



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

REPLY TO ATTENTION OF  
ECW-15J

**VIA EMAIL**

Mr. Robert Maciel  
Environmental Manager  
ArcelorMittal Burns Harbor, LLC  
250 West U.S. Highway 12  
Burns Harbor, IN 46304

Subject: August 12, 2020 Inspection Report for ArcelorMittal Burns Harbor, NPDES Permit Number IN0000175

Dear Mr. Maciel:

Enclosed, please find a copy of the U.S. Environmental Protection Agency Inspection Report that describes, and documents the activities at ArcelorMittal Burns Harbor, LLC on August 12, 2020.

The purpose of the inspection at ArcelorMittal Burns Harbor, LLC was to document the facility's compliance with its NPDES permit and gather information related to permit effluent exceedances and investigations by the facility.

On August 20, 2020, IDEM and EPA received the Dye Tracer Study and on September 18, 2020, IDEM and EPA received the Toxicity Reduction Evaluation Plan. On September 28, 2020, EPA received the Root Cause Failure Analysis for the bypass event on June 15, 2020 and information that the new auto sampler was installed or will be installed at Outfall 002 and was fully functional by the last week of August. Please provide the report and data on the Phase 1 Ammonia Study of the Storm Ditch, including conclusions drawn from Phase 1 and plan for Phase 2 as soon as it is completed.

If you have any questions or concerns regarding this letter, or the inspection report, please contact Joan Rogers at (312) 886-2785 or at [rogers.joan@epa.gov](mailto:rogers.joan@epa.gov).

Sincerely,

RYAN BAHR

Digitally signed by RYAN  
BAHR  
Date: 2020.10.07  
18:04:28 -05'00'

Ryan J. Bahr,  
Chief, Section 2  
Water Enforcement and Compliance Assurance Branch

Enclosure

cc: Nicholas Ream, Environmental Engineer  
Indiana Department of Environmental Management

Jason House, Branch Chief of Wastewater Compliance  
Indiana Department of Environmental Management

**CWA COMPLIANCE EVALUATION INSPECTION REPORT  
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5**

**Purpose:**

Compliance Evaluation Inspection

**Facility:**

ArcelorMittal Burns Harbor, LLC  
250 US-12  
Burns Harbor, Indiana 46304  
Porter County  
41.625, -87.117

**NPDES Permit Number:**

IN0000175

**Date of Inspection:**

August 12, 2020

**EPA Representatives:**

Joan Rogers, Environmental Scientist 312-886-2785  
Rogers.joan@epa.gov

**State Representatives:**

Nicholas Ream, Indiana Department of Environmental Management 219-730-1691  
Wastewater Inspector  
[nream@idem.IN.gov](mailto:nream@idem.IN.gov)

**Facility Representatives:**

Robert Maciel, Environmental Manager 219-787-4961  
[Robert.maciel@arcelormittal.com](mailto:Robert.maciel@arcelormittal.com)

Cary Mathias, Regional Waste Manager (via phone) 330-659-9124  
[Cary.mathias@arcelormittal.com](mailto:Cary.mathias@arcelormittal.com)

Morgan Swanson, Environmental Engineer 219-787-2646  
[Morgan.swanson@arcelormittal.com](mailto:Morgan.swanson@arcelormittal.com)

Joyce Casillas, Environmental Engineer  
[Joyce.casillas@arcelormittal.com](mailto:Joyce.casillas@arcelormittal.com)

**Report Prepared by:**

Joan Rogers

**Inspector Signature:** JOAN ROGERS Digitally signed by JOAN ROGERS  
Date: 2020.09.30 10:49:20 -05'00'

**Approver Name and Title:** Ryan Bahr, Chief, Section 2, WECAB

**Approver Signature/Date:** RYAN BAHR Digitally signed by RYAN BAHR  
Date: 2020.09.30 10:59:59 -05'00'

**1. BACKGROUND**

The purpose of this report is to describe and document the discussion and site inspection at the ArcelorMittal Burns Harbor facility on August 12, 2020. This inspection was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended.

