



## **FACILITY INFORMATION**

### Permittee

MillerCoors, L.L.C.  
5135 South Eastside Highway  
Elkton, Virginia 22827

### Facility

MillerCoors, L.L.C. – Shenandoah Brewery  
3.5 miles south of Elkton on U.S. 340  
Rockingham County, Virginia

## **SOURCE DESCRIPTION**

NAICS Code: 312120 – Malt Beverage Manufacturer

MillerCoors, L.L.C. – Shenandoah Brewery (MillerCoors) manufactures malt beverages. Operations at the facility include a brewery (grain handling, brewing, fermenting, aging, and conditioning processes), packaging (bottles, cans, and kegs and carton assembly and label application), and a wastewater treatment plant. In addition, there are auxiliary processes supporting the operations.

MillerCoors is a Title V major source of nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC). This source is located in an attainment area for all pollutants, and is a PSD minor source. The facility is currently permitted under a minor new source review permit approved on February 3, 2016. The existing Title V operating permit, which was issued on September 20, 2010, underwent a significant modification on May 15, 2014, and expired on September 19, 2015. Because the application was timely and complete, the application shield was in effect.

## **COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit (July 2, 2015), has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

## **CHANGES TO THE EXISTING TITLE V PERMIT**

The following changes were made to the Title V permit since its last renewal, including a significant modification approved on May 15, 2014, and a minor NSR Permit, signed on February 3, 2016. Changes are listed below.

### Significant Modification – May 15, 2014

A significant modification to the Title V permit was approved on May 15, 2014. The following changes were made to the Title V permit:

- Added the requirements for the facility's combined heat and power (CHP) spark ignition internal combustion engine (SI ICE) generator set, as well as the federal New Source Performance Standards (NSPS) 40 CFR 60, Subpart JJJJ, and the Maximum Achievable Control Technology (MACT) standards 40 CFR 63, Subpart ZZZZ, applicable to the same.
- Included a compliance change from a current compliance demonstration, which included the following changes: change the calculation of air emissions every four-week period as the sum of 13 consecutive four-week periods, to a monthly demonstration by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months. This is done in order to make the permit practically enforceable.
- The CO<sub>2</sub> recovery system emission factor decreased from 3.27 lb/hr VOC to 0.0304 lb/hr VOC, based on stack testing data from similarly-sized MillerCoors breweries. The resulting annual emissions rate from the CO<sub>2</sub> recovery system decreased from 7.61 tpy to 0.133 tpy.
- Added requirements for the two existing digester (biogas)-fired boilers (Units 34 and 35).

### NSR Changes (February 3, 2016)

The NSR permit dated June 10, 2011, as amended November 18, 2013, was amended on February 3, 2016. This NSR amendment was in response to facility requests for changes to the TV permit, which had to be first completed under the minor NSR permitting process. Permit revisions made to the NSR, and subsequently to the TV permit, were as follows:

- Global Changes: All references to the facility's NSR permit are changed from "6/10/11 Permit as amended 11/18/13" to "6/10/11 Permit as amended 11/18/13 and 2/3/16" to reflect the most recent amendment to the NSR permit. Additionally, minor changes were made to make the general conditions consistent with current agency boilerplate.

- Facility Information: Removed County-Plant ID. It is no longer used by the DEQ for facility identification.
  
- Emission Units: Emission Unit List was updated, as follows:
  - The section name was changed from “Emission Units” to “Emission Units and Control Device Identification”.
  - Modify Unit #27 – to Install (Aluminum) Bottle Line #5
  - Move the biogas-fired boilers (Units 34 and 35) to the Insignificant Emission Units List.
  - Remove the Conveyor Lubricants (Unit #28) from the permit since the lubricants used have no VOC content.
  
- Fuel Burning Equipment Requirements – Unit IDs 1, 2, 3, 4, and 5:
  - Remove propane as a fuel for Boilers 1 – 5.
  - Remove fuel throughput limitations for the three - 18 MMBtu/hr boilers since they run solely on natural gas.
  - Remove fuel throughput limitations for the two – 97 MMBtu/hr boilers since they run solely on natural gas.
  - Remove references to propane emission factors for the two - 97 MMBtu/hr boilers (Units 4 and 5) respectively.
  - Remove references to propane emission factors for the three - 18 MMBtu/hr boilers (Units 1, 2 and 3), respectively.
  - Update annual emission limits for the two 97 MMBtu/hr boilers (Units 4 and 5) as a result of the removal of propane as a fuel.
  - Update annual emission limits for the three - 18 MMBtu/hr boilers (Units 1, 2 and 3) as a result of the removal of propane as a fuel.
  - Remove recordkeeping requirement for throughput limitations for fuels since propane now removed; natural gas operated at 8760 hours in two 97 MMBtu/hr boilers (Units 4 and 5).

