



Best Management Practice (BMP) for Alcohol Beverage Manufacturing

Effective Date: January 1, 2018

1. Purpose

Alcohol beverage manufacturing may produce wastewater that is incompatible with the sewerage system of the Hampton Roads Sanitation District (HRSD). This BMP was developed to protect public health and prevent degradation of the sanitary sewerage system by facilities involved in the manufacturing of alcoholic beverages.

2. General Information

pH is the negative base 10 logarithm of the hydrogen ion concentration in a aqueous solution. A neutral pH, such as that of pure water, is 7.0 standard units (s.u.). A pH below 7.0 s.u. is considered acidic, while a pH above 7.0 s.u. is considered basic. Acidic wastewater can have negative effects on the wastewater collection system and the wastewater treatment process. Acidic wastewater can produce hydrogen sulfide gas, which is the cause of most sewer odors and can create explosive conditions, endangering workers health and the public. Hydrogen sulfide gas is converted to sulfuric acid which degrades sewer pipes causing corrosion, failures, and/or collapsing of the sewer pipes and pump stations. These issues can lead to an uncontrolled release of wastewater and disruption of service.

Manufacturing alcoholic beverages may require the use of acidic and/or caustic cleaners. Wastewater with a pH lower than 5.0 s.u. is prohibited from discharge to the sanitary sewer [Title 40, Part 403.5(b) (2)]. Any wastewater

PO Box 5902, Virginia Beach, VA 23471-0902 • 757.460.7045 • Fax 757.464.3985

Commissioners: Frederick N. Elofson, CPA, Chair • Maurice P. Lynch, PhD, Vice-Chair • Vishnu K. Lakdawala, PhD
Michael E. Glenn • Stephen C. Rodriguez • Willie Levenston, Jr. • Ann W. Templeman • Elizabeth A. Taraski, PhD
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with a pH greater than or equal to 12.5 s.u. is considered hazardous waste and must be reported to the wastewater treatment authority, HRSD [Title 40 Part 261.22(a)(1)].

HRSD's Industrial Wastewater Discharge Regulations provide requirements for control of the discharge of industrial wastewater into the sanitary sewer. Section 301 of the Regulations states that "No person shall discharge or cause to be discharged into any portion of the sewerage system, directly or indirectly, any wastes which may violate any law or governmental regulation or have an adverse or harmful effect on the sewerage system, maintenance personnel, wastewater treatment plant personnel, processes, or equipment, treatment plant effluent quality, biosolids quality, air quality, public or private property, or which may otherwise endanger the public, the local environment or create a nuisance, or which may interfere with or adversely impact wastewater treatment and/or biosolids technology, as determined by HRSD."

3. Safety Data Sheets (SDS)

- A. All SDS for chemicals used in any cleaning processes of equipment at the facility shall be submitted to this office within seven (7) calendar days of receipt of this BMP. Additionally, if at any point the composition of chemicals or use of chemicals were to change after the issuance of this BMP, the new SDS must be submitted to this office within seven (7) calendar days. See Section 11 for documentation submittal.

- B. The SDS shall be reviewed by this office and correspondence indicating the approval or disapproval for discharge to the sanitary sewage system will be sent to the primary facility contact. All cleaning process chemicals are deemed unapproved and shall not be discharged to the sanitary sewerage system until correspondence indicating otherwise is received from HRSD.

4. Waste Disposal

Prior to the discharge of the cleaning wastewater and associated rinse water to the sanitary sewer, the pH shall be measured using an electronic pH measuring device or pH strips. Once the initial pH of the wastewater has been measured it can be disposed of based on the following criteria:

- A. If the pH is greater than or equal to 5.0 s.u. and below 12.5 s.u. the wastewater can be discharged into the sanitary sewer. A discharge pH must be recorded in the pH discharge logbook.
- B. If the pH is below 5.0 s.u. it must be adjusted to a pH equal to or greater than 5.0 s.u. prior to discharging to the sanitary sewer. A discharge pH must be recorded in the pH discharge logbook. Upon adjustment if the pH is greater than or equal to 12.5 s.u. refer to 4C-4D.
- C. If the pH is greater than or equal to 12.5 s.u. it is considered hazardous waste and must be reported to HRSD. Or, to eliminate the need to report to HRSD, the pH shall be adjusted to greater than or equal to 5.0 s.u. and below 12.5 s.u. prior to discharge. A discharge pH must be recorded in the pH discharge logbook.
- D. In lieu of pH adjustment or in the event the waste is deemed unsuitable for discharge to the sanitary sewer, an appropriate alternative disposal method shall be used. All copies of receipts/manifests must be maintained on-site and available for review for the most current three (3) year period.

