IDEM

Indiana Department of Environmental Management

We Protect Hoosiers and Our Environment.

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Eric J. Holcomb
Governor

Bruno Pigott
Commissioner

October 21, 2019
Via Email to: robert.maciel@arcelormittal.com
Mr. Robert Maciel, Environmental Manager
ArcelorMittal Burns Harbor, LLC
250 West US Highway 20
Burns Harbor, Indiana 46304

Dear Mr. Maciel:

Re: **Inspection Summary/ Enforcement Referral**
ArcelorMittal Burns Harbor LLC
NPDES Permit No. IN0000175
Burns Harbor, Porter County

An inspection of the above-referenced facility or location was conducted by a representative of the Indiana Department of Environmental Management, Northwest Regional Office, pursuant to IC 13-18-3-9. A summary of the inspection is provided below:

Date(s) of Inspection:	August 14, 2019, August 22, 2019, September 11, 2019, October 01, 2019
Type of Inspection:	Reconnaissance Inspection
Inspection Results:	Violations were observed and will be referred to the Office of Water Quality Enforcement Section.

A copy of the NPDES Industrial Facility Inspection Report, which sets forth the violations identified, is enclosed. This matter is being referred to the Office of Water Quality Enforcement Section for appropriate action.

Sincerely,

Rick Massoels, Deputy Director
Northwest Regional Office

Enclosure

NPDES Industrial Facility Inspection Report

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

NPDES Permit Number:	Facility Type:		Facility Classification:	TEMPO AI ID
IN0000175	Industrial	Major	D	12029

Date(s) of Inspection: August 14, 2019 , August 22, 2019 , September 11, 2019 , October 01, 2019

Type of Inspection: Reconnaissance Inspection

Name and Location of Facility Inspected:			Receiving Waters/POTW:	Permit Expiration Date:
ArcelorMittal Burns Harbor LLC				6/30/2021
250 West US Highway 20		County:	East Branch of the Little Calumet River and Lake Michigan	Design Flow:
Burns Harbor	IN 46304	Porter		NA

On Site Representative(s):

First Name	Last Name	Title	Email	Phone
Theresa	Kirk	Environmental Engineer	theresa.kirk@arcelormittal.com	219-214-2363
Robert	Maciel	Environmental Manager	robert.maciel@arcelormittal.com	219-787-4961
Cary	Mathias	Regional Waste Manager	cary.mathias@arcelormittal.com	330-659-9124
Keith	Nagel	Director of Environmental Affairs and Real Estate	keith.nagel@arcelormittal.com	330-659-9165
John	Olasek	Solid Waste Engineer		
Blake	Crisman	Operation Technology Manager		
Rick	Balunda	Manager of Operations		
Brian	Leymann	Division Manager of Operations		
Gary	Amendola	Consultant		
Pat	Gorman	Operator		

Was a verbal summary of the inspection given to the on-site rep? **Yes**

Certified Operator:	Number:	Class:	Effective Date:	Expiration Date:	Email:
Pat Gorman	9310	D	7-1-19	6-30-22	pat.gorman@arcelormittal.com

Cyber Security Contact

Name: Email:

Responsible Official:
Mr. Robert Maciel, Environmental Manager
250 West US Highway 20

Burns Harbor, Indiana 46304

Permittee: ArcelorMittal Burns Harbor, LLC
Email: robert.maciel@arcelormittal.com
Phone: Contacted?
Fax: Yes

INSPECTION FINDINGS

- ○ Conditions evaluated were found to be satisfactory at the time of the inspection. (5)
- ○ Violations were discovered but corrected during the inspection. (4)
- ○ Potential problems were discovered or observed. (3)
- ○ Violations were discovered and require a submittal from you and/or a follow-up inspection by IDEM. (2)
- ◉ Violations were discovered and may subject you to an appropriate enforcement response. (1)

AREAS EVALUATED DURING INSPECTION

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated

U	Receiving Waters	N	Facility/Site	U	Self-Monitoring	N	Compliance Schedules
U	Effluent/Discharge	U	Operation	N	Flow Measurement		
U	Permit	U	Maintenance	N	Laboratory	U	Effluent Limits Compliance
		N	Sludge	U	Records/Reports	N	Other:

DETAILED AREA EVALUATIONS

This investigation was conducted in response to a fish kill in the East Branch of the Little Calumet River in August 2019. The investigation findings are set forth in the attached Investigation Report.

Receiving Waters:

Comments:
Receiving Waters was rated as Unsatisfactory. Please refer to the attached Investigation Report, including Item 1 in the "Description of Violations."

Effluent/Discharge:

Comments:
Effluent/Discharge was rated as Unsatisfactory. Please refer to the attached Investigation Report, including Item 1 in the "Description of Violations."

Permit:

Comments:
Permit was rated as Unsatisfactory. Please refer to the attached Investigation Report, including Item 3 in the "Description of Violations."

Operation:

Comments:
Operation was rated as Unsatisfactory. Please refer to the attached Investigation Report, including Items 5 and 6 in the "Description of Violations."

Maintenance:

Comments:
Maintenance was rated as Unsatisfactory. Please refer to the attached Investigation Report, including Item 5 in the "Description of Violations."

Self-Monitoring:

Comments:
Self-Monitoring was rated as Unsatisfactory. Please refer to the attached Investigation Report, including Items 4, 6, and 7 in the "Description of Violations."

Records/Reports:

The following records/reports were reviewed:
DMRs for the period of: August 2019 were reviewed as part of the inspection.

Comments:
Records/Reports was rated as Unsatisfactory. Please refer to the attached Investigation Report, including Items 4, 6, and 7 in the "Description of Violations."

Effluent Limits Compliance:

Yes 1. Were DMRs reviewed as part of the inspection?

DMRs for the period of: August 2019 were reviewed as part of the inspection.

Yes 2. Were violations noted during the review of DMRs?

Comments:
Effluent Limits Compliance was rated as Unsatisfactory. Please refer to the attached Investigation Report, including Item 2 in the "Description of Violations."

IDEM REPRESENTATIVE

Inspector Name:	Email:	Phone Number:
Nicholas Ream	nream@idem.IN.gov	219-730-1691

Other staff participating in the inspection:

Name(s)	Phone Number(s)
Jason House - IDEM	317-233-0470
Robert Lugar - IDEM	317-234-6019
Aaron Deeter - IDEM	317-691-1915
Sangsook Choi - EPA	
Joan Rogers - EPA	
Mark Conti - EPA	

IDEM MANAGER REVIEW	
IDEM Manager:	Date:
Rick Massoels	10/15/2019

Investigation Report
Fish Kill on the East Branch of the Little Calumet River
August 2019

Emergency Response

On Monday, August 12, 2019, the Indiana Department of Environmental Management (IDEM) and the Indiana Department of Natural Resources (IDNR) responded to a report of distressed fish in the East Branch of the Little Calumet River, just west of 149 and Route 12. IDEM Emergency Response On-scene Coordinator (OSC), David Greinke, and IDNR Conservation Officers, Shawn Brown and Guy Wendorf, went to the site in question to investigate. They found no dead fish, but observed a single distressed fish. OSC Greinke ran field screens for Dissolved Oxygen, Ammonia-Nitrogen, and Temperature. The results, which were 6.0 mg/l for Dissolved Oxygen, less than 1.0 mg/l for Ammonia Nitrogen, and 29.2 degrees Celsius for Temperature, did not indicate a water quality issue.

OSC Greinke noted that ArcelorMittal Burns Harbor (AMBH) has a National Pollutant Discharge Elimination System (NPDES) permitted outfall (001) directly upstream of the investigation site, and thus contacted AMBH. AMBH Environmental Department representative, Theresa Kirk, accompanied by another AMBH representative, arrived on scene, as the IDNR Conservation Officers were leaving. OSC Greinke advised the AMBH representatives that he was investigating a report of distressed fish in the area, and inquired as to whether AMBH had any issues with its wastewater discharges or elevated sample results within the last 24 hours. Ms. Kirk advised that she was not aware of any such issues.

On Wednesday, August 14, 2019, IDEM Emergency Response OSCs David Greinke and John Lankowicz, along with IDNR Conservation Officer, Matt Shurr, responded to a report of dead fish in the East Branch of the Little Calumet River made on Tuesday, August 13, 2019 at 10:08 pm.

OSC Lankowicz accompanied Conservation Officer Shurr on the IDNR boat. They observed numerous dead fish of varying species and sizes along the East Branch of the Little Calumet River, and initiated a count of the dead fish.[1] In addition, in an effort to identify a potential cause of the fish kill, OSC Lankowicz conducted field screens for Dissolved Oxygen, pH, Temperature, and Ammonia-Nitrogen at several locations along the East Branch of the Little Calumet River, with no notable results.

In the meantime, OSC Greinke was directed to respond to a report, made by AMBH on the morning of August 14, 2019, of the presence of a petroleum sheen at AMBH Outfall 002. OSC Greinke was not able to determine whether the sheen was attributable to the discharge from Outfall 002. AMBH utilized a boom to capture the sheen, and collected samples for fingerprint

[1] Information regarding the number, species, and size of the dead fish will be included in a separate report prepared by IDNR.

analysis.[2] Thereafter, OSC Greinke was directed to proceed to East Chicago to respond to a report of an explosion at a tank cleaning facility. Prior to leaving the area, however, OSC Greinke conducted a field screening for Ammonia-Nitrogen in the East Branch of the Little Calumet River in the vicinity of the Portage Marina, with a result of 1.0 mg/l.

IDEM wastewater inspector, Nicholas Ream, was then deployed, on August 14, 2019, to investigate potential causes of the fish kill. Based on the location of the fish kill and the Ammonia Nitrogen detection in the vicinity of the Portage Marina, Inspector Ream proceeded to the AMBH facility. Upon arrival, Inspector Ream met with AMBH Environmental representative, Theresa Kirk. Inspector Ream explained to Ms. Kirk that he was investigating the potential cause of a fish kill on the East Branch of the Little Calumet River, and inquired as to whether AMBH was encountering any operational issues or issues with its wastewater discharges. Ms. Kirk advised that AMBH had a recent exceedance of its NPDES permit daily maximum limit for Ammonia-Nitrogen of 0.52 mg/l at Outfall 001, with a result of about 0.9 mg/l. Ms. Kirk advised, however, that AMBH did not believe that the Ammonia-Nitrogen exceedance was attributable to discharges from its facility because: (1) Ammonia-Nitrogen monitoring of the discharge from internal Outfall 011, which, as explained below, comprises a substantial amount of the Outfall 001 discharge, yielded a result of about 0.2 mg/l; and (2) none of the other waters that comprise the Outfall 001 discharge (noncontact cooling water, storm water, and lake water) are known or expected to contain Ammonia-Nitrogen.

Inspector Ream proceeded to make visual observations of AMBH Outfalls 001 and 011. Inspector Ream noted the presence of two dead fish in the vicinity of Outfall 001, and no dead fish in the vicinity of Outfall 011. See the photographs set forth in Exhibit 1. Outfall 001 is located approximately 800 feet downstream of Outfall 011. The discharge from Outfall 011, which is comprised of treated process wastewater from the Secondary Wastewater Treatment Plant (SWTP) and treated wastewater from the Town of Burns Harbor sanitary wastewater treatment plant, enters an open channel. Other waters then enter the open channel, including noncontact cooling water and storm water run-off. The co-mingled waters (Outfall 011 discharge plus the other inputs) then discharge through Outfall 001 to the East Branch of the Little Calumet River.

Ms. Kirk suggested that the elevated Ammonia Nitrogen at Outfall 001 may be attributable to discharges from sources not related to AMBH entering the open channel. Ms. Kirk identified nearby facilities (specifically, a NIPSCO facility, which Ms. Kirk said was conducting cleaning activities, and US Air) as potential sources of the elevated Ammonia-Nitrogen. Due to the presence of heavy vegetative growth, Inspector Ream was not able to determine whether storm water (or any other water) was entering the open channel at the time of the visit. Inspector Ream noted, however, the absence of any precipitation at the time of the visit. It was also not clear

[2] The fingerprint analysis results, which were subsequently provided to IDEM, indicated that the captured substance was not petroleum based; rather it was an inorganic substance comprised of material normally associated with dirt, but also contained iron, sulfur, silicone, and calcium.

how discharges from nearby facilities could be entering the open channel, and AMBH was not able to provide any evidence to support this theory.

Ms. Kirk advised that AMBH would continue efforts to identify potential sources of the elevated Ammonia-Nitrogen, and that the efforts would include collection of grab samples at instream locations and at Outfalls 001 and 011 for analysis for Ammonia-Nitrogen, Cyanide, and Dissolved Oxygen, using approved analytical methods. When Inspector Ream asked Ms. Kirk why samples would be analyzed for Cyanide, Ms. Kirk advised that AMBH was having a blast furnace gas washing recycle system issue, but emphasized that AMBH did not believe that the issue was impacting its discharges, as any impact would have been exhibited in the process wastewater discharges (Outfall 011) and no such impact was observed. Therefore, per Ms. Kirk, having the grab samples analyzed for Cyanide was purely precautionary.

As of the morning of Thursday, August 15, 2019, the cause of the fish kill had not been identified. Concurrent with IDEM's ongoing investigation into the cause of the fish kill, IDEM staff initiated the process of removing and disposing of the dead fish in an effort to minimize public nuisance. Thereafter, AMBH notified IDEM that the 24 hour composite sample at Outfall 011 for August 13, 2019 yielded a Total Cyanide concentration result of 0.26 mg/l, which translated to 188 pounds, in violation of the daily maximum pounds limit of 21. See Exhibit 2.

Upon learning of the release of Cyanide in excess of permit limits, IDEM issued two written communications to AMBH on August 15, 2019. One of the communications, from Wastewater Compliance Branch Chief, Jason House, directed ArcelorMittal to, among other things:

- Immediately and until further notice increase monitoring for all parameters at Outfalls 001 and 011 to daily, using the sample types called for in the NPDES permit and approved analytical methods;
- To the extent that 24 hour composite samples collected at Outfalls 001 and 011 from August 1 through August 14, 2019 continue to be available, analyze the samples for Total and Free Cyanide and Ammonia-Nitrogen, using approved analytical methods, if such analysis did not already occur;
- Produce the results of the grab sampling for Ammonia-Nitrogen, Cyanide, and Dissolved Oxygen conducted on August 14, 2019;
- Immediately and until further notice monitor the East Branch of the Little Calumet River for Total and Free Cyanide, Ammonia-Nitrogen, pH, Temperature, and Dissolved Oxygen; and
- Immediately and until further notice increase monitoring for Oil & Grease at Outfall 002 to daily, using the sample type called for in the NPDES permit and approved analytical methods. See Exhibit 3.

The other written communication, from Emergency Response Section Chief, Aaron Green, named AMBH as the party responsible for the fish kill, and directed AMBH to undertake a spill response. Having identified a responsible party, IDEM suspended its fish recovery effort, and tasked AMBH with fish recovery and disposal as part of the spill response. See Exhibit 4.

Later on August 15, 2019, AMBH issued a statement accepting responsibility for the fish kill and attributing the event to a catastrophic failure of the blast furnace gas washing recycle system pump station that occurred on August 11, 2019. Per AMBH, repairs were made and operation of the pump station resumed on August 15, 2019.

From Friday, August 16 through Monday, August 26, 2019, IDEM held daily meetings with AMBH to discuss the status of required response actions, relay any additional response actions deemed necessary, and review analytical data gathered as part of the incident response. With input from the United States Environmental Protection Agency and the Agency for Toxic Substances and Disease Registry, a screening value of 0.2 mg/l for Free Cyanide was established for purposes of assessing whether instream water quality posed a risk to human health.

As referenced above, the required response actions included, from the onset, daily monitoring at Outfall 002 for Oil & Grease. On Friday, August 16, 2019, IDEM added a requirement for Total Cyanide to be monitored daily at Outfall 002, as a precautionary measure.

Also as referenced above, the required response actions called for submittal of the results of the Wednesday, August 14, 2019 grab sampling conducted by AMBH of locations along the East Branch of the Little Calumet River for Cyanide, Ammonia-Nitrogen, and Dissolved Oxygen. On Saturday, August 17, 2019, IDEM inquired as to the status of the results. At that time, AMBH stated that the samples were not tested for Cyanide and that there had never been intention to test the samples for Cyanide because the sole purpose of the August 14, 2019 sampling was to try to identify potential sources of Ammonia Nitrogen. Later on August 17, 2019, AMBH produced the results of the grab sampling conducted on August 14, 2019, with Cyanide results included. AMBH stated that the samples were only analyzed for Cyanide after IDEM's August 15, 2019 directive to analyze available samples for Cyanide. This information, however, was contrary to what Inspector Ream was explicitly told on August 14, 2019, and inconsistent with the chain of custody for the samples, which clearly shows that the Cyanide testing was requested by AMBH on August 14, 2019. See Exhibit 5.

In addition, as referenced above, the required response actions included, from the onset, instream sampling of the East Branch of the Little Calumet River by AMBH. However, on August 18, 2019, IDEM conducted sampling of the East Branch of the Little Calumet River and eight locations along the Lake Michigan Shoreline. The shoreline sampling was conducted west of the confluence, including the Portage Lakefront & Riverwalk, Ogden Dunes, and West Beach areas. The IDEM samples were taken to Pace Analytical and were analyzed for Total and Free Cyanide. The results of the sampling conducted by IDEM are set forth in Exhibit 6.

On August 18, 2019, IDEM received the results of instream sampling conducted by AMBH on August 16, 2019. The results indicated Cyanide detections just beyond the breakwater. Although the detection levels were well below 0.2 mg/l, as a precaution, IDEM instructed AMBH to conduct sampling of the Lake Michigan Shoreline at the locations sampled by IDEM, beginning on August 19, 2019 and continuing until further notice, in addition to conducting sampling of the East Branch of the Little Calumet River.

On August 20, 2019, AMBH reported the presence of a sheen at Outfall 002. IDEM and the US Coast Guard responded. While the presence of a sheen was confirmed, it was determined by IDEM and the USCG that containment and recovery were not warranted, due to the slight amount of sheen present.

On August 24, 2019, IDEM added a requirement for AMBH to expand the instream sampling locations to include the Portage Marina, until further notice.

After at least 30 consecutive days of results without indication of water quality issues or NPDES permit daily maximum effluent limit violations, IDEM suspended the Little Calumet River and Lake Michigan Shoreline monitoring, and returned monitoring frequencies to the frequencies called for in the NPDES permit for all parameters except Total Cyanide, Free Cyanide, and Ammonia-Nitrogen. Per IDEM directive, daily monitoring of Ammonia-Nitrogen at Outfalls 001 and 011, Total Cyanide at Outfall 002 and 011, and Free Cyanide at Outfall 001[3] will continue for the foreseeable future.

Incident Investigation

Background Information

As referenced above, AMBH attributed the Cyanide release, which caused the fish kill, to the catastrophic failure of a pump station that is an essential part of its blast furnace gas washing recycle system. Pertinent information regarding this system, obtained from the NPDES permit, the NPDES permit fact sheet, the NPDES permit application, and/or AMBH, is as follows. See also the photographs set forth in Exhibit 1.

> AMBH blast furnaces C and D are equipped with venturi air scrubbers, which utilize water to "wash" the blast furnace gas prior to emission of the gas to the atmosphere. The used gas wash water is continuously treated, conditioned, cooled and reused, via a recycle system that operates as follows: After use in the air scrubber, the water enters clarifiers (for treatment), then enters the hot well (for conditioning), then is pumped, via four (4) hot well pumps, to cooling towers (for cooling), then is returned to the cold well (for

[3] The NPDES permit requires utilization of Method 1677 for Free Cyanide analysis, unless an alternative method is approved by IDEM. AMBH has not requested or received approval to use an alternative method. IDEM directed daily monitoring of all parameters at Outfall 001, including Free Cyanide, beginning on August 15, 2019, using the sample type called for in the NPDES permit and approved analytical methods. ArcelorMittal utilized a method other than 1677 for Free Cyanide analysis of the daily samples in order to expedite the turnaround time for results. While IDEM was aware that this alternative method was being utilized to enable production of results within 24 hours, IDEM believed that the daily samples were also being analyzed for Free Cyanide using the approved analytical method, based on the directive that IDEM had issued and discussions with AMBH representatives. IDEM learned on September 25, 2019, that AMBH was solely utilizing the alternative method for Free Cyanide analysis and directed AMBH to use Method 1677 unless and until an alternative method is approved by IDEM. Additionally, on September 25, 2019, IDEM requested that any held samples that could be analyzed with Method 1677, be analyzed and reported to IDEM.

storage), then is pumped, via three (3) cold well pumps, back to the air scrubber (for gas washing). The four (4) hot well and three (3) cold well pumps are housed in a single pump station building. The power source for the pumps is a 5000 volt electrical feed, while the power source for the pump controls is a self-recharging 250 v DC battery system. There is no backup power source for the power feed to the pumps or the pump controls. AMBH estimates that there are two (2) million gallons of gas wash waters in the recycle system at any given time.

The system is not entirely closed loop, however. AMBH intermittently directs treated blowdown from the cold well to the SWTP, at a rate of 200 to 500 gallons per minute, and adds lake "make-up" water to the recycle system, to maintain a hydraulic balance within the recycle system. Per AMBH's NPDES permit fact sheet and AMBH's NPDES permit application, this is the sole waste stream from the blast furnace gas washing process that is directed to the SWTP.

Per the NPDES permit fact sheet and AMBH's NPDES permit application, in the event the recycle system experiences elevated concentrations of Cyanide, the blowdown can be directed from the cold well to an alkaline chlorination system to destroy the Cyanide before discharge to the SWTP.

AMBH monitors the recycle water in the cold well for pollutants known to be present in blast furnace gas wash waters, including Cyanide and Ammonia Nitrogen, three (3) times per week. Monitoring was not conducted during the week that the pump station failure occurred. However, monitoring results for the week preceding the failure and the week following the failure are set forth in Exhibit 7.

The SWTP is not designed or equipped to treat for Cyanide. Thus, continuous proper operation and maintenance of the blast furnace gas washing recycle system, such that the discharge from the blast furnace gas washing process to the SWTP is limited to the low rate of treated blowdown authorized by the NPDES permit, is essential to ensuring consistent compliance with NPDES permit effluent limits, particularly for Cyanide.

The pump station is equipped with an overflow weir that enables water from the hot well to enter a 24 inch sewer, which leads to the "dirty industrial wastewater" (DIW) sewer, which leads to the SWTP. The NPDES permit does not contemplate the discharge of blast furnace gas wash water beyond treated blowdown to the SWTP, via the hot well overflow weir, or otherwise.

Incident Description

In the course of its incident investigation, which included visits to the AMBH facility on August 14, August 22, September 11, and October 1, 2019, and a review of records and information provided by AMBH, IDEM obtained the following information regarding the pump station failure:

On August 4, 2019 at 3:22 pm, an air release valve on the pump station cold well return line to the blast furnace broke free, releasing pressurized water to the ceiling of the pump station. Some of the water drained into the adjacent room, damaging the 250 v DC battery switchgear system and rendering it unable to recharge. There was no alarm in place to alert operators that the battery ceased recharging.

Until the air release valve was repaired, which took approximately three (3) hours, the blast furnace gas washing recycle system was out of service. AMBH continued blast furnace operations and therefore gas washing operations, utilizing lake water, on a once through basis, in place of recycle water. During this period of time, all of the used gas wash water was released to the SWTP, via the hot well overflow weir, at a rate of thousands of gallons per minute. AMBH did not accelerate or increase monitoring at Outfalls 011 or 001 in response to this incident, nor did AMBH report this incident to IDEM or to downstream users.

On August 5, 2019, AMBH exceeded its Ammonia Nitrogen concentration limit of 0.52 mg/l at Outfall 001, with a result of 0.92 mg/l. At the time it was reported to IDEM, on August 25, 2019, AMBH indicated that the cause of the violation was unknown and was being investigated. The above referenced August 4, 2019 incident was not mentioned, even as a potential cause of the violation, but is now believed to be the cause.

On August 11, 2019 at 6:37 am, the 250 v DC battery system discharged to the point where the solenoid coils on the automatic check valves on the four (4) hot well and three (3) cold well pumps were not powered. The automatic check valves on every pump failed in a closed position, rendering the pump station entirely inoperable. Without hot and cold well pumping capability, use of lake water for blast furnace gas washing on a once through basis was initiated.

During this time, used gas wash water continued to flow to the clarifiers, then to the hot well, but could not be pumped to the cooling towers. In addition, water already in the cooling towers continued to return to the cold well, but could not be pumped to the air scrubbers. The gas wash water level in the hot well and cold well rose to an elevation that reached the hot well overview weir, and gas wash waters began overflowing into the 24 inch sewer, to the DIW sewer, to the SWTP, at a rate of thousands of gallons per minute.

In the meantime, the rising water levels triggered fail safes in both the hot and cold well, which activated the addition of lake makeup water into the recycle system, including the air scrubbers, the hot well, and the cold well. The influx of water adversely impacted the operation of the clarifiers. Additionally, the influx of water hydraulically overloaded the line that carries gas wash water to the clarifiers, causing used gas wash water to overflow from manholes and flood the area around the clarifiers. Moreover, the rate of water entering the pump station exceeded the capacity of the 24 inch hot well overflow sewer, causing the level of water in the pump station to further rise. The pump station flooded, with water reaching a level of five (5) to six (6) feet above the pump station floor and submerging the electrical power feed to the pumps. A pit outside of the pump station,

which houses the lake makeup water valves, also flooded. AMBH staff vacuumed the water out of the pit, at an estimated volume of 6,000 gallons, and directed it to the SWTP. AMBH staff then entered the pit and manually turned off the lake makeup water valves. At that point, the water in the pump station began to recede. AMBH staff also reduced the volume of water from the slag pit to the DIW, to facilitate the receding of the flood water.

The pump station had to be completely dried out before repairs could be made. On August 15, 2019 at 2:20 pm, repairs to the pump station were completed and the pump station was returned to service. At that time, AMBH ceased use of once through lake water and resumed use of recycle water for blast furnace gas washing operations.

From the time of the failure on August 11, 2019 until the pump station was returned to service on August 15, 2019, essentially all of the gas washing wastewater, including the approximate two million gallons of gas wash water in the recycle system at the time of the failure, the pump station flood waters, and the continuously generated once through gas wash water, was released via the hot well overflow weir, at a rate of thousands of gallons per minute, into the 24 inch sewer, into the DIW sewer, into the SWTP, through Outfall 011, and ultimately through Outfall 001. It is unclear whether all of the flood waters around the blast furnace gas washing recycle system clarifiers were vacuumed up and transported to the SWTP or if some of the flood waters washed out via Outfall 002.

AMBH's Incident Response

In the course of its incident investigation, IDEM obtained the following information regarding AMBH's response to the pump station failure that occurred on August 11, 2019:

Communication/Notification

According to AMBH personnel, there was plant wide communication regarding the blast furnace gas washing recycle system pump station failure and the resulting continuous release of thousands of gallons per minute of blast furnace gas washing wastewater to the SWTP, including communication with the wastewater treatment plant operators and the environmental personnel. However, the pump station failure, and the resulting continuous release of thousands of gallons per minute of blast furnace gas washing wastewater, known, by the nature of its origin, to contain pollutants including Cyanide, to a treatment plant not designed or equipped to treat Cyanide, was not reported to IDEM or to downstream users; was not mentioned to OSC Greinke on August 12, 2019, when he was investigating a report of distressed fish in the vicinity of AMBH's Outfall 001 or any time thereafter; and was mentioned only in passing, and dismissed as an issue, when Inspector Ream was at the facility on August 14, 2019, investigating potential causes of a fish kill in the vicinity of AMBH's Outfall 001.

The wastewater treatment plant operators conduct routine screening for pollutants, including Cyanide and Ammonia-Nitrogen, of the SWTP influent once per eight (8) hour shift. Wastewater operations staff initially advised IDEM that, in the event that Cyanide,

using a Hach screening method, is detected during three (3) consecutive shifts, routine protocol calls for screening to be accelerated to once every two (2) hours and notification to be made to other departments.

A review of six (6) months of SWTP influent screening records revealed that in the months preceding the incident that began on August 11, 2019, there were Cyanide detections during a total of ten shifts, with readings ranging from 0.02 mg/l to 0.07 mg/l, and with detections occurring during two (2) consecutive shifts on only two (2) occasions. However, beginning on August 12, 2019, Cyanide was detected during influent screenings conducted each shift, through August 15, 2019, with screening readings as high as 3.9 mg/l. See Exhibit 8. These screening results, which indicated an issue with Cyanide in the influent to a treatment plant not designed or equipped to treat Cyanide, were not communicated to IDEM, despite inquiries from IDEM on August 12, 2019, and again on August 14, 2019, regarding whether AMBH was experiencing any issues with its wastewater discharges.

IDEM requested the records of the accelerated [once every two (2) hour] screenings, but was told by AMBH that accelerated screening was not conducted during this event. AMBH then stated that accelerated screening is only conducted in response to Cyanide detections in the SWTP influent that occur in the context of blast furnace start up/shut down or blast furnace gas temperature readings above 700 degrees Fahrenheit.

NPDES Permit Monitoring

Per the NPDES permit, AMBH is required to monitor the discharge from Outfall 011 for Ammonia-Nitrogen at least two (2) times per week and for Total Cyanide at least one (1) time per week. From August 1 through August 15, 2019, AMBH conducted routine monitoring for Ammonia-Nitrogen on August 4, 6, 11, and 13, and Total Cyanide on August 6 and August 13.

In addition, AMBH is required to monitor the discharge from Outfall 001 for Ammonia Nitrogen at least three (3) times per week and for Free Cyanide at least two (2) times per month. From August 1 through August 15, 2019, AMBH conducted routine monitoring for Ammonia-Nitrogen on August 1, 4, 6, 8, 11, 13, and 15, 2019, and Free Cyanide on August 4, 6, and 8, 2019.

AMBH did not accelerate or increase monitoring of the Outfall 011 or Outfall 001 discharges in response to the catastrophic failure of the blast furnace gas washing system pump station on August 11, 2019, or the SWTP influent screening results that indicated repeated Cyanide detections beginning on August 12, 2019. (Note: Results are now available for Ammonia-Nitrogen and Cyanide for dates from August 1 through August 15, 2019 beyond the dates of AMBH's routine monitoring. These results were obtained following IDEM's August 15, 2019, directive to analyze available samples for these parameters.)

Operations

AMBH did not alter its plant operations or take any other actions to reduce the volume of blast furnace gas wash wastewater being generated and released to the SWTP.

AMBH did not initiate use of the cyanide destruction system in place to treat blowdown from the blast furnace gas washing recycle system during this event or otherwise attempt to treat the Cyanide prior to discharge to waters of the state. AMBH stated that triggers for use of the cyanide destruction system have been limited to blast furnace start up/shut down and blast furnace gas temperatures above 700 degrees Fahrenheit. AMBH also cited a number of reasons that the cyanide destruction system could not be / was not used during the failure of the pump station, including: there was no way to get the wastewater to the cyanide destruction unit due to the pump station failure; the cyanide destruction unit is not readily operable at all times (chlorine needs to be brought in and dosages determined); and the capacity of the cyanide destruction unit is limited to 500 gallons per minute.

AMBH initiated use of the water cannons, which are in place to help ensure compliance with temperature limits at Outfall 001, on August 14, 2019, but could not provide IDEM with specific information regarding who directed use of the water cannons and why. Thus is it is unclear whether the water cannons were utilized in an effort to dilute pollutant concentrations to mitigate adverse impact.

Monitoring Data Associated with the Incident

As referenced above, at the direction of IDEM, AMBH conducted daily monitoring of the East Branch of the Little Calumet River and the Lake Michigan Shoreline until there were at least 30 consecutive days without indication of a water quality issue. See the attached results of the monitoring conducted by AMBH in August and September of 2019 of the East Branch of the Little Calumet River, (Exhibit 9); and the Lake Michigan Shoreline (Exhibit 10).

Also as referenced above, at the direction of IDEM, AMBH conducted daily monitoring of Outfall 001 and 011, for all parameters, and Outfall 002, for Oil & Grease and Total Cyanide, until there were at least 30 consecutive days without indication of a NPDES permit daily maximum effluent limit violation. Thereafter, monitoring frequencies were returned to the frequencies called for in the NPDES permit, except daily monitoring of Ammonia-Nitrogen at Outfalls 001 and 011, Total Cyanide at Outfall 002 and 011, and Free Cyanide at Outfall 001 will continue for the foreseeable future.

A review of the monitoring results for Outfalls 001 and 011 for August 1 through August 31, 2019, revealed that AMBH violated NPDES permit effluent limits at Outfalls 001 and 011, as described in the below 'Description of Violations.' The monthly monitoring report and noncompliance notifications that reflect these violations are set forth in Exhibit 11.

A review of the monitoring results for Outfall 002 for August 15 through September 30, 2019, revealed the following:

> Total Cyanide was detected in the Outfall 002 discharge on August 16 and 17, and September 11, 14, 24, 28, and 29. AMBH does not have NPDES permit authorization to discharge any waste stream containing Total Cyanide from Outfall 002, with the exception of "treated process wastewater from the lagoon recirculating pump station" in the event that water is needed on an emergency basis. AMBH cannot recall the last time the lagoon recirculating pump station was used, and stated explicitly that it was not used at any time in 2019, through September 30. AMBH is unable to account for the presence of Total Cyanide in the Outfall 002 discharge, as detected on the aforementioned dates.

Description of Violations:

1. ***Violations of Narrative Effluent Limitations:***

A. Pursuant to Part I.B of AMBH's NPDES permit and 327 IAC 2-1.5-8, at all times the discharge from any and all point sources specified within the permit shall not cause receiving waters, including the mixing zone, to contain pollutants in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill aquatic life.

Pursuant to IC 13-30-2-1(1), a person may not discharge, emit, cause, allow, or threaten to discharge, emit, cause, or allow any contaminant or waste, including any noxious odor, either alone or in combination with contaminants from other sources, into the environment in any form that causes or would cause pollution that violates or would violate rules, standards, or discharge or emission requirements adopted by the board under the environmental management laws.

Beginning on or about August 11, 2019, discharges from AMBH, via Outfalls 011 and 001, caused the East Branch of the Little Calumet River to contain pollutants, including Cyanide, in amounts sufficient to be acutely toxic to, or to otherwise severely injure or kill approximately 3,000 fish, in violation of part I.B of the NPDES permit, 327 IAC 2-1.5-8, and IC 13-30-2-1(1).

B. Pursuant to Part I.B of AMBH's NPDES permit and 327 IAC 2-1.5-8, at all times the discharge from any and all point sources specified within the permit shall not cause receiving water, including the mixing zone, to contain pollutants that produce visible oil sheen.

Pursuant to IC 13-30-2-1(1), a person may not discharge, emit, cause, allow, or threaten to discharge, emit, cause, or allow any contaminant or waste, including any noxious odor, either alone or in combination with contaminants from other

sources, into the environment in any form that causes or would cause pollution that violates or would violate rules, standards, or discharge or emission requirements adopted by the board under the environmental management laws.

On August 20, 2019, AMBH reported the presence of oil sheen in the Outfall 002 discharge to Burns Harbor, in violation of Part I.B. of the NPDES permit, 327 IAC 2-1.5-8, and IC 13-30-2-1(1).

2. ***Violations of Numeric Effluent Limitations:***

A. Part I.A.1 of AMBH's NPDES permit sets forth numeric effluent limitations applicable to the discharge from Outfall 001, including effluent limitations for Free Cyanide and Ammonia-Nitrogen.

For the period of August 1 through August 31, 2019, AMBH exceeded numeric effluent limitations, in violation of Part I.A.1 of the NPDES permit, as follows:

Outfall	Date	Parameter	Limit Type	Limit	Result
001	8/5/19	Ammonia-Nitrogen	Daily Maximum (concentration)	0.52 mg/l	0.92 mg/l
001	8/5/19	Ammonia-Nitrogen	Daily Maximum (loading)	540 lbs/day	901 lbs
001	8/11/19	Ammonia-Nitrogen	Daily Maximum (concentration)	0.52 mg/l	0.92 mg/l
001	8/11/19	Ammonia-Nitrogen	Daily Maximum (loading)	540 lbs/day	911 lbs
001	8/12/19	Ammonia-Nitrogen	Daily Maximum (concentration)	0.52 mg/l	1.0 mg/l
001	8/12/19	Ammonia-Nitrogen	Daily Maximum (loading)	540 lbs/day	1117 lbs
001	8/13/19	Ammonia-Nitrogen	Daily Maximum (concentration)	0.52 mg/l	0.80 mg/l
001	8/13/19	Ammonia-Nitrogen	Daily Maximum (loading)	540 lbs/day	891 lbs
001	8/14/19	Ammonia-Nitrogen	Daily Maximum (concentration)	0.52 mg/l	0.57 mg/l
001	8/14/19	Ammonia-Nitrogen	Daily Maximum (loading)	540 lbs/day	562 lbs
001	8/15/19	Ammonia-Nitrogen	Daily Maximum (concentration)	0.52 mg/l	0.81 mg/l

001	8/15/19	Ammonia-Nitrogen	Daily Maximum (loading)	540 lbs/day	751 lbs[4]
001	8/16/19	Ammonia-Nitrogen	Daily Maximum (concentration)	0.52 mg/l	0.53 mg/l
001	8/16/19	Ammonia-Nitrogen	Daily Maximum (loading)	540 lbs/day	554 lbs
001	8/1/19-8/7/19	Ammonia-Nitrogen	7-Day Average (concentration)	0.37 mg/l	0.48 mg/l
001	8/1/19-8/7/19	Ammonia-Nitrogen	7-Day Average (loading)	385 lbs/day	460 lbs
001	8/8/19 - 8/14/19	Ammonia-Nitrogen	7-Day Average (concentration)	0.37 mg/l	0.65 mg/l
001	8/8/19 - 8/14/19	Ammonia-Nitrogen	7-Day Average (loading)	385 lbs/day	679 lbs
001	8/15/19-8/21/19	Ammonia-Nitrogen	7-Day Average (concentration)	0.37 mg/l	0.49 mg/l
001	8/15/19-8/21/19	Ammonia-Nitrogen	7-Day Average (loading)	385 lbs/day	488 lbs
001	8/29/19-8/31/19	Ammonia-Nitrogen	7-Day Average (concentration)	0.37 mg/l	0.39 mg/l
001	8/29/19-8/31/19	Ammonia-Nitrogen	7-Day Average (loading)	385 lbs/day	401 lbs
001	8/12/19	Free Cyanide	Daily Maximum (concentration)	8.8 ug/l	160 ug/l
001	8/12/19	Free Cyanide	Daily Maximum (loading)	9.9 lbs/day	178.8 lbs
001	8/13/19	Free Cyanide	Daily Maximum (concentration)	8.8 ug/l	220 ug/l
001	8/13/19	Free Cyanide	Daily Maximum (loading)	9.9 lbs/day	244.9 lbs
001	8/14/19	Free Cyanide	Daily Maximum (concentration)	8.8 ug/l	106 ug/l
001	8/14/19	Free Cyanide	Daily Maximum (loading)	9.9 lbs/day	104.9 lbs
001	8/15/19	Free Cyanide	Daily Maximum (concentration)	8.8 ug/l	125.2 ug/l
001	8/15/19	Free Cyanide	Daily Maximum (loading)	9.9 lbs/day	116.3 lbs
001	8/16/19	Free Cyanide	Daily Maximum (concentration)	8.8 ug/l	11.9 ug/l

[4] Note that the Monthly Monitoring Report indicated a result of 751 lbs, but the noncompliance notification submitted by AMBH indicated a result of 854 lbs. Both values constitute violations. IDEM will request that AMBH resolve the discrepancy.