- Remove recordkeeping requirement for throughput limitations for fuels since propane now removed; natural gas operated at 8760 hours in three - 18 MMBtu/hr boilers (Units 1, 2, and 3).
- Remove the requirement to obtain certificates of sulfur content in natural gas due to the use of ultra-low sulfur fuel.
- Remove requirements for monthly and annual VOC emissions from conveyor line lubrication (Unit 28). Unit has zero VOC emissions.
- Fuel Supplier Certifications, Units 4 and 5 – Discontinued. NSPS Subpart Dc requirement to have fuel supplier certifications instead of PM monitoring is no longer required.
- Brewery Requirements:
  - Change recordkeeping requirements to reflect monthly and annual throughput or emissions, as indicated, instead of “annual, as the sum of each consecutive 12-month period”.
- Packaging Requirements – Unit IDs 27, 28, 29, 30, 31 and 32:
  - Remove requirements related to Unit ID 28 (Conveyor Lubricants). The unit now uses lubricants with no VOC content. Maintain listing Unit 28 in Recordkeeping for required SDS/ MSDS to show / ensure lubricants maintain zero VOC content.
- Wastewater Treatment Requirements - Unit IDs 16, 33, 34, 35 and CHP-1 Requirements:
  - Removed reference to biogas boilers (Unit IDs 34 and 35), which have been removed from the NSR permit. They have no NSPS requirements, and are insignificant units.
- Facility-Wide Conditions – No changes made.
- Insignificant Emission Units: Add biogas-fired boilers (Units 34 and 35).

## **EMISSIONS INVENTORY**

A copy of the 2014 permit application emission inventory is attached in *Attachment B*. Emissions are summarized in the following tables.

**2014 Actual Emissions**

Emission Unit ID	Criteria Pollutant Emissions (tons/year)				
	VOC	CO	SO <sub>2</sub>	PM <sub>2.5</sub> /PM <sub>10</sub>	NO <sub>x</sub>
<b>Fuel Burning Equipment</b>					
1, 2, and 3 <sup>1</sup>	0.00	0.00	0.00	0.00	0.00
4 and 5 <sup>2</sup>	0.886	13.539	0.0967	1.225	7.289
<b>Brewing Process</b>					
10	--	--	--	0.30	--
20	1.57	--	--	0.63	--
23	0.128	--	--	--	--
24	0.87	--	--	--	--
25	0.62	--	--	--	--
26	0.51	--	--	--	--
38	0.08	--	--	--	--
<b>Packaging</b>					
27	90.47	--	--	--	--
28	0.00	--	--	--	--
29	3.11	--	--	--	--
30	0.15	--	--	--	--
31	0.15	--	--	--	--
32	6.98	--	--	--	--
<b>Wastewater Treatment Plant</b>					
16	--	--	--	0.00	--
33	0.08	0.89	0.34	0.08	1.06
CHP-1	1.36	10.3	0.55	0.37	2.47
WWTP	2.32	11.53	1.66	--	2.12
<b>TOTALS</b>	<b>109.26</b>	<b>36.25</b>	<b>2.64</b>	<b>2.63</b>	<b>12.93</b>

1. Boilers 1, 2, and 3 were not fired during the 2014 Emissions Inventory year
2. NO<sub>x</sub> emissions were determined from the CEMS installed on the boilers.

Pollutant	Hazardous Air Pollutant Emission (tons/yr)
Formaldehyde <sup>1</sup>	0.012
Acetaldehyde	0.19
Ethyl Acetate	--

1. Formaldehyde emissions from natural gas burning.

**EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION**

The emissions units at this facility consist of the following:

<b>Emission Unit ID</b>	<b>Stack ID</b>	<b>Emission Unit Description</b>	<b>Size/Rated Capacity*</b>	<b>Pollution Control Device (PCD) Description</b>	<b>PCD ID</b>	<b>Pollutant Controlled</b>	<b>Applicable Permit Date</b>
<b>Fuel Burning Equipment</b>							
1	S-1	Cleaver Brooks boiler Model # D-34, Unit # W-3371 Constructed November 1985	18 Million BTU/hr	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
2	S-2	Cleaver Brooks boiler Model # D-34, Unit # W-3372 Constructed November 1985	18 Million BTU/hr	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
3	S-3	Cleaver Brooks boiler Model # D-34, Unit # W-3373 Constructed November 1985	18 Million BTU/hr	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
4	S-4	Nebraska boiler Model # NS-E-64 Constructed January 2002	97 Million Btu/hr	Low NO <sub>x</sub> Burners	PC-5	NO <sub>x</sub>	6/10/11 Permit as amended 11/18/13 and 2/3/16
5	S-5	Nebraska Boiler Model #NS-E-64 Constructed January 2006	97 Million Btu/hr	Low NO <sub>x</sub> Burners Flue Gas Recirculation	PC-6	NO <sub>x</sub>	6/10/11 Permit as amended 11/18/13 and 2/3/16
40	--	Propane-fired emergency generator	0.10 Million Btu/hr	--	--	--	--
<b>Brewing</b>							
10	S-10	Grain Handling System	133,000 tons malt/yr	Fabric Filters	PC-10-A PC-10-B PC-10-C	PM/PM-10	6/10/11 Permit as amended 11/18/13 and 2/3/16
20	S-20	Brewing Process	10 Million barrels/yr	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16 6/10/11 Permit as amended 11/18/13 and

