anniversary of the effective date of the NPDES permit that incorporates the approved SMV. A proposed schedule with an alternative submittal date is subject to IDEM's approval. The annual reports shall include a description of the facility's progress toward fulfilling each PMPP requirement, mercury monitoring results, and steps taken to implement each planned activity developed under the PMPP.

See PMPP

United States Steel Corporation
1350 Penn Ave. – Suite 200
Pittsburgh, PA 15222

Tishie Woodwell
Vice President – Environmental Affairs

MEMORANDUM

To: Individuals in Positions Identified Below

From: Tishie Woodwell

Date: September 30, 2020

Re: Authority to Sign Applications, Reports, and Other Information Requests

Individuals in the following positions are hereby delegated the authority to submit applications under 327 IAC 5-2-22(a)(1)(B) of the Indiana Administrative Code. Individuals in these positions are authorized to make management decisions that govern the operation of the regulated facility including having explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations. Individuals in these positions can furthermore ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements.

Facility	Responsible Corporate Officer Title
Midwest Plant	Plant Manager

Individuals in the following positions are hereby designated as duly authorized representatives under 327 IAC 5-2-22(b) of the Indiana Administrative Code. Individuals in these positions are responsible for the overall operation of their regulated activity and they may certify all reports required by permits, and other information requested under the federal Clean Water Act and under the rules administered and implemented by the Water Pollution Control Division of the Department of Environmental Management.

Facility	Duly Authorized Representative Title
Gary Works	Director, Environmental Environmental Engineer

Midwest Plant	Director, Environmental Environmental Engineer
East Chicago Tin	Director, Environmental Environmental Engineer

Tishie Woodwell

Tishie Woodwell

115 Hillcrest Rd.
Ogden Dunes, IN 46368

June 16, 2021

Jennifer Elliot
Office of Water Quality/NPDES Permits Branch
100 N Senate Ave
Indianapolis, IN 46204-2251

RE: Town of Ogden Dunes Comments on NPDES # IN0000337

Dear Ms. Elliot:

Thank you for the opportunity for the Town of Ogden Dunes to provide comments on the major NPDES draft permit renewal for NPDES # IN0000337 at the United States Steel Corporation – Midwest Plant, 6300 U.S. Highway 12, Portage, IN 46368.

The Town of Ogden Dunes is located less than one mile west of the U.S. Steel Midwest facility. As a downstream user from the facility, the town has a vested interest in these proceedings and has been carefully reviewing the draft permit and Fact Sheet.

The Indiana American Water Co. intake that supplies drinking water to our town through the Ogden Dunes Waterworks was closed as a preventative measure during the 2017 spill into Burns Waterway. An estimated 350 pounds of total chromium and 300 pounds of hexavalent chromium dumped into Burns Waterway was a serious and frightening incident, and our residents will not forget it any time soon.

While we are pleased that the recently released Agreed Order with IDEM puts U.S. Steel Midwest on the road to compliance with IDEM and addresses some of their violations, the town is very dismayed that this permit is in the process of being renewed while the Consent Decree with the Department of Justice remains unsigned. We believe that the permit should include a statement that indicates that if the final signed Consent Decree is different from the one used to draft the permit that the permit be immediately modified to reflect any changes. Nevertheless, we would like to thank the permit writers for at least making sure items promised in the current unsigned Consent Decree were addressed in the draft permit.

The town also wants to make sure the permit clearly addresses spill response measures required by 327 IAC 2-6.1-7(5) that require U.S. Steel Midwest, upon discovery of a reportable spill to the soil or surface waters of the state, to exercise due diligence and document all attempts to notify all affected downstream users, not just IDEM or the National Response Center. We appreciate what appears to have been better coordination with our Fire Chief, Eric Kurtz, this past two years, and we hope those calls are now part of an improving culture of compliance.

On page 27, item (4), the draft permit indicates that: "Contact information must be in locations that are readily accessible and available." It is our belief that potentially affected downstream users, like the Town of Ogden Dunes, should be listed in the permit and not just "readily accessible and available." If that change cannot be accommodated, then perhaps change the wording to "readily accessible via electronic communication with hard copy back up located in a designated area."

On page 29 of the draft permit, paragraph 6 a. should be revised to add the underlined sentence below:

> 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. <u>In addition, the facility must take reasonable steps to minimize or prevent the discharge of pollutants until a solution is found</u>:

On page 32 of the draft permit, an Annual Routine Facility Inspection is required to be undertaken while a discharge is occurring. The permit directs U.S. Steel Midwest on how to document the findings and where to maintain them. However, a requirement should also be added to send this documentation to IDEM or to make it available during an IDEM inspection.

On page 69 of the draft permit, item # 7, Availability of Reports, the permit should indicate that the documents will be available through the IDEM Virtual File Cabinet for public inspection.

U.S. Steel Midwest has applied for and received a Streamlined Mercury Variance (SMV) described starting on p. 77 of the draft permit. They made this application in anticipation of not being able to meet the final limitations for mercury. On page 61 of the Fact Sheet, IDEM states that the goal of SMVs is to reduce effluent levels of mercury towards, and achieve "as soon as practicable, compliance with the mercury Water Quality Based Effluent Limitations (WQBELs) through implementation of a pollutant minimization program." The words "as soon as practicable" are somewhat troubling. We would prefer to see a compliance schedule.

Also, the SMV is new to this permit. We are curious if SMVs used at other facilities have actually helped them meet WQBELs for mercury?

The diagrams on pages 8-9 of the Fact Sheet should be provided to IDEM in a better resolution. They are of especially poor quality when enlarged.

The Fact Sheet provides detail on U.S. Steel's previous violations starting on page 13. This demonstrates a longstanding and persistent pattern of admitted CWA violations, maintenance failures, and environmental neglect at U. S. Steel's Midwest Plant, a pattern that preceded and postdated it. We hope that a strong draft permit will help stop this pattern of environmental neglect.

Thank you for adding monitoring requirements at Outfall 004 for Hexavalent Chromium, as indicated on page 19 of the Fact Sheet. On page 26 of the Fact Sheet, it states that IDEM is now requiring daily sampling for total chromium and hexavalent chromium. Thank you for recognizing that these changes were needed.

On page 27 of the Fact Sheet, IDEM indicates that U.S. Steel Midwest has requested a re-opening clause to reduce monitoring in the future. We believe this request should be denied as U.S. Steel has not earned the right to this clause. Perhaps five years from now when this permit is renewed, but not within this permit.

Also, on page 27 of the Fact Sheet, IDEM stated that the monitoring frequencies for silver, cadmium, nickel and lead have decreased from 2 X Monthly to 1 X Monthly. How this decision was made is explained on page 17 of the Fact Sheet where it states that "the results of the reasonable potential statistical procedure were used to help establish monitoring frequency."

We desire to understand how that procedure works and whether both numeric and narrative criteria were considered in the analysis. This is another monitoring frequency that should not be rolled back, in our opinion.

On page 33 of the Fact Sheet, the permittee has requested and provided justification for a sixty (60) month compliance schedule. IDEM believes that this is a reasonable amount of time to comply with the new water quality-based effluent limitation. The 60-month schedule of compliance has been included in Part I.G. of the permit. Why does IDEM believe this is a "reasonable amount of time?"

One final note: To assist users in finding references to specific items in the permit, we believe it would be helpful to have a Table of Contents for the NPDES permit itself. The Fact Sheet has one, why not the permit? This should become standard for all IDEM permits.

In conclusion, we strongly believe the DOJ, IDEM and the EPA must remedy the violations described in the Consent Decree as-soon-as-possible, hopefully prior to issuance of this permit.

Sincerely,

Doug Cannon
President
Ogden Dunes Town Council

cc: Ogden Dunes Environmental Advisory Board
Senator Karen Tallian

ALLIANCE FOR THE GREAT LAKES・ENVIRONMENTAL LAW & POLICY CENTER・HOOSIER ENVIRONMENTAL COUNCIL・IZAAK WALTON LEAGUE ・ NATIONAL PARKS CONSERVATION ASSOCIATION・ SAVE THE DUNES・SURFRIDER FOUNDATION

Comments on US Steel Midwest - Draft NPDES Permit No. IN0000337

June 17, 2021

Richard Hamblin, Permit Manager
IDEM/OWQ/NPDES/PS
100 N Senate Ave., Room 1255
Indianapolis, IN 46204

Dear Mr. Hamblin:

On behalf of our members and supporters the National Parks Conservation Association, Alliance for the Great Lakes, Environmental Law & Policy Center, Hoosier Environmental Council, Izaak Walton League, Save the Dunes, and the Surfrider Foundation respectfully submit these comments concerning the National Pollutant Discharge Elimination System (NPDES) Draft Permit Number IN0000337 (Draft Permit) issued by the Indiana Department of Environmental Management (IDEM) to United States Steel Corporation (USS) for its Midwest Works facility in Portage, Indiana.

Strong enforcement of the goals and tenets of the NPDES program is essential to the health of the people, wildlife, waters, and landscapes of the Great Lakes. With 85 percent of America's fresh surface water, the Great Lakes are a national and international treasure, providing drinking water, jobs, and recreation to more than 40 million United States citizens.

Indiana Dunes National Park, located immediately adjacent to the USS Midwest facility, is especially vulnerable to diminished water quality. The Congressionally mandated purpose of Indiana Dunes National Park, the very reason the park was established, is "to preserve for the educational, inspirational, and recreational use of the public certain portions of the Indiana dunes and other areas of scenic, scientific, and historic interest and recreational value."[1] Indiana Dunes features a variety of natural and cultural features, some of which are globally rare, including dune pannes located at Portage Lakefront, the park site closest to the USS Midwest facility. More than two million people visit Indiana Dunes each year to experience its beaches, waters, and trails. Failure to hold USS accountable at its Midwest site through strong NPDES permitting puts visitor health and safety at risk and endangers the Park Service mission to protect Indiana Dunes in perpetuity.

As IDEM is aware, past violations by USS Midwest have necessitated enforcement action by both IDEM and the US Environmental Protection Agency (EPA). While the results of the government complaint against USS and the Clean Water Act citizen suit brought by the City of Chicago and the Surfrider Foundation are pending, IDEM must take the necessary steps to ensure the protection of Lake Michigan,

[1] See 16 U.S.C. 460u.

Indiana Dunes National Park, and the millions of people who rely on these places for clean drinking water, quality of life, and recreation.

We, the undersigned organizations, have significant concerns with Draft NPDES Permit Number IN0000337 and recommend a series of changes as detailed below. This permit, as currently constructed, is excessively deferential to a facility with a long history of permit violations. Attached to this letter is a technical memorandum completed by CEA Engineers, PC, that further elaborates our concerns.

Consent Decree Consistency

We appreciate that IDEM has included in the Draft Permit the elements of the 2019 proposed consent decree related to wastewater process and facility maintenance and operations planning. However, IDEM must incorporate into the Draft Permit a reopening clause requiring the permit's immediate revision following the finalization of the consent decree.

The goal of the NPDES permitting program is to eliminate pollutant discharges through reasonable and effective measures. Likewise, the goal of the 2019 revised consent decree proposed by the government is to ensure USS Midwest compliance with the NPDES program and the Clean Water Act.[2] The decree goes further to define what the government believes is necessary in successor permits to ensure compliance, including revisions to the 2016 NPDES permit under which USS Midwest has been operating. IDEM did not require, and the Midwest facility did not request, modification of the 2016 NPDES permit to incorporate all facets of the proposed consent decree.

This Draft Permit was submitted in October 2020, three and a half years after the April 2017 spill, during which USS Midwest spilled nearly forty times the legal limit of toxic hexavalent chromium into Burns Waterway and Lake Michigan, and two years after the entry of the 2018 proposed consent decree. As a result, the requirements of the current 2016 NPDES permit differ from those of the consent decrees despite the stated objective of both decrees to bring the Midwest facility into compliance with the 2016 NPDES permit.

Failure to modify the 2016 NPDES Permit expeditiously contravenes the goal of the NPDES permitting program and is not protective of the water quality and beneficial uses of the natural resources surrounding the Midwest facility, including Indiana Dunes and Lake Michigan. The absence of a final consent decree should not disincentivize IDEM and USS Midwest from acting expeditiously to take steps beyond good faith implementation of consent decree requirements to reach compliance with the CWA and NPDES program.

The Draft Permit must be modified to include a requirement for immediate modification of the Midwest facility's NPDES Permit to be inclusive of, and consistent with, any future consent decrees, court orders, or enforcement actions entered into by US Steel. If the consent decree is finalized in its current form, IDEM will have already implemented the required, but insufficient, changes to bring USS Midwest into compliance. If the decree is altered, this added reopening clause will ensure that the permit is consistent with the final version.

Public Notification

The spill/release and notification provisions of the 2019 revised consent decree, entitled "Midwest Facility Spill/Release Evaluation and External Reporting Requirements," should be incorporated into the NPDES permit.

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[2] USDC IN/ND case 2:18-cv-00127, *United States of America and the State of Indiana v. United States Steel Corporation*, Lodged Consent Decree, April 2, 2018, Page 4.

In October 2017, USS discharged illegal amounts of chromium without notifying the public in a timely manner, leaving park recreators, including kayakers, surfers, and other water users, completely unaware of any risk to their health. IDEM cited USS for giving an "unsatisfactory" notification of its May 2019 oil violation, describing their statement as "not timely," "not directed to potentially affected downstream users," and "misleading." To further limit the impacts of potential violations, USS should be required to directly notify the public promptly of violations, such as by installing signs visible to water recreation areas and by providing digital notification to those who request it.

Chromium Monitoring

The Draft Permit should be revised to eliminate the reopening clause that would allow for the potential reduction of hexavalent and total chromium sampling frequency. Such a clause must not be considered until US Steel applies for renewal of its NPDES permit in five years and has demonstrated a proven track record of effective operation and maintenance (O&M) of its wastewater treatment facilities. This conclusion must be evidenced by cessation of NPDES permit violations for operations and maintenance inadequacies, total chromium discharge violations, and hexavalent chromium violations.

The US Steel Midwest facility has not demonstrated such improvements. The facility exceeded its total chromium limit in October 2017 and hexavalent chromium limits in January 2017, October 2017, and October 2019. US Steel has had continued O&M issues with its treatment facilities and violated the current NPDES Permit five times between May 2019 and December 2019 due to O&M inadequacies in its wastewater treatment facilities.

Based on continued compliance issues with hexavalent chromium limits and improper wastewater treatment facility O&M, IDEM should reject the inclusion of this reopening clause.

Streamlined Mercury Variance

The Draft Permit must be revised to eliminate the streamlined mercury variance as currently drafted. IDEM should require that the Midwest facility achieves the water quality-based effluent limits for mercury determined by IDEM's Reasonable Potential Analysis in a defined time period.

As our attached analysis notes, water quality-based effluent limits (WQBEL) are "intended to protect receiving waters of industrial discharges to allow for their beneficial use and are required for any pollutant determined to have a reasonable potential to exceed the water quality criteria of the receiving water."[3] In this case, the receiving waters are Burns Waterway and nearby Lake Michigan, used by boaters, anglers, and swimmers.

IDEM determined that discharges at the Midwest facility present the reasonable potential to exceed water quality criteria and therefore would adversely impact Burns Waterway and disallow its full beneficial use. The approach to determining the Interim Mercury Limit is inconsistent with the overall goal of the NPDES permitting program of eliminating, or at least minimizing, pollutant discharges. At a minimum, IDEM should institute reductions in the Interim Mercury Limit over the term of the Draft NPDES Permit that approach the WQBELs to provide an impetus for US Steel to take the necessary action to reduce mercury discharges from the Midwest facility.

Whole Effluent Toxicity

The Draft Permit should be revised to include stricter chronic toxicity effluent limit to discharges from Outfall 001. In addition, IDEM should require Whole Effluent Toxicity testing for acute and chronic toxicity while the Midwest facility is under its compliance schedule for toxicity reduction.