The ArcelorMittal Burns Harbor (AMBH) facility is one of the largest fully integrated steel mills in North America, with the capacity to produce approximately 5 million tons of raw steel per year. They operate under NPDES Permit No. IN0000175, which was issued on May 27, 2016 and expires on June 30, 2021.

The inspection on August 12, 2020 was a Compliance Evaluation Inspection to document compliance with the facility’s permit and gather information about:

- a. When Blast Furnace D went online and current status of dye tracer testing of the Blast Furnace Recycle System.
- b. Recent ammonia exceedances at Outfall 001 and AMBH’s investigation of ammonia in the Non-Contact Cooling Water/Storm Water Ditch (Storm Ditch) that enters the stream after Outfall 011 but before Outfall 001.
- c. Recent Whole Effluent Toxicity (WET) Testing failures and the facilities actions related to the development of a Toxicity Reduction Evaluation.
- d. Current status of flow proportioning and information about the location of the flow meter with respect to the sampling location at Outfall 011.
- e. June 15, 2020 bypass event.
- f. Current status of cyanide and phenols flow proportioning.
- g. The changes made at Outfall 002’s flow meter.

**2. SITE INSPECTION**

**Site Entry and Opening Conference – August 12, 2020**

<b>Arrival Time:</b>	9:10 A.M.
<b>Presented credentials?</b>	Yes
<b>Credentials presented to whom and at what time?</b>	Badging personnel at the main desk at 9:10 A.M. and then to Morgan Swanson, Rob Maciel and Joyce Casillas at 9:30 A.M.
<b>Was an opening conference held? With whom?</b>	Yes. Ms. Swanson, Mr. Maciel and Ms. Casillas.
<b>If photographs or documents were taken, does the facility consider any to be Confidential Business Information (CBI)?</b>	No.

<b>Which information does the facility consider to be CBI?</b>	None.
<b>EPA vehicle parked in approved location?</b>	Yes
<b>Location where EPA vehicle was parked?</b>	Environmental Services Building.

**Interview**

EPA inspector, Ms. Rogers, and IDEM inspector Mr. Nick Ream followed Ms. Swanson to the Environmental Services Building conference room. IDEM inspector, Mr. Ream, explained that the purpose of the inspection was to document compliance with the NPDES permit, obtain information about recent exceedances and the bypass event, and view the changes made at Outfall 002. Mr. Mathias joined the meeting via telephone.

**Blast Furnace D and Dye Tracer Study**

On the morning of July 16, 2020, there was an explosion at AMBH. IDEM received information from the company that morning that the “D1 Stove” exploded at Blast Furnace D. At the time, it was unclear whether the fire suppression water would flow out Outfall 002 or to the Dirty Industrial Wastewater (DIW) sewer and through the Secondary Wastewater Treatment Plant (SWTP) and to Outfall 001. On July 16, 2020, IDEM requested information related to the explosion and screening values for pollutants following the explosion. AMBH responded to those questions on July 24, 2020 and provided the screening values on July 27, 2020.

During this inspection, EPA and IDEM representatives inquired as to whether Blast Furnace D was still offline. AMBH representatives stated that Blast Furnace D was not currently online. They intended to bring it back online during the week of August 24, 2020 but bringing a blast furnace online is “chaotic at best” and those dates are tentative. EPA and IDEM representatives stressed that they wished to be present during the dye tracer study and understood that this could happen during the time when the furnace was being brought back online. Mr. Maciel believed that AMBH could give the agencies 72 hours before the testing was to begin. Mr. Mathias stated that he would be sending a dye tracer study plan to the agencies by Friday, August 14, 2020, or early the following week.

**Ammonia Exceedances**

Beginning in early June, AMBH began having a series of ammonia exceedances from Outfall 001, including: (7-day average permit limit = 0.62 mg/L, Daily maximum permit limit = 0.51 mg/L and 540 lb/day)

- 6/07/20            7-day average            0.64 mg/L            03.23% exceedance
- 6/30/20            7-day average            0.74 mg/L            19.35% exceedance
- 7/01/20            Daily maximum            0.64 mg/L            25.49% exceedance
- 7/01/20            Daily maximum            561 lb/day            03.89% exceedance
- 7/02/20            Daily maximum            0.67 mg/L            31.37% exceedance
- 7/02/20            Daily maximum            604 lb/day            11.85% exceedance
- 7/04/20            Daily maximum            0.52 mg/L            01.96% exceedance
- 7/06/20            Daily maximum            0.53 mg/L            03.92% exceedance

• 7/13/20	Daily maximum	0.67 mg/L	31.37% exceedance
• 7/13/20	Daily maximum	582 lb/day	07.78% exceedance
• 7/15/20	Daily maximum	0.54 mg/L	05.88% exceedance
• 7/16/20	Daily maximum	0.58 mg/L	13.73% exceedance
• 7/20/20	Daily maximum	0.61 mg/L	19.61% exceedance

Mr. Mathias stated that AMBH has begun conducting focused sampling at various locations along the Storm Ditch and upstream of Outfall 001 and downstream of Outfall 011. The sampling is focused on ammonia and all the data has not been received from the lab yet. This is Phase 1 and it consists of 15-20 fixed sample points that are daily 24-hour time composited. Phase 1 will run for two weeks and AMBH will share the data once it is complete. After analyzing the data from Phase 1, AMBH plans to conduct a Phase 2 sampling program that is more focused where the Phase 1 sampling indicates it should be. Mr. Mathias stated that AMBH would share this data with EPA and IDEM.

EPA asked additional questions about the Storm Ditch. AMBH representatives stated that the Storm Ditch begins on the facility but goes offsite for approximately ½ mile. While offsite, it flows past a Praxair facility and the Norfolk Southern Railyard. Then the Storm Ditch comes back onsite. Some of the Phase 1 sampling locations were chosen to determine if there is ammonia loading to the water in the Storm Ditch while the flow was off the AMBH property. An initial theory of Mr. Mathias was that the ammonia levels of Lake Michigan were causing the increase of ammonia to the Storm Ditch. Water cannons spray additional Lake Michigan water into the Storm Ditch for temperature control.

#### WET Testing Failures and TRE

On June 26, 2020, AMBH notified IDEM that it had failed its quarterly WET Testing. The effluent passed the acute toxicity test but failed the chronic toxicity test with a Toxicity Unit value of 11.52 TU<sub>c</sub> (Permit limit is 1 TU<sub>c</sub>). On July 1, 2020, AMBH notified IDEM that its confirmation testing also passed the acute toxicity test but failed the chronic toxicity test with a Toxicity Unit value of 2,050 TU<sub>c</sub>. The failure of the second WET test triggers the permit requirement for AMBH to develop a Toxicity Reduction Evaluation (TRE). The plan is to be completed within 90 days and submitted to IDEM. AMBH representatives stated that they were currently working on the plan for the TRE.

#### 24-hour Compositing and Flow Meter at Outfall 011

Recently, IDEM and EPA wanted to confirm that sampling at Outfall 011 was flow proportioned, since the flow meter for Outfall 011 was not located at the same place as where the sampling takes place. The flow meter for Outfall 011 is located after the SWTP, which is before the flow goes to the lagoons. Outfall 011 is immediately after the lagoons. The flow meter is listed at its current location in the AMBH permit.

AMBH representatives confirmed that 24-hour compositing is being done at Outfall 011. They will be looking into options to co-locate the sampling and flow meter and felt that the opportunity to make changes would be during the next permit issuance.

#### June 15, 2020 Bypass Event

On June 15, 2020, AMBH submitted a Bypass/Overflow Incident Report to IDEM. The report stated that an estimated 15,000 gallons of flow bypassed treatment from 8:31 A.M. to 8:47 A.M. and flowed out Outfall 002. Outfall 002 is permitted for non-contact cooling water and storm water. The description of the bypass/overflow event stated “While switching from lake water back to non-contact water, there was a time period of 15 minutes where the streams were co-mingled. With closed water pressure higher than lake water, closed water passed into the lake water system and discharged with the non-contact cooling water.” Additionally, it states “When the issue was discovered, operators promptly closed the connection. Outfall 002 was observed, and no signs of damage were noted.”

During the discussion on the day of the inspection, AMBH representatives stated that there is a double block and bleed valve between two valves. One valve is non-contact cooling water and when opened, releases that water to Outfall 002. The other valve is for the water in the Blast Furnace Recycling System and when opened, releases this water to the SWTP and then to Outfalls 011 and 001. On June 15, 2020, a new person opened one valve before closing another. AMBH was still working on a Root Cause Failure Analysis (RCFA) for this event and stated that IDEM and EPA could request it in two weeks. EPA and IDEM inspectors requested that the RCFA include drawings and/or a schematic of these valves.

#### Cyanide and Phenols Flow Proportioning

In July 2020, EPA and IDEM notified AMBH that cyanide and phenol sampling needed to be flow proportioned in addition to being collected via manually composited grab samples. AMBH hired a person to do this and AMBH representatives stated that the cyanide and phenol samples are being flow proportioned as of August 3, 2020 at Outfalls 001, 002, and 011. Outfall 011 flow is measured at the current location at the SWTP. This is not representative of the samples at Outfall 011.

#### Outfall 002 Flow Meter Changes

During recent discussions with AMBH, their representatives stated that because Lake Michigan lake levels were so high, the lake was interfering with the flow meter at Outfall 002. AMBH stated that they had altered some equipment at Outfall 002 and EPA and IDEM inspectors requested to observe Outfall 002.

After observing Outfall 002, EPA and IDEM inspectors were still unclear as to the actions taken by AMBH and requested a call with AMBH representatives to clarify what was observed on August 12, 2020 by Outfall 002. On August 19, 2020, Mr. Ream and Ms. Rogers spoke with Ms. Swanson and Mr. Mathias on the phone. During the conversation, the inspectors learned that the high Lake Michigan water levels were getting into the housing for the electronics for the Outfall 002 flow meter. This housing was previously slightly above water level, but as the lake level rose, it was now submerged. Although the housing was supposed to be water-tight, water did get in and caused shorting of the electronics. The electronics have been moved to ground level.

The flow meter for Outfall 002 is underwater, in the vault for the outfall. This vault is approximately five feet below the surface of the water. The meter is a velocity meter and

with a flow rate of 1.5 feet/second, there is no chance that the lake water can impact the flow reading. A new flow meter was installed in June or early July and was switched on August 15, 2020.

Sampling for Outfall 002 is done from flow that is closer to the surface of the ground, approximately 150 feet back from the dock. After the sample location, the piping drops down approximately five feet and then flows laterally to the outfall.

Once the new flow meter has been validated, a new 5800 ISCO Auto Sampler will be installed in the sample building. The new sampler is on site. AMBH representatives stated that IDEM and EPA inspectors could ask for information on when the new sampler was installed.

### **Walkthrough of the Facility**

See Attachment A for photos taken by IDEM.

At 10:35 A.M., EPA and IDEM inspectors followed Ms. Swanson, and Ms. Casillas to Outfall 002. The inspectors observed the metal box that houses the electronics for the flow meter. EPA also observed a level sensor that is used by the ore boats that use the dock by Outfall 002. The inspectors also observed a small amount of foam at the near end of the Outfall 002 channel. The water in the channel was clear and there were fish observed in the water.

### **2.3 Closing Conference and Post-Inspection**

EPA and IDEM inspectors provided a closing conference in the conference room before going out to Outfall 002. The inspectors exited the plant at 12:15 P.M.

### **3. LIST OF DOCUMENTS RECEIVED FROM FACILITY**

No documents were received from the facility.

### **4. INFORMATION TO BE PROVIDED BY FACILITY**

- A. Dye tracer study plan.
- B. Report and data on the Phase 1 Ammonia Study of the Storm Ditch, including conclusions drawn from Phase 1 and plan for Phase 2.
- C. Toxic Reduction Evaluation Plan, due to IDEM by 90 days after toxicity was determined on May 20, 2020.

### **5. AREAS OF CONCERN**

- A. The Storm Ditch is providing additional ammonia to the wastestream even though that flow should only consist of non-contact cooling water and storm water.
- B. The failure of the WET Test two times shows chronic toxicity of the flow from Outfall 001. The level of chronic toxicity was 1052% over permit limit for the May 4 through May 8, 2020 sampling and 2050% over permit limit for confirmation sampling done from May 31 through June 5, 2020.

- C. There is a double block and bleed valve that has the potential to allow Blast Furnace Recycle Water to flow out to Outfall 002 and bypass treatment. This connection was previously unknown to the agencies.
- D. The flow values for the sampling at Outfall 011 are not representative of the flow at Outfall 011 due to the location of the flow meter at the SWTP, while the sampling is conducted downstream after the lagoons. (Although the location of the flow meter is in the permitted location.)

6. **LIST OF ATTACHMENTS**

- A) Photolog

**Attachment A**  
**ArcelorMittal Burns Harbor**  
**Joint EPA/IDEM Inspection August 12, 2020**  
**All photos taken by Nick Ream, IDEM Inspector**



1: IMG\_0826 (Photo was rotated 90°)

Description: Looking down into the Outfall 002 channel at a small amount of foam. Outfall 002 discharges to Burns Harbor approximately 5' below the water level at this end of the channel.

Location: Outfall 002.

Camera Direction: Down

Date/Time: August 12, 2020 10:37 A.M.



2: IMG\_0827

Description: The Outfall 002 Channel to Burns Harbor. Outfall 002 discharges to Burns Harbor approximately 5' below the water level at the near end of the channel.

Location: Outfall 002.

Camera Direction: West

Date/Time: August 12, 2020 10:37 A.M.



3: IMG\_0828

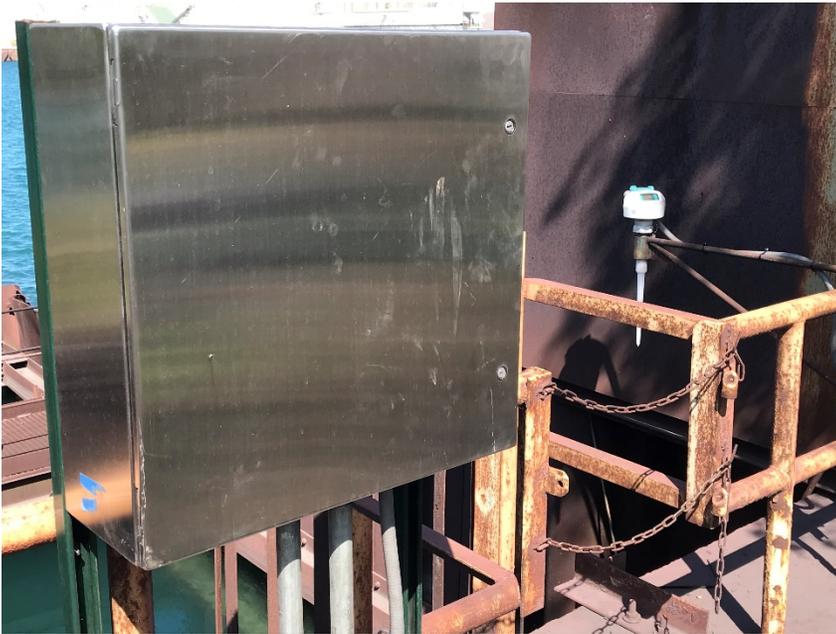
Description: Probe measures the depth to the surface of the water, used by shipping activities.

Location: Outfall 002.

Camera Direction: West

Date/Time: August 12, 2020 10:37 A.M.