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
							2/3/16
23	S-23	Fermenting Process	10 Million barrels/yr	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
24	S-24	Maturation (Aging) Process	10 Million barrels/yr	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
25	S-25-1 through S-25-5	Conditioning Process	10 Million barrels/yr	Closed vessels under CO <sub>2</sub> gas pressure during storage and cleaning.	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
26	S-26-1 S-26-2 S-26-3	Byproducts Handling System	Waste Beer: 1,740,000 gal/yr Yeast: 10,250,859 gal/yr Waste yeast: 12,122,021 gal/yr	--	--	--	6/10/11 Permit, as amended 11/18/13 and 2/3/16
38	--	CO <sub>2</sub> Recovery System	10 Million barrels/yr	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
<b>Packaging</b>							
27	S-P-1 through S-P-9	Packaging Fillers Process	17,855,564 barrels/yr	Beer Dispensing Technology and Beer Spillage Management	--	VOC	6/10/11 as amended 11/18/13 and 2/3/16 Permit
29	Fugitive	Product Marking	--	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
30	Fugitive	Carton Assembly	--	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
31	Fugitive	Label Application	--	--	--	--	6/10/11 Permit as amended 11/18/13 and 2/3/16
32	S-32	Packaging Defill Process	1,182,600	Water Spraying System	PC-32	VOC	6/10/11 Permit as

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
			lb- aluminum/yr 19,272,000 lb-glass/yr				amended 11/18/13 and 2/3/16
<b>Wastewater Treatment</b>							
33	S-33-1 through S-33-11	Wastewater Treatment Plant	4,500,000 gal/day	VAREC Biogas Flare and/or Two Cleaver-Brooks Biogas Boilers	PC-33 (VAREC) Units 34 and 35 (Boilers)	VOC and H <sub>2</sub> S	6/10/11 Permit as amended 11/18/13 and 2/3/16
16	S-16	Lime-handling System	14,100 tons/yr	Bin vent filter	PC-16	PM/PM-10	6/10/11 Permit as amended 11/18/13 and 2/3/16

\*The Size/Rated capacity is provided for informational purposes only, and is not an applicable requirement.

## **EMISSION UNIT APPLICABLE REQUIREMENTS**

Those requirements determined to be Best Available Control Technology (BACT) per 9 VAC 5-50-260 in the minor NSR permit dated 6/10/11 as amended 11/18/13 and 2/3/16 are noted after each condition description.

### **Fuel Burning Equipment – Unit IDs 1, 2, 3, 4, and 5**

**Limitations** – The following requirements are from the minor NSR permit issued on 6/10/11 as amended 11/18/13 and 2/3/16. The condition numbers reflect those in the minor NSR. A copy of the permit is attached as *Attachment C*.

- Condition 1 – Nitrogen oxide (NO<sub>x</sub>) emissions from the 97 Million Btu/hr boiler (Unit ID 4) shall be controlled by low NO<sub>x</sub> burners (BACT)
- Condition 2 – NO<sub>x</sub> emissions from the 97 Million Btu/hr boiler (Unit ID 5) shall be controlled by low NO<sub>x</sub> burners and flue gas recirculation. (BACT)
- Condition 19 – Approved fuel for all boilers (Unit IDs 1-5) is natural gas.
- Condition 20 – Short term criteria pollutant emission limits for the 18 Million Btu/hr boilers (Unit IDs 1-3). (BACT)
- Condition 21 – Annual criteria pollutant emission limits for the 18 Million Btu/hr boilers (Unit IDs 1-3). (BACT)
- Condition 22 – Short term criteria pollutant emission limits for the 97 Million Btu/hr boilers (Unit ID 4). (BACT)
- Condition 23 – Short term criteria pollutant emission limits for the 97 Million Btu/hr boilers (Unit ID 5). (BACT)
- Condition 24 – Annual criteria pollutant emission limits for the 97 Million Btu/hr boilers (Unit IDs 4 and 5). (BACT)
- Condition 25 – Visible emission limit of five-percent opacity for the 97 Million Btu/hr boilers, except for one six-minute period in any one hour in which visible emissions shall not exceed 20 percent opacity. (BACT)
- Condition 56 – Boiler emissions shall be controlled by proper operation and maintenance. Training shall be provided and written operating procedures and a maintenance schedule shall be available.

A visible emission limitation for the three 18 Million Btu/hr boilers (Unit IDs 1-3) was not included in the minor NSR permit issued on 6/10/11 Permit as amended 11/18/13 and 2/3/16, nor

in the previous minor NSR permits superseded by this permit. The visible emission limitation included in the Title V permit is pursuant to 9 VAC 5-50-80.

A condition is in the Title V permit restricting Unit ID 40 (guardhouse generator) to the use of propane as the sole fuel.

### **Monitoring**

The monitoring and recordkeeping requirements in Conditions 14, 15, 46, 48, and 49 of the minor NSR permit issued on 6/10/11 Permit as amended 11/18/13 and 2/3/16 have been modified to meet Part 70 requirements.

Conditions 14 and 15 – The fuel gas flow to all boilers (Unit IDs 1-5) shall be fitted with devices to continuously measure and record the fuel gas flow. This requirement has been used to satisfy the periodic monitoring requirements for the fuel throughput limits, which were discontinued with the minor NSR permit last amended on 2/3/16; propane was discontinued as a boiler fuel for Units 1-5, leaving natural gas as the sole fuel.(BACT)

Conditions 46, 48, and 49 – NO<sub>x</sub> emissions shall be measured and recorded by continuous emission monitoring systems (CEMS) on the two 97 Million Btu/hr boilers (Unit IDs 4 and 5). This requirement will satisfy the periodic monitoring requirements for the NO<sub>x</sub> emission limits in Conditions 22 - 24. The data collected shall be used to determine compliance with these NO<sub>x</sub> emission limitations.