001	8/16/19	Free Cyanide	Daily Maximum (loading)	9.9 lbs/day	12.4 lbs
001	August 2019	Free Cyanide	Monthly Average (concentration)	4.4 ug/l	30 ug/l
001	August 2019	Free Cyanide	Monthly Average (loading)	5.0 lbs/day	29.2 lbs/day

B. Part I.A.4 of AMBH's NPDES permit sets forth numeric effluent limitations applicable to the discharge from Outfall 011, including effluent limitations for Total Cyanide.

For the period of August 1 through August 31, 2019, ArcelorMIttal Burns Harbor exceeded numeric effluent limits, in violation of Part I.A.4 of the NPDES permit, as follows:

Outfall	Date	Parameter	Limit Type	Limit	Result
011	8/12/19	Total Cyanide	Daily Maximum (loading)	21 lbs/day	136 lbs
011	8/13/19	Total Cyanide	Daily Maximum (loading)	21 lbs/day	188 lbs
011	8/14/19	Total Cyanide	Daily Maximum (loading)	21 lbs/day	138 lbs
011	8/15/19	Total Cyanide	Daily Maximum (loading)	21 lbs/day	110 lbs
011	8/16/19	Total Cyanide	Daily Maximum (loading)	21 lbs/day	35 lbs

3. Prohibited Discharges

Pursuant to 327 IAC 5-2-2, the point source discharge of pollutants to waters of the state is prohibited except in conformity with a valid NPDES permit obtained prior to the discharge.

A. AMBH's NPDES permit authorizes the intermittent discharge treated blowdown, at a rate of 200 to 500 gallons per minute, from the blast furnace gas washing recycling system cold well to the SWTP. This is the sole waste stream from the blast furnace gas washing process that AMBH is authorized to discharge to the SWTP.

1. On August 4, 2019, the AMBH blast furnace gas washing recycle system was out of service for approximately a three (3) hour period for repair. AMBH continued blast furnace operations, utilizing once through lake water in place of recycle water for gas washing, and released, at a rate of thousands of gallons per minute, all of the used gas wash water, via the hot

well overflow, to the SWTP and ultimately through Outfall 001, in violation of 327 IAC 5-2-2.

2. On August 11, 2019, the ArcelorMittal Burns Harbor gas washing recycle system hot and cold well pump check valves failed in the closed position, rendering all of the pumps inoperable, until the pump station was returned to service on August 15, 2019 at 2:20 pm. This resulted in the release of millions of gallons of wastewater from the blast furnace gas washing process to the SWTP and ultimately through Outfall 001, in violation of 327 IAC 5-2-2, as follows:

   All gas wash water present in the recycle system at the time of the failure, approximately two (2) million gallons, was lost to the SWTP.

   An influx of lake makeup water caused flooding around the blast furnace gas wash recycle system clarifiers and flooding of the pump station. The flood waters were directed to the SWTP.

   AMBH continued blast furnace operations, utilizing once through lake water in place of recycle water for gas washing, and released, at a rate of thousands of gallons per minute, all of the used gas wash water to the SWTP, via the hot well overflow.

B. AMBH's NPDES permit does not authorize the discharge of any waste stream containing Total Cyanide from Outfall 002, with the exception of "treated process wastewater from the lagoon recirculating pump station" in the event that water is needed on an emergency basis.

For the period of August 15 through September 30, 2019, when the lagoon recirculating pump station was not is use, the Outfall 002 discharge contained detectable concentrations of Total Cyanide on August 16 and 17, and September 11, 14, 24, 28, and 29, in violation of 327 IAC 5-2-2.

4. ***Failure to Provide Required Notifications***

Pursuant to Part II.C.3 of AMBH's NPDES permit, AMBH is required to notify IDEM, as soon as it becomes aware, of any noncompliance that may pose a significant danger to human health or the environment.

Pursuant to Part II.C.3 of AMBH's NPDES permit and 327 IAC 2-6.1, in the event of a spill, as defined in 327 IAC 2-6.1, AMBH is required to notify IDEM within two (2) hours of discovery, and is required to exercise due diligence to notify downstream users.

The blast furnace gas washing recycle system outages on or about August 4 and again on or about August 11 through August 15, resulted in the continuous, unauthorized release

of thousands of gallons per minute of blast furnace gas washing wastewater, known, by the nature of its origin, to contain pollutants including Cyanide and Ammonia-Nitrogen, to the SWTP, which is not designed or equipped to treat Cyanide. Accordingly, these releases of blast furnace gas washing wastewater to the SWTP, and ultimately to Outfall 001, posed a significant danger to human health or the environment and constituted reportable spills, thereby triggering the aforementioned reporting requirements.[5] AMBH failed to provide timely notification of these releases to IDEM and to downstream users, in violation of Part II.C.3 of the NPDES permit and 327 IAC 2-6.1.

5. ***Failure to Efficiently Operate and Maintain Facility in Good Working Order at All Times***

Pursuant to Part II.B.1 of AMBH's NPDES permit and 327 IAC 5-2-8(9), AMBH shall at all times maintain in good working order and efficiently operate all facilities and systems (and related appurtenances) for collection and treatment that are installed or used by AMBH and which are necessary for achieving compliance with the terms and conditions of the permit.

On August 4 and again on August 11 through August 15, 2019, AMBH failed to at all times maintain in good working order and efficiently operate all facilities and system for collection and treatment that are installed or used and necessary for achieving compliance with the terms and conditions of the permit, including the blast furnace gas washing recycle system, the Cyanide destruction unit, and the SWTP, in violation of Part II.B.1 of the NPDES permit and 327 IAC 5-2-8(9).

6. ***Failure to Mitigate Adverse Impact***

Pursuant to Part II.A.2 of AMBH's NPDES permit and 327 IAC 5-2-8(3), AMBH has a duty to take all reasonable steps to minimize or correct any adverse impact to the environment resulting from noncompliance with the permit, including conducting accelerated or additional monitoring, as appropriate or as requested by IDEM, to determine the nature and impact of the noncompliance.

[5] Note that the spill reporting requirements set forth in 327 IAC 2-6.1 do not apply to discharges or exceedances that are under the jurisdiction of an applicable permit when the substance in question is covered by the permit and death or acute injury or illness to animals or humans does not occur. This spill reporting exclusion does not apply to the aforementioned releases for reasons that include the following: (1) Death to animals occurred; and (2) AMBH's NPDES permit fact sheet explicitly states that in order for a discharge or exceedance to be under the jurisdiction of the NPDES permit, the substance in question must have been discharged in the normal course of operation. The releases did not occur in the normal course of operation, but rather, were the result of the failure of the blast furnace gas washing recycle system.

AMBH failed to discharge its duty to take all reasonable steps to minimize or correct adverse impact, in violation of Part II.A.2 of the NPDES permit and 327 IAC 5-2-8(3), as follows:

On August 4, 2019, AMBH failed to accelerate monitoring of the Outfall 011 or Outfall 001 discharges in response to the outage of the blast furnace gas washing recycle system. In addition, AMBH failed to provide notification of the outage of the blast furnace gas washing recycle system to IDEM or downstream users, thereby precluding precautionary measures to protect human health and the environment from being taken.

On August 11 through August 15, 2019, AMBH failed to accelerate monitoring of the Outfall 011 or Outfall 001 discharges in response to the catastrophic failure of the blast furnace gas washing recycle system or the SWTP influent screening results that indicated repeated Cyanide detections. In addition, AMBH failed to provide notification of the catastrophic failure of the blast furnace gas washing recycle system or the SWTP influent screening results that indicated repeated Cyanide detections to IDEM, thereby precluding precautionary measures to protect human health and the environment from being taken.

On August 11 through August 15, 2019, AMBH did not alter its plant operations or take any other actions to reduce the rate or volume of blast furnace gas washing wastewater being generated and released to the SWTP.

7. ***Failure to Provide Requested Information***

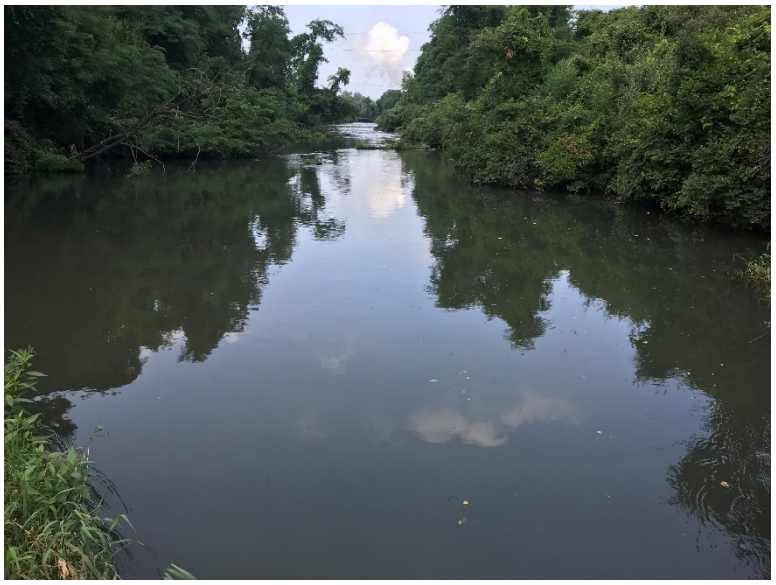
Pursuant to Part II.A.5 of AMBH's NPDES permit and 327 IAC 5-1-3, AMBH is required to provide information, at such locations, at such times, and in such a manner as reasonably requested by IDEM.

Pursuant to AMBH's NPDES permit, AMBH is required to monitor for Free Cyanide at Outfall 001 at a minimum frequency of two (2) times per month, using Method 1677 for the analysis, unless an alternative method is approved by IDEM. AMBH has not requested or received approval to utilize an alternative method.

On August 15, 2019, IDEM directed AMBH to conduct daily monitoring of all parameters at Outfall 001, including Free Cyanide, using the sample type called for in the NPDES permit and approved analytical methods. From August 16 through September 26, 2019, ArcelorMittal utilized a method other than 1677 for Free Cyanide analysis for all Free Cyanide sampling beyond the two (2) time per month sampling required by the NPDES permit in order to obtain results more rapidly, but failed to also analyze the samples utilizing Method 1677. The failure to provide information in the manner requested by IDEM is in violation of part II.A.5 of the NPDES permit and 327 IAC 5-1-3.

Exhibit 1

Inspection Photographs



Facility:
ArcelorMittal Burns Harbor LLC

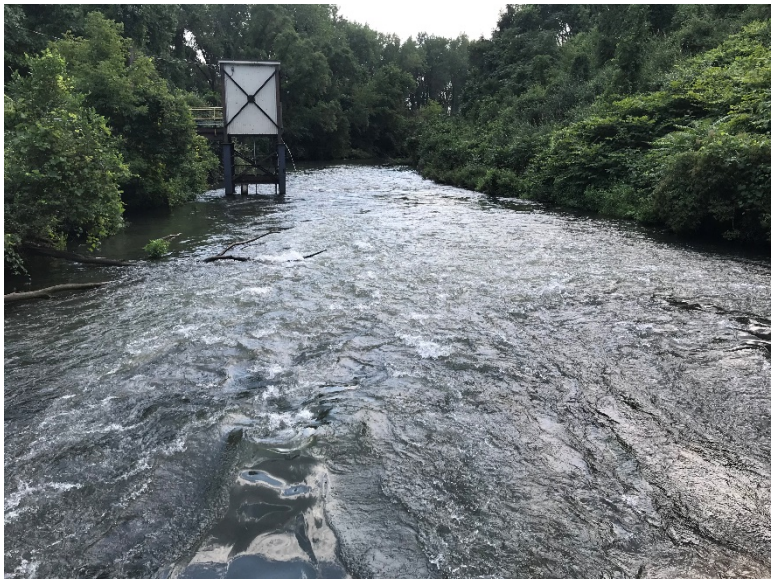
Photographer:
Nicholas Ream

Date: 08/14/2019 Time: 2:15 PM

Others Present:

Location/Description:
North view of the channel immediately prior to Outfall 001.

Others present: Theresa Kirk



Facility:
ArcelorMittal Burns Harbor LLC

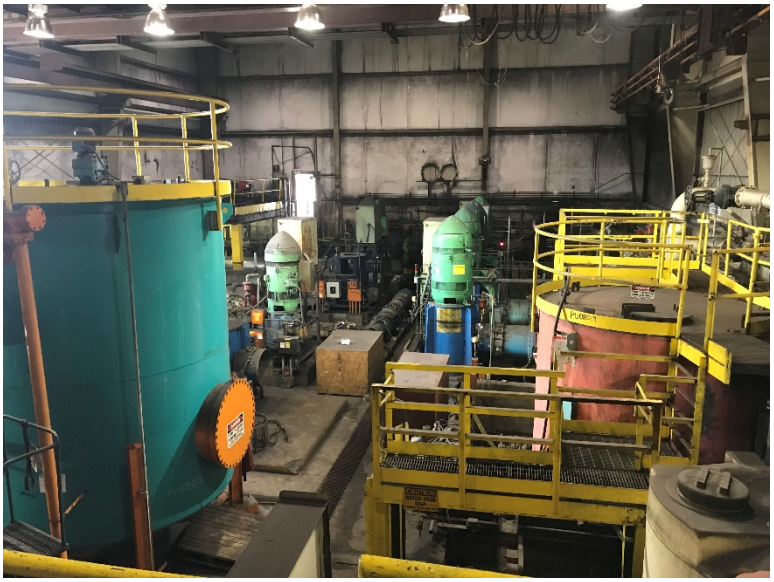
Photographer:
Nicholas Ream

Date: 08/14/2019 Time: 2:15 PM

Others Present:

Location/Description:
Southern view of the sampling structure for Outfall 001 and the effluent to the East Branch of the Little Calumet River. Two dead fish were observed approximately 200 feet past the sampling structure.

Others present: Theresa Kirk



Facility:
ArcelorMittal Burns Harbor LLC

Photographer:
Nicholas Ream

Date: 09/11/2019 Time: 12:55 PM

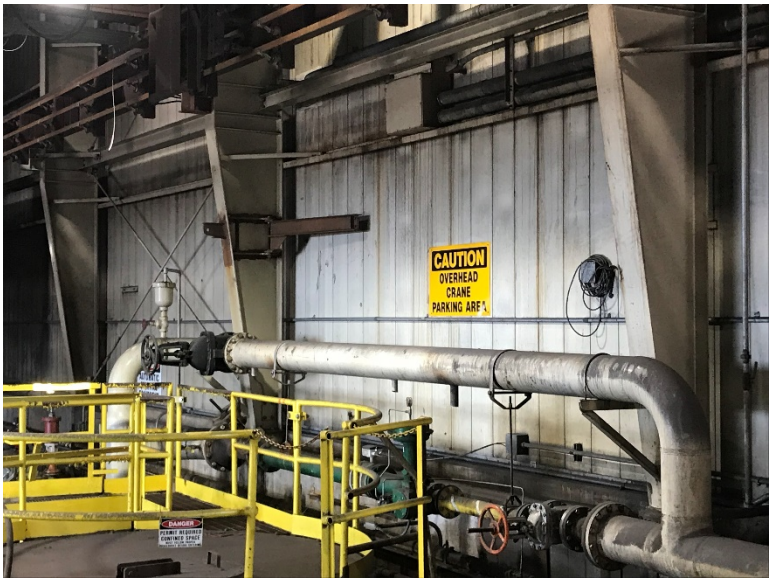
Others Present:

Location/Description:
North view of the blast furnace gas washing recycle system pump station.

The pumps are visible in the center/back of the photo.

The air release valve on the pump station cold well return line to the blast furnace is visible on top of the gray pipe on the right of the photo.

Others present: Gary Amendola, Jason House, Bob Lugar, Rick Balunda



Facility:
ArcelorMittal Burns Harbor LLC

Photographer:
Nicholas Ream

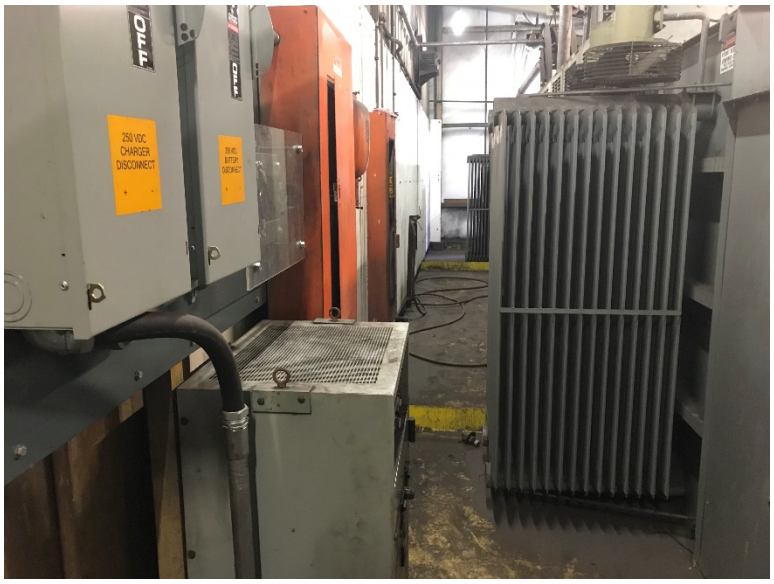
Date: 10/01/2019 Time: 12:55 PM

Others Present:

Location/Description:
North view of the Hot Well and Cold Well structure inside the blast furnace gas washing recycle system pump station.

The air release valve on the pump station cold well return line to the blast furnace is visible on top of the gray pipe on the left of the photo.

Others present: Joan Rogers, Cary Mathias, and Rob Maciel.



Facility:
ArcelorMittal Burns Harbor LLC

Photographer:
Nicholas Ream

Date: 10/01/2019 Time: 1:05 PM

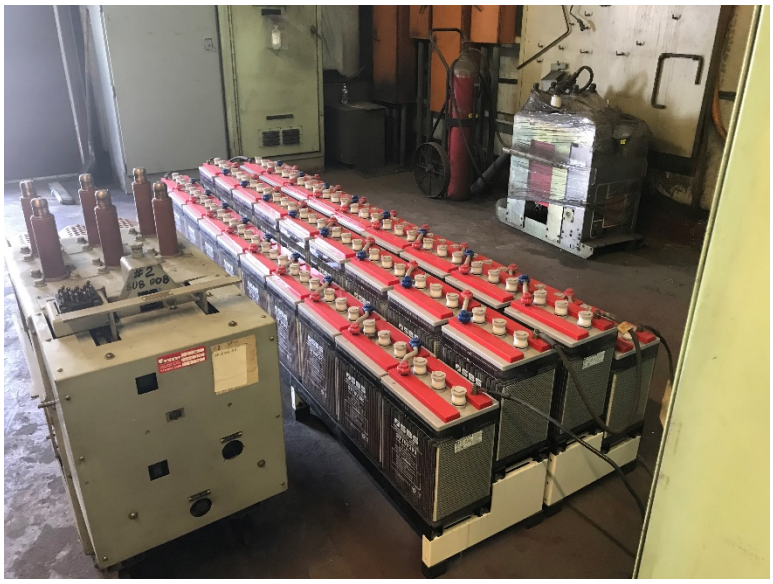
Others Present:

Location/Description:
North view of the electrical room adjacent to the blast furnace gas washing recycle system pump station.

The wall on the left of the photo adjoins the room in which the Hot Well/Cold Well structure is located.

The solenoid damaged during the August 4 incident is visible in the foreground.

Others present: Cary Mathias, Joan Rogers, Rob Maciel



Facility:
ArcelorMittal Burns Harbor LLC

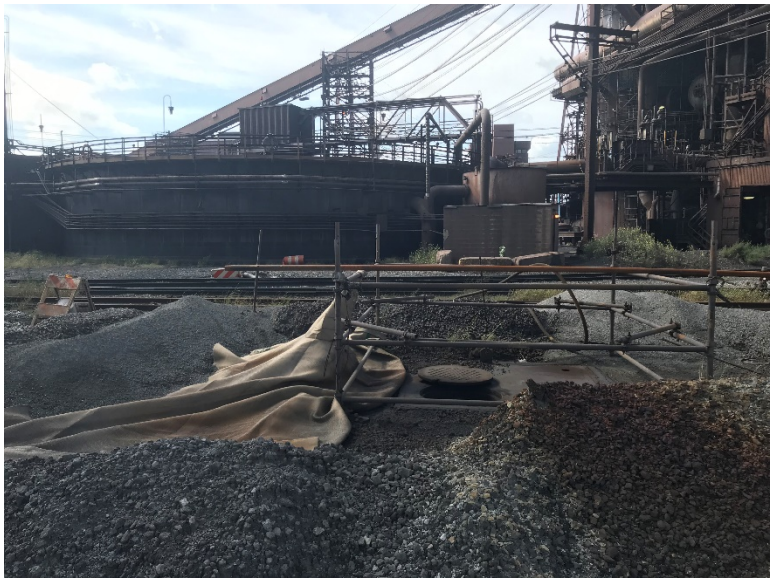
Photographer:
Nicholas Ream

Date: 10/01/2019 Time: 1:05 PM

Others Present:

Location/Description:
Northeast view of the array of batteries that lost power during the August 11, 2019 incident due to the damage to the solenoid.

Others present: Cary Mathias, Joan Rogers, Rob Maciel



Facility: **ArcelorMittal Burns Harbor LLC**
Photographer: Nicholas Ream
Date: 10/01/2019 Time: 1:10 PM
Others Present:
Location/ Description : West view of C Thickener in the background. The foreground is part of the area that was flooded during the August 11, 2019 event. Additional flooding also occurred behind, and to the right, of the thickener. Others present: Cary Mathias, Joan Rogers, Rob Maciel

Exhibit 2

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

INSTRUCTIONS: Complete all sections of this form and email it to Office of Water Quality, Compliance Data Section at wwreports@idem.IN.gov. Thorough completion of this report will satisfy the Office of Water Quality (OWQ) telephone and 5-day written noncompliance notification reporting requirements of your NPDES permit. To speak with someone in OWQ, call (317) 232-8670.

Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/15/19

Email Address: theresa.kirk@arcelormittal.com

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/13/2019	011	Total Cyanide	21 lbs/day	188
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:
Today, ArcelorMittal Burns Harbor received a high result for total cyanide at Outfall 011. The resulting concentration was 0.26 mg/l resulting in a mass concentration of 188 lbs/day versus the limit of 21 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs are in progress and it will be placed back in service as soon as possible. IDEM is providing requirements for sampling, etc that will determine further actions

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:
The cyanide sample was taken from approximately 0600 August 13 through 0600 August 14, 2019. Prior samples were in compliance. We do not have subsequent sample results at this time.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:
Burns Harbor is continuing to monitor the situation and to make repairs a swiftly as possible.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 08/15/19

Exhibit 3

From: HOUSE, JASON
Sent: Thursday, August 15, 2019 2:12 PM
To: robert.maciel@arcelormittal.com
Cc: Kuss, Hala <hkuss@idem.IN.gov>; Ream, Nicholas <NREAM@idem.IN.gov>; MURPHY, BRIDGET <BSMURPHY@idem.IN.gov>; Green, Aaron <AGreen2@idem.IN.gov>; ADMIRE, BETH <BADMIRE@idem.IN.gov>; Higginbotham, Paul <PHIGGINB@idem.IN.gov>; CLARK METTLER, MARTHA <MCLARK@idem.IN.gov>; Lugar, Robert G <RLugar@idem.IN.gov>; Clem, Ryan T <RClem@idem.IN.gov>; MASSOELS, RICK <RMASSOEL@idem.IN.gov>; ADMIRE, BETH <BADMIRE@idem.IN.gov>
Subject: Arcelor Mittal Burns Harbor IN0000175 required response
Importance: High

Dear Mr. Maciel,

The purpose of this communication is to request that Arcelor Mittal Burns Harbor do the following, in response to recent sample results for cyanide and ammonia for discharges from NPDES permitted outfalls 001 and 011:

1. For Outfall 001, immediately, and until further notice, increase the monitoring frequency for all parameters listed in Part I.A.1 of the NPDES permit that are not continuously monitored to daily, using the sample type called for in the NPDES Permit and approved analytical methods. Report the results to IDEM, via e-mail to Nicholas Ream, within 2 hours of the results being available.

2. For Outfall 011, immediately, and until further notice, increase the monitoring frequency for all parameters listed in Part I. A.4 of the NPDES permit that are not continuously monitored to daily, using the sample type called for in the NPDES permit and approved analytical methods. Report the results to IDEM, via e-mail to Nicholas Ream, within 2 hours of the results being available.

3. Provide to IDEM, via e-mail to Nicholas Ream, all presently available monitoring results for Outfalls 001 and 011 for August 2019 by close of business today.

4. Provide to IDEM, via e-mail to Nicholas Ream, the analytical results for cyanide, ammonia, and D.O. for the grab samples collected by Arcelor Mittal at Outfalls 001, 011 and 12 locations in the receiving water on August 14, 2019 and a map depicting the receiving water sampling locations within two hours of the results being available.

5. To the extent that 24 hour composite samples collected at Outfalls 001 and 011 from August 1 through August 14 continue to be available, analyze the samples for total and free cyanide and ammonia, using approved analytical methods, if such analysis did not already occur. Report the results to IDEM, via e-mail to Nicholas Ream, within two hours of the results being available.

6. Provide IDEM with a detailed explanation of the cause(s) of the elevated cyanide and ammonia in Arcelor Mittal's discharge and the corrective actions taken. If the cause(s) have not been determined, explain the steps being taken to investigate the cause(s) and steps being taken to mitigate adverse impact.

7. Conduct a spill response that includes monitoring of the receiving water for total and free cyanide, ammonia, pH, temperature, and D.O. The results of the receiving water sampling are to be provided to IDEM as analytical results become available. Please ensure proper collection and

handling of in-stream samples. The United States Geological Survey (USGS) maintains several guidance documents which may be referenced, if needed.

In addition, IDEM requests that Arcelor Mittal do the following, in response to the report of the presence of a petroleum sheen in the Outfall 002 discharge:

1. Immediately and until further notice, increase the monitoring frequency for Oil & Grease to daily, using the sample type called for in the NPDES permit and approved analytical methods. Report the results to IDEM, via e-mail to Nicholas Ream, within 24 hours of the results being available.

2. Provide IDEM with a detailed explanation of the cause(s) of the petroleum sheen in the discharge and the corrective actions taken. If the cause(s) have not been determined, explain the steps being taken to investigate the cause(s) and steps being taken to mitigate adverse impact.

Please note that compliance with the request contained in this letter does not alleviate any compliance requirements already contained within NPDES Permit No. IN0000175.

Please direct any questions and responses to Nick Ream at NREAM@idem.IN.gov or 219-730-1691 or alternatively contact me with questions and responses as Nick Ream is not available today.

Jason House, Chief
Indiana Department of Environmental Management
Office of Water Quality - Wastewater Compliance Branch
100 N. Senate Avenue,
Indianapolis, IN 46204
Phone: 317/233-0470
Toll Free: 1-800/451-6027
https://www.in.gov/idem/cleanwater/2337.htm

Exhibit 4

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

August 15, 2018

Sent via US Mail and Email (robert.maciel@arcelormittal.com)
Robert Maciel
ArcelorMittal Burns Harbor, LLC
250 West US Highway 12
Burns Harbor, IN 46304-9745

Dear Mr. Maciel

RE: Notice to Initiate Spill Response
East Arm of the Little Calumet River
Burns Harbor, Porter County
Incident # 88243

On Monday, August 13, 2019, the Indiana Department of Environmental Management (IDEM) and Indiana Department of Natural Resources (IDNR) received a citizen complaint of distressed fish in the East Arm of the Little Calumet River. Both IDEM and IDNR responded Monday and confirmed the presence of distressed fish, but no dead fish were observed. Tuesday evening additional complaints were received identifying the presence of numerous dead fish. Both IDEM and IDNR conducted reconnaissance on Wednesday, August 14, 2019, and observed that a significant fish die had occurred on the East Arm of the Little Calumet River.

In the course of its investigation of ArcelorMittal Burns Harbor's discharges, IDEM learned that ArcelorMittal experienced exceedances of the daily maximum limit for ammonia-nitrogen at Outfall 001 on August 11 on August 13 and an exceedance of the daily maximum limit for total cyanide at Outfall 011 on August 13. The reported ammonia-nitrogen concentrations were .92 mg/L and .78 mg/L, respectively, and the reported total cyanide concentration was 0.26mg/L. These exceedances correspond with the initial report of distressed fish and appear to be the cause or a significant contributing factor to the mortality of the fish observed on the East Arm of the Little Calumet River/Burns Waterway.

ArcelorMittal is being notified to initiate a spill response. These response actions are to include but are not limited to:

- Contaminant source identification and control measures to prevent any further discharges that maybe damaging to receiving waters;
- Assessment of receiving water to identify extent and magnitude of impacts to the East Arm of the Little Calumet River and Burns Waterway. This is to include providing IDEM with the results of Wednesday's in stream samplings and as needed expanded sampling;
- Pursuant to NPDES permit requirements and/or 327 IAC 2-6.1-7(5), notification to downstream users and affected users of activities and an potential exposure concerns; and

- Such as not to create nuisance, the collection and proper disposal of dead fish.

IDEM requires the designation of an incident command center and establishment of incident command to facilitate coordinated and structured response efforts and the dissemination of information. ArcelorMittal is expected to designate a representative to sit in unified command. On-scene Coordinator David Greinke has been selected to represent IDEM. It is expected that a written incident action plan (IAP) be created daily until IDEM and ArcelorMittal mutually agree to disband the formal incident command structure. The incident command is to be established by Friday, August 16, 2019 with the first joint meeting to be held at 9:00am CST.

This notice requires immediate response actions which are to be discussed and coordinated with IDEM On-scene Coordinator David Greinke.

If you have any questions or concerns you may contact me or David Greinke. Our contact information will be provided in the corresponding email.

Sincerely,

Aaron Green

Aaron Green
Section Chief
Emergency Response

cc: Teri Kirk, ArcelorMittal (Theresa.Kirk@arcelormittal.com)
David Greinke, IDEM On-scene Coordinator
Hala Kuss, IDEM Northwest Regional
Jason House, IDEM OWQ Compliance
Beth Admire, IDEM Office of Legal Counsel

Exhibit 5

August 16, 2019

Arcelor Mittal USA, Inc.
250 W US Highway 12
Burns Harbor, IN 46304-9745

Work Order No.: 19H0921

Re: Special

Dear Teri Kirk:

Microbac Laboratories, Inc. - Chicagoland Division received 10 sample(s) on 8/14/2019 5:55:00PM for the analyses presented in the following report as Work Order 19H0921.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Ron Misiunas, Division Manager, at ron.misiunas@microbac.com.

Sincerely,
Microbac Laboratories, Inc.