5. pH Measuring Equipment

- A. If an electronic pH measuring device (i.e. pH meter) is used it must be calibrated prior to use in accordance with manufacturer's specifications and documented in a logbook in compliance with section 6B of this BMP.

- B. If pH measuring strips are used they must be stored in a dry location protected from sunlight and used in accordance with manufacturer's specification.

6. Record Keeping

- A. A discharge pH logbook must be maintained indicating at a minimum, the date, employee initials, the type of tank the waste came from, the time the sample was collected, the time the sample was analyzed, the discharge pH and any associated comments such as how the pH was adjusted. The log book should not be submitted to this office, but shall be maintained onsite for the most current three (3) year period. The log shall be available for review by HRSD personnel at all times.

- B. If an electronic pH measuring device is used, a calibration logbook must be maintained indicating the unique meter identification, date of calibration, employee initials, time of calibration and results of all buffer solution standards, measured to include pH value obtained, temperature (if applicable), buffer solution expiration date, and if the calibration check met acceptance criteria. The log should not be submitted to this office, but shall be maintained onsite for the most current three (3) year period. The log shall be available for review by HRSD personnel at all times.

7. Access

In accordance with section 506 of the HRSD Industrial Discharge Wastewater Regulations, "Authorized HRSD personnel shall be provided reasonable access to all facilities which directly or indirectly discharge to HRSD's sewerage system at all times, including those occasioned by emergency conditions, and shall be allowed to perform inspections and take independent samples for compliance purposes at all times. Such inspections shall include all records of wastes and Inflow and Infiltration managed, whether disposed to the HRSD sewerage system or otherwise."

8. Special Conditions

Any waste removed from the alcohol beverage manufacturing process cannot be discharged directly or indirectly to the HRSD sewerage system. This includes spent mash/grain, must, distillate and associated wastewater or residual materials removed from any pretreatment device.

9. Enforcement Actions

Enforcement actions resulting from non-compliance with any portion of this BMP shall be applied in accordance with the HRSD Industrial Wastewater Discharge Regulations and the HRSD Pretreatment & Pollution Prevention Enforcement Response Plan (ERP). A copy of the Regulations and ERP can be found at www.hrsd.com.

Additionally, any person or discharger who violates any provision of this BMP shall be financially responsible and liable to HRSD, for all costs incurred in association with the violation(s) as outlined in Section 608 of the HRSD Industrial Wastewater Discharge Regulations.

10. Optional Bill Deduction

Due to the nature of the alcohol manufacturing business, HRSD understands that a good portion of water utilized at the facility has the potential to not be discharged to the sanitary sewer. Considering most of the facilities under this BMP are billed on influent meter readings, an optional deduction for water contained in the final product may be applicable.

In order to receive this deduction, a copy of the prior year's Department of the Treasury TTB Reports (i.e. 5130.9, 5120.17 or 5110.28) must be submitted annually to our office, as stated in Section 11, by January 31st. For example, all reports for the calendar year 2017 must be submitted to HRSD by January 31, 2018. Upon request, a refund may be issued or a credit adjustment will be applied to the account.

11. Data Submittal

Submit all required documentation via email to p3data@hrsd.com or mail to

HRSD
Pretreatment & Pollution Prevention Division
PO Box 5902
Virginia Beach, VA 23471-0902

12. References

For more information refer to the following:

HRSD's Industrial Wastewater Discharge Regulations – Available at www.hrsd.com

HRSD Pretreatment & Pollution Prevention Enforcement Response Plan – Available at www.hrsd.com

HRSD Rate Schedule – Available at www.hrsd.com

Code of Federal Regulations Title 40 Part 136, Part 261, Part 403

Discharge pH Log - Completion Key

Alcohol Beverage Manufacturing BMP

Date	Initials	Type	Sample Time	Analysis Time	pH	Comments
MM-DD-YY	AA	Brite Tank	2:56pm	3:02pm	5.6	no adjustment needed
MM-DD-YY	AA	Fermenter #1	3:02pm / 3:10pm	3:05pm / 3:15pm	4.2 / 5.3	adjusted with baking soda
date of pH	employee initials who took the sample and analyzed the sample	The type of tank the waste is from if adjustment is in the actual tank. If adjustment is waste mixing write down the container it is stored in before discharge.	The time the sample was collected.	The time the sample was analyzed for pH. Sample analysis must be within 15 minutes of the sample time.	The discharge pH must be recorded. If initial pH is not within range a new sample time, analysis time and pH shall be recorded as show above.	Any notable comments. The method of adjustment. Dilution of waste with water is unacceptable for pH adjustment.