The hourly emission limits in Conditions 22, 23, and 24 are based on the capacity of the boilers. Therefore, if the boilers are operated at or below capacity, the hourly emission limits will not be exceeded.

With the exception of NO<sub>x</sub> emissions from Unit IDs 4 and 5, the following equation and emissions factors will be used to determine actual emissions from the operation of the five boilers. NO<sub>x</sub> from these units is determined through a Continuous Emissions Monitoring System (CEMS).

$$E = F \times N$$

Where: E = emission rate (lb/time period)

F = pollutant specific emission factor, provided below

N = fuel consumed (million ft<sup>3</sup>/time period for natural gas and 1000 gal/time period for propane)

**Emission Factors – Unit IDs 1, 2, and 3  
 18 Million Btu/hr heat input rating, each**

Pollutant	Emission Factor (1)
	Natural Gas
	(lb/million ft <sup>3</sup> )
PM	7.6
PM-10	7.6
PM-2.5	7.6
SO <sub>2</sub>	0.6
CO	84
NO <sub>x</sub>	100
VOC	5.5
Formaldehyde	0.075

**Emission Factors – Unit IDs 4 and 5  
 97 Million Btu/hr heat input rating, each**

Pollutant	Emission Factor (1)
	Natural Gas
	(lb/million ft <sup>3</sup> )
PM	7.6
PM-10	7.6
PM-2.5	7.6
SO <sub>2</sub>	0.6
CO	84
NO <sub>x</sub> – Unit ID 4 (3)	50
NO <sub>x</sub> – Unit ID 5 (2), (3)	32
VOC	5.5
Formaldehyde	0.075

- (1) Emission Factors: Natural Gas from AP-42, Tables 1.4-1 and 1.4-2 (07/98); Unit ID 4 uses low NO<sub>x</sub> burners for control. The emission factor for natural gas burning reflects the use of these controls.
- (2) Unit ID 5 uses low NO<sub>x</sub> burners and flue gas recirculation. The emission factor for natural gas burning reflects the use of these controls.
- (3) Although NO<sub>x</sub> emission factors are provided for Boilers 4 and 5, these units are equipped with NO<sub>x</sub> CEMS; actual NO<sub>x</sub> emissions data is provided by the CEMS monitors.

The annual emission limits in Conditions 21 and 24 were determined from the annual capacity of the boilers with a natural gas throughput at 8760 hours. Fuel throughput requirements have been dropped from the permit, as of 2/3/16, since propane has been discontinued as a fuel; only natural gas is used to fuel the five boilers. The throughput is at 8760 hours. Therefore, there is no need to require a throughput listing.

The opacity requirements in the NSR Condition 25 for the 97 Million Btu/hr boilers and those established for the 18 Million Btu/hr boilers pursuant to 9 VAC 5-50-80 will be met through the

use of the required fuel and through proper operation and maintenance. The operating procedures and maintenance schedule requirements will ensure compliance with the opacity limitations and satisfy the periodic monitoring requirement for the boilers.

### **Recordkeeping**

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include the CEMS data collected to determine compliance with the NO<sub>x</sub> emission limits. In Condition 47 of the minor NSR permit last amended on 2/3/16, detailing an annual evaluation of the CEMS (RATA), the wording “and shall take place during the performance tests under 9 VAC 5-50-30 or within 30 days thereafter” was removed because the boiler performance evaluation has already taken; the wording is obsolete.

Requirements for fuel supplier certifications were eliminated from the TV permit, having been first removed from the minor NSR permit. The NSPS Subpart Dc requirement to have fuel supplier certifications as substitute for PM monitoring has been discontinued in the subpart. Therefore, the requirement has been removed from the NSR.

### **Compliance Assurance Monitoring (CAM) Plan**

CAM does not apply to the boilers; none of the boilers has potential pre-controlled emissions of any pollutant that exceed major source threshold levels for that pollutant.

### **Testing**

The permit does not require source tests for the fuel-burning equipment. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **Reporting**

Condition 50 of the minor NSR permit issued 6/10/11 as amended 11/18/13 and 2/3/16 requires quarterly reporting within 30 days of the end of the calendar quarter for the 97 Million Btu/hr boilers. The reporting must include: the source operating time (in hours); for each boiler operating day, the information required under 40 CFR 60.49b (g)(1), (g)(2), and (g)(3); the quality assurance information required under 40 CFR 60.49b (g)(10); the dates and times of all outages of the NO<sub>x</sub> CEMS, with reasons for the outages and corrective action taken; and the calculated hourly NO<sub>x</sub> emission rates (in lb/hr). This information is to be sent to both the DEQ and to the EPA.

### **Notifications**

In Condition 52 of the minor NSR permit as last amended on 2/3/16, the facility is required to notify the DEQ:

1. Within 30 days of the commencement of modification of the Packaging Fillers Process (installation of Bottle Line 5), and
2. Within 15 days of the start-up of the Packaging Fillers Process (Bottle Line 5).

Neither event has yet taken place. Therefore, these notifications were added to the TV permit.

