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November 16, 2023

Ms. Nicole Gardner
Office of Water Quality
MC 65/42PS Rm 1255
100 N. Senate Avenue
Indianapolis, IN 46204-22510
ngardner@idem.in.gov

Re: Comments on Tentative Determination to Renew NPDES Permit No. IN0000094
Cleveland-Cliffs Steel LLC-Indiana Harbor East

Dear Ms. Gardner:

The Environmental Integrity Project (“EIP”), Environmental Law and Policy Center (“ELPC”), Surfrider Foundation (“Surfrider”), Conservation Law Center, Just Transition Northwest Indiana, National Parks Conservation Association, Northwestern University School of Law, Industrious Labs, and Gary Advocates for Responsible Development (collectively “Commenters”) respectfully submit the comments below to the Indiana Department of Environmental Management (“IDEM” or “the Department”) on its tentative determination to renew the NPDES Permit for Cleveland-Cliffs LLC Indiana Harbor East Treatment Plant (“the Facility”) (NPDES No. IN000094) (“Draft Permit”). Commenters appreciate the hard work that has gone into drafting the Permit and thank you for the opportunity to comment. We have identified several issues that should be addressed before it is finalized, as detailed in the attached Comments.

All of the Commenters share the same goal of protecting water quality. For example, EIP is a non-profit, nonpartisan organization that empowers communities and protects public health and the environment by investigating polluters, holding them accountable under the law, and strengthening public policy. Comprised of attorneys, analysts, investigators, and community organizers, EIP’s goals include helping local communities obtain the protections of environmental laws. ELPC is the Midwest’s leading environmental legal advocacy organization that aims to ensure all Midwesterners have healthy clean air to breathe, safe clean water to drink, and can live in communities without toxic threats, including in the Great Lake region. Surfrider is a grassroots, environmental non-profit organization dedicated to the protection and enjoyment of the world’s ocean, waves and beaches for all people through a powerful activist network with nearly 200 chapters and school clubs in the United States, including a Great Lakes chapter network.

Weak Clean Water Act (“CWA”) National Pollutant Discharge Elimination System (“NPDES”) state pollution control permits and lack of enforcement result in millions of pounds

of pollution entering our communities and waters and have major implications for public health, water quality, and the overall efforts towards Great Lakes restoration. By contrast, strong CWA implementation and enforcement lead to efficient pollution reduction and more equitable outcomes. The federal CWA and Indiana's Water Pollution Control law, together with those laws' implementing regulations, rely on NPDES permits to achieve and maintain water quality standards ("WQS"). The Draft Permit is an important opportunity to create clear, specific, measurable, and enforceable requirements to reduce pollution downstream of the Facility and to facilitate environmental justice in Indiana. The Draft Permit also presents an opportunity for IDEM to promote its mission of "protect[ing] human health and the environment while allowing the environmentally sound operations of industrial, agricultural, commercial, and governmental activities vital to a prosperous economy."

Commenters urge IDEM to issue a final permit for the Facility that reflects the changes recommended in the attached Comments, and we invite discussion as to how the Permit's requirements can be carried out in a way that is environmentally protective, cost-effective, and implementable by industry while, most importantly, achieving the objectives of the CWA to restore and maintain the health of our nation's waters.

Thank you again for your work on the proposed permits for Cleveland-Cliffs, and for considering our comments.

Sincerely,



Lori G. Kier
Senior Attorney, Environmental
Integrity Project

Attachment

cc: (w/ attachment)
Luca Cherubini, Indiana Wastewater Program Manager, IN, EPA Region 5
Robert Pepin, Great Lakes Water Quality Initiative Permitting, EPA Region 5
Alan Walts, Director, Tribal and Multi-media Programs Office, EPA Region 5

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

**CLEVELAND - CLIFFS LLC INDIANA HARBOR EAST TREATMENT PLANT
3210 Watling Street, East Chicago, Lake County, Indiana
NPDES Permit No. IN000094**

**COMMENTS OF ENVIRONMENTAL INTEGRITY PROJECT, ENVIRONMENTAL
LAW AND POLICY CENTER, SURFRIDER FOUNDATION, CONSERVATION LAW
CENTER, JUST TRANSITION NORTHWEST INDIANA; NATIONAL PARKS
CONSERVATION ASSOCIATION, NORTHWESTERN UNIVERSITY SCHOOL OF LAW,
INDUSTRIOUS LABS, AND GARY ADVOCATES FOR RESPONSIBLE
DEVELOPMENT**

Submitted electronically through email to the Permit Manager and via First Class Mail

Introduction and Overview

The Environmental Integrity Project, Environmental Law and Policy Center, Surfrider Foundation, Conservation Law Center, Just Transition Northwest Indiana, National Parks Conservation Association, Northwestern University School of Law, Industrious Labs, and Gary Advocates for Responsible Development (collectively “Commenters”) respectfully submit the comments below to the Indiana Department of Environmental Management (“IDEM” or “the Department”) on its tentative determination to renew the NPDES Permit for Cleveland-Cliffs LLC Indiana Harbor East Treatment Plant (“the Facility”) (NPDES No. IN000094) (“Draft Permit”). Commenters appreciate the hard work that has gone into drafting the Permit, and have identified the following issues in particular that should be addressed before it is finalized:

- Need to consider environmental justice implications of permit renewal
- Need to develop site-specific technology-based effluent limits and modern water treatment technology specific to these operations
- Need to develop expanded record of review of application for Streamlined Mercury Variance

When the Clean Water Act was enacted in 1972, Congress declared that it was “the national goal that the discharge of pollutants into navigable waters be eliminated by 1985.” 33 U.S.C. § 1251(a)(1). This goal was to be reached, in part, by a nationwide permitting system — called the National Pollutant Discharge Elimination System (“NPDES”) — that would gradually lower the amount and concentration of pollutants that municipalities and industries discharged into public waters as the technology improved. Much of the CWA, in fact, dealt with promoting and funding research into wastewater treatment technologies. In the 50 years since passage of the CWA, treatment technology has made significant improvements, but we have not come close to eliminating the discharge of pollutants into our public waters because we have not always required the use of the latest treatment technologies.

The renewal of NPDES permits provides IDEM the opportunity to evaluate whether a permitted facility is using the latest treatment technology to reduce its discharge of pollutants. Absent any requests for modification, this chance is presented to the Department only once every five years, so it is incumbent on IDEM — and the public it serves — to rigorously assess the current water quality of the public waters into which pollutants are discharged, the toxicity and amounts of those pollutants, and the treatment systems used to limit those discharges. Fortunately, IDEM has the technical expertise and the analytical tools to conduct this rigorous assessment. The Commenters document here how such a rigorous assessment, consistent with federal and state law, should be performed so that Cleveland-Cliffs is required to install modernized technology to meet lower limits that are justified by the existence of such technology along with the importance of Lake Michigan and the nearby communities.

To be clear, the Commenters do not categorically oppose the renewal of these permits, but ask that they be improved to reflect the real dangers posed by Cleveland-Cliffs' pollutants to the priceless national resource that is Lake Michigan and to the overburdened communities that rely on it for drinking water, food, recreation and enjoyment. Industry can no longer be allowed to despoil our public waters for personal gain when the present and potential future harm is so grave, nor should it be allowed to rely on outdated technology in controlling these pollutants when more advanced options are available.

Background: Receiving Waters and Neighboring Communities

To understand the impacts of Cleveland-Cliffs Steel's discharges on the environmental justice community, it is important to understand, initially, that this Facility (together with Cleveland-Cliffs Steel LLC — Indiana Harbor Central ("Central Facility") and Cleveland-Cliffs Steel LLC — Cleveland Cliffs West ("West Facility")) is within the Great Lakes Restoration Initiative's ("GLRI") Grand Calumet River Area of Concern. According to the U.S. Environmental Protection Agency ("EPA"):

The Grand Calumet River is in one of the most heavily industrialized areas in the United States, flowing mainly through northwestern Indiana. Beginning in the 20th century the area began experiencing an influx of steel mills, foundries, chemical plants, oil refineries, meat packing industries, and pharmaceutical industries. Prior to the 1972 Clean Water Act, industries released industrial waste and some nearby cities discharged untreated sewage into the river. In addition, potential nonpoint sources of contaminants, such as industrial and urban runoff may have affected water quality in the river.¹

There are at least a dozen other active IDEM NPDES permits authorizing discharge to the Indiana Harbor Ship Canal (including the receiving waters of Indiana Harbor Canal, Lake George Canal (a part of the Indiana Harbor Canal), and Lake Michigan via Indiana Harbor Ship Canal), including the three Cleveland-Cliffs facilities currently undergoing permit renewals.² Despite being just one of many sources of water pollution in the region, the Cleveland-Cliffs

¹ U.S. EPA, "[Grand Calumet River AOC](#)."

