



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

New England Regional Laboratory
Laboratory Services and Applied Sciences Division
11 Technology Drive
North Chelmsford, MA 01863-2431

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Subject: Sampling Summary Report - AeroDynamics
Compliance Sampling Inspection

From: Shannon Shea, Inspector, Field Services Branch (FSB)
Laboratory Services and Applied Science Division (LSASD)

Reviewed By: Jerome Keefe, Field Team Leader
FSB-LSASD

To: Todd Borci, Manager, Water Compliance Section 1
Enforcement and Compliance Assurance Division (ECAD)

CC: Jack Melcher, Inspector, Water Compliance Section 1
ECAD

I. Facility Information

- A. Facility Name: AeroDynamics
- B. Facility Location: 142 Batchelder Rd, Seabrook, NH 03874
- C. Facility Contact(s): Cara Burzynski, President, (603) 814-4253
Owen Labrie, Lab Manager, (603) 814-4249
- D. NPDES ID Number: NHPIU0021

II. Background Information

- A. Date and time of inspection: 4/12/2023
Facility entrance: 09:00
Facility exit: 15:10
- B. Weather Conditions: Sunny, approximately 60 °F
- C. US EPA Representative(s): Jack Melcher, Damian Bednarz, Shannon Shea, William Sommer
- D. State/Local Representative(s): Marico Leclarc, Town of Seabrook, New Hampshire, Industrial Pretreatment Manager
- E. Federally Enforceable Requirements Covered During the Inspection: 40 CFR 403, 40 CFR Part 433.17
- F. Previous Enforcement Actions: N/A

III. Disclaimer

Unless otherwise noted, this report describes conditions at the facility/property as observed by EPA inspector(s), and/or through records provided to and/or information reported to EPA inspector(s) by facility representatives and as understood by the inspector(s). This report may not capture all operations or activities ongoing at the time of the inspection. This report does not make final determinations on

potential areas of concern. Nothing in this report affects EPA's authorities under federal statutes and regulations to pursue further investigation or action.

IV. Type and Purpose of Inspection

US EPA Region 1 representatives Jack Melcher, Damien Bednarz, Shannon Shea, and William Sommer (the "EPA inspection team") conducted an announced National Pollutant Discharge Elimination System (NPDES) industrial user (IU) pretreatment sampling inspection at AeroDynamics, a privately-owned industrial facility located in Seabrook, New Hampshire ("the facility").

The purpose of the inspection is to collect wastewater samples and assess the facility's compliance with the EPA general pretreatment regulations in 40 CFR 403, the applicable EPA categorical pretreatment standards in 40 CFR Part 433.17 (See Section 10), and applicable provisions including but not limited to industrial local limits in the facility's industrial discharge permit (IDP).

V. Facility Description

AeroDynamics is a full-service electroplating finishing company specializing in aerospace, military and defense industries while also serving commercial, industrial, and medical fields. Capabilities include anodizing aluminum, black oxide coating, Chemfilm coating, and passivation of stainless-steel materials. Facility wastewater is treated by an automated wastewater treatment system before discharging to the Town of Seabrook POTW.

VI. Inspection

Jack Melcher announced the inspection to the facility on April 5, 2023. The EPA inspection team Jack Melcher, Damian Bednarz, Shannon Shea, and William Sommer arrived at the facility at approximately 09:00 on April 12, 2023.

VI.A. Opening Conference

An opening conference was held with the US EPA representatives, facility representatives Cara Burzynski, President and Owen Labrie, Lab Manager ("facility representatives") and local representative Mario Leclerc, Town of Seabrook, New Hampshire, Industrial Pretreatment Manager. The EPA inspection team presented credentials and explained the purpose of the wastewater sampling inspection. Mr. Labrie requested split samples.

AeroDynamics has been in operation since 1989 and employs approximately 30 to 35 employees. The facility has one operating shift from 05:00 to 18:00 on Monday through Friday and no production occurs on weekends. Approximately 70% of the work done at AeroDynamics is based in the aerospace and defense industry and approximately 10% of the work done is general metal finishing. Other work done at the facility includes administrative duties and an introduction of serving the medical industry. AeroDynamics received a medical accreditation and plans to increase their work under the accreditation.

In 2020 the facility installed a new automated wastewater treatment system that batch discharges. Wastewater sent to the treatment system is generated from the facilities anodized line, chemical converting coating processes which includes black oxide and chemfilm, and passivation. In February 2022 nickel plating was discontinued at the facility. In April 2022 chrome electroplating was discontinued at the facility. Both processes were discontinued for regulatory and cost reasons.

Each batch of wastewater treated by the automated treatment system is tested by Mr. Labrie prior to discharging to the city. Treated batches take approximately 2.5 to 3 hours to discharge to the Town of

Seabrook. Sample collection points are numerous valves located on the ion exchange columns to which wastewater is piped immediately after treatment. Flocculation occurs during the treatment process and the settled solids are sent to a sludge tank followed by a filter press. Solids are shipped out monthly as hazardous material using a third-party contractor. As of January 2023, the facility has a contract with Red Technologies for monthly hazardous waste removal.

Mr. Labrie requested split samples.

VI.B. Plant Inspection

At approximately 10:00 facility representatives led the EPA Inspection Team on a tour of the facility beginning at the wastewater treatment area. The wastewater treatment system consists of one holding tank, two 3,000-gallon treatment tanks, one ion exchange system, and one sludge tank. An LCD screen displays volume of effluent, sludge level, and valve positions. The facility does not have a flow totalizer connected to the treatment system.

Shannon Shea and William Sommer (“The EPA Sampling Team”) began sampling set up at approximately 10:05. All samples were collected from “BV-0512” valve on the ion exchange column. Batch discharge of treated wastewater began at 10:15. The treatment system line was purged for approximately one minute or a cumulative volume of 2 liters. Grab samples were collected for base/neutral acid extractables (BNAs), total cyanide, and volatile organic compounds (VOCs) beginning at 10:17 and completed by 10:30. Split samples were given to the facility for analysis of VOAs and total cyanide. Manual compositing was done by collecting aliquots of 2 liters every 30 minutes until the treatment system was empty. Aliquot collections began at 10:35. Each aliquot was combined into a 5-gallon cubitainer and homogenized.

While in the wastewater treatment area, Mr. Labrie explained that each batch of wastewater treated by the automated treatment system is tested using a “test kit” prior to discharge. Mr. Labrie further explained the “test kits” are aliquots of treated wastewater collected daily for pH, copper, hexavalent chrome, total chrome, zinc, and cyanide and are analyzed on site in the facilities laboratory. The analytical results from the “test kits” are sent to the Town of Seabrook. Monthly monitoring sampling for NPDES permit compliance is conducted by a third-party contractor, Katahdin Analytical Services.

At approximately 11:00, Mr. Melcher, Mr. Bednarz, and I continued the facility tour with facility representatives while Mr. Sommer remained at the sampling valve to collect aliquots for the composite samples.

Facility representatives brought Mr. Melcher, Mr. Bednarz, and I to the facility laboratory. A saltwater chamber is located inside the facility laboratory and is used for integrity testing products. The discharge water from the saltwater chamber is plumbed to the wastewater treatment system contributing an estimated 1 to 2 milliliters of discharge per hour. A sink located on the laboratory bench is plumbed to the wastewater treatment system in combination with the saltwater chamber discharge. Wastewater from the sink consists of general benchtop chemistry work and wastewater titrations.

Facility representatives brought Mr. Melcher, Mr. Bednarz, and I to the parts cleaning line. Mrs. Burzynski explained that the chemicals used in the cleaning line are prepped for compatibility with specific racks and parts prior to dipping and rinsing. Rinses on the cleaning line are sent to the wastewater treatment system. Dip rinses are changed approximately once a week and spray rinses are changed “as needed” based on volume and part specifics.

From 12:30 to 13:35, I returned waste treatment area at to collect aliquots while Mr. Sommer continued the tour with Mr. Melcher, Mr. Bednarz, and facility representatives. Aliquot collections were completed at 13:35. Composite samples were collected for total metals, pesticides/polychlorinated biphenyls (PCBs). Composite samples were collected at 13:37. A split sample was given to Mr. Leclarc for the analysis of total metals. White foam was present on the surface of each aliquot, the foam dissipated into the aliquot after approximately two minutes.

VI.C. Closing Conference

At 14:15 I joined the EPA Inspection team and facility representatives who had started the closing conference at approximately 14:00. Mr. Melcher stated the potential areas of concern for the facility included lack of sampling and analysis for pesticides/PCBs, improper storage of acid and base chemicals and lack of secondary containment for chemicals stored at the facility.

EPA Inspection team departed 15:10.

VII. Wastewater Sampling

The sampling activities were conducted in accordance with the Standard Operating Procedure for the Collection of Chemical and Biological NPDES Water and Wastewater Samples (*FSBSOP-NPDESWater#*). The EPA sampling team collected composite samples (“AD01”) for the analysis of total metals, pesticides & PCBs. The EPA sampling team collected grab samples (“AD01”) for BNAs, total cyanide, and VOCs. Duplicate samples (“Dup01”) were collected for each analysis during the sampling inspection. An instantaneous grab sample was collected for the in-situ measurement of pH and Total Residual Chlorine (TRC). The sample was field tested for pH using an Oakton “pHtester” pH meter and TRC using a HACH “DR300” colorimeter. The pH was 9.16 S.U. and TRC was 0.04 mg/L. Between 10:15 and 13:45 approximately 1517 gallons were discharged from the wastewater treatment system.

The total metals sample was collected in a 250-mL HDPE container and preserved with nitric acid to attain a pH of less than 2 Standard Units (S.U.). The pesticides/PCBs samples were collected in 1-liter amber jars with no preservative added. The BNAs samples were collected in 1-liter amber jars with no preservative added. The total cyanide sample was collected in a 250-mL HDPE container and preserved with sodium hydroxide to attain a pH of above 12 S.U. Total cyanide was also preserved with ascorbic acid due to the presence of chlorine. The VOC samples were collected in 40-mL amber vials and preserved with hydrochloric acid to attain a pH of less than 2 S.U. After collection, all samples were placed in coolers with ice to maintain an internal temperature of less than 4 degrees Celsius and delivered to the to the EPA New England Regional Laboratory in North Chelmsford, MA to be analyzed.

VIII. EPA Sampling and Analytical Results

The table below provides a summary of the laboratory analytical results and field parameters collected during the inspection. For a full list of compounds analyzed for each parameter and their results, refer to the laboratory reports that are attached to this inspection report (Attachments A-E).

Table 1: Summary of AeroDynamics April 12, 2023, Inspection

Sample #	Sample Date and Time	Sample Type	pH (S.U.)	TRC (mg/L)	EPA Analytical Results ¹ (mg/L)		Pretreatment Standards for 40 CFR 433.17	
							Daily Maximum (mg/L)	Monthly Average (mg/L)
AD01	10:17	Grab	9.16	0.04	VOCs^{1,2}			
					Trichloroethylene	0.024	2.13	N/A
					BNAs^{1,4}			
					Phenol 4-Nitrophenol	0.0056 0.0025	2.13	N/A
AD01	13:37	Composite	N/A	N/A	Total Cyanide²	ND ⁶	1.20	0.65
					Pesticides/ PCBs¹	ND	2.13	N/A
					Total Metals^{3,4}			
					Cadmium Chromium Copper Lead Nickel Silver Zinc	ND ND 0.15 ND 0.64 ND 0.031	0.11 0.27 3.38 0.69 3.98 0.43 2.61	0.07 1.71 2.07 0.43 2.38 0.24 1.48
Dup01	10:17	Grab	N/A	N/A	VOCs^{1,2}			
					Trichloroethylene	0.025	2.13	N/A
					BNAs^{1,4}	N/A ⁵	2.13	N/A
					Total Cyanide²	ND ⁶	1.20	0.65
Dup01	13:37	Composite	N/A	N/A	Pesticides/ PCBs¹	ND	2.13	N/A
					Total Metals^{3,4}			
					Cadmium Chromium Copper Lead Nickel Silver Zinc	ND ND 0.14 ND 0.63 ND 0.029	0.11 0.27 3.38 0.69 3.98 0.43 2.61	0.07 1.71 2.07 0.43 2.38 0.24 1.48

Notes:

1. Compounds that were analyzed but not listed in this table are Not Detected above Reporting Limit (ND).
2. Compounds listed are detected Total Toxic Organics (TTO) subject to the Metal Finishing Point Source standards under 40 CFR part 433.
- 3: Total metals within the pollutants of concern under the 40 CFR 433.17.
4. Additional compounds not subject to the standard were detected but are not listed in this table.
5. N/A because no duplicate sample collected
6. Estimate due to ICV being past expiration date

IX. Attachments

A: Laboratory Report for Pesticides and PCBs

Author: LSASD Laboratory Services Branch

Pages: 10

B: Laboratory Report for BNAs

Author: LSASD Laboratory Services Branch

Pages: 16

C: Laboratory Report for VOCs

Author: LSASD Laboratory Services Branch

Pages: 22

D: Laboratory Report for Total Cyanide

Author: LSASD Laboratory Services Branch

Pages: 8

E: Laboratory Report for Total Metals

Author: LSASD Laboratory Services Branch

Pages: 10

End of Report