



REGION 3

PHILADELPHIA, PA 19103

Report Title: Clean Water Act Compliance Inspection Report
Inspection Date: 09/25/2024
Regulatory Program(s): National Pollutant Discharge Elimination System (NPDES)
Type of Activity: Industrial Wastewater
Site/Facility Name: Vibrantz Specialty Products
Permittee(s): Vibrantz Specialty Products
Site/Facility Operator: Vibrantz Specialty Products
Site/Facility Address: 610 Pittman Road
 Baltimore Maryland, 21226
Latitude: 39.19469 **Longitude:** -76.56416
County/Parish: Anne Arundel
Permit Number: MD0001775
NAICS Code: 325180 **SIC:** 2819
Unique Project #: ECAD-523

Site/Facility Representative(s):	Point of Contact
Bryan Jenkins	<input type="checkbox"/>
Phone: (410) 375-1054 Email: Bryan.Jenkins@Vibrantz.com	
Sophia Li	<input checked="" type="checkbox"/>
Phone: (610) 618-6350 Email: Sophia.Li@Vibrantz.com	

EPA Inspectors:
 Shane McAleer
 Phone: (215) 814-5616 Email: Mcaleer.Shane@EPA.gov
 Brian Tolton
 Phone: (215) 814-3291 Email: Tolton.Brian@EPA.gov

State/Local Inspectors:
 Wendy Huang
 Phone: (410) 537-3526 Email: Wendy.Huang@maryland.gov

Report Preparer Signature/Date	Brian Tolton, Physical Scientist 3ED33	Date
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Supervisor Signature/Date	Jessica Duffy, NPDES Section 2 Chief, 3ED33	Date
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I. Introduction

On September 25, 2024, an inspection team composed of staff from the U.S. Environmental Protection Agency (“EPA”) Region III (hereinafter, referred to as the “EPA Inspection Team”) and a representative of the Maryland Department of the Environment (“MDE”) conducted an industrial wastewater inspection of the Vibrantz Specialty Products LLC facility (hereinafter, “the facility”). The purpose of the inspection was to observe compliance with the Clean Water Act (CWA) and to verify compliance with the facility’s National Pollutant Discharge Elimination System (NPDES) Permit No. MD0001775 (hereinafter, the “Permit”) and applicable State and Federal regulations. The EPA Inspection Team performed a concurrent industrial stormwater compliance evaluation inspection; however, the following inspection report covers the industrial wastewater inspection only.

A. Inspection Opening Conference

The EPA Inspection Team arrived at the site at est. 10:30 AM for the inspection. Inspectors met with the following facility representatives:

Table 1: Inspection Attendee List

Name	Affiliation	Telephone	Email
EPA Region III Inspectors and Contractors			
Shane McAleer	EPA Inspector	(215) 814-5616	Mcaleer.Shane@EPA.gov
Brian Tolton	EPA Inspector	(215) 814-3291	Tolton.Brian@EPA.gov
Site/Facility Representatives			
Bryan Jenkins	Vibrantz	(410) 375-1054	Bryan.Jenkins@Vibrantz.com
Sophia Li	Vibrantz	(610) 618-6350	Sophia.Li@Vibrantz.com
Adam Bates	Vibrantz	(410) 672-9110	Adam.Bates@Vibrantz.com
Doug Crawford	Vibrantz	(410) 636-7155	Doug.Crawford@Vibrantz.com
State or County Representatives			
Wendy Huang	MDE	(443) 934-7737	Wendy.Huang@Maryland.gov

The EPA inspection team displayed their credentials to the facility operator, Vibrantz, at the outset of the inspection, and explained the purpose of the inspection was to observe compliance with its Permit. A copy of the Permit is provided in Attachment 1. The EPA Inspection Team informed the Operator that any information that the Facility deemed to be confidential business information (“CBI”) should be identified to EPA representatives during the inspection and it would be handled as CBI according to EPA’s CBI procedures.

B. Weather and Precipitation Conditions

During the inspection, weather was overcast, around 70° F. National Oceanic and Atmospheric Administration (NOAA) National Weather Service precipitation data for the date of the inspection and 5 days prior are provided in the Table 2 below:

Table 2. Precipitation Data

Station Name	Date	Precipitation Amount (inches) ¹
Baltimore Washington International Airport MD US (USW00093721)	9/20/2024	0.00
Baltimore Washington International Airport MD US (USW00093721)	9/21/2024	0.03
Baltimore Washington International Airport MD US (USW00093721)	9/22/2024	0.27
Baltimore Washington International Airport MD US (USW00093721)	9/23/2024	0.11
Baltimore Washington International Airport MD US (USW00093721)	9/24/2024	0.07
Baltimore Washington International Airport MD US (USW00093721)	9/25/2024	0.19

C. Summary of the Facility

Vibrantz Specialty Products, LLC (formerly Erachem-Comilog and Prince Specialty Products, LLC) owns and operates their Baltimore manganese refining facility located on a 70-acre site bounded on the east and north by the Patapsco River and on the west by Curtis Creek. The facility is engaged in multiple types of processes for the manufacturing of over forty manganese products, including manganese chloride, manganese nitrate, manganese dioxide, manganous dioxide, lithium manganese oxide, manganous manganic oxide, manganese sesquioxide, manganese carbonate, nitrided ferromanganese, and nitrided manganese. The facility processes high-purity manganese ores (mainly from Africa) and byproducts into manganese-based products for use as metals alloys, animal feeds, fertilizers, electronics, steel, etc. Operations are continuous, seven days a week, 365 days a year. Operators work 12-hour shifts. Approximately 80% of the property is within the “main basin” where stormwater runoff along with process wastewater, non-contact cooling water (NCCW), and equipment wash water is conveyed to and treated at the onsite industrial wastewater treatment plant (IWTP), which discharges via Outfall 001 to Curtis Creek. The water collected in the “main basin” is either

¹ Source: NOAA National Climatic Data Center (<http://www.ncdc.noaa.gov/>).

recycled back through the facility or is treated at the IWTP. The IWTP process includes pH adjustment, precipitation, oxidation, filtration and chemical addition of hydrated lime.

II. Facility Activity

During the inspection, the EPA Inspection Team observed: the manganese process buildings, exterior of the buildings, stockpiles, cooling towers, detention basins, IWTP, and in-house laboratory. The EPA Inspection Team was escorted around the Facility by representatives from Vibrantz who described the manganese production process. A photolog is provided in Attachment 2 of photographs taken by the EPA Inspection Team. There are two manganese ore stockpiles that are covered and stored on the west side of the property (Photo 1). The manganese ore is then transported to different buildings depending on what manganese by-product is being manufactured. The solid waste left over from the refinery process, referred to as “gangue”, is placed in stockpiles near the northwest portion of the facility (Photo 4), where it awaits hauling via truck offsite for disposal. The EPA inspection team were also escorted through each facility building to observe each step of the manganese refining process. Process and equipment wash waters typically get pumped to designated collection areas within each building. The collected wastewater is either recycled or pumped to the IWTP. The IWTP treatment processes consist of pH adjustment, precipitation, oxidation, filtration and chemical addition of hydrated lime (Photos 8 and 11 through 14). Treated industrial wastewater effluent from the IWTP is conveyed through an underground 4-inch pipe that runs southwest under the facility, under the adjacent U.S Coast Guard property, and discharges through a single-port diffuser at Outfall 001 to Curtis Creek below the water surface. The outfall was not observed during the inspection. An ISCO 4700 automated composite sampler collects a 24-hour flow proportional sample of the IWTP effluent (Photo 21 and 22). The composite sample is picked up by a Microbac courier every Tuesday and Thursday. A schematic diagram of the IWTP process is provided in Attachment 4.

There is a drain collection system that captures stormwater and potential spills from between the main production area buildings (Photo 9). Stormwater in this area flows to a sump where it gets pumped (Photo 10) to a 20,000-gallon storage tank at the IWTP (Photo 13). At the north end of the facility there is a 6,000-gallon sump (the main basin sump, see Photos 16 and 18) that collects stormwater and gets pumped to a 410,000-gallon storage tank (referred to as the mother of all tanks, or MOAT, Photo 15). The stormwater and process water collected in both the 20,000-gallon storage tank and the MOAT is fed over an extended period to the IWTP and treated as capacity allows. If stormwater from the main basin exceeds the sump capacity or that of the MOAT during a large precipitation event, stormwater overflows into a vegetated channel and is conveyed to three large stormwater detention basins (Photo 19), which discharge via Outfall 003 to an unnamed tributary to the Patapsco River.

III. Observations

Permit requirement Part II section B.8.a

8. POWER FAILURE

In order to maintain compliance with the effluent limitations and prohibitions of this permit, the permittee shall either:

- a. provide an alternative power source sufficient to operate the wastewater collection and treatment facilities or,*
- b. halt, reduce or otherwise control production and all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater collection and treatment facilities.*

Observation 01:

The EPA Inspection team observed that the main basin sump did not have an alternative power source. See Attachment 3 for Vibrantz power contingency memo that was reviewed during records request process.

IV. Records Review

During the opening and closing conferences, the EPA Inspection Team indicated an EPA records request would be submitted to facility representatives after the inspection. The following records were requested by EPA, and provided by the Facility operator via email and the EPA file transfer website on November 4, 2024:

- Current Industrial wastewater permit
- Information on the disposal of any removed substances (Permit Section I. Special Condition D)
- Hauling manifests for gangue waste
- Analytical laboratory Reports (Permit Section I. Special Condition E)
- Wastewater Operator Certification (Permit Section I. Special Condition F)
- A description of the methodology used to estimate flow (Permit Section I. Special Condition G)
- Best Management Practices (BMPs) plan (Permit Section I. Special Condition T)
- Power Failure Contingency (Permit Section I. B. 8)
- DMRs (2022-2024)
- Lab tech Sample forms with temperature readings
- Direct Flow readings (pH, Turbidity etc) (2024).

Vibrantz provided a letter memo agreeing to send all requested records. All records requested were uploaded to the EPA portal as outlined in the memo. Vibrantz records request memo can be found in Attachment 5. Due to amount of requested records, they will not be included in this inspection report.

V. Closing Conference

After the facility walk, the EPA Inspection Team met with the facility representatives for a closing conference. The EPA Inspection Team shared preliminary observations with the facility. The EPA Inspection Team reiterated to the facility representatives that all preliminary observations discussed were not compliance determinations. Any and all preliminary observations shared were subject to further investigation by EPA upon the additional review of records and documentation. Additional observations may be contained in this inspection report that were not identified at the time of the closing conference after EPA reviewed additional materials following the inspection.

The inspection concluded at 14:30

VI. List of Attachments

- Attachment 1: NPDES Permit (MD0001775)
- Attachment 2: Photograph Log
- Attachment 3: Power Failure Contingency Memo
- Attachment 4: IWTP Schematic Diagram
- Attachment 5: Records Request Memo