### **Federal Standards Applicability – Unit ID 40 (Propane-fired Generator)**

Unit ID 40, the guardhouse propane-fired generator, is currently not subject to any of the requirements of 40 CFR 60, Subpart JJJJ (NSPS for Stationary Spark Internal Combustion Engines). Based on the manufacture date, the construction date, and the maximum engine power, there are no compliance requirements for the generator. However, pursuant to §60.4230 (5), if the unit is modified or reconstructed as defined under 40 CFR 60, Subpart A, the unit will become subject to the applicable requirements of Subpart JJJJ.

Applicability of 40 CFR 63, Subpart ZZZZ (NESHAP for Stationary Reciprocating Internal Combustion Engines) is limited to demonstrating compliance with the applicable requirements of 40 CFR 60, Subpart JJJJ, pursuant to §63.6590 (c).

### **Streamlined Requirements**

The 97 Million Btu/hr boilers (Unit IDs 4 and 5) are subject to 9 VAC 5-50-80, Standard for Visible Emissions. This regulation limits visible emissions from the boilers to 20 percent opacity except for one six-minute period where visible emissions may not exceed 30 percent opacity. The minor NSR permit limits the visible emissions from the boilers to five percent opacity (Condition 25). Compliance with the minor NSR requirement will ensure that the boilers are also in compliance with 9 VAC 5-50-80. Therefore, the opacity requirements of 9 VAC 5-50-80 have not been included in the Title V permit for Unit IDs 4 and 5.

All five boilers (Unit IDs 1-5) are subject to the particulate matter (PM), sulfur dioxide (SO<sub>2</sub>), and visible emissions (opacity) requirements of 9 VAC 5-40-880, *et. seq.*, Emissions Standards for Fuel Burning Equipment (Rule 4-8). The minor NSR permit limits for PM, SO<sub>2</sub>, and opacity are more stringent than the limits in Rule 4-8. Therefore, compliance with the minor NSR requirements will ensure that the boilers are in compliance with the requirements of Rule 4-8.

Condition 26 of the minor NSR permit, “Requirements by Reference” for 40 CFR 60, Subpart Dc, has not been included because all applicable requirements of the subpart have been incorporated into the Title V permit.

### **Brewery Requirements – Unit IDs 10, 20, 23, 24, 25, 26, and 38**

**Limitations** – The following requirements are from the minor NSR permit issued on 6/10/11 as amended 11/18/13 and 2/3/16. The condition numbers reflect those in the minor NSR. A copy of the permit is attached as *Attachment C*.

Condition 3 – Particulate Matter emissions (PM/PM-10) from the Barley Malt Receiving System, including grain receiving by railcar (choke unloading) and headhouse and internal handling, and the Barley Malt Storage, Screening, and Milling System (Unit ID 10) shall be controlled by fabric filters. (BACT)

Condition 5 – Volatile Organic Compound (VOC) emissions from the Conditioning Process (Unit ID 25) shall be controlled by maintaining closed vessels under CO<sub>2</sub> pressure during storage and cleaning activities. (BACT)

Condition 30 – Annual production limitation of beer.

Condition 28 – Annual throughput limitation of barley malt.

Condition 29 – Short term and annual PM and PM-10 emission limitations for the Barley Malt Receiving System and the Barley Malt Storage, Screening, and Milling System (Unit ID 10). (BACT)

Condition 31 – Monthly and annual VOC emission limitations for the Brewing Process (Unit ID 20), Fermentation (Unit ID 23), Maturation (Unit ID 24), Conditioning (Unit ID 25), By-products Handling (Unit ID 26), and the CO<sub>2</sub> Recovery System (Unit ID 38). (BACT)

Condition 32 – Monthly and annual PM and PM-10 emission limitations for the Brewing Process (Unit ID 20). (BACT)

Condition 33 – Visible emission limit of five percent opacity from all fabric filters. (BACT)

Regarding the CO<sub>2</sub> Recovery system emission factor (EF), the previous recovery system emission factor of 3.27 lb/hr was design data; it represented the maximum removal efficiency of the recovery system from the Coors purchase specifications. Coors officials used the design data, which is considered the most conservative emissions scenario, instead of the results of the testing at the Fulton, New York brewery, conducted in the 1990s. The brewery testing results was selected as the AP-42 factor for the Malt Beverage Section (Section 9.1.2), Activated Carbon Recovery, listing at 0.035 lb/1000 barrels (bbl) packaged. The AP-42 value did not speciate VOCs as the design data did - 2.89 lb/hr as ethyl acetate, and 0.38 lb/hr as acetaldehyde (3.27 lb/hr total).

The current factor of 0.0304 lb/hr was calculated from the results of a stack test that MillerCoors conducted at its Milwaukee brewery in 2011. Similarities between the carbon dioxide recovery systems at the two facilities are sufficient to allow test data from the Milwaukee facility to be used at the Shenandoah facility. Input to the recovery system is CO<sub>2</sub> collected from the fermentation and aging tanks. All collected CO<sub>2</sub> is treated by

the recovery system to remove impurities before re-use. Although the systems have different manufacturers, both use two (2) carbon adsorbers to remove VOC contaminants. One adsorber is maintained in adsorbing mode while the other is regenerating. Recovery is accomplished by heating the carbon media, at which time CO<sub>2</sub> is purged through the carbon. VOCs are only emitted during the recovery cycle, which occurs over 8760 hours. The emission factor applies to the entire recovery system, and not each unit. When one unit is regenerating, the other is operating.