² See IDEM, "[List of NPDES Permits \(Updated Quarterly\)](#)."

East Facility’s discharges are significant when taken together with the nearby Central and West Facilities. Table A below shows the Annual Maximum Environmental Load using daily maximum loads allowed by the Draft Permit, if discharged 365 days/year, for all three facilities.³ To visualize the size of the loading, the three sites are capable of discharging more than 5,000 tons/year of total suspended solids (“TSS”) and oil and grease (“O&G”) alone (the heavy metals in Table A will be in the solids). This is *more than 350 large dump truck loads each year into the Indiana Harbor Canal and to Lake Michigan.*⁴

Table A
Pollutants Discharged by Cleveland-Cliffs Indiana Harbor Facilities Per Year (in pounds)

Annual Maximum Environmental Load Cleveland Cliffs All	
<i>Lbs/yr</i>	<i>Pollutant</i>
0.97	Mercury
11,348	Lead
111,931	Zinc
7,787,385	TSS
2,258,510.5	O&G
62,050	Total Chrome

As of July 2022, Indiana ranked last among Midwest states in protecting vulnerable communities from pollution,⁵ and — if the Draft Permit is issued as proposed — it could become another manifestation of that fact. As currently written, the Draft Permit fails to adequately control contaminants that threaten the health and safety of vulnerable residents in the vicinity of the Facility and receiving waters, such that already overburdened communities would experience disproportionate impacts from this increased pollution.

While we are concerned about the volume and characteristics of pollution entering the water from this Facility, we acknowledge that industry can co-exist with residents — even in the most vulnerable populations — if steps are taken to prevent over-burdening nearby communities. The more industry there is in an area, however, the more precautions that are needed to ensure that local residents are not shouldering a disproportionate burden to serve the needs of all. The East Facility primarily serves the steel industry, which is undeniably important to Lake County, Indiana, and the nation. That importance, however, does not justify its operation without regard to the surrounding communities, which is why environmental laws and regulations exist. Those

³ To calculate the annual load, Commenters applied permit limits that would be applicable in the event that ECTO starts back up.

⁴ The combined total discharge of TSS (7,787,385 lbs/year) and O&G (2,258,511 lbs/year) is more than 10,000,000 lbs/year. Larger dump trucks can carry as much as 14 tons (28,000 lbs) of material at one time. See “How Much Can a Dump Truck Carry?,” (available at: <https://www.badgertruck.com/heavy-truck-information/dump-truck-carrying-capacity/#:~:text=On%20average%2C%20large%20dump%20trucks,to%20consider%20your%20needs%20carefull>).

⁵ See Northeast-Midwest Institute, “Scorecard of Environmental Justice Policies in Northeast-Midwest States,” <https://www.nemw.org/wp-content/uploads/2022/08/Environmental-Justice-Report-and-Scorecard-August-5-2022.pdf> (July 2022).

provisions, designed to protect the environment and public health and welfare, must be rigorously enforced and environmental justice considerations in particular must be taken into account:

- **Environmental Justice Analysis.** IDEM should conduct an environmental justice analysis of appropriate scope to inform the permitting decision, for example by using an Environmental Justice Assessment (before reissuance of the Permit).⁶ This analysis should include an EJScreen analysis,⁷ input from the affected community to identify their concerns, an evaluation of existing environmental data, and an evaluation of existing demographic and public health data about the community. The analysis should evaluate the effects that the Permit, as renewed, will have on the community, and the degree to which these effects will be disproportionately high and adverse. Furthermore, the analysis should discuss mitigations to be included in the permit that would be expected to address any identified adverse effects.
- **Cumulative Impact Analysis.** IDEM should conduct a cumulative impact analysis to determine the Facility's impact on the affected communities. A cumulative impact analysis could demonstrate that the permit will be protective of health and the environment in those communities. Due to the number of dischargers in the same receiving waters, a cumulative impact analysis is appropriate.
- **Mitigation.** IDEM should consider opportunities to address disproportionately high and adverse effects that extend beyond the scope of the NPDES permitting decision utilizing a whole-of-government approach by working with the permittee and local officials to reduce impacts on the surrounding neighborhood.
- **Greater Public Engagement.** IDEM has indicated publicly that it values environmental stakeholder inclusion.⁸ The Department should hold a public meeting in East Chicago – in addition to the November 1, 2023 public hearing which was held specifically on the Draft Permit – to hear and answer questions and comments from local residents regarding the Facility. It is important that the meeting for the public be held at a time and location to make it accessible to the surrounding community, most of whom have jobs during the work day that they cannot afford to miss. Additionally, the meeting announcement should be in both English and Spanish, and Spanish language interpreters should be available at the meeting, since the community in the vicinity of the Facility is more than 50% Hispanic or Latino.⁹ Commenters further recommend that responsible officials from Cleveland-Cliffs attend. A public meeting could help dispel some concerns and raise understanding among local residents and apprise the company of its role and impact on the community.

⁶ EPA, [Technical Guidance for Assessing Environmental Justice in Regulatory Analysis](#).

⁷ See <https://www.epa.gov/ejscreen> for more information about EPA's EJ Screening and Mapping Tool.

⁸ See <https://www.in.gov/idem/health/environmental-stakeholder-inclusion/>.

⁹ See <https://www.census.gov/quickfacts/fact/table/eastchicagocityindiana,US/POP010210>.

Our remaining comments stand alone from, but are influenced by, our recommendations regarding environmental justice. The additional comments are not, however, exhaustive of the ways in which the Draft Permit could be amended to mitigate the impact to the environment and local residents. We encourage IDEM and Cleveland-Cliffs, based on their superior knowledge of the Facility's operations and emissions, to seek out and implement ways to reduce the Facility's adverse impacts. The comments are organized in numbered sections that correspond with the sections of the Facility's Draft Fact Sheet.

Specific Comments

2.3 Outfall Descriptions and Wastewater Treatment

Current Treatment Systems and Authorized Pollutants

The Draft Permit authorizes the discharge of groundwater from the East facility through Outfall 011. Draft Permit at p. 2. During emergency situations, groundwater may be discharged through Outfall 013. *Id.* at p. 5. The Draft Permit also covers Outfall 014, but "is limited [to] blowdown from the Main Recycle System 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 Indiana Harbor Turning Basin. Such discharge shall be limited and monitored by the permittee as specified below:

The Main Recycle System consists of process and cooling water from hot forming operations (80" hot strip mill); pickling operations (No. 5 pickle line, continuous anneal line); cold rolling mills (80" tandem mills; Nos. 28 and 29 temper mills); alkaline cleaning; No. 5 hot dip galvanizing line; treated sanitary wastewaters from the No. 1, No. 2, and No. 3 sewage treatment plants, and Plant 2 former coke plant remediation system discharge.

Id. In other words, the list of covered discharges for Outfall 014 does not indicate that groundwater discharge is authorized, so it is not permitted through that outfall. (Please see discussion below under "Overall Recommendations for Improved Treatment Systems" and Section 5.0, Permit limitations, "Unpermitted Discharges Should be Expressly Prohibited" for additional authority for the lack of coverage for unpermitted discharges).

The Draft Permit implicitly recognizes the contribution of pollutants through its groundwater discharges: it includes continuation of a Groundwater Remediation Project, which involves treating groundwater from the Plant 3 former coke plant groundwater remediation system, which then discharges through granular activated carbon filtration. Draft Permit at p. 58; Draft Fact Sheet at Section 6.3.2 The fact that the Facility has chosen a carbon filtration process suggests at least a recognition of its contribution to contaminants discharged to Indiana Harbor and Lake Michigan. While the Facility voluntarily tests groundwater for volatile organic compounds ("VOCs") and semi-volatile organic compounds ("SVOCs") prior to discharge from Outfall 014, no information is available in the Draft Permit package to identify specific chemicals or data that supports the efficacy of the Facility's carbon filtration system.

Total Suspended Solids, Oil & Grease, Lead, Zinc, Selenium, and Mercury

The Facility has historically had issues with inadequate Operation and Maintenance (O&M) and unapproved bypass management practices. These challenges continued to present concerns earlier this year, as they were identified during a February 1, 2023, Reconnaissance Inspection performed by IDEM. The Department subsequently inspected the Facility in March, June and September 2023 and found that all issues related to O&M and bypass had been addressed by the Facility.

