

REPORT OF RCRA COMPLIANCE EVALUATION INSPECTION

At

BARRETT PLATING

2100 NE 60th Avenue
Des Moines, Iowa 50313
(515) 262-4072

EPA RCRA ID No. None

On

January 17, 2024

By

TOEROEK ASSOCIATES, INC.

For

U.S. ENVIRONMENTAL PROTECTION AGENCY

Region 7

Enforcement and Compliance Assurance Division

INTRODUCTION

At the request of the Enforcement and Compliance Assurance Division/Chemical Branch/RCRA Section of the U.S. Environmental Protection Agency (EPA) Region 7, Toeroek Associates, Inc. and its subcontractor CLAENE Group (Toeroek team) conducted a hazardous waste compliance evaluation inspection (CEI) at Barrett Plating, at 2100 NE 60th Avenue, Des Moines, Iowa. The CEI was conducted under the authority of Section 3007 of the Resource Conservation and Recovery Act (RCRA), as amended. The CEI covered hazardous waste generator, used oil, and universal waste requirements as applicable. This report and its attachments present the findings of the CEI.

PARTICIPANTS

Barrett Plating:

Kathy Nixon, President
Albert Hartfield, Supervisor

Toeroek Team:

John D. Dixon, Inspector, (703) 473-8717

INSPECTION PROCEDURES

Prior to the CEI at Barrett Plating on January 17, 2024, I conducted a drive-by visual inspection. I did not observe any areas of concern during the drive-by. Upon my arrival, I entered office area and introduced myself to Ms. Nixon. I explained the purpose of the CEI and conducted an entry briefing with Ms. Nixon in her office.

During the entry briefing, I presented my business card and EPA credentials to Ms. Nixon. I explained the scope and procedures for the CEI. I explained the facility's right to make confidentiality claims and provided a Notice Regarding Proprietary/Confidential Business Information. I stated that at the conclusion of the CEI, she would be presented with a Confidentiality Notice (Notice) with which she could make or not make a claim of confidentiality for the facility. I also provided Ms. Nixon a copy of U.S. Federal Codes 1001 and 1002, concerning communication of false statements and documents to federal inspectors, and RCRA Section 3007, explaining EPA's inspection authority, both of which she read.

A copy of each of the following documents was left with the facility during the inspection:

- RCRA Facility Access Information Sheet
- Mr. Trevor Urban's business card
- RCRA Section 3007
- U.S. Federal Codes 1001 and 1002
- Notice Regarding Proprietary/Confidential Business Information
- U.S. EPA Small Business Resources Information Sheet
- Chemical Facility Anti-Terrorism Standards
- TCLP – Toxicity Characteristic Leaching Procedure

I conducted the visual inspection and records review on January 17, 2024, accompanied by Ms. Nixon. During the records review, I reviewed facility documentation such as hazardous waste determination records, analytical testing reports, Safety Data Sheets (SDS), purchase records, and permits. I prepared and completed a site-specific inspection checklist to document my observations.

I conducted an exit briefing on January 17, 2024, with Ms. Nixon. During the exit briefing, I provided a Receipt for Documents and Samples, which Ms. Nixon signed, acknowledging receipt (Attachment 1). I provided Ms. Nixon the Notice, which she signed indicating no confidential business information had been provided (Attachment 2). I made no preliminary findings during the inspection so a Notice of Preliminary Findings (NOPF) was not left with the facility at the conclusion of the CEI. However, I explained to Ms. Nixon that findings might be added by EPA after review of the inspection report

A map of facility was obtained during the CEI and is in Attachment 3. An aerial photograph of the facility was downloaded after the CEI and is in Attachment 4. The 18 photographs taken during the CEI are in Attachment 5; of these, 17 are discussed in this report.

FINDINGS AND OBSERVATIONS

1. Facility Description and General Information

Barrett Plating performs zinc electroplating on carbon steel parts for various industrial customers. After zinc plating, parts can be baked, chromated (chromate-conversion coated using yellow hexavalent and clear trivalent chromate compounds), and/or coated with sealer depending on customer specifications. Plating and coating are performed by dipping parts into a series of tanks (baths) containing cleaning solutions, acids, plating/coating solutions, and rinse waters. The plating lines are automated, with large parts (up to 9 feet by 4 feet) plated on the Rack Line (Attachment 5, Photograph 1) and small parts plated on the Barrel Line. A copy of a Barrel Line process sheet showing the types of baths and tank numbers (sequentially, north to south) is in Attachment 6. Photographs of the baths along the Rack Line are in Attachment 5, Photographs 2 through 6. In general, the initial cleaning and rinse tanks are in the middle of each plating line and zinc plating baths and rinses are on the south end. Chromating and sealer coating baths with associated rinses are on the north end of the lines.

Bath solutions and rinse waters associated with the cleaning, acid, and trivalent chromating baths are generated through occasional bath changeouts. According to Ms. Nixon, the hexavalent chromating bath is recharged by addition of new chemicals and is not changed out. All baths and rinse waters generated during changeouts are immediately treated in the facility's onsite wastewater treatment system with no prior storage. The wastewater treatment system consists of a chrome reduction tank (for bath solutions and rinse waters associated with the chromating processes), primary neutralization tank (for pH adjustment), secondary neutralization tank (for stabilization), and flocculation tank (for metals precipitation). After tank treatment, the wastewater is routed to an ALAR vacuum drum sludge removal system that removes and dewateres wastewater treatment sludge. After treatment and sludge removal, wastewater is continuously discharged to the sanitary sewer system for treatment at the City of Des Moines' publicly-owned treatment works (POTW). The wastewater discharge is authorized by a wastewater discharge permit issued by the city.

The wastewater treatment system meets the definition of an exempt wastewater treatment unit (WWTU) in Title 40 *Code of Federal Regulations* (40 CFR 260.10). The facility considers wastewater treatment sludge to be nonhazardous based on product and process knowledge as well as analytical testing. Wastewater treatment sludge is collected for disposal at the Metro Park East Landfill in Mitchellville, Iowa, under a Special Waste Authorization.

Zinc bath filters and solids cleaned from the zinc plating baths are considered by the facility to be nonhazardous based on product and process knowledge. These wastes are added to the wastewater treatment sludge containers for landfill disposal.

According to Ms. Nixon, facility lighting was changed to light emitting diode (LED) fixtures approximately 3 years ago. She stated that no waste lamps have been generated since the lighting upgrade. No other universal waste or used oil is generated at the facility.

General trash is accumulated in several containers throughout the facility and consolidated in a roll-off container east of the building. General trash is collected for landfill disposal at the Metro Park East Landfill in Mitchellville, Iowa.

Barrett Plating began operations at its current location in 2001. The facility consists of a single building with approximately 25,000 square feet under roof (Attachment 5, Photographs 17 and 18). Barrett Plating currently employs six full-time personnel and six part-time personnel who work one shift, five days per week (7:00 a.m. to 4:00 p.m. Monday through Thursday and 7:00 a.m. to 11:30 a.m. Friday).

On August 20, 2004, Barrett Plating was inspected by an EPA contractor as a nongenerator of hazardous waste. During the CEI, the inspector made the preliminary finding that the facility had failed to make a hazardous waste determination on spent fluorescent and sodium lamps, as required by 40 CFR 262.11. The preliminary finding from the prior CEI was not repeated during this CEI.

2. RCRA Status

During the CEI, I determined Barrett Plating's hazardous waste generator status through interviews with Ms. Nixon and Mr. Hartfield, review of current operations, and review of available documentation (including waste determination records, SDSs, and purchasing records).

Facility operations generate four waste streams—wastewater, wastewater treatment sludge, zinc filters and solids, and general trash. Wastewater is transferred immediately upon generation to an exempt WWTU, as defined in 40 CFR 260.10. After treatment, wastewater is discharged to the sanitary sewer system for treatment at the City of Des Moines' POTW under Wastewater Discharge Permit No. B10002 (Attachment 7). The facility considers treated wastewater discharged to the sanitary sewer to be exempt from the definition of solid waste, per 40 CFR 261.4(a)(1)(ii).