EF (lb/hr) \* 8 recovery hrs/8 operating hrs \* 8760 hrs/yr \* ton/2000 lb = emissions (tpy)

$$0.0304 \text{ lb/hr} * 1 * [(8760 \text{ hrs/yr})/(2000 \text{ lb/ton})] = 0.133 \text{ tpy}$$

Recovery of the carbon media at the Elkton facility takes eight hours. Although the Milwaukee brewery's CO<sub>2</sub> recovery cycle is longer, at 12 hours, it processes 78,000 pounds of CO<sub>2</sub> during the cycle, as contrasted with the Elkton's brewery's 45,000 pounds of CO<sub>2</sub> per eight-hour cycle. Recovery at the Elkton plant is 40% more frequent than the Milwaukee plant, but the carbon bed is exposed to 40% less CO<sub>2</sub>. Therefore, proportionality is maintained, and the emission factor is likely conservative of the actual emissions.

No visible emission limit was included in the minor NSR permit issued on 6/10/11 as amended 11/18/13 and 2/3/16 for the operations emitting only VOC, which are brewing, fermentation, maturation, conditioning and by-products handling. A visible emission limit of 20 percent opacity except for one six-minute period where visible emissions may not exceed 30 percent was established pursuant to 9 VAC 5-50-80.

## **Monitoring**

Fabric filters must be equipped with a device to continuously measure the differential pressure across the fabric filter (Condition 18).

The PM limits are based on the production of beer and barley malt throughput allowed in the permit. Likewise, the VOC limits established are based on the production and throughput limits allowed in the permit. If MillerCoors does not violate the beer production limit or throughput limits contained in the permit, the PM and VOC emission limits will not be violated. Recordkeeping demonstrating the total amount of beer produced and barley malt throughput can be used to demonstrate compliance with the PM and VOC emission limits, satisfying the periodic monitoring requirement.

MillerCoors is required to maintain records using DEQ-approved emission factors to demonstrate compliance with the PM and VOC limits established for the grain-handling and brewing processes in the permit. Actual emissions from these processes shall be calculated using

the procedures outlined below. Details discussing the determination of emission factors are provided in *Attachment B – 2014 Emissions Inventory*.

$$E = TxEFx \frac{100 - C}{100}$$

Particulate Matter (PM) Monitoring – Unit ID 10 Grain Handling System

Where: E = VOC emission rate (lb VOC/time period)  
T = Throughput to process (units are dependent on process)  
EF = Process specific VOC emission factors as provided in the table below  
C = control efficiency, as applicable (%)

Process Step	Emission Factor (EF)		EF Source	Units
	PM	PM-10		
Grain Receiving – Railcar	0.032	0.0078	AP-42, Table 9.9.1-1 (5/98)	lb/ton grain
Headhouse and Internal Handling	0.061	0.034	AP-42, Table 9.9.1-1 (5/98)	lb/ton grain
Malt Storage	0.14	0.14	AP-42, Table 9.9.7-1 (1/95) for Starch Storage Bin	lb/ton grain
Malt Screening	0.643	0.161	AP-42, Section 9.9.1 (5/98), Background Document	lb/ton grain
Malt Milling	1.20, controlled	1.20, controlled	AP-42, Table 9.9.1-2 (5/98), for Animal Feed Mill, Hammermill	lb/ton grain

Volatile Organic Compounds (VOC) Monitoring

$$E = TxEFx \frac{100 - C}{100}$$

Where: E = VOC emission rate (lb VOC/time period)  
T = Throughput to process (units are dependent on process)  
EF = Process specific VOC emission factors as provided in the table below  
C = control efficiency, as applicable (%)

Process (Unit ID)	Emission Factor (EF)	EF Source	Units
Brewing (20)	1.02	AP-42, Table 9.12.1-2 (10/96) <sup>1</sup>	lb/1000 bbl of beer
Fermenting (23)	1.05	Coors, Golden, CO stack test	lb/1000 bbl of beer
Maturation (24)	0.57	AP-42, Table 9.12.1-2 <sup>2</sup>	lb/1000 bbl of beer
Conditioning – Fill-on-vent (25)	0.174	Facility study conducted on 8/20/96	lb/1000 lb of CO <sub>2</sub>
Conditioning – Evacuation (25)	1.05	Coors, Golden, CO stack test, 7/9/97	lb/1000 bbl evacuated
By-products Handling (26)	N/A	Emissions determined from EPA TANKS 4 program.	lb/1000 bbl of waste beer
CO <sub>2</sub> Recovery System (38) <sup>3</sup>	Total VOC – 0.0304	Stack test data, MillerCoors Milwaukee Brewery, 2011	lb/hr <sup>4</sup>

1. Emission factor is the total of the emissions factors for Mash-in, Lauter Tun, Combi Kettle, and Trub Tanks as found in AP-42. Detailed discussion is provided in the Emissions Inventory (*Attachment B*).
2. Aging Tank emission factor.
3. Emissions from the CO<sub>2</sub> Recovery System occur only during regeneration. VOC emissions are for acetaldehyde (also listed as a HAP) and ethyl acetate (VOC only). Emissions of acetaldehyde are below the modeling exemption thresholds.
4. Emissions from the CO<sub>2</sub> Recovery System are calculated as follows:  
(EF) x 8 regeneration hours/8 operating hours = emissions (lb/hr)