Carey Gadzala
Project Manager

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WORK ORDER SAMPLE SUMMARY

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Project: Special
Lab Order: 19H0921

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
19H0921-01	Location 8		08/14/2019 14:09	8/14/2019 5:55:00PM
19H0921-02	Location 7		08/14/2019 14:09	8/14/2019 5:55:00PM
19H0921-03	Location 5		08/14/2019 14:09	8/14/2019 5:55:00PM
19H0921-04	Location 6		08/14/2019 14:09	8/14/2019 5:55:00PM
19H0921-05	Location 2 (011)		08/14/2019 14:09	8/14/2019 5:55:00PM
19H0921-06	Location 3 (001)		08/14/2019 14:09	8/14/2019 5:55:00PM
19H0921-07	Location 4		08/14/2019 14:09	8/14/2019 5:55:00PM
19H0921-08	Location 1		08/14/2019 14:09	8/14/2019 5:55:00PM
19H0921-09	Location Near Entrance		08/14/2019 14:09	8/14/2019 5:55:00PM
19H0921-10	Location 160		08/14/2019 14:09	8/14/2019 5:55:00PM

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Field Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Work Order: 19H0921

Client Sample ID: Location 8
Sample Description:
Matrix: Aqueous
Work Order/ID: 19H0921-01
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Result	Units
pH	7.68	pH Units

Client Sample ID: Location 7
Sample Description:
Matrix: Aqueous
Work Order/ID: 19H0921-02
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Result	Units
pH	8.09	pH Units

Client Sample ID: Location 5
Sample Description:
Matrix: Aqueous
Work Order/ID: 19H0921-03
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Result	Units
pH	8.18	pH Units

Client Sample ID: Location 6
Sample Description:
Matrix: Aqueous
Work Order/ID: 19H0921-04
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Result	Units
pH	8.12	pH Units

Client Sample ID: Location 2 (011)
Sample Description:
Matrix: Aqueous
Work Order/ID: 19H0921-05
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Result	Units
pH	8.20	pH Units

Client Sample ID: Location 3 (001)
Sample Description:
Matrix: Aqueous
Work Order/ID: 19H0921-06
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Result	Units
pH	8.19	pH Units

Client Sample ID: Location 4
Sample Description:
Matrix: Aqueous
Work Order/ID: 19H0921-07
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Result	Units
pH	8.09	pH Units

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Field Results

Date: *Friday, August 16, 2019*

Client Sample ID:	Location 1	**Work Order/ID:**	19H0921-08
Sample Description:		**Sampled:**	08/14/2019 14:09
Matrix:	Aqueous	**Received:**	08/14/2019 17:55

Analyses	Result	Units
pH	8.25	pH Units

Client Sample ID:	Location Near Entrance	**Work Order/ID:**	19H0921-09
Sample Description:		**Sampled:**	08/14/2019 14:09
Matrix:	Aqueous	**Received:**	08/14/2019 17:55

Analyses	Result	Units
pH	8.28	pH Units

Client Sample ID:	Location 160	**Work Order/ID:**	19H0921-10
Sample Description:		**Sampled:**	08/14/2019 14:09
Matrix:	Aqueous	**Received:**	08/14/2019 17:55

Analyses	Result	Units
pH	8.41	pH Units

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 8
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-01
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 11:11
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 11:11
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 11:11
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:11
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:11
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 11:11

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 8
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-01
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 11:11
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 11:11
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 11:11
Surr: 1,2-Dichloroethane-d4		S	106	74.5-132		%REC	1	08/15/2019 11:11
Surr: 4-Bromofluorobenzene		S	102	80-120		%REC	1	08/15/2019 11:11
Surr: Dibromofluoromethane		S	104	80-120		%REC	1	08/15/2019 11:11
Surr: Toluene-d8		S	105	80-120		%REC	1	08/15/2019 11:11
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***ND***	0.0050		mg/L	1	08/15/2019 15:18
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***9.1***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 13:55**	
Nitrogen, Ammonia (As N)	**di**	A	***0.14***	0.10		mg/L	1	08/15/2019 18:49

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 7
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-02
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 11:32
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 11:32
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 11:32
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:32
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:32
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 11:32

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 7
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-02
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 11:32
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 11:32
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 11:32
Surr: 1,2-Dichloroethane-d4		S	107	74.5-132		%REC	1	08/15/2019 11:32
Surr: 4-Bromofluorobenzene		S	100	80-120		%REC	1	08/15/2019 11:32
Surr: Dibromofluoromethane		S	105	80-120		%REC	1	08/15/2019 11:32
Surr: Toluene-d8		S	104	80-120		%REC	1	08/15/2019 11:32
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***ND***	0.0050		mg/L	1	08/15/2019 15:20
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***8.6***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 13:55**	
Nitrogen, Ammonia (As N)	**di**	A	***0.18***	0.10		mg/L	1	08/15/2019 18:51

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 5
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-03
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 11:54
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 11:54
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 11:54
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 11:54
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 11:54
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 11:54

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 5
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-03
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 11:54
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 11:54
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 11:54
Surr: 1,2-Dichloroethane-d4		S	105	74.5-132		%REC	1	08/15/2019 11:54
Surr: 4-Bromofluorobenzene		S	102	80-120		%REC	1	08/15/2019 11:54
Surr: Dibromofluoromethane		S	105	80-120		%REC	1	08/15/2019 11:54
Surr: Toluene-d8		S	104	80-120		%REC	1	08/15/2019 11:54
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***0.084***	0.0050		mg/L	1	08/15/2019 13:41
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***8.9***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 13:55**	
Nitrogen, Ammonia (As N)	**di**	A	***0.53***	0.10		mg/L	1	08/15/2019 18:54

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 6
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-04
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 12:16
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 12:16
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 12:16
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:16
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:16
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 12:16

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 6
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-04
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 12:16
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 12:16
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 12:16
Surr: 1,2-Dichloroethane-d4		S	106	74.5-132		%REC	1	08/15/2019 12:16
Surr: 4-Bromofluorobenzene		S	102	80-120		%REC	1	08/15/2019 12:16
Surr: Dibromofluoromethane		S	105	80-120		%REC	1	08/15/2019 12:16
Surr: Toluene-d8		S	105	80-120		%REC	1	08/15/2019 12:16
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***0.15***	0.0050		mg/L	1	08/15/2019 13:42
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***8.5***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 15:53**	
Nitrogen, Ammonia (As N)	**di**	A	***0.55***	0.10		mg/L	1	08/15/2019 19:15

MICROBAC®

Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 2 (011)
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-05
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 12:37
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 12:37
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 12:37
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:37
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:37
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 12:37

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 2 (011)
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-05
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 12:37
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 12:37
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 12:37
Surr: 1,2-Dichloroethane-d4		S	105	74.5-132		%REC	1	08/15/2019 12:37
Surr: 4-Bromofluorobenzene		S	101	80-120		%REC	1	08/15/2019 12:37
Surr: Dibromofluoromethane		S	104	80-120		%REC	1	08/15/2019 12:37
Surr: Toluene-d8		S	104	80-120		%REC	1	08/15/2019 12:37
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***0.35***	0.0050		mg/L	1	08/15/2019 15:22
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***6.8***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 15:53**	
Nitrogen, Ammonia (As N)	**di**	A	***0.91***	0.10		mg/L	1	08/15/2019 19:22

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 3 (001)
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-06
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 12:59
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 12:59
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 12:59
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 12:59
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 12:59
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 12:59

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 3 (001)
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-06
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 12:59
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 12:59
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 12:59
Surr: 1,2-Dichloroethane-d4		S	105	74.5-132		%REC	1	08/15/2019 12:59
Surr: 4-Bromofluorobenzene		S	101	80-120		%REC	1	08/15/2019 12:59
Surr: Dibromofluoromethane		S	104	80-120		%REC	1	08/15/2019 12:59
Surr: Toluene-d8		S	104	80-120		%REC	1	08/15/2019 12:59
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***0.12***	0.0050		mg/L	1	08/15/2019 15:23
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***8.8***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 15:53**	
Nitrogen, Ammonia (As N)	**di**	A	***0.37***	0.10		mg/L	1	08/15/2019 19:25

Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 4
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-07
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 13:21
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 13:21
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 13:21
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:21
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:21
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 13:21

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 4
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-07
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 13:21
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 13:21
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 13:21
Surr: 1,2-Dichloroethane-d4		S	104	74.5-132		%REC	1	08/15/2019 13:21
Surr: 4-Bromofluorobenzene		S	101	80-120		%REC	1	08/15/2019 13:21
Surr: Dibromofluoromethane		S	104	80-120		%REC	1	08/15/2019 13:21
Surr: Toluene-d8		S	105	80-120		%REC	1	08/15/2019 13:21
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***ND***	0.0050		mg/L	1	08/15/2019 15:25
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***8.9***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 15:53**	
Nitrogen, Ammonia (As N)	**di**	A	***0.21***	0.10		mg/L	1	08/15/2019 19:27

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 1
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-08
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 13:43
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 13:43
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 13:43
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 13:43
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 13:43
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 13:43

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 1
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-08
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 13:43
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 13:43
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 13:43
Surr: 1,2-Dichloroethane-d4		S	107	74.5-132		%REC	1	08/15/2019 13:43
Surr: 4-Bromofluorobenzene		S	101	80-120		%REC	1	08/15/2019 13:43
Surr: Dibromofluoromethane		S	105	80-120		%REC	1	08/15/2019 13:43
Surr: Toluene-d8		S	105	80-120		%REC	1	08/15/2019 13:43
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***ND***	0.0050		mg/L	1	08/15/2019 15:27
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***9.4***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 15:53**	
Nitrogen, Ammonia (As N)	**di**	A	***ND***	0.10		mg/L	1	08/15/2019 19:29

Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location Near Entrance
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-09
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 14:04
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 14:04
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 14:04
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:04
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:04
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 14:04

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location Near Entrance
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-09
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 14:04
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 14:04
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 14:04
Surr: 1,2-Dichloroethane-d4		S	107	74.5-132		%REC	1	08/15/2019 14:04
Surr: 4-Bromofluorobenzene		S	102	80-120		%REC	1	08/15/2019 14:04
Surr: Dibromofluoromethane		S	104	80-120		%REC	1	08/15/2019 14:04
Surr: Toluene-d8		S	104	80-120		%REC	1	08/15/2019 14:04
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***ND***	0.0050		mg/L	1	08/15/2019 16:09
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***9.4***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 15:53**	
Nitrogen, Ammonia (As N)	**di**	A	***ND***	0.10		mg/L	1	08/15/2019 19:32

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 160
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-10
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
1,1,1,2-Tetrachloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
1,1,1-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
1,1,2,2-Tetrachloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
1,1,2-Trichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
1,1-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
1,1-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
1,2-Dichloroethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
1,2-Dichloropropane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
2-Butanone	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
2-Hexanone	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
4-Methyl-2-pentanone	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
Acetone	di	A	***ND***	50		µg/L	1	08/15/2019 14:26
Acrolein	di	A	***ND***	100		µg/L	1	08/15/2019 14:26
Acrylonitrile	di	A	***ND***	100		µg/L	1	08/15/2019 14:26
Benzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Bromodichloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Bromoform	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Bromomethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
Carbon Disulfide	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
Carbon tetrachloride	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Chlorobenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Chloroethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
Chloroform	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Chloromethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
cis-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
cis-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Dibromochloromethane	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Ethylbenzene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
m,p-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Methylene chloride	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
Methyl-t-Butyl Ether	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
o-Xylene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Styrene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Tetrachloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Toluene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
trans-1,2-Dichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
trans-1,3-Dichloropropene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Trichloroethene	di	A	***ND***	5.0		µg/L	1	08/15/2019 14:26
Trichlorofluoromethane	di	A	***ND***	10		µg/L	1	08/15/2019 14:26
Vinyl Acetate	di	A	***ND***	10		µg/L	1	08/15/2019 14:26

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Analytical Results

Date: *Friday, August 16, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Special
Client Sample ID: Location 160
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H0921-10
Sampled: 08/14/2019 14:09
Received: 08/14/2019 17:55

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: **SW-846 8260B**				Analyst: **jln**	
Volatile Organic Compounds			Prep Method: **NA**				Prep Date/Time: **08/15/2019 07:24**	
Vinyl chloride	**di**	A	***ND***	1.0		µg/L	1	08/15/2019 14:26
Total 1,2-Dichloroethene		M	***ND***	5.0		µg/L	1	08/15/2019 14:26
Total Xylenes	**di**	M	***ND***	5.0		µg/L	1	08/15/2019 14:26
Surr: 1,2-Dichloroethane-d4		S	106	74.5-132		%REC	1	08/15/2019 14:26
Surr: 4-Bromofluorobenzene		S	101	80-120		%REC	1	08/15/2019 14:26
Surr: Dibromofluoromethane		S	105	80-120		%REC	1	08/15/2019 14:26
Surr: Toluene-d8		S	105	80-120		%REC	1	08/15/2019 14:26
			Method: **SM 4500-CN C/E-1999**				Analyst: **ABG**	
Total Cyanide			Prep Method: **NA**				Prep Date/Time: **08/15/2019 09:35**	
Cyanide, Total	**dij**	A	***ND***	0.0050		mg/L	1	08/15/2019 16:11
			Method: **SM 4500-O C-2001**				Analyst: **DAT**	
Dissolved Oxygen			Prep Method: **SM 4500-O C-2001**				Prep Date/Time: **08/15/2019 10:21**	
Oxygen, Dissolved	**di**	A	***9.4***	0.20	H	mg/L	1	08/15/2019 10:21
			Method: **EPA 350.1 Rev 2.0**				Analyst: **EF**	
Nitrogen, Ammonia as N			Prep Method: **EPA 350.1 Rev 2.0**				Prep Date/Time: **08/15/2019 15:53**	
Nitrogen, Ammonia (As N)	**di**	A	***ND***	0.10		mg/L	1	08/15/2019 19:39

ANALYTE TYPES: (AT)

A,B = Target Analyte
I = Internal Standard
M = Summation Analyte
S = Surrogate
T = Tentatively Identified Compound (TIC, concentration estimated)

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank
DUP = Method Duplicate
BS = Method Blank Spike
MS = Matrix Spike
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank
CRL = Client Required Reporting Limit
PDS = Post Digestion Spike
QCS = Quality Control Standard
ICSA = Interference Check Standard "A"
ICSAB = Interference Check Standard "AB"
BSD = Method Blank Spike Duplicate
MSD = Matrix Spike Duplicate
ICV = Initial Calibration Verification
CCV = Continuing Calibration Verification
OPR = Ongoing Precision and Recovery Standard
SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

[d] Illinois EPA drinking water, wastewater and solid waste analysis (#200064)
[i] Kansas Dept Health & Env. NELAP (#E-10397)
[j] Kentucky Wastewater Laboratory Certification Program (#108202)

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

H:	Sample was analyzed past holding time.
RL:	Reporting Limit
RPD:	Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 5.7°C

Comments

CN container split off and preserved at lab

Cooler Inspection Checklist

Ice Present or not required?	Yes
Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes
Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes
Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes
Sample type identified on COC?	Yes
Correct type of Containers Received	Yes
Correct number of containers listed on COC?	Yes
Containers Intact?	Yes
COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes
Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes
Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes
Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes

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PUSH!

CHAIN OF CUSTODY RECORD

Number 151160

Instructions on back

Lab Report Address

Client Name: AMBH

Address:

City, State, Zip:

Contact:

Telephone No.:

Invoice Address

Client Name:

Address:

City, State, Zip:

Contact:

Telephone No.:

Turnaround Time

☐ Routine (5 to 7 business days)
☒ RUSH* (notify lab)

(needed by)

Report Type

☒ Results Only ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

TO BE COMPLETED BY MICROBAC

Temperature Upon Receipt (°C) 6-0-32507
Therm ID

Holding Time

Samples Received on Ice? ☒ Yes ☐ No ☐ N/A

Custody Seals Intact? ☐ Yes ☐ No ☒ N/A

Send Report via: ☐ Mail ☐ Fax ☐ e-mail (address)

Send Invoice via: ☐ Mail ☐ Fax ☐ e-mail (address)

Project: Special 08/14/2019

Location: ArcelorMittal - Burns Harbor, IN

PO No.: 19H0921

Compliance Monitoring? ☐ Yes ☐ No
☐ Agency/Program

Sampled by (PRINT): B. Otto

Sampler Signature:

Sampler Phone No.: 769-8378

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)

** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

REQUESTED ANALYSIS

Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	Ammonia	CN	DO	Field PH							Additional Notes
																	19H0921
Location 8	8/14/19	1409	6	Aq	G	2,4,3	X	X	X	X							01
Location 7		1432					X	X	X	X							02
Location 5		1448					X	X	X	X							03
Location 6		1505					X	X	X	X							04
Location 2(011)		1524					X	X	X	X							05
Location 3(001)		1543					X	X	X	X							06
Location 4		1605					X	X	X	X							07
Location 1		1624					X	X	X	X							08
Location Near Entrance		1638					X	X	X	X							09
Location 160		1658					X	X	X	X							10

Possible Hazard Identification ☐ Hazardous ☐ Non-Hazardous ☐ Radioactive

Sample Disposition ☐ Dispose as appropriate ☐ Return ☐ Archive

Comments

8 = 7.68
7 = 8.09
5 = 8.18
6 = 8.12
2(011) = 8.20
3(001) = 8.19
4 = 8.09
1 = 8.25
Near Entrance = 8.28
160 = 8.41

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
	8-14-19/1755		
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
		Nicole Lenato	8-14-19/1755

rev.12/26/2017

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CHICAGOLAND DIVISION - FIELD SAMPLING FORM

Date: 8/14/19	Field Tech (initals): BAO
Client: AMBH	Time IN: 1200
Facility Location: Burns Harbor	Time Out: 1755
Client Contact:	

Weather Conditions (if sampling outside)

Sunny, raining, partly cloudy

Summary of Sampling Performed:

pulled samples for Ammonia, Cyanide, Dissolved Oxygen and took a PH for each site

Field Equipment Used:

PH Meter

Include Field Measurements Here (if not included on COC)

Comments:

Field Tech Signature: B. Otto Date: 8/14/19

Exhibit 6

Analytical Data Package

Prepared by:

Pace Analytical Services

Pace Project No.: 50233350

Table Of Contents

August 20, 2019

Case Narrative—Level Project Review
Project 50233350 (IDEM)

General Reporting Comments

Quality control issues or reported footnotes that require more detailed information will be covered in this case narrative. Dilutions of samples are indicated in the sample results section under the heading 'DF'. The raw sample and calibration data is included following the body of the report. This raw data is separated by analysis and then further separated into categories of information.

Sample Receiving

All discrepancies were noted concerning sample receipt or sample transfer on the Sample Condition Upon Receipt form.

Cyanide—EPA 335.4

Analysis was performed according to standard operating procedures. All quality control requirements were met.

> Total Cyanide was non-detect at specified reporting limit. Therefore, Free Cyanide was also non-detect at the same reporting limit.

I have reviewed the data from this project and have found all other discrepancies to be sufficiently covered in the footnotes in the report or documented within the raw data.

Theresa L Sheingold

Theresa Sheingold
Quality Analyst
Pace Analytical Services

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

August 20, 2019

DAVID HARRISON
INDIANA DEPT OF ENVIRONMENTAL MANAGEMENT
100 N. SENATE AVENUE RM 1101
OFFICE OF LAND QUALITY
Indianapolis, IN 46204

RE: Project: LA713-LA725
Pace Project No.: 50233350

Dear DAVID HARRISON:
Enclosed are the analytical results for sample(s) received by the laboratory on August 19, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Susan Brotherton

Sue Brotherton
sue.brotherton@pacelabs.com
(317)228-3100
Project Manager

Enclosures

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: LA713-LA725
Pace Project No.: 50233350

Indiana Certification IDs

7726 Moller Road, Indianapolis, IN 46268
Illinois Certification #: 200074
Indiana Certification #: C-49-06
Kansas/NELAP Certification #: E-10177
Kentucky UST Certification #: 80226
Kentucky WW Certification #: 98019
Michigan Department of Environmental Quality, Laboratory #9050
Ohio VAP Certification #: CL0065
Oklahoma Certification #: 2018-101
Texas Certification #: T104704355
West Virginia Certification #: 330
Wisconsin Certification #: 999788130
USDA Soil Permit #: P330-16-00257

Pace Analytical Services, LLC
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SAMPLE SUMMARY

Project: LA713-LA725
Pace Project No.: 50233350

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50233350001	**Outfall 001 LA713**	Water	08/18/19 14:52	08/19/19 09:44
50233350002	**Duplicate LA714**	Water	08/18/19 14:53	08/19/19 09:44
50233350003	**LC-01 LA715**	Water	08/18/19 15:06	08/19/19 09:44
50233350004	**LC-02 LA716**	Water	08/18/19 15:28	08/19/19 09:44
50233350005	**LC-03 LA717**	Water	08/18/19 15:40	08/19/19 09:44
50233350006	**SL-01 LA718**	Water	08/18/19 16:58	08/19/19 09:44
50233350007	**SL-02 LA719**	Water	08/18/19 17:25	08/19/19 09:44
50233350008	**SL-03 LA720**	Water	08/18/19 17:40	08/19/19 09:44
50233350009	**SL-04 LA721**	Water	08/18/19 17:50	08/19/19 09:44
50233350010	**SL-05 LA722**	Water	08/18/19 18:00	08/19/19 09:44
50233350011	**SL-06 LA723**	Water	08/18/19 18:30	08/19/19 09:44
50233350012	**SL-07 LA724**	Water	08/18/19 18:37	08/19/19 09:44
50233350013	**SL-08 LA725**	Water	08/18/19 18:50	08/19/19 09:44

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: LA713-LA725
Pace Project No.: 50233350

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50233350001	**Outfall 001 LA713**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350002	**Duplicate LA714**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350003	**LC-01 LA715**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350004	**LC-02 LA716**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350005	**LC-03 LA717**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350006	**SL-01 LA718**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350007	**SL-02 LA719**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350008	**SL-03 LA720**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350009	**SL-04 LA721**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350010	**SL-05 LA722**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350011	**SL-06 LA723**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350012	**SL-07 LA724**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I
50233350013	**SL-08 LA725**	EPA 335.4	GWA	1	PASI-I
		EPA 9014 Free Cyanide	GWA	1	PASI-I

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PROJECT NARRATIVE

Project: LA713-LA725
Pace Project No.: 50233350

Method: **EPA 335.4**
Description: 335.4 Cyanide, Total
Client: IDEM Senate Avenue
Date: August 20, 2019

General Information:
13 samples were analyzed for EPA 335.4. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 335.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: LA713-LA725
Pace Project No.: 50233350

Method: **EPA 9014 Free Cyanide**
Description: 9014 Cyanide, Free
Client: IDEM Senate Avenue
Date: August 20, 2019

General Information:
13 samples were analyzed for EPA 9014 Free Cyanide. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 517157

1d: Total cyanide was non-detect at specified reporting limit. Therefore, free cyanide is also non-detect at the same reporting limit.

- BLANK (Lab ID: 2385578)
  - Cyanide, Free
- Duplicate LA714 (Lab ID: 50233350002)
  - Cyanide, Free
- LC-01 LA715 (Lab ID: 50233350003)
  - Cyanide, Free
- LC-02 LA716 (Lab ID: 50233350004)
  - Cyanide, Free
- LC-03 LA717 (Lab ID: 50233350005)
  - Cyanide, Free
- Outfall 001 LA713 (Lab ID: 50233350001)
  - Cyanide, Free
- SL-01 LA718 (Lab ID: 50233350006)
  - Cyanide, Free
- SL-02 LA719 (Lab ID: 50233350007)
  - Cyanide, Free
- SL-03 LA720 (Lab ID: 50233350008)
  - Cyanide, Free
- SL-04 LA721 (Lab ID: 50233350009)
  - Cyanide, Free
- SL-05 LA722 (Lab ID: 50233350010)
  - Cyanide, Free
- SL-06 LA723 (Lab ID: 50233350011)
  - Cyanide, Free

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PROJECT NARRATIVE

Project: LA713-LA725
Pace Project No.: 50233350

Method: **EPA 9014 Free Cyanide**
Description: 9014 Cyanide, Free
Client: IDEM Senate Avenue
Date: August 20, 2019

Analyte Comments:

QC Batch: 517157

1d: Total cyanide was non-detect at specified reporting limit. Therefore, free cyanide is also non-detect at the same reporting limit.

- SL-07 LA724 (Lab ID: 50233350012)
  - Cyanide, Free
- SL-08 LA725 (Lab ID: 50233350013)
  - Cyanide, Free

N2: The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

- BLANK (Lab ID: 2385578)
  - Cyanide, Free
- Duplicate LA714 (Lab ID: 50233350002)
  - Cyanide, Free
- LC-01 LA715 (Lab ID: 50233350003)
  - Cyanide, Free
- LC-02 LA716 (Lab ID: 50233350004)
  - Cyanide, Free
- LC-03 LA717 (Lab ID: 50233350005)
  - Cyanide, Free
- Outfall 001 LA713 (Lab ID: 50233350001)
  - Cyanide, Free
- SL-01 LA718 (Lab ID: 50233350006)
  - Cyanide, Free
- SL-02 LA719 (Lab ID: 50233350007)
  - Cyanide, Free
- SL-03 LA720 (Lab ID: 50233350008)
  - Cyanide, Free
- SL-04 LA721 (Lab ID: 50233350009)
  - Cyanide, Free
- SL-05 LA722 (Lab ID: 50233350010)
  - Cyanide, Free
- SL-06 LA723 (Lab ID: 50233350011)
  - Cyanide, Free
- SL-07 LA724 (Lab ID: 50233350012)
  - Cyanide, Free
- SL-08 LA725 (Lab ID: 50233350013)
  - Cyanide, Free

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: Outfall 001 LA713 **Lab ID: 50233350001** Collected: 08/18/19 14:52 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 16:50	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 16:50		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: Duplicate LA714 **Lab ID: 50233350002** Collected: 08/18/19 14:53 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 16:50	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 16:50		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: LC-01 LA715 **Lab ID: 50233350003** Collected: 08/18/19 15:06 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 16:52	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 16:52		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: LC-02 LA716 **Lab ID: 50233350004** Collected: 08/18/19 15:28 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 16:53	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 16:53		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: LC-03 LA717 **Lab ID: 50233350005** Collected: 08/18/19 15:40 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 16:55	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 16:55		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: SL-01 LA718 **Lab ID: 50233350006** Collected: 08/18/19 16:58 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 16:55	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 16:55		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: SL-02 LA719 **Lab ID: 50233350007** Collected: 08/18/19 17:25 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 16:57	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 16:57		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: SL-03 LA720 **Lab ID: 50233350008** Collected: 08/18/19 17:40 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 16:57	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 16:57		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: SL-04 LA721 **Lab ID: 50233350009** Collected: 08/18/19 17:50 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 17:02	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 17:02		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: SL-05 LA722 **Lab ID: 50233350010** Collected: 08/18/19 18:00 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 17:02	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 17:02		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: SL-06 LA723 **Lab ID: 50233350011** Collected: 08/18/19 18:30 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 17:04	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 17:04		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: SL-07 LA724 **Lab ID: 50233350012** Collected: 08/18/19 18:37 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 17:05	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 17:05		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: LA713-LA725
Pace Project No.: 50233350

Sample: SL-08 LA725 **Lab ID: 50233350013** Collected: 08/18/19 18:50 Received: 08/19/19 09:44 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
335.4 Cyanide, Total	Analytical Method: EPA 335.4 Preparation Method: EPA 335.4							
Cyanide	ND	mg/L	0.0050	1	08/19/19 13:47	08/19/19 17:07	57-12-5	
9014 Cyanide, Free	Analytical Method: EPA 9014 Free Cyanide							
Cyanide, Free	ND	ug/L	100	1		08/19/19 17:07		1d,N2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: LA713-LA725
Pace Project No.: 50233350

QC Batch: 517006 Analysis Method: EPA 335.4
QC Batch Method: EPA 335.4 Analysis Description: 335.4 Cyanide, Total
Associated Lab Samples: 50233350001, 50233350002, 50233350003, 50233350004, 50233350005, 50233350006, 50233350007, 50233350008, 50233350009, 50233350010, 50233350011, 50233350012, 50233350013

METHOD BLANK: 2385146 Matrix: Water
Associated Lab Samples: 50233350001, 50233350002, 50233350003, 50233350004, 50233350005, 50233350006, 50233350007, 50233350008, 50233350009, 50233350010, 50233350011, 50233350012, 50233350013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	08/19/19 16:47	

LABORATORY CONTROL SAMPLE: 2385147

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	0.1	0.10	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2385148 2385149

Parameter	Units	50233350013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cyanide	mg/L	ND	0.1	0.1	0.096	0.094	95	93	90-110	2	20	

MATRIX SPIKE SAMPLE: 2385154

Parameter	Units	50233111001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	ND	0.1	0.10	96	90-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: LA713-LA725
Pace Project No.: 50233350

QC Batch: 517157 Analysis Method: EPA 9014 Free Cyanide
QC Batch Method: EPA 9014 Free Cyanide Analysis Description: 9014 Free Cyanide
Associated Lab Samples: 50233350001, 50233350002, 50233350003, 50233350004, 50233350005, 50233350006, 50233350007, 50233350008, 50233350009, 50233350010, 50233350011, 50233350012, 50233350013

METHOD BLANK: 2385578 Matrix: Water
Associated Lab Samples: 50233350001, 50233350002, 50233350003, 50233350004, 50233350005, 50233350006, 50233350007, 50233350008, 50233350009, 50233350010, 50233350011, 50233350012, 50233350013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Free	ug/L	ND	100	08/19/19 16:47	1d,N2

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: LA713-LA725
Pace Project No.: 50233350

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-I	Pace Analytical Services - Indianapolis

ANALYTE QUALIFIERS

1d	Total cyanide was non-detect at specified reporting limit. Therefore, free cyanide is also non-detect at the same reporting limit.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: LA713-LA725
Pace Project No.: 50233350

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50233350001	**Outfall 001 LA713**	EPA 335.4	517006	EPA 335.4	517076
50233350002	**Duplicate LA714**	EPA 335.4	517006	EPA 335.4	517076
50233350003	**LC-01 LA715**	EPA 335.4	517006	EPA 335.4	517076
50233350004	**LC-02 LA716**	EPA 335.4	517006	EPA 335.4	517076
50233350005	**LC-03 LA717**	EPA 335.4	517006	EPA 335.4	517076
50233350006	**SL-01 LA718**	EPA 335.4	517006	EPA 335.4	517076
50233350007	**SL-02 LA719**	EPA 335.4	517006	EPA 335.4	517076
50233350008	**SL-03 LA720**	EPA 335.4	517006	EPA 335.4	517076
50233350009	**SL-04 LA721**	EPA 335.4	517006	EPA 335.4	517076
50233350010	**SL-05 LA722**	EPA 335.4	517006	EPA 335.4	517076
50233350011	**SL-06 LA723**	EPA 335.4	517006	EPA 335.4	517076
50233350012	**SL-07 LA724**	EPA 335.4	517006	EPA 335.4	517076
50233350013	**SL-08 LA725**	EPA 335.4	517006	EPA 335.4	517076
50233350001	**Outfall 001 LA713**	EPA 9014 Free Cyanide	517157		
50233350002	**Duplicate LA714**	EPA 9014 Free Cyanide	517157		
50233350003	**LC-01 LA715**	EPA 9014 Free Cyanide	517157		
50233350004	**LC-02 LA716**	EPA 9014 Free Cyanide	517157		
50233350005	**LC-03 LA717**	EPA 9014 Free Cyanide	517157		
50233350006	**SL-01 LA718**	EPA 9014 Free Cyanide	517157		
50233350007	**SL-02 LA719**	EPA 9014 Free Cyanide	517157		
50233350008	**SL-03 LA720**	EPA 9014 Free Cyanide	517157		
50233350009	**SL-04 LA721**	EPA 9014 Free Cyanide	517157		
50233350010	**SL-05 LA722**	EPA 9014 Free Cyanide	517157		
50233350011	**SL-06 LA723**	EPA 9014 Free Cyanide	517157		
50233350012	**SL-07 LA724**	EPA 9014 Free Cyanide	517157		
50233350013	**SL-08 LA725**	EPA 9014 Free Cyanide	517157		

Pace Analytical

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here: 50233350

ALL SHADED AREAS are for LAB USE ONLY

Company: IDEM	Billing Information:
Address: 100 N. Senate, Indianapolis, S	
Report To: agreen2@idem.in.gov	Email To:
Copy To: .	Site Collection Info/Address:
Customer Project Name/Number: RM #88243	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): NICHOLAS K. REED	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

Container Preservative Type **: 4 4

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: IN WAD Cyanide	Analyses: IN/Cyanide, Total/Free	Lab Sample # / Comments
Outfall 001 - LA713	OT	G	8/18/19	2:52	8/18/19			2	X	X	001
Duplicate LA714	OT	G	8/18/19	2:53				2	X	X	002
LC-01 LA715	OT	G	8/18/19	3:06				2	X	X	003
LC-02 LA716	OT	G	8/18/19	3:28				2	X	X	004
LC-03 LA717	OT	G	8/18/19	3:40				2	X	X	005
SL-01 LA718	OT	G	8/18/19	4:58				NP2	X	X	006
SL-02 LA719	OT	G	8/18/19	5:25				NP2	X	X	007
SL-03 LA720	OT	G	8/18/19	5:40PM				NP2	X	X	008
SL-04 LA721	OT	G	8/18/19	5:50PM				NP2	X	X	009
SL-05 LA722	OT	G	8/18/19	6:00PM				NP2	X	X	010

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:
SEE SCVR

Customer Remarks / Special Conditions / Possible Hazards:
OT = Surface Water
Turnaround ASAP

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2447435

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#: F
Cooler 1 Temp Upon Receipt: 1.7 oC
Cooler 1 Therm Corr. Factor: 0.0 oC
Cooler 1 Corrected Temp: 1.7 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Nicholas K. Reed	8/18/19 7:02pm	Aaron Thean (IDEM)	8/18/19 7:02pm
Aaron Thean	8/19/19 8:40am EST		8/19/19 8:40 am
	8/19 9:44		8/19/19 0944

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

50233350

ALL SHADED AREAS are for LAB USE ONLY

Company: IDEM	Billing Information:
Address: 100 N. Senate, Indianapolis	
Report To: agreen2@idem.in.gov	Email To:
Copy To:	Site Collection Info/Address:
Customer Project Name/Number: RM#88243	State: / County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET
Phone: 317-691-6417 cell Email:	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): NICHOLAS K. REMAN	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature):	Turnaround Date Required: Immediately Packed on Ice: [ ] Yes [ ] No
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)	Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: 4 4

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses: IN WAD CYANIDE | IN Cyanide, TOTAL + FILTERED

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	WAD CYANIDE	CYANIDE, TOTAL + FILTERED	Lab Profile/Line:
SL-06 LA723	OT		8/18/19	6:30			NC	2	X	X	011
SL-07 LA724	OT		8/18/19	6:37			NC	2	X	X	012
SL-08 LA725	OT		8/18/19	6:50			NC	8	X	X	Includes MS/MSD 013

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY:
Lab Sample # / Comments:

SEE SCUR

Customer Remarks / Special Conditions / Possible Hazards:
OT - SURFACE WATER
Turnaround ASAP

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2447439

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: Y N NA
Therm ID#: E
Cooler 1 Temp Upon Receipt: 1.7 oC
Cooler 1 Therm Corr. Factor: 0.0 oC
Cooler 1 Corrected Temp: 1.7 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
NICHOLAS K. REMAN	8/18/19 7:02pm		8/18/19 7:02pm
Relinquished by/Company: (Signature)	Date/Time: 8/19/19 8:40am EST	Received by/Company: (Signature)	Date/Time: 8/19/19 8:40 am
Relinquished by/Company: (Signature)	Date/Time: 8/19/19 9:44 am	Received by/Company: (Signature)	Date/Time: 8/19/19 09:44

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

Face Analytical

SAMPLE CONDITION UPON RECEIPT FORM

Project #: 50233390

Date/Time and Initials of person examining contents: KS1011 8-19-19

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No Seals Intact: ☐ Yes ☑ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other bags

Thermometer: 1 2 3 4 5 6 A B C D E (F) Ice Type: ☑ Wet ☐ Blue ☐ None | Samples collected today and on ice: ☐ Yes ☐ No ☑ N/A

Cooler Temperature: 1.7 | 1.7 Ice Visible in Sample Containers?: ☐ Yes ☑ No ☐ N/A

(Initial/Corrected) Temp should be above freezing to 6°C If temp. is Over 6°C or under 0°C, was the PM Notified?: ☐ Yes ☐ No ☑ N/A

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
Are samples from West Virginia? Document any containers out of temp.		✓	All containers needing acid/base pres. Have been checked?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** All containers needing preservation are found to be in compliance with EPA recommendation (<2, >9, >12) unless otherwise noted.	✓		
USDA Regulated Soils? (ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓				
Chain of Custody Present:	✓		Circle: HNO3 H2SO4 (NaOH) NaOH/ZnAc			
Chain of Custody Filled Out:	✓		Dissolved Metals field filtered?:			✓
Short Hold Time Analysis (<72hr)?: Analysis:		✓	Headspace Wisconsin Sulfide			✓
Time 5035A TC placed in Freezer or Short Holds To Lab:				Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
			Residual Chlorine Check (Total/Amenable/Free Cyanide)		✓	
Rush TAT Requested: Next day	✓		Headspace in VOA Vials (>6mm):			✓
Containers Intact?:	✓		Trip Blank Present?:		✓	
Sample Labels (IDs/Dates/Times) Match COC? except TCs, which only require sample ID	✓		Trip Blank Custody Seals?:		✓	
Extra labels on Terracore Vials (soils only)?		✓				

Comments:

Sample Container Count

CLIENT: IDEM

COC PAGE 1 of 2
COC ID# 2447435

Project # 50233350

Sample Line Item	DG9H	VG9H	AG0U	AG1H	AG1U	AG2U	AG3S	WGFU	SP5T	BP1U	BP2N	BP2S	BP2U	BP3B	BP3N	BP3S	BP3U	SBS Bulk Kit R	Matrix SlWt/NAL (Soil/Water/Non-Aqueous Liquid)	pH <2	pH >9	pH>12
1														2					W			
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Container Codes

Glass

DG9B	40mL Na Bisulfate amber vial	AG0U	100mL unpreserved amber glass
DG9H	40mL HCL amber voa vial	AG1H	1 liter HCL amber glass
DG9M	40mL MeOH clear vial	AG1S	1 liter H2SO4 amber glass
DG9P	40mL TSP amber vial	AG1T	1 liter Na Thiosulfate amber glass
DG9S	40rnL H2SO4 amber vial	AG1U	1liter unpreserved amber glass
DG9T	40mL Na Thio amber vial	AG2N	500mL HNO3 amber glass
DG9U	40mL unpreserved amber vial	AG2S	500mL H2SO4 amber glass
VG9H	40mL HCL clear vial	AG2U	500mL unpreserved amber glass
VG9T	40mL Na Thio. clear vial	AG3S	250mL H2SO4 glass amber
VG9U	40mL unpreserved clear vial	AG3U	250mL unpreserved amber glass
VGFX	40mL w/hexane wipe vial	BG1H	1 liter HCL clear glass
VSG	Headspace septa vial & HCL	BG1S	1 liter H2SO4 clear glass
WGKU	8oz unpreserved clear jar	BG1T	1 liter Na Thiosulfate clear glass
WGFU	4oz clear soil jar	BG1U	1 liter unpreserved glass
JGFU	4oz unpreserved amber wide	BG3H	250mL HCl Clear Glass
		BG3U	250mL Unpreserved Clear Glass

Plastic / Misc.

BP1A	1 liter NaOH, Asc Acid plastic	BP3U	250mL unpreserved plastic
BP1N	1 liter HNO3 plastic	BP3Z	250mL NaOH, Zn Ac plastic
BP1S	1 liter H2SO4 plastic		
BP1U	1 liter unpreserved plastic	AF	Air Filter
BP1Z	1 liter NaOH, Zn, Ac	C	Air Cassettes
BP2A	500mL NaOH, Asc Acid plastic	R	Terra core kit
BP2N	500mL HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
BP2O	500mL NaOH plastic	U	Summa Can
BP2S	500mL H2SO4 plastic	ZPLC	Ziploc Bag
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3S	250mL H2SO4 plastic		

Sample Container Count

WO# : 50233350

50233350

CLIENT: IDEM

COC PAGE 2 of 2

COC ID# 2447439

Project # 50233350

Sample Line Item	DG9H	VG9H	AG0U	AG1H	AG1U	AG2U	AG3S	WGFU	SP5T	BP1U	BP2N	BP2S	BP2U	BP3B	BP3N	BP3S	BP3U	Bulk Kit R	Matrix SW (Soil/Wate Aqueous	pH <2	pH >9	pH>12
1														2					WT			—
2														2					↓			—
3														8								—
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

Container Codes

Glass

DG9B	40mL Na Bisulfate amber vial	AG0U	100mL unpreserved amber glass
DG9H	40mL HCL amber voa vial	AG1H	1 liter HCL amber glass
DG9M	40mL MeOH clear vial	AG1S	1 liter H2SO4 amber glass
DG9P	40mL TSP amber vial	AG1T	1 liter Na Thiosulfate amber glass
DG9S	40mL H2SO4 amber vial	AG1U	1liter unpreserved amber glass
DG9T	40mL Na Thio amber vial	AG2N	500mL HNO3 amber glass
DG9U	40mL unpreserved **amber** vial	AG2S	500mL H2SO4 amber glass
VG9H	40mL HCL clear vial	AG2U	500mL unpreserved amber glass
VG9T	40mL Na Thio. clear vial	AG3S	250mL H2SO4 glass amber
VG9U	40mL unpreserved **clear** vial	AG3U	250mL unpreserved amber glass
VGFX	40mL w/hexane wipe vial	BG1H	1 liter HCL clear glass
VSG	Headspace septa vial & HCL	BG1S	1 liter H2SO4 clear glass
WGKU	8oz unpreserved clear jar	BG1T	1 liter Na Thiosulfate clear glass
WGFU	4oz clear soil jar	BG1U	1 liter unpreserved glass
JGFU	4oz unpreserved amber wide	BG3H	250mL HCl Clear Glass
		BG3U	250mL Unpreserved Clear Glass

Plastic / Misc.

BP1A	1 liter NaOH, Asc Acid plastic	BP3U	250mL unpreserved plastic
BP1N	1 liter HNO3 plastic	BP3Z	250mL NaOH, Zn Ac plastic
BP1S	1 liter H2SO4 plastic		
BP1U	1 liter unpreserved plastic	AF	Air Filter
BP1Z	1 liter NaOH, Zn, Ac	C	Air Cassettes
BP2A	500mL NaOH, Asc Acid plastic	R	Terra core kit
BP2N	500mL HNO3 plastic	SP5T	120mL Coliform Na Thiosulfate
BP2O	500mL NaOH plastic	U	Summa Can
BP2S	500mL H2SO4 plastic	ZPLC	Ziploc Bag
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3S	250mL H2SO4 plastic		

SAMPLE NO.