The facility considers wastewater treatment sludge to be nonhazardous waste. The definition of F006 listed hazardous waste (wastewater treatment sludges from electroplating operations) specifically exempts zinc plating (segregated basis) on carbon steel. I asked Ms. Nixon what types of metal are plated at the facility. She stated that carbon steel and mild steel are plated. I asked if mild steel differs from carbon steel. Ms. Nixon explained that mild steel is carbon steel, and that the designation refers to a lower carbon content than medium or high-carbon steels. She provided a fact sheet to support the statement (Attachment 8). I asked Ms. Nixon if any other metals (such as copper or cast iron) or types of steel (such as stainless or alloy steel) are ever plated at the facility. She stated that anything other than carbon steel will foul the bath; therefore, the facility only plates carbon steel. I only observed steel parts being plated during the visual inspection, and Mr. Hartfield confirmed that carbon steel is the only metal plated at the facility. Ms. Nixon stated that the zinc plating process is segregated basis (non-cyanide), and provided SDSs for the zinc plating chemicals used at the facility (Attachment 9). In addition, the chromating processes are non-cyanide, non-electrical chemical conversion coating processes that do not meet the definition of electroplating. Based on the information obtained during the CEI, the wastewater treatment sludge does not appear to meet the definition F006 or any other listed hazardous waste.

I asked Ms. Nixon if the wastewater treatment sludge was a characteristic hazardous waste. She stated that the sludge is not a characteristic hazardous waste based on analytical testing and product knowledge. At the time of the CEI, Barrett Plating was awaiting renewal of the Special Waste Authorization (SWA) (No. 77-SWA-62-05) for disposal of wastewater treatment sludge, which expired September 22, 2023 (Attachment 10). She explained that previous analytical testing had shown no hazardous waste characteristics. A copy of the Toxicity Characteristic Leaching Procedure (TCLP) analytical report submitted with the previous SWA renewal application, dated September 22, 2020, is in Attachment 11.

Ms. Nixon explained that the TCLP results initially submitted with the current renewal application were rejected due to use of a non-certified laboratory. Another sample was collected on October 4, 2023, and the results showed a TCLP chromium concentration of 28.7 milligrams per liter (mg/L) (Attachment 12). This result exceeded the 5.0 mg/L characteristic hazardous waste limit for chromium and caused a delay in SWA renewal. Additional samples were collected on October 13 and 16, 2023, and the results for both sampling events did not exceed the TCLP limit for chromium or any other metals (Attachment 13). Based on the analytical results from October 13 and 16, 2023, the wastewater treatment sludge did not appear to be a characteristic hazardous waste.

Ms. Nixon was not sure why the October 4, 2023, sample exceeded the TCLP chromium limit. She did explain that the facility almost exclusively uses trivalent chromium products for chromating and provided copies of the purchasing records for 2023 (Attachment 14). Based on these records, Barrett Plating purchased 2,200 gallons of Hyprotec Clear (trivalent), 30 gallons of Pavchrome Yellow (hexavalent), and 15 gallons of Pavchrome Black (hexavalent) in 2023. Therefore, 98% of the chromium products purchased in 2023 were trivalent chromium products. Ms. Nixon stated that the facility has phased out use of the black chromate coating, so the trivalent chromium percentage will be higher in the future.

The facility considers zinc filters and solids to be nonhazardous based on product and process knowledge. Specifically, the wastes are not characteristic hazardous wastes and because the zinc plating process does not use cyanide, the wastes are not listed hazardous waste. The facility also considers general trash to be nonhazardous based on product and process knowledge.

Barrett Plating considers all four waste streams generated at the facility (wastewater, wastewater treatment sludge, zinc filters and solids, and general trash) to be exempt from the definition of solid waste or nonhazardous waste. During the CEI, I determined that the waste determinations appeared to be accurate. Therefore, I inspected the facility as a nongenerator of hazardous waste. I also determined that the facility does not generate or manage universal waste or used oil.

3. Waste Streams

This section of the CEI report describes waste streams generated by the facility, including the facility's waste determination and waste codes, generation process and rate, management at the facility, and ultimate disposition. The following discussion of waste streams is based on my interview with Ms. Nixon, the visual inspection, and my review of available documentation.

