

NPDES Inspection Report – Pretreatment Categorical Industrial User

National Database Information	
Inspection Entry Date/Time: August 16, 2022 / 08:12	Inspection Type: Pretreatment Categorical Industrial User (CIU)
Inspection Closing Date/Time: August 16, 2022 / 15:21	NPDES ID Number: MTPF00102
Inspection ID: 202208 MTPF00102	
Lead inspector and affiliation: Lisa-kay Prideaux / EPA Region 8 Montana Operations Office	
Inspector and affiliation: Emilio Llamozas / EPA Region 8	

Facility Location Information	
Site/Facility Name & Location: C. Sharps Arms Company, Inc. 100 Centennial Drive Big Timber, Montana 59011 45.8392866°N; -109.9415455°W	Mail Report (Electronic Delivery) to: Tim Corwin, Production Manager C. Sharps Arms Company, Inc. info@csharpsarms.com

Contact Information	
	Name(s)/Title
Person/Company meeting definition of Owner/Operator	C. Sharps Arms Company, Inc.
Facility Contacts:	Don Franklin / C. Sharps Arms Company, Inc. / Vice President (present during inspection) (now retired) Tim Corwin / C. Sharps Arms Company, Inc. / Production Manager (present) Pat Dulin / C. Sharps Arms Company, Inc. / Machinist (present)
Authorized Official(s)	Don Franklin / C. Sharps Arms Company, Inc. / Vice President (at the time of the inspection, now retired) Donna Laubach / C. Sharps Arms Company, Inc. / Secretary

Areas Evaluated During Inspection		
Permit	Effluent/Receiving Waters	Compliance Schedule
<u>Records/Reports</u>	<u>Flow Measurement</u>	<u>Pollution Prevention</u>
<u>Facility Site Review</u>	<u>Self-Monitoring Program</u>	Laboratory
Stormwater	<u>Operations and Maintenance</u>	<u>Pretreatment</u>

Report Review and Signature		
Drafter Name	Date	Address/Phone Number
Prideaux, LisaKay Digitally signed by Prideaux, LisaKay Date: 2022.10.28 14:18:47 -06'00'	10.21.2022	U.S. EPA Region 8, Montana Operations Office 10 West 15th Street, Suite 3200 Helena, Montana 59626 406-457-5022
Reviewer Name	Date	Address/Phone Number
Emilio Llamozas	10/25/2022	U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202 303-312-6407
Management Reviewer Signature	Date	Address/Phone Number
MICHAEL BOEGLIN Digitally signed by MICHAEL BOEGLIN Date: 2022.10.28 14:04:48 -06'00'		U.S. EPA Region 8 1595 Wynkoop Street 8ENF-W-NW Denver, Colorado 80202 303-312-6250
Michael Boeglin, NPDES and Wetlands Enforcement Section Supervisor		

Inspection Narrative and Site Description

Introduction

EPA promulgated regulations at 40 C.F.R. part 403 establishing the General Pretreatment Regulations and the Point Source Categorical Standards. These regulations are designed to regulate the introduction of pollutants into POTWs which are determined not to be susceptible to treatment by such treatment works or which could interfere with the operation of such treatment works. The State of Montana has not sought EPA approval of its authority to administer the pretreatment component of the National Pollution Discharge Elimination System (NPDES) program and the City of Big Timber has not developed an EPA-approved pretreatment program. EPA administers the pretreatment portion of the NPDES program in Montana and is the pretreatment "Control Authority," as defined by 40 C.F.R. § 403.3(f), for industrial users that discharge to the Big Timber, Montana Publicly Owned Treatment Works (POTW). The Big Timber POTW discharges into the Boulder River.

Metal finishing facilities that discharge wastewater to a POTW are subject to the Metal Finishing Point Source Category Pretreatment Standards found at 40 C.F.R. part 433. The applicability section of the Metal Finishing Point Source Category states at 40 C.F.R. § 433.10(a), "the provisions of this subpart apply to plants which perform any of the following six metal finishing operations on any basis material: ... If any of those six operations are present, then this part applies to discharges from those operations and also to discharges from any of the following 40 process operations." Coating (chromating, phosphating, and coloring) is one of the six metal finishing operations and is described in Table 3-1 on page 3-2 of EPA's 1984 Guidance Manual for Electroplating and Metal Finishing Pretreatment Standards: "Coatings – Any operation that includes chromating, phosphating, metal coloring and passivating... Metal coloring involves the chemical method of converting the metal surface into an oxide or similar metallic compound to produce a decorative finish."

On Tuesday, August 16, 2022, at approximately 08:12, U.S. Environmental Protection Agency (EPA) inspectors Lisa-kay Prideaux and Emilio Llamozas (inspectors) conducted an announced pretreatment Significant Industrial User (SIU) inspection of C. Sharps Arms, Inc. (facility) located at 100 Centennial Drive in Big Timber, Montana. The purpose of the inspection was to evaluate the facility's compliance with the requirements in 40 C.F.R. Parts 403 and 433 for the General Pretreatment Regulations and Metal Finishing Point Source Category Pretreatment Standards (Subpart A), respectively. It was also announced, the EPA would be collecting samples of the effluent during the inspection pursuant to 40 C.F.R. Part 403.8(f)(2)(v). EPA inspectors introduced themselves and met with Mr. Don Franklin, Vice President, Mr. Tim Corwin, Production Manager, and Mr. Pat Dulin, Machinist. The inspectors presented their inspector credentials and held an opening conference to explain the purpose of the inspection and discussed the role of the EPA regarding pretreatment regulations in Montana. Inspectors asked a series of questions throughout the inspection; observations and photograph descriptions were documented in a bound checklist. All photographs taken during the inspection are included in the attached photo log.

Facility Description and Process Overview

Mr. Franklin provided an overview of the operations and processes at C. Sharps Arms Company, Inc. The company was started in New York in 1975 and moved to Big Timber, Montana in 1979. In 1983 the facility split from the parent company, constructed the current building and started to manufacture replicas of the 1874 Sharps rifles through a combination of fabrication and assembly, discharging to the Big Timber POTW. Some metal components of the rifles (barrels and screws) are colored through the application of a metal salt coating during the bluing process. The bluing process includes cleaning, polishing, rinsing metal components, and immersing them in a solution of black oxide salt, to produce a decorative color finish. Other metal components (receivers and trim parts) go through a case hardening process where the metal is heat treated so the surface of the metal component is hardened, while keeping the underlying metal layer ductile. The facility operates four days a week.

The process starts by taking various types of steel stock (bullets and rods) and creating the steel components needed to fabricate the Sharps rifle. The metal components are fabricated using milling and grinding machines, with finish work by hand. The facility has three computer numerical control (CNC) machines that cut the steel stock to the desired specifications. Used oil from the CNC machines is collected and given to local shops to burn

in oil heaters during the winter months to produce heat. Some steel components undergo a bluing process (barrels and screws) while other components undergo a case hardening process (screws, fasteners, lock plates, and bolts).

For the bluing process, the steel components are bead-blasted for texturing to hide machine and polishing marks and to give an even, uniform look to the surface of the metal parts, and then cleaned with acetone. Steel components are cleaned in a heated tank with a soap solution to remove oil from the surfaces then are rinsed in a hot water bath. After the steel components are cleaned and rinsed, the metal salt coating occurs and consists of immersing the metal components in a solution of HeatBath Nickel Pentrate®, a metal salt, to provide a decorative color. The metal components are then placed in a cold rinse tank for cooling. Parts are scrubbed with degrease steel wool by hand and then the process, excluding the bead-blasting and soap tank, is repeated until the desired color is achieved. Once the desired color is reached, metal components are then placed into the final boil-out hot water rinse tank. The final step is immersion in a water displacement oil bath. The cold-water rinse tank has a continuous tap-water flow into the tank to keep the temperature cool and has a continuous discharge via overflow into a 125-gallon holding tank. The cold-water rinse tank is the only tank that discharges to the 125-gallon holding tank via an overflow. All tanks are left filled for the next batch operation and are recharged as necessary. After production is complete, contents of the 125-gallon holding tank is discharge into a sealed floor drain with riser into the City of Big Timber's POTW.

The metal components which undergo the case hardening process are first cleaned with acetone and are then heat treated in an oven containing sodium cyanide. Sodium cyanide is heated in an oven until it turns to liquid, metal components are heated enough that they begin to absorb carbon from the sodium cyanide. The additional carbon enters the crystalline structure of the surface of the metal, and when cooled, or quenched, hardens. This leaves the surface of the metal component hard, while the interior characteristics of the metal do not change. Depending on the length of time the metal component is exposed to the sodium cyanide, the process will prevent corrosion and provide a decorative finish. Once the oven cools, the sodium cyanide returns to solid form and is reused. Spent sodium cyanide, in ash form, is placed in a drum and is disposed of when full. Once the metal components are removed from the oven, they are submerged in water in a 103-gallon quench tank. The quench tank helps to rapidly cool the heat-treated steel components and develop the desired color. Components are then rinsed in a 5-gallon cold-water rinse tank and placed in the final 8-gallon boil-out tap water tank. All tanks are left filled for the next batch operation and are recharged as necessary.

Records

After the facility representative provided a background description of the facility operations, the inspectors commenced to review facility records. C. Sharps Arms' Slug Discharge Control Plan, which contains the Solvent Management Plan, was approved by EPA on April 13, 2020. Approval of the Solvent Management Plan allows C. Sharps Arms to submit a total toxic organics (TTO) certification statement with each periodic compliance report in lieu of sampling for TTOs. C. Sharps Arms was required to submit the Baseline and 90-day Compliance Report within 90-days of the effective date of the Order (December 26, 2019). C. Sharps Arms submitted the required Baseline and 90-day Compliance Reports on September 19, 2019, and it was reviewed and approved by EPA on October 2, 2019. The inspectors performed a review of Discharge Monitoring Reports (DMRs) for the timeframe of July 1, 2021, through June 30, 2022. C. Sharps Arms had copies of all sampling and reporting documentation to support the completion of the reviewed DMRs. Signed TTO certifications were included with each quarterly DMR submittal. Material Safety Data Sheets are kept for all chemicals on-site.

Site visit

After facility representative interviews and records review, Mr. Franklin, Mr. Corwin, and Mr. Dulin walked the inspectors around each of the processes. We started in the manufacturing area, where there were multiple worktables, tools, computer numerical control (CNC) machines, barrel drilling machines, and other large pieces of equipment used to manufacture the various steel components used in the Sharps rifle. Mr. Corwin stated the raw materials used at the facility primarily include black walnut wood and various types of steel stock (e.g., barrel stock, screw stock). Next, we entered the bluing building, located as a separate building on the southwest side of the main building, where the bluing and case hardening operations occur. The room is set up where all processes occur on the south side of the building, and the north side is set for chemical storage. The entire area encompassing the bluing and case hardening process is sunken approximately 4-inches as secondary containment (photo 626).

There are three floor drains in the bluing building which connect to the City of Big Timber's POTW. One drain is within the containment, which is sealed with a closed riser and access only from the 125-gallon holding tank hose, which is discharged (photo 623). The other two drains are located on the higher portion of the building floor and were not plugged at the time of the inspection (photo 628). The area is used for chemical storage, though all chemicals stored in this area are dry materials.

For the bluing process (photo 620), steel components are placed into an 8-gallon tank with a soap/degreaser solution bath (tank 6) then are rinsed with hot water in an 8-gallon tank (tank 5). Steel components are placed in one of the two 8-gallon bluing tanks (tanks 1 or 2) for varying lengths of time. The metal components are then placed in an 8-gallon cold rinse tank (tank 3) for cooling. Next, metal components are placed into the final 8-gallon boil-out hot water rinse tank (tank 4). The final step is immersion into an 8-gallon water displacement oil bath (tank 7). During production, tank 3 has a continuous flow of tap water monitored by a flow meter (photo 621) for temperature control, and a continuous discharge via overflow (photo 627) into a 125-gallon holding tank located directly south of the tank (photo 622) and is connected via a hose into the top of the tank. Tank 3 is the only tank that discharges to the 125-gallon holding tank via an overflow. The holding tank has a marker to estimate volume, and after production is complete, and the tank contents have settled, facility personnel will open the valve to discharge into a sealed floor drain with riser into the City of Big Timber's POTW (photo 623).

The metal components which undergo the case hardening process are heat treated in an oven containing sodium cyanide. Once metal components are removed from the oven, they are submerged in a 103-gallon quench tank containing water (tank 9) and then rinsed in a 5-gallon water tank (tank 10) (photo 625). Components are then placed in the final 8-gallon boil-out tap water tank (tank 8) (photo 624).

Once metal parts are processed, they are assembled to a final product (photo 619).

Sample Collection

The facility was not discharging at the time of the inspection and their holding tank was empty; therefore, samples were collected out of tank 3 which discharges through the holding tank to the Big Timber POTW. Samples were collected by Lisa-kay Prideaux and recorded by Emilio Llamozas. Present at the time of sampling included Mr. Franklin, Mr. Corwin, and Mr. Dulin. Sampling commenced at 11:15. Lisa-kay Prideaux used a collection device comprised of a glass beaker to collect samples out of Tank 3 and transferred samples into pre-preserved collection bottles. Samples were collected for total metals (Cadmium, Chromium, Copper, Lead, Nickel, Silver, Zinc), Total Cyanide, Semi-Volatiles, Volatiles, Pesticides, and PCBs. Samples, duplicates, and field blanks were collected from the timeframe of 11:17 to 12:00. Field blanks consisted of distilled water. Samples were labeled and placed in bubble wrap and Ziplock bags on ice in coolers, along with the completion of a chain of custody form. Trip blanks consisted of distilled water collected from 16:19 to 16:25. Trip blanks were labeled, chain of custody forms completed and placed in bubble wrap and Ziplock bags on ice in the cooler. Two coolers were used, one cooler with the effluent samples and field blanks, and the second cooler with the effluent duplicates and trip blanks. Both coolers were filled with ice, sealed, and dropped off at the UPS store in Bozeman, MT on August 16, 2022, for 2-day delivery to EPA Region 1 laboratory in North Chelmsford, MA. On August 18, 2022, at 12:34, notification of sample receipt at the laboratory was confirmed. On August 22, 2022, at 05:48, notification was received by Lisa-kay Prideaux from the EPA Region 1 laboratory that the pH for the effluent and duplicate samples was greater than 14 standard units (s.u.), and therefore were not suitable for analysis. It is unknown what caused the samples to have an elevated pH.

Closing and Follow-Up

After sample collection was complete around 12:15, the inspectors left for lunch and to perform another inspection. The inspectors returned to the facility at 14:38 for a closing conference with Mr. Franklin, Mr. Corwin, and Mr. Dulin, during which preliminary findings, as well as the process for the inspection report was discussed. The inspection concluded at 15:21. On August 29, 2022, the EPA sent an email to Mr. Corwin with the preliminary findings from the inspection. In the August 29, 2022, email, the inspector explained the process for closing out the Administrative Order on Consent (AOC) issued by the EPA on September 26, 2019. However, the facility must fully comply with all requirements in the AOC, including addressing the findings listed below before the

AOC can be closed. The August 29, 2022, email also included information requested regarding how to request NSCIU or Middle tier CIU status. The AOC will remain in effect until the EPA issues a control mechanism for the facility.

Findings, Corrective Actions and Recommendations

Finding #1: The facility was not collecting a representative effluent sample.

Specifically, the facility was sampling from the overflow hose between the cold rinse tank (tank #3) and the 125-gallon holding tank. To obtain a representative sample of what is being discharged, the facility should be collecting a sample from the hose leaving the 125-gallon holding tank that enters into the floor drain connected to the Big Timber Wastewater Treatment Facility.

Pretreatment Requirement:

Part II.C of Attachment 1 to the C. Sharps Arms Company, Inc. AOC “Discharge Requirements Under General Pretreatment Regulations and Metal Finishing Point Source Category” (Discharge Requirements) states ... Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. Monitoring shall be conducted by sampling after treatment processes and prior to the introduction of sanitary and other non-categorically defined dilution flows.”

Part II.C of the Discharge Requirements references 40 C.F.R. § 403.12(e); 40 C.F.R. § 403.12(g)(3); 40 C.F.R. § 433.12(a) and (b); 40 C.F.R. § 433.15; 40 C.F.R. § 403.8(f)(1)(iii)(B)(3) and (4))

Corrective Action:

Begin collecting samples between the 125-gallon holding tank and the floor drain to the Big Timber POTW. In a response to the EPA, dated September 12, 2022, C. Sharps Arms Company, Inc. submitted information and photographs showing a change in the location of sample collection. A sample port has been installed on the hose from the 125-gallon holding tank prior to the floor drain connected to the Big Timber POTW. No additional information is required.

Finding #2: The facility was not reporting flow correctly on the DMR.

Specifically, in the first half of 2022 (April), the facility reported the amount of water (104.58 gallons/day) used during the bluing process on April 26, 2022, not the amount of wastewater discharged. The amount of water collected in the 125-gallon holding tank (104.58 gallons) on April 26, 2022, was discharged during two separate days keeping the discharge under the 100 gallons per day threshold. The facility discharged 54 gallons on April 27, 2022, and 50.58 gallons on April 28, 2022.

Pretreatment Requirement:

Part III.D.1 of the Discharge Requirements states DMRs shall contain information from the associated compliance monitoring period.

Part III.D.4 of the Discharge Requirements states “...to submit a record of daily discharge flows for the compliance monitoring period. ... a record of measured or estimated average and maximum daily flows for the reporting period is required on the DMR.”

Corrective Action:

On August 17, 2022, an amended DMR was submitted by C. Sharps Arms Company, Inc. to reflect the correct flow amounts for the first half of 2022. In a response to the EPA, dated September 12, 2022, C. Sharps Arms Company, Inc. submitted a copy of their standard operating procedures (SOPs) to ensure that their discharge process does not discharge greater than 100 gallons per day. No additional information is required

Recommendation #1:

C. Sharps Arms Company, Inc. should consider creating written SOPs for processes from steel component manufacturing through the bluing and case hardening process, as well as the process for discharge and sample collection.

Corrective Action:

In a response to the EPA, dated September 12, 2022, C. Sharps Arms Company, Inc. submitted a copy of their SOPs for the bluing process discharge. No additional information is required.

Recommendation #2:

C. Sharps Arms Company, Inc. should consider permanently plugging the two floor drains located outside of the containment area in the processing room to avoid the potential of a slug discharge through them.

Corrective Action:

In a response to the EPA, dated September 12, 2022, C. Sharps Arms Company, Inc. submitted information and photographs showing the two floor drains located outside the containment area in the processing room have been permanently plugged. No additional information is required.