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[3] IDEM NPDES Permit IN0000337 Fact Sheet, page 16.

Failure to require this testing and adherence to the water quality-based effluent limits for acute and chronic toxicity reduces the incentive for USS Midwest to identify and remediate the source of toxicity as soon as possible, since there are no potential penalties or corrective actions resulting from NPDES permit effluent violations until September 2023. Considering the potential for adverse water quality impacts resulting from toxic discharges to Burns Waterway, the potential exists for USS Midwest to continue discharging toxic effluent through September 2023 with all of the accompanying potential adverse impacts to the environment and public.

Metal Sampling Frequencies
IDEM should not reduce the sampling frequency for the metals determined to require water quality-based effluent limits.

Based on the recent, ongoing NPDES permit violations and compliance issues by USS Midwest in achieving copper effluent limits and improper wastewater treatment facility maintenance, a sampling frequency reduction is unjustified. A reduction in sampling frequency relaxes the Midwest facility's permit compliance requirements and potential for identifying effluent limit violations potentially causing adverse impacts to the environment and public. Identification of effluent limit violations, especially for the copper daily maximum concentration effluent limit which has consistently been violated, are an impetus for corrective actions, such as improving facility operations and implementing treatment technologies capable of meeting effluent limits.

Fish Impingement
IDEM should make two changes to the Draft Permit to limit impacts to the Lake Michigan fishery and Indiana Dunes wildlife. First, IDEM should require US Steel to verify the intake velocity of the cooling water intake through in-stream velocity monitoring and not rely on calculations based on assumptions that are potentially not representative of actual conditions, consistent with US EPA's best technology available. In addition, IDEM should require US Steel to submit a full 316(b) application inclusive of all information required to confirm that these US EPA requirements are being met and that the potential for adverse impacts to fish and aquatic species from the cooling water intake are adequately reduced. Without these changes, the Draft Permit places Lake Michigan's nearshore fishery at risk.

Formaldehyde Compliance
IDEM should not permit the Midwest facility to operate under the formaldehyde compliance schedule as currently constituted.

In the application for this Draft Permit, US Steel requested a sixty-month compliance schedule for the formaldehyde effluent limits and provided IDEM information to justify its request. IDEM determined that sixty months was a reasonable amount of time to achieve the water quality-based effluent limit but provided no basis in the Draft NPDES Permit Fact Sheet to support its determination. IDEM needs to include the information provided by US Steel for justification for its compliance schedule request and its basis for acceptance in the Draft NPDES Permit Fact Sheet to allow the public to be able to fully understand and evaluate the potential threats to the environment and local residents resulting from formaldehyde discharges from the Midwest facility and implementation of the compliance schedule as currently drafted.

Conclusion
Indiana Dunes National Park and Lake Michigan are among America's most treasured places, underscored by the stewardship of the National Park Service, the more than two million people who visit Indiana Dunes every year. The Draft Permit must go further to ensure our natural resources, park visitors, and area residents are well protected now and into the future. Thank you for the opportunity to comment.

Respectfully submitted,

Colin Deverell
Midwest Program Manager
National Parks Conservation Association

Anna-Lisa Castle
Water Policy Manager
Alliance for the Great Lakes

Kiana Courtney & Jeff Hammons
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Technical Evaluation Report

Date: June 15, 2021; Revised June 16, 2021

To: Colin Deverell, Midwest Program Manager, National Parks Conservation Association

From: Kevin Draganchuk, P.E., BCEE

Re: US Steel Midwest Plant Draft NPDES Permit – Revision 1

CEA Engineers, P.C. Job No.: J21-11

At the request of National Parks Conservation Association, ("NPCA"), CEA Engineers, P.C. ("CEAPC") evaluated the draft National Pollutant Discharge Elimination System ("NPDES") Draft Permit Number IN0000337 issued April 19, 2021, ("Draft NPDES Permit"), by the State of Indiana Department of Environmental Management ("IDEM") to United States Steel Corporation ("US Steel") to authorize discharges from its industrial facility located in Portage, Indiana ("Midwest Plant") to the Portage-Burns Waterway ("PBW") for compliance with the November 20, 2019, Revised Consent Decree between the State of Indiana ("Indiana") and United States of America ("USA") and US Steel, Case No. 2:18 cv-00127 ("Revised CD"), consistency with recommendations made by NPCA in June 2018 and July 2018 regarding the April 2, 2018, Proposed Consent Decree between Indiana and USA and US Steel ("Proposed CD"), consistency with permitting best practices, and to identify the potential to adverse impacts to the environment and public.

Executive Summary

CEA Engineers, P.C. ("CEAPC") evaluated the draft National Pollutant Discharge Elimination System Draft Permit Number IN0000337 issued April 19, 2021, ("Draft NPDES Permit"), by IDEM to US Steel to authorize discharges from its Portage, Indiana industrial facility ("Midwest Plant") to the Portage-Burns Waterway ("PBW"). PBW is adjacent Indiana Dunes National Park and ultimately discharges to Lake Michigan. CEAPC evaluated the Draft NPDES Permit for consistency with the revised CD lodged in November 2019 in response to a catastrophic spill of chromium containing wastewater in April 2017, comments provided by NPCA in June and July 2018 on the proposed CD lodged in April 2018, and permitting best practices, and to identify the potential to adverse impacts to the environment and public. US Steel is also under an Agreed Order with IDEM related to numerous violations since November 2018 of its current NPDES Permit.

As a result of its evaluation, CEAPC identified numerous shortcomings in the Draft NPDES Permit, including, but not limited to: failure to ensure consistency with court orders US Steel enters into during the life of the Draft NPDES Permit; issuance of a Streamlined Mercury Variance that is lenient, provides little impetus for US Steel to comply with mercury effluent limits determined to be protective of water quality in PBW, and allows US Steel to continue discharging excessive levels of mercury to its receiving waters; suspension of whole effluent toxicity testing despite the fact that the Midwest Plant had multiple violations in 2020 of its chronic and acute toxicity effluent limits and is required by IDEM to complete a toxicity reduction evaluation; relaxation in the required water quality based effluent limit monitoring frequencies for cadmium, copper, lead, nickel, and silver from bi-monthly to monthly despite numerous recent wastewater treatment facility operational violations and copper daily maximum effluent limit violations; permitting US Steel to request a future reduction in total chromium and hexavalent chromium despite recent numerous recent violations of its total chromium and hexavalent chromium effluent limits; implementation of a lenient compliance schedule for a newly issued effluent limit for formaldehyde that fails to provide impetus for expeditious compliance by US Steel; failures to adequately implement the USEPA's best available technology requirements for preventing fish impingement in its cooling water intake structure ("CWIS"); failure to request from US Steel and include in the Draft NPDES Permit Fact Sheet justification for US Steel's assertions that fish impingement at the CWIS is not a concern; and, failures to include information necessary for the public to adequately ascertain the efficacy of the Draft NPDES Permit and its protectiveness of the environment and public.

CEAPC recommends changes to the Draft NPDES Permit consistent with remedying the shortcomings identified in its evaluation in order to achieve the intended purpose of the NPDES permitting program of reducing pollutant discharges, to allow PBW to achieve its beneficial uses, and to be protective of the environment and public.

<u>Background</u>

The US Steel Midwest Plant is located along the shores of Lake Michigan adjacent to Indiana Dunes National Park ("Indiana Dunes") and discharges non-contact cooling water, treated process wastewaters, and stormwater through permitted outfalls to PBW, which subsequently discharges to Lake Michigan, an Indiana outstanding state water resource located within Indiana Dunes, an aquatic protected area. The Midwest Plant's current NPDES Permit expired March 31, 2021, ("Current NPDES Permit").[1] US Steel submitted a NPDES permit renewal and streamlined mercury variance application to IDEM in October 2020 for the Midwest Plant. IDEM issued the Draft NPDES Permit on April 19, 2021.[2,34]

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1 State of Indiana Department of Environmental Management, Authorization to Discharge under the National Pollutant Discharge Elimination System, United States Steel Corporation – Midwest Plant, Permit No. IN0000337, April 1, 2016. (Hereafter, "Current NPDES Permit")

2 Indiana Department of Environmental Management, Public Notice No. 20210419-IN0000337, April 19, 2021. (Hereafter, "IDEM Public Notice")

3 Indiana Department of Environmental Management, National Pollutant Discharge Elimination System Fact Sheet for United States Steel Corporation Midwest Plant, Draft: April 2021. (Hereafter, "Fact Sheet").

4 CEAPC is explicit in referring to a specific NDPES Permit for the Midwest Plant by using the terms "Draft NPDES Permit" and "Current NPDES Permit." When discuss requirements under both permits or in discussion of general NPDES permitting, CEAPC uses the term "NPDES permit(s)".

On April 11, 2017, US Steel discharged process wastewater containing excessive pollutant levels including, but not limited to, chromium and hexavalent chromium into PBW ("April 2017 Spill"). Inspections by United States Environmental Protection Agency ("USEPA") in April 2017 following the April 2017 spill identified numerous deficiencies resulting in adverse environmental impacts to PBW, Indiana Dunes, and Lake Michigan, including NPDES permit effluent limit exceedances, narrative water quality standard ("WQS") violations, monitoring violations, reporting violations, inadequacies in operation and maintenance ("O&M") at the Midwest Plant, and deficiencies in the stormwater pollution prevention plan ("SWPPP") for the Midwest Plant. As a result of the April 2017 Spill and USEPA inspections, the Proposed CD was lodged to remedy the impacts of the April 2017 Spill and prevent similar events in the future. The Revised CD in the matter was subsequently lodged in November 2019, but has not been entered into by the Court as of the issuance of the Draft NPDES Permit or the writing of this Technical Report.[5]

NPCA provided comments on the Proposed CD on June 4, 2018, ("June 2018 Comments") and supplemental comments on July 18, 2018, ("July 2018 Supplemental Comments") regarding numerous concerns related to the ability of the Proposed CD and its compliance requirements to bring the Midwest Plant into compliance with all state and federal environmental laws intended to protect public resources and to prevent future NPDES permit violations, the potential for incidents like the April 2017 Spill, the potential for adverse environmental impacts to Indiana Dunes, PBW, and Lake Michigan, and potential losses to the public resulting from beach closures and environmental degradation caused by incidents like the April .2017 Spill.[6,7] NPCA filed an amicus brief in opposition to the Revised CD in March 2021.[8]

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5 Attachment A, In the United States District Court for the Northern District of Indiana Hammond Division, United States of America and the State of Indiana, v. United States Steel Corporation, Revised Consent Decree, Case No. 2:18 cv-00127, November 20, 2019. (Hereafter, "Revised CD")

6 Earthrise law center, Comments Proposed Consent Decree, United States et al. v. United States Steel Corporation, D.J. Ref. No. 90-5-2-1-06476/2, submitted by National Parks Conservation Association, June 4, 2018. (Hereafter, "NPCA June 2018 Comments")

7 Earthrise law center, Supplemental Comments Proposed Consent Decree, United States et al. v. United States Steel Corporation, D.J. Ref. No. 90-5-2-1-06476/2, submitted by National Parks Conservation Association, July 20, 2018. (Hereafter, "NPCA July 2018 Supplemental Comments")

8 In the United States District Court for the Northern District of Indiana, United States of America and the State of Indiana, Plaintiffs, City of Chicago and the Surfrider Foundation, Intervenor-Plaintiffs v. United States Steel Corporation, Case No. 2:18 cv-00127, National Parks Conservation Association [Proposed] Amicus Curiae Brief in Opposition to Entry of Revised Consent Decree, December 26, 2019. (Hereafter, "NPCA Amicus Brief").

Midwest Plant Permitted Outfalls

The Midwest Plan discharges from permitted outfalls to PBW that require monitoring under its NPDES permits including:[9,10]

- Outfall 002 – discharges non-contact cooling water
- Outfall 003 – discharges non-contact cooling water and stormwater from 20 acres
- Outfall 004 – discharges non-contact cooling water, process wastewater effluent and stormwater from 24.25 acres
- Outfall 104 – internal outfall that discharges process wastewater
- Outfall 204 – internal outfall that discharges process wastewater
- Outfall 304 – internal outfall that discharges process wastewater combined from 104 and 204
- Outfall 006 – created to report cooling water intake data
- Outfall 500 – created as the temperature compliance point and is located at the edge of the mixing zone in PBW

IDEM Agreed Order

Due to numerous Current NPDES Permit and IDEM inspection violations between November 2018 and December 2020, the Midwest Plant entered into an Agreed Order ("AO") with IDEM on May 11, 2021.[11] Table 1 summarizes the violations contained in the AO.

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9 Fact Sheet, page 6.

10 State of Indiana Department of Environmental Management, Authorization to Discharge under the National Pollutant Discharge Elimination System, United States Steel Corporation – Midwest Plant, DRAFT Permit No. IN0000337, April 19, 2021. (Hereafter, "Draft NPDES Permit")

11 Indiana Department of Environmental Management, Adoption of Agreed Order, Case No. 2019-26434-W, Case No. 2019-26665-W, May 11, 2021. (Hereafter, "IDEM AO")

Table 1 - Summary of IDEM AO Violations at Midwest Plant

Date	Outfall	Standard	Pollutant
11/28/2018	Outfall 004	narrative visual	foam and scum
12/18/2018	Outfall 004	narrative visual	foam
5/9/2019	Outfall 004	narrative visual	turbid, discolored effluent; visible sheen and solids
5/9/2019	Outfall 004	public notification	
5/9/2019	Outfall 004	minimize environmental impacts	sulfuric acid
5/9/2019	Outfall 004	provide information to IDEM	sulfuric acid
5/9/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	solids
5/30/2019	Outfall 003	narrative visual	foam
8/8/2019	Outfall 004	narrative visual	oil sheen
8/20/2019	Outfall 004	narrative visual	oil sheen
8/20/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	oil
8/29/2019	Outfall 004	maximum daily concentration effluent limit	copper
9/6/2019	Outfall 004	narrative visual	oil sheen
9/6/2019	Outfall 004	public notification	
9/6/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	oil
9/6/2019	Outfall 004	maintain a current Operations Manual for Final Treatment	
9/6/2019	Outfall 500	reporting	hourly maximum temperature
9/18/2019	Outfall 004	narrative visual	oil sheen
10/13/2019	Outfall 004	maximum daily concentration effluent limit	copper
10/30/2019	Outfall 204/ Outfall 004	minimize environmental impacts	hexavalent chromium
10/30/2019	Outfall 304	maximum daily load effluent limit	hexavalent chromium
10/31/2019	Outfall 004	narrative visual	oil sheen
11/21/2019	Outfall 004	narrative visual	oil sheen and solids
12/3/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	
12/10/2019	Outfall 004	maintain in good working order and efficiently operate all facilities and systems	
8/31/2020	Outfall 004	whole effluent toxicity	toxicity
9/30/2020	Outfall 004	whole effluent toxicity	toxicity
10/26/2020	Outfall 104	monitoring	
11/14/2020	Outfall 004	maximum daily concentration effluent limit	copper
11/28/2020	Outfall 004	maximum daily concentration effluent limit	copper
12/20/2020	Outfall 004	maximum daily concentration effluent limit	cyanide

Revised CD

The Revised CD includes the following NPDES permit related requirements:

- Paragraph 10(f) - US Steel shall, at the time of renewal of its NPDES permit and as part of its application for renewal, submit to IDEM the most current O&M Plan and the renewal application shall include a request that the renewed NPDES permit contain the requirements to develop, implement, and review the O&M Plan as required by Paragraphs 10(a)-(e) of the Revised CD.
- Paragraph 11(c): US Steel shall complete installation of the USEPA and IDEM approved wastewater treatment works monitoring technologies and equipment and begin operating the approved wastewater process monitoring.
- Paragraph 11(d): US Steel shall incorporate visual inspection and maintenance of the USEPA and IDEM approved wastewater process monitoring equipment into its O&M Plan.
- Paragraph 11(e): US Steel shall maintain the results of the approved wastewater process monitoring in accordance with its NPDES permit and shall make such records available to USEPA and IDEM upon request.
    - *CEAPC Comment:* The Draft NPDES Permit includes the requirements of Paragraphs 10(f), 11(c), 11(d), and 11(e) . US Steel submitted with its application the April 15, 2020, 7th Revision of its Wastewater Treatment O&M Manual and Preventive Maintenance Program Plan ("O&M Plan 7th Revision"). Part VI of the Draft NPDES Permit requires implementation and compliance with O&M Plan 7th Revision or future revisions, as required by Paragraph 10 of the Revised CD.[12,13] The Draft NPDES Permit includes requirements for monitoring and reporting records and their provision as required by IDEM and USEPA that are reasonable.[14]
- Paragraph 12(a): By January 31, 2018, US Steel shall perform daily sampling for total and hexavalent chromium at Outfalls 104 and 204.
    a. Hexavalent chromium shall be collected as grab samples for dissolved metals analysis
    b. Total chromium as shall be collected as a 24-hour composite for total recoverable metals analysis

12 Fact Sheet, pages 33-34.
13 Draft NPDES Permit, page 80.
14 Draft NPDES Permit, pages 23 and page 61.

Results must be reported in the DMRs and MMRs submitted pursuant to the NPDES permit.[15]

- *CEAPC Comment:* The Draft NPDES Permit meets all the requirement of paragraph 12(a) regarding hexavalent chromium and total chromium sampling frequency at outfalls 104 and 204 by implementation of daily sampling.[16] Considering the impacts of the April 2017 Spill, the fact that the Midwest Plant exceeded its total chromium limit in October 2017 and hexavalent chromium limits in January 2017, October 2017, and October 2019 at Outfall 304, and the fact that the Midwest Plant has had continued O&M issues with its treatment facilities and violated the Current NPDES Permit five times between May 2019 and December 2019 due to O&M inadequacies in its wastewater treatment facilities, daily sampling for total chromium and hexavalent chromium is reasonable and consistent for identifying potential NPDES permit effluent limit violations and their resulting deleterious effects on PBW.[17,18]

- Paragraph 12(b): US Steel shall, at the time of renewal of its NPDES permit, apply to IDEM for renewal that includes the requirements of Paragraph 12(a) of the Revised CD. US Steel may request a change in monitoring frequency in the application, along with any supporting data.
  - *CEAPC Comment:* US Steel did not request a change in total chromium and hexavalent chromium monitoring frequencies in its application for the Draft NPDES Permit, however, it did request and was granted by IDEM a request for inclusion of a reopening clause in the Draft NPDES Permit that can result in a future relaxation in total chromium and hexavalent chromium effluent monitoring frequencies.[19] US Steel exceeded its total chromium limit in October 2017 and hexavalent chromium limits in January 2017, October 2017, and October 2019 at Outfall 304.[20,21] US Steel has had continued O&M issues with its treatment facilities and violated the Current NPDES Permit five times between May 2019 and December 2019 due to O&M inadequacies in its wastewater treatment

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15 According to Paragraph 12 of the Revised CD, "Due to the nature of the process, there may be instances in which minimal flow occurs over a 24-hour period. During those events, when there is insufficient sample volume (or no sample at all), U. S. Steel shall document NODI code *F – Insufficient flow for sampling* on the DMR and MMR forms for that particular outfall and day. In the event that there is no flow during a 24-hour period, NODI code *C – No discharge* shall be used. Both codes will be deemed acceptable sampling events representative of the volume and nature of the discharge, and count towards the Daily sampling frequency."

16 Draft NPDES Permit, pages 12-14.

17 Fact Sheet, page 27.

18 Indiana Department of Environmental Management, Adoption of Agreed Order, Case No. 2019-26434-W, Case No. 2019-26665-W, May 11, 2021. (Hereafter, "IDEM AO")

19 Fact Sheet, page 27.

20 *Ibid.*

21 IDEM AO.

facilities.[22] Based on continued compliance issues with hexavalent chromium limits and improper wastewater treatment facility O&M, IDEM should reject the request for reopening that would allow for the potential reduction of hexavalent and total chromium sampling frequency at outfalls 104, 204, and 304 until US Steel applies for renewal of its NPDES permit in five years and has demonstrated a proven track record of effective operation and maintenance of it wastewater treatment facilities evidenced by cessation of NPDES permit violations for O&M inadequacies, total chromium discharge violations, and hexavalent chromium violations. Table 1 contains a list of the Midwest Plant's NPDES permit violations from the IDEM Administrative Order.

- Paragraph 30: US Steel must submit all reports required by its NPDES permit to IDEM and USEPA.
    - *CEAPC Comment:* Section C of the Draft NPDES Permit, Monitoring and Reporting, adequately includes the requirements of Paragraph 30 of the Revised CD.[23]

CEAPC Comment

The Draft NPDES Permit does include the requirements of the Revised CD, however, the Revised CD has not been entered by the Court and is potentially subject to change. The Draft Permit does not include a provision requiring immediate modification of the Midwest Plant's NPDES Permit should the provisions of the court-ordered consent decree differ from the Revised CD. Failure to include such a provision results in the potential for two different sets of compliance monitoring requirements for the Midwest Plant and in increase in the potential for reporting, monitoring, and discharge sampling errors and inconsistencies. Failure to include a provision requiring immediate permit modification upon any change in the requirements contained in the court-order consent decree reduces the efficacy Midwest Plant's NPDES permit and results in a failure of the NPDES permit to maximally achieve its intended purpose of reducing pollutant discharges to receiving waters.

NPCA June 2018 Comments

NPCA's June 2018 Comments include the following recommendations regarding compliance with the Revised CD and requirements of the Midwest Plant's NPDES permit.[24]

- The Midwest Plant must immediately modify its NPDES permit to incorporate the requirements of the Revised CD, including all of the operation, maintenance, preventative

22 IDEM AO.
23 Draft NPDES Permit, pages 19-23.
24 The recommendations of the June 2018 Comments have been paraphrased by CEAPC for conciseness, unless otherwise noted with quotations. Unless an excerpt is fully quoted, the term "proposed Consent Decree" in the June 2018 Comments has been changed to "Revised CD" as appropriate, since the Revised CD is the version currently under consideration.

maintenance, wastewater process monitoring plans be incorporated into the NPDES permit.[25]

- The Revised CD requires substantively different monitoring for both hexavalent and total chromium than is required by the Current NPDES permit in 2018. An immediate NPDES permit modification is essential to ensure the efficacy of the consent decree.[26]
- "Allowing U.S. Steel to continue to operate with an outdated permit that does not accurately reflect *all* requirements of the Facility undermines the NPDES permit program itself. Fundamental to the permit program is that the permit, in a single operative document, contains all legal requirements for the Facility's discharge of pollutants."[27]
- "By not incorporating the requirements of the proposed Consent Decree into the permitting process, there is no explicit mechanism for ensuring employees are fully trained. Moreover, there is an express risk that employees will be mis-trained to follow the NPDES Permit rather than the Consent Decree for hexavalent and total chromium monitoring from outfalls 104 and 204. And there is a further risk that employees will not be sufficiently trained at all on the other plans, which under the proposed Consent Decree will never be part of the permit."[28]
- Upon modification all compliance requirements of the Revised CD should be included in the NPDES permit to increase their enforceability, and to increase the compliance transparency for the public.[29]
    - *CEAPC Comment:* IDEM did not require, and the Midwest Plant did not request, modification of the Current NPDES Permit to meet the requirements of the Proposed CD or the Revised CD (collectively, "consent decrees") until its expiration on March 31, 2021, and the corresponding required application for NPDES permit renewal in anticipation of NPDES permit expiration was submitted in October 2020. As a result, the requirements of the Current NPDES Permit differed from those of the consent decrees. Failure to enter the consent decrees in the court disincentivized IDEM and the Midwest Plant to act expeditiously and take steps beyond good faith implementation of consent decree requirements by the Midwest Plant and its application for and development by IDEM of the Draft NPDES Permit. As a result, over three years have passed since lodging of the Proposed CD and issuance of the Draft NPDES Permit by IDEM that incorporates the consent decree compliance requirements deemed necessary to reduce the potential for incidents like the April 2017 Spill, reduce

25 June 2018 Comments, pages 26-27.
26 June 2018 Comments, page 27.
27 June 2018 Comments, page 28.
28 June 2018 Comments, page 29.
29 *Ibid.*

pollutant discharges from the Midwest Plant, and be protective of environment and public. The goal of the NPDES permitting program is to eliminate pollutant discharges through reasonable and effective measures. Failure to modify the Current NPDES Permit expeditiously after lodging of the Proposed CD to include the compliance requirements of the consent decrees contravenes the goal of the NPDES permitting program and was not protective of the water quality and beneficial uses of PBW, the environmental resources surrounding the Midwest Plant, including Lake Michigan and Indiana Dunes, and of the public. The Draft Permit needs to be modified to include a requirement for immediate modification of the Midwest Plant's NPDES Permit to be inclusive of and consistent with any future consent decrees, court orders, or enforcement actions entered into by US Steel.

    - *CEAPC Comment:* The Draft NPDES Permit includes training requirements for the Midwest Plant staff consistent with the requirements of the Revised CD and best practices in the wastewater treatment industry.[30]

- The Revised CD changes the effluent limitation monitoring frequencies for total and hexavalent chromium at outfalls 104 and 204. If the Current NPDES Permit is not modified to include the effluent limitation monitoring frequencies for total and hexavalent chromium at outfalls 104 and 204, uncertainty is created for US Steel and public transparency is precluded.[31]
- By not updating the Current NPDES Permit to match the compliance requirements of the Revised CD and incorporating all of its Clean Water Act-based requirements, a risk of confusion is created that prevents compliance with the more rigorous monitoring required between the NPDES Permit or the Revised CD. Additionally, being in compliance with a NPDES permit in general is considered compliance with the Clean Water Act, even if the NPDES permit is later deemed unlawful or inadequate.[32]
    - *CEAPC Comment:* The Draft NPDES Permit includes the hexavalent chromium and total chromium monitoring frequencies required by the Revised CD and precludes confusion created by two different monitoring requirements.

NPCA July 2018 Supplemental Comments

NPCA's July 2018 Supplemental Comments include the following recommendations regarding compliance with the Proposed CD and requirements of the Current NPDES permit.[33]

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[30] Draft NPDES Permit, page 28.
[31] *Ibid.*
[32] June 2018 Comments, pages 28-29.
[33] The recommendations of the July 2018 Supplemental Comments have been paraphrased by CEAPC for conciseness.

- NPCA reiterated its recommendation from its June 2018 Comments that all "substantive" compliance requirements, be incorporated into the NPDES permit and its training requirements.[34]
    - *CEAPC Comment:* IDEM did not require, and the Midwest Plant did not request, modification of the Current NPDES Permit to meet the requirements of the Proposed CD or the Revised CD (collectively, "consent decrees") until its expiration on March 31, 2021, and the corresponding required application for NPDES permit renewal in anticipation of NPDES permit expiration was submitted in October 2020. As a result, the requirements of the Current NPDES Permit differed from those of the consent decrees. Failure to enter the consent decrees in the court disincentivized IDEM and the Midwest Plant to act expeditiously and take steps beyond good faith implementation of consent decree requirements by the Midwest Plant and its application for and development by IDEM of the Draft NPDES Permit. As a result, over three years have passed since lodging of the Proposed CD and issuance of the Draft NPDES Permit by IDEM that incorporates the consent decree compliance requirements deemed necessary to reduce the potential for incidents like the April 2017 Spill, reduce pollutant discharges from the Midwest Plant, and be protective of environment and public. The goal of the NPDES permitting program is to eliminate pollutant discharges through reasonable and effective measures. Failure to modify the Current NPDES Permit expeditiously after lodging of the Proposed CD to include the its compliance requirements contravenes the goal of the NPDES permitting program and was not protective of the water quality and beneficial uses of PBW, the environmental resources surrounding the Midwest Plant, including Lake Michigan and Indiana Dunes, and of the public. The Draft Permit needs to be modified to include a requirement for immediate modification of the Midwest Plant's NPDES Permit to be inclusive of and consistent with any future consent decrees, court orders, or enforcement actions entered into by US Steel.
- US Steel produced a Revised O&M Plan dated June 26, 2018, that did not adequately respond to concerns raised by USEPA and IDEM regarding reference to and documentation of all standard operating procedures regarding tracking maintenance activities. NPCA requested that EPA and IDEM disapprove the Revised O&M Plan and require that each of its concerns are fully addressed and explained.[35]
    - Paragraph 10(f) of the Revised CD requires that the current Midwest Plant O&M Plan is included in the NPDES Permit application and that the NPDES Permit

[34] July 2018 Supplemental Comments, page 7.
[35] July 2018 Supplemental Comments, page 3.

contain the requirements of the Revised CD regarding development, implementation, and review.

- *CEAPC Comment:* US Steel submitted with its application O&M Plan 7th Revision. Part VI of the Draft NPDES Permit requires implementation and compliance with O&M Plan 7th Revision or future revisions, as required by Paragraph 10 of the Revised CD.[36,37]

Streamlined Mercury Variance

IDEM performed a Reasonable Potential Analysis ("RPA") and determined that water quality based effluent limits ("WQBELs") were required at Outfall 004 for mercury discharges in the Draft NPDES Permit consisting of:[38]

- monthly average daily load – 0.00018 lb/day
- daily maximum load – 0.00045 lb/day
- monthly average concentration – 1.3 ng/l
- daily maximum concentration– 3.2 ng/l

In anticipation of not being able to meet the Draft NPDES Permit WQBELs for mercury, US Steel submitted a request for a Streamlined Mercury Variance ("SMV"), including a pollutant minimization program plan (PMPP), which IDEM incorporated into the Draft NPDES Permit.[39,40] The Draft NPDES Permit includes an interim discharge limit for mercury of 18 ng/l calculated on a 12-month rolling average ("Interim Mercury Limit") based on bi-monthly grab samples.[41] The interim limit was determined based on the highest maximum daily discharge effluent concentration for mercury between February 2019 and February 2021.[42]

Prior to issuance of the Draft NPDES Permit, the Midwest Plant had no effluent limits in the Current NPDES Permit for mercury and was required only to report its concentration and load six times a year based on bi-monthly sampling.[43]

CEAPC Comment:

WQBELs are intended to protect receiving waters of industrial discharges to allow for their beneficial use and are required for any pollutant determined to have a reasonable potential to exceed the water quality criteria of the receiving water.[44] IDEM's RPA determined discharges

36 Fact Sheet, pages 33-34.
37 Draft NPDES Permit, page 80.
38 Draft NPDES Permit, page 8.
39 Fact Sheet, page 61.
40 IDEM Public Notice.
41 Draft NPDES Permit, pages 8 -10.
42 Fact Sheet, page 61.
43 Current NPDES Permit.
44 Fact Sheet, page 16.

from Outfall 004 at the Midwest Plant present the reasonable potential to exceed water quality criteria and therefore would adversely impact PBW and disallow the full beneficial use of PBW.

The Interim Mercury Limit under the SMV is not protective of PBW. Basing the Interim Mercury Limit on the highest daily reported mercury concentration over the previous two reporting years is a too lenient to be protective of PBW even though it is consistent with the requirements of Rule 327 Indiana Administrative Code 5-3.5. The Interim Mercury Limit allows the continued discharge of mercury to PBW far exceeding the levels determined by IDEM as protective of the water quality and beneficial uses of PBW. The Interim Mercury Limit is nearly 14 times greater than the monthly average concentration WQBEL and nearly 6 times greater than the daily maximum concentration WQBEL.