Wastewater is generated from changeout of bath solutions and rinse waters associated with the cleaning, acid, and trivalent chromating processes. All wastewater generated during changeouts is transferred immediately to the exempt WWTU for treatment. After chromium reduction, pH adjustment, metals flocculation, and sludge removal, treated wastewater is discharged to the sanitary sewer for treatment at the City of Des Moines' POTW under Wastewater Discharge Permit No. B10002 (Attachment 7). Copies of the Industrial Monitoring Reports from October through December 2023 are in Attachment 15. Based on these reports, the wastewater flow rate ranges from approximately 5,000 to 12,000 gallons per day (gpd). The facility considers treated wastewater discharged to the sanitary sewer to be exempt from the definition of solid waste, per 40 CFR 261.4(a)(1)(ii).

During the CEI, I observed the wastewater treatment system, including the chrome reduction, neutralization, and flocculation tanks (Attachment 5, Photographs 7 and 9). I observed the ALAR vacuum drum sludge removal system, treated wastewater holding tank, and the discharge to the sanitary sewer system through a Parshall flume (Attachment 5, Photographs 10 through 13). The City of Des Moines maintains an ISCO sampler at the Parshall flume for discharge monitoring (Attachment 5, Photograph 14). A copy of the monitoring data for 2023 is in Attachment 16. I noted no deficiencies with wastewater management or treatment during the CEI.

Wastewater treatment sludge is generated by an ALAR vacuum drum sludge removal system. The sludge is accumulated in 1-cubic-yard fiberboard containers upon generation. The facility considers wastewater treatment sludge to be nonhazardous based on product and process knowledge as well as analytical testing. The previous SWA for the waste authorized disposal of 25,000 pounds per quarter. Wastewater treatment sludge is collected by Ankeny Sanitation and transported to the Metro Park East Landfill for disposal.

During the CEI, I observed accumulation of wastewater treatment sludge from the ALAR vacuum drum sludge removal system (Attachment 5, Photograph 11). I also observed eleven 1-cubic-yard containers of wastewater treatment sludge in the aisle adjacent to the ALAR system (Attachment 5, Photographs 15 and 16). Each container was labeled with the date of generation and an indication of the source of the wastewater that generated the sludge (for example, rinse waters, rack acid). The container dates ranged from December 5, 2023, to January 11, 2024. I noted no deficiencies with management of wastewater treatment sludge during the CEI.

Zinc filters and solids are generated during filter changeout and cleanout of the zinc plating tanks. The facility considers the wastes to be nonhazardous based on product and process knowledge. I did not determine a generation rate for zinc filters and solids during the CEI. The wastes are added to the wastewater treatment sludge accumulation containers when generated. Zinc filters and solids are collected by Ankeny Sanitation and transported to the Metro Park East Landfill for disposal. I did not observe zinc filters and solids in accumulation during the CEI.

General trash consists of office and packaging refuse generated during production and facility maintenance. The facility considers general trash nonhazardous based on product and process knowledge. General trash is accumulated in several containers throughout the facility and transferred to an outdoor roll-off container east of the building. The waste is collected by Ankeny Sanitation and transported to the Metro Park East Landfill for disposal.

During the CEI, I observed various containers for general trash accumulation, including the outdoor roll-off container. I noted no deficiencies with accumulation of general trash during the CEI.

4. Summary of Preliminary Findings

Other than items specifically noted in the narrative, I observed no additional issues. However, further review by EPA may change or add to my findings.

John D.
Dixon

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John D. Dixon
Inspector
CLAENE Group, LLC.

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Amber Whisnant
Section Chief
ECAD/CB/RCRA, EPA Region 7

Attachments

1. Receipt for Documents and Samples (1 Page)
2. Confidentiality Notice (1 Page)
3. Facility Map (1 Page)
4. Google Earth Aerial Photograph (1 Page)
5. Photographic Documentation (18 Photos and Photolog) (11 Pages)
6. Barrel Line Process Sheet (1 Page)
7. Wastewater Discharge Permit B10002 (10 Pages)
8. Carbon Steel Fact Sheet (5 Pages)
9. SDSs for Zinc Plating Chemicals (25 Pages)
10. Special Waste Authorization for Sludge (2 Pages)
11. Sludge TCLP Report Dated September 22, 2020 (1 Page)
12. Sludge TCLP Report Dated October 4, 2023 (1 Page)
13. Sludge TCLP Report Dated October 13 and 20, 2023 (2 Pages)
14. Chromate Purchase Records for 2023 (13 Pages)
15. Wastewater Monitoring Reports (3 Pages)
16. City Monitoring Data for 2023 (2 Pages)