

## STATEMENT OF BASIS

**Applicant:** Remington Arms, Inc. d.b.a. Dakota Arms  
**Permit Number:** SDP000128  
**Contact Person:** Pamela Kryger, Assoc. Buyer, HR/Safety Director  
Dakota Arms  
1310 Industry Road  
Sturgis, SD 57785  
**Phone:** (605) 347-4686  
**Permit Type:** Pretreatment Industrial User – New

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### DESCRIPTION

Remington Arms, Inc. operates a custom-made rifle facility under the name Dakota Arms, located in the city of Sturgis at 1310 Industry Road, in the Southeast  $\frac{1}{4}$  of Section 6, Township 5 North, Range 5 East, in Meade County, South Dakota (Latitude 44.420278°, Longitude -103.556944°, permit application). The plant opened in June 1985.

Dakota Arms is a small manufacturer of high quality custom-made sporting firearms.

Wood blocks are cut, milled, sanded, and treated with oils to form stocks for guns. Steel, aluminum, and stainless steel comes in as rods and bars. The metal is cut, drilled, milled, and machined to form mechanisms. Purchased barrels are threaded, chambered, and finished. No wastewater is generated in the manufacturing processes. Lubricants and oils for the machines are skimmed and reused as much as possible. Three or four 55-gallon barrels of waste are produced each year as waste oil. Metal scrap from machining is taken to the landfill. These processes do not contribute wastewater.

Metal parts are blued as needed once a week, estimated at 750 gallons per day while in use. Bluing is performed with a seven-stage dip process. The first dip tank is a hot degreasing detergent, which has a constant refill and overflow. A heated water rinse is second, which also has a constant refill and overflow. Third is the heated black oxide (bluing) tanks, which are contained units that do not overflow. Foam that forms on top of the bluing tank is removed and added to the overflow water manually. Fourth is a water tank for cooling and rinsing the metal, which has a constant refill and overflow. The fifth tank contains a mild acid, which is washed out at the end of the day. Another cool water rinse is next, which also has a continuous refill and overflow. The final tank contains oil to seal and protect the metal, which has no overflow. All overflows mix in a shallow metal holding tray to equalize pH, and discharges continuously to the city sewer without further treatment.

Because this facility employs a coating system that contributes process wastewater flow to a Publicly Owned Treatment Works (POTW), and began discharging after August 31, 1982, they are categorized as a New Source Metal Finisher under the Code of Federal Regulations, Title 40, Part 433 (40 CFR 433). They are, therefore, subject to pretreatment standards for new sources, monitoring and reporting requirements, and other conditions set forth in Administrative Rules of South Dakota (ARSD) Chapters 74:52:10 and 74:52:11, which adopts 40 CFR Part 403 Subchapter N by reference.

## **RECEIVING POTW**

The city of Sturgis operates a wastewater treatment facility (WWTF), which receives wastewater from Dakota Arms.

The city of Sturgis operates a wastewater treatment facility located about one and one-half miles east-northeast of the city in Section 1, Township 5 North, Range 5 East, in Meade County, South Dakota (Latitude 44.423488°, Longitude -103.460685° – Navigational Quality GPS). This wastewater treatment facility serves a population of 6,770 persons (permit application). The wastewater facility has an average design flow rate of 1.2 million gallons per day (MGD) and a peak flow of 1.4 MGD. The average design organic treatment capacity is 2,280 pounds per day of biochemical oxygen demand (BOD<sub>5</sub>).

The city's original facility was built in 1963 for a design population equivalent of 7,000 and an average design flow of 0.54 million gallons per day (MGD). At that time, Bear Butte Creek was rerouted and two of the cells were located over the original creek channel. The old channel was not properly sealed, and as a result, seepage occurred from the stabilization ponds. The facility was upgraded in 1992 to correct these problems.

The current wastewater treatment facility consists of a gravity flow collection system that conveys wastewater to a bar screen for preliminary treatment. The primary cell is a 15.4-acre aerated cell (Cell #1). This is followed by two secondary cells of 38.6 acres and 26.6 acres (Cell #2 and Cell #3, respectively). Both Cell #1 and Cell #2 can accept influent. However, only influent from the high school enters Cell #2 through a collection system and lift station owned and operated by the school. All other influent from the city typically enters Cell #1. The wastewater flows in series through the three cells. Wastewater can then flow via pipeline from Cell #3 to a pump station and a land application water storage pond (Cell #4; Latitude 44.443956°, Longitude -103.423332°; Map Interpolation). The storage pond holds about 220 acre-feet of water and is located in the Northwest ¼ of Section 32. The city owns about 550 acres in Sections 29 and 32, Township 6 North, Range 6 East, for land application.

The city's current permit does not authorize routine discharges into Bear Butte Creek from the wastewater treatment facility. However, the city has submitted a request to SDDENR to allow periodic discharges from Cell #3. Any discharge from Cell #3 would enter Bear Butte Creek (Outfall 001A). During a prior version of the city's discharge permit, Outfall 001A was designated as any discharge from Cell #3. This outfall will be reactivated in the proposed permit, authorizing discharges into Bear Butte Creek, provided the city complies with the effluent limits and other permit conditions.

The city's treatment facility currently treats domestic wastewater from the city and wastewater from industrial and federal facilities. The industries currently served by the collection system are primarily gun and ammunition manufacturers, as well as jewelry manufacturing facilities (see Attachment 1 for a full listing of the industries in Sturgis). The primary federal facility served by the city's system is the Fort Meade Veterans Administration Medical Center. The Fort Meade complex consists of primary care and outpatient facilities, long-term nursing home units, laundry facilities, associated support facilities, on-site residences, and temporary National Guard housing. The city estimates that about 10% of the total flow to the system can be attributed to

non-domestic industrial sources. The city also receives substantial portable toilet wastes from multiple haulers during the annual Sturgis motorcycle rally in August.

## **MONITORING DATA**

Dakota Arms will be required to sample for metals quarterly, measure pH and flow daily, and submit Discharge Monitoring Reports (DMRs) semiannually by the proposed permit. Since this is a new facility, no monitoring data has been submitted.

## **INSPECTIONS**

The most recent inspection of Dakota Arms was conducted by South Dakota Department of Environment and Natural Resources (SDDENR) personnel on November 5, 2009. The inspection confirmed the facility is required to be permitted.

## **EFFLUENT LIMITS**

The permittee shall comply with the effluent limits specified below. These limits are based on ARSD Chapters 74:52:10 and 74:52:11, which adopt 40 CFR Parts 403.5 (general and specific prohibitions) and 40 CFR Subchapter N (pretreatment standards) by reference, 40 CFR 433.17 (Metal Finishing pretreatment standards for New Sources), and the corrosive hazardous waste regulations found in 40 CFR 261.22(a)(1).

### **The following limits are applicable to the entire facility effluent:**

1. There shall be no discharge of pollutants that cause pass through or interference at the POTW. This limit is based on 40 CFR 403.5(a)(1).
2. There shall be no discharge of pollutants that create a fire or explosion hazard at the POTW, including, but not limited to, wastestreams with a closed loop flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in ARSD Section 74:28:22:01 a.b.r. 40 CFR 261.21. This limit is based on 40 CFR 403.5(b).
3. There shall be no discharge of pollutants that will cause corrosive structural damage to the POTW, but in no case shall discharges be allowed with a pH lower than 5.0 standard units or greater than 12.5 standard units. This limit is based on 40 CFR 403.5(b) and 40 CFR 261.22(a)(1).
4. There shall be no discharge of solid or viscous pollutants in amounts that will cause obstruction to the flow in the POTW resulting in interference. This limit is based on 40 CFR 403.5(b).
5. There shall be no discharge of any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration that will cause interference with the POTW. This limit is based on 40 CFR 403.5(b).

6. There shall be no discharge of heat in amounts that will inhibit biological activity at the POTW resulting in interference, and in no case shall there be heat in such quantities that the temperature at the POTW treatment plant exceeds 40°C (104°F) unless SDDENR, upon request of the POTW, approves alternate temperature limits. This limit is based on 40 CFR 403.5(b).
7. There shall be no discharge of petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through at the POTW. This limit is based on 40 CFR 403.5(b).
8. There shall be no discharge of pollutants that result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems. This limit is based on 40 CFR 403.5(b).
9. There shall be no discharge of any trucked or hauled pollutants, except at discharge points designated by the POTW. This limit is based on 40 CFR 403.5(b).

Flow Rate (gallons per day – gpd) and Process Wastewater Flow (gpd) shall be monitored, but will not have a limit.

**Outfall 001** - Any discharge from the facility’s bluing system to the City of Sturgis sanitary sewer system. (Latitude 44.420278°, Longitude -103.556944°, map interpolation).

The following table summarizes the effluent limits for specific pollutants based on 40 CFR 433.17, 40 CFR 403.5(b), and 40 CFR 261.22(a)(1):

Parameter	Effluent Limit	
	30-day Average <sup>1</sup>	Daily Maximum <sup>1</sup>
Total Cadmium, mg/L	0.07	0.11
Total Chromium, mg/L	1.71	2.77
Total Copper, mg/L	2.07	3.38
Total Lead, mg/L	0.43	0.69
Total Nickel, mg/L	2.38	3.98
Total Silver, mg/L	0.24	0.43
Total Zinc, mg/L	1.48	2.61
Total Cyanide, mg/L	0.65	1.20
Total Toxic Organics <sup>1</sup> , mg/L	N/A	2.13
The pH shall not be lower than 5.0 standard units or greater than 12.5 standard units.		

<sup>1</sup> See **Definitions**, in the proposed Permit, for definition of terms.

## SELF MONITORING REQUIREMENTS

As a minimum, upon the effective date of this permit, the following constituents shall be monitored at the frequency and with the type of measurement indicated; samples or measurements shall be representative of the volume and nature of the monitored discharge. All samples shall be taken before the process generated wastewater effluent either joins or is diluted

by any other dilution stream, water, or substance. Test procedures for the analysis of pollutants shall conform to those codified in ARSD Section 74:52:03:06, a.b.r. 40 CFR Part 136. If no discharge occurs during the entire monitoring period, it shall be stated as such on the Discharge Monitoring Report Form (EPA No. 3320-1). The sample point shall be before process and sanitary wastewater mix.

<b>Parameter<sup>1</sup></b>	<b>Frequency</b>	<b>Reporting Values<sup>1</sup></b>	<b>Sample Type<sup>1</sup></b>
Flow Rate, gpd <sup>2</sup>	Monthly	30-day Average; Daily Maximum	Continuous
Process Wastewater Flow, gpd <sup>3</sup>	Daily When Discharging	30-day Average; Daily Maximum	Continuous
pH, standard units	Daily When Discharging	Daily Minimum; Daily Maximum	Instantaneous <sup>3</sup>
Total Cadmium, mg/L	Quarterly <sup>4</sup>	30-day Average; Daily Maximum	Grab
Total Chromium, mg/L	Quarterly <sup>4</sup>	30-day Average; Daily Maximum	Grab
Total Copper, mg/L	Quarterly <sup>4</sup>	30-day Average; Daily Maximum	Grab
Total Lead, mg/L	Quarterly <sup>4</sup>	30-day Average; Daily Maximum	Grab
Total Nickel, mg/L	Quarterly <sup>4</sup>	30-day Average; Daily Maximum	Grab
Total Silver, mg/L	Quarterly <sup>4</sup>	30-day Average; Daily Maximum	Grab
Total Zinc, mg/L	Quarterly <sup>4</sup>	30-day Average; Daily Maximum	Grab
Total Cyanide, mg/L	Quarterly <sup>4</sup>	30-day Average; Daily Maximum	4 Grabs <sup>5</sup>
Total Toxic Organics, mg/L	Quarterly <sup>4</sup>	Daily Maximum	4 Grabs <sup>5,6</sup>

<sup>1</sup> See **Definitions**, in the proposed Permit, for definition of terms.

<sup>2</sup> Flow rate is the water usage for the entire facility. Process wastewater flow is the water discharged at this outfall.

<sup>3</sup> The pH is to be taken within 15 minutes of sample collection with a pH meter. The pH meter must be capable of simultaneous calibration to two points on the pH scale that bracket the expected pH and are approximately three standard units apart. The pH meter must read to 0.01 standard units and be equipped with temperature compensation adjustment. Readings shall be reported to the nearest 0.1 standard units.

<sup>4</sup> These parameters shall be sampled and analyzed at least once every three months (January 1 – March 31, April 1 – June 30, July 1 – September 30, and October 1 – December 31) or more often if necessary to obtain samples representative of the process wastestream.

<sup>5</sup> Total Toxic Organics (TTO) and Cyanide grab samples may be composited by the laboratory immediately prior to analysis. A single grab sample may be used if obtaining 4 grab samples is infeasible. For TTOs, the permittee need only monitor for those toxics believed to be present in the discharge.

<sup>6</sup> If a toxic organic management plan (TOMP) approved by SDDENR has been implemented, the permittee may submit, semiannually, the TTO certification statement in section 2.15.5 of the permit in lieu of monitoring for TTO pursuant to ARSD Section 74:52:11:01, a.b.r. 40 CFR 433.12. If the permittee cannot make the certification during a reporting period, sampling and analysis shall be required that period.

Discharge Monitoring Reports (DMRs) shall be filled out **quarterly** submitted to SDDENR and the City of Sturgis **every six months**. DMRs shall be postmarked by the 28<sup>th</sup> day of the month following the completed reporting period.

If sampling and analysis indicates a violation of any pollutant limit, the permittee shall notify SDDENR and the city of Sturgis within 24 hours of becoming aware of the violation, and repeat the sampling and analysis for that parameter within 30 days.

## **STORM WATER**

Dakota Arms has no outdoor storage. Therefore, Dakota Arms has obtained an exemption from the General Permit for Storm Water Discharges Associated with Industrial Activity (No Exposure Certification number NOX000084). Storm water requirements will not be included in this permit.

## **LOCAL LIMITS REOPENER PROVISION**

The pretreatment program relies on a pollution control strategy with three elements. These elements are the categorical standards, general prohibitions, and local limits. The first two, categorical standards and general prohibitions, are contained in the permit to ensure the local POTW is protected. However, local limits, will not be incorporated into this permit at this time. The limits contained in the permit should be protective of the POTW without developing additional local limits for the facility. If it is determined that local limits are necessary to protect the POTW, the permit may be reopened and modified to contain local limits.

## **ENDANGERED SPECIES**

The discharge regulated under this permit does not go directly to waters of the state, but rather to the POTW where it will receive further treatment. Therefore, it is not believed there will be any detrimental effects to endangered species.

## **PERMIT EXPIRATION**

A five-year permit is recommended.

## **PERMIT CONTACT**

Any questions pertaining to this statement of basis can be directed to Anthony Mueske, Engineer II for the Surface Water Quality Program, at (605) 773-3351.

March 16, 2012