SMV compliance requirements for mercury discharges from the Midwest Plant are excessively lenient. The SMV requires only reporting of a daily maximum value and does not set an effluent limitation. The Interim Mercury Limit is based on a 12-month rolling average of the bi-monthly mercury samples, which reduces the impact of mercury discharges exceeding 18 ng/l, a concentration well in excess of what IDEM determined was protective of PBW. As a result of the lenient compliance requirements of the SMV, the Midwest Plant will be able to continue discharging mercury to PBW at excessive and unsafe levels with limited potential for Draft NPDES Permit violations and their associated penalties and corrective measures.

Through implementation of the PMPP, the SMV is intended to allow the Midwest Plant to be able to reduce mercury in its effluent discharges at Outfall 004 to the extent that it will be able to achieve compliance with its WQBELs "as soon as practicable", which is a vague, indeterminate standard.[45] If the Midwest Plant determines that the steps necessary to reduce mercury discharges from Outfall 004 to levels below the WQBELs are impractical, excessive mercury discharges will persist until an unknown time in the future and potentially into perpetuity. The Midwest Plant will be able to apply to renew the SMV when it reapplies for NPDES permit coverage in five years, and if granted by IDEM, excessive, unprotective, and water quality degrading discharges of mercury to PBW will perpetuate along with all of their adverse environmental and beneficial use impacts.

Based on best professional judgment and with the intention of allowing PBW to achieve its beneficial uses, IDEM should not permit the Midwest Plant to operate under the SMV as currently constituted. The approach to determining the Interim Mercury Limit by IDEM through Rule 327 Indiana Administrative Code 5-3.5 is intended to not be punitive on pollutant dischargers through identifying an interim discharge limit for mercury that is readily achievable based on recent sampling results, however, it is inconsistent with the overall goal of the NPDES permitting program of eliminating, or at least minimizing, pollutant discharges. The Interim Mercury Limit will not be lowered over the five-year period the Draft NPDES Permit will be enforced and ultimate achievement of the WQBELs is not required within a defined timeframe,

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45 Fact Sheet, page 61.

even though the Midwest Plant will be implementing the PMPP to reduce mercury discharges. IDEM should require that the Midwest Plant achieves the WQBELs for mercury determined by IDEM's RPA in a defined time in order to reduce the risk of adverse impacts resulting from mercury discharges to the environment and public and to be fully protective of the beneficial uses of PBW. At a minimum, IDEM should institute reductions in the Interim Mercury Limit over the term of the Draft NPDES Permit that approach the WQBELs to provide an impetus for US Steel to take action necessary to reduce mercury discharges from the Midwest Plant.[46]

Whole Effluent Toxicity

The Midwest Plant violated its Current NPDES permit for whole effluent toxicity ("WET") in August and September 2020.[47,48] Based on USEPA Enforcement and Compliance History Online data ("USEPA ECHO") data, the Midwest Plant violated the Current NPDES Permit for chronic toxicity in June 2020.[49] As a result, the Midwest Facility is under a compliance schedule requiring completion of a toxicity reduction evaluation ("TRE") to identify and remediate the cause of toxicity in its discharges from Outfall 004.[50,51]

Table 2 contains the effluent limit WET violation data from USEPA ECHO and the magnitude of effluent limit exceedances. Chronic WET results reported to USEPA ECHO reached a maximum of eight times greater than the Midwest Plant's NPDES permit limit for October 2020.

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46 CEAPC downloaded discharge monitoring reporting data from USEPA Environmental Compliance History Online (USEPA ECHO) for the Midwest Plant, including bi-monthly monitoring results for daily maximum and monthly average concentrations for mercury. USEPA ECHO is reporting mercury concentrations in micrograms/liter ('µg/l"). Specifically, the daily maximum mercury concentration for February 2021 is reported as 1.8 µg/l and in April 2021 as 1.9 µg/l. As detailed, the maximum observed daily maximum mercury concentration value over the past two years used as the basis for the Interim Mercury Limit was 18 nanograms/liter ("ng/l"). Converting the EPA ECHO data from µg/l to ng/l results in maximum daily mercury concentrations of 1,800 ng/l for the February 2021 and 1,900 ng/l. These results would exceed the Interim Mercury Limit by approximately by a factor of 100, which does not appear reasonable based on previous sampling results. It appears that the data was potentially reported incorrectly or the units in the USEPA ECHO data are incorrect. Regardless, CEAPC did not rely on this data as a basis for its evaluation of the SMV.

47 IDEM AO, page 8.

48 Fact Sheet, pages 20-21.

49 United States Environmental Protection Agency, Enforcement and Compliance History Online, Effluent Limit Exceedances Report, IN0000337: US Steel Corp Midwest Plant, Portage, IN 46361287, Monitoring Periods Date Range: 01/01/2018 to 06/30/2021, Accessed June 11, 2021.

50 Fact Sheet, pages 20-21.

51 Draft NPDES Permit, page 41.

Table 2 - Midwest Plant Whole Effluent Toxicity Violations

Monitoring Period Date[52]	WET Test	Discharge Monitoring Report Value	NPDES Permit Limit Value	Unit	Percent Exceedance of Permit Limit
6-30-20	Chronic	3.8	1.9	TUc	200%
9-30-20	Acute	1.3	1	TUa	130%
9-30-20	Chronic	8.2	1.9	TUc	432%
10-30-20	Acute	6.2	1	Tua	620%
10-30-20	Chronic	15.2	1.9	TUc	800%

As part of the Draft NPDES Permit development process, IDEM performed a reasonable potential to exceed analysis at Outfall 004 that determined that a reasonable potential for exceedances of the acute and chronic toxicity exists. IDEM determined that WQBELs for Outfall 004 are required for acute and chronic toxicity consisting of: [53]

- acute daily maximum of 1.0 acute toxic units ("TUa") sampled quarterly as a 24-hour composite
- chronic monthly average of 2.0 chronic toxic units ("TUc") sampled quarterly as a 24-hour composite

Due to being under the TRE compliance schedule resulting from its WET violations in August and September 2020, WET testing has been suspended. The Midwest Plant is required to complete the TRE process by September 1, 2023. WET testing will resume upon completion of the TRE process.[54]

CEAPC Comment:

A chronic toxicity effluent limit of 2.0 TUc allows for effluent proportion of 50% within the test solution resulting in adverse impacts to the indicator organism, indicating pure effluent discharges from Outfall 004 that would meet the 2.0 TUc chronic toxicity effluent limit are likely resulting in the potential for adverse impacts to aquatic species.[55,56] IDEM should apply a chronic toxicity effluent limit of 1.0 TUc to discharges from Outfall 001 to be fully protective of PBW.

Not requiring WET testing while the Midwest Plant is under the TRE compliance schedule is lenient and reduces the urgency for the Midwest Plant to identify the source of toxicity in its

52 CEAPC notes that the dates from USEPA ECHO data and the IDEM AO are inconsistent.
53 Draft NPDES Permit, pages 8.
54 Fact Sheet, pages 20-21.
55 Draft NPDES Permit, page 47.
56 United States Environmental Protection Agency, EPA Regions 8, 9, and 10 Toxicity Training Tool, January 2010.

effluent from Outfall 004 and remediate it, especially considering the magnitude of the NPDES permit exceedances that occurred in 2020 as shown in Table 2. IDEM should require WET testing for acute and chronic toxicity while the Midwest Plant is under the TRE compliance schedule, which may extend for more than two more years if uncompleted until September 2023, and enforce the WQBELs it determined are necessary to be protective of PBW and its beneficial uses. Failure to require WET testing and adherence to the WQBELs for acute and chronic toxicity reduces the impetus for the Midwest Plant to identify and remediate the source of toxicity as soon as possible, since there are no potential penalties or corrective actions resulting from NPDES permit WET effluent violations until September 2023. Considering the potential for adverse water quality impacts resulting from toxic discharges to PBW, the potential exists for the Midwest Plant to continue discharging toxic effluent to PBW through September 2023 with all of the accompanying potential adverse impacts to the environment and public and failure to be fully protective of the beneficial uses of PBW.

Silver, Cadmium, Copper, Nickel, and Lead Sampling Frequencies

WQBELs are required for effluent discharges from Outfall 004 for cadmium, copper, lead, nickel, and silver.[57] Loading-based WQBELs for lead and nickel are more stringent in the Draft NPDES Permit than in the Current NPDES permit.[58,59] The Current NPDES permit requires 24-hour composite sampling for silver, cadmium, copper, nickel, and lead twice a month.[60] The Draft NPDES Permit reduces the sampling frequencies for cadmium, lead, nickel, and silver to monthly based on the results of the reasonable potential statistical analysis performed by IDEM.[61,62] Copper sampling frequency is increased from bi-monthly to weekly.[63]

CEAPC Comment:

US Steel exceeded its maximum daily copper concentration at Outfall 004 on August 29, 2019, October 13, 2019, November 14, 2020, and November 29, 2020, exhibiting a consistent failure to meet the copper WQBEL deemed protective of PBW by IDEM.[64] US Steel has had continued O&M issues with its treatment facilities and violated the Current NPDES Permit five times between May 2019 and December 2019 due to O&M inadequacies in its wastewater treatment facilities.[65] Table 1 contains a list of the NPDES permit violations at the Midwest Plant from the IDEM Administrative Order.

The recent, ongoing NPDES permit violations and compliance issues achieving copper effluent limits and improper wastewater treatment facility O&M increase the potential for exceedances of

57 Fact Sheet, pages 16 and 19.
58 Current NPDES Permit, page 11.
59 NPDES Permit, page 8.
60 Current NPDES Permit, page 11.
61 Draft NPDES Permit, page 8.
62 Fact Sheet, page 17.
63 Draft NPDES Permit, page 8.
64 IDEM AO
65 *Ibid.*

the metals WQBELs at Outfall 004. As a result, IDEM should not reduce the sampling frequency for the metals determined to require WQBELs in order to be protective of the beneficial uses of PBW and confirm compliance with the WQBELs. A reduction in sampling frequency relaxes the Midwest Plant's permit compliance requirements and potential for identifying effluent limit violations potentially causing adverse impacts to the environment and public. Identification of effluent limit violations, especially for the copper daily maximum concentration effluent limit which has consistently been violated, are an impetus for corrective actions, such as improving facility operations and implementing treatment technologies capable of meeting effluent limits.

Cooling Water Intake Structure Fish Impingement

Impingement occurs when fish and other aquatic species are trapped against cooling water intake structure ("CWIS") screens or are pulled into CWIS pipes during water withdrawal. Impingement can result in injury and death to fish and other aquatic organisms.[66,67]

The Midwest Plant CWIS fish impingement prevention technology consists of non-functional traveling screens that IDEM has determined is in accordance with USEPA Best Technology Available ("BTA") for intake structures with a through screen intake velocity determined to be less than 0.5 feet per second ("fps").[68] The Midwest Plant CWIS through screen intake velocity was determined to be 0.42 fps at the maximum observed intake flow rate and 0.22 fps at the average observed intake flow rate. The through screen intake velocities were determined not by actual velocity monitoring by US Steel, but calculated using water flow, water depth, and screen open areas.[69] The calculated velocity was based on the assumption that the traveling screens are in their original configuration and condition.[70] The flow velocity in the 84-inch CWIS pipe that conveys water to the onshore pump stations was determined to be 2.1 fps at the maximum observed intake flow rate and 1.1 fps at the average observed intake flow rate.[71]

The traveling screens at the CWIS have not been operational since 2006 based on US Steel's observations that debris and fish were "typically" absent during backwash and that in the previous 25 years of operation fish impingement "did not occur at a significant amount." Other than routine maintenance, there have been no infrastructure repairs or replacements performed at the CWIS. There currently are no plans to remove or refurbish the traveling screens, since US Steel determined that removal activities posed a significant risk to the intake operations due to the conditions of the traveling screens and US Steel has "indicated" to IDEM that the traveling screens have deteriorated and that "portions of the screen are likely no longer present.[72]

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66 Fact Sheet, page 40.
67 United States Environmental Protection Agency, Technical Development Document for the Final Section 316(b) Existing Facilities Rule, EPA-821-R-14-002, May 2014.
68 Fact Sheet, pages 54-55.
69 Fact Sheet, page 46.
70 Fact Sheet, page 55.
71 Fact Sheet, page 46.
72 Face Sheet, page 45.

CEAPC Comments:

The CWIS through screen intake velocities were calculated based on a flawed and invalid assumption. The calculation assumes that the traveling screens are in there original configuration and conditions, however, the traveling screens have been identified by US Steel as having suffered from deterioration, including complete loss of portions of the traveling screens.[73] IDEM was aware that the traveling screens are no longer in their original configuration and condition when it approved US Steel's operation of the CWIS and determined that it was in compliance with USEPA's BTA requirements.[74]

IDEM needs to require US Steel to verify the through screen intake velocity of the CWIS and compliance with the USEPA BTA requirements through in stream velocity monitoring and not rely on calculations based on assumptions that are invalid and result in calculated through screen intake velocities that are potentially not representative of actual conditions. Modifying the velocity calculations based on new assumptions based on the existing, deteriorated condition of the traveling screens is also a flawed approach and should not be permitted by IDEM due to the inherent uncertainty assumptions result in.

The deteriorated condition of the traveling screens, including portions that are missing, is likely resulting in an increase in the number of fish that are pulled into the 84-inch pipe relative to operation of an intact and undamaged traveling screen. Once inside, it is likely that fish and aquatic species become entrapped in the 84-inch and are unable to escape the CWIS due to velocities in the 84-inch pipe.[75] According to US Steel, its observations when the traveling screens were last in service in 2006, over approximately 15 years ago, was that debris and fish were "typically" absent during backwash and that in the past 25 years of operation fish impingement "did not occur at a significant amount."[76]

US Steel does not define what "typical" or "significant" levels of fish impingement are. IDEM does not clarify what is meant by these two relative terms in the Draft NPDES Permit Fact Sheet. US Steel needs to report actual data on fish impingement based on its observations during CWIS operations and IDEM needs to include this data in the Draft NPDES Permit Fact Sheet to allow the public to be able to fully understand and evaluate the potential threats to fish and aquatic species caused by impingement at the CWIS and compliance with the USEPA's BTA requirements. The deteriorated condition of the traveling screens and entrapping velocities of the 84-inch pipe make actual data collection and reporting even more imperative. Reliance on estimates from sonar-based technologies for fish identification rather than on actual data

[73] Fact Sheet, page 46.
[74] Face Sheet, page 45 and 54-55.
[75] Fact Sheet page 47.
[76] Fact Sheet, page 45.

collection is inadequate due to the inherent limitations of sonar-based technology and the deteriorated traveling screens. If necessary to collect the data required to verify compliance with USEPA BTA and ensure that impingement is effectively minimized, US Steel needs to install a new, traveling screen system at the CWIS.

In October 2018 US Steel requested permission from IDEM to submit a reduced 316(b) application. IDEM denied US Steel's request in January 2019. In contravention of IDEM's decision regarding its request for submission of a reduced 316(b) application, US Steel submitted a reduced 316(b) application with its NPDES permit renewal application in October 2020. IDEM ultimately accepted the reduced 316(b) application as satisfactorily meeting the needs of IDEM 316(b) evaluation.[77]

Based on the comments related to inadequacies with the CWIS in this Technical Report and US Steel's disregard for IDEM's authority in submitting a reduced 316(b) application despite IDEM's denial of its request to do so, IDEM should require US Steel to submit a full 316(b) application inclusive of all of the information required to confirm that USEPA BTA requirements are being met and that the potential for adverse impacts to fish and aquatic species from the CWIS are adequately reduced.

Formaldehyde Compliance Schedule

The Draft NPDES Permit contains new WQBELs for formaldehyde at Outfall 004.[78,79] US Steel requested a sixty month compliance schedule for the new formaldehyde effluent limits and provided IDEM information to justify its request. IDEM determined that sixty months was a reasonable amount of time to achieve the WQBELs, however provided no basis in the Draft NPDES Permit Fact Sheet to support its determination.[80]

The compliance schedule sets an interim limit requiring only reporting of formaldehyde concentrations and loads in discharges from Outfall 004. No numeric interim effluent limits were included in the sixty month compliance schedule. Progress reports are required at the end of each consecutive 12-month period of Draft NPDES Permit is in place detailing US Steel's progress towards being able to achieve the formaldehyde WQBELs.[81]

CEAPC Comment:

Based on best professional judgment and with the intention of allowing PBW to achieve its beneficial uses of being protective of the environment and public, IDEM should not permit the Midwest Plant to operate under the formaldehyde compliance schedule as currently constituted. The approach to determining if a compliance schedule is reasonable by IDEM through Rule 327 Indiana Administrative Code 5-2-12.1 is intended to not be punitive on pollutant dischargers that

77 Fact Sheet, page 41.
78 Draft NPDES Permit, page 8.
79 Fact Sheet, pages 19 and 33.
80 Fact Sheet, page 33.
81 Draft NPDES Permit, pages 51-52.

a given new effluent limits to comply with, which can require operational modifications to existing treatment systems or installation of new treatment systems, however, it is inconsistent with the overall goal of the NPDES permitting program of eliminating, or at least minimizing, pollutant discharges. The interim limit consisting of reporting will not be modified until US Steel demonstrates the ability to comply or the sixty month term of the compliance schedule and Draft NPDES Permit come to an end.[82] Conceivably, it may be five years from the effective date of the Draft NPDES Permit until US Steel is required to meet its formaldehyde WQBELs for Outfall 004. IDEM should begin instituting interim numeric effluent limits in the compliance schedule over the term of the Draft NPDES Permit that approach the formaldehyde WQBELs to provide an impetus for US Steel to take action necessary to reduce formaldehyde discharges from the Midwest Plant and achieve compliance with the WQBELs expeditiously.

IDEM failed to include US Steel's justification for requesting a compliance schedule for achievement of its formaldehyde WQBELs for Outfall 004 or its own basis for accepting US Steel's justification in the Draft NPDES Permit. IDEM needs to include the information provided by US Steel for justification for its compliance schedule request and its basis for acceptance in the Draft NPDES Permit Fact Sheet to allow the public to be able to fully understand and evaluate the potential threats to the environment and public resulting from formaldehyde discharges from the Midwest Plant and implementation of the compliance schedule as currently constituted.

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82 Draft NPDES Permit, page 52.

United States Steel Corporation
Law Department
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Mark A. Mustian
Counsel - Environmental

March 17, 2021
Indiana Department of Environmental Management
IDEM/OWQ/NPDES/PS
100 N. Senate Ave., Rm 1255
Indianapolis, IN 46204

Re: Public Notice No. 20210521-IN0000337

To Whom it may concern:

Attached, please find comments submitted by U. S. Steel in response to the draft NPDES permit for our Midwest Plant. If you have any questions, please feel free to contact me.

Sincerely,

Mark Mustian

Mark Mustian

United States Department of the Interior

NATIONAL PARK SERVICE
Indiana Dunes National Park
1100 N. Mineral Springs Road
Porter, Indiana 46304-1299

IN REPLY REFER TO:

June 17, 2021

Jennifer Elliot
Permit Manager
IDEM/OWQ/NPDES/PS
100 N Senate Ave., Room 1255
Indianapolis, IN 46204

Dear Ms. Elliot:

On behalf of our the Indiana Dunes National Park, we respectfully submit these comments concerning the National Pollutant Discharge Elimination System (NPDES) Draft Permit Number IN0000337 (Draft Permit) issued by the Indiana Department of Environmental Management (IDEM) to United States Steel Corporation (USS) for its Midwest Works facility in Portage, Indiana.

As a neighbor to the USS Midwest Plant, we especially are concerned when it comes to all environmental permits issued. After the 2017 hexavalent chromium spill and ongoing aftermath as well as series of other NPDES related permit exceedances, the Indiana Dunes National Park believes that USS needs to have the strongest permit limits and requirements possible under the law in order to prevent another catastrophic event that did a significant deal of harm to confidence of our visitors and the communities surrounding the park.

Strong enforcement of the NPDES permit program is essential to the health of our visitors, employees, waters, wildlife, and the natural areas that make up our great National Park. The Congressionally mandated purpose as a National Park is "to preserve for the educational, inspirational, and recreational use of the public certain portions of the Indiana Dunes and other areas of scenic, scientific, and historic interest and recreational value." The Indiana Dunes National Park is home to several globally rare ecosystems including extremely rare interdunal pannes which are present adjacent to the USS Midwest Plant. As with all National Park units, we like to say that we are in the "forever business". For us to help fulfil our mission, we rely on the Indiana Department of Environmental Management as a reliable partner to issue strong NPDES permits and hold USS accountable for maintaining a safe and environmentally sound operation.

We appreciate the efforts of environmental advocacy and watchdog organizations that strive to protect the interests of the Indiana Dunes National Park. The National Parks Conservation Association, Alliance for the Great Lakes, Environmental Law & Policy Center, Hoosier Environmental Council, Izaak Walton League, Save the Dunes, and the Surfrider Foundation recently commissioned a technical memorandum completed by CEA Engineers, PC, which provided an depth analysis of the Consent Decree Consistency and NPDES permit renewal application. The Indiana Dunes National Park reviewed and concurs with the technical memorandum and the comment letter submitted by this coalition of interest groups. It is our hope that IDEM strongly considers these comments in the issuance of the NPDES permit. We thank you for the opportunity to comment on this draft permit. If you have any questions, please feel free to contact Dan Plath, Chief of Resource Management at daniel_plath@nps.gov.

Sincerely,

Paul Labovitz
Superintendent

State Form 4336

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

Date: February 12, 2021 NG

To:	Jennifer Elliot JE Industrial NPDES Permits Section	Thru:	Nicole Gardner, Chief Industrial NPDES Permits Section John Elliott, Reviewer JE
From:	Jennifer Elliot Industrial NPDES Permits Section		
Subject:	Wasteload Allocation Report for U.S. Steel – Midwest Plant in Porter County (IN0000337, WLA002530)		

Water quality-based effluent limitations (WQBELs) were calculated for multiple pollutants and a reasonable potential analysis for free cyanide, formaldehyde, mercury and whole effluent toxicity (WET) was conducted for the renewal of the NPDES permit for U.S. Steel – Midwest Plant. The analysis was done for Outfall 004, which discharges to the Portage-Burns Waterway, a tributary to the Indiana portion of the open waters of Lake Michigan. Therefore, the discharge is covered under the rules for the Great Lakes system. The effluent flow for Outfall 004 used in this analysis was 17 MGD.

The Portage-Burns Waterway is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The East Branch of Little Calumet River and its tributaries downstream to Lake Michigan via Burns Ditch (Portage-Burns Waterway) are designated in 327 IAC 2-1.5-5(a)(3)(B) as salmonid waters and shall be capable of supporting a salmonid fishery. The Indiana portion of the open waters of Lake Michigan is classified as an outstanding state resource water (OSRW) in 327 IAC 2-1.5-19(b)(2).

The 2018 assessment unit for the Portage-Burns Waterway is INC0159_02. This assessment unit is on the 2018 303(d) list for PCBs in fish tissue. A TMDL for *E. coli* for the Portage-Burns Waterway was approved by U.S. EPA January 28, 2005 and is part of the Little Calumet/Burns Ditch TMDL. The TMDL requires load reductions from nonpoint sources, but not from point source discharges. The TMDL does not require permit limits for *E. coli* for Outfall 004. A TMDL for *E. coli* for the Lake Michigan shoreline was approved by U.S. EPA on September 30, 2004 and is part of the Lake Michigan Shoreline TMDL.

The calculation of the monthly average and daily maximum projected effluent quality (PEQ) for individual toxic pollutants is included in Table 1. The results of the reasonable potential statistical procedure are included in Table 2. The results show that WQBELs are not required for free cyanide, but they are required for mercury and formaldehyde.

The WQBELs for mercury and formaldehyde calculated for Outfall 004 are included in Table 3. This table also includes WQBELs for the pollutants regulated by Federal Effluent Limitation Guidelines (ELGs) at internal Outfall 304. The WQBELs for the ELG parameters are being provided for comparison to applicable technology-based effluent limitations. Free cyanide is also included in Table 3, even though reasonable potential was not demonstrated, for comparison to the existing WQBELs.

A reasonable potential analysis for Outfall 004, for WET, was done in accordance with the Federal Great Lakes Guidance in 40 CFR Part 132. U.S. EPA overpromulgated Indiana’s reasonable potential procedure for WET in 327 IAC 5-2-11.5(c)(1) and Indiana is now required to apply specific portions of the Federal Great Lakes Guidance when conducting reasonable potential analyses for WET. Indiana’s requirements are included under 40 CFR Part 132.6. The results of the reasonable potential analysis for WET show that the discharge from Outfall 004 has a reasonable potential to exceed the numeric interpretation of the narrative criteria for acute and chronic WET. Therefore, WQBELs are required for WET.

Once a determination is made that WQBELs are required for WET, the WQBELs are established in accordance with 327 IAC 5-2-11.6(d). This provision allows a case-by-case determination of whether to establish a WQBEL for only acute or chronic WET, or WQBELs for both acute and chronic WET, the number of species required for testing and the species required for testing. The purpose of the WLA report is to provide the numerical limits. The numerical limits for acute and chronic WET are included in Table 3. The documentation of the wasteload allocation analysis is included as an attachment.

TABLE 1
Calculation of Projected Effluent Quality
For U.S. Steel - Midwest Plant in Porter County
Outfall 004 to Portage - Burns Waterway
(IN0000337, WLA002530)

Parameter	Monthly Average PEQ					Daily Maximum PEQ				
	Maximum Monthly Average (mg/l)	Number of Monthly Averages	CV	Multiplying Factor	Monthly Average PEQ (mg/l)	Maximum Daily Sample (mg/l)	Number of Daily Samples	CV	Multiplying Factor	Daily Maximum PEQ (mg/l)
Mercury	0.0000016	13	0.4	1.4	0.0000022	0.000018	389	1.4	0.8	0.000014
Formaldehyde					5.7	2.2	4	0.6	2.6	5.7
Cyanide, Free	0.0058	25	0.5	1.2	0.0020	0.017	620	0.5	0.9	0.015

2/12/2021

TABLE 2
Results of Reasonable Potential Statistical Procedure
For U.S. Steel - Midwest Plant in Porter County
Outfall 004 to Portage - Burns Waterway
(IN0000337, WLA002530)

Parameter	Monthly Average Comparison			Daily Maximum Comparison			WQBELs Required?
	Monthly Average PEQ (mg/l)	Monthly Average PEL (mg/l)	PEQ > PEL?	Daily Maximum PEQ (mg/l)	Daily Maximum PEL (mg/l)	PEQ > PEL?	
Mercury	0.0000022	0.0000013	Yes	0.000014	0.0000032	Yes	Yes
Formaldehyde	5.7	0.14	Yes	5.7	0.24	Yes	Yes
Cyanide, Free	0.0020	0.0096	No	0.015	0.017	No	No

2/12/2021

TABLE 3
Water Quality-based Effluent Limitations
For U.S. Steel - Midwest Plant in Porter County
Outfall 004 to Portage - Burns Waterway
(IN0000337, WLA002530)

Parameter	Quality or Concentration Monthly Average	Daily Maximum	Units	Quantity or Loading* Monthly Average	Daily Maximum	Units	Monthly Sampling Frequency
Cadmium	0.0098	0.017	mg/l	1.4	2.4	lbs/day	2
Chromium (VI)	0.016	0.032	mg/l	2.3	4.5	lbs/day	4
Total Chromium	0.32	0.65	mg/l	46	92	lbs/day	4
Copper	0.033	0.066	mg/l	4.7	9.4	lbs/day	4
Lead	0.041	0.070	mg/l	5.8	9.9	lbs/day	2
Mercury	0.0000013	0.0000032	mg/l	0.00018	0.00045	lbs/day	1
Nickel	0.22	0.38	mg/l	31	54	lbs/day	2
Silver	0.000083	0.00017	mg/l	0.014	0.024	lbs/day	2
Zinc	0.27	0.54	mg/l	38	77	lbs/day	4
Formaldehyde	0.14	0.24	mg/l	20	34	lbs/day	2
Naphthalene	0.048	0.084	mg/l	6.8	12	lbs/day	2
Tetrachloroethylene	0.11	0.19	mg/l	16	27	lbs/day	2
Cyanide, Free	0.0096	0.017	mg/l	1.4	2.4	lbs/day	2
Cyanide, Total	220	540	mg/l	31,000	77,000	lbs/day	4
Fluoride	3.1	5.4	mg/l	440	770	lbs/day	2
Whole Effluent Toxicity							
Acute		1.0	TUa				
Chronic	2.0		TUc				

*Based on an effluent flow of 17 MGD

2/12/2021

Documentation of Wasteload Allocation Analysis
For Discharges to the Great Lakes System

Analysis By: Jennifer Elliot
Date: February 12, 2021
Reviewed By: John Elliott
WLA Number: 002530

Facility Information

- **Name:** U.S. Steel – Midwest Plant
- **NPDES Permit Number:** IN0000337
- **Permit Expiration Date:** March 31, 2021
- **County:** Porter
- **Purpose of Analysis:** Recalculate WQBELs for permit renewal using updated flow and conduct reasonable potential analysis for free cyanide, formaldehyde, mercury and WET.
- **Outfall:** 004
- **Facility Operations:** Operations contributing to Outfall 004 include noncontact cooling water, stormwater and wastewater from internal Outfall 304, which includes process wastewater from internal Outfalls 104 and 204.
- **Applicable Effluent Guidelines:** 40 CFR 420.92 – Acid Pickling (TSS, oil & grease, lead and zinc), 40 CFR 420.102 – Cold Forming (TSS, oil & grease, lead, zinc, naphthalene and tetrachloroethylene), 40 CFR 420.112 and 420.114 – Alkaline Cleaning (TSS and oil & grease), 40 CFR 420.122 and 420.124 – Hot Coating (TSS, oil & grease, lead, zinc and hexavalent chromium) and 40 CFR 433.14 – Metal Finishing (cadmium, total chromium, copper, lead, nickel, silver, zinc, total cyanide and TTO)
- **Current Permitted Flow:** 19 MGD
- **Type of Treatment:** None besides the treatment for internal Outfalls 104 and 204.
- **Effluent Flow for WLA Analysis:** 17 MGD (The highest monthly average flow from August 2018 through July 2020 and occurred during August 2018.)
- **Current Effluent Limits:**

Parameter	Monthly Average		Daily Maximum		Measurement Frequency
	(mg/l)	(lbs/day)	(mg/l)	(lbs/day)	
Total Residual Chlorine	0.01	1.3	0.02	3.1	Daily
Silver	0.000076	0.012	0.00013	0.021	2 x Monthly
Free Cyanide	0.0075	1.2	0.013	2.1	2 x Monthly
Cadmium	0.0077	1.2	0.013	2.1	2 x Monthly
Copper	0.030	4.7	0.052	8.2	2 x Monthly
Nickel	0.21	33.3	0.36	57.1	2 x Monthly
Lead	0.038	6.0	0.066	10.5	2 x Monthly
Acute WET (TUa) [1]	--	--	Report	--	Quarterly
Chronic WET (TUc) [2]	Report	--	--	--	Quarterly

[1] An acute toxicity reduction evaluation trigger of 1.0 TUa applies to the discharge.
[2] A chronic toxicity reduction evaluation trigger of 1.9 TUc applies to the discharge.

Pollutants of Concern for WLA Analysis

Pollutants of Concern and Type of WLA Analysis		
Parameter	**Type of Analysis**	**Reason for Inclusion on Pollutants of Concern List**
Fluoride	WQBEL	Limited at internal Outfall 304
Cadmium, Hexavalent Chromium, Total Chromium, Copper, Total Cyanide, Lead, Nickel, Silver, Zinc, Naphthalene and Tetrachloroethylene	WQBEL	Federal effluent limitation guidelines apply at internal Outfall 304
Free Cyanide	RPE/ WQBEL	Limited in current permit and Federal effluent limitation guideline for total cyanide applies at internal Outfall 304
Mercury	RPE	Monitored in current permit.
Formaldehyde	RPE	Form 2C data showed elevated levels
Whole Effluent Toxicity	RPE	Monitored in current permit

Receiving Stream Information

- **Receiving Stream:** Outfall 004 discharges to the Portage-Burns Waterway, about 0.06 miles upstream of the Indiana portion of the open waters of Lake Michigan (See Attachment 1)
- **Drainage Basin:** Lake Michigan
- **Drinking Water Intakes Downstream:** None on Portage-Burns Waterway. There are several

public water system intakes in Lake Michigan, but none will impact this analysis.

- **Designated Stream Use:** Portage-Burns Waterway is designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community. The East Branch of the Little Calumet River and its tributaries downstream to Lake Michigan via Burns Ditch (Portage-Burns Waterway) are designated in 327 IAC 2-1.5-5(a)(3)(B) as salmonid waters and shall be capable of supporting a salmonid fishery. Therefore, Portage-Burns Waterway is designated as a salmonid water. 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; and is designated as an industrial water supply.
- **Stream Classification:** The Indiana portion of the open waters of Lake Michigan is classified in 327 IAC 2-1.5-19(b)(2) as an outstanding state resource water (OSRW).
- **12 Digit HUC:** 040400010509
- **Assessment Unit (2018):** INC0159_02 (Portage-Burns Waterway) and INC0163_G1074 (Lake Michigan Shoreline) and INC0163_G1093 (Lake Michigan Shoreline)
- **303(d) List:** The Portage-Burns Waterway (assessment unit INC0159_02) is on the 2018 303(d) list for PCBs in fish tissue. The Lake Michigan Shoreline is on the 2018 303(d) list for mercury in fish tissue and PCBs in fish tissue.
- **TMDL Status:** A TMDL for *E. coli* for Portage-Burns Waterway was approved by U.S. EPA January 28, 2005 and is part of the Little Calumet/Burns Ditch TMDL. A TMDL for *E. coli* for the Lake Michigan shoreline was approved by U.S. EPA on September 30, 2004 and is part of the Lake Michigan Shoreline TMDL.
- **Q7,10 (upstream of facility):** 100 cfs (65 mgd) (USGS gaging station 04095090 Burns Ditch at Portage is on Portage-Burns Waterway at the bridge upstream of Outfall 002. The drainage area at this gage is 331 mi^2, the Q7,10 is 100 cfs, the Q1,10 is 84 cfs, and the harmonic mean flow is 384 cfs. The drainage area and stream design flows were obtained from the book <u>Low-Flow Characteristics for Selected Streams in Indiana</u> by Kathleen K. Fowler and John T. Wilson, published in 2015 by the USGS.)
- **Q1,10 (upstream of facility):** 84 cfs (54 mgd)
- **Q90,10 (upstream of facility):** 206 cfs (133 mgd) (the determination of this value is documented in the January 20, 2016 WLA report)
- **Harmonic Mean Flow (upstream of facility):** 384 cfs (248 mgd)
- **Nearby Dischargers**: There are several dischargers to tributaries of Portage-Burns Waterway upstream of this facility. The Chesterton WWTP (IN0022578), Praxair (IN0043435) and ArcelorMittal Burns Harbor (IN0000175) discharge to East Branch Little Calumet River. The Valparaiso WWTP (IN0024660) and South Haven WWTP (IN0030651) discharge to Salt Creek and several sanitary WWTPs discharge to tributaries of Salt Creek. The Portage WWTP (IN0024368) discharges to Burns Ditch. Only ArcelorMittal, Valparaiso and Portage currently have monitoring data available for metals. All these dischargers contribute to the background concentrations upstream of U.S. Steel - Midwest. However, only the ArcelorMittal and Portage discharges were specifically considered in the WLA analysis because of the availability of data and their close proximity to U.S. Steel - Midwest.

Calculation of Preliminary Effluent Limitations

The representative background concentration of a pollutant for use in developing wasteload allocations is determined in accordance with 327 IAC 5-2-11.4(a)(8). According to this provision, best professional judgment is to be used to select the one data set that most accurately reflects or estimates background concentrations when data in more than one of the following data sets exist:

(A) Acceptable available water column data.
(B) Water column concentrations estimated through use of acceptable available caged or resident fish tissue data.
(C) Water column concentrations estimated through use of acceptable available or projected pollutant loading data.

The background concentration is calculated as the geometric mean of the selected data set. In the case of U.S. Steel - Midwest, instream data are available from fixed water quality monitoring station BD 1 Burns Ditch at Portage. This station is located at the U.S. Highway 12 Bridge upstream of Outfall 002. Water quality data from fixed station BD 1 were obtained for the period August 2015 through July 2020. Instream data for all of the pollutants of concern are not available from fixed station BD 1 so data were obtained from nearby waterbodies. The Surveys Section conducted quarterly trace metals sampling in Deep River downstream of the Lake George Dam during the period from 2002 through 2006. The data from the trace metals sampling were used for several pollutants that are not monitored at the fixed station and for cadmium and silver which were reported as non-detect at the fixed station. Water quality data were obtained from the Surveys Section database. The time periods chosen for the different data sets are based on the availability of data and the desire to have data for whole years. Fixed station data were limited to the last five years. Based on 327 IAC 5-2-11.4(b)(1), a mixing zone is not allowed for BCCs, so stream data were not required for mercury.

The background concentration of each pollutant based on instream data was determined by calculating the geometric mean of the instream data for the pollutant (327 IAC 5-2-11.4(a)(8)). In 327 IAC 5-2-11.4(a)(8) a procedure is included for calculating background concentrations when the data set includes values below the limit of detection. The fixed station data are actually reported as less than the limit of quantitation (LOQ). Therefore, a procedure based on best professional judgment was used for the fixed station data. The values below the LOQ were set equal to one-half the LOQ and then the geometric mean of the data set was calculated. The determination of background concentrations based on instream data is included in Attachments 2 through 5.

Pollutant loading data for some pollutants of concern are available for the Portage WWTP and pollutant loading data for most of the pollutants of concern in this WLA analysis are available for ArcelorMittal Burns Harbor. However, considering the multiple sources of flow upstream of U.S. Steel - Midwest and the distance between the dischargers, it was decided that the instream data would more accurately reflect the background concentrations. However, the effluent concentrations available for ArcelorMittal and Portage were compared to the background concentrations calculated using the instream data to determine if the background concentration of any pollutant may potentially be underestimated, and if so, whether the potentially higher background concentration would significantly impact the calculation of WQBELs. After reviewing the data for ArcelorMittal and Portage, the background concentrations calculated using the instream data were considered to be acceptable to calculate WQBELs.

The facility provided one background sample for chromium (VI) with a concentration of 0.0718 ug/l as part of their 2020 permit renewal application. After consideration of the trace metals sampling results for chromium (VI), the background concentration was set equal to 0.072 ug/l based on the application data. The background concentration of free cyanide was set equal to zero after consideration of the sampling results for total cyanide at the fixed station and the trace metals sampling results for free cyanide. There are no known upstream sources of formaldehyde, and for naphthalene and tetrachloroethylene, effluent data for ArcelorMittal Burns Harbor, the only known potential source upstream, have shown nondetectable concentrations. Therefore, the background concentrations of these organic chemicals were set equal to zero.

According to 5-2-11.4(a)(13), the 50th percentile downstream hardness is to be used to determine the criteria for those metals whose criteria are dependent on hardness. There is no downstream fixed station, so hardness data were obtained from fixed station BD 1. The 50th percentile hardness calculated using the last five years of data is 265 mg/l. The data are included in Attachment 6.

In addition to the aquatic life, human health and wildlife criteria that apply to all waters within the Great Lakes system, there are criteria in 327 IAC 2-1.5-8(j) that apply specifically to Lake Michigan. For the pollutants of concern, there is a Lake Michigan criterion for fluoride. The criterion for fluoride is more stringent than the aquatic life criteria that apply to Portage-Burns Waterway. In accordance with 327 IAC 5-2-11.4(a)(3), TMDLs, WLAs calculated in the absence of a TMDL, and preliminary WLAs must ensure attainment of applicable water quality standards including all numeric and narrative water quality criteria set forth in 327 IAC 2-1.5-8 and 327 IAC 2-1.5-16, and Tier I criteria and Tier II values established under 327 IAC 2-1.5-11 through 327 IAC 2-1.5-16. Therefore, to ensure that the concentration of fluoride in Portage-Burns Waterway meets the Lake Michigan criterion for this pollutant at the confluence of Portage-Burns Waterway with Lake Michigan, preliminary effluent limitations (PELs) were calculated using the Lake Michigan criterion and 100% dilution of effluent and receiving stream flow. These PELs were compared to the PELs based on the discharge meeting aquatic life, human health and wildlife criteria in Portage-Burns Waterway and the more stringent PELs were used as the applicable PELs.

The coefficient of variation used to calculate monthly average and daily maximum PELs was set equal to the default value of 0.6. The number of samples per month used to calculate monthly average PELs was based on the expected monitoring frequency. For cadmium, lead, nickel, silver, fluoride, free cyanide, formaldehyde, naphthalene and tetrachloroethylene, the number of samples per month was set equal to 2. For the other pollutants, the number of samples per month was set equal to 4. The spreadsheet used to calculate PELs is included in Attachment 7. The applicable PELs for fluoride are based on the Lake Michigan criterion.

Reasonable Potential Analysis for WET

U.S. EPA disapproved the reasonable potential procedure for whole effluent toxicity at 327 IAC 5-2-11.5(c)(1). In place of 5-2-11.5(c)(1), IDEM is required to apply Paragraphs C.1 and D of Procedure 6 in Appendix F of 40 CFR Part 132. The following analysis is based on Paragraphs C.1 and D of Procedure 6 in Appendix F of 40 CFR Part 132.

Effluent Data

The permit renewal effective April 1, 2016 required the U.S. Steel - Midwest Plant to conduct whole effluent toxicity (WET) testing quarterly using *Ceriodaphnia dubia* and fathead minnow. As allowed under the permit, monitoring for fathead minnow was discontinued after three tests. WET data from May 2017 to September 2020 are included in Attachment 8. The first three tests were conducted to demonstrate successful completion of a toxicity reduction evaluation (TRE). Chronic toxicity was calculated using the NOEC and IC25 values.

Reasonable Potential Analysis for Acute WET

The WET of an effluent is or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above the numeric interpretation of the narrative criterion for acute WET at 2-1.5-8(b)(1)(E)(ii) when effluent specific WET data demonstrates that:

(TUa effluent) x (B) x (effluent flow)/(Qad + effluent flow) > AC

where,

TUa effluent = maximum acute WET result
B = multiplying factor from 5-2-11.5(h)
effluent flow = effluent flow used to calculate WQBELs for individual pollutants
Qad = amount of receiving water available for dilution
AC = numeric interpretation of the narrative criterion for acute WET

For U.S. Steel - Midwest, the following apply:

TUa effluent = 6.2 TUa (*Ceriodaphnia dubia*)
B = 1.6 (based on 18 samples and a CV of 0.9)
effluent flow = 17 mgd
Qad = 0.0 mgd (an alternate mixing zone has not been approved for acute WET)
AC = 1.0 TUa (the applicable numeric interpretation of the narrative criterion for acute WET for the case where an alternate mixing zone for acute WET has not been approved)

(6.2 TUa) x (1.6) x (17 mgd)/(0.0 mgd+17 mgd) = 9.9 TUa

The calculated value is greater than 1.0 TUa, so there is reasonable potential for acute WET.

Reasonable Potential Analysis for Chronic WET

The WET of an effluent is or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above the numeric interpretation of the narrative criterion for chronic WET at 2-1.5-8(b)(2)(A)(iv) when effluent specific WET data demonstrates that:

(TUc effluent) x (B) x (effluent flow)/(Qad + effluent flow) > CC

where,

TUc effluent = maximum chronic WET result
B = multiplying factor from 5-2-11.5(h)
effluent flow = effluent flow used to calculate WQBELs for individual pollutants
Qad = amount of receiving water available for dilution
CC = numeric interpretation of the narrative criterion for chronic WET

For U.S. Steel – Midwest, the following apply:

TUc effluent = >15.2 TUc (*Ceriodaphnia dubia*)
B = 2.0 (based on 18 samples and a CV of 1.5)
effluent flow = 17 mgd
Qad = 16.25 mgd (25% of the Q7,10 (65 mgd))
CC = 1.0 TUc

(>15.2 TUc) x (2.0) x (17 mgd)/(16.25 mgd + 17 mgd) = >15.5 TUc

Since the calculated value is greater than 1.0 TUc, there is reasonable potential for chronic WET.

Reasonable Potential Analysis for Individual Pollutants

Calculation of Projected Effluent Quality

A reasonable potential analysis was conducted for free cyanide which is currently limited at Outfall 004. The current limit was established in the 2011 permit renewal based on a reasonable potential analysis conducted with a limited dataset. A reasonable potential analysis was conducted for mercury which is currently monitored at Outfall 004. A reasonable potential analysis was also conducted for formaldehyde based on data reported on Form 2C of the 2020 permit renewal application. A reasonable potential analysis for hexavalent chromium, total chromium, zinc, fluoride, total cyanide, naphthalene and tetrachloroethylene, which are limited at internal Outfall 304, but not monitored at Outfall 004, was not conducted based on a review of Outfall 004 data provided with the permit renewal application and internal Outfall 304 data for these pollutants.

The effluent data used in the reasonable potential analysis were provided by the facility in electronic format and obtained from monthly monitoring reports. Data for the period April 2016 through October 2020 were used in the analysis for mercury. Data for free cyanide from April 2016 through December 2020 were used. Due to the large number of samples, the data for mercury and free cyanide are not included in this report. The facility provided the following data for formaldehyde which were summarized on the Form 2C for Outfall 004: 2.2 mg/l (5-27-2020), <0.05 mg/l (7-27-2020), 0.102 mg/l (8-17-2020) and 0.123 mg/l (8-31-2020). The facility also provided the following data for formaldehyde on the Form 2C for internal Outfall 204: 4.3 mg/l (5-27-2020), 0.075 mg/l (7-27-2020), 0.413 mg/l (8-17-2020) and 0.545 mg/l (8-31-2020). Samples for formaldehyde collected at internal Outfall 104 on the same days as those for Outfall 004 and internal Outfall 204 in May and July 2020 were reported as non-detect. The effluent data include values reported as less than (<) the LOD. These values were assigned the reported less than value. Monthly averages were calculated for mercury and free cyanide for those months where at least two data points were available.

Comparison of PEQs to PELs

The reasonable potential analysis is included in Attachment 9. The results show that a projected effluent quality (PEQ) does not exceed a PEL for free cyanide, but it does for mercury and formaldehyde. Therefore, based on the reasonable potential statistical procedure, water quality-based effluent limitations (WQBELs) are not required for free cyanide, but they are required for mercury and formaldehyde.

Calculation of Water Quality-based Effluent Limitations

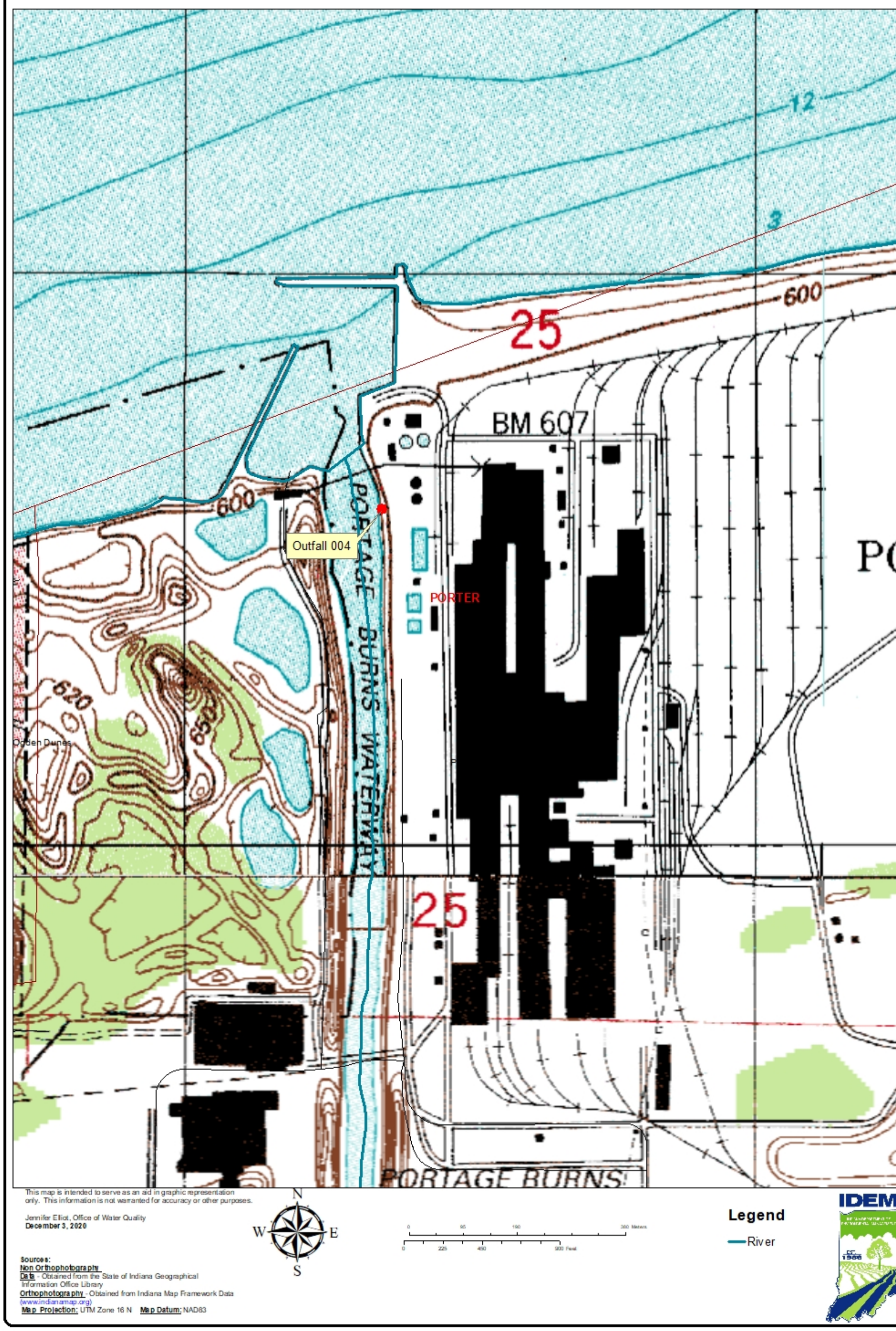
The PELs for free cyanide, formaldehyde and mercury in Attachment 7 are based on water quality criteria or values and may be included in an NPDES permit as WQBELs. For each pollutant receiving technology-based effluent limitations (TBELs) and for which water quality criteria or values exist or can be developed, concentration and corresponding mass-based WQBELs were calculated. For U.S. Steel – Midwest the pollutants receiving TBELs for which WQBELs can be calculated are cadmium, hexavalent chromium, total chromium, copper, lead, nickel, silver, zinc, total cyanide, fluoride, naphthalene and tetrachloroethylene. For these pollutants, the PELs in Attachment 7 are based on water quality criteria or values and may be applied as WQBELs. The mass-based WQBELs for Outfall 004 will be compared to the mass-based TBELs at internal Outfall 304. Since the facility is authorized to discharge up to the mass-based TBELs, if the mass-based TBELs exceed the mass-based WQBELs, 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.

List of Attachments

Attachment 1: Map of Outfall Location
Attachments 2 thru 5: Calculation of Background Concentrations
Attachment 6: Calculation of Water Quality Characteristics
Attachment 7: Calculation of Preliminary Effluent Limitations
Attachment 8: Whole Effluent Toxicity Data
Attachment 9: Reasonable Potential to Exceed Analysis for Individual Pollutants

Attachment 1

U.S. Steel - Midwest Plant
Outfall 004



ATTACHMENT 2
Calculation of Background Concentrations
Data From Fixed Station BD-1

Date	Cadmium (ug/)	Adjusted Cadmium (ug/l)	Total Chromium (ug/l)	Adjusted Total Chromium (ug/l)	Copper (ug/l)	Lead (ug/l)	Adjusted Lead (ug/l)
8/6/2015	<1	0.5	<1.2	0.6	2.07	<1	0.5
9/2/2015	<1	0.5	1.38	1.38	2.16	<1	0.5
10/8/2015	<1	0.5	<1.2	0.6	1.48	<1	0.5
11/10/2015	<1	0.5	<1.2	0.6	1.61	<1	0.5
12/17/2015	<1	0.5	1.84	1.84	2.34	1.38	1.38
1/11/2016	<1	0.5	<1.2	0.6	2.15	<1	0.5
2/2/2016	<1	0.5	<1.2	0.6	1.98	<1	0.5
3/3/2016	<1	0.5	<1.2	0.6	1.88	<1	0.5
4/12/2016	<1	0.5	1.6	1.6	2.86	1.58	1.58
5/10/2016	<1	0.5	<1.2	0.6	2.38	1.16	1.16
6/7/2016	<1	0.5	<1.2	0.6	2.05	1.07	1.07
7/5/2016	<1	0.5	<1.2	0.6	2	<1	0.5
8/4/2016	<1	0.5	<1.2	0.6	2.2	<1	0.5
9/7/2016	<1	0.5	2.5	2.5	3.03	<1	0.5
10/20/2016	<1	0.5	<1.2	0.6	2.35	<1	0.5
11/8/2016	<1	0.5	<1.2	0.6	3.23	<1	0.5
12/6/2016	<1	0.5	<1.2	0.6	2.23	<1	0.5
1/24/2017	<1	0.5	<1.2	0.6	2.09	1.15	1.15
2/14/2017	<1	0.5	<1.2	0.6	2.65	<1	0.5
3/2/2017	<1	0.5	5.16	5.16	5.75	6.5	6.5
4/11/2017	<1	0.5	<1.2	0.6	3.05	1.36	1.36
5/2/2017	<1	0.5	1.92	1.92	4.79	2.68	2.68
6/8/2017	<1	0.5	<1.2	0.6	2.8	<1	0.5
7/6/2017	<1	0.5	<1.2	0.6	1.6	<1	0.5
8/24/2017	<1	0.5	<1.2	0.6	1.74	<1	0.5
9/7/2017	<1	0.5	<1.2	0.6	1.56	<1	0.5
10/5/2017	<1	0.5	<1.2	0.6	1.61	<1	0.5
11/7/2017	<1	0.5	<1.2	0.6	2.02	<1	0.5
12/12/2017	<1	0.5	<1.2	0.6	1.42	<1	0.5
1/25/2018	<1	0.5	<1.2	0.6	2.32	<1	0.5
2/27/2018	<1	0.5	<1.2	0.6	2.76	1.41	1.41
3/28/2018	<1	0.5	<1.2	0.6	1.81	<1	0.5
4/24/2018	<1	0.5	<1.2	0.6	1.52	<1	0.5
5/24/2018	<1	0.5	<1.2	0.6	1.86	<1	0.5
6/14/2018	<1	0.5	<1.2	0.6	1.84	<1	0.5
7/2/2018	<1	0.5	<1.2	0.6	1.78	<1	0.5
8/2/2018	<1	0.5	<1.2	0.6	1.74	1.36	1.36
9/6/2018	<1	0.5	<1.2	0.6	1.66	<1	0.5
10/9/2018	<1	0.5	<1.2	0.6	2.07	<1	0.5
11/1/2018	<1	0.5	<1.2	0.6	1.69	<1	0.5
12/6/2018	<1	0.5	<1.2	0.6	2.46	<1	0.5
1/3/2019	<1	0.5	<1.2	0.6	2.34	1.09	1.09
2/14/2019	<1	0.5	<1.2	0.6	2.1	<1	0.5
3/5/2019	<1	0.5	<1.2	0.6	1.25	<1	0.5
4/2/2019	<1	0.5	<1.2	0.6	2.92	1.81	1.81
5/9/2019	<1	0.5	<1.2	0.6	2.56	1.98	1.98
6/4/2019	<1	0.5	<1.2	0.6	2.3	<1	0.5
7/9/2019	<1	0.5	<1.2	0.6	1.75	<1	0.5
8/6/2019	<1	0.5	<1.2	0.6	2.11	<1	0.5
9/10/2019	<1	0.5	<1.2	0.6	1.87	<1	0.5
10/3/2019	<1	0.5	<1.2	0.6	3.13	1.55	1.55
11/14/2019	<1	0.5	<1.2	0.6	1.56	<1	0.5
12/5/2019	<1	0.5	<1.2	0.6	1.87	<1	0.5
1/7/2020	<1	0.5	<1.2	0.6	1.71	<1	0.5
2/4/2020	<1	0.5	<1.2	0.6	1.4	<1	0.5
3/5/2020	<1	0.5	<1.2	0.6	1.73	<1	0.5
6/22/2020	<1	0.5	<1.2	0.6	1.96	<1	0.5
7/13/2020	<1	0.5	<1.2	0.6	1.31	<1	0.5
Geomean		**0.5**		**0.68**	**2.1**		**0.66**

ATTACHMENT 3
Calculation of Background Concentrations
Data From Fixed Station BD-1

Date	Nickel (ug/l)	Sliver (ug/l)	Adjusted Sliver (ug/l)	Zinc (ug/l)	Adjusted Zinc (ug/l)	Fluoride (mg/l)
8/6/2015	3.05	<1	0.5	<6	3	0.5
9/2/2015	3.79	<1	0.5	<6	3	0.5
10/8/2015	3	<1	0.5	<6	3	0.5
11/10/2015	4.29	<1	0.5	<6	3	0.5
12/17/2015	2.46	<1	0.5	7.69	7.69	0.2
1/11/2016	2.78	<1	0.5	<6	3	0.3
2/2/2016	4.32	<1	0.5	<6	3	0.4
3/3/2016	3.1	<1	0.5	<6	3	0.3
4/12/2016	4.04	<1	0.5	8.87	8.87	0.3
5/10/2016	4.14	<1	0.5	<6	3	0.4
6/7/2016	2.68	<1	0.5	6.02	6.02	0.4
7/5/2016	2.06	<1	0.5	<6	3	0.6
8/4/2016	2.53	<1	0.5	<6	3	0.4
9/7/2016	2.78	<1	0.5	<6	3	0.4
10/20/2016	2.77	<1	0.5	<6	3	0.4
11/8/2016	2.97	<1	0.5	<6	3	0.4
12/6/2016	2.98	<1	0.5	<6	3	0.3
1/24/2017	2.89	<1	0.5	7.53	7.53	0.3
2/14/2017	2.9	<1	0.5	<6	3	0.3
3/2/2017	6.44	<1	0.5	28.5	28.5	0.2
4/11/2017	4.65	<1	0.5	7.33	7.33	0.3
5/2/2017	4.82	<1	0.5	12.4	12.4	0.2
6/8/2017	3.48	<1	0.5	<6	3	0.6
7/6/2017	2.22	<1	0.5	<6	3	0.3
8/24/2017	2.84	<1	0.5	<6	3	0.8
9/7/2017	2.76	<1	0.5	<6	3	0.5
10/5/2017	2.99	<1	0.5	9.45	9.45	0.4
11/7/2017	3.52	<1	0.5	<6	3	0.3
12/12/2017	3.11	<1	0.5	<6	3	0.5
1/25/2018	2.52	<1	0.5	6.94	6.94	0.3
2/27/2018	2.44	<1	0.5	9.42	9.42	0.2
3/28/2018	2.69	<1	0.5	<6	3	0.4
4/24/2018	2.17	<1	0.5	<6	3	0.4
5/24/2018	2.76	<1	0.5	<6	3	0.4
6/14/2018	2.5	<1	0.5	<6	3	0.5
7/2/2018	2.4	<1	0.5	<6	3	0.4
8/2/2018	2.17	<1	0.5	<6	3	0.7
9/6/2018	2.85	<1	0.5	<6	3	0.5
10/9/2018	1.57	<1	0.5	<6	3	0.3
11/1/2018	2.6	<1	0.5	<6	3	0.4
12/6/2018	2.96	<1	0.5	6.07	6.07	0.4
1/3/2019	2.1	<1	0.5	6.44	6.44	0.2
2/14/2019	2.43	<1	0.5	8.26	8.26	0.3
3/5/2019	1.88	<1	0.5	6.8	6.8	0.4
4/2/2019	2.65	<1	0.5	<6	3	0.3
5/9/2019	2.08	<1	0.5	9.86	9.86	0.4
6/4/2019	2.45	<1	0.5	<6	3	0.2
7/9/2019	1.76	<1	0.5	<6	3	0.3
8/6/2019	2.26	<1	0.5	<6	3	0.7
9/10/2019	1.73	<1	0.5	10.5	10.5	0.7
10/3/2019	2.37	<1	0.5	8.93	8.93	0.3
11/14/2019	1.89	<1	0.5	6.29	6.29	0.6
12/5/2019	2.23	<1	0.5	<6	3	0.4
1/7/2020	1.98	<1	0.5	<6	3	0.4
2/4/2020	1.99	<1	0.5	<6	3	0.4
3/5/2020	2.45	<1	0.5	<6	3	0.4
6/22/2020	2.24	<1	0.5	<6	3	0.4
7/13/2020	2	<1	0.5	<6	3	0.4
Geomean	**2.7**		**0.5**		**4.2**	**0.4**

Attachment 4
Calculation of Background Concentrations
Data From Fixed Station BD-1

Date	Total Cyanide (mg/l)	Adjusted Total Cyanide (mg/l)
1/3/2005	<0.005	0.0025
2/2/2005	<0.005	0.0025
3/28/2005	<0.005	0.0025
4/11/2005	<0.005	0.0025
5/9/2005	<0.005	0.0025
6/13/2005	<0.005	0.0025
7/11/2005	<0.005	0.0025
8/3/2005	<0.005	0.0025
9/12/2005	<0.005	0.0025
10/11/2005	<0.005	0.0025
11/15/2005	<0.005	0.0025
12/19/2005	<0.005	0.0025
1/30/2006	<0.005	0.0025
2/22/2006	<0.005	0.0025
3/13/2006	<0.005	0.0025
4/5/2006	<0.005	0.0025
5/15/2006	<0.005	0.0025
Geomean		**0.0025**

ATTACHMENT 5
Calculation of Background Concentrations
Data From Deep River Trace Metals Sampling

Date	Total Cadmium (ug/l)	Adjusted Total Cadmium (ug/l)	Hexavalent Chromium (ug/l)	Adjusted Hexavalent Chromium (ug/l)	Total Silver (ug/l)	Adjusted Total Silver (ug/l)
4/24/2002	0.033	0.033	0.2	0.2	0.0236	0.0236
7/10/2002	< 0.037	0.019	< 0.6	0.3	< 0.014	0.007
10/22/2002	< 0.037	0.019	< 0.6	0.3	0.0081	0.0081
1/14/2003	0.013	0.013	< 0.6	0.3	0.0078	0.0078
5/20/2003	< 0.037	0.019	< 0.6	0.3	0.0144	0.0144
8/19/2003	< 0.037	0.019	< 0.6	0.3	0.0155	0.0155
11/18/2003	0.013	0.013	< 0.6	0.3	0.0104	0.0104
2/24/2004	0.031	0.031	< 0.6	0.3	0.0256	0.0256
9/8/2004	0.02	0.02			0.0073	0.0073
10/20/2004	0.039	0.039			0.0078	0.0078
3/10/2005	0.029	0.029			0.0195	0.0195
6/23/2005	0.017	0.017			< 0.014	0.007
9/1/2005	0.022	0.022			< 0.014	0.007
12/8/2005	0.03	0.03			0.0493	0.0493
3/16/2006	0.038	0.038			0.0258	0.0258
5/25/2006	0.023	0.023			0.0197	0.0197
Geomean		**0.023**		**0.3**		**0.013**