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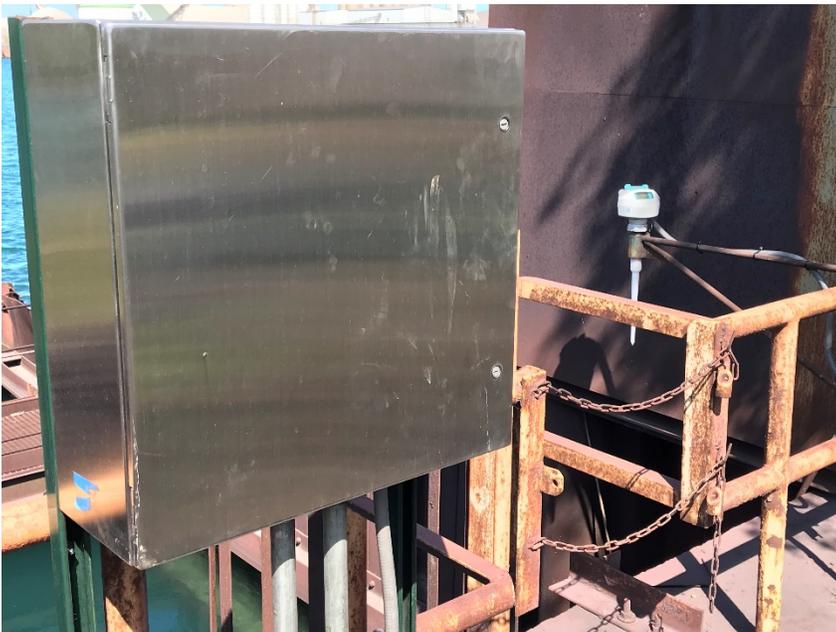
4: IMG\_0829

Description: Silver box contains the electronics for the flow meter for Outfall 002. The electronics were previously at water level, but since the lake level has risen, the electronics needed to be moved to prevent outages.

Location: Outfall 002.

Camera Direction: Northwest

Date/Time: August 12, 2020 10:37 A.M.



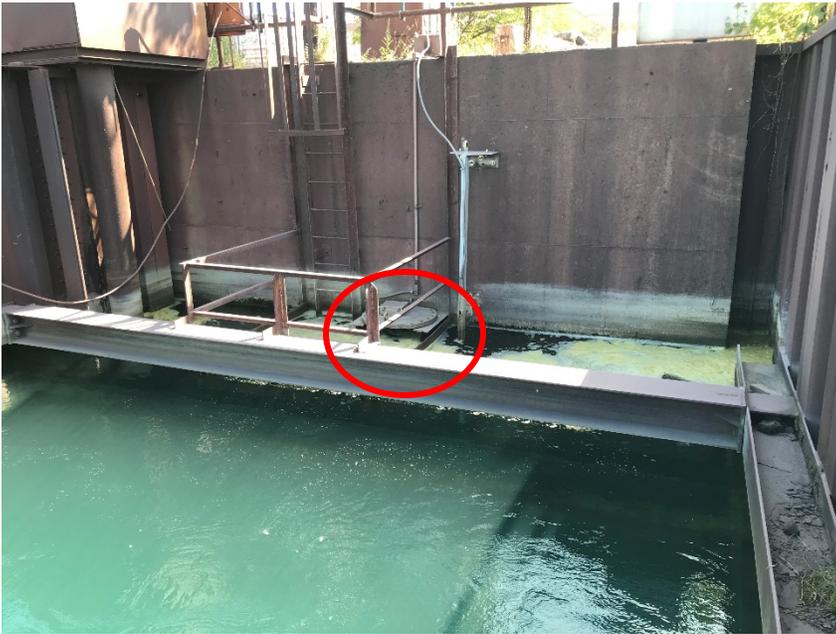
5: IMG\_0830

Description: Duplicate photo as IMG\_0829.

Location: Outfall 002.

Camera Direction: Northwest

Date/Time: August 12, 2020 10:37 A.M.



6: IMG\_0831

Description: Looking back at the head wall of the Outfall 002 Channel. Electronics for the flow meter were previously in a housing at lake level - identified by a red circle in photo. They have now been moved up to ground level.

Location: Along walkway on south side of Outfall 002 Channel.

Camera Direction: Northeast

Date/Time: August 12, 2020 10:40 A.M.



7: IMG\_0832

Description: Duplicate photo as IMG\_0831.

Location: Along walkway on south side of Outfall 002 Channel.

Camera Direction: Northeast

Date/Time: August 12, 2020 10:40 A.M.