Outfall 001 LA713

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350001 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 16:50
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 16:50

SAMPLE NO.

Duplicate LA714

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350002 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 16:50
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 16:50

SAMPLE NO.

LC-01 LA715

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350003 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 16:52
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 16:52

SAMPLE NO.

LC-02 LA716

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350004 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 16:53
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 16:53

SAMPLE NO.

LC-03 LA717

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350005 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 16:55
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 16:55

SAMPLE NO.

SL-01 LA718

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350006 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 16:55
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 16:55

SAMPLE NO.

SL-02 LA719

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350007 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 16:57
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 16:57

SAMPLE NO.

SL-03 LA720

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350008 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 16:57
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 16:57

SAMPLE NO.

SL-04 LA721

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350009 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 17:02
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 17:02

SAMPLE NO.

SL-05 LA722

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350010 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 17:02
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 17:02

SAMPLE NO.

SL-06 LA723

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350011 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 17:04
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 17:04

SAMPLE NO.

SL-07 LA724

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350012 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 17:05
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 17:05

SAMPLE NO.

SL-08 LA725

FORM I INORGANIC-1

INORGANIC ANALYSIS DATA SHEET

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Lab Sample ID: 50233350013 Percent Moisture:

CAS No.	Analyte	Concentration	Q	Units	DF	Analysis Date/Time
57-12-5	Cyanide	ND	U	mg/L	1	08/19/2019 17:07
	Cyanide, Free	ND	U	ug/L	1	08/19/2019 17:07

FORM II INORGANIC-1

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Initial Calibration Verification Source: 218963

Continuing Calibration Verification Source: 218958

Concentration Units: mg/L Instrument ID: 50WTA9

	Initial Calibration Verification				Continuing Calibration Verification						
	08/19/2019 16:22				08/19/2019 16:45			08/19/2019 16:59			Control Limit
Analyte	True	Found	%R	Control Limit	True	Found	%R	True	Found	%R	
Cyanide	0.05	0.049	98.2	90-110	0.05	0.048	95.2	0.05	0.049	98.2	90-110

FORM II INORGANIC-2

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Initial Calibration Verification Source:

Continuing Calibration Verification Source: 218958

Concentration Units: mg/L Instrument ID: 50WTA9

	Continuing Calibration Verification			
	08/19/2019 17:14			Control Limit
Analyte	True	Found	%R	
Cyanide	0.05	0.049	97.6	90-110

FORM III INORGANIC-1

BLANKS

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract : LA713-LA725

Method Blank Matrix: Water Instrument ID: 50WTA9

Method Blank Concentration Units: mg/L

Analyte	Initial Calibration Blank (mg/L)		Continuing Calibration Blank (mg/L)						Method Blank	
	08/19/2019 16:22	C	08/19/2019 16:45	C	08/19/2019 17:00	C	08/19/2019 17:14	C	2385146	C
Cyanide	0.0050	U	0.0050	U	0.0050	U	0.0050	U	ND	U
Cyanide, Free										

FORM III INORGANIC-2

BLANKS

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract : LA713-LA725

Method Blank Matrix: Water Instrument ID: 50WTA9

Method Blank Concentration Units: ug/L

Analyte	Initial Calibration Blank		Continuing Calibration Blank						Method Blank	
		C		C		C		C	2385578	C
Cyanide										
Cyanide, Free									ND	U

SAMPLE NO.

2385148MS

FORM V INORGANIC-1

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Matrix: Water Basis: Wet Parent Sample ID: SL-08 LA725

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Cyanide	mg/L	90-110	0.096	ND	0.10	95

SAMPLE NO.

2385149MSD

FORM V INORGANIC-2

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Matrix: Water Basis: Wet Parent Sample ID: SL-08 LA725

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Cyanide	mg/L	90-110	0.094	ND	0.10	93

SAMPLE NO.

2385154MS

FORM V INORGANIC-3

MATRIX SPIKE SAMPLE RECOVERY

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Matrix: Water Basis: Wet Parent Sample ID: 50233111001

Percent Moisture:

Analyte	Units	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spike Added (SA)	%R
Cyanide	mg/L	90-110	0.10	ND	0.10	96

SAMPLE NO.

2385149MSD

FORM VI INORGANIC-1
DUPLICATES

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Matrix: Water Concentration Units: mg/L

Percent Moisture: Basis: Wet

Analyte	Control Limit	Sample	Duplicate	RPD
Cyanide	20	0.096	0.094	2

SAMPLE NO.

2385147LCS

FORM VII INORGANIC-1
LABORATORY CONTROL SAMPLE

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Matrix: Water

Analyte	Units	True	Found	%R	Limits	
Cyanide	mg/L	0.10	0.10	104	90	110

FORM XII INORGANIC-1

PREPARATION LOG

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Preparation Method: EPA 9014 Free Cyanide Batch: WETA 40128

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
2385578	2385578BLANK	08/19/2019	1	10
50233350001	Outfall 001 LA713	08/19/2019	1	10
50233350002	Duplicate LA714	08/19/2019	1	10
50233350003	LC-01 LA715	08/19/2019	1	10
50233350004	LC-02 LA716	08/19/2019	1	10
50233350005	LC-03 LA717	08/19/2019	1	10
50233350006	SL-01 LA718	08/19/2019	1	10
50233350007	SL-02 LA719	08/19/2019	1	10
50233350008	SL-03 LA720	08/19/2019	1	10
50233350009	SL-04 LA721	08/19/2019	1	10
50233350010	SL-05 LA722	08/19/2019	1	10
50233350011	SL-06 LA723	08/19/2019	1	10
50233350012	SL-07 LA724	08/19/2019	1	10
50233350013	SL-08 LA725	08/19/2019	1	10

FORM XII INORGANIC-1
PREPARATION LOG

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Preparation Method: EPA 335.4 Batch: WETA 40115

Lab Sample ID	Sample Name	Preparation Date	Initial Volume (mL)	Final Volume (mL)
2385146	2385146BLANK	08/19/2019	50	25
2385147	2385147LCS	08/19/2019	50	25
2385148	2385148MS	08/19/2019	50	25
2385149	2385149MSD	08/19/2019	50	25
2385154	2385154MS	08/19/2019	50	25
50233350001	Outfall 001 LA713	08/19/2019	50	25
50233350002	Duplicate LA714	08/19/2019	50	25
50233350003	LC-01 LA715	08/19/2019	50	25
50233350004	LC-02 LA716	08/19/2019	50	25
50233350005	LC-03 LA717	08/19/2019	50	25
50233350006	SL-01 LA718	08/19/2019	50	25
50233350007	SL-02 LA719	08/19/2019	50	25
50233350008	SL-03 LA720	08/19/2019	50	25
50233350009	SL-04 LA721	08/19/2019	50	25
50233350010	SL-05 LA722	08/19/2019	50	25
50233350011	SL-06 LA723	08/19/2019	50	25
50233350012	SL-07 LA724	08/19/2019	50	25
50233350013	SL-08 LA725	08/19/2019	50	25

FORM XIII INORGANIC-1

ANALYSIS RUN LOG

Lab Name: Pace Analytical - Indiana SDG No. : 50233350 Contract: LA713-LA725

Instrument ID: 50WTA9 Analysis Method: EPA 335.4

Start Date: 08/19/2019 16:10 End Date: 08/19/2019 17:14

Sample Name	Lab Sample ID	D/F	Date	Time	CN	CNF
15594063CAL0	15594063CAL0	1	08/19/2019	16:10	X	
15594064CAL1	15594064CAL1	1	08/19/2019	16:10	X	
15594065CAL2	15594065CAL2	1	08/19/2019	16:12	X	
15594066CAL3	15594066CAL3	1	08/19/2019	16:13	X	
15594067CAL4	15594067CAL4	1	08/19/2019	16:15	X	
15594068CAL5	15594068CAL5	1	08/19/2019	16:15	X	
15594069CAL6	15594069CAL6	1	08/19/2019	16:17	X	
15594070CAL7	15594070CAL7	1	08/19/2019	16:17	X	
15594073ICV	15594073ICV	1	08/19/2019	16:22	X	
15594074ICB	15594074ICB	1	08/19/2019	16:22	X	
15594077CCB	15594077CCB	1	08/19/2019	16:45	X	
15594078CCV	15594078CCV	1	08/19/2019	16:45	X	
2385146BLANK	2385146	1	08/19/2019	16:47	X	
2385578BLANK	2385578	1	08/19/2019	16:47		X
2385147LCS	2385147	1	08/19/2019	16:48	X	
Outfall 001 LA713	50233350001	1	08/19/2019	16:50	X	X
Duplicate LA714	50233350002	1	08/19/2019	16:50	X	X
LC-01 LA715	50233350003	1	08/19/2019	16:52	X	X
LC-02 LA716	50233350004	1	08/19/2019	16:53	X	X
LC-03 LA717	50233350005	1	08/19/2019	16:55	X	X
SL-01 LA718	50233350006	1	08/19/2019	16:55	X	X
SL-02 LA719	50233350007	1	08/19/2019	16:57	X	X
SL-03 LA720	50233350008	1	08/19/2019	16:57	X	X
15594079CCV	15594079CCV	1	08/19/2019	16:59	X	
15594080CCB	15594080CCB	1	08/19/2019	17:00	X	
SL-04 LA721	50233350009	1	08/19/2019	17:02	X	X
SL-05 LA722	50233350010	1	08/19/2019	17:02	X	X
SL-06 LA723	50233350011	1	08/19/2019	17:04	X	X
SL-07 LA724	50233350012	1	08/19/2019	17:05	X	X
SL-08 LA725	50233350013	1	08/19/2019	17:07	X	X
2385148MS	2385148	1	08/19/2019	17:07	X	
2385149MSD	2385149	1	08/19/2019	17:09	X	
50233111001	50233111001	1	08/19/2019	17:09	X	
2385154MS	2385154	1	08/19/2019	17:11	X	
15594081CCV	15594081CCV	1	08/19/2019	17:14	X	
15594082CCB	15594082CCB	1	08/19/2019	17:14	X	

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis
Indiana 46268
Phone : 317-228-3100

Method: WCYN - Unit [mg/L] - EPA 335.4 Cyanide 0.005 to 0.500 mg/L

Smp#/[Dil Fact]	Sample ID	Conc.	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0000	0.0050	0.00		4:05:30 PM
DIL-1	RBL	0.0000	0.0056	0.00		4:05:48 PM
DIL-1	RBL	0.0000	0.0061	0.00		4:07:54 PM
DIL-1	RBL	0.0000	0.0058	0.00		4:08:12 PM
DIL-1	Std-1	0.0000	0.0046	0.00	INV	4:10:18 PM
SR5-1	Std-2	0.0050	0.0109	0.00		4:10:36 PM
SR5-2	Std-3	0.0100	0.0170	0.00		4:12:42 PM
SR5-3	Std-4	0.0250	0.0319	0.00		4:13:00 PM
SR5-4	Std-5	0.0500	0.0578	0.00		4:15:06 PM
SR5-5	Std-6	0.1000	0.1094	0.00		4:15:24 PM
SR5-6	Std-7	0.2000	0.2075	0.00		4:17:30 PM
ST-1	Std-8	0.5000	0.5003	0.00		4:17:48 PM
R-5	CCB (0 mg/L)	-0.0003	0.0071	0.00	LL	4:19:55 PM
R-4	CCV (0.05 mg/L)	0.0494	0.0562	98.71		4:20:13 PM
1	ICV	0.0491	0.0559	0.00		4:22:19 PM
2	ICB	-0.0003	0.0071	0.00	LL	4:22:37 PM
R-4	CCV (0.05 mg/L)	0.0491	0.0559	98.10		4:24:43 PM
R-5	CCB (0 mg/L)	-0.0003	0.0071	0.00	LL	4:25:01 PM

Report Date: 08/19/2019 **Calibrant Run Date: 08/19/2019** **Calibrant Code: CYN4**
Exp. Date: 01/22/2020 **Plan #: 20190819004** **Run Date: 08/19/2019** **Operator: WESTCO**
Plan Description: CN calibration **Page:1**

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis
Indiana 46268
Phone : 317-228-3100

Method: WCYN - Unit [mg/L] - EPA 335.4 Cyanide 0.005 to 0.500 mg/L

Smp#/[Dil Fact]	Sample ID	Conc.	OD	%Recovery/RPD	Flag	Analysis Time
***	RBL	0.0000	0.0057	0.00		***
***	Std-1	0.0000	0.0046	0.00		***
***	Std-2	0.0050	0.0109	0.00		***
***	Std-3	0.0100	0.0170	0.00		***
***	Std-4	0.0250	0.0319	0.00		***
***	Std-5	0.0500	0.0578	0.00		***
***	Std-6	0.1000	0.1094	0.00		***
***	Std-7	0.2000	0.2075	0.00		***
***	Std-8	0.5000	0.5003	0.00		***
R-5	CCB (0 mg/L)	-0.0025	0.0049	0.00	INV,LL	4:45:31 PM
R-4	CCV (0.05 mg/L)	0.0476	0.0545	95.27		4:45:49 PM
1	2385146	-0.0003	0.0071	0.00	LL	4:47:55 PM
2	2385147	0.2084	0.2135	0.00		4:48:13 PM
3	50233350001	0.0033	0.0106	0.00		4:50:19 PM
4	50233350002	0.0031	0.0104	0.00		4:50:37 PM
5	50233350003	0.0035	0.0108	0.00		4:52:43 PM
6	50233350004	0.0037	0.0110	0.00		4:53:01 PM
7	50233350005	0.0045	0.0118	0.00		4:55:07 PM
8	50233350006	0.0026	0.0100	0.00		4:55:25 PM
9	50233350007	0.0031	0.0104	0.00		4:57:31 PM
10	50233350008	0.0039	0.0112	0.00		4:57:49 PM
R-4	CCV (0.05 mg/L)	0.0491	0.0559	98.10		4:59:55 PM
R-5	CCB (0 mg/L)	-0.0003	0.0071	0.00	LL	5:00:13 PM
11	50233350009	0.0042	0.0115	0.00		5:02:19 PM
12	50233350010	0.0020	0.0094	0.00		5:02:37 PM
13	50233350011	0.0018	0.0092	0.00		5:04:43 PM
14	50233350012	0.0016	0.0090	0.00		5:05:01 PM
15	50233350013	0.0017	0.0091	0.00		5:07:08 PM
16	2385148	0.1919	0.1972	0.00		5:07:26 PM
17	2385149	0.1881	0.1934	0.00		5:09:32 PM
18	50233111001	0.0087	0.0160	0.00		5:09:50 PM
19	2385154	0.2004	0.2056	0.00		5:11:56 PM
20	50233111002	0.0018	0.0092	0.00		5:12:14 PM
R-4	CCV (0.05 mg/L)	0.0488	0.0557	97.70		5:14:20 PM
R-5	CCB (0 mg/L)	0.0000	0.0074	0.00		5:14:38 PM
21	50233111003	***	***	***	><,LH,OLN	5:16:44 PM

Report Date: 08/20/2019 **Calibrant Run Date: 08/19/2019** **Calibrant Code: CYN4**
Exp. Date: 01/22/2020 **Plan #: 20190819005** **Run Date: 08/19/2019** **Operator: WESTCO**
Plan Description: CN samples 1 **Page:1**

Pace Analytical Services, Inc.
7726 Moller Road
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Phone : 317-228-3100

Method: WCYN - Unit [mg/L] - EPA 335.4 Cyanide 0.005 to 0.500 mg/L

Smp#/[Dil Fact]	Sample ID	Conc.	OD	%Recovery/RPD	Flag	Analysis Time
22	50233111004	0.0071	0.0144	0.00		5:17:02 PM
23	50233111005	0.0353	0.0423	0.00		5:19:08 PM
24	50233111006	***	***	***	><,LH,OLN	5:19:26 PM
25	50233111007	0.0381	0.0451	0.00		5:21:32 PM
26	2384905	-0.0005	0.0069	0.00	LL	5:21:50 PM
27	2384906	0.1990	0.2042	0.00		5:23:56 PM
28	5220694001	0.0034	0.0107	0.00		5:24:15 PM
29	50232797001	0.0511	0.0579	0.00		5:26:21 PM
30	50232913001	0.0010	0.0084	0.00		5:26:39 PM
R-4	CCV (0.05 mg/L)	0.0472	0.0541	94.46		5:28:45 PM
R-5	CCB (0 mg/L)	-0.0006	0.0068	0.00	LL	5:29:03 PM
31	10487180002	0.0027	0.0101	0.00		5:31:09 PM
32	2384907	0.1994	0.2046	0.00		5:31:27 PM
33	2384908	0.1682	0.1738	0.00		5:33:33 PM
34	10487180003	0.6783	0.6783	0.00	><,LH	5:33:51 PM
35	10487180001	0.0100	0.0173	0.00		5:35:57 PM
36	50232920002	0.0037	0.0110	0.00		5:36:15 PM
37	50233212001	0.0028	0.0102	0.00		5:38:21 PM
38	2384871_A	0.0012	0.0086	0.00		5:38:39 PM
39	5220694001_A	0.0065	0.0138	0.00		5:40:45 PM
40	2384912	0.0009	0.0083	0.00		5:41:03 PM
R-4	CCV (0.05 mg/L)	0.0489	0.0558	97.90		5:43:09 PM
R-5	CCB (0 mg/L)	0.0000	0.0074	0.00		5:43:27 PM
41	2384913	0.0891	0.0955	0.00		5:45:33 PM
42	50233240001	0.0188	0.0260	0.00		5:45:51 PM
43	2384949	0.1131	0.1193	0.00		5:47:58 PM
44	2384950	0.1214	0.1275	0.00		5:48:16 PM
45	50233240002	0.0017	0.0091	0.00		5:50:22 PM
46	50233240003	0.0225	0.0296	0.00		5:50:40 PM
47	50233240004	0.0210	0.0282	0.00		5:52:46 PM
48	50233240005	0.0402	0.0471	0.00		5:53:04 PM
49	50233240006	0.0063	0.0136	0.00		5:55:10 PM
50	50233240007	0.0075	0.0148	0.00		5:55:28 PM
R-4	CCV (0.05 mg/L)	0.0453	0.0522	90.62		5:57:34 PM
R-5	CCB (0 mg/L)	-0.0018	0.0056	0.00	INV,LL	5:57:52 PM
51	50233240008	0.0006	0.0080	0.00		5:59:58 PM

Report Date: 08/20/2019 **Calibrant Run Date: 08/19/2019** **Calibrant Code: CYN4**
Exp. Date: 01/22/2020 **Plan #: 20190819005** **Run Date: 08/19/2019** **Operator: WESTCO**
Plan Description: CN samples 1 **Page:2**

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis
Indiana 46268
Phone : 317-228-3100

Method: WCYN - Unit [mg/L] - EPA 335.4 Cyanide 0.005 to 0.500 mg/L

Smp#/[Dil Fact]	Sample ID	Conc.	OD	%Recovery/RPD	Flag	Analysis Time
52	50233240009	0.0014	0.0088	0.00		6:00:16 PM
53	50233240010	0.0010	0.0084	0.00		6:02:22 PM
54	50233240011	0.0110	0.0183	0.00		6:02:40 PM
55	50233240012	0.0010	0.0084	0.00		6:04:46 PM
56	50233240013	0.0055	0.0128	0.00		6:05:04 PM
57	50233240014	0.0052	0.0125	0.00		6:07:10 PM
58	50233240015	0.1100	0.1162	0.00		6:07:29 PM
59	50233240016	0.0251	0.0322	0.00		6:09:35 PM
60	2384916	0.1147	0.1208	0.00		6:09:53 PM
R-4	CCV (0.05 mg/L)	0.0486	0.0555	97.29		6:11:59 PM
R-5	CCB (0 mg/L)	-0.0001	0.0073	0.00	LL	6:12:17 PM
61	50233240017	0.0072	0.0145	0.00		6:14:23 PM
62	50233240018	0.0037	0.0110	0.00		6:14:41 PM
R-4	CCV (0.05 mg/L)	0.0478	0.0547	95.67		6:16:47 PM
R-5	CCB (0 mg/L)	-0.0002	0.0072	0.00	LL	6:17:05 PM
21-[1/2]	50233111003	***	***	***	><,LH,OLN	6:28:39 PM
24-[1/2]	50233111006	***	***	***	><,LH,OLN	6:30:10 PM
34-[1/2]	10487180003	0.7180	0.3625	0.00	H	6:31:40 PM
R-4	CCV (0.05 mg/L)	0.0489	0.0558	97.90		6:32:52 PM
R-5	CCB (0 mg/L)	-0.0001	0.0073	0.00	LL	6:34:22 PM
21-[1/5]	50233111003	10.8543	2.1547	0.00	><,LH	6:45:56 PM
24-[1/5]	50233111006	11.0858	2.2005	0.00	EPL,><,LH	6:47:26 PM
R-4	CCV (0.05 mg/L)	0.0493	0.0561	98.51		6:48:38 PM
R-5	CCB (0 mg/L)	-0.0023	0.0051	0.00	INV,LL	6:50:08 PM
21-[1/10]	50233111003	11.4059	1.1356	0.00	><,LH	7:01:43 PM
24-[1/10]	50233111006	11.2391	1.1191	0.00	><,LH	7:03:13 PM
R-4	CCV (0.05 mg/L)	0.0491	0.0559	98.10		7:04:25 PM
R-5	CCB (0 mg/L)	0.0001	0.0075	0.00		7:05:55 PM
21-[1/25]	50233111003	10.9795	0.4418	0.00	H	7:17:29 PM
24-[1/25]	50233111006	11.8389	0.4758	0.00	H	7:18:59 PM
R-4	CCV (0.05 mg/L)	0.0489	0.0558	97.90		7:20:11 PM
R-5	CCB (0 mg/L)	-0.0002	0.0072	0.00	LL	7:21:41 PM

Report Date: 08/20/2019 **Calibrant Run Date: 08/19/2019** **Calibrant Code: CYN4**
Exp. Date: 01/22/2020 **Plan #: 20190819005** **Run Date: 08/19/2019** **Operator: WESTCO**
Plan Description: CN samples 1 **Page:3**

Prep Log Report

Batch Information: WETA 40115

Template Version: EF-IN-Q-350-Rev.05 (28Feb2019)

Prep Method	EPA 335.4	Analysis Method	EPA 335.4	Extracted By	SCM	Extracted Date/Time	08/19/2019 13:47:00
Block Temp (C)	120	Dist./Dig. Start Date/Time	08/19/2019 13:47:00	Dist./Dig. End Date/Time	08/19/2019 15:17:00	Block Duration (min)	90
Sulfamic Acid Solution (mL)	217862 (2)	1:1 H2SO4 (mL)	214510 (5)	Lead(II) carbonate	None Added	Sodium Arsenite	None Added
Sodium Arsenite Solution	None Added	0.25 N Sodium Hydroxide (mL)	217861 (25)	Magnesium Chloride, 51% (mL)	217864 (2)	Lab Container/Transfer	215689
Sodium Hydroxide Solution 1N	None Added	Antifoam B Silicon Emulsion	None Added	Collection Traps	214976	Reviewed By	GWA
Reviewed By Date	08/19/2019 16:22	Batch Notes					

Sample Information:

QC Rule	Sample Type	Lab Sample ID	Block ID	Cl2 Present	S2 Present	Antifoam Added	pH	Initial Amount (g | mL)	Final Volume (mL)	Matrix	Sample Notes	CN-SPK (mL)
3354 W_P	BLANK	**2385146**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	LCS	**2385147**	50WT03	No	No	No	12	50	25	Water		218953 (0.2)
3354 W_P	PS	**50233350001**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350002**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350003**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350004**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350005**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350006**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350007**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350008**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350009**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350010**	50WT03	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350011**	50WETE	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233350012**	50WETE	No	No	No	12	50	25	Water		
3354 W_P	RQS	**50233350013**	50WETE	No	No	No	12	50	25	Water		
3354 W_P	MS	**2385148**	50WETE	No	No	No	12	50	25	Water		218953 (0.2)
3354 W_P	MSD	**2385149**	50WETE	No	No	No	12	50	25	Water		218953 (0.2)

Prep Log Report

QC Rule	Sample Type	Lab Sample ID	Block ID	Cl2 Present	S2 Present	Antifoam Added	pH	Initial Amount (g | mL)	Final Volume (mL)	Matrix	Sample Notes	CN-SPK (mL)
3354 W_P	PS	**50233111001**	50WETE	No	No	No	12	50	25	Water		
3354 W_P	MS	**2385154**	50WETE	No	No	No	12	50	25	Water		218953 (0.2)
3354 W_P	PS	**50233111002**	50WETE	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233111003**	50WETE	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233111004**	50WETE	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233111005**	50WETE	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233111006**	50WETE	No	No	No	12	50	25	Water		
3354 W_P	PS	**50233111007**	50WETI	No	No	No	12	50	25	Water		

Standard Notes:

218953: CN ICV Spike 25 mg/L

Exhibit 7

AMBH BFCWPS Coldwell Results
all results in mg/l

Date	NH3	CN	PB	TSS	ZN
8/5/2019	22	0.33	0.3	92	1.6
8/7/2019	32	0.025	0.12	88	0.53
8/9/2019	42	0.022	0.14	130	0.66
	coldwell no flow during pump station outage				
8/16/2019	23	0.54		61	
8/19/2019	33	0.5	0.15	73	1.1
8/21/2019	47	0.18	0.053	51	0.35
8/23/2019	42	0.067	0.1	63	0.63

Exhibit 8

OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

****

DATE: 8-11-19 TIME: 04:30 TURN: 1 SENIOR OPERATOR: ACW

TOWN OF BURNS HARBOR SANITARY INFLUENT : 4558687
TOTAL INFLUENT: 24512280 CMF/C INFLUENT: —
HMF/C INFLUENT: — HM POLYMER : 12306325
SSTP EFFLUENT : 35617047 SWTP STEAM : 33384800

RETURN SLUDGE: 10899131
CM POLYER : 11954873
WWII INFLUENT: 67197200
SWTP HPA : —

150 / 140

WWII WET WELL LEVEL: 12.6
RETURN SLUDGE FLOW : 150
AMOUNT CL2 USED : 10
SLUDGE TO DIGESTORS: 0
LPA BLOWER AMPERAGE: 50

SSPS#2 WET WELL LEVEL: 1.5
MIX LIQUOR SET TEST : 370
FULL C12 BOTTLES : 6
SLUDGE TO DRYING BEDS: 0
RETURN SLUDGE SET TEST: 990

LPA FLOW RATE: 946
DISOLVED O2 : —
C12 RESIDUAL : 2.0
SUPERNANTANT : 0
031 TURBIDITY: 7

#2

WPL HAULED BY AMROX: 0
WPL ONHAND AT SWTP : 1700
#1 RINSE TANK pH : —

WPL HAULED BY KEMIRA : 0
WPL ONHAND AT THE CSM: 6500
#2 RINSE TANK pH : —

WPL GRAVITY : —
DIW #1356 pH : 7.0

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: —
% HORSE POWER:
TORQUE READING : 44
SPECIFIC GRAVITY : 1.210

DISC-FLOW PUMP FLOW RATE: ___ GPM
SLURRY TO PONDS ___ LOADS ___ WET TONS
SLURRY TO RSB ___ LOADS ___ WET TONS
% SOLIDS: 51 BLANKET: 7.3 FEET POLY FLOW ___

32300

LIME SYSTEM READINGS

LSHT#1 LEVEL: 31900 LSHT#2 LEVEL: 33500 LSHT#4 LEVEL: —
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.04 LSHT#4 SP GR: — BIN: % LEVEL 49
% OIL ON SCALPER CELL SURFACES => ___ WEST ___ EAST OIL HAULED: ___ HOPPERS

#1 Pump Station Hot Strip Finishing →

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.01	1.03	—	1.01
UNDERFLOW PERCENT SOLIDS :	28	4	—	32
EFFLUENT TURBITIES :	29	30	—	25
EFFLUENT PH's :	8.6	8.7	—	8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 1.8 Mg/L TOTAL COLD CYANIDE 0 Mg/L

#2 Blast Furnace →

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.01	1.01	1.03
UNDERFLOW PERCENT SOLIDS :	28	29	7
EFFLUENT TURBITIES :	27	27	26
EFFLUENT PH's :	8.7	8.6	8.8
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 1.5 Mg/L TOTAL HOT CYANIDE 0 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: ___ END OF TURN: ___

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: ___ #2 AIR COMPRESSOR: ___ #3 AIR COMPRESSOR: ___
SWTP A/C DEW POINT READING : ___ (Only record when at least 1 A/C is On Lin

Fileref: \\Bhwfs01\PCSAS\PSUSMenuSystem\Data\WTdata(WTOCHEAT)

OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

****

DATE 8-11-19 TIME: TURN: 2 SENIOR OPERATOR: Cohen Cross

TOWN OF BURNS HARBOR SANITARY INFLUENT : 1458935 RETURN SLUDGE: 10,900,011
TOTAL INFLUENT: 74537359 CMF/C INFLUENT: — CM POLYER : 1195339
HMF/C INFLUENT: — HM POLYMER : 12318959 WWII INFLUENT: 67235760
SSTP EFFLUENT : 35819667 SWTP STEAM : 33379239 SWTP HPA : —

1410/129 #2

WWII WET WELL LEVEL: 124 SSPS#2 WET WELL LEVEL: 15 LPA FLOW RATE: 947
RETURN SLUDGE FLOW : 1355 MIX LIQUOR SET TEST : 356 DISOLVED O2 :
AMOUNT CL2 USED : 11 FULL Cl2 BOTTLES : 6 Cl2 RESIDUAL : 2.8
SLUDGE TO DIGESTORS: 1466 SLUDGE TO DRYING BEDS: — SUPERNANTANT : 7330
LPA BLOWER AMPERAGE: 48 RETURN SLUDGE SET TEST: 925 031 TURBIDITY: 6.7

WPL HAULED BY AMROX: — WPL HAULED BY KEMIRA : — WPL GRAVITY : —
WPL ONHAND AT SWTP : 4700 WPL ONHAND AT THE CSM: 9000
#1 RINSE TANK pH : — #2 RINSE TANK pH : — DIW #1356 pH : 7.0

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: — DISC-FLOW PUMP FLOW RATE: — GPM
% HORSE POWER: SLURRY TO PONDS — LOADS — WET TONS
TORQUE READING : 44 SLURRY TO RSB — LOADS — WET TONS
SPECIFIC GRAVITY : 1.23 % SOLIDS: 49 BLANKET: 8.1 FEET POLY FLOW —

LIME SYSTEM READINGS

LSHT#1 LEVEL: 28500 LSHT#2 LEVEL: 33400 LSHT#4 LEVEL: —
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.04 LSHT#4 SP GR: — BIN: % LEVEL 46
% OIL ON SCALPER CELL SURFACES => 100 WEST 100 EAST OIL HAULED: — HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.02	1.02	—	1.01
UNDERFLOW PERCENT SOLIDS :	4	4	—	3
EFFLUENT TURBITIES :	26	24	—	21
EFFLUENT PH's :	8.3	8.3	—	8.4
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 3.4 Mg/L TOTAL COLD CYANIDE 0 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.02	1.02	1.03
UNDERFLOW PERCENT SOLIDS :	4	4	7
EFFLUENT TURBITIES :	27	26	25
EFFLUENT PH's :	8.4	8.4	8.4
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 3.6 Mg/L TOTAL HOT CYANIDE 0 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: _____ END OF TURN: _____

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: _____ #2 AIR COMPRESSOR: _____ #3 AIR COMPRESSOR: _____
SWTP A/C DEW POINT READING : _____ (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8-11-19 TIME: TURN: 3 SENIOR OPERATOR: Cohen Dimitroff

TOWN OF BURNS HARBOR SANITARY INFLUENT : 4548781 RETURN SLUDGE: 10900057
TOTAL INFLUENT: 245638860 CMF/C INFLUENT: — CM POLYER : 11959998
HMF/C INFLUENT: HM POLYMER : 12311788 WWII INFLUENT: 672814100
SSTP EFFLUENT : 358228830 SWTP STEAM : 334147700 SWTP HPA : —

129/134

WWII WET WELL LEVEL: 12.6 SSPS#2 WET WELL LEVEL: 1.5 LPA FLOW RATE: 998
RETURN SLUDGE FLOW : 150 MIX LIQUOR SET TEST : 275 DISOLVED O2 : —
AMOUNT CL2 USED : 5 FULL Cl2 BOTTLES : 6 Cl2 RESIDUAL : 0.4
SLUDGE TO DIGESTORS: 0 SLUDGE TO DRYING BEDS: 0 SUPERNANTANT : 0
#2 LPA BLOWER AMPERAGE: 47 RETURN SLUDGE SET TEST: 925 031 TURBIDITY: 998

WPL HAULED BY AMROX: 0 WPL HAULED BY KEMIRA : 0 WPL GRAVITY :
WPL ONHAND AT SWTP : 1700 WPL ONHAND AT THE CSM: 14000
#1 RINSE TANK pH : — #2 RINSE TANK pH : — DIW #1356 pH : 6.6

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: DISC-FLOW PUMP FLOW RATE: GPM
% HORSE POWER: SLURRY TO PONDS LOADS WET TONS
TORQUE READING : 44 SLURRY TO RSB LOADS WET TONS
SPECIFIC GRAVITY : 1.29 % SOLIDS: 55 BLANKET: 2.5 FEET POLY FLOW

LIME SYSTEM READINGS

LSHT#1 LEVEL: 32800 LSHT#2 LEVEL: 33200 LSHT#4 LEVEL: —
33500 LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.09 LSHT#4 SP GR: BIN: % LEVEL 45
% OIL ON SCALPER CELL SURFACES => WEST EAST OIL HAULED: HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.04	1.02		1.01
UNDERFLOW PERCENT SOLIDS :	9	4		2
EFFLUENT TURBITIES :	38.9	38.5		23.2
EFFLUENT PH's :	8.8	8.8		8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 3.8 Mg/L TOTAL COLD CYANIDE 0 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.02	1.03
UNDERFLOW PERCENT SOLIDS :	7	4	7
EFFLUENT TURBITIES :	33.2	29.8	28.2
EFFLUENT PH's :	8.9	8.9	8.9
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 4.0 Mg/L TOTAL HOT CYANIDE 0 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: END OF TURN:

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: #2 AIR COMPRESSOR: #3 AIR COMPRESSOR:
SWTP A/C DEW POINT READING : (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

DATE: 8-12-19 TIME: 04:30 TURN: 1 SENIOR OPERATOR: [illegible]

TOWN OF BURNS HARBOR SANITARY INFLUENT : 458828 RETURN SLUDGE: 10901090
TOTAL INFLUENT: 74591570 CMF/C INFLUENT: — CM POLYER : 11962757
HMF/C INFLUENT: — HM POLYMER : 23147247 WWII INFLUENT: 67324000
SSTP EFFLUENT : 35885625 SWTP STEAM : 33430900 SWTP HPA : —

WWII WET WELL LEVEL: 12.4 SSPS#2 WET WELL LEVEL: 1.5 LPA FLOW RATE: 970
RETURN SLUDGE FLOW : 150 MIX LIQUOR SET TEST : 350 DISOLVED O2 : —
AMOUNT CL2 USED : 6 FULL Cl2 BOTTLES : 6 Cl2 RESIDUAL : 1.6
SLUDGE TO DIGESTORS: 0 SLUDGE TO DRYING BEDS: 0 SUPERNANTANT : 0
LPA BLOWER AMPERAGE: 419 RETURN SLUDGE SET TEST: 975 031 TURBIDITY: 9.3

WPL HAULED BY AMROX: 0 WPL HAULED BY KEMIRA : 0 WPL GRAVITY :
WPL ONHAND AT SWTP : 1700 WPL ONHAND AT THE CSM: 14000
#1 RINSE TANK pH : — #2 RINSE TANK pH : — DIW #1356 pH : 6.0

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: 0 DISC-FLOW PUMP FLOW RATE: ___ GPM
% HORSE POWER: SLURRY TO PONDS ___ LOADS ___ WET TONS
TORQUE READING : 9.4 SLURRY TO RSB ___ LOADS ___ WET TONS
SPECIFIC GRAVITY : 1.25 % SOLIDS: 49 BLANKET: 7.3 FEET POLY FLOW ___

LIME SYSTEM READINGS

LSHT#1 LEVEL: 33500 LSHT#2 LEVEL: 33000 LSHT#4 LEVEL: —
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.09 LSHT#4 SP GR: — BIN: % LEVEL 45
% OIL ON SCALPER CELL SURFACES => ___ WEST ___ EAST OIL HAULED: ___ HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.03	/	1.01
UNDERFLOW PERCENT SOLIDS :	7	7	/	2
EFFLUENT TURBITIES :	34.1	33.4	/	24.1
EFFLUENT PH's :	8.7	8.7	/	8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 2.7 Mg/L TOTAL COLD CYANIDE 0.03 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.09	1.08	1.04
UNDERFLOW PERCENT SOLIDS :	20	18	9
EFFLUENT TURBITIES :	34.5	32.6	33.6
EFFLUENT PH's :	8.8	8.8	8.8
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 1.8 Mg/L TOTAL HOT CYANIDE 0.04 Mg/L

SAS ROUNDED TO 0

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: ___ END OF TURN: ___

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: ___ #2 AIR COMPRESSOR: ___ #3 AIR COMPRESSOR: ___
SWTP A/C DEW POINT READING : ___ (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8-12-19 TIME: TURN: 2 SENIOR OPERATOR: DEAL/VARA

TOWN OF BURNS HARBOR SANITARY INFLUENT : 00458852 RETURN SLUDGE: 1090 2080
TOTAL INFLUENT: 74618400 CMF/C INFLUENT: CM POLYER : 119654408
HMF/C INFLUENT: HM POLYMER : 12317578 WWII INFLUENT: 67363300
SSTP EFFLUENT : 35828331 SWTP STEAM : 33997800 SWTP HPA :

WWII WET WELL LEVEL: 12.5 SSPS#2 WET WELL LEVEL: 1.5 LPA FLOW RATE: 867
RETURN SLUDGE FLOW : 123 MIX LIQUOR SET TEST : 325 DISOLVED O2 :
AMOUNT CL2 USED : 9 FULL Cl2 BOTTLES : 6 Cl2 RESIDUAL : 0.6
SLUDGE TO DIGESTORS: SLUDGE TO DRYING BEDS: SUPERNANTANT :
LPA BLOWER AMPERAGE: 46 RETURN SLUDGE SET TEST: 725 031 TURBIDITY: 7.1

WPL HAULED BY AMROX: 0 WPL HAULED BY KEMIRA : 2 WPL GRAVITY :
WPL ONHAND AT SWTP : 1706 WPL ONHAND AT THE CSM: 8500
#1 RINSE TANK pH : #2 RINSE TANK pH : DIW #1356 pH : 6.2

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: 43009 DISC-FLOW PUMP FLOW RATE: GPM
% HORSE POWER: SLURRY TO PONDS LOADS WET TONS
TORQUE READING : 4.3 SLURRY TO RSB LOADS WET TONS
SPECIFIC GRAVITY : 1.31 % SOLIDS: 5.8% BLANKET: 7.6 FEET POLY FLOW

LIME SYSTEM READINGS

LSHT#1 LEVEL: LSHT#2 LEVEL: 33100 LSHT#4 LEVEL:
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.04 LSHT#4 SP GR: BIN: % LEVEL 44
% OIL ON SCALPER CELL SURFACES => 100 WEST 100 EAST OIL HAULED: 0 HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.02		1.02
UNDERFLOW PERCENT SOLIDS :	7	4		4
EFFLUENT TURBITIES :	29	31		24
EFFLUENT PH's :	8.6	8.6		8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 2.7 Mg/L TOTAL COLD CYANIDE 0.1 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.06	1.16	1.08
UNDERFLOW PERCENT SOLIDS :	13	34	18
EFFLUENT TURBITIES :	26	38	38
EFFLUENT PH's :	8.8	8.8	8.8
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 3.8 Mg/L TOTAL HOT CYANIDE 0.2 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: 8.76 END OF TURN: 8.68

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: #2 AIR COMPRESSOR: #3 AIR COMPRESSOR:
SWTP A/C DEW POINT READING : (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8-12-19 TIME: TURN: 3 SENIOR OPERATOR: DEAL / DIMITROFF

TOWN OF BURNS HARBOR SANITARY INFLUENT : 41583930 RETURN SLUDGE: 10902625
TOTAL INFLUENT: 74649200 CMF/C INFLUENT: — CM POLYER : 11968524
HMF/C INFLUENT: HM POLYMER : 12320907 WWII INFLUENT: 67407700
SSTP EFFLUENT : 35531760 SWTP STEAM : 33477600 SWTP HPA : —

10a / 10?

WWII WET WELL LEVEL: 12.7 SSPS#2 WET WELL LEVEL: 1.5 LPA FLOW RATE: 943
RETURN SLUDGE FLOW : 150 MIX LIQUOR SET TEST : 300 DISOLVED O2 : —
AMOUNT CL2 USED : 2 FULL Cl2 BOTTLES : 6 Cl2 RESIDUAL : 0
SLUDGE TO DIGESTORS: 1500 SLUDGE TO DRYING BEDS: 0 SUPERNANTANT : 0
#3 LPA BLOWER AMPERAGE: 47 RETURN SLUDGE SET TEST: 950 031 TURBIDITY: 7.9

WPL HAULED BY AMROX: 0 WPL HAULED BY KEMIRA : 1 WPL GRAVITY : —
WPL ONHAND AT SWTP : 1700 WPL ONHAND AT THE CSM: 15500
#1 RINSE TANK pH : — #2 RINSE TANK pH : — DIW #1356 pH : 6.0

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: 0 DISC-FLOW PUMP FLOW RATE: ___ GPM
% HORSE POWER: ___ SLURRY TO PONDS ___ LOADS ___ WET TONS
TORQUE READING : 4.3 SLURRY TO RSB ___ LOADS ___ WET TONS
SPECIFIC GRAVITY : 1.30 % SOLIDS: 5% BLANKET: 7.7 FEET POLY FLOW ___

LIME SYSTEM READINGS

31700 LSHT#1 LEVEL: 30900 LSHT#2 LEVEL: 33100 LSHT#4 LEVEL: —
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.04 LSHT#4 SP GR: — BIN: % LEVEL 41
% OIL ON SCALPER CELL SURFACES => ___ WEST ___ EAST OIL HAULED: 0 HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.05	1.03	(1.02)	1.01
UNDERFLOW PERCENT SOLIDS :	11	7	(4)	2
EFFLUENT TURBITIES :	29.1	31.8	/	21.2
EFFLUENT PH's :	8.6	8.6	/	8.4
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 2.4 Mg/L TOTAL COLD CYANIDE 0.1 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.08	1.03	1.05
UNDERFLOW PERCENT SOLIDS :	18	7	11
EFFLUENT TURBITIES :	31.7	31.5	31.4
EFFLUENT PH's :	8.6	8.5	8.5
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 3.8 Mg/L TOTAL HOT CYANIDE 0.1 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: ___ END OF TURN: ___

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: ___ #2 AIR COMPRESSOR: ___ #3 AIR COMPRESSOR: ___
SWTP A/C DEW POINT READING : ___ (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8-13-19 TIME: 04:30 TURN: 1 SENIOR OPERATOR: JCW/DY

TOWN OF BURNS HARBOR SANITARY INFLUENT : 4589777 RETURN SLUDGE: 10903195
TOTAL INFLUENT: 74676611 CMF/C INFLUENT: — CM POLYER : 11971865
HMF/C INFLUENT: HM POLYMER : 12323835 WWII INFLUENT: 67449600
SSTP EFFLUENT : 35834668 SWTP STEAM : 33497200 SWTP HPA : —

107 WWII WET WELL LEVEL: 12.4 SSPS#2 WET WELL LEVEL: 1.5 LPA FLOW RATE: 953
RETURN SLUDGE FLOW : 150 MIX LIQUOR SET TEST : 325 DISOLVED O2 : —
AMOUNT CL2 USED : 0 FULL Cl2 BOTTLES : 6 Cl2 RESIDUAL : 0
SLUDGE TO DIGESTORS: 0 SLUDGE TO DRYING BEDS: 0 SUPERNANTANT : 0
LPA BLOWER AMPERAGE: 54 RETURN SLUDGE SET TEST: 1000 031 TURBIDITY: 4.2

#1 WPL HAULED BY AMROX: 0 WPL HAULED BY KEMIRA : 3 WPL GRAVITY :
WPL ONHAND AT SWTP : 1700 WPL ONHAND AT THE CSM: 20000
#1 RINSE TANK pH : — #2 RINSE TANK pH : — DIW #1356 pH : 5.9

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: DISC-FLOW PUMP FLOW RATE: GPM
% HORSE POWER: SLURRY TO PONDS LOADS WET TONS
TORQUE READING : 41.5 SLURRY TO RSB LOADS WET TONS
SPECIFIC GRAVITY : 1.32 % SOLIDS: 60 BLANKET: 7.9 FEET POLY FLOW

LIME SYSTEM READINGS

33600 LSHT#1 LEVEL: 29200 LSHT#2 LEVEL: 33100 LSHT#4 LEVEL: —
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.04 LSHT#4 SP GR: — BIN: % LEVEL 41
% OIL ON SCALPER CELL SURFACES => WEST EAST OIL HAULED: HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.01	1.02		1.01
UNDERFLOW PERCENT SOLIDS :	2	4		2
EFFLUENT TURBITIES :	17.2	17.0		14.5
EFFLUENT PH's :	8.6	8.6		8.4
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 2.3 Mg/L TOTAL COLD CYANIDE 0.09 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.04	1.02	1.02
UNDERFLOW PERCENT SOLIDS :	9	4	4
EFFLUENT TURBITIES :	22.6	22.3	20.9
EFFLUENT PH's :	8.6	8.6	8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 3.5 Mg/L TOTAL HOT CYANIDE 0.17 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: END OF TURN:

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: #2 AIR COMPRESSOR: #3 AIR COMPRESSOR:
SWTP A/C DEW POINT READING : (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8-13-19 TIME: TURN: 2 SENIOR OPERATOR: DEAL/VARA/HINTON

TOWN OF BURNS HARBOR SANITARY INFLUENT :00159032 RETURN SLUDGE: 10904076
TOTAL INFLUENT: 74710500 CMF/C INFLUENT: CM POLYER : 11974660
HMF/C INFLUENT: HM POLYMER :12327461 WWII INFLUENT: 67498800
SSTP EFFLUENT : 35838129 SWTP STEAM :33519200 SWTP HPA :

WWII WET WELL LEVEL: 12.4 SSPS#2 WET WELL LEVEL: 1.5 LPA FLOW RATE: 953
RETURN SLUDGE FLOW : 137 MIX LIQUOR SET TEST : 250 DISOLVED O2 :
AMOUNT CL2 USED : 6 FULL C12 BOTTLES : C12 RESIDUAL : 0.71
SLUDGE TO DIGESTORS: SLUDGE TO DRYING BEDS: SUPERNANTANT :
LPA BLOWER AMPERAGE: 53 RETURN SLUDGE SET TEST: 875 031 TURBIDITY: 3.1

WPL HAULED BY AMROX: 1 WPL HAULED BY KEMIRA : 2 WPL GRAVITY :
WPL ONHAND AT SWTP : 18000 WPL ONHAND AT THE CSM: 18000
#1 RINSE TANK pH : #2 RINSE TANK pH : DIW #1356 pH : 5.0

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: 52000 DISC-FLOW PUMP FLOW RATE: GPM
% HORSE POWER: SLURRY TO PONDS LOADS WET TONS
TORQUE READING : 4.4 SLURRY TO RSB LOADS WET TONS
SPECIFIC GRAVITY : 1.29 % SOLIDS: 5.5 BLANKET: 7.4 FEET POLY FLOW

LIME SYSTEM READINGS

LSHT#1 LEVEL: 31500 LSHT#2 LEVEL: 33000 LSHT#4 LEVEL:
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.09 LSHT#4 SP GR: BIN: % LEVEL 35
% OIL ON SCALPER CELL SURFACES => 100 WEST 100 EAST OIL HAULED: 0 HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.02	1.02	1.03
UNDERFLOW PERCENT SOLIDS :	7	4	4	7
EFFLUENT TURBITIES :	30	30		23
EFFLUENT PH's :	8.6	8.6		8.5
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 2.10 Mg/L TOTAL COLD CYANIDE 0.07 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.06	1.06	1.05
UNDERFLOW PERCENT SOLIDS :	11	13	11
EFFLUENT TURBITIES :	31	31	33
EFFLUENT PH's :	8.6	8.6	8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 3.00 Mg/L TOTAL HOT CYANIDE 0.15 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: 8.57 END OF TURN: 8.41

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: #2 AIR COMPRESSOR: #3 AIR COMPRESSOR:
SWTP A/C DEW POINT READING : (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

DATE: 8-13-19 TIME: 20:30 TURN: 3 SENIOR OPERATOR: JKD/JCW

TOWN OF BURNS HARBOR SANITARY INFLUENT : 459078
TOTAL INFLUENT: 247355 20
HMF/C INFLUENT: —
SSTP EFFLUENT : 35840635
CMF/C INFLUENT: —
HM POLYMER : 2330131
SWTP STEAM : 33537100
RETURN SLUDGE: 10904661
CM POLYER : 11977160
WWII INFLUENT: 67534500
SWTP HPA : —

144/137

WWII WET WELL LEVEL: 12.5
RETURN SLUDGE FLOW : 150
AMOUNT CL2 USED : 1
SLUDGE TO DIGESTORS: 3500
LPA BLOWER AMPERAGE: 53 #1
SSPS#2 WET WELL LEVEL: 1.5
MIX LIQUOR SET TEST : 275
FULL Cl2 BOTTLES : 6
SLUDGE TO DRYING BEDS: 0
RETURN SLUDGE SET TEST: 900
LPA FLOW RATE: 946
DISOLVED O2 : —
Cl2 RESIDUAL : 1.8
SUPERNANTANT : 0
031 TURBIDITY: 2.5

WPL HAULED BY AMROX: 1
WPL ONHAND AT SWTP : 1700
#1 RINSE TANK pH : —
WPL HAULED BY KEMIRA : 1
WPL ONHAND AT THE CSM: 18000
#2 RINSE TANK pH : —
WPL GRAVITY : —
DIW #1356 pH : 5.9

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: _____
% HORSE POWER:
TORQUE READING : 41.5
SPECIFIC GRAVITY : 1.32
DISC-FLOW PUMP FLOW RATE: ___ GPM
SLURRY TO PONDS ___ LOADS ___ WET TONS
SLURRY TO RSB ___ LOADS ___ WET TONS
% SOLIDS: 60% BLANKET: 7.3 FEET POLY FLOW ___

LIME SYSTEM READINGS

33,500
LSHT#1 LEVEL: 32000 LSHT#2 LEVEL: 33000 LSHT#4 LEVEL: —
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.04 LSHT#4 SP GR: — BIN: % LEVEL 34
% OIL ON SCALPER CELL SURFACES => ___ WEST ___ EAST OIL HAULED: 1 HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.03	1.02	1.02
UNDERFLOW PERCENT SOLIDS :	7	7	4	4
EFFLUENT TURBITIES :	20.4	22.5	/	15.7
EFFLUENT PH's :	8.6	8.5	/	8.4
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 2.4 Mg/L TOTAL COLD CYANIDE 0.21 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.11	1.09	1.06
UNDERFLOW PERCENT SOLIDS :	24	20	13
EFFLUENT TURBITIES :	27.1	27.2	25.8
EFFLUENT PH's :	8.7	8.7	8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 3.0 Mg/L TOTAL HOT CYANIDE 0.36 Mg/L

SAS Rounds To .2 ± .3

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: _____ END OF TURN: _____

SWTP AIR COMPRESSOR HOUR METER READING
#1 AIR COMPRESSOR: _____ #2 AIR COMPRESSOR: _____ #3 AIR COMPRESSOR: _____
SWTP A/C DEW POINT READING : _____ (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8-14-19 TIME: 04:30 TURN: 1 SENIOR OPERATOR: JCW/JL

TOWN OF BURNS HARBOR SANITARY INFLUENT : 459130 RETURN SLUDGE: 10905884
TOTAL INFLUENT: 74763860 CMF/C INFLUENT: — CM POLYER : 11979997
HMF/C INFLUENT: — HM POLYMER : 12333160 WWII INFLUENT: 67576000
SSTP EFFLUENT : 35843200 SWTP STEAM : 33555800 SWTP HPA : —

WWII WET WELL LEVEL: 134 / 130 (137/131) SSPS#2 WET WELL LEVEL: 1.5 LPA FLOW RATE: 970
RETURN SLUDGE FLOW : — MIX LIQUOR SET TEST : 325 DISOLVED O2 : —
AMOUNT CL2 USED : 6 FULL Cl2 BOTTLES : 5 Cl2 RESIDUAL : 2.3
SLUDGE TO DIGESTORS: 0 SLUDGE TO DRYING BEDS: 0 SUPERNANTANT : 0
LPA BLOWER AMPERAGE: 48 (#2) RETURN SLUDGE SET TEST: 1000 031 TURBIDITY: 2.7

WPL HAULED BY AMROX: — WPL HAULED BY KEMIRA : — WPL GRAVITY : —
WPL ONHAND AT SWTP : 1700 WPL ONHAND AT THE CSM: —
#1 RINSE TANK pH : — #2 RINSE TANK pH : — DIW #1356 pH : 5.0

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: — DISC-FLOW PUMP FLOW RATE: — GPM
% HORSE POWER: — SLURRY TO PONDS — LOADS — WET TONS
TORQUE READING : 4.5 SLURRY TO RSB — LOADS — WET TONS
SPECIFIC GRAVITY : 1.30 % SOLIDS: 57 BLANKET: 7.3 FEET POLY FLOW —

LIME SYSTEM READINGS

LSHT#1 LEVEL: 33000 (32000) LSHT#2 LEVEL: 33000 LSHT#4 LEVEL: —
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.04 LSHT#4 SP GR: — BIN: % LEVEL 37
% OIL ON SCALPER CELL SURFACES => — WEST — EAST OIL HAULED: — HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.05		1.02
UNDERFLOW PERCENT SOLIDS :	7	11		4
EFFLUENT TURBITIES :	16.2	17.3		14.0
EFFLUENT PH's :	8.6	8.5		8.4
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 0.4 Mg/L TOTAL COLD CYANIDE 0.08 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.04	1.03
UNDERFLOW PERCENT SOLIDS :	7	9	7
EFFLUENT TURBITIES :	25.5	24.4	23.2
EFFLUENT PH's :	8.6	8.6	8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO CUT ONCE

TOTAL HOT MILL AMMONIA : 3.4 Mg/L TOTAL HOT CYANIDE ~~0.14~~ 0.28 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: — END OF TURN: —

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: — #2 AIR COMPRESSOR: — #3 AIR COMPRESSOR: —
SWTP A/C DEW POINT READING : — (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8/14/19 TIME: 2 TURN: SENIOR OPERATOR: DEAL/VARA/HIN

TOWN OF BURNS HARBOR SANITARY INFLUENT : 159188 RETURN SLUDGE: 10906047
TOTAL INFLUENT: 74790100 CMF/C INFLUENT: CM POLYER : 11982618
HMF/C INFLUENT: HM POLYMER : 12336536 WWII INFLUENT: 67630300
SSTP EFFLUENT : 35847542 SWTP STEAM : 33581700 SWTP HPA :

WWII WET WELL LEVEL: 10.5 SSPS#2 WET WELL LEVEL: 1.5 LPA FLOW RATE: 980
RETURN SLUDGE FLOW : 724 MIX LIQUOR SET TEST : 250 DISOLVED O2 :
AMOUNT CL2 USED : 11 FULL C12 BOTTLES : 5 C12 RESIDUAL : .63 2.
SLUDGE TO DIGESTORS: SLUDGE TO DRYING BEDS: SUPERNANTANT :
LPA BLOWER AMPERAGE: 48 RETURN SLUDGE SET TEST: 900 031 TURBIDITY: 2.5

WPL HAULED BY AMROX: 0 WPL HAULED BY KEMIRA : 5 WPL GRAVITY :
WPL ONHAND AT SWTP : 1700 WPL ONHAND AT THE CSM: 8500
#1 RINSE TANK pH : #2 RINSE TANK pH : DIW #1356 pH : 5.7

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: 36410 DISC-FLOW PUMP FLOW RATE: GPM
% HORSE POWER: SLURRY TO PONDS LOADS WET TONS
TORQUE READING : 4.5 SLURRY TO RSB LOADS WET TONS
SPECIFIC GRAVITY : 1.31 % SOLIDS: 5.6 BLANKET: 7.2 FEET POLY FLOW

LIME SYSTEM READINGS

LSHT#1 LEVEL: 30800 LSHT#2 LEVEL: 32800 LSHT#4 LEVEL:
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.04 LSHT#4 SP GR: BIN: % LEVEL 52
% OIL ON SCALPER CELL SURFACES => 100 WEST 100 EAST OIL HAULED: HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.03	1.02	1.02
UNDERFLOW PERCENT SOLIDS :	7	7	4	4
EFFLUENT TURBITIES :	17	17		11
EFFLUENT PH's :	8.6	8.6		8.5
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 2.49 Mg/L TOTAL COLD CYANIDE .220 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.02	1.04	1.03
UNDERFLOW PERCENT SOLIDS :	4	9	7
EFFLUENT TURBITIES :	26	27	25
EFFLUENT PH's :	8.7	8.7	8.7
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 2.99 Mg/L TOTAL HOT CYANIDE .094 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: 8.55 END OF TURN: 8.54

SWTP AIR COMPRESSOR HOUR METER READING Cyanide .143
#1 AIR COMPRESSOR: #2 AIR COMPRESSOR: #3 AIR COMPRESSOR:
SWTP A/C DEW POINT READING : (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8/14/14 TIME: TURN: 3 SENIOR OPERATOR: DEAL/VARA/COHEN/C

TOWN OF BURNS HARBOR SANITARY INFLUENT : 459241 RETURN SLUDGE: 10,906,625
TOTAL INFLUENT: 7480/510 CMF/C INFLUENT: CM POLYER : 178,353
HMF/C INFLUENT: HM POLYMER : 12337816 WWII INFLUENT: 6966/174
SSTP EFFLUENT : 358479943 SWTP STEAM : 33593589 SWTP HPA :

120
113

WWII WET WELL LEVEL: 11.0 SSPS#2 WET WELL LEVEL: 1.5 LPA FLOW RATE: 967
RETURN SLUDGE FLOW : 139 MIX LIQUOR SET TEST : 250 DISOLVED O2 :
AMOUNT CL2 USED : 7 FULL Cl2 BOTTLES : 5 Cl2 RESIDUAL : 2.5
SLUDGE TO DIGESTORS: SLUDGE TO DRYING BEDS: SUPERNANTANT :
LPA BLOWER AMPERAGE: 98 RETURN SLUDGE SET TEST: 925 031 TURBIDITY: 2.1

WPL HAULED BY AMROX: WPL HAULED BY KEMIRA : WPL GRAVITY :
WPL ONHAND AT SWTP : 1723 WPL ONHAND AT THE CSM: 10300
#1 RINSE TANK pH : #2 RINSE TANK pH : DIW #1356 pH : 5.7

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: DISC-FLOW PUMP FLOW RATE: GPM
% HORSE POWER: SLURRY TO PONDS LOADS WET TONS
TORQUE READING : 43 SLURRY TO RSB LOADS WET TONS
SPECIFIC GRAVITY : 1.31 % SOLIDS: 5.8 BLANKET: 7.3 FEET POLY FLOW

LIME SYSTEM READINGS

LSHT#1 LEVEL: 3100 LSHT#2 LEVEL: 32800 LSHT#4 LEVEL:
LSHT#1 SPGR : 1.09 LSHT#2 SPGR : 1.09 LSHT#4 SP GR: BIN: % LEVEL 50
% OIL ON SCALPER CELL SURFACES => 100 WEST 100 EAST OIL HAULED: 1 HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:				
UNDERFLOW PERCENT SOLIDS :				
EFFLUENT TURBITIES :	22	19		20
EFFLUENT PH's :	8.4	8.5		8.5
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 2.6 Mg/L TOTAL COLD CYANIDE 1.9 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:			
UNDERFLOW PERCENT SOLIDS :			
EFFLUENT TURBITIES :	27	29	23
EFFLUENT PH's :	8.7	8.7	8.7
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 3.8 Mg/L TOTAL HOT CYANIDE 3.9 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: END OF TURN:

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: #2 AIR COMPRESSOR: #3 AIR COMPRESSOR:
SWTP A/C DEW POINT READING : (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8-15-19 TIME: TURN: 1 SENIOR OPERATOR: COHEN CROSS

TOWN OF BURNS HARBOR SANITARY INFLUENT : 459,289 RETURN SLUDGE: 10 907 174
TOTAL INFLUENT: 7481269 CMF/C INFLUENT: CM POLYER : 1785044
HMF/C INFLUENT: HM POLYMER : 1233996 WWII INFLUENT: 6980265
SSTP EFFLUENT : 35852608 SWTP STEAM : 33607404 SWTP HPA :

113/106

WWII WET WELL LEVEL: 113 SSPS#2 WET WELL LEVEL: 15 LPA FLOW RATE: 957
RETURN SLUDGE FLOW : 139 MIX LIQUOR SET TEST : 250 DISOLVED O2 :
AMOUNT CL2 USED : 19 FULL Cl2 BOTTLES : 5 Cl2 RESIDUAL : 2.5
SLUDGE TO DIGESTORS: — SLUDGE TO DRYING BEDS: — SUPERNANTANT : —
#2 LPA BLOWER AMPERAGE: 48 RETURN SLUDGE SET TEST: 920 031 TURBIDITY: 4.1

WPL HAULED BY AMROX: — WPL HAULED BY KEMIRA : WPL GRAVITY : —
WPL ONHAND AT SWTP : 1700 WPL ONHAND AT THE CSM: 8500
#1 RINSE TANK pH : — #2 RINSE TANK pH : — DIW #1356 pH : 5.5

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: 6 DISC-FLOW PUMP FLOW RATE: — GPM
% HORSE POWER: — SLURRY TO PONDS — LOADS — WET TONS
TORQUE READING : 45 SLURRY TO RSB — LOADS — WET TONS
SPECIFIC GRAVITY : 1.32 % SOLIDS: 60 BLANKET: 7.8 FEET POLY FLOW —

LIME SYSTEM READINGS

LSHT#1 LEVEL: 34800 LSHT#2 LEVEL: 32900 LSHT#4 LEVEL: —
LSHT#1 SPGR : 1.04 LSHT#2 SPGR : 1.04 LSHT#4 SP GR: — BIN: % LEVEL 48
% OIL ON SCALPER CELL SURFACES => 100 WEST 100 EAST OIL HAULED: ____ HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.03	—	1.02
UNDERFLOW PERCENT SOLIDS :	7	7	—	4
EFFLUENT TURBITIES :	18	19	—	18
EFFLUENT PH's :	8.3	8.4	—	8.3
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 3.0 Mg/L TOTAL COLD CYANIDE NEG Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.05	1.02	1.03
UNDERFLOW PERCENT SOLIDS :	11	4	7
EFFLUENT TURBITIES :	26	25	21
EFFLUENT PH's :	8.6	8.6	8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 4.0 Mg/L TOTAL HOT CYANIDE 0.67 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: ____ END OF TURN: ____

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: ____ #2 AIR COMPRESSOR: ____ #3 AIR COMPRESSOR: ____
SWTP A/C DEW POINT READING : ____ (Only record when at least 1 A/C is On Lin

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OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8 15 19 TIME: TURN: 2 SENIOR OPERATOR:

TOWN OF BURNS HARBOR SANITARY INFLUENT : 459336 RETURN SLUDGE: 10907943
TOTAL INFLUENT: 74830494 CMF/C INFLUENT: CM POLYER : 11986671
HMF/C INFLUENT: HM POLYMER : 12341057 WWII INFLUENT: 60774710
SSTP EFFLUENT : 35855882 SWTP STEAM : 33628242 SWTP HPA :

100/97 #3

WWII WET WELL LEVEL: 12 SSPS#2 WET WELL LEVEL: 16 LPA FLOW RATE: 972
RETURN SLUDGE FLOW : 127 MIX LIQUOR SET TEST : 300 DISOLVED O2 :
AMOUNT CL2 USED : 9 FULL Cl2 BOTTLES : Cl2 RESIDUAL : see MG
SLUDGE TO DIGESTORS: SLUDGE TO DRYING BEDS: SUPERNANTANT :
LPA BLOWER AMPERAGE: 49 RETURN SLUDGE SET TEST: 1000 031 TURBIDITY: 4

WPL HAULED BY AMROX: 1 WPL HAULED BY KEMIRA : 3 WPL GRAVITY :
WPL ONHAND AT SWTP : 1000 WPL ONHAND AT THE CSM: 9000
#1 RINSE TANK pH : #2 RINSE TANK pH : DIW #1356 pH :

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: 50012 DISC-FLOW PUMP FLOW RATE: GPM
% HORSE POWER: SLURRY TO PONDS LOADS WET TONS
TORQUE READING : 44 SLURRY TO RSB LOADS WET TONS
SPECIFIC GRAVITY : 1.35 % SOLIDS: BLANKET: 7.9 FEET POLY FLOW

LIME SYSTEM READINGS

LSHT#1 LEVEL: 32000 LSHT#2 LEVEL: 32000 LSHT#4 LEVEL:
LSHT#1 SPGR : LSHT#2 SPGR : LSHT#4 SP GR: BIN: % LEVEL
% OIL ON SCALPER CELL SURFACES => 60 WEST 100 EAST OIL HAULED: HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.03	1.02		1.01
UNDERFLOW PERCENT SOLIDS :	7	4		2
EFFLUENT TURBITIES :	13	13		10
EFFLUENT PH's :	8.5	8.5		8.5
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 2.22 Mg/L TOTAL COLD CYANIDE .106 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.04	1.05	1.03
UNDERFLOW PERCENT SOLIDS :	9	11	4
EFFLUENT TURBITIES :	23	29	29
EFFLUENT PH's :	8.6	8.6	8.7
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 3.37 Mg/L TOTAL HOT CYANIDE .154 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: 8.51 END OF TURN: 8.41

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: #2 AIR COMPRESSOR: #3 AIR COMPRESSOR:
SWTP A/C DEW POINT READING : (Only record when at least 1 A/C is On Lin

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HM - 1.67 cut twice CM - 2.22 cut once

OPERATORS END OF TURN REPORT WORKSHEET - Revised 10/31/2012 - RMB

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DATE: 8-15-19 TIME: TURN: 3 SENIOR OPERATOR: CHEN GROSS

TOWN OF BURNS HARBOR SANITARY INFLUENT : 459393 RETURN SLUDGE: 10,968,591
TOTAL INFLUENT: 74889926 CMF/C INFLUENT: CM POLYER : 11968114
HMF/C INFLUENT: HM POLYMER : 12343730 WWII INFLUENT: 67785141
SSTP EFFLUENT : 35858660 SWTP STEAM : 33643755 SWTP HPA :

97/89 #3

WWII WET WELL LEVEL: 11.0 SSPS#2 WET WELL LEVEL: 11.5 LPA FLOW RATE: 973
RETURN SLUDGE FLOW : 149 MIX LIQUOR SET TEST : 250 DISOLVED O2 : —
AMOUNT CL2 USED : 8 FULL Cl2 BOTTLES : 5 Cl2 RESIDUAL : 3.0
SLUDGE TO DIGESTORS: SLUDGE TO DRYING BEDS: SUPERNANTANT : —
LPA BLOWER AMPERAGE: 48 RETURN SLUDGE SET TEST: 1000 031 TURBIDITY: 2.8

WPL HAULED BY AMROX: WPL HAULED BY KEMIRA : WPL GRAVITY :
WPL ONHAND AT SWTP : 1700 WPL ONHAND AT THE CSM: 15500
#1 RINSE TANK pH : #2 RINSE TANK pH : DIW #1356 pH : 5.4

THICKENER SYSTEM READINGS

CENTRIFUGE GALLONS: DISC-FLOW PUMP FLOW RATE: GPM
% HORSE POWER: SLURRY TO PONDS LOADS WET TONS
TORQUE READING : 17 SLURRY TO RSB LOADS WET TONS
SPECIFIC GRAVITY : 1.35 % SOLIDS: 6.4 BLANKET: 7.2 FEET POLY FLOW

LIME SYSTEM READINGS

LSHT#1 LEVEL: 32200 LSHT#2 LEVEL: 32800 LSHT#4 LEVEL: —
LSHT#1 SPGR : 104 LSHT#2 SPGR : 104 LSHT#4 SP GR: — BIN: % LEVEL 45
% OIL ON SCALPER CELL SURFACES => 100 WEST 100 EAST OIL HAULED: — HOPPERS

COLD MILL F/C READINGS

	#1 CMF/C	#2 CMF/C	#3 CMF/C	#6 CMF/C
DRIVE AMPERAGE :				
UNDERFLOW SPECIFIC GRAVITY:	1.05	1.03		1.03
UNDERFLOW PERCENT SOLIDS :	11	7		7
EFFLUENT TURBITIES :	20	17		13
EFFLUENT PH's :	8.6	8.7		8.6
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO	YES/NO

TOTAL COLD MILL AMMONIA : 1.8 Mg/L TOTAL COLD CYANIDE .11 Mg/L

HOT MILL F/C READINGS

	#1 HMF/C	#2 HMF/C	#3 HMF/C
DRIVE AMPERAGE :			
UNDERFLOW SPECIFIC GRAVITY:	1.05	1.04	1.04
UNDERFLOW PERCENT SOLIDS :	11	9	9
EFFLUENT TURBITIES :	20	21	17
EFFLUENT PH's :	8.9	8.9	8.9
OIL SKIMMER UNITS WORKING :	YES/NO	YES/NO	YES/NO

TOTAL HOT MILL AMMONIA : 1.4 Mg/L TOTAL HOT CYANIDE .06 Mg/L

TOTAL EFFLUENT JUNCTION BOX pH REPORTING (7-3 TURN, MON. THRU FRI. ONLY!!!)
JUNCTION BOX pH READING AT THE START OF THE 7-3 TURN: END OF TURN:

SWTP AIR COMPRESSOR HOUR METER READING

#1 AIR COMPRESSOR: #2 AIR COMPRESSOR: #3 AIR COMPRESSOR:
SWTP A/C DEW POINT READING : (Only record when at least 1 A/C is On Lin

Fileref: \\Bhwfs01\PCSAS\PSUSMenuSystem\Data\WTdata(WTOCHEAT)

Exhibit 9

Unit of Measure **mg/L** unless otherwise noted.

Date	Reporting Limits						LAB
	DO	NH3	Free-CN	Tot-CN	pH(s.u.)	Temp(F)	
8/16/2019	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/17/2019	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/18/2019	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/19/2019	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/20/2019	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/21/2019	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/22/2019	Not Provided in ALS EDD						ALS
8/23/2019	0	0.0098	0.002	0.002	0	0	ALS
	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/24/2019	0	0.0098	0.002	0.002	0	0	ALS
	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/25/2019	0	0.0098	0.002	0.002	0	0	ALS
	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/26/2019	0	0.0098	0.002	0.002	0	0	ALS
8/27/2019	0	0.0098	0.002	0.002	0	0	ALS
8/28/2019	0	0.0098	0.002	0.002	0	0	ALS
8/29/2019	0	0.0098	0.002	0.002	0	0	ALS
8/30/2019	0	0.0098	0.0011	0.0012	0	0	ALS
9/1/2019	0	0.0098	0.0011	0.0017	0	0	ALS
9/2/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/3/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/4/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/5/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/6/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/7/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/8/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/9/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/10/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/11/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/12/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/13/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/14/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/15/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/16/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/17/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/18/2019	0	0.0098	0.0011	0.002	0	0	ALS

No Sample	Not Sampled due to Hazardous Conditions
	Data adjusted from re-anlyization. Previous result in respective cell's comment

Microbac Stated that all stream and shoreline analysis reported met method QA/QC requirements
ALS Stated that all stream and shoreline analysis reported met method QA/QC requirements

Date	Dissolved Oxygen																
	#000	Outfall001	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	MSWB	PME
8/16/2019	8.00	6.60	6.90	7.00	7.10	7.40	7.20	7.20	7.00	6.40	6.40	6.50	6.60	6.80	8.50		
8/17/2019	7.70	6.60	6.60	6.60	6.60	6.50	6.4	6.30	6.30	6.30	6.00	6.30	6.50	6.40	6.60		
8/18/2019	7.1	6.3	6.5	6.8	6.7	6.6	6.5	6.4	6.8	6.0	6.2	6.4	6.1	6.2	7.3		
8/19/2019	7.7	8.6	7.6	8.5	7.4	7.0	7.2	6.6	6.3	5.9	5.8	8.3	6.1	6.2	7.1		
8/20/2019	7.5	6.4	6.5	6.4	6.5	6.4	6.2	6.0	5.2	5.4	5.3	5.2	5.5	4.3	7.1		
8/21/2019	7.8	7.1	7.2	7.2	7.1	7.0	6.8	6.7	5.9	5.7	6.1	5.9	6.0	5.4	7.8		
8/22/2019	6.70	6.40	6.50	6.30	6.10	5.80	6.00	6.00	5.30	5.50	5.40	5.60	5.40	6.30	6.30		
8/23/2019	6.70	6.50	7.10	6.20	6.80	6.50	6.70	6.60	6.00	6.20	5.30	5.80	6.20	6.70	No Sample		
	6.7	6.5	7.1	6.2	6.8	6.5	6.7	6.6	6.0	6.2	5.3	5.8	6.2	6.7	No Sample		
8/24/2019	6.60	6.70	6.50	6.50	6.90	6.00	5.40	5.60	5.40	6.10	5.20	5.40	5.80	5.50	No Sample	7.90	7.70
	6.6	6.7	6.5	6.5	6.9	6.0	5.4	5.6	5.4	6.1	5.2	5.4	5.8	5.5	No Sample	7.9	7.7
8/25/2019	6.70	6.40	7.10	6.40	6.60	6.60	6.30	6.40	5.70	5.90	5.50	6.00	5.90	6.00	6.90	8.30	5.90
	6.7	6.4	7.1	6.4	6.6	6.6	6.3	6.4	5.7	5.9	5.5	6.0	5.9	6.0	6.9	8.3	5.9
8/26/2019	7.30	7.30	7.20	7.30	7.20	6.70	6.50	6.80	7.00	6.70	6.30	6.40	6.00	7.60	8.50	8.20	6.90
8/27/2019	6.80	7.10	6.50	6.50	6.60	6.50	7.00	6.80	7.30	6.10	5.80	6.10	5.70	5.60	6.90	8.10	7.40
8/28/2019	6.80	7.10	7.70	7.90	8.00	7.90	7.20	7.90	6.80	5.60	5.90	6.40	7.20	7.20	7.00	7.10	7.70
8/29/2019	6.10	6.60	7.80	6.50	8.30	8.00	7.90	8.10	7.90	8.10	7.40	6.50	7.30	7.10	7.00	8.20	8.00
8/30/2019	6.60	6.30	6.10	5.60	5.20	5.30	5.30	5.60	5.80	5.40	6.00	6.80	6.40	6.60	6.80	5.10	6.00
9/1/2019	6.90	7.10	6.90	6.60	7.00	7.00	8.30	8.90	7.50	8.00	7.90	8.10	7.60	7.90	7.70	8.30	7.10
9/2/2019	7.30	7.00	7.10	7.30	7.20	7.90	7.20	7.10	7.20	7.60	7.90	7.90	7.50	7.70	7.00	8.60	7.10
9/3/2019	7.20	6.90	6.60	7.80	7.10	7.40	6.70	7.20	7.30	6.80	7.80	6.80	7.20	7.40	7.60	7.50	6.90
9/4/2019	8.00	7.40	7.10	6.80	6.90	7.00	6.30	7.30	7.40	7.10	7.40	7.80	7.40	7.10	6.90	6.70	6.40
9/5/2019	8.00	7.10	6.90	7.40	7.60	7.10	6.90	7.10	7.00	7.20	7.30	7.00	6.90	7.10	7.10	6.80	6.90
9/6/2019	7.10	7.10	7.00	7.10	7.30	7.00	7.20	6.90	7.00	7.10	7.30	7.10	6.90	7.10	6.80	7.40	7.10
9/7/2019	8.00	8.10	8.20	8.40	7.60	7.50	7.80	7.80	8.50	6.60	8.10	7.70	6.50	7.00	6.00	8.20	7.40
9/8/2019	7.80	8.80	8.50	8.10	9.00	8.70	8.50	8.60	8.20	7.70	7.80	8.30	8.10	8.50	8.30	8.50	7.80
9/9/2019	7.20	9.10	8.30	9.30	9.10	8.90	8.50	7.90	8.20	7.70	7.20	8.30	8.30	8.00	8.80	7.80	7.50
9/10/2019	11.8	7.30	8.90	7.30	6.90	7.20	6.60	6.40	6.30	7.80	6.70	7.50	7.60	8.10	7.80	7.10	7.20
9/11/2019	9.20	7.80	8.90	8.60	7.40	8.40	7.60	8.50	7.80	6.00	6.90	7.20	8.00	6.90	7.00	9.30	7.30
9/12/2019	7.90	9.10	9.30	9.10	9.00	8.70	9.10	8.90	8.60	8.90	8.20	7.80	7.60	8.90	7.90	10.8	9.20
9/13/2019	8.70	8.50	8.20	8.30	6.70	6.90	8.80	7.80	7.60	6.30	7.10	7.60	7.90	8.10	8.40	9.70	7.50
9/14/2019	7.60	7.60	7.20	6.90	7.70	7.80	8.30	8.10	7.70	7.80	8.20	7.10	9.20	7.90	7.90	8.60	7.90
9/15/2019	8.30	7.90	7.80	8.20	9.20	7.60	7.70	8.60	9.00	8.20	7.90	7.90	8.20	8.80	8.70	8.80	8.30
9/16/2019	8.40	9.70	8.40	8.40	8.20	7.20	6.60	7.10	7.20	7.30	8.10	7.70	7.40	8.30	8.10	8.90	7.50
9/17/2019	8.20	8.90	8.10	8.10	7.80	8.70	7.90	7.90	8.00	8.70	8.00	7.20	8.50	8.00	7.60	8.70	8.80
9/18/2019	8.20	7.70	7.20	8.10	8.10	8.20	8.10	6.70	7.90	6.70	8.00	7.20	8.50	8.00	7.60	8.20	7.70

Date	Nitrogen, Ammonia (As N)																
	#000	Outfall001	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	MSWB	PME
8/16/2019	ND	0.56	0.43	0.41	0.47	0.52	0.41	0.43	0.47	0.61	0.65	0.59	0.58	0.45	0.12		
8/17/2019	ND	0.40	0.36	0.37	0.30	0.39	0.33	0.37	0.42	0.37	0.36	0.38	0.31	0.31	0.33		
8/18/2019	0.14	0.46	0.34	0.28	0.25	0.28	0.23	0.26	0.19	0.26	0.22	0.24	0.28	0.33	0.20		
8/19/2019	0.21	0.35	0.27	0.26	0.28	0.28	0.27	0.31	0.25	0.34	0.26	0.30	0.28	0.25	0.20		
8/20/2019	0.17	0.36	0.25	0.28	0.27	0.21	0.25	0.24	0.23	0.28	0.24	0.25	0.21	0.18	0.13		
8/21/2019	ND	0.30	0.27	0.21	0.20	0.23	0.25	0.25	0.25	0.23	0.22	0.28	0.28	0.20	ND		
8/22/2019	ND	0.241	0.168	0.147	0.176	0.173	0.186	0.189	0.189	0.213	0.178	0.176	0.108	0.0482	0.0754		
8/23/2019	0.0394	0.265	0.131	0.134	0.115	0.169	0.108	0.0874	0.100	0.109	0.123	0.134	0.0967	0.0566	No Sample		
	0.26	0.46	0.42	0.33	0.29	0.30	0.32	0.35	0.31	0.36	0.33	0.38	1.7	0.24	No Sample		
8/24/2019	0.0523	0.191	0.197	0.136	0.126	0.143	0.126	0.161	0.149	0.148	0.116	0.123	0.121	0.0797	No Sample	0.0346	0.0695
	ND	0.30	0.18	0.17	0.20	0.20	0.24	0.23	0.28	0.39	0.26	0.27	0.16	0.17	No Sample	ND	0.16
8/25/2019	ND	0.258	0.215	0.199	0.171	0.175	0.173	0.159	0.133	0.130	0.127	0.119	0.114	0.0821	0.0408	ND	0.0860
	ND	0.26	0.19	0.16	0.16	0.16	0.21	0.20	0.18	0.16	0.16	0.21	0.12	ND	ND	ND	0.11
8/26/2019	ND	0.303	0.223	0.213	0.166	0.161	0.166	0.162	0.0985	0.0701	0.0966	0.0775	0.0921	0.0640	ND	ND	0.0810
8/27/2019	ND	0.300	0.226	0.181	0.187	0.190	0.173	0.167	0.120	0.113	0.124	0.121	0.130	0.124	0.0467	0.0726	0.0837
8/28/2019	0.06	0.25	0.16	0.11	0.15	0.11	0.09	0.10	0.05	0.06	0.05	0.05	ND	ND	ND	0.11	0.14
8/29/2019	ND	0.48	0.392	0.295	0.268	0.294	0.256	0.207	0.165	0.140	0.106	0.130	0.0545	0.0753	0.0443	0.0916	0.0859
8/30/2019	ND	0.35	0.270	0.222	0.213	0.200	0.194	0.188	0.186	0.128	0.113	0.0962	0.0663	0.0631	0.0703	0.120	0.106
9/1/2019	ND	0.194	0.280	0.173	0.138	0.119	0.172	0.130	0.137	0.120	0.149	0.132	0.134	0.0380	0.141	ND	0.129
9/2/2019	0.0484	0.230	0.152	0.109	0.109	0.109	0.188	0.170	0.117	0.105	0.0502	0.0534	0.120	0.0978	ND	0.0650	0.210
9/3/2019	0.102	0.0419	0.134	0.141	0.141	0.159	0.171	0.165	0.164	0.159	0.148	0.151	0.148	0.118	0.0411	0.0913	0.157
9/4/2019	0.0556	0.262	0.190	0.176	0.160	0.165	0.162	0.133	0.141	0.129	0.140	0.128	0.0856	0.101	0.124	0.0890	0.162
9/5/2019	ND	0.340	0.328	0.286	0.227	0.233	0.234	0.224	0.136	0.199	0.202	0.207	0.115	0.126	0.105	0.116	0.172
9/6/2019	ND	0.230	0.247	0.193	0.188	0.185	0.177	0.180	0.164	0.145	0.139	0.122	0.127	0.0849	0.102	0.0744	0.148
9/7/2019	ND	0.250	0.188	0.157	0.151	0.163	0.168	0.158	0.168	0.153	0.140	0.145	0.105	0.103	0.0966	0.0562	0.162
9/8/2019	0.0666	0.242	0.155	0.0988	0.0948	0.103	0.146	0.175	0.148	0.125	0.144	0.116	0.0534	0.0875	0.0876	0.0881	0.123
9/9/2019	ND	0.280	0.242	0.199	0.194	0.193	0.194	0.215	0.193	0.166	0.188	0.142	0.125	0.123	0.105	0.0519	0.131
9/10/2019	ND	0.247	0.178	0.154	0.198	0.166	0.162	0.170	0.179	0.174	0.168	0.143	0.0946	0.0523	0.0592	ND	0.127
9/11/2019	ND	0.243	0.183	0.158	0.153	0.134	0.137	0.134	0.0976	0.0908	0.108	0.0651	0.0667	0.0587	0.0634	ND	0.0825
9/12/2019	ND	0.279	0.249	0.180	0.186	0.199	0.134	0.140	0.115	0.121	0.105	0.0936	0.0502	0.0446	0.0597	ND	0.0633
9/13/2019	ND	0.548	0.471	0.377	0.292	0.331	0.258	0.289	0.211	0.193	0.151	0.107	0.110	0.0975	0.116	ND	0.105
9/14/2019	ND	0.247	0.237	0.184	0.233	0.225	0.230	0.204	0.162	0.199	0.159	0.106	0.171	0.181	ND	0.154	0.339
9/15/2019	ND	0.324	0.253	0.215	0.188	0.196	0.191	0.204	0.194	0.186	0.173	0.178	0.147	0.121	0.120	0.0532	0.129
9/16/2019	ND	0.234	0.173	0.126	0.135	0.173	0.171	0.179	0.166	0.166	0.155	0.139	0.105	0.118	0.120	ND	0.112
9/17/2019	0.0371	0.296	0.353	0.276	0.277	0.274	0.210	0.192	0.0852	0.0965	0.0980	0.0784	0.0864	0.0607	0.0663	ND	0.0775
9/18/2019	ND	0.360	0.296	0.272	0.224	0.249	0.248	0.238	0.194	0.234	0.206	0.228	0.0976	0.111	0.112	0.0364	0.136

Date	Free Cyanide																
	#000	Outfall001	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	MSWB	PME
8/16/2019	ND	0.018	0.016	0.016	0.017	0.016	0.016	0.022	0.024	0.032	0.040	0.050	0.046	0.040	ND		
8/17/2019	ND	ND	ND	ND	ND	ND	ND	0.0075	0.0082	0.010	0.012	0.015	0.016	0.018	0.018		
8/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/19/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/20/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/21/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.011	ND	ND	ND	ND		
8/22/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/23/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No Sample		
	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No Sample		
8/24/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No Sample	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No Sample	ND	ND
8/25/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/26/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/27/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/28/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/29/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/30/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/1/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/2/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/3/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/4/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/5/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/7/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/8/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/9/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/10/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/11/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/12/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/13/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/14/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/15/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/16/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/17/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Date	Total Cyanide																
	#000	Outfall001	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	MSWB	PME
8/16/2019	ND	0.0190	0.0160	0.0160	0.0180	0.0180	0.0180	0.0230	0.0260	0.0350	0.0380	0.0500	0.0440	0.0420	0.0079		
8/17/2019	ND	0.0058	ND	0.0056	ND	ND	ND	0.0073	0.0094	0.0120	0.0120	0.0160	0.0170	0.0180	0.0200		
8/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0052	0.0058	ND	ND		
8/19/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0052	ND	ND		
8/20/2019	ND	ND	ND	0.0050	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/21/2019	ND	0.0050	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/22/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/23/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No Sample		
	ND	ND	0.0054	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No Sample		
8/24/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No Sample	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	No Sample	ND	ND
8/25/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	0.0070	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/26/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/27/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/28/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/29/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/30/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/1/2019	ND	ND	ND	0.0054	0.0052	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/2/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/3/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/4/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/5/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/6/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/7/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/8/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/9/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/10/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/11/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/12/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/13/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/14/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/15/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/16/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/17/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Date	pH (s.u.)																
	#000	Outfall001	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	MSWB	PME
8/16/2019	7.64	7.63	7.62	7.66	7.63	7.64	7.59	7.59	7.52	7.37	7.29	7.35	7.32	7.40	7.71		
8/17/2019	7.91	7.79	7.76	7.85	7.80	7.83	7.77	7.71	7.56	7.57	7.53	7.51	7.43	7.36	7.39		
8/18/2019	7.89	7.76	7.79	7.86	7.89	7.89	7.78	7.77	7.74	7.69	7.69	7.67	7.68	7.77	7.68		
8/19/2019	7.4	7.5	7.5	7.41	7.4	7.34	7.34	7.36	7.25	7.16	7.16	7.17	7.17	7.12	7.2		
8/20/2019	7.64	6.72	7.66	7.69	7.68	7.68	7.71	7.61	7.50	7.24	7.30	7.35	7.28	7.43	7.70		
8/21/2019	7.77	7.83	7.92	7.82	7.81	7.81	7.73	7.64	7.68	7.63	7.73	7.71	7.67	7.69	8.05		
8/22/2019	7.60	7.81	7.81	7.86	7.85	7.76	7.75	7.72	7.75	7.28	7.44	7.52	7.55	7.70	7.69		
8/23/2019	7.40	7.80	7.75	7.82	7.78	7.70	7.72	7.68	7.52	7.72	7.71	7.52	7.47	7.32	No Sample		
	7.4	7.80	7.75	7.82	7.78	7.70	7.72	7.68	7.52	7.72	7.71	7.52	7.47	7.32	No Sample		
8/24/2019	7.60	7.81	7.81	7.75	7.85	7.78	7.77	7.64	7.56	7.80	7.52	7.70	7.66	7.71	No Sample	7.99	7.67
	7.60	7.81	7.81	7.75	7.85	7.78	7.77	7.64	7.56	7.80	7.52	7.70	7.66	7.71	No Sample	7.99	7.67
8/25/2019	7.77	7.79	7.73	7.76	7.76	7.72	7.73	7.71	7.51	7.28	7.32	7.35	7.44	7.47	7.73	7.96	7.32
	7.77	7.79	7.73	7.76	7.76	7.72	7.73	7.71	7.51	7.28	7.32	7.35	7.44	7.47	7.73	7.96	7.32
8/26/2019	7.63	7.48	7.36	7.39	7.52	7.52	7.51	7.45	7.20	7.56	7.57	7.56	7.50	7.66	7.77	7.71	7.40
8/27/2019	7.71	7.64	7.65	7.71	7.70	7.69	7.68	7.66	7.52	7.64	7.63	7.76	7.70	7.74	7.87	7.75	7.63
8/28/2019	7.73	7.78	7.73	7.79	7.74	7.78	7.74	7.77	7.51	7.73	7.73	7.74	7.85	7.78	7.77	7.72	7.69
8/29/2019	7.76	7.44	7.30	7.58	7.54	7.56	7.53	7.20	7.42	7.57	7.60	7.81	7.73	7.98	7.79	7.40	7.38
8/30/2019	7.87	7.81	7.83	7.77	7.76	7.68	7.66	7.60	7.56	7.75	7.79	7.81	7.89	7.76	7.91	7.61	7.74
9/1/2019	7.78	7.87	7.72	7.83	7.90	7.87	7.84	7.80	7.69	7.80	7.76	7.79	7.82	7.88	7.78	7.96	7.80
9/2/2019	7.65	7.78	7.89	7.76	7.85	7.96	7.82	7.85	7.66	7.78	7.81	7.85	7.82	7.85	7.96	7.89	7.71
9/3/2019	7.83	7.62	7.89	7.78	7.65	7.90	7.87	7.79	7.69	7.74	7.75	7.73	7.69	7.84	7.53	7.80	7.53
9/4/2019	7.76	7.57	7.62	7.70	7.63	7.59	7.58	7.54	7.50	7.59	7.54	7.63	7.73	7.74	7.61	7.58	7.43
9/5/2019	7.83	7.74	7.68	7.75	7.82	7.71	7.71	7.67	7.76	7.63	7.68	7.73	7.76	7.73	7.77	7.65	7.64
9/6/2019	7.72	7.70	7.73	7.76	7.81	7.83	7.80	7.76	7.75	7.71	7.70	7.72	7.76	7.76	7.58	7.80	7.62
9/7/2019	7.87	7.85	7.82	7.87	7.81	7.83	ND	7.80	7.73	7.74	7.76	7.79	7.77	7.77	7.63	7.93	7.75
9/8/2019	7.69	7.63	7.64	7.77	7.73	7.70	7.67	7.59	7.63	7.34	7.26	7.37	7.52	7.14	7.35	7.65	7.64
9/9/2019	7.75	7.75	7.76	7.69	7.68	7.67	7.63	7.62	7.49	7.56	7.63	7.61	7.61	7.66	7.69	7.55	7.43
9/10/2019	7.75	7.64	7.70	7.71	7.63	7.67	7.69	7.61	7.59	7.62	7.64	7.67	7.61	7.79	7.83	7.61	7.22
9/11/2019	7.77	7.87	7.76	7.81	7.84	7.76	7.78	7.80	7.63	7.71	7.76	7.76	7.78	7.82	7.88	8.10	7.86
9/12/2019	7.84	7.71	7.69	7.67	7.60	7.53	7.66	7.69	7.48	7.74	7.76	7.80	7.84	7.86	7.75	7.81	7.68
9/13/2019	7.69	7.74	7.72	7.71	7.70	7.72	7.66	7.68	7.63	7.76	7.67	7.70	7.73	7.75	7.80	8.17	7.72
9/14/2019	7.81	7.96	7.92	7.91	7.88	7.84	7.81	7.82	7.66	7.67	7.73	7.79	7.76	7.68	8.16	7.75	7.99
9/15/2019	8.00	7.91	7.86	7.82	7.81	7.79	7.79	7.73	7.67	7.64	7.64	7.59	7.64	7.70	7.70	7.85	7.56
9/16/2019	7.81	8.00	7.94	7.89	7.87	7.86	7.83	7.83	7.78	7.66	7.69	7.63	7.69	7.72	7.71	7.79	7.67
9/17/2019	7.60	7.89	7.64	7.38	7.33	7.63	7.62	7.61	7.27	7.56	7.51	7.53	7.50	7.60	7.71	7.84	7.43
9/18/2019	7.60	7.60	7.65	7.67	7.63	7.63	7.61	7.57	7.38	7.56	7.51	7.53	7.50	7.60	7.71	7.71	7.36

Date	Temperature (F)																
	#000	Outfall001	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	MSWB	PME
8/16/2019	70.9	84.5	82.5	81.2	81.2	80.8	80.4	79.2	79	78.1	78.1	78.4	78.7	79.2	76.2		
8/17/2019	69.7	82.5	79.4	79.2	78	77.9	78.1	78.2	78.1	78.2	77.7	77.6	77.6	77.8	76.9		
8/18/2019	68.4	82.6	78.7	77.7	77.2	76.8	76.7	77.6	77.9	77.8	77.7	77.5	77.7	77.1	75.9		
8/19/2019	77.5	84.4	80.1	79.5	79.0	81.3	81.3	82.6	81.0	79.9	79.5	79.9	80.4	80.1	79.3		
8/20/2019	70.9	80.8	79.0	78.6	77.5	77.7	77.7	77.7	77.5	78.4	78.4	78.8	79.3	79.5	76.8		
8/21/2019	72.3	82.0	79.7	80.1	77.7	77.7	79.9	78.3	78.3	76.6	77.4	76.8	76.8	78.1	76.3		
8/22/2019	73.2	82.6	78.8	78.1	78.6	77.9	78.3	78.3	78.3	77.5	77.4	76.8	79.3	77.7	76.3		
8/23/2019	70.2	80.1	78.3	77.5	77.4	76.6	76.5	77.0	76.5	77.7	77.2	77.9	79.3	78.1	No Sample		
	70.2	80.1	78.3	77.5	77.4	76.6	76.5	77.0	76.5	77.7	77.2	77.9	79.3	78.1	No Sample		
8/24/2019	77.0	76.6	74.8	73.2	73.0	72.9	72.3	73.6	73.9	72.0	74.7	73.9	74.1	75.2	No Sample	75.38	77.18
	77.0	76.6	74.8	73.2	73.0	72.9	72.3	73.6	73.9	72.0	74.7	73.9	74.1	75.2	No Sample	75.38	77.18
8/25/2019	70.3	75.9	73.9	72.9	72.3	73.0	72.7	72.3	74.1	74.1	74.5	74.7	74.3	74.8	72.7	75.56	74.66
	70.3	75.9	73.9	72.9	72.3	73.0	72.7	72.3	74.1	74.1	74.5	74.7	74.3	74.8	72.7	75.56	74.66
8/26/2019	68.4	72.1	73.0	71.8	70.5	71.1	71.2	72.1	73.0	73.9	74.1	73.8	73.2	73.0	63.9	74.48	73.76
8/27/2019	71.8	72.3	71.4	70.9	70.9	70.7	70.5	71.1	71.8	77.4	75.4	75.6	75.6	75.2	70.3	72.68	72.50
8/28/2019	71.2	72.0	70.7	70.0	69.6	68.4	69.3	69.3	70.9	74.8	73.9	73.4	72.3	70.2	69.1	70.70	71.96
8/29/2019	69.9	73.8	71.8	68.4	70.3	71.6	71.1	71.2	70.0	70.5	70.2	71.2	73.8	70.9	67.8	69.44	70.88
8/30/2019	68.7	81.7	80.1	77.9	78.3	77.4	77.2	75.0	76.5	75.4	75.4	75.7	76.3	70.9	70.0	75.90	76.30
9/1/2019	67.8	71.8	71.8	70.0	69.6	68.7	69.1	70.3	70.9	72.5	73.0	72.7	71.4	72.3	70.0	71.78	72.14
9/2/2019	69.4	72.0	70.5	70.7	69.3	69.6	69.6	69.4	71.1	72.0	72.3	70.3	72.7	73.2	69.3	72.68	72.14
9/3/2019	65.3	70.2	68.9	69.6	70.2	69.6	69.3	71.8	72.7	72.1	72.7	72.5	73.2	69.6	65.3	73.76	73.94
9/4/2019	66.2	72.5	71.4	71.1	71.2	71.8	71.6	72.0	70.9	72.3	72.3	71.1	72.1	72.1	70.0	73.04	73.58
9/5/2019	69.4	73.2	73.0	72.1	70.3	70.5	70.3	70.3	71.2	70.2	70.2	70.3	72.3	70.9	70.0	71.06	70.52
9/6/2019	69.1	72.1	72.1	72.0	72.1	71.6	71.4	71.2	71.6	70.5	69.8	70.3	70.5	70.7	70.3	72.14	71.78
9/7/2019	67.6	76.1	74.8	72.1	71.6	71.2	71.4	70.9	72.0	74.8	73.8	74.7	76.8	74.5	72.7	72.86	71.24
9/8/2019	64.6	73.9	73.2	70.0	70.0	69.3	69.4	70.9	71.2	70.3	70.3	70.7	74.8	70.2	70.0	70.52	70.52
9/9/2019	68.2	72.9	71.1	70.2	70.3	70.2	69.8	69.8	70.9	69.8	71.2	70.0	72.7	70.9	69.8	71.06	71.42
9/10/2019	74.1	72.7	70.3	71.1	71.4	71.1	71.2	71.6	71.4	72.7	71.6	71.8	72.1	67.3	66.6	71.78	71.24
9/11/2019	73.6	73.6	73.8	72.7	74.8	73.9	73.6	73.4	75.4	73.6	74.7	73.9	78.4	74.5	74.3	76.10	78.08
9/12/2019	72.1	76.5	73.2	72.9	73.6	72.1	71.4	72.3	73.8	73.4	74.8	72.7	74.3	74.8	71.8	73.04	73.40
9/13/2019	72.7	76.5	76.3	76.1	75.9	76.3	75.2	75.4	75.6	75.9	76.1	74.5	75.4	74.7	73.6	76.10	75.56
9/14/2019	66.0	75.4	76.1	76.3	75.6	74.7	74.5	73.8	74.8	75.9	74.7	78.4	75.0	73.6	75.0	76.28	75.74
9/15/2019	67.5	75.6	74.1	73.0	72.0	72.0	71.6	71.4	73.2	73.0	73.0	73.4	73.6	73.0	72.9	72.14	73.22
9/16/2019	70.0	68.5	66.2	66.0	70.2	71.2	72.0	72.7	72.7	72.9	72.9	72.5	74.5	72.1	72.3	72.68	73.58
9/17/2019	66.6	69.4	71.2	75.0	77.0	77.0	70.2	70.0	70.3	71.8	71.2	71.1	70.9	70.9	80.4	77.00	74.12
9/18/2019	66.6	75.6	74.7	74.1	74.7	73.9	71.8	73.2	73.2	71.8	71.2	71.1	70.9	70.9	69.6	74.12	73.04

Exhibit 10

Unit of Measure **mg/L** unless otherwise noted.

Date	Reporting Limits						LAB
	DO	NH3	Free-CN	Tot-CN	pH(s.u.)	Temp(F)	
8/19/2019	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/20/2019	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/21/2019	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/22/2019	Not Provided in ALS EDD						ALS
8/23/2019	0	0.0098	0.002	0.002	0	0	ALS
	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/24/2019	0	0.0098	0.002	0.002	0	0	ALS
	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/25/2019	0	0.0098	0.002	0.002	0	0	ALS
	0.20	0.10	0.0062	0.0050	0.1	0	Microbac
8/26/2019	0	0.0098	0.002	0.002	0	0	ALS
8/27/2019	0	0.0098	0.002	0.002	0	0	ALS
8/28/2019	0	0.0098	0.002	0.002	0	0	ALS
8/29/2019	0	0.0098	0.002	0.002	0	0	ALS
8/30/2019	0	0.0098	0.0011	0.0012	0	0	ALS
9/1/2019	0	0.0098	0.0011	0.0017	0	0	ALS
9/2/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/3/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/4/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/5/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/6/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/7/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/8/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/9/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/10/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/11/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/12/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/13/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/14/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/15/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/16/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/17/2019	0	0.0098	0.0011	0.002	0	0	ALS
9/18/2019	0	0.0098	0.0011	0.002	0	0	ALS

Data adjusted from re-anlyization. Previous result in respective cell's comment

Microbac Stated that all stream and shoreline analysis reported met method QA/QC requirements
ALS Stated that all stream and shoreline analysis reported met method QA/QC requirements

Date	Dissolved Oxygen							
	SL 1	SL 2	SL 3	SL 4	SL 5	SL 6	SL 7	SL 8
8/19/2019	10	8.5	8.7	8.4	8.6	8.3	8.0	7.9
8/20/2019	8.2	8.2	8.6	8.4	8.6	8.6	8.6	8.5
8/21/2019	7.8	8.3	8.4	8.4	8.4	8.4	8.5	8.4
8/22/2019	7.40	7.60	7.30	7.00	7.20	6.80	7.20	6.80
8/23/2019	7.90	7.00	7.00	7.90	7.30	7.00	6.90	7.20
	7.9	7.0	7.0	7.9	7.3	7.0	6.9	7.2
8/24/2019	7.00	7.80	7.20	7.00	6.90	7.00	7.60	7.30
	7.0	7.8	7.2	7.0	6.9	7.0	7.6	7.3
8/25/2019	8.00	8.20	7.70	8.00	7.60	6.70	6.80	7.10
	8.0	8.2	7.7	8.0	7.6	6.7	6.8	7.1
8/26/2019	9.10	8.20	7.90	7.20	7.40	8.70	8.40	7.60
8/27/2019	6.50	6.60	7.60	7.30	7.20	7.70	7.80	6.90
8/28/2019	7.80	6.90	6.30	6.10	7.30	7.40	6.80	6.20
8/29/2019	6.90	7.10	6.40	6.10	5.60	6.50	5.20	5.50
8/30/2019	6.70	6.90	7.60	7.30	8.00	7.90	6.20	7.50
9/1/2019	8.40	7.90	8.50	7.80	6.90	7.10	6.80	7.30
9/2/2019	7.20	8.00	8.20	7.90	7.80	7.60	8.00	7.90
9/3/2019	6.80	7.10	8.30	7.90	8.10	7.70	7.60	6.90
9/4/2019	7.30	7.10	6.90	7.90	7.30	7.80	7.50	8.00
9/5/2019	7.30	7.70	7.20	7.50	7.30	7.10	7.20	6.80
9/6/2019	6.90	7.10	6.70	7.30	6.60	7.00	8.10	7.80
9/7/2019	7.00	7.50	8.20	7.80	8.00	8.80	7.90	8.20
9/8/2019	8.50	8.60	9.20	8.10	8.60	8.50	8.30	7.90
9/9/2019	7.00	7.10	7.60	7.40	7.80	7.30	7.70	7.60
9/10/2019	8.30	8.10	8.50	9.90	8.20	7.50	9.40	8.20
9/11/2019	8.50	8.40	8.80	8.30	7.30	8.10	8.40	8.70
9/12/2019	7.80	7.50	8.60	8.20	7.70	7.10	8.20	7.40
9/13/2019	7.80	7.40	7.60	7.40	7.10	8.50	9.00	8.10
9/14/2019	7.20	7.50	6.80	7.30	9.10	7.80	7.30	7.60
9/15/2019	8.70	8.60	8.20	8.20	8.30	8.30	9.10	8.20
9/16/2019	8.20	8.30	9.70	8.50	8.60	8.80	8.60	8.30
9/17/2019	8.30	8.90	8.90	8.70	9.20	8.30	8.80	8.90
9/18/2019	8.30	8.90	8.90	8.70	9.20	8.30	8.80	8.90

Date	Nitrogen, Ammonia (As N)							
	SL 1	SL 2	SL 3	SL 4	SL 5	SL 6	SL 7	SL 8
8/19/2019	2.3	0.71	0.50	0.27	0.23	0.19	0.13	0.12
8/20/2019	0.18	0.13	0.11	ND	0.11	0.15	0.11	ND
8/21/2019	0.11	ND	ND	ND	ND	ND	ND	ND
8/22/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/23/2019	ND	ND	ND	ND	ND	ND	ND	ND
	0.17	0.26	0.23	0.22	0.19	0.11	ND	0.12
8/24/2019	ND	ND	ND	ND	0.0336	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	0.10
8/25/2019	ND	ND	0.0546	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND
8/26/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/27/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/28/2019	ND	ND	ND	ND	0.05	0.36	ND	0.06
8/29/2019	0.0731	ND	ND	ND	ND	ND	ND	ND
8/30/2019	0.0628	0.0623	0.0474	0.0413	0.0438	ND	ND	ND
9/1/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/2/2019	ND	ND	ND	ND	ND	0.202	ND	ND
9/3/2019	0.103	0.101	ND	ND	ND	0.138	ND	ND
9/4/2019	0.0741	0.0819	0.0558	0.0437	0.117	0.0508	0.0676	0.0599
9/5/2019	0.0347	ND	ND	ND	ND	ND	ND	ND
9/6/2019	0.0716	ND	ND	ND	ND	ND	ND	ND
9/7/2019	0.0538	0.0599	ND	ND	ND	ND	ND	0.0322
9/8/2019	ND	ND	ND	0.0344	ND	ND	ND	ND
9/9/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/10/2019	ND	ND	0.0357	ND	ND	ND	ND	ND
9/11/2019	ND	0.0618	ND	ND	ND	ND	ND	ND
9/12/2019	0.0531	0.0528	0.0631	0.0504	ND	ND	ND	ND
9/13/2019	0.0715	ND	ND	ND	ND	ND	ND	ND
9/14/2019	0.0721	0.0613	0.0425	0.0594	ND	ND	ND	ND
9/15/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/16/2019	0.0645	0.0497	ND	ND	ND	ND	ND	ND
9/17/2019	ND	0.0382	ND	ND	ND	ND	ND	ND
9/18/2019	0.133	0.142	0.0580	0.0699	ND	ND	ND	ND

Date	Free Cyanide							
	SL 1	SL 2	SL 3	SL 4	SL 5	SL 6	SL 7	SL 8
8/19/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/20/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/21/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/22/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/23/2019	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND
8/24/2019	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND
8/25/2019	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND
8/26/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/27/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/28/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/29/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/30/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/1/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/2/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/3/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/4/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/5/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/6/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/7/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/8/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/9/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/10/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/11/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/12/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/13/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/14/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/15/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/16/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/17/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/18/2019	ND	ND	ND	ND	ND	ND	ND	ND

Date	Total Cyanide							
	SL 1	SL 2	SL 3	SL 4	SL 5	SL 6	SL 7	SL 8
8/19/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/20/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/21/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/22/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/23/2019	ND	ND	ND	ND	ND	ND	ND	ND
	0.011	ND	ND	ND	ND	ND	ND	ND
8/24/2019	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND
8/25/2019	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND
8/26/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/27/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/28/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/29/2019	ND	ND	ND	ND	ND	ND	ND	ND
8/30/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/1/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/2/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/3/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/4/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/5/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/6/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/7/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/8/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/9/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/10/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/11/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/12/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/13/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/14/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/15/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/16/2019	ND	ND	ND	ND	ND	ND	ND	ND
9/17/2019	ND	ND	ND	ND	ND	ND	ND	0.0087
9/18/2019	ND	ND	ND	ND	ND	ND	ND	ND

Date	pH (s.u.)							
	SL 1	SL 2	SL 3	SL 4	SL 5	SL 6	SL 7	SL 8
8/19/2019	7.45	7.42	7.56	7.66	7.73	7.79	7.83	7.38
8/20/2019	7.99	7.97	8.0	8.01	8.01	8.04	7.98	8.09
8/21/2019	7.93	8.06	8.08	8.08	8.11	8.09	8.17	8.16
8/22/2019	7.99	7.65	7.89	8.16	8.04	7.97	8.03	8.19
8/23/2019	7.62	7.71	7.74	7.70	7.84	7.76	7.80	7.96
	7.62	7.71	7.74	7.70	7.84	7.76	7.8	7.96
8/24/2019	7.83	7.91	8.00	8.02	7.92	8.09	8.08	8.03
	7.83	7.91	8.0	8.02	7.92	8.09	8.08	8.03
8/25/2019	7.91	8.04	8.11	8.04	7.92	7.99	8.02	8.00
	7.91	8.04	8.11	8.04	7.92	7.99	8.02	8.0
8/26/2019	7.74	7.96	7.96	7.93	7.95	7.94	7.93	7.96
8/27/2019	8.04	8.05	8.06	8.06	8.04	8.01	7.99	8.05
8/28/2019	8.05	7.90	8.05	8.06	8.02	8.04	8.09	7.50
8/29/2019	7.97	7.98	7.99	7.50	7.99	7.98	8.04	7.90
8/30/2019	7.20	8.09	8.11	8.12	8.12	8.09	8.02	7.91
9/1/2019	8.16	8.02	8.15	8.06	8.09	7.91	8.15	8.17
9/2/2019	8.08	8.16	8.18	8.12	8.15	8.18	8.15	8.13
9/3/2019	7.12	7.31	8.10	7.89	8.03	8.17	8.00	7.96
9/4/2019	8.05	7.92	7.85	7.90	7.87	7.95	7.98	7.95
9/5/2019	7.94	7.87	7.94	8.10	8.02	8.01	8.04	8.05
9/6/2019	7.77	8.16	8.05	8.13	8.09	8.13	7.93	8.01
9/7/2019	7.92	7.94	8.15	8.14	8.11	8.12	8.09	8.10
9/8/2019	7.63	7.69	7.84	7.73	7.63	7.84	7.85	8.02
9/9/2019	7.94	7.90	7.85	7.61	7.85	7.83	7.94	7.83
9/10/2019	7.95	7.86	7.94	8.00	7.89	7.95	8.05	7.99
9/11/2019	8.08	8.07	8.04	8.09	8.07	8.08	8.09	8.13
9/12/2019	7.87	7.79	7.91	7.82	8.06	8.12	7.95	8.03
9/13/2019	7.95	8.08	8.07	8.05	8.08	8.04	8.02	7.93
9/14/2019	7.99	7.78	8.05	7.93	8.17	8.14	8.13	8.16
9/15/2019	7.97	7.96	8.00	7.78	8.02	8.04	8.05	8.06
9/16/2019	7.80	7.92	8.07	8.10	8.07	8.08	8.10	7.94
9/17/2019	7.74	7.75	7.81	7.79	7.82	7.76	7.78	7.80
9/18/2019	7.74	7.75	7.81	7.79	7.62	7.76	7.78	7.80

Date	Temperature (F)							
	SL 1	SL 2	SL 3	SL 4	SL 5	SL 6	SL 7	SL 8
8/19/2019	79.9	79.5	79.3	80.1	80.1	79.3	79.2	78.1
8/20/2019	75.6	75.6	75.2	75.4	75.2	75.4	75.0	75.6
8/21/2019	77.4	76.6	76.3	76.8	77.2	76.6	76.5	77.2
8/22/2019	77.0	78.3	78.4	77.4	77.2	77.4	76.8	76.6
8/23/2019	74.1	73.6	73.6	73.2	72.5	72.5	72.0	72.0
	74.1	73.6	73.6	73.2	72.5	72.5	72.0	72.0
8/24/2019	77.0	77.0	77.0	74.1	73.8	73.9	73.6	73.2
	77.0	77.0	77.0	74.1	73.8	73.9	73.6	73.2
8/25/2019	71.1	73.8	74.1	74.7	75.0	75.6	74.8	74.8
	71.1	73.8	74.1	74.7	75.0	75.6	74.8	74.8
8/26/2019	59.5	60.6	61.0	60.1	60.4	59.2	60.6	60.4
8/27/2019	66.9	67.6	67.5	66.4	67.1	66.6	67.1	67.3
8/28/2019	69.4	67.3	69.6	70.7	74.1	70.2	70.3	68.4
8/29/2019	66.0	66.2	67.6	66.6	67.5	66.4	68.2	67.6
8/30/2019	68.2	72.9	70.0	72.1	70.9	71.4	72.9	68.9
9/1/2019	65.1	64.0	63.9	65.1	66.4	65.3	65.8	65.7
9/2/2019	69.4	68.2	69.4	69.1	68.7	69.4	69.1	69.4
9/3/2019	66.6	66.0	64.6	63.7	64.2	63.5	64.6	64.0
9/4/2019	70.3	69.1	68.7	69.3	68.5	68.2	67.8	67.3
9/5/2019	66.9	67.3	66.6	65.5	65.7	66.0	65.8	65.5
9/6/2019	66.9	66.0	65.3	66.2	65.7	66.0	65.3	66.4
9/7/2019	73.0	71.2	71.4	70.3	70.0	72.1	71.8	71.4
9/8/2019	66.6	66.7	65.1	64.6	65.3	65.1	64.9	64.9
9/9/2019	65.8	65.8	65.7	65.5	65.8	66.2	65.3	65.1
9/10/2019	65.1	65.7	66.0	65.8	65.5	66.6	66.0	66.7
9/11/2019	70.5	70.2	69.3	69.6	69.4	70.3	69.3	68.5
9/12/2019	72.0	71.4	71.8	71.1	73.0	76.3	74.8	71.8
9/13/2019	70.0	69.6	69.6	69.4	69.4	69.8	70.0	69.3
9/14/2019	71.4	72.1	70.0	71.1	68.7	68.4	68.0	68.4
9/15/2019	67.3	67.3	67.1	67.3	67.1	67.3	66.9	67.1
9/16/2019	70.3	69.1	67.8	67.6	67.8	67.8	67.6	67.3
9/17/2019	70.7	70.5	69.3	69.4	69.3	68.9	68.5	69.1
9/18/2019	70.3	70.5	69.3	69.4	69.3	68.5	69.1	66.6

Exhibit 11

MONTHLY MONITORING REPORT (MMR) FOR INDUSTRIAL DISCHARGE PERMITS

Indiana Discharge Monitoring Report

State Form 30530 (R3 / 3-14)

FACILITY NAME AND ADDRESS:
ArcelorMittal Burns Harbor LLC

250 West US Highway 12
Burns Harbor, IN
46304

PLEASE COMPLETE AND SUBMIT ONE COPY EACH MONTH.
THIS REPORT MUST BE POSTMARKED NO LATER THAN THE 28TH OF THE FOLLOWING MONTH.

Mail To: Indiana Department of Environmental Management
Office of Water Quality, Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

E-mail address: theresa.kirk@arcelormittal.com

I	N	0	0	0	0	1	7	5
PERMIT NUMBER								

0	0	1	A
OUTFALL NO.			

0	8	1	9
MO.		YR.	

No Discharge ☐

This is a revised submittal ☐

EFFLUENT CHARACTERISTICS		FLOW	pH		Cannon Flow	Temp	Ammonia as N		TSS	
EFFLUENT PARAMETER NUMBER		Q 50050	C 00400		Q 74020	C 00011	Q 00610	C 00610	Q 00530	C 00530
SAMPLE TYPE	Permit Condition	TOTALZ	RCORDR		TOTALZ	RCORDR	COMP24	COMP24	COMP24	COMP24
	Monitored	TOTALZ	RCORDR		TOTALZ	RCORDR	COMP24	COMP24	COMP24	COMP24
FREQUENCY	Permit Condition	31/31	31/31		31/31	31/31	29/31	29/31	20/31	20/31
	Monitored	31/31	31/31		31/31	31/31	29/31	29/31	20/31	20/31
EFFLUENT LIMITATIONS	Permit Minimum	NA	6.0		NA	NA	NA	NA	NA	NA
	Permit Average	NA	NA		NA	NA	385	0.37	NA	NA
	Permit Maximum	NA	9.0		NA	86	540	0.52	NA	NA
UNITS =		MGD	HI	LOW	MGD	°F	lb/day	mg/L	lb/day	mg/L
Thu	1	110.9	8.3	8.0	0.0	78	268	0.29		
Fri	2	118.3	8.0	7.8	0.0	81				
Sat	3	109.9	8.0	7.7	0.0	82				
Sun	4	111.5	8.2	7.7	0.0	80	437	0.47	4745	5.1
Mon	5	117.4	8.3	7.6	0.0	80	901	0.92		
Tue	6	106.3	8.4	7.9	0.0	80	337	0.38	1242	1.4
Wed	7	121.2	8.3	7.9	0.0	83	354	0.35		
Thu	8	124.4	8.4	7.9	0.0	85	436	0.42	10381	10.0
Fri	9	125.7	8.2	7.9	0.0	83	388	0.37		
Sat	10	116.8	8.0	7.8	0.0	82	448	0.46		
Sun	11	118.7	8.0	7.7	0.0	79	911	0.92		
Mon	12	133.9	8.6	7.9	0.0	80	1117	1.00		
Tue	13	133.4	8.4	8.2	0.0	82	891	0.80	2115	1.9
Wed	14	127.0	8.5	8.2	8.4	79	562	0.57		
Thu	15	126.7	8.4	8.1	15.4	84	751	0.81		
Fri	16	135.5	8.5	8.1	9.9	86	554	0.53	2714	2.4
Sat	17	131.1	8.3	8.1	10.1	85	525	0.52	2297	2.1
Sun	18	124.5	8.3	8.1	8.2	84	395	0.41	5403	5.2
Mon	19	130.0	8.5	8.1	13.6	85	499	0.51	< 1085	< 1.0
Tue	20	132.9	8.2	8.0	9.0	82	344	0.33	1774	1.6
Wed	21	125.5	8.3	8.0	0.0	83	346	0.33	2304	2.2
Thu	22	126.5	8.2	8.0	0.0	84	359	0.34	5806	5.5
Fri	23	123.2	8.0	7.7	0.0	80	308	0.30	1542	1.5
Sat	24	126.2	7.7	7.6	0.0	79	295	0.28	5476	5.2
Sun	25	124.0	8.3	6.8	0.0	76	300	0.29	1035	1.0
Mon	26	126.3	8.2	8.0	0.0	74	316	0.30	2635	2.5
Tue	27	107.1	8.3	8.0	0.0	73	241	0.27	983	1.1
Wed	28	99.7	8.2	8.0	0.0	81	200	0.24	1248	1.5
Thu	29	125.5	8.2	7.9	0.0	81	377	0.36	2304	2.2
Fri	30	128.7	8.3	8.1	0.0	83	516	0.48	2148	2.0
Sat	31	116.3	8.3	8.0	0.0	79	311	0.32	2620	2.7
MONTHLY AVERAGE		122.1			2.4		679 [b]	0.64 [b]	2939	2.9
HIGHEST VALUE		135.5	8.6		15.4	86	1117	1.00	10381	10.0
LOWEST VALUE		99.7	6.8		0.0		200	0.24	983	< 1.0
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED			0			0	11	11		
TOTAL FLOW		3785.1								

[b] Maximum 7 day average

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

Prepared by or under the direction of (Certified Operator): **Patrick M. Gorman, P.E.**

Date (month, day, year): 9/20/2019

Preparer's telephone number: 219-787-2712

Operator's certification number: WW009310

Signature of principal executive officer or authorized agent (or attested by NetDMR subscriber agreement): **Robert A. Maciel**

Date (month, day, year): 9/20/2019

MONTHLY MONITORING REPORT (MMR) FOR INDUSTRIAL DISCHARGE PERMITS

Indiana Discharge Monitoring Report

State Form 30530 (R3 / 3-14)

FACILITY NAME AND ADDRESS:
ArcelorMittal Burns Harbor LLC

250 West US Highway 12
Burns Harbor, IN
46304

PLEASE COMPLETE AND SUBMIT ONE COPY EACH MONTH.
THIS REPORT MUST BE POSTMARKED NO LATER THAN THE 28TH OF THE FOLLOWING MONTH.

Mail To: Indiana Department of Environmental Management
Office of Water Quality, Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

I	N	0	0	0	0	1	7	5
PERMIT NUMBER								

0	0	1	A
OUTFALL NO.			

0	8	1	9
MO.		YR.	

No Discharge ☐
This is a revised submittal ☐

EFFLUENT CHARACTERISTICS		Oil and Grease		Phenols (4APP)		Total Residual Chlorine [a]		Zinc, Total Rec	
EFFLUENT PARAMETER NUMBER		Q 00552	C 00552	Q 32730	C 32730	Q 50060	C 50060	Q 01094	C 01094
SAMPLE TYPE	Permit Condition	GRAB	GRAB	COMP24	COMP24	GRAB	GRAB	COMP24	COMP24
	Monitored	GRAB	GRAB	COMP24	COMP24	GRAB	GRAB	COMP24	COMP24
FREQUENCY	Permit Condition	20/31	20/31	20/31	20/31	31/31	31/31	19/31	19/31
	Monitored	20/31	20/31	20/31	20/31	31/31	31/31	19/31	19/31
EFFLUENT LIMITATIONS	Permit Minimum	NA	NA	NA	NA	NA	NA	NA	NA
	Permit Average	NA	NA	14	NA	11	10	169	150
	Permit Maximum	NA	NA	22	NA	68	60	326	290
UNITS=		lb/day	mg/L	lb/day	mg/L	lb/day	µg/L	lb/day	µg/L
Thu	1					< 19	< 20		
Fri	2					< 20	< 20		
Sat	3					< 18	< 20		
Sun	4	< 1303	< 1.4	< 6	< 0.006	< 19	< 20	NQ 11	NQ 12
Mon	5					< 20	< 20		
Tue	6	NQ 1419	NQ 1.6	10	0.011	< 18	< 20	< 6	< 7
Wed	7					< 20	< 20		
Thu	8	< 1453	< 1.4	< 6	< 0.006	< 21	< 20	< 8	< 7
Fri	9					< 21	< 20		
Sat	10					< 19	< 20		
Sun	11					< 20	< 20		
Mon	12					< 22	< 20		
Tue	13	< 1559	< 1.4	< 7	< 0.006	< 22	< 20		
Wed	14					< 21	< 20		
Thu	15					< 21	< 20		
Fri	16	< 1583	< 1.4	< 7	< 0.006	< 23	< 20	< 8	< 7
Sat	17	< 1532	< 1.4	< 7	< 0.006	< 22	< 20	NQ 12	NQ 12
Sun	18	< 1455	< 1.4	< 6	< 0.006	< 21	< 20	21	21
Mon	19	< 1519	< 1.4	NQ 9	NQ 0.008	< 22	< 20	NQ 16	NQ 17
Tue	20	< 1553	< 1.4	< 7	< 0.006	< 22	< 20	< 8	< 7
Wed	21	< 1466	< 1.4	15	0.014	< 21	< 20	< 8	< 7
Thu	22	NQ 1478	NQ 1.4	NQ 7	NQ 0.007	< 21	< 20	NQ 8	NQ 7
Fri	23	< 1439	< 1.4	NQ 9	NQ 0.009	< 21	< 20	NQ 9	NQ 9
Sat	24	< 1474	< 1.4	< 6	< 0.006	< 21	< 20	NQ 8	NQ 8
Sun	25	< 1449	< 1.4	< 6	< 0.006	< 21	< 20	NQ 10	NQ 10
Mon	26	< 1476	< 1.4	< 6	< 0.006	< 21	< 20	NQ 18	NQ 17
Tue	27	< 1251	< 1.4	< 5	< 0.006	< 18	< 20	< 7	< 7
Wed	28	< 1165	< 1.4	< 5	< 0.006	< 17	< 20	< 6	< 7
Thu	29	< 1466	< 1.4	< 6	< 0.006	< 21	< 20	< 8	< 7
Fri	30	< 1504	< 1.4	< 6	< 0.006	< 21	< 20	< 8	< 7
Sat	31	< 1359	< 1.4	< 6	< 0.006	< 19	< 20	< 7	< 7
MONTHLY AVERAGE		0	0	1	< 0.006	0	0	1	< 7
HIGHEST VALUE		< 1583	NQ 1.6	15	0.014	< 23	< 20	21	20
LOWEST VALUE		< 1165	< 1.4	< 5	< 0.006	< 17	< 20	< 6	< 7
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED				0		0	0	0	0

[a] Zebra mussel treatment started June 11, 2019.

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Date (month, day, year): 9/20/2019

Preparer's telephone number: 219-787-2712

Operator's certification number: WW009310

Signature of principal executive officer or authorized agent (or attested by NetDMR subscriber agreement): **Robert A. Maciel**

Date (month, day, year): 9/20/2019

MONTHLY MONITORING REPORT (MMR) FOR INDUSTRIAL DISCHARGE PERMITS

Indiana Discharge Monitoring Report

State Form 30530 (R3 / 3-14)

FACILITY NAME AND ADDRESS:
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Indianapolis, Indiana 46204-2251

I	N	0	0	0	0	1	7	5
PERMIT NUMBER								

0	0	1	A
OUTFALL NO.			

0	8	1	9
MO.		YR.	

No Discharge ☐

This is a revised submittal ☐

EFFLUENT CHARACTERISTICS		Copper, Total Rec		Mercury, Total Rec		Silver, Total Rec		Cyanide, Free [a]	
EFFLUENT PARAMETER NUMBER		Q 01119	C 01119	Q 71901	C 71901	Q 01079	C 01079	Q 00722	C 00722
SAMPLE TYPE	Permit Condition	COMP24	COMP24	GRAB	GRAB	COMP24	COMP24	COMP24	COMP24
	Monitored	COMP24	COMP24	GRAB	GRAB	COMP24	COMP24	COMP24	COMP24
FREQUENCY	Permit Condition	19/31	19/31	3/31	3/31	19/31	19/31	23/31	23/31
	Monitored	19/31	19/31	3/31	3/31	19/31	19/31	23/31	23/31
EFFLUENT LIMITATIONS	Permit Minimum	NA	NA	NA	NA	NA	NA	NA	NA
	Permit Average	20	0.018	0.0015	1.3	0.054	0.048	5	4.4
	Permit Maximum	39	0.035	0.0037	3.2	0.72	0.64	9.9	8.8
UNITS=		lb/day	mg/L	lb/day	ng/L	lb/day	µg/L	lb/day	µg/L
Thu	1								
Fri	2								
Sat	3								
Sun	4	NQ 5	NQ 0.006	< 0.0001	< 0.118	< 0.049	< 0.05	7.6	8.150
Mon	5								
Tue	6	NQ 3	NQ 0.004	< 0.0001	< 0.118	< 0.047	< 0.05	2.8	3.200
Wed	7								
Thu	8	NQ 3	NQ 0.003	NQ 0.0001	NQ 0.133	< 0.055	< 0.05	< 0.9	< 0.910
Fri	9								
Sat	10								
Sun	11								
Mon	12							178.8	160.000
Tue	13							244.9	220.000
Wed	14							104.9	106.030
Thu	15							116.3	125.192
Fri	16	NQ 3	NQ 0.003			< 0.060	< 0.05	12.4	11.868
Sat	17	NQ 3	NQ 0.003			< 0.058	< 0.05	< 2.0	< 1.800
Sun	18	NQ 5	NQ 0.005			< 0.055	< 0.05	< 1.9	< 1.800
Mon	19	NQ 3	NQ 0.003			< 0.057	< 0.05	< 2.0	< 1.800
Tue	20	NQ 4	NQ 0.004			< 0.059	< 0.05	< 2.0	< 1.800
Wed	21	NQ 6	NQ 0.005			< 0.056	< 0.05	< 1.9	< 1.800
Thu	22	NQ 5	NQ 0.004			< 0.056	< 0.05	< 1.9	< 1.800
Fri	23	NQ 4	NQ 0.004			< 0.054	< 0.05	< 1.9	< 1.800
Sat	24	NQ 3	NQ 0.003			< 0.056	< 0.05	< 1.9	< 1.800
Sun	25	NQ 2	NQ 0.002			< 0.055	< 0.05	< 1.9	< 1.800
Mon	26	NQ 3	NQ 0.003			< 0.056	< 0.05	< 1.9	< 1.800
Tue	27	NQ 2	NQ 0.003			< 0.047	< 0.05	< 1.6	< 1.800
Wed	28	NQ 2	NQ 0.003			< 0.044	< 0.05	< 1.5	< 1.800
Thu	29	NQ 2	NQ 0.002			< 0.056	< 0.05	< 1.9	< 1.800
Fri	30	NQ 4	NQ 0.004			< 0.057	< 0.05	< 1.9	< 1.800
Sat	31	NQ 2	NQ 0.002			< 0.051	< 0.05	< 1.7	< 1.800
MONTHLY AVERAGE		0	0	0.0000	0	0.000	0	29.0	27.584
HIGHEST VALUE		NQ 6	NQ 0.006	NQ 0.0001	NQ 0.133	< 0.060	< 0.05	244.9	220.000
LOWEST VALUE		NQ 2	NQ 0.002	< 0.0001	< 0.118	< 0.044	< 0.05	< 0.9	< 0.910
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED		0	0	0	0	0	0	6	6

a The Free CN run after August 9 was the Wad Available cyanide method which has a higher detection limit and subject to more interference than oi 1677. This was initially due to the fact the retains were not collected as required by oi1677 and after August 16 due to the 24 hour TAT requirement. Normal TAT for oi1677 is 2 to 3 weeks.

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Prepared by or under the direction of (Certified Operator): **Patrick M. Gorman, P.E.**

Date (month, day, year): 9/20/2019

Preparer's telephone number: 219-787-2712

Operator's certification number: WW009310

Signature of principal executive officer or authorized agent (or attested by NetDMR subscriber agreement): **Robert A. Maciel**

Date (month, day, year): 9/20/2019

MONTHLY MONITORING REPORT (MMR) FOR INDUSTRIAL DISCHARGE PERMITS

Indiana Discharge Monitoring Report

State Form 30530 (R3 / 3-14)

FACILITY NAME AND ADDRESS:
ArcelorMittal Burns Harbor LLC

250 West US Highway 12
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46304

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Mail To: Indiana Department of Environmental Management
Office of Water Quality, Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

E-mail address: theresa.kirk@arcelormittal.com

I	N	0	0	0	0	1	7	5
PERMIT NUMBER								

0	0	2	A
OUTFALL NO.			

0	8	1	9
MO.		YR.	

No Discharge ☐

This is a revised submittal ☐

EFFLUENT CHARACTERISTICS		FLOW [c]	pH		TSS		Oil and Grease		Ammonia as N [b]	
EFFLUENT PARAMETER NUMBER		Q 50050	C 00400		Q 50050	C 50050	Q 00552	C 00552	Q 00610	C 00610
SAMPLE TYPE	Permit Condition	RCOTOT	RCORDR		COMP24	COMP24	GRAB	GRAB	COMP24	COMP24
	Monitored	RCOTOT	RCORDR		COMP24	COMP24	GRAB	GRAB	COMP24	COMP24
FREQUENCY	Permit Condition	31/31	31/31		4/31	4/31	18/31	18/31	0/31	0/31
	Monitored	31/31	31/31		4/31	4/31	18/31	18/31	0/31	0/31
EFFLUENT LIMITATIONS	Permit Minimum	NA	6.0		NA	NA	NA	NA	NA	NA
	Permit Average	NA	NA		NA	NA	NA	NA	NA	NA
	Permit Maximum	NA	9.0		NA	NA	NA	NA	NA	NA
UNITS =		MGD	HI	LOW	lb/day	mg/L	lb/day	mg/L	lb/day	mg/L
Thu	1	227.8	8.5	8.4						
Fri	2	235.3	8.6	8.5						
Sat	3	229.3	8.6	8.5						
Sun	4	228.9	8.6	8.4						
Mon	5	228.4	8.6	8.5						
Tue	6	226.8	8.6	8.5			< 2650	< 1.4		
Wed	7	227.3	8.6	8.5	2276	1.2				
Thu	8	262.9	8.6	8.5						
Fri	9	263.7	8.6	8.5						
Sat	10	262.9	8.6	8.5						
Sun	11	263.1	8.1 [a]	8.1 [a]						
Mon	12	269.0	8.5	8.4						
Tue	13	249.8	8.5	8.1	5837	2.8	< 2918	< 1.4		
Wed	14	235.0	8.6	8.5						
Thu	15	263.0	8.6	8.5						
Fri	16	270.8	8.6	8.6			< 3164	< 1.4		
Sat	17	269.7	8.6	8.6			< 3151	< 1.4		
Sun	18	269.3	8.6	8.6			< 3146	< 1.4		
Mon	19	268.3	8.6	8.5			< 3135	< 1.4		
Tue	20	268.3	8.6	8.5	4254	1.9	< 3135	< 1.4		
Wed	21	268.5	8.6	8.5			< 3137	< 1.4		
Thu	22	266.3	8.6	8.5			< 3111	< 1.4		
Fri	23	259.3	8.6	8.5			< 3029	< 1.4		
Sat	24	259.5	8.5	8.5			< 3032	< 1.4		
Sun	25	259.0	8.5	8.4			< 3026	< 1.4		
Mon	26	258.9	8.4	8.2			< 3025	< 1.4		
Tue	27	259.4	8.4	8.2	3464	1.6	< 3031	< 1.4		
Wed	28	242.0	8.5	8.4			< 2827	< 1.4		
Thu	29	206.3	8.6	8.4			< 2410	< 1.4		
Fri	30	204.4	8.5	8.5			< 2388	< 1.4		
Sat	31	193.7	8.5	8.3			< 2263	< 1.4		
MONTHLY AVERAGE		248.3 [c]			3958	1.9	0	0	NA [b]	NA [b]
HIGHEST VALUE		270.8 [c]	8.6		5837	2.8	< 3164	< 1.4	NA [b]	NA [b]
LOWEST VALUE		193.7 [c]	8.1		2276	1.2	< 2263	< 1.4	NA [b]	NA [b]
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED			0							
TOTAL FLOW		7696.9								

[a] Grab Value - monitoring instrument malfunction

[b] Monitoring not required unless treated process water from lagoon recirculating pump station is directed to Outfall 002

c Calculated values reported. Flow monitoring instrument failure.

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

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PERMIT NUMBER								

0	0	2	A
OUTFALL NO.			

0	8	1	9
MO.		YR.	

No Discharge ☐

This is a revised submittal ☐

EFFLUENT CHARACTERISTICS		Phenols (4APP) [b]		Iron, Dissolved [b]		Zinc, total recoverable [b]		Lead, Total Rec [b]	
EFFLUENT PARAMETER NUMBER		Q 32730	C 32730	Q 01046	C 01046	Q 01094	C 01094	Q 01114	C 01114
SAMPLE TYPE	Permit Condition	GRAB	GRAB	GRAB	GRAB	COMP24	COMP24	COMP24	COMP24
	Monitored	GRAB	GRAB	GRAB	GRAB	COMP24	COMP24	COMP24	COMP24
FREQUENCY	Permit Condition	0/31	0/31	0/31	0/31	0/31	0/31	0/31	0/31
	Monitored	0/31	0/31	0/31	0/31	0/31	0/31	0/31	0/31
EFFLUENT LIMITATIONS	Permit Minimum	NA	NA	NA	NA	NA	NA	NA	NA
	Permit Average	NA	NA	NA	NA	NA	NA	NA	NA
	Permit Maximum	NA	NA	NA	NA	NA	NA	NA	NA
UNITS=		lb/day	mg/L	lb/day	mg/L	lb/day	µg/L	lb/day	µg/L
Thu	1								
Fri	2								
Sat	3								
Sun	4								
Mon	5								
Tue	6								
Wed	7								
Thu	8								
Fri	9								
Sat	10								
Sun	11								
Mon	12								
Tue	13								
Wed	14								
Thu	15								
Fri	16								
Sat	17								
Sun	18								
Mon	19								
Tue	20								
Wed	21								
Thu	22								
Fri	23								
Sat	24								
Sun	25								
Mon	26								
Tue	27								
Wed	28								
Thu	29								
Fri	30								
Sat	31								
MONTHLY AVERAGE		NA [b]	NA [b]	NA [b]	NA [b]	NA [b]	NA [b]	NA [b]	NA [b]
HIGHEST VALUE		NA [b]	NA [b]	NA [b]	NA [b]	NA [b]	NA [b]	NA [b]	NA [b]
LOWEST VALUE		NA [b]	NA [b]	NA [b]	NA [b]	NA [b]	NA [b]	NA [b]	NA [b]
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED									

[b] Monitoring not required unless treated process water from lagoon recirculating pump station is directed to Outfall 002

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0	8	1	9
MO.		YR.	

No Discharge ☐

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EFFLUENT CHARACTERISTICS		Fluoride [b]		Total Residual Chlorine [a]		Temp			
EFFLUENT PARAMETER NUMBER		Q 00951	C 00951	Q 50060	C 50060	C 00011			
SAMPLE TYPE	Permit Condition	COMP24	COMP24	GRAB	GRAB	RCORDR			
	Monitored	COMP24	COMP24	GRAB	GRAB	RCORDR			
FREQUENCY	Permit Condition	0/31	0/31	31/31	31/31	31/31			
	Monitored	0/31	0/31	31/31	31/31	31/31			
EFFLUENT LIMITATIONS	Permit Minimum	NA	NA	NA	NA	NA			
	Permit Average	NA	NA	24	10	NA			
	Permit Maximum	NA	NA	110.7	60	90			
UNITS=		lb/day	mg/L	lb/day	µg/L	°F			
Thu	1			< 38.0	< 20	83			
Fri	2			< 39.3	< 20	80			
Sat	3			< 38.3	< 20	77			
Sun	4			< 38.2	< 20	79			
Mon	5			< 38.1	< 20	76			
Tue	6			< 37.9	< 20	83			
Wed	7			< 37.9	< 20	79			
Thu	8			< 43.9	< 20	86			
Fri	9			< 44.0	< 20	78			
Sat	10			< 43.9	< 20	78			
Sun	11			< 43.9	< 20	73			
Mon	12			< 44.9	< 20	71			
Tue	13			< 41.7	< 20	76			
Wed	14			< 39.2	< 20	85			
Thu	15			< 43.9	< 20	89			
Fri	16			< 45.2	< 20	89			
Sat	17			< 45.0	< 20	88			
Sun	18			< 44.9	< 20	88			
Mon	19			< 44.8	< 20	88			
Tue	20			< 44.8	< 20	79			
Wed	21			< 44.8	< 20	84			
Thu	22			< 44.4	< 20	82			
Fri	23			< 43.3	< 20	78			
Sat	24			< 43.3	< 20	80			
Sun	25			< 43.2	< 20	75			
Mon	26			< 43.2	< 20	69			
Tue	27			< 43.3	< 20	70			
Wed	28			< 40.4	< 20	79			
Thu	29			< 34.4	< 20	78			
Fri	30			< 34.1	< 20	78			
Sat	31			< 32.3	< 20	79			
MONTHLY AVERAGE		NA [b]	NA [b]	0.0	0				
HIGHEST VALUE		NA [b]	NA [b]	< 45.2	< 20	89			
LOWEST VALUE		NA [b]	NA [b]	< 32.3	< 20				
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED				0	0	0			

[a] Zebra mussel treatment started June 11, 2019.

[b] Monitoring not required unless treated process water from lagoon recirculating pump station is directed to Outfall 002

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

Prepared by or under the direction of (Certified Operator): **Patrick M. Gorman, P.E.**

Date (month, day, year): 9/20/2019

Preparer's telephone number: 219-787-2712

Operator's certification number: WW009310

Signature of principal executive officer or authorized agent (or attested by NetDMR subscriber agreement): **Robert A. Maciel**

Date (month, day, year): 9/20/2019

MONTHLY MONITORING REPORT (MMR) FOR INDUSTRIAL DISCHARGE PERMITS

Indiana Discharge Monitoring Report

State Form 30530 (R3 / 3-14)

FACILITY NAME AND ADDRESS:
ArcelorMittal Burns Harbor LLC

250 West US Highway 12
Burns Harbor, IN
46304

PLEASE COMPLETE AND SUBMIT ONE COPY EACH MONTH.
THIS REPORT MUST BE POSTMARKED NO LATER THAN THE 28TH OF THE FOLLOWING MONTH.

Mail To: Indiana Department of Environmental Management
Office of Water Quality, Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

E-mail address: theresa.kirk@arcelormittal.com

I	N	0	0	0	0	1	7	5
PERMIT NUMBER								

0	0	3	A
OUTFALL NO.			

0	8	1	9
MO.		YR.	

No Discharge ☐

This is a revised submittal ☐

EFFLUENT CHARACTERISTICS		Total Residual Chlorine [a]							
EFFLUENT PARAMETER NUMBER			C 50060						
SAMPLE TYPE	Permit Condition		GRAB						
	Monitored		GRAB						
FREQUENCY	Permit Condition		31/31						
	Monitored		31/31						
EFFLUENT LIMITATIONS	Permit Minimum		NA						
	Permit Average		10						
	Permit Maximum		60						
UNITS =			µg/L						
Thu	1		< 20						
Fri	2		< 20						
Sat	3		< 20						
Sun	4		< 20						
Mon	5		< 20						
Tue	6		< 20						
Wed	7		< 20						
Thu	8		< 20						
Fri	9		< 20						
Sat	10		< 20						
Sun	11		< 20						
Mon	12		< 20						
Tue	13		< 20						
Wed	14		< 20						
Thu	15		< 20						
Fri	16		< 20						
Sat	17		< 20						
Sun	18		< 20						
Mon	19		< 20						
Tue	20		< 20						
Wed	21		< 20						
Thu	22		< 20						
Fri	23		< 20						
Sat	24		< 20						
Sun	25		< 20						
Mon	26		< 20						
Tue	27		< 20						
Wed	28		< 20						
Thu	29		< 20						
Fri	30		< 20						
Sat	31		< 20						
MONTHLY AVERAGE			0						
HIGHEST VALUE			< 20						
LOWEST VALUE			< 20						
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED			0						

[a] Zebra mussel treatment started June 11, 2019.

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

Prepared by or under the direction of (Certified Operator): **Patrick M. Gorman, P.E.**

Date (month, day, year): 9/20/2019

Preparer's telephone number: 219-787-2712

Operator's certification number: WW009310

Signature of principal executive officer or authorized agent (or attested by NetDMR subscriber agreement): **Robert A. Maciel**

Date (month, day, year): 9/20/2019

MONTHLY MONITORING REPORT (MMR) FOR INDUSTRIAL DISCHARGE PERMITS

Indiana Discharge Monitoring Report

State Form 30530 (R3 / 3-14)

FACILITY NAME AND ADDRESS:
ArcelorMittal Burns Harbor LLC

250 West US Highway 12
Burns Harbor, IN
46304

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Mail To: Indiana Department of Environmental Management
Office of Water Quality, Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

E-mail address: theresa.kirk@arcelormittal.com

I	N	0	0	0	0	1	7	5
PERMIT NUMBER								

0	1	1	A
OUTFALL NO.			

0	8	1	9
MO.		YR.	

No Discharge ☐
This is a revised submittal ☐

EFFLUENT CHARACTERISTICS		FLOW	TSS		Oil and Grease		Ammonia as N		
EFFLUENT PARAMETER NUMBER		Q 50050	Q 00530	C 00530	Q 00552	C 00552	Q 00610	C 00610	
SAMPLE TYPE	Permit Condition	TOTALZ	COMP24	COMP24	GRAB	GRAB	COMP24	COMP24	
	Monitored	TOTALZ	COMP24	COMP24	GRAB	GRAB	COMP24	COMP24	
FREQUENCY	Permit Condition	31/31	20/31	20/31	20/31	20/31	27/31	27/31	
	Monitored	31/31	20/31	20/31	20/31	20/31	27/31	27/31	
EFFLUENT LIMITATIONS	Permit Minimum	NA	NA	NA	NA	NA	NA	NA	
	Permit Average	NA	7000	NA	NA	NA	NA	NA	
	Permit Maximum	NA	24530	NA	5584	NA	NA	NA	
	UNITS =	MGD	lb/day	mg/L	lb/day	mg/L	lb/day	mg/L	
Thu	1	57.1					86	0.18	
Fri	2	75.5							
Sat	3	73.1							
Sun	4	66.1	1434	2.6	< 772	< 1.4	149	0.27	
Mon	5	68.8					534	0.93	
Tue	6	59.7	697	1.4	< 697	< 1.4	130	0.26	
Wed	7	74.9					169	0.27	
Thu	8	78.1					143	0.22	
Fri	9	79.2							
Sat	10	72.2							
Sun	11	76.7	896	1.4	NQ 896	NQ 1.4	134	0.21	
Mon	12	85.7					858	1.20	
Tue	13	86.6	3252	4.5	< 1012	< 1.4	658	0.91	
Wed	14	59.2					459	0.93	
Thu	15	54.8					640	1.40	
Fri	16	79.1	1584	2.4	< 924	< 1.4	356	0.54	
Sat	17	75.3	1948	3.1	< 880	< 1.4	245	0.39	
Sun	18	68.2	2049	3.6	NQ 1024	NQ 1.8	131	0.23	
Mon	19	61.6	1131	2.2	< 720	< 1.4	175	0.34	
Tue	20	74.2	1300	2.1	< 867	< 1.4	198	0.32	
Wed	21	75.2	941	1.5	< 879	< 1.4	295	0.47	
Thu	22	76.7	1664	2.6	NQ 960	NQ 1.5	173	0.27	
Fri	23	71.4	834	1.4	< 834	< 1.4	161	0.27	
Sat	24	74.5	7460	12.0	< 870	< 1.4	168	0.27	
Sun	25	70.3	1056	1.8	< 821	< 1.4	141	0.24	
Mon	26	74.3	1364	2.2	NQ 992	NQ 1.6	105	0.17	
Tue	27	50.6	845	2.0	< 591	< 1.4	NQ 36	NQ 0.09	
Wed	28	39.7	729	2.2	< 464	< 1.4	123	0.37	
Thu	29	76.6	1215	1.9	< 895	< 1.4	160	0.25	
Fri	30	81.8	1297	1.9	< 956	< 1.4	164	0.24	
Sat	31	68.6	1374	2.4	< 801	< 1.4	172	0.30	
MONTHLY AVERAGE		70.5	1654	2.8	0	0	249	0.42	
HIGHEST VALUE		86.6	7460	12.0	NQ 1024	NQ 1.8	858	1.40	
LOWEST VALUE		39.7	697	1.4	< 464	< 1.4	NQ 36	NQ 0.09	
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED			0		0				
TOTAL FLOW		2185.8							

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

Prepared by or under the direction of (Certified Operator): **Patrick M. Gorman, P.E.**

Date (month, day, year): 9/20/2019

Preparer's telephone number: 219-787-2712

Operator's certification number: WW009310

Signature of principal executive officer or authorized agent (or attested by NetDMR subscriber agreement): **Robert A. Maciel**

Date (month, day, year): 9/20/2019

MONTHLY MONITORING REPORT (MMR) FOR INDUSTRIAL DISCHARGE PERMITS

Indiana Discharge Monitoring Report

State Form 30530 (R3 / 3-14)

FACILITY NAME AND ADDRESS:
ArcelorMittal Burns Harbor LLC

250 West US Highway 12
Burns Harbor, IN
46304

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Mail To: Indiana Department of Environmental Management
Office of Water Quality, Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

I	N	0	0	0	0	1	7	5
PERMIT NUMBER								

0	1	1	A
OUTFALL NO.			

0	8	1	9
MO.		YR.	

No Discharge ☐
This is a revised submittal ☐

EFFLUENT CHARACTERISTICS			Total Residual Chlorine							
EFFLUENT PARAMETER NUMBER			Q 50060	Q 50060						
SAMPLE TYPE	Permit Condition		GRAB	GRAB						
	Monitored		GRAB	GRAB						
FREQUENCY	Permit Condition		20/31	20/31						
	Monitored		20/31	20/31						
EFFLUENT LIMITATIONS	Permit Minimum		NA	NA						
	Permit Average		NA	NA						
	Permit Maximum		36	NA						
	UNITS=		lb/day	µg/L						
	Thu	1								
	Fri	2								
	Sat	3								
	Sun	4	< 11	< 20						
	Mon	5								
	Tue	6	< 10	< 20						
	Wed	7								
	Thu	8								
	Fri	9								
	Sat	10								
	Sun	11	< 13	< 20						
	Mon	12								
	Tue	13	< 14	< 20						
	Wed	14								
	Thu	15								
	Fri	16	< 13	< 20						
	Sat	17	< 13	< 20						
	Sun	18	< 11	< 20						
	Mon	19	< 10	< 20						
	Tue	20	< 12	< 20						
	Wed	21	< 13	< 20						
	Thu	22	< 13	< 20						
	Fri	23	< 12	< 20						
	Sat	24	< 12	< 20						
	Sun	25	< 12	< 20						
	Mon	26	< 12	< 20						
	Tue	27	< 8	< 20						
	Wed	28	< 7	< 20						
	Thu	29	< 13	< 20						
	Fri	30	< 14	< 20						
	Sat	31	< 11	< 20						
MONTHLY AVERAGE			0	0						
HIGHEST VALUE			< 14	< 20						
LOWEST VALUE			< 7	< 20						
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED			0							

[a] Limit not applicable. No chlorination of blast furnace process water.

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

Prepared by or under the direction of (Certified Operator): **Patrick M. Gorman, P.E.**

Date (month, day, year): 9/20/2019

Preparer's telephone number: 219-787-2712

Operator's certification number: WW009310

Signature of principal executive officer or authorized agent (or attested by NetDMR subscriber agreement): **Robert A. Maciel**

Date (month, day, year): 9/20/2019

MONTHLY MONITORING REPORT (MMR) FOR INDUSTRIAL DISCHARGE PERMITS

Indiana Discharge Monitoring Report

State Form 30530 (R3 / 3-14)

FACILITY NAME AND ADDRESS:
ArcelorMittal Burns Harbor LLC

250 West US Highway 12
Burns Harbor, IN
46304

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Mail To: Indiana Department of Environmental Management
Office of Water Quality, Mail Code 65-42
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

I	N	0	0	0	0	1	7	5
PERMIT NUMBER								

0	1	1	A
OUTFALL NO.			

0	8	1	9
MO.		YR.	

No Discharge ☐
This is a revised submittal X

EFFLUENT CHARACTERISTICS		Phenols (4APP)		Cyanide, Total		Lead, Total Rec		Zinc, Total Rec	
EFFLUENT PARAMETER NUMBER		Q 32730	Q 32730	Q 00720	Q 00720	Q 01114	Q 01114	Q 01094	Q 01094
SAMPLE TYPE	Permit Condition	COMP24	COMP24	COMP24	COMP24	COMP24	COMP24	COMP24	COMP24
	Monitored	COMP24	COMP24	COMP24	COMP24	COMP24	COMP24	COMP24	COMP24
FREQUENCY	Permit Condition	18/31	18/31	22/31	22/31	20/31	20/31	20/31	20/31
	Monitored	18/31	18/31	22/31	22/31	20/31	20/31	20/31	20/31
EFFLUENT LIMITATIONS	Permit Minimum	NA	NA	NA	NA	NA	NA	NA	NA
	Permit Average	NA	NA	NA	NA	19.8	NA	28.4	NA
	Permit Maximum	NA	NA	21	NA	40.0	NA	85.2	NA
UNITS=		lb/day	mg/L	lb/day	mg/L	lb/day	mg/L	lb/day	mg/L
Thu	1								
Fri	2								
Sat	3								
Sun	4					NQ 2.4	NQ 0.004	NQ 4.8	NQ 0.009
Mon	5								
Tue	6	NQ 4.7	NQ 0.009	4	0.008	< 1.6	< 0.003	NQ 7.5	NQ 0.015
Wed	7								
Thu	8								
Fri	9								
Sat	10								
Sun	11			NQ 2	NQ 0.004	< 2.1	< 0.003	NQ 11.5	NQ 0.018
Mon	12			136	0.190				
Tue	13	NQ 5.6	NQ 0.008	188	0.260	< 2.4	< 0.003	NQ 6.7	NQ 0.009
Wed	14			138	0.280				
Thu	15			110	0.240				
Fri	16	7.3	0.011	35	0.053	< 2.2	< 0.003	NQ 6.3	NQ 0.010
Sat	17	< 3.8	< 0.006	4	0.007	< 2.1	< 0.003	< 4.6	< 0.007
Sun	18	< 3.4	< 0.006	3	0.005	< 1.9	< 0.003	NQ 4.5	NQ 0.008
Mon	19	5.7	0.011	NQ 1	NQ 0.003	< 1.7	< 0.003	NQ 5.1	NQ 0.010
Tue	20	< 3.7	< 0.006	4	0.007	< 2.0	< 0.003	NQ 6.8	NQ 0.011
Wed	21	NQ 6.2	NQ 0.010	3	0.005	< 2.1	< 0.003	NQ 5.4	NQ 0.009
Thu	22	< 3.8	< 0.006	< 1	< 0.002	NQ 2.1	NQ 0.003	NQ 6.1	NQ 0.010
Fri	23	< 3.6	< 0.006	< 1	< 0.002	< 2.0	< 0.003	NQ 8.3	NQ 0.014
Sat	24	< 3.7	< 0.006	< 1	< 0.002	< 2.1	< 0.003	NQ 5.3	NQ 0.009
Sun	25	< 3.5	< 0.006	< 1	< 0.002	< 1.9	< 0.003	NQ 6.5	NQ 0.011
Mon	26	< 3.7	< 0.006	4	0.007	< 2.0	< 0.003	NQ 10.5	NQ 0.017
Tue	27	< 2.5	< 0.006	< 1	< 0.002	< 1.4	< 0.003	< 3.1	< 0.007
Wed	28	NQ 3.2	NQ 0.010	NQ 1	NQ 0.003	NQ 1.3	NQ 0.004	< 2.4	< 0.007
Thu	29	16.0	0.025	NQ 2	NQ 0.003	< 2.1	< 0.003	< 4.7	< 0.007
Fri	30	< 4.1	< 0.006	NQ 2	NQ 0.003	< 2.3	< 0.003	< 5.0	< 0.007
Sat	31	< 3.4	< 0.006	NQ 1	NQ 0.002	< 1.9	< 0.003	< 4.2	< 0.007
MONTHLY AVERAGE		1.6	< 0.006	29	0.048	0.0	0	0.0	0
HIGHEST VALUE		16.0	0.025	188	0.280	NQ 2.4	NQ 0.004	NQ 11.5	NQ 0.018
LOWEST VALUE		< 2.5	< 0.006	< 1	< 0.002	NQ 1.3	< 0.003	< 2.4	< 0.007
NO. OF TIMES WEEKLY, DAILY, MONTHLY EFFL. LIMITATIONS EXCEEDED				5		0		0	

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Prepared by or under the direction of (Certified Operator): **Patrick M. Gorman, P.E.**

Date (month, day, year): 9/20/2019

Preparer's telephone number: 219-787-2712

Operator's certification number: WW009310

Signature of principal executive officer or authorized agent (or attested by NetDMR subscriber agreement): **Robert A. Maciel**

Date (month, day, year): 9/20/2019

ArcelorMittal Burns Harbor LLC
Flat Carbon Steel

ArcelorMittal

VIA NETDMR

Mr. Gary Starks, Section Chief
Office of Water Quality, Compliance Branch
Indiana Department of Environmental Management
Indiana Government Center North
100 North Senate Avenue
Indianapolis, IN 46204-2251

September 19, 2019
Ref: RA/NPDES/MR

Subject: Reported Exceedances of 7-day Average Ammonia as Nitrogen Limitations
NPDES Permit No. IN0000175, Outfall 001
ArcelorMittal Burns Harbor LLC

Dear Mr. Starks,

In accordance with Part II, Section C.4 of NPDES Permit IN0000175, this is to provide a timely written report regarding analytical results indicating exceedances of the 7-day average concentration and the 7-day average mass discharge limitation for ammonia as nitrogen that occurred at Outfall 001 during August 1-7, 2019.

The 7-day average ammonia as nitrogen monitoring values for Outfall 001 for the periods of August 1 through August 7, 2019 were 0.48 mg/l versus the permit limit of 0.37 mg/l and 460 lbs per day versus the permit limit of 385 lbs per day.

During the 7-day average periods, the daily concentrations were slightly higher than normal for this time of year. The original 7-day average values for concentration and mass discharge would have been within the permit limits. However, in response to an incident that occurred the Indiana Department of Environmental Management (IDEM) requested that the facility go back and analyze any retain samples for ammonia that were within hold time. These samples were also higher than normal with one very high reported concentration of 0.92 mg/l for the August 5 sample period resulting in daily maximum concentration and mass discharge exceedances. These results were enough to raise the 7-day averages over their respective limits.

Additionally, the ammonia as nitrogen concentrations and mass discharges at the process water discharge Outfall 011, directly upstream of Outfall 001, were compared to the Outfall 001 concentrations and mass discharges. With the exception of the August 5 sample, the concentrations at 001 during this 7-day period averaged over 50% percent higher than the concentrations at Outfall 011 for ammonia.

ArcelorMittal Burns Harbor, LLC.
Environmental Mgmt. Dept.
250 W. U.S. Highway 12
Burns Harbor, IN 46304
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ArcelorMittal

Outfall 001 consists of the waters from Outfall 011, ground water, storm water, and non-contact cooling water from the plant as well as an influx of ground water and storm water from offsite properties. Historic sampling of the non-contact cooling water directly downstream of all contributing plant discharges but prior to any other adjacent land/facilities did not show any source of an increased concentration of ammonia.

Currently, ArcelorMittal Burns Harbor is conducting sampling to verify historic results and to attempt to locate the influx of the waters containing ammonia. During this study, measurable quantities of ammonia have been found in the lakewater intake samples with results reaching up to 0.12 mg/l of ammonia. It is unknown at this point whether that is a cause of the differences between the two outfalls.

Burns Harbor is awaiting final approval and issuance of a modified ammonia 301(g) variance. Due to ammonia as nitrogen being a known by-product of iron production, Burns Harbor has never had ammonia treatment and applied for an original ammonia 301(g) variance in 1983. Burns Harbor applied for a modification to the ammonia 301(g) variance in July 2012, as Burns Harbor has consistently demonstrated that future compliance could only be maintained through the installation of ammonia treatment.

If there are any questions concerning this matter, please contact Teri Kirk at (219) 787-4643.

Very truly yours,

R. A. Maciel,
Environmental Manager
ArcelorMittal Burns Harbor LLC

ArcelorMittal Burns Harbor, LLC.
Environmental Mgmt. Dept.
250 W. U.S. Highway 12
Burns Harbor, IN 46304
USA

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ArcelorMittal Burns Harbor LLC
Flat Carbon Steel

ArcelorMittal

VIA NETDMR

Mr. Gary Starks, Section Chief
Office of Water Quality, Compliance Branch
Indiana Department of Environmental Management
Indiana Government Center North
100 North Senate Avenue
Indianapolis, IN 46204-2251

September 19, 2019
Ref: RA/NPDES/MR

Subject: Reported Exceedances of 7-day Average Ammonia as Nitrogen Limitations
NPDES Permit No. IN0000175, Outfall 001
ArcelorMittal Burns Harbor LLC

Dear Mr. Starks,

In accordance with Part II, Section C.4 of NPDES Permit IN0000175, this is to provide a timely written report regarding analytical results indicating two exceedances of the 7-day average concentration and two exceedance of the 7-day average mass discharge limitation for ammonia as nitrogen that occurred at Outfall 001 for the August 8-14 and 15-21, 2019 sample periods.

The 7-day average ammonia as nitrogen concentrations for Outfall 001 for the periods of August 8 through August 14 and August 15 through 21 were 0.65 and 0.49 mg/l respectively versus the permit limit of 0.37 mg/l. The 7-day average ammonia as nitrogen calculated mass discharges for Outfall 001 for the same periods were 679 and 488 lbs per day versus the permit limit of 385 lbs per day.

On the morning of August 11, 2019, the Blast Furnace Closed Water Pumping Station (BFCWPS) went down. This station is used to cool and recycle the waters from the blast furnace scrubber water system. Repairs were made to the system and it was placed back in service on August 16. Due to the outage, there were daily exceedances for concentration and mass discharge of ammonia for the August 11 through August 16 sample periods. These exceedances resulted in the 7-day average discharge exceedances for the two 7-day periods.

Once the station was repaired on August 16, the ammonia as nitrogen concentrations and mass discharges at the process water discharge Outfall 011, directly upstream of Outfall 001, were compared to the Outfall 001 concentrations and mass discharges. The concentration at Outfall 001 continued to have results higher than the concentrations at Outfall 011 for ammonia.

ArcelorMittal Burns Harbor, LLC.
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ArcelorMittal

Outfall 001 consists of the waters from Outfall 011, ground water, storm water, and non-contact cooling water from the plant as well as an influx of ground water and storm water from offsite properties. Historic sampling of the non-contact cooling water directly downstream of all contributing plant discharges but prior to any other adjacent land/facilities did not show any source of an increased concentration of ammonia.

Currently, ArcelorMittal Burns Harbor is conducting sampling to verify historic results and to attempt to locate the influx of the waters containing ammonia. During this study, measurable quantities of ammonia have been found in the lakewater intake samples with results reaching up to 0.23 mg/l of ammonia. It is unknown at this point whether that is a cause of the differences between the two outfalls.

Burns Harbor is awaiting final approval and issuance of a modified ammonia 301(g) variance. Due to ammonia as nitrogen being a known by-product of iron production, Burns Harbor has never had ammonia treatment and applied for an original ammonia 301(g) variance in 1983. Burns Harbor applied for a modification to the ammonia 301(g) variance in July 2012, as Burns Harbor has consistently demonstrated that future compliance could only be maintained through the installation of ammonia treatment.

If there are any questions concerning this matter, please contact Teri Kirk at (219) 787-4643.

Very truly yours,

R. A. Maciel,
Environmental Manager
ArcelorMittal Burns Harbor LLC

ArcelorMittal Burns Harbor, LLC.
Environmental Mgmt. Dept.
250 W. U.S. Highway 12
Burns Harbor, IN 46304
USA

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ArcelorMittal Burns Harbor LLC
Flat Carbon Steel

ArcelorMittal

VIA NETDMR

Mr. Gary Starks, Section Chief
Office of Water Quality, Compliance Branch
Indiana Department of Environmental Management
Indiana Government Center North
100 North Senate Avenue
Indianapolis, IN 46204-2251

September 19, 2019
Ref: RA/NPDES/MR

Subject: Reported Exceedances of 7-day Average Ammonia as Nitrogen Limitations
NPDES Permit No. IN0000175, Outfall 001
ArcelorMittal Burns Harbor LLC

Dear Mr. Starks,

In accordance with Part II, Section C.4 of NPDES Permit IN0000175, this is to provide a timely written report regarding analytical results indicating exceedances of the 7-day average concentration and the 7-day average mass discharge limitation for ammonia as nitrogen that occurred at Outfall 001 during August 29-31, 2019.

The 7-day average ammonia as nitrogen monitoring values for Outfall 001 for the period of August 29 through August 31, 2019 were 0.39 mg/l versus the permit limit of 0.37 mg/l and 401 lbs per day versus the permit limit of 385 lbs per day.

During the 7-day average periods, the daily concentrations were within limits however there was one slightly higher result on August 30, 2019 of 0.48 mg/l. The original 7-day average values for concentration and mass discharge for this 7-day period would have been within the permit limits. However, in response to an incident that occurred the Indiana Department of Environmental Management (IDEM) requested that the facility analyze for ammonia daily. The sample for the August 30, 2019 sample period would not normally have been analyzed.

Additionally, the ammonia as nitrogen concentrations and mass discharges at the process water discharge Outfall 011, directly upstream of Outfall 001, were compared to the Outfall 001 concentrations and mass discharges. The concentrations at 001 during this 7-day period averaged over 40% percent higher than the concentrations at Outfall 011 for ammonia.

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Outfall 001 consists of the waters from Outfall 011, ground water, storm water, and non-contact cooling water from the plant as well as an influx of ground water and storm water from offsite properties. Historic sampling of the non-contact cooling water directly downstream of all contributing plant discharges but prior to any other adjacent land/facilities did not show any source of an increased concentration of ammonia.

Currently, ArcelorMittal Burns Harbor is conducting sampling to verify historic results and to attempt to locate the influx of the waters containing ammonia. During this study, measurable quantities of ammonia have been found in the lakewater intake samples with results reaching up to 0.23 mg/l of ammonia. It is unknown at this point whether that is a cause of the differences between the two outfalls.

Burns Harbor is awaiting final approval and issuance of a modified ammonia 301(g) variance. Due to ammonia as nitrogen being a known by-product of iron production, Burns Harbor has never had ammonia treatment and applied for an original ammonia 301(g) variance in 1983. Burns Harbor applied for a modification to the ammonia 301(g) variance in July 2012, as Burns Harbor has consistently demonstrated that future compliance could only be maintained through the installation of ammonia treatment.

If there are any questions concerning this matter, please contact Teri Kirk at (219) 787-4643.

Very truly yours,

R. A. Maciel,
Environmental Manager
ArcelorMittal Burns Harbor LLC

ArcelorMittal Burns Harbor, LLC.
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Flat Carbon Steel

ArcelorMittal

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Gary Starks, Section Chief
Office of Water Quality, Compliance Branch
Indiana Department of Environmental Management
100 North Senate Avenue. ICGN 1255
Indianapolis, IN 46204-2251

September 19, 2019
Ref: RA/NPDES/MR

Subject: Monthly Average Exceedances for Free Cyanide
NPDES Permit No. IN0000175, Outfall 001
ArcelorMittal Burns Harbor LLC

Dear Mr. Starks,

In accordance with Part II, Section C.4 of the subject permit, this is to provide a timely written report regarding exceedances of the monthly average concentration and mass discharge limitations for free cyanide that occurred at Outfall 001 for the month of August 2019.

The calculated August 2019 monthly average free cyanide concentration was 0.03 mg/l versus the monthly average limit of 0.004 mg/l. The calculated monthly average mass discharge was 29.2 lbs/day versus the limit of 5 lbs/day.

The monthly average exceedances are the result of five daily exceedances. The cause of the daily exceedances has been determined to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the blast furnace scrubber water system. The station went down the morning of August 11, 2019. Repairs were completed and the system was placed back in service on August 16, 2019.

IDEM has provided requirements for additional daily sampling. The results of this sampling have been reported to IDEM per the requirements given.

ArcelorMittal Burns Harbor, LLC.
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ArcelorMittal

If there are any questions concerning this matter, please contact Teri Kirk at (219) 787-4643.

Very truly yours,

R. A. Maciel,
Environmental Manager

Cc: Cary Mathias

ArcelorMittal Burns Harbor, LLC.
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NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

INSTRUCTIONS: Complete all sections of this form and email it to Office of Water Quality, Compliance Data Section at wwreports@idem.IN.gov. Thorough completion of this report will satisfy the Office of Water Quality (OWQ) telephone and 5-day written noncompliance notification reporting requirements of your NPDES permit. To speak with someone in OWQ, call (317) 232-8670.

Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/25/19
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/5/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	0.91 mg.l and 892 lbs/day
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:

On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such a sample was identified for August 5th and subsequently sent out for third party analysis. Results from this retain sample, for ammonia at Outfall 001 for August 5. showed concentrations of 0.91 mg/l resulting in mass concentrations of 892 lbs/day versus the limit of 0.52 mg/l and 540 lbs/day. The cause of this exceedance is unknonwn at this time. We have asked the contract laboratory to rerun this sample as it is twice the concentration of the prior and subsequent days.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The sample was taken from approximately 0600 August 5 through 0600 August 6. The August 4th and 6th samples were in compliance.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 08/25/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

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Indiana Department of Environmental Management
Office of Water Quality

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FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date** *(month, day, year)*
Theresa Kirk	219-787-2712	REVISED 9/18/19
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/5/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	Revised to 0.92 mg.l and 901 lbs/day
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:
REVISED ONLY TO UPDATE MONITORED VALUES TO INCLUDE AVERAGE OF ORIGINAL AND RE-RUN RESULTS. On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such a sample was identified for August 5th and subsequently sent out for third party analysis. Results from this retain sample, for ammonia at Outfall 001 for August 5. showed concentrations of 0.92 mg/l resulting in mass concentrations of 892 lbs/day versus the limit of 0.52 mg/l and 540 lbs/day. The cause of this exceedance is unknonwn at this time. We have asked the contract laboratory to rerun this sample as it is twice the concentration of the prior and subsequent days.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:
The sample was taken from approximately 0600 August 5 through 0600 August 6. The August 4th and 6th samples were in compliance.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:
Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 9/18/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/15/19

Email Address

theresa.kirk@arcelormittal.com

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/11/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	0.92 mg.l and 911 lbs/day
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
8/13/19	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	0.78 mg/l and 768 lbs/day

Description of the Noncompliance and its Cause:

Today, ArcelorMittal Burns Harbor received confirmation of high results for ammonia at Outfall 001. The resulting concentrations on 8/13 and 8/15/19 were 0.92 and 0.78 mg/l respectively versus the limit of 0.52 mg/l. This resulted in mass concentrations of 911 and 768 lbs/day versus the limit of 540 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs are in progress and it will be placed back in service as soon as possible. IDEM is providing requirements for sampling, etc that will determine further actions

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue.

The samples were taken from approximately 0600 August 11 through August 12 and 0600 August 13 through 0600 August 14, 2019. Prior samples were in compliance with the daily limits. We do not have subsequent sample results at this time.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is continuing to monitor the situation and to make repairs a swiftly as possible.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 08/15/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date** *(month, day, year)*
Theresa Kirk	219-787-2712	REVISED 9/18/19
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/11/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	0.92 mg.l and 911 lbs/day
Date *(month, day, year)*	**Outfall**	**Parameter**	**Permit Limit** *(Units/Daily/Weekly/Ave/Max/Min)*	**Monitored Value**
8/13/19	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	REVISED TO 0.80 mg/l and 891 lbs/day

Description of the Noncompliance and its Cause:

REVISED ONLY TO UPDATE MONITORED VALUES FOR 8/13/19 DUE TO UPDATED DATA AND DATES DATES IN THE NARRATIVE BELOW. Today, ArcelorMittal Burns Harbor received confirmation of high results for ammonia at Outfall 001. The resulting concentrations on 8/11 and 8/13/19 were 0.92 and 0.80 mg/l respectively versus the limit of 0.52 mg/l. This resulted in mass concentrations of 911 and 891 lbs/day versus the limit of 540 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs are in progress and it will be placed back in service as soon as possible. IDEM is providing requirements for sampling, etc that will determine further actions

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The samples were taken from approximately 0600 August 11 through August 12 and 0600 August 13 through 0600 August 14, 2019. Prior samples were in compliance with the daily limits. We do not have subsequent sample results at this time.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is continuing to monitor the situation and to make repairs a swiftly as possible.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 9/18/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/24/19

Email Address

theresa.kirk@arcelormittal.com

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/12/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	1.0 mg.l and 1117 lbs/day
8/14/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	0.57 mg/l and 562 lbs/day

Description of the Noncompliance and its Cause:

On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such samples were identified for August 12th and 14th and subsequently sent out for third party analysis. Results from these retain samples, for ammonia at Outfall 001 for August 12 and 14. showed concentrations of 1 and 0.57 mg/l respectively resulting in mass concentrations of 1117 and 562 lbs/day versus the limit of 0.52 mg/l and 540 lbs/day. The cause of these exceedance stem from the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS) as previously reported. This pumping station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The samples were taken from approximately 0600 August 12 through 0600 August 13 and 0600 August 13 through 0600 August 14, 2019. The August 8 and August 18th samples were in compliance.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 08/24/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Robert Maciel	219-787-2712	8/17/19
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/15/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	0.81 mg.l and 854 lbs/day
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:

Today, ArcelorMittal Burns Harbor received confirmation of high results for ammonia at Outfall 001. The resulting concentrations on 8/15/19 were 0.81 versus the limit of 0.52 mg/l. This resulted in mass concentration of 854 lbs/day versus the limit of 540 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service. IDEM has provided additional requirements for sampling.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The ammonia sample was taken from approximately 0600 August 14 through 0600 August 15, 2019. Prior samples were in non compliance. We do not have subsequent sample results at this time although samples have been taken and we awaiting results.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 011 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: Robert Maciel DATE *(month, day, year)*:

08/15/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
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Office of Water Quality

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Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/23/19

Email Address: theresa.kirk@arcelormittal.com

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/16/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	0.53 mg.l and 554 lbs/day
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:
ArcelorMittal Burns Harbor received confirmation of a high result for ammonia at Outfall 001. The resulting concentration on 8/16/19 was 0.53 versus the limit of 0.52 mg/l. This resulted in a mass concentration of 554 lbs/day versus the limit of 540 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service. IDEM has provided additional requirements for sampling. This report is from additional required sampling

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:
The ammonia sample was taken from approximately 0600 August 16 through 0600 August 17, 2019. Prior samples were in non compliance. We do not have subsequent sample results at this time although samples have been taken and we awaiting results.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:
Burns Harbor is now monitoring the full suite of analytes for Outfall 011 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 08/23/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

INSTRUCTIONS: Complete all sections of this form and email it to Office of Water Quality, Compliance Data Section at wwreports@idem.IN.gov. Thorough completion of this report will satisfy the Office of Water Quality (OWQ) telephone and 5-day written noncompliance notification reporting requirements of your NPDES permit. To speak with someone in OWQ, call (317) 232-8670.

Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Robert Maciel	219-787-2712	8/19/19
Email Address		
robert.maciel@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/17/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	0.53 mg.l and 536.1 lbs/day
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:

Today, ArcelorMittal Burns Harbor received confirmation of high results for ammonia at Outfall 001. The resulting concentrations on 8/17/19 were 0.53 versus the limit of 0.52 mg/l. This resulted in mass concentration of 536.1 lbs/day versus the limit of 540 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service. IDEM has provided additional requirements for sampling.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The ammonia sample was taken from approximately 0600 August 16 through 0600 August 17, 2019. Prior samples were in non compliance. We do not have subsequent sample results at this time although samples have been taken and we awaiting results. The initial sampling result was determined to be in comliance however a reassessment of the flow data indicated that compliance had not been achieved hence this notice.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 011 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: Robert Maciel DATE *(month, day, year)*:

08/19/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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Additionally, any noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	RESCINDED 9/18/19
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/17/2019	001	Ammonia daily mass and concentration	0.52 mg/l and 540 lbs/day	REVISED TO 0.52 mg/l and 525 lbs/day
Date *(month, day, year)*	**Outfall**	**Parameter**	**Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)***	**Monitored Value**

Description of the Noncompliance and its Cause:
WHEN DATA WAS REVISED TO CORRECT ERROR IN ANALYTICAL REPORT SAMPLE DATES FOR AUGUST 17, REVISED CALCULATIONS INDICATED THAT THERE WAS NO EXCEEDANCE TO BE REPORTED.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:
The ammonia sample were taken from approximately 0600 August 17 through 0600 August 18. Pruor samples were in non compliance. We do not have subsequent sample results at this time although samples have been taken and we are awaiting results. the initial sampling result was determined to be in compliance however a reassessment of the flow data indiated that the compliance had not been achieved hence this notice

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:
Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 9/18/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/30/2019
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/12/2019	001	Free Cyanide	0.0088 mg/l	0.16 mg/l
08/14/2019	001	Free Cyanide	.0088 mg/l	0.106 mg/l

Description of the Noncompliance and its Cause:

On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such samples were identified for August 12th and 14th which were subsequently sent out for third party analysis. Results from these retain samples, for free cyanide at Outfall 001 for August 12 and 14 show concentrations of 0.16 and 0.106 mg/l respectively versus the limit of 0.0088 mg/l. The cause of these exceedances stems from the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS) as previously reported. This pumping station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

These sample were taken from approximately 0600 August 12 through 0600 August 13 and 0600 August 14 to 0600 August 15. The August 17th sample was in compliance. It should be noted that these samples were analyzed using an alternate method as the retain composite samples were not taken per the sample method required for the analytical method specified in the permit.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 8/30/2019

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	9/1/2019

Email Address: theresa.kirk@arcelormittal.com

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/12/2019	001	Free Cyanide	9.9 lbs/day	179 lbs/day
08/14/2019	001	Free Cyanide	9.9 lbs/day	105 lbs/day

Description of the Noncompliance and its Cause:

On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such samples were identified for August 12th and 14th which were subsequently sent out for third party analysis. Results from these retain samples, for free cyanide at Outfall 001 for August 12 and 14 show concentrations of 0.16 and 0.106 mg/l respectively which result in mass loadings of 179 and 105 lbs/day of versus the limit of 9.9. The cause of these exceedances stems from the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS) as previously reported. This pumping station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

These sample were taken from approximately 0600 August 12 through 0600 August 13 and 0600 August 14 to 0600 August 15. The August 17th sample was in compliance. It should be noted that these samples were analyzed using an alternate method as the retain composite samples were not taken per the sample method required for the analytical method specified in the permit.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 9/1/2019

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

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Indiana Department of Environmental Management
Office of Water Quality

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FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/31/2019

Email Address: theresa.kirk@arcelormittal.com

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/13/2019	001	Free Cyanide	0.0088 mg/l	0.22 mg/l
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:

On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such a sample was identified for August 13th and was subsequently sent out for third party analysis. Results from this retain sample, for free cyanide at Outfall 001 for August 13th shows a concentration of 0.22 mg/l versus the limit of 0.0088 mg/l. The cause of this exceedance stems from the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS) as previously reported. This pumping station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The sample was taken from approximately 0600 August 13 to 0600 August 14. The August 17th sample was in compliance. It should be noted that these samples were analyzed using an alternate method as the retain composite samples were not taken per the sample method required for the analytical method specified in the permit.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 8/31/2019

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	9/1/2019

Email Address

theresa.kirk@arcelormittal.com

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/13/2019	001	Free Cyanide	9.9 lbs/day	245 lbs/day
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:

On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such a sample was identified for August 13th and was subsequently sent out for third party analysis. Results from this retain sample, for free cyanide at Outfall 001 for August 13th shows a concentration of 0.22 mg/l which results in a mass loading of 245 lbs/day versus the limit of 9.9 lbs/day. The cause of this exceedance stems from the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS) as previously reported. This pumping station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The sample was taken from approximately 0600 August 13 to 0600 August 14. The August 17th sample was in compliance. It should be noted that these samples were analyzed using an alternate method as the retain composite samples were not taken per the sample method required for the analytical method specified in the permit.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 9/1/2019

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

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Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/30/2019
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/15/2019	001	Free Cyanide	0.0088 mg/l	0.1252 mg/l
08/16/2019	001	Free Cyanide	0.0088 mg/l	0.0119 mg/l

Description of the Noncompliance and its Cause:

On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such samples were identified for August 15th and16th and were subsequently sent out for third party analysis. Results from these retain sample, for free cyanide at Outfall 001 for August 15th and 16th show concentrations of 0.1252 and 0.0119 mg/l respectively versus the limit of 0.0088 mg/l. The cause of these exceedances stems from the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS) as previously reported. This pumping station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The sample was taken from approximately 0600 August 15 to 0600 August 16 and 0600 August 16 through 0600 August 17. The August 17th sample was in compliance. It should be noted that these samples were analyzed using an alternate method as the retain composite samples were not taken per the sample method required for the analytical method specified in the permit.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 8/30/2019

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

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Office of Water Quality

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FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	9/1/2019
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/15/2019	001	Free Cyanide	9.9 lbs/day	116 lbs/day
08/16/2019	001	Free Cyanide	9.9 lbs/day	12 lbs/day

Description of the Noncompliance and its Cause:

On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such samples were identified for August 15th and16th and were subsequently sent out for third party analysis. Results from these retain sample, for free cyanide at Outfall 001 for August 15th and 16th show concentrations of 0.1252 and 0.0119 mg/l respectively which result in mass loadings of 116 and 12 lbs/day versus the limit of 9.9 mg/l. The cause of these exceedances stems from the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS) as previously reported. This pumping station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The sample was taken from approximately 0600 August 15 to 0600 August 16 and 0600 August 16 through 0600 August 17. The August 17th sample was in compliance. It should be noted that these samples were analyzed using an alternate method as the retain composite samples were not taken per the sample method required for the analytical method specified in the permit.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 9/1/2019

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

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Indiana Department of Environmental Management
Office of Water Quality

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FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/15/19
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/13/2019	011	Total Cyanide	21 lbs/day	188
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:

Today, ArcelorMittal Burns Harbor received a high result for total cyanide at Outfall 011. The resulting concentration was 0.26 mg/l resulting in a mass concentration of 188 lbs/day versus the limit of 21 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs are in progress and it will be placed back in service as soon as possible. IDEM is providing requirements for sampling, etc that will determine further actions

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The cyanide sample was taken from approximately 0600 August 13 through 0600 August 14, 2019. Prior samples were in compliance. We do not have subsequent sample results at this time.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is continuing to monitor the situation and to make repairs a swiftly as possible.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 08/15/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

INSTRUCTIONS: Complete all sections of this form and email it to Office of Water Quality, Compliance Data Section at wwreports@idem.IN.gov. Thorough completion of this report will satisfy the Office of Water Quality (OWQ) telephone and 5-day written noncompliance notification reporting requirements of your NPDES permit. To speak with someone in OWQ, call (317) 232-8670.

Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	8/23/19
Email Address		
Theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/12/2019	011	Total Cyanide	21 lbs/day	136
08/14/2019	011	Total Cyanide	21 lbs/day	138

Description of the Noncompliance and its Cause:

On August 16th ArcelorMittal Burns Harbor was instructed by IDEM to go back and analyze any retain 24 hour composite samples that the facility may have that were properly presesrved. Such samples were identified for August 12th and 14th ans subsequently sent out for third party analysis. Results from these retain samples, for total cyanide at Outfall 011 for August 12 and 14. showed concentrations of 0.19 and 0.28 mg/l respectively resulting in mass concentrations of 136 and 138 lbs/day versus the limit of 21 lbs/day. The cause of these exceedance stem from the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS) as previously reported. This pumping station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is was back in service.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:

The cyanide sample was taken from approximately 06:00AM on the stated sample date through 06:00AM the following day. The August 11, 2019 sample was in compliance.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:

Burns Harbor is now monitoring the full suite of analytes for Outfall 011 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 08/23/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

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FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Robert Maciel	219-787-2712	8/17/19
Email Address		
robert.maciel@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/15/2019	011	Total Cyanide	21 lbs/day	109
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:
Today, ArcelorMittal Burns Harbor received a high result for total cyanide at Outfall 011. The resulting concentration was 0.24 mg/l resulting in a mass concentration of 109 lbs/day versus the limit of 21 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service. IDEM has provided additional requirements for sampling.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:
.The cyanide sample was taken from approximately 0600 August 14 through 0600 August 15, 2019. Prior samples were in non compliance. We do not have subsequent sample results at this time although samples have been taken and we awaiting results.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:
Burns Harbor is now monitoring the full suite of analytes for Outfall 011 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: Robert Maciel DATE *(month, day, year)*:
08/17/18

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Theresa Kirk	219-787-2712	REVISED 9/18/19

Email Address: theresa.kirk@arcelormittal.com

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/15/2019	011	Total Cyanide	21 lbs/day	REVISED TO 110
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:
REVISED TO CORRECT ROUNDING ERROR IN MONITORED VALUES AND SAMPLE TIMES ONLY. Today, ArcelorMittal Burns Harbor received a high result for total cyanide at Outfall 011. The resulting concentration was 0.24 mg/l resulting in a mass concentration of 110 lbs/day versus the limit of 21 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service. IDEM has provided additional requirements for sampling.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:
The cyanide sample was taken from approximately 0600 August 15 through 0600 August 16, 2019. Prior samples were in non compliance. We do not have subsequent sample results at this time.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:
Burns Harbor is now monitoring the full suite of analytes for Outfall 011 daily. the Blast Furnace Closed Water Pumping Station resulmed operation on 15 August 2019 at 2:20 pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 9/18/19

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

State Form 52415 (R / 10-13)
Indiana Department of Environmental Management
Office of Water Quality

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Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date *(month, day, year)***
Robert Maciel	219-787-2712	8/18/19

Email Address: robert.maciel@arcelormittal.com

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/16/2019	011	Total Cyanide	21 lbs/day	33.3
Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value

Description of the Noncompliance and its Cause:
Today, ArcelorMittal Burns Harbor received a high result for total cyanide at Outfall 011. The resulting concentration was 0.053 mg/l resulting in a mass concentration of 33.3 lbs/day versus the limit of 21 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service. IDEM has provided additional requirements for sampling.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:
.The cyanide sample was taken from approximately 0600 August 16 through 0600 August 17, 2019. Prior samples were in non compliance. We do not have subsequent sample results at this time although samples have been taken and we awaiting results.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:
Burns Harbor is now monitoring the full suite of analytes for Outfall 011 daily. The Blast Furnace Closed Water Pumping Station resumed operation on 15 August 2019 at 2:20pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: Robert Maciel DATE *(month, day, year)*: 08/18/18

NONCOMPLIANCE 24-HOUR NOTIFICATION REPORT

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Indiana Department of Environmental Management
Office of Water Quality

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Additionally, any **noncompliance which may pose a significant danger to human health or the environment (including a fish kill) must be immediately reported** to the Emergency Response Section spill response line at: (317) 233-7745 or toll free within Indiana at (888) 233-7745.

FACILITY INFORMATION

Facility Name	County	NPDES Permit Number
ArcelorMittal Burns Harbor LLC	Porter	IN0000175
Individual Reporting	**Telephone Number**	**Reporting Date** *(month, day, year)*
Theresa Kirk	219-787-2712	REVISED 9/18/19
Email Address		
theresa.kirk@arcelormittal.com		

NONCOMPLIANCE INFORMATION

Date *(month, day, year)*	Outfall	Parameter	Permit Limit *(Units/Daily/Weekly/Ave/Max/Min)*	Monitored Value
08/16/2019	011	Total Cyanide	21 lbs/day	REVISED TO 35 lbs/day
Date *(month, day, year)*	**Outfall**	**Parameter**	**Permit Limit** *(Units/Daily/Weekly/Ave/Max/Min)*	**Monitored Value**

Description of the Noncompliance and its Cause:
DATA WAS REVISED TO CORRECT ERROR IN MASS DISCHARGE CALCULATION ONLY. Today, ArcelorMittal Burns Harbor received a high result for total cyanide at Outfall 011. The resulting concentration was 0.053 mg/l resulting in a mass concentration of 35 lbs/day versus the limit of 21 lbs/day. The cause of the exceedance is expected to be the loss of power and operation of the Blast Furnace Closed Water Pumping Station (BFCWPS). This station is used to cool and recycle the waters from the Blast Furnace Scrubber Water system. The station went down the morning of August 11, 2019. Repairs have been made to the unit and it is back in service. IDEM has provided additional requirements for sampling.

Description of the Period of Noncompliance, Including Exact Dates and Time, and if the Noncompliance has not been Corrected, the Anticipated Time it is Expected to Continue:
The cyanide sample was taken from approximately 0600 August 16 through 0600 August 17, 2019. Prior samples were in non compliance. We do not have subsequent sample results at this time, although samples have been taken and we re awaiting results.

Steps Taken or Planned to Reduce, Eliminate, and Prevent Reoccurrence of the Noncompliance:
Burns Harbor is now monitoring the full suite of analytes for Outfall 001 daily. the Blast Furnace Closed Water Pumping Station resulmed operation on 15 August 2019 at 2:20 pm.

CERTIFICATION AND SIGNATURE

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

SIGNATURE: _____ DATE *(month, day, year)*: 9/18/19