However, regarding TSS and Oil & Grease (as discussed above under Global Concerns), the load and burden on the receiving waters from the significant quantity of solids and O&G discharged from the Facility continue to present a concern, and would only increase if the idled No. 28 Temper Mill process is brought back into service. As a result, we recommend that the Facility should be required to focus on improving the removal of TSS and O&G to reduce the load of those contaminants. The removal of these conventional pollutants will also address the removal of heavy metals. (See further discussion about removal of TSS and O&G below under “Overall Recommendations for Improved Treatment Systems”).

Chlorine and Biocide Treatment

The Facility has had issues with Chlorine in its effluent in the past. The IDEM multi-discharger model was used to assess the Water Quality-Based Effluent Limits (“WQBELs”) for chlorine and other COC in 2017 and for this draft permit. Monitoring requirements for Total Residual Oxidants (“TRO”) (bromine + chlorine) are also proposed based on the potential for both bleach (sodium hypochlorite) and Stabrex ST70 to be present in the discharge. Commenters are concerned that periodic treatments like these — because they are not normally metered into the system — are often excessive and can potentially cause significant problems for aquatic life in the receiving water. A case in point is a November 2021 violation where a reddish-brown discoloration was observed at Outfall 018. (See below under Section 3.1, “Compliance History”). The Facility’s preliminary investigation of the root cause of the discoloration was suspected excess addition of the water treatment chemical Ferric Chloride at the Blast Furnace blowdown treatment plant, which discharges through outfall 518 to outfall 018. No fish kill or other wildlife appeared to have been adversely affected because of this incident but the potential for adverse environmental impacts remains, and the Facility should put engineered controls in place to avoid future incidents.

We recommend that the Facility consider installing metered systems for additions of chlorine and biocides to reduce the potential for repeat violations. This is recommended in addition to the onsite lab testing that is already required.

Overall Recommendations for Improved Treatment Systems

First, Commenters note generally that unpermitted discharges, such as groundwater from Outfall 014, are not authorized by NPDES permits unless explicitly identified and covered by the Draft Permit. The federal Clean Water Act plainly prohibits the “discharge of *any pollutant* by

any person” “[e]xcept as in compliance with [the CWA].” Section 301 of the CWA, 33 U.S.C. § 1311 (emphasis added). The term “pollutant” means, *inter alia*, “industrial . . . waste discharged into water.” 40 C.F.R. § 122.2. Conversely, compliance with a permit issued pursuant to section 402 of the CWA, is deemed to be compliance with the CWA. 33 U.S.C. § 1342(k). Thus, any substance discharged into water as part of the industrial waste process, including groundwater (except as expressly authorized with the CWA and its implementing regulations and requirements, such as an NPDES permit) is illegal.

Further, Commenters are concerned about the overall volume of wastewater discharged from the Facility (which we also discuss above in connection with TSS and O&G in particular). We recognize that the Facility performs various methods of wastewater pretreatment prior to discharging to the Indiana Harbor Ship Canal (which flows into Lake Michigan). However, based on the amount of TSS, Oil & Grease, heavy metal particulate, and other pollutants that continue to be discharged, and our expressed concerns in connection with Section 5.2 WQBELs of the Fact Sheet below, we are recommending improved and added treatment systems.

The table in Attachment A below summarizes pertinent information about the Facility’s wastewater treatment systems, the pollutants of concern discharged to each outfall, and provides proposed treatment system improvements. We are generally recommending the addition of ion exchange, membrane filtration or reverse osmosis (“RO”) of wastewater post-settling to help to reduce the large volume of TSS, Oil & Grease and heavy metals that are currently discharged through outfall 014. We also note that the addition of membrane filtration or RO of wastewater following the Continuous Caster and Ruhrstahl Heraeus (“RHOB”) processes would help to reduce the large volume of TSS, Oil & grease and heavy metals that is currently discharged through Outfalls 618 and 018. The addition of RO would also be effective at outfalls where Per- and Polyfluoroalkyl Substances (“PFAS”) is potentially discharged.¹⁰ RO has been demonstrated as effective treatment for PFAS in wastewater discharge.

3.0. Permit History

3.1 Compliance History

The Fact Sheet for the Draft Permit includes a list of exceedances and inspections over the last two years “for compliance verification,” but does not explain what these mean or how they are considered in renewal of this permit. Commenters request that IDEM include in the Fact Sheet a complete history of noncompliance by the Indiana Harbor East steel mill, as well as IDEM’s efforts to address those violations (*e.g.*, September 14, 2021 Administrative Penalty Order for bypassing, failure to manage plant adequately allowing a reddish discharge, failure to maintain records, and exceedances of permit limits), since its last renewal on July 21, 2017. Doing so can identify recurring compliance issues and the need for additional inspections, monitoring, and reporting. Based on the information reviewed by the Commenters in the Virtual

¹⁰ More information about potential PFAS discharges from the Facility is included below at Section 5.6, Antidegradation.

File Cabinet, there has been a repeated exceedance of the chlorine limit during the past four years.

- 1/11/22 Ammonia discharge of 270 lbs from Outfall 518 in excess of daily maximum of 210 lbs (VFC #83275849)
- 11/12/21 Reddish-brown discoloration observed at Outfall 018 (VFC #83242321)
- 9/13/21 Chlorine average value of 0.297 mg/L, well in excess of daily concentration maximum limit of 31 µg/L from Outfall 014 (VFC #83218304)
- 7/14/21 Zinc discharge of 32.54 lbs from Outfall 518, in excess of 9.46 lbs/day limit. (VFC #83187012)
- 7/14/21 TSS discharge of 602 lbs from Outfall 518, in excess of 281 lbs/day limit. (VFC #83193544)
- 4/13/21 Oil and grease discharge of 19.35 mg/L from Outfall 014, in excess of maximum daily concentration of 15 mg/L. (VFC #83141590)
- 3/9/21 Total residual chlorine discharge of 4.51 lbs from Outfall 014, in excess of daily maximum limit of 1.0 lbs/day. (VFC #83132664)
- 1/25/21 Total cyanide discharge of 32.71 lbs from Outfall 518, in excess of daily maximum limit of 14.0 lbs/day. (VFC #83120403)
- 6/2/20 Failed to test for chlorine for two months. (VFC #83022465)
- 5/5/20 Grab sample at Outfall 014 shows pH level at 9.1, outside the permitted limit of 6-9 pH. (VFC #82967815)

There have also been several bypasses of the treatment facility since the last renewal:

- 1/29/23: An estimated 21,000 gallons of unchlorinated water was allowed to reach the Indiana Harbor Turning Basin from the Buffalo Box. (VFC #83443089)
- 5/20/21: An estimated 30,000 gallons of water discharged through the No. 6 pumphouse. (VFC #83170724)
- 5/16/21: An estimated 12,500 gallons of water discharged from the slurry Stillwell to the terminal lagoon. (VFC #83178302)
- 5/4/20: An estimated 36,000 gallons of water discharged from the pump house to the main intake over five days when lake levels exceeded the sheet pile at the No. 6 pump house. (VFC #82992669)
- 10/8/18: An estimated 3.6 million gallons overflowed the weir and discharged through Outfall 011 due to a plant-wide power outage. (VFC #83035005)

Commenters also request that the Fact Sheet compile a summary of IDEM inspections of the Indiana Harbor East wastewater treatment operations. The Commenters were able to locate the following ten reports of inspections by IDEM personnel since the last renewal, most of which found problems or violations of its NPDES permit. These inspections identify a number of recurring problems, particularly involving maintenance, operations, and bypasses.

- 9/13/23: Reconnaissance inspection focused on the No. 4 steel plant treatment system and all external outfalls. It found a layer of scum, presumably “biological in nature” within the soft booms at Outfall 018. It also recognized an EPA inspection that found vegetation growth within the final thickeners and a leak in the clear well pump. (VFC #83534853)
- 4/17/23: Reconnaissance inspection focused on all external outfalls, the No. 7 blast furnace blowdown treatment facility, and the No. 6 pump house. It found the blowdown treatment facility operating effectively in part due to more stable cyanide levels since the blast furnace was relined in 2021. (VFC #83491700)
- 3/20/23: Reconnaissance inspection following up on EPA’s inspection from October 2022 with a focus on external outfalls 011, 014, and 018. Found limestone pulled back from the edge of the bank near Outfall 018 and leaks in the Terminal Treatment West Plant had been repaired. (VFC #83449401)
- 2/1/23: Reconnaissance inspection rated the bypass category unsatisfactory and maintenance as unsatisfactory due to the failure of the 12-inch ductile iron pipe that allowed water to flow into the Indiana Harbor Turning Basin. (VFC #83426000)
- 8/24/22: Compliance evaluation inspection conducted on August 24 and 31, 2022, observed violations. A brown foam/scum was observed near the sampling building for Outfall 018, lab bench sheets lacked the time for many analyses conducted on-site, reporting was rated as marginal, and effluent was rated as marginal due to exceedances of TSS, zinc and ammonia in July 2021. (VFC #83365248)
- 6/28/22: Reconnaissance inspection of outfalls found all clear and free of color at the time of the inspection. (VFC #83338873)
- 1/27/21: Reconnaissance inspection conducted in response to a cyanide exceedance reported on January 25. Operation was rated as unsatisfactory where the cyanide exceedance was the result of improper operations. (VFC #83120357)
- 9/14/20: Compliance evaluation inspection observed violations due to discolored effluent. The site was rated as marginal due to the inability to visually evaluate Outfall 518 and its operation were rated as unsatisfactory due to self-reported operational problems. (VFC #83049297)
- 1/13/20: Reconnaissance inspection found conditions satisfactory. (VFC #82900180)
- 9/23/19: Compliance evaluation inspection rated the facility’s flow measurement program as marginal and referenced exceedances of pH and oil & grease limits. (VFC #82843397)

Addressing the violations at the Facility is especially critical given the environmental justice community that has experienced the adverse impacts from its pollution for decades.

4.1 Total Maximum Daily Loads

NPDES permit limitations and conditions must be designed to ensure compliance with the narrative and numeric criteria in the WQS and the Total Maximum Daily Load (“TMDL”)

wasteload allocations (“WLAs”) established in any applicable TMDL.¹¹ Permit writers must also consider whether the discharge contributes directly or indirectly to a waterbody that is included on the latest CWA section 303(d) list or designated by IDEM as impaired. According to the draft Fact Sheet, Indiana’s List of Impaired Waters for the 2022 cycle included the following impairments for waters to which the permittee discharges, as shown in Table B below:

Table B

Impaired Waterways			
Assessment Unit	Waterbody	Impairments	Cleveland-Cliffs Indiana Harbor East Outfalls
INC0163_T1001	Indiana Harbor Canal	Biological Integrity, Oil and Grease, E. coli and PCBs in Fish Tissue	None
INC0163G_G1078	Lake Michigan Shoreline (includes Indiana Harbor)	Free Cyanide, Mercury in Fish Tissue and PCBs in Fish Tissue	011, 014, and 018
INM00G1000_00	Lake Michigan (beyond the shoreline)	Mercury in Fish Tissue and PCBs in Fish Tissue	None

As discussed above, this Facility is within the GLRI Grand Calumet River Area of Concern. The Calumet River was designated as an Area of Concern (“AOC”) under the Great Lakes Water Quality Agreement of 1987, largely due to legacy pollutants. These pollutants remain in the environment for extended periods of time after they are introduced and were found in sediments at the bottom of the Grand River, Indiana Harbor and Ship Canal. These legacy pollutants include:

- Polychlorinated biphenyls (“PCBs”)
- Polycyclic aromatic hydrocarbons (“PAHs”)
- Heavy metals including but not limited to mercury, cadmium, chromium, and lead
- Oil and grease

In addition to the legacy pollutants listed above, monitoring revealed degradation in the form of biochemical oxygen demand.¹²

Despite the historically impaired status of the receiving waters, neither the Draft Permit nor Fact Sheet appear to include a record that WQS and TMDL wasteload allocations will be achieved. Instead, they simply identify the list of impaired waters (and designations for the Indiana Harbor Canal and Lake Michigan Shoreline). The Fact Sheet makes the conclusory

¹¹ Section 301(b)(1)(c) of CWA, 33 U.S.C. § 1331(b)(1)(C); *see also* 40 C.F.R. § 122.4(d) (providing that “[n]o permit may be issued . . . [w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States. . .”).

¹² U.S. EPA, “[Grand Calumet River AOC](#).”

statement that “[t]he 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.” Fact Sheet at 5.3.1. That is insufficient.

Therefore, we urge IDEM to include more prescriptive requirements in the Permit based on known information about the permittee’s discharges, and to demonstrate in the Fact Sheet how those limits will ensure attainment of WQS. We acknowledge that the process of translating WLAs into NPDES permit limits that are consistent with the assumptions and requirements of TMDLs is not always straightforward, so we suggest that IDEM review EPA’s informative web page (including specific examples) on “Permit Limits – Permitting to Meet a Total Maximum Daily Load (TMDL)”¹³ as the Department attempts to develop a fulsome record connecting the TMDL WLAs for the Facility with the Permit’s effluent limitations and conditions.

5.0 Permit limitations

Unpermitted Discharges Should be Expressly Prohibited

The Clean Water Act prohibits the discharge of unpermitted pollutants. 33 U.S.C. § 1311 (prohibiting “discharge of *any pollutant* by any person” “[e]xcept as in compliance with [the CWA].”). Indiana law provides that “[a]ny discharge of pollutants into waters of the State as a point source discharge . . . is prohibited unless in conformity with a valid NPDES permit obtained prior to discharge.” 327 IAC 5-2-2. Despite these general propositions, a broad prohibition against unpermitted discharges does not appear in the Draft Permit. For example, the Draft Permit includes discharge limitations for Outfalls 001A, 001B, 101A, and 101B, but nowhere does the document include a generalized statement that discharges are prohibited other than through those outfalls. Commenters request that IDEM include a general prohibition against the unpermitted discharge of pollutants with a statement similar to the prohibition under Indiana law that any discharges of pollutants into waters of the State as a point source discharge is prohibited unless in compliance with a valid NPDES permit.

5.1 Technology-Based Effluent Limitations

Applicability of Effluent Limitation Guidelines

The technology-based effluent limitations (“TBELs”) in the proposed permit are insufficient to address water pollution discharged from the facility for several reasons: first, the Fact Sheet supporting the Proposed Permit indicates that TBELs are based on EPA’s effluent limitation guidelines (“ELGS”) for the iron and steel manufacturing point source category, 40 C.F.R. Part 420, and the metal finishing point source category, 40 C.F.R. Part 433. The ELGs for the iron and steel industry were established in 1982 (with certain individual provisions amended about 20 years after that).¹⁴ The ELGs for the metal finishing industry were established in 1983,

¹³ See <https://www.epa.gov/npdes/permit-limits-permitting-meet-total-maximum-daily-load-tmdl>.

¹⁴ See, e.g., 40 C.F.R. § 420.07 (ELGs and standards for pH, established in 2002).

with certain individual provisions amended in 1986 at the latest.¹⁵ So, the requirements of the ELGs relied on by the Draft Permit are at least 20 years old, and many are more than 40 years out-of-date. As such, the guidelines in no way represent current best available technology for treating water pollution from steel and metal finishing facilities, and reliance on them is inconsistent with EPA's regulation on technology-based treatment requirements in permits, 40 C.F.R. § 125.3(a)(2) (providing that, for non-POTWs, effluent limitations must reflect best practicable technology ("BPT") currently available). The requirement in Section 125.3 that BPT be applied should be read in harmony with existing ELGs such that the Permit should include the more stringent of BPT or ELG limitations to ensure that water quality is sufficiently protected.

Need for Site-Specific TBELs

Second, to the extent that individual pollutants are discharged by the permittee but were not contemplated at the time that the outdated ELGs were promulgated, IDEM should establish site-specific TBELs for the Facility, applying best professional judgment ("BPJ"). Where EPA has not promulgated technology-based effluent guidelines for a particular class or category of industrial discharger, or where the technology-based effluent guidelines do not address all waste streams or pollutants discharged by the industrial discharger, the permit-issuing authority must establish technology-based effluent limitations on a case-by-case basis in individual NPDES permits, based on its BPJ.¹⁶ 40 C.F.R. § 122.44.

Because Section 301 of the CWA requires technology-based effluent limitations as a minimum level of control, 33 U.S.C. § 1311(b), such case-by-case technology limitations are "necessary to carry out the provision of this chapter" prior to the development of an applicable effluent guidelines and therefore must be included in any NPDES permit issued under section 402(a), as provided in EPA's implementing regulations. See 40 C.F.R. § 125.3(a) ("Technology-based treatment requirements under section 301(b) of the Act represent the minimum level of control that must be imposed in a permit issued under Section 402 of the Act"); see also 40 C.F.R. § 125.3(c) (describing methods of imposing technology-based treatment requirements in permits, including on a case-by-case basis "to the extent that EPA-promulgated effluent limitations are inapplicable."); 40 C.F.R. § 125.3(d) (requiring that, in setting case-by-case limitations, the permit writer must consider factors including BPT, best control technology and best available technology).

5.2 Water Quality-Based Effluent Limits (WQBEL)

We have reviewed the available information for development of the Draft Permit's Water Quality-Based Effluent Limits ("WQBELs") and understand the data that was used, the methodologies that were employed, and the parameters that are included in the multi-discharge

¹⁵ See, e.g., 40 C.F.R. § 433.11 (Specialized definitions last amended in 1986).