### Compliance Assurance Monitoring (CAM) Plan

The following processes identified under Unit ID 10, Grain-handling System, are controlled by fabric filters and have the pre-control emissions of PM/PM-10 exceeding major source thresholds. These processes are subject to CAM:

- Barley Malt Receiving System, including grain receiving by railcar (choke unloading) and headhouse and internal handling
- Barley Malt Storage, Screening, and Milling System

None of the remaining brewing processes (Unit IDs 20, 23-26, and 38) use add-on control devices for emissions controls. Therefore, CAM is not applicable to these processes.

The CAM Plan (*Attachment A*) for Unit ID 10 fabric filters includes the following:

Indicator 1 – Visible emissions were selected as a performance indicator because they are indicative of good operation and maintenance of the fabric filters. When the

fabric filters are operating properly, there will not be any visible emissions from the exhaust. Any increase in visible emissions indicates reduced performance of a particulate matter control device; therefore, the presence of visible emissions is used as a performance indicator.

Indicator 2 - An excursion is defined as the presence of visible emissions, unless the facility chooses to conduct a Method 9 VEE, where an excursion is defined as an average opacity of five percent during any one six-minute period in any hour. Regardless of which option the facility chooses, a Quality Improvement Plan (QIP) shall be developed if two excursions per each control device occur in a two-week period, during weekly monitoring, or if one excursion occurs during monthly monitoring.

Indicator 3 – Monthly external filter inspections and annual internal filter inspections are required by qualified personnel. Inspections will alert the facility of bag deterioration and necessary corrective maintenance to obtain the proper control efficiencies in order to meet emission limitations.

### **Recordkeeping**

The permit includes requirements for maintaining records of all monitoring and testing required by the permit. These records include throughputs of all raw materials, total amount of beer brewed, total amount of waste beer, total amount of CO<sub>2</sub> consumed, emissions data, and necessary records required by the CAM plan.

### **Testing**

The permit does not require source tests for the brewing process. The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

### **Reporting**

The facility is required to submit CAM reports as part of the Title V semi-annual monitoring reports required in the General Conditions. The reports shall include, at a minimum: summary information of excursions, monitor downtime, and action taken to implement a QIP, if required during the reporting period.

### **Packaging Requirements – Unit IDs 27, 29 - 32**

**Limitations** – The following requirements are from the minor NSR permit issued on 6/10/11 as amended 11/18/13 and 2/3/16. The condition numbers reflect those in the minor NSR. A copy of the permit is attached as *Attachment C*.

Condition 6 – Volatile organic compound (VOC) emissions from the Packaging Fillers Process (Unit ID 27) shall be controlled by beer dispensing technology beer spillage management practices. (BACT)

Condition 7 – Volatile organic compound (VOC) emissions from product marking (Unit ID 29) shall be controlled by the use of the approved low-VOC content product marking inks and makeup cleaners. The facility is required to evaluate new, low VOC-containing inks and make-up cleaners as they become available. (BACT)

Condition 8 – VOC emissions from carton assembly (Unit ID 30) and bottle label application (Unit ID 31) shall be controlled by the use of ultra low-solvent based adhesives (containing less than 0.01 percent by weight VOC). (BACT)

Condition 9 – VOC emissions from the Packaging Defill Process (Unit ID 32) shall be controlled by the use of a water spraying system. (BACT)

Condition 30 – Annual production limitation of beer through packaging.

Condition 31 – Monthly and annual VOC emission limitations for the Packaging Fillers Process (Unit ID 27), Product Marking (Unit ID 29), Carton Assembly (Unit ID 30), Label Application (Unit ID 31), and the Packaging Defill Process (Unit ID 32). (BACT)

Unit ID 28 (Conveyor Lubrication) no longer uses lubricants that contain VOC. Therefore, the NSR Condition requiring the use of low VOC content lubricants has been removed. Unit ID 28 has also been removed from the list of Emissions Units. A mention is made of the conveyor line lubricants (Unit ID 28) in Recordkeeping, for keeping SDS / MSDS on file to show that the lubricants do not contain VOC content.

### **Monitoring and Recordkeeping**

There are VOC emission limits established for all aspects of the packaging process (packaging, packaging fillers process, product marking, carton assembly, bottle label application, and defilling) which are based on the beer production/processing limits contained within the permit. The beer production/processing rate directly determines VOC emission rates. If MillerCoors does not exceed the beer production/processing limits contained in the permit, the VOC emission limits will not be violated. Recordkeeping demonstrating the total amount of beer produced/processed each year can be used to demonstrate compliance with the VOC emission limits, satisfying the periodic monitoring requirement.