ATTACHMENT 6
Calculation of Water Quality Characteristics
Data From Fixed Station BD-1

Date	Hardness (mg/l)
8/6/2015	253
9/2/2015	268
10/8/2015	274
11/10/2015	281
12/17/2015	287
1/11/2016	244
2/2/2016	294
3/3/2016	278
4/12/2016	256
5/10/2016	280
6/7/2016	282
7/5/2016	239
8/4/2016	229
9/7/2016	243
10/20/2016	253
11/8/2016	260
12/6/2016	286
1/24/2017	239
2/14/2017	283
3/2/2017	182
4/11/2017	241
5/2/2017	211
6/8/2017	283
7/6/2017	274
8/24/2017	244
9/7/2017	271
10/5/2017	245
11/7/2017	276
12/12/2017	294
1/25/2018	286
2/27/2018	219
3/28/2018	303
4/24/2018	282
5/24/2018	289
6/14/2018	293
7/2/2018	241
8/2/2018	242
9/6/2018	247
10/9/2018	233
11/1/2018	303
12/6/2018	252
1/3/2019	224
2/14/2019	280
3/5/2019	285
4/2/2019	242
5/9/2019	218
6/4/2019	242
7/9/2019	249
8/6/2019	262
9/10/2019	261
10/3/2019	159
11/14/2019	286
12/5/2019	286
1/7/2020	277
2/4/2020	283
3/5/2020	278
6/22/2020	285
7/13/2020	260
50th %	**265**

ATTACHMENT 7
Calculation of Preliminary Effluent Limitations

2/12/2021

Discharger Name:	U.S. Steel - Midwest Plant
Receiving Stream:	Portage-Burns Waterway

			Mixing Zone
Discharge Flow	=	17 mgd	
Q1,10 receiving stream (Outfall)	=	54 mgd	
Q7,10 receiving stream (Outfall)	=	65 mgd	25%
Q7,10 receiving stream (Industrial Water Supply)	=	mgd	25%
Harmonic Mean Flow (Outfall)	=	248 mgd	25%
Harmonic Mean Flow (Drinking Water Intake)	=	mgd	25%
Q90,10 receiving stream	=	133 mgd	25%
Dilution Factor (for acute mixing zone)	=		
Hardness (50th percentile)	=	265 mg/l	
Chloride (50th percentile)	=	mg/l	
Sulfate (50th percentile)	=	mg/l	
Stream pH (50th percentile)	=	s.u.	
Summer Stream Temperature (75th percentile)	=	C	
Summer Stream pH (75th percentile)	=	s.u.	
Winter Stream Temperature (75th percentile)	=	C	
Winter Stream pH (75th percentile)	=	s.u.	

Discharge-Induced Mixing (DIM)	No
Drinking Water Intake Downstream	No
Industrial Water Supply Downstream	No

Metals Translators
(dissolved to total recoverable)

	Acute	**Chronic**
Aluminum		
Antimony	1.000	1.000
Arsenic	1.000	1.000
Barium	1.000	1.000
Beryllium	1.000	1.000
Cadmium	0.903	0.868
Chromium III	0.316	0.860
Chromium VI	0.982	0.962
Cobalt	1.000	1.000
Copper	0.960	0.960
Iron		
Lead	0.649	0.649
Manganese	1.000	1.000
Mercury	0.85	0.85
Molybdenum	1.000	1.000
Nickel	0.998	0.997
Selenium		0.922
Silver	0.85	1.000
Strontium	1.000	1.000
Thallium	1.000	1.000
Tin	1.000	1.000
Titanium	1.000	1.000
Vanadium	1.000	1.000
Zinc	0.978	0.986

Source of Criteria [1] A	B	C	D	E	F	G	Background (ug/l)	BCC	Add.	Samples/ Month	CV	CAS Number	Parameters[2]
1	1	3	3				0.023			2	0.6	7440439	Cadmium[4][8]
1	1	3	3				0.68			4	0.6	16065831	Chromium (III)[8]
1	1	3	3				0.072			4	0.6	18540299	Chromium (VI)
												7440473	Total Chromium
1	1	3	3				2.1			4	0.6	7440508	Copper[8]
3	3						0.66			2	0.6	7439921	Lead[4][8]
1	1	1	1			1		Y		1	0.6	7439976	Mercury[6]
1	1	3	3				2.7			2	0.6	7440020	Nickel[8]
3	4	3	3				0.013			2	0.6	7440224	Silver
1	1	3	3				4.2			4	0.6	7440666	Zinc[8]
4	4	3	3				0		Y	2	0.6	50000	Formaldehyde[4]
4	4	3	3				0			2	0.6	91203	Naphthalene
4	4	3	3	3	3		0		Y	2	0.6	127184	Tetrachloroethylene[4]
1	1						0			2	0.6	57125	Cyanide, Free
		1	1				2.5			4	0.6	57125	Cyanide, Total
3	3						400			2	0.6	16984488	Fluoride[8]
													Whole Effluent Toxicity (WET)
1													Acute (TUa) without Mixing Zone
	1												Chronic (TUc)
													Additional Criteria for Lake Michigan
	2						400			2	0.6	16984488	Fluoride

	Indiana Water Quality Criteria for the Great Lakes System (ug/l)							**Preliminary Effluent Limitations (calculated in accordance with 327 IAC 5-2-11.4 and 11.6)**					
	A	B	C	D	E	F	G						
	Aquatic Life Criteria		Human Health Noncancer Criteria		Human Health Cancer Criteria		Wildlife Criteria	Concentration (ug/l)[3]		Mass (lbs/day)		Criteria	
Parameters[2]	Acute (CMC)	Chronic (CCC)	Drinking (HNC-D)	Nondrinking (HNC-N)	Drinking (HCC-D)	Nondrinking (HCC-N)	(WC)	Average	Maximum	Average	Maximum	Type	Basis
Cadmium[4][8]	12.25	4.59	14	1400				9.8	17	1.4	2.4	Tier I	CCC
Chromium (III)[8]	1266	165	410000	43000000				306.06	614.02	43.42	87.11	Tier I	CCC
Chromium (VI)	15.73	10.56	230	25000				16	32	2.3	4.5	Tier I	CMC
Total Chromium								320	650	46	92	Tier I	CCC
Copper[8]	33.66	20.60	280	56000				33	66	4.7	9.4	Tier I	CCC
Lead[4][8]	274.70	14.41						41	70	5.8	9.9	Tier I	CCC
Mercury[6]	1.440	0.772	0.0018	0.0018			0.0013	0.0013	0.0032	0.00018	0.00045	Tier I	WC
Nickel[8]	1067.90	118.61	460	42000				220	380	31	54	Tier I	CCC
Silver	0.46	0.058	130	26000				0.096	0.17	0.014	0.024	Tier II	CCC
Zinc[8]	267.59	269.78	9000	250000				270	540	38	77	Tier I	CMC
Formaldehyde[4]	660	74	3200	320000				140	240	20	34	Tier II	CCC
Naphthalene	200	26	490	1900				48	84	6.8	12	Tier II	CCC
Tetrachloroethylene[4]	480	60	320	1700	11	60		110	190	16	27	Tier II	CCC
Cyanide, Free	22	5.2						9.6	17	1.4	2.4	Tier I	CCC
Cyanide, Total			600	48000				220000	540000	31000	77000	Tier I	HNC-N
Fluoride[8]	16935.42	8196.50						15000	26000	2100	3700	Tier I	CCC
Whole Effluent Toxicity (WET)													
Acute (TUa) without Mixing Zone	1.0								1				
Chronic (TUc)		1.0						2					
Additional Criteria for Lake Michigan													
Fluoride		1000						3100	5400	440	770	Lake M	CCC

[1] Source of Criteria
  1) Indiana numeric water quality criterion; 327 IAC 2-1.5-8(b)(3), Table 8-1; 327 IAC 2-1.5-8(b)(5); 327 IAC 2-1.5-8(b)(6), Table 8-3; 327 IAC 2-1.5-8(b)(7), Table 8-4; 327 IAC 2-1.5-8(c)(5); and 327 IAC 2-1.5-8(f).
  2) Additional Criteria for Lake Michigan, 327 IAC 2-1.5-8(j), Table 8-9. These criteria are not aquatic life criteria, however, since they are treated as 4-day average criteria, they are included in the chronic aquatic criteria column.
  3) Tier I criterion calculated using the methodology in 327 IAC 2-1.5-11, 327 IAC 2-1.5-14, and 327 IAC 2-1.5-15.
  4) Tier II value calculated using the methodology in 327 IAC 2-1.5-12, 327 IAC 2-1.5-14, and 327 IAC 2-1.5-15.
  5) Estimated ambient screening value (EASV) calculated in accordance with 327 IAC 5-2-11.5(b)(3)(A)(i).

[2] The aquatic criteria for the metals are dissolved criteria. The human health criteria for the metals are total recoverable. The aquatic criteria for cyanide are free cyanide. The human health criteria for cyanide are total cyanide.

[3] The preliminary effluent limitations (PELs) for the metals are total recoverable (with the exception of Chromium (VI) which is dissolved).

[4] The above-noted substances are probable or known human carcinogens. If an effluent contains more than one of these substances, the additivity provisions contained in 327 IAC 5-2-11.4(a)(4)(A) shall be applied. This spreadsheet automatically applies these additivity provisions by reducing each human health wasteload allocation for a carcinogen by an equal amount. This allocation between carcinogens can be altered on a case-specific basis.

[5] The above-noted substance is a chlorinated dibenzo-p-dioxin. If an effluent contains more than one chlorinated dibenzo-p-dioxin or chlorinated dibenzofuran, the additivity provisions contained in 327 IAC 5-2-11.4(a)(4)(C) shall be applied.

[6] The above-noted substances are bioaccumulative chemicals of concern (BCCs). Dilution is not allowed for new discharges of BCCs to streams and for any discharges of BCCs to the open waters of Lake Michigan. Dilution is not allowed for existing discharges of BCCs to streams after January 1, 2004 unless the discharge meets an exception. To not allow for dilution for BCCs, place a "Y" in the "BCC" column.

[7] Limits based on estimated ambient screening values (as indicated by EASV) ARE NOT to be used as water quality-based effluent limitations. These are solely to be used as preliminary effluent limitations.

[8] The above noted substances have a criterion that is a function of an ambient downstream water quality characteristic.

[9] The ambient downstream water quality characteristic must be entered for both chloride and sulfate and it cannot exceed the applicable chronic aquatic life criterion for the substance.
Preliminary effluent limitations (PELs) for chloride and sulfate shall not be used to establish water quality-based effluent limitations that do not ensure the water quality criteria for both substances are achieved in the receiving waterbody.

Last revised: 25 July 2013

ATTACHMENT 8
U.S. Steel - Midwest Plant (IN0000337) Outfall 004
Whole Effluent Toxicity Data [1]

Species: ***Ceriodaphnia dubia*** **[2]**

	Acute WET Data			Chronic WET Data				
Date	**LC50 (%)**	**LC50 (TU_a)**	**Adjusted LC50 (TU_a)**	**NOEC (%)**	**NOEC (TUc)**	**IC25 (%)**	**IC25 (TU_c)**	**Adjusted IC25 (TU_c)**
May-17	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Jun-17	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Jul-17	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Sep-17	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Dec-17	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Mar-18	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Jun-18	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Sep-18	>100	<1.0	1.0	52.6	1.9	64.5	1.6	1.6
Dec-18	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Mar-19	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Jun-19	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Sep-19	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Jan-20	>100	<1.0	1.0	52.6	1.9	68.8	1.5	1.5
Mar-20	>100	<1.0	1.0	52.6	1.9	67.7	1.5	1.5
Jun-20	>100	<1.0	1.0	26.3	3.8	46.8	2.1	2.1
Jul-20	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Sep-20	78.6	1.3	1.3	26.3	3.8	12.1	8.3	8.3
Sep-20 [3]	16.1	6.2	6.2	<6.6	15.2	<6.6	>15.2	15.2
n			**18**		**18**			**18**
CV			**0.9**		**1.5**			**1.5**
Maximum			**6.2**		**15.2**			**15.2**

Species: Fathead Minnow

	Acute WET Data			Chronic WET Data				
Date	**LC50 (%)**	**LC50 (TU_a)**	**Adjusted LC50 (TU_a)**	**NOEC (%)**	**NOEC (TUc)**	**IC25 (%)**	**IC25 (TU_c)**	**Adjusted IC25 (TU_c)**
May-17	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Jun-17	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
Jul-17	>100	<1.0	1.0	100	1.0	>100	<1.0	1.0
n			**3**		**3**			**3**
CV			**--**		**--**			**--**
Maximum			**1.0**		**1.0**			**1.0**

[1] The renewal permit effective April 1, 2016 required chronic toxicity testing for *Ceriodaphnia dubia* and fathead minnow. After three tests, chronic toxicity testing was only required for the most sensitive species. The three monthly tests beginning May 2017 confirmed completion of a toxicity reduction evaluation (TRE).
[2] The data for this species were used in the reasonable potential analysis.
[3] Toxicity was below the lowest test dilution, so the TUc at the lowest dilution was used for the purposes of calculating the coefficient of variation (CV).

2/12/2021

ATTACHMENT 9

Reasonable Potential Statistical Procedure

2/12/2021

(calculated in accordance with 327 IAC 5-2-11.5)		**Monthly Average Determination**							**Daily Maximum Determination**						
Parameters	WQBELs Required*	Maximum Monthly Average (ug/l)	Number of Monthly Averages	CV	MF	PEQ (ug/l)	PEL (ug/l)	PEQ > PEL?	Maximum Daily Sample (ug/l)	Number of Daily Samples	CV	MF	PEQ (ug/l)	PEL (ug/l)	PEQ > PEL?
Cadmium															
Chromium (III)															
Chromium (VI)															
Total Chromium															
Copper															
Lead															
Mercury	Yes I	0.0016	13	0.4	1.4	0.0022	0.0013	Yes	0.018	389	1.4	0.8	0.014	0.0032	Yes
Nickel															
Silver															
Zinc															
Formaldehyde	Yes II					5700	140	Yes	2200	4	0.6	2.6	5700	240	Yes
Naphthalene															
Tetrachloroethylene															
Cyanide, Free	No	2	57	0.2	1.0	2	9.6	No	17	620	0.5	0.9	15	17	No
Cyanide, Total															
Fluoride															
Whole Effluent Toxicity (WET)															
Acute (TUa) without Mixing Zone															
Chronic (TUc)															
Additional Criteria for Lake Michigan															
Fluoride															

*WQBELs Required:

[1] "Yes I" means that a projected effluent quality (PEQ) exceeded a preliminary effluent limitation (PEL) based on a Tier I criterion and WQBELs must be included in the NPDES permit.

[2] "Yes II" means that a PEQ exceeded a PEL based on a Tier II value and WQBELs must be included in the NPDES permit.

[3] "No" means that a PEQ did not exceed a PEL and WQBELs do not have to be included in the NPDES permit based on the reasonable potential statistical procedure.

[4] "Data" means that a PEQ exceeded a PEL based on an "estimated ambient screening value" and the permittee must generate sufficient data to develop a Tier I criterion or Tier II value for the parameter.