¹⁶ In the case of EPA-issued permits, the Agency establishes such limitations pursuant to its authority under CWA section 402(a)(1) which authorizes EPA to include in permits "such conditions as the Administrator determines are necessary to carry out the provision of [the CWA]." 33 USC § 1342(a)(1)(B).

model used by IDEM to perform a wasteload allocation (WLA) analysis.¹⁷ “For each pollutant receiving TBELs at an internal outfall, and for which water quality criteria or values exist or can be developed, concentration and corresponding mass-based WQBELs were calculated [by IDEM] at the final outfall.” Fact Sheet at Section 5.3.5. The WQBELs were set equal to the applicable PELs (preliminary effluent limitation) from the multi-discharger model or the outfall specific spreadsheet. Supplemental Information for WLA at p. 5. IDEM also limits the dilution available for each outfall (the mixing zone) to twenty-five percent (25%) of the stream design flow and accounts for the potential of overlapping mixing zones within a segment by also limited collectively to twenty-five percent (25%) of the stream design flow. *Id.*

While Commenters understand the above-described process followed by IDEM’s Office of Water Quality and that it meets the state’s regulatory guidelines, we do not agree with the final purpose and endpoints that have been determined. Instead, we believe that the Permit must be more protective of the aquatic and human environment than it would be as drafted. IDEM’s proposed purpose and endpoints should protect and improve the quality of the receiving waterways and not simply achieve parity. To do that, IDEM must determine applicable limits that will assure ultimate healing of the receiving water bodies. That is, simply continuing to use the same model inputs (except to change flows or add or remove processes) and approving a permit that continues to follow the determinations made five years ago is insufficient for any receiving water, and particularly for such an important waterway as Lake Michigan. To achieve the desired improvements of the receiving water bodies, it is essential that IDEM calculate limits to achieve healing. People fish in these waterways, recreate and swim in these waterways, and drink water that is from these waterways,¹⁸ and they deserve an effort by industry and oversight agencies to make progressive improvements. Table B, above (taken from the Draft Fact Sheet at Section 4.0), illustrates the current impairments of receiving waters.

IDEM has performed a WLA analysis using the multi-discharge model for all outfalls from the Draft Permit. Pollutants selected for the multi-discharger model were reportedly based on water quality concerns and the application of technology-based effluent limitations at multiple outfalls. Our calculations indicate that the following annual maximum discharges of pollutants would likely continue if the Draft Permit for the East Facility is approved.

¹⁷ IDEM’s “Multi-Discharger Model for the Indiana Harbor Canal and Indiana Harbor” is explained in the document entitled “Supplemental Information for the Wasteload Allocation Analysis for the Cleveland-Cliffs Indiana Harbor 2023 Permits” (May 22, 2023) (hereinafter, “Supplemental information for WLA”), at p. 6, which appears in the draft permit package immediately following Appendix D of the Fact Sheet at https://www.in.gov/idem/files/notice_20231116_npdes_in0063711.pdf.

¹⁸ See Draft Fact Sheet at Section 4.1 (“The Indiana Harbor Ship Canal and Indiana Harbor are designated for full-body contact recreation and shall be capable of supporting a well-balanced, warm water aquatic community”).

Annual Maximum Environmental Load Cleveland Cliffs East	
<i>Lbs/yr</i>	<i>Pollutant</i>
0.19	Mercury
803.0	Lead
18,615	Zinc
6,369,980	TSS
1,698,345	O&G

Additionally, our calculations indicate that the following annual maximum discharges of pollutants would continue if all three Cleveland Cliffs draft permits are approved.

Annual Maximum Environmental Load Cleveland Cliffs (East, West, Central)	
<i>Lbs/yr</i>	<i>Pollutant</i>
0.97	Mercury
11,348	Lead
111,931	Zinc
7,787,385	TSS
2,258,510.5	O&G
62,050	Total Chrome

Commenters are also concerned that IDEM did not include WLA calculations specifically for TSS in this Permit reissuance. This omission is especially glaring because IDEM’s own information about Common Watershed Parameters demonstrates the harm that elevated TSS can cause:

Total Suspended Solids (TSS) includes all particles suspended in water that can be trapped by a filter. Although it’s commonly collected to estimate the scale of sediment run-off from the watershed, TSS includes much more than just soil. TSS can include inorganic materials like industrial waste, and organic materials like dead plants and animal matter, live organisms and sewage. Large amounts of TSS can reduce water clarity, reduce light availability necessary for plant growth, and harm fish and other aquatic organisms. Sediment can clog fish gills and fill in spawning and other habitat areas. High TSS can also cause an increase in water temperature as the particles trap heat from the sun. Additionally, high TSS measurements can indicate high levels of nutrients, bacteria, metals and other chemicals since many of these pollutants attach to sediment. TSS even has an economic impact, since it has to be filtered out of surface water used as a drinking water source.¹⁹

¹⁹ See IDEM, “[Common Watershed Parameters](#).”

Thus, IDEM should either include WLA calculations for TSS in this Permit reissuance (along with other conventional pollutants), or — to the extent that the Department is relying on prior WLA calculations — those should be explicitly incorporated into the Draft Permit/Fact Sheet.

5.6 Antidegradation

Per- and Polyfluoroalkyl Substances (“PFAS”)

We recommend adding language to the Fact Sheet reflecting the possibility that PFAS is or was discharged by the Facility and including a corresponding Permit requirement to monitor for PFAS at section I.A. of the Permit. PFAS are a class of synthetic chemicals used since the 1940s to make water-, heat-, adhesive-, and stain-resistant products such as cookware, carpets, clothing, furniture fabrics, paper packaging for food, other resistant materials, and aqueous film-forming foam (AFFF). These chemicals are bioaccumulative and persistent in the human body and throughout the environment. For example, EPA considers Perfluorooctane sulfonic acid (“PFOS”) — one of many PFAS substances — to be a hazardous substance that “may present a substantial danger to human health” due to its links to cancer and effects on reproductive, developmental, and cardiovascular health.²⁰ Other PFAS have also been linked to cancer, immune deficiencies, thyroid disease, and other health problems.²¹

Even though not yet regulated in Indiana, there is a significant potential for discharge of PFAS from the Facility because of its possible use of the substances in past and current systems, including the Facility Fire Department and fire training area plus Facility fixed and portable fire protection systems. Fixed fire protection systems are especially vulnerable to accidental discharge and release during testing and system maintenance.²² Because PFAS are considered “forever chemicals” and are difficult to remove and remediate, it is likely that residuals would remain in Facility process and discharge systems.

Regulatory agencies have recognized the significant potential dangers of PFAS in surface water, rivers and freshwater lakes. In December 2022, EPA Office of Water sent a memorandum to Regional Water Division Directors on how best to use Clean Water Act authorities to protect the public from the dangers of PFAS.²³ Guidelines included using state NPDES permits to reduce PFAS pollution allowed into waterways and using the most current sampling and analysis methods and pretreatment to identify PFAS sources. In November 2019, the Great Lakes Consortium for Fish Consumption Advisories published a fish advisory titled, “Best Practice for

²⁰ 87 Fed. Reg. 54415, 54422 (Sept. 6, 2022).

²¹ See, e.g., U.S. Centers for Disease Control, Agency for Toxic Substances and Disease Registry, “[What are the health effects of PFAS?](#)”; S. Fenton, *et al.*, “[Per- and Polyfluoroalkyl Substance Toxicity and Human Health Review: Current State of Knowledge and Strategies for Informing Future Research](#),” *Env’tl. Tox. Chem.* (Dec. 7, 2020).

²² The Department of Defense (DOD) is early in the environmental restoration process at or near the 687 installations with a known or suspected release of certain per- and polyfluoroalkyl substances (PFAS)—heat-resistant chemicals found in certain firefighting foams that can contaminate drinking water. <https://www.gao.gov/products/gao-21-421>

²³ EPA, “[Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs](#)” (Dec. 5, 2022).

Perfluorooctane Sulfonate (PFOS) Guidelines.”²⁴ Of note, the Indiana Department of Health has posted a PFOS Advisory to its website.²⁵

The East Facility discharges to the Indiana Harbor Ship Canal and to Lake Michigan. PFAS has been found in fish tissue in Lake Michigan, indicating that monitoring requirements for the substance should be added to the Facility’s Permit requirements. Image 1 below, from EPA’s *How’s My Waterway* website,²⁶ depicts Michigan’s designation of the eastern half of Lake Michigan as impaired by PFOS in fish tissue. PFOS is one of two widely produced, commonly encountered, and most studied PFAS compounds, is known to be particularly harmful, and is the largest contributor to total PFAS levels found in freshwater fish samples.²⁷ The contribution and bioaccumulation of PFAS in fish is a nationwide problem and indigenous and tribal communities are particularly at risk due to their dependence on freshwater fish.²⁸ Especially notable is the fact that the designated PFOS-impaired area of Lake Michigan shown in Image 1 abruptly ends at the border of northwestern Indiana waters, which is highly unlikely. This obvious omission reflects the need for IDEM to require PFAS monitoring in permits so that information about the extent of PFAS contamination can be fully understood. Northwest Indiana communities, visiting public, and local tribal communities that choose to fish in these waters have a right to know all potential hazards that exist.

²⁴ See [Great Lakes Consortium for Fish Consumption Advisories: Best Practice for Perfluorooctane Sulfonate \(PFOS\) Guidelines](#)” (Nov. 2019).

²⁵ *Id.*

²⁶ EPA, “[How’s My Waterway?](#)”

²⁷ Perfluorooctanesulfonic acid (PFOS) was the most commonly found PFAS at the Dearborn facility, averaging 74% of the total PFAS. For comparison, scientists looked at data from the US Food and Drug Administration on PFAS in commercially relevant fish in 2019–2022. They report that the average amount of PFAS in freshwater fish was 280 times more than that found in commercially available fish sold in the US. See N. Barbo, *et al.*, “Locally caught freshwater fish across the United States are likely a significant source of exposure to PFOS and other perfluorinated compounds,” [220 J. Env’t’l. Res. 115165](#) (March 2023).

²⁸ See, e.g., U.S. Army Corps of Engineers, “[Great Lakes and Mississippi River Interbasin Study: Treaty Rights and Subsistence Fishing in the U.S. Waters of the Great Lakes, Upper Mississippi River, and Ohio River Basins](#)” (June 2012).

Image 1



As proposed, the Draft Permit does restrict new or increased discharges of bioaccumulative pollutants generally. Part II.A.16 of the Facility permit states: “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. . . .” Draft Permit at p. 72. Consistent with that prohibition, we recommend that the Permit be revised to add sampling and monitoring requirements for potential PFAS in the Permittee’s discharge at all internal and external outfalls where non-point stormwater might carry PFAS from fixed and portable fire protection system use and/or periodic maintenance and testing. This sampling is needed to determine whether PFAS is present and to have a baseline record available when EPA does impose specific requirements through its various rulemaking activities.²⁹ If PFAS is identified, we further recommend that the Facility should be required to investigate the source(s) and proactively mitigate the sources to the extent feasible

Mercury and PFAS Atmospheric Deposition

There is evidence that both mercury and PFAS have been found in surface water, groundwater, and drinking water systems from atmospheric deposition where it is manufactured or used. This is in addition to mercury and PFAS possibly being discharged in facility wastewaters. There is further evidence that the primary source of mercury from a steel mill is from blast furnaces emissions to air.³⁰ The Michigan TMDL for mercury in Lake Michigan

²⁹ EPA recommends using Draft EPA Method 1633 for PFAS contaminants, as outlined in the December 5, 2022 Radhika Fox memorandum, “[Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs](#).” If the permitting authority decides to use an in-house method (e.g., modified 537.1 or 533), then the data generated may not be as consistent with the data generated by Method 1633 nationwide. <https://www.epa.gov/cwa-methods/frequent-questions-about-pfas-methods-npdes-permits>

³⁰ According to U.S. EPA, the primary metals sector, which includes iron and steel manufacturers, accounted for 39% of the air emissions of mercury and the electric utilities sector accounted for 21% of mercury air emissions in 2021. See [Mercury Chemical Profile](#).

indicates that the impairment is partly due to atmospheric deposition.³¹ This is also true of PFAS in states that have found it in surface water bodies and in fish tissue. As mentioned, PFAS has been found in residential drinking water as a result of atmospheric deposition.³² Two examples of PFAS in residential drinking water from industrial atmospheric deposition include emissions from the 3M facility in Cordova, IL³³ where PFAS products were manufactured and the St. Gobain facility in Merrimack, NH³⁴ where PFAS products were used. These situations are heartbreaking for the surrounding exposed communities and costly for the companies because of associated penalties and treatment or replacement of drinking water supplies.

Because of the proven potential for emissions from steel mill blast furnaces to deposit to surface water and the fact that there have been firefighting activities and the potential for AFFF in fire protection systems, Commenters strongly recommend that the Facility should be required to include this possibility in review of its overall potential impacts to the Indiana Harbor Canal and to Lake Michigan. If emissions to air are found to be a possible contributor, existing air emissions control devices should be improved, or new emission controls installed. Ultimately, the preferred action is to avoid the use of these harmful BCCs.

5.7 Stormwater

The Draft Permit presents an opportunity to create clear, specific, measurable and enforceable requirements to reduce polluted industrial stormwater runoff from the Facility, which can be particularly toxic and hazardous to human health and aquatic biota, and that threatens the goal of promoting environmental justice in Indiana. As written, the Draft Permit requires the permittee to “implement the non-numeric permit conditions in this Section of the permit for the entire site as it relates to stormwater associated with industrial activity regardless which outfall the stormwater is discharged from.” Draft Permit at Part I.D. In support of the lack of measurable standards for the required control measures, the Fact Sheet provides that:

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.

Proposed Fact Sheet at section 5.7 (emphasis added). Without numeric metrics, though, the Draft Permit includes requirements that are inherently unenforceable. Commenters recommend that the Department establish, and clearly identify, measurable and enforceable obligations in the Permit beyond the general prohibition against causing or contributing to an exceedance of WQS; otherwise, the Permit may be ineffective and unlawful to the extent that the permittee cannot be

³¹ Michigan, [Lake Michigan TMDL](#).

³² U.S. EPA, [3M Agrees to EPA Order to Sample Drinking Water](#).

³³ 3M Agrees to EPA Order to Sample Drinking Water. <https://www.epa.gov/il/3m-cordova>

³⁴ Investigation and mitigation of PFAS releases from the Saint-Gobain Performance Plastics Facility in Merrimack, New Hampshire. <https://www.pfas.des.nh.gov/pfas-occurrences/saint-gobain-performance-plastics>

made to comply. Enforceability would be improved through clearer, more measurable standards and explicit statements of enforceable provisions, avoiding permittee self-regulation, increased monitoring requirements, strengthened corrective action provisions, and improved transparency and public accessibility of information.

For example, the Draft Permit requires the permittee to perform the following “Good Housekeeping” stormwater control measures: “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.” Draft Permit at Part I.D.4.b (emphasis added). The frequency of sweeping should be prescribed, including so that it ensures that all portions of the Facility regularly receive attention. By way of further example, the Draft Permit requires that the permittee “[e]nclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces.” *Id.* at 4.g. However, the Draft Permit does not contain a deadline for covering the salt piles or provide any specific requirements for doing so. Therefore, IDEM should review the entire “Stormwater” portion of the Draft Permit to add enforceable performance metrics.

Additionally with regard to stormwater, the Draft Permit requires the permittee to consider “use of treatment interceptors (*e.g.* swirl separators and sand filters) [which] may be appropriate in some instances to minimize the discharge of pollutants.” Draft Permit at Part I.D.3.g. As discussed above at Section 2.3 (Wastewater Treatment), Commenters recommend installation of oil/water separators for wastewater. Similarly, we suggest using separators for purposes of stormwater as well.

5.8 Water Treatment Additives

In the event that the permittee decides to use a new water treatment additive that will contribute to the Facility’s outfalls (or in the case of certain other changes), the permittee is required to complete and submit State Form 50000 (Application for Approval to Use Water Treatment Additives) “prior to such discharge.” Permit at Part I.A.1 n. 1. The Fact Sheet cites several provisions of Indiana law which require advance notice of planned changes “as soon as possible,” or “as soon as the discharger knows or has reason to know” that it has begun or expects to use such additives. Fact Sheet at Section 5.8. We submit that the Permit should require submission of State Form 50000 within a prescribed number of days before an additive begins usage, rather than “as soon as possible.” Permit at Part I.A.1. If the permittee is unable to comply with the required number of days, IDEM could consider using enforcement discretion on a case-by-case basis to determine whether to address any such lateness.

6.0 Permit Draft Discussion

6.5 Streamlined Mercury Variance

The Draft Permit proposes to apply a variance to otherwise-applicable WQSs for mercury through a “Streamlined Mercury Variance” (“SMV”), simply because the discharger is unable to attain the WQS for that pollutant. The information in the Draft

Permit and Fact Sheet is insufficient to show consistency with federal and Indiana law on variances, such that the SMV should be denied until and unless the permit applicant is able to provide necessary support for its request as explained below.

Indiana’s streamlined mercury variance, 327 IAC 5–3.5, requires compliance with the federal variance regulation, 40 C.F.R. § 131.14. *See* 327 IAC 5-3.5-2(b); IC § 13-14-8-9(b)(1). The federal regulations require that a discharger-specific WQS variance “represent the highest attainable condition of the water body or waterbody segment applicable throughout the term of the WQS variance.” 40 C.F.R. § 131.14(b)(1)(ii). When an impairment is human-caused, like mercury, the permittee must also demonstrate that “[h]uman caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.” 40 C.F.R. § 131.14; 40 C.F.R. § 131.10(g).

Where a discharge is to occur within the Great Lakes System, like here, it must also meet the requirements of 40 C.F.R. Part 132. IC § 13-14-8-9(b)(2). The following conditions (among others) apply to WQS variances granted to Great Lakes dischargers:

1. A variance to a WQS shall not be granted that would likely jeopardize the continued existence of any endangered or threatened species listed under Section 4 of the Endangered Species Act . . . or result in the destruction or adverse modification of such species' critical habitat.
2. A WQS variance shall not be granted if standards will be attained by implementing effluent limits required under sections 301(b) and 306 of the Clean Water Act (CWA) and by the permittee implementing cost-effective and reasonable best management practices for nonpoint source control.

...

A variance may be granted if:

1. The permittee demonstrates to the State that attaining the WQS is not feasible because:

...

- c. Human-caused conditions or sources of pollution prevent the attainment of the WQS and cannot be remedied, or would cause more environmental damage to correct than to leave in place;

...

2. In addition to the requirements of C.1, above, the permittee shall also:
 - a. Show that the variance requested conforms to the requirements of the State's or Tribe's antidegradation procedures; and
 - b. Characterize the extent of any increased risk to human health and the environment associated with granting the variance compared with compliance with WQS absent the variance, such that the State or Tribe is able to conclude that any such increased risk is consistent with the protection of the public health, safety and welfare.

40 C.F.R. Part 132, Appendix F, Procedure 2. To the extent that the federal criteria are more stringent than the state criteria, they must also be considered. 33 U.S.C. § 1311(b)(1)(C); 40 C.F.R. § 123.1(f); (i)(1).

Indiana regulations also contain criteria for variances from WQS. Among other requirements, the state requires that, in order for a variance to be granted, a permit applicant must “demonstrate[] that implementing a proposed methodology, which includes any production process(es), wastewater treatment technology, or combination thereof used to reduce pollutants discharged in the wastewater from a facility, as identified pursuant to 327 IAC 5-3-4.1(b)(2)(A), will cause an undue hardship or burden upon the applicant.” 327 IAC 2-1.5.

Further, in deciding a variance application, the Department “shall balance the increased risk to human health and the environment if the variance is granted against the hardship or burden upon the applicant if the variance is not granted so the commissioner is able to conclude that any increased risk is *consistent with the protection of the public health, safety and welfare*. In balancing these factors, the commissioner shall consider the following to determine if the hardship or burden upon the applicant is undue:

- (1) The cost and cost effectiveness of pollutant removal by implementing the methodologies proposed by the applicant and the methodology capable of attaining the WQBEL.
- (2) The reduction in concentrations and loadings of pollutants attainable by the methodologies proposed by the applicant as compared with the reduction attainable by use of the methodology capable of attaining the WQBEL.
- (3) The impact of the proposed methodologies and the methodology capable of attaining the WQBEL on the price of the goods or services provided by the applicant.
- (4) Information on the relative price of goods or services in the same market as the applicant.
- (5) The overall impact of attaining the WQBEL and implementing the proposed methodologies on employment at the facility.
- (6) Information on the type and magnitude of adverse or beneficial environmental impacts, including the net impact on the receiving water, resulting from the proposed methodologies that could be applied to the control of the substance for which a variance is applied.
- (7) Other relevant information requested by the commissioner or supplied by the applicant or the public.”

327 IAC 2-1.5-17(c) (emphasis added). As with the federal requirements, the Draft Permit does not include any discussion of how it considered each of the criteria for granting variances — particularly protection of the public health, safety and welfare — so approval of the variance request is premature. If IDEM obtains the necessary information to grant the variance, the Fact Sheet should be revised to include such an explanation. Fortunately, IDEM has developed a form for industrial facilities to use when applying for the SMV, State Form 52111, so gathering the required information should not be burdensome. We also strongly recommend that the fully-completed form should be included in the permit renewal package if at some point the permit applicant has submitted sufficient information supporting its variance request.

As drafted, the Draft Fact Sheet does not yet demonstrate how any of the criteria in Appendix F apply to the proposed SMV for the Facility, in particular that the human-caused source of mercury would prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place. Commenters request that IDEM identify precisely in the Fact Sheet and Draft Permit which, if any, of the qualifying conditions set forth in 40 C.F.R. Appendix F to Part 132, Procedure 2, Section C.1 IDEM has concluded justifies issuance of the SMV. With respect to each such C.1 condition, the Fact Sheet or Permit should include or describe in detail “[a]ll relevant information demonstrating that attaining the applicable WQS is not feasible” as required by Appendix F at Section D.1. If IDEM is unable to comply with this request because the applicant has failed to submit information sufficient to make the required demonstration, then the requirements for the SMV have not been satisfied and the application should be rejected. It is essential that IDEM develop a record about all impacts of the variance, but especially the extent of any increased risk to human health and the environment associated with granting the variance compared with compliance with WQS absent the variance, given the vulnerable population surrounding the Facility. IDEM must be able to conclude, after a thorough review, that any such increased risk is consistent with the protection of the public health, safety and welfare. *Id.* at Subsection (C)(2)(b).

With regard to 40 C.F.R. Appendix F to Part 132, Procedure 2, Sections C.2(a) and C.2(b), Commenters request that IDEM indicate whether the applicant has complied with both demonstration and characterization requirements. If IDEM believes the applicant has complied with each of those requirements, we request that the Fact Sheet and Permit include “[a]ll of the relevant information demonstrating compliance with the conditions in section C.2 of this procedure,” as required by the regulation at Section D. 2. If IDEM is unable to comply with this request because the applicant has failed to submit information sufficient to make the required demonstration, then the requirements for the SMV have not been satisfied and the application should be rejected.

Mercury Discharge Limits Under SMV

The Draft Permit indicates that the SMV is intended to establish a simplified process for “obtaining a variance from a water quality criterion used to establish a WQBEL for mercury in an NPDES permit.” Draft Permit at p. 89. The interim effluent limitation for mercury proposed by the Draft Permit with the SMV at Outfall 018 is a monthly average of 1.5 ng/L; the Draft Permit also provides that “Compliance with the interim discharge limit will demonstrate compliance with mercury discharge limitations of this permit for this outfall.” Draft Permit at p. 17, Table 1; p. 5, n. 10. As a basis for the SMV, the Draft Permit indicates that, “[b]ased 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).” *Id.* As a technical basis for approving the SMV, the Fact Sheet explains that:

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.

After receipt of a complete application on April 28, 2022, an updated dataset was provided to IDEM. The updated dataset was used to calculate the interim limit (see Table 7 below) which represents the highest daily value for mercury during the period of review.

Draft Fact Sheet at p. 134. In other words, *the limit is based on the highest daily value of mercury actually discharged over the prior two years*, consistent with 327 IAC 5-3.5-8. However, simply relying on that provision — and ignoring the other federal and state requirements for approval of variances — is insufficient as a basis for approving the SMV. As such, we recommend that IDEM review the federal and state requirements identified above and expand its analysis of the SMV application to reflect that information.

Further, we recommend that IDEM include the entire SMV application in the permit renewal package to ensure transparency, given the environmental impacts of mercury. Currently, the package only includes the data set of highest mercury discharge concentrations from April 2020 – February 2022. Draft Fact Sheet, Appendix C.

Additional Challenges Presented By SMV

Reliance on PMPP is Misplaced

In support of the proposed SMV, the Fact Sheet provides that “[t]he 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.” Draft Fact Sheet at section 6.5. However, the bulk of the requirements to be imposed on a permittee that has been granted an SMV is development of an annual Pollutant Minimization Program Plan (“PMPP”). Draft Permit at Part IV; 327 IAC 5-3.5-9.

However, Cleveland-Cliffs has not developed PMPPs annually, even though that has been a requirement of the existing permits. For example, at this Facility, the permittee was required to include a plan in its PMPP to monitor mercury at internal outfalls 518 and 618, which discharge to outfalls 011 and 014. However, the current status stated in the 2021 PMPP list, as shown in Attachment 1 to the September 30, 2021 PMPP, was “Not conducted. Outfall 011 and 014 mercury results from August 2019 to June 2020 have been below SMV limits. Source characterization/monitoring at internal outfalls is not warranted.” Yet, we submit that source characterization is precisely what the permittee must do or it will never ultimately reduce mercury discharges.

Receiving Waters Cannot Tolerate Higher Concentrations of Mercury

Finally with regard to the proposed SMV variance, allowing additional mercury discharges to the receiving waters of the Cleveland-Cliffs permits is not appropriate, given the current impaired status of Lake Michigan, Cleveland Cliff’s contribution, and the need to heal the receiving waterbodies.

Deposition of Mercury from Air Emissions Unregulated

The Lake County Shoreline, including the East Chicago shoreline (Incorporated Area), is listed by IDEM as impaired by mercury in fish tissue. Michigan and Wisconsin have listed Lake Michigan as impaired by mercury. Consideration should be given to this fact in any assessment regarding a variance for higher mercury discharge criteria. Atmospheric deposition of mercury from Facility operations should also be considered and factored into any decision for a variance and for setting discharge criteria.

Summary of Recommendations

Based on the foregoing discussion, Commenters recommend that the Permit and Fact Sheet be revised as follows:

1. **Conduct environmental justice analysis** to include analysis of existing demographic and public health data and mitigation available to address adverse effects.
2. **Conduct cumulative impacts analysis** to protect the water quality of receiving streams and the public health of local communities due to the number of other local dischargers.
3. **Greater Public Engagement:** Hold a public meeting, together with Cleveland-Cliffs Steel, to answer questions from the local community. Provide Spanish translation.
4. **Improve treatment** to increase the removal of total suspended solids and oil and grease and, as a result, the discharge of heavy metals. Improve treatment for ammonia that reflects the best treatment technology. Specifically, install membrane filtration, ion exchange, and/or reverse osmosis to its current treatment system just prior to discharge to Lake Michigan. *See* Table in Appendix A for treatment improvement proposals for specific discharges.
5. **Install oil/water separators** for all wastewater and stormwater discharges.
6. **Establish site-specific technology-based effluent limits** applying best professional judgment.
7. **Establish measurable and enforceable obligations** of any requirements designed to prevent exceedances of water quality standards.
8. **Add performance metrics** to stormwater portion of permit that are measurable and enforceable.
9. **Include wasteload allocation calculations** for total suspended solids in permit.
10. **Add to the NPDES Permit** an express prohibition on the discharge of unpermitted pollutants.
11. **Monitor for PFAS contamination.** Specifically, add sampling and monitoring requirements for PFAS in all internal and external outfalls, investigate their source, and mitigate where to the extent feasible.
12. **Require submission of Form 5000** within a prescribed number of days before any water treatment additive is used.
13. **Reject the Streamlined Mercury Variance** unless and until the applicant's publicly-available supporting documentation satisfies all applicable federal and state requirements. If IDEM determines that it has sufficient information to consider the SMV request,

include in the renewal permit package a copy of permittee's completed application for streamlined mercury variance.

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Attachment A

Cleveland Cliffs - East						
Outfall	Description of Discharge	Pollutants	Pretreatment Technology	SMV Apply? (Yes/No)	Status	Proposed Treatment Improvements
011	Sinter plant noncontact cooling water, stormwater, and groundwater.	Mercury, Oil & Grease, TRC	No wastewater treatment associated with Outfall 011	Yes	Active	None
014/013	Discharge from the Terminal Treatment Plant – East/West via No. 6 Pump House to 014 (emergency discharge to 013). The discharge from Outfall 014 is limited to blowdown from the Main [Master] Recycle System and stormwater. The Master Recycle System consists of process and cooling water from hot forming operations (80” hot strip mill); pickling operations (No. 5 pickle line, continuous anneal line); cold rolling mills (80” tandem mills; Nos. 28 and 29 temper mills); alkaline cleaning; No. 5 hot dip galvanizing line; treated sanitary wastewaters from the No. 1, No. 2, and No. 3 sewage treatment plants, and Plant 2 former coke plant remediation system discharge[19].	Oil & Grease, TSS, Zinc, Lead, Ammonia, cyanide, Phenols, Naphthalene, TCE, Selenium, Total Residual Oxidants (Bromine + TRC), and Mercury. Whole effluent toxicity testing of its effluent discharge from Outfalls 013 and 014 using <i>Ceriodaphnia dubia</i> Groundwater tested for VOCs and SVOCs prior to discharge	Terminal Treatment Plant (TTPW) consists of two scalping tanks and two settling basins (oil & sludge removal) and a cooling tower Master Recycle System includes cooling water and process water recirculating systems. There is no good description of this system and no figure that I could find. It should have been included.	Yes	No. 28 Temper Line temporarily idled. No. 5 Galvanizing Line is shut down. All other processes are active.	pf

Cleveland Cliffs - East

Outfall	Description of Discharge	Pollutants	Pretreatment Technology	SMV Apply? (Yes/No)	Status	Proposed Treatment Improvements
018	Noncontact cooling water; treated effluents from the No. 4 Steel Plant (BOF), Vacuum Degasser (RHOB), and No. 1 Continuous Caster (internal Outfall 618); treated effluents from the No. 7 Blast Furnace gas scrubber system (internal Outfall 518); cooling tower blowdown and discharges from the No. 5 Boiler House; service water directed through the former No. 4 AC Power Station, cooling tower blowdown from CokEnergy co-generating facility, stormwater run-off, and noncontact cooling water and storm water runoff from the Indiana Harbor Coke Company.	Free cyanide, lead, mercury, total residual oxidants (bromine and total residual chlorine), TSS, O&G, ammonia, phenols, zinc, selenium, and whole effluent toxicity	See outfalls 518 and 618 treatment systems	Yes	Active	See outfalls 518 and 618 treatment systems
518	No. 7 Blast Furnace scrubber system	TSS, O&G, lead, zinc, total residual chlorine, ammonia, total cyanide, and phenols	Dirty water from the Bischoff gas scrubber is treated through two large diameter thickeners and a cooling tower and then recycled back to the scrubber. Blowdown from the scrubber system is sent to the No. 7 Blast Furnace Lafarge slag granulation system. The thickener underflow is dewatered in a recessed chamber filter press. Filtrate is returned to the thickeners and dry cake is sent off site for disposal. No. 7 blast furnace blowdown treatment plant consists of pH	No	Active (No. 7 Blast Furnace increasing)	None

Cleveland Cliffs - East

Outfall	Description of Discharge	Pollutants	Pretreatment Technology	SMV Apply? (Yes/No)	Status	Proposed Treatment Improvements
			adjustment, cyanide precipitation and alkaline chlorination. A new larger cyanide reaction tank is being added in series to the existing reaction tank which will increase the facility's treatment ability by increasing the reaction time of the process water with ferrous chloride.			
618	No. 4 Steel Plant (the basic oxygen furnace or BOF), the Vacuum Degasser (RHOB) and the No. 1 Continuous Caster process water systems. RHOB stands for Ruhrstahl Heraeus Oxygen Blowing.	TSS, O&G, lead, and zinc	<p>The gas cleaning system for No. 4 Steel Plant (BOF) is a high-rate process water recycle system that supplies water to clean BOF off-gas through four venturi scrubbers. Gas cleaning water is treated in large diameter thickeners for solids removal and most of the water is returned directly back to the venturi scrubbers.</p> <p>No. 1 Continuous Caster water system Treatment consists of a scale pit with oil and scale recovery, a cooling tower, and high-rate multi-media filtration. A small amount of water is blown down from the caster system to the No. 4 Steel Plant Treatment and Recycle</p>	No	Active	The addition of membrane filtration or reverse osmosis (RO) of wastewater following the Continuous Caster and RHOB systems would help to reduce the large volume of TSS, Oil & grease and heavy metals that is currently discharged.

Cleveland Cliffs - East

Outfall	Description of Discharge	Pollutants	Pretreatment Technology	SMV Apply? (Yes/No)	Status	Proposed Treatment Improvements
			<p>System. The No. 4 Steel Plant Treatment and Recycle System treats the combined blowdown from the No. 4 Steel Plant (BOF), the No. 1 Continuous Caster and RHOB through high-rate multi-media filters prior to discharge at Outfall 618.</p> <p>The RHOB water system is a high-rate process water recycle system that supplies contact cooling water to the (vacuum degasser) barometric condensers. Discharge from the condensers returns to a cooling tower and is then recycled back to the condensers. A side stream of water is treated through two inclined plate separators (Lamella clarifiers) for solids removal and then returned to the system. The underflow from the separators is discharge to the No. 4 Steel Plant Grit Boxes (thickeners).</p>			