MillerCoors is required to maintain records using DEQ-approved emission factors to

demonstrate compliance with the VOC limits in the permit. Details discussing the determination of emission factors are provided in *Attachment B – 2014 Emissions Inventory*. Actual VOC emissions from the packaging operations shall be calculated using the following equation:

$$E = T \times EF \times \frac{100 - C}{100}$$

Where: E = VOC emission rate (lb VOC/time period)  
T = Throughput to process (units are dependent on process)  
EF = Process specific VOC emission factors as provided in the table below  
C = control efficiency, as applicable (%)

Process (Unit ID)	Emission Factor (EF)	EF Source	Units
Packaging Fillers Process – Bottles (27)	2.15	Compliance Test – 12/11/14-12/12/14 at Shenandoah Brewery (Elkton, VA)	lb/1000 bbl of beer
Packaging Fillers Process – Cans (27)	9.94	Compliance Test – 12/11/14-12/12/14 at Shenandoah Brewery (Elkton, VA)	lb/1000 bbl of beer
Packaging Fillers Process – Kegs (27)	0.69	AP-42 Tbl 9.12.1-2 (10/96)	lb/1000 bbl of beer
Product Marking (29)	(or as specified on most recent MSDS)	MSDS	lb/gal
Carton Assembly (30)	(or as specified on most recent MSDS)	MSDS	lb/gal
Bottle Label Application (31)	(or as specified on most recent MSDS)	MSDS	lb/gal
Defilling – Bottles (32)	0.001	Coors, Golden, CO stack test 4/32/93	lb/lb glass crushed
Defilling – Cans (32)	0.035	Coors, Golden, CO stack test 10/31/93	lb/lb aluminum shredded

The above listed emission factors for Bottle 3 and Can 4 are applied to all three can lines (1, 2, and 3), and all three bottle lines (3, 4 and 5), as appropriate. The emissions from the eight lane Centramatic keg line are not changed.

The new emission factors for the can and bottle lines are calculated from the results of data obtained from a stack test conducted at the Elkton brewery from December 11 - 12, 2014, using EPA Method 25A.

### Compliance Assurance Monitoring (CAM) Plan

CAM does not apply to any of the units in the Packaging Process, as none of the emission units uses an add-on control device.

## **Testing**

Per Condition 43 of the NSR permit last amended on 2/3/16, a performance (stack) test will be required within five years of the December 11-12, 2014 stack test at the Elkton brewery in order to verify the new emission factors for the packaging fillers process, can and bottle lines. The test can be conducted on Bottle Line 4 or Can Line 1, 2, or 3 to determine compliance with the new emission factors, as these are the lines that were not tested in the December 11 – 12, 2014 stack test; the December 2014 tests were conducted on Bottle Line 3 and Can Line 4.

The DEQ and the EPA have authority to conduct additional performance tests for VOC from the filler rooms of the Packaging Fillers process - Can Lines 1, 2 or 3, and Packaging Fillers Process – Bottle Lines 3, 4 or 5 to demonstrate compliance with the emission limits determined from the December 11-12, 2014 stack test. Additionally, the DEQ and the EPA have the authority to require testing not in this permit, if necessary, to determine compliance with an emission limit or standard.

## **Reporting**

No specific reporting has been included in the permit for the Packaging Process.

## **Streamlined Requirements**

There are no streamlined requirements for the packaging equipment.

## **Wastewater Treatment Requirements – Unit IDs 16, 33 and CHP-1**

**Limitations** – The following requirements are from the minor NSR permit issued on 6/10/11 as amended 11/18/13 and 2/3/16. The condition numbers reflect those in the minor NSR. A copy of the permit is attached as *Attachment C*.

Condition 4 – Particulate matter emissions (PM and PM-10) from the operation of the lime storage and handling system (Unit ID 16) shall be controlled by a bin vent filter. (BACT)

Condition 10 – The collection system for the wastewater treatment facility and influent structures must be covered to prevent the escape of volatile organic compound (VOC) emissions. (BACT)

Condition 11 – Added Unit ID CHP-1 to equipment that is controlled by an advanced wastewater treatment system. (BACT)

Condition 12 – NO<sub>x</sub> emissions from the Unit ID CHP-1 shall be controlled by a low NO<sub>x</sub> engine. (BACT)

Condition 13 – Emissions from the Unit ID CHP-1 shall be controlled by proper operation and maintenance. This includes operator training, recordkeeping of training, and a maintenance schedule based on manufacturer’s recommendations for CHP-1. (BACT)

Condition 36 – Annual throughput limit for lime. (BACT)

Condition 37 – Annual PM and PM-10 emission limits from the Lime Storage and Handling System (Unit ID 16). (BACT)

Condition 38 – Monthly and annual VOC emission limits from the Wastewater Collection/Treatment and Sludge Handling Systems. (BACT)

Condition 39 – Process emission limits for Unit ID CHP-1.

Condition 40 – Monthly and annual emission limits for the Unit ID CHP-1 (BACT).

Condition 41 – Visible emission limit of 10 percent opacity, except during one six-minute period in any one hour in which opacity shall not exceed 20 percent from the Unit ID CHP-1.

Condition 42 – Visible emission limit of five percent opacity from the lime storage silo bin vent filter. (BACT)

Condition 45 – A continuing compliance provision for the Unit ID CHP-1 opacity requirements.

40 CFR 60, Subpart JJJJ Requirements: The following conditions are established for the SI ICE (Unit ID CHP-1) in accordance with the NSPS, Subpart JJJJ. Condition numbers in this part refer to the Title V permit.

Condition 56 – Added NSPS (Subpart JJJJ) emission standards for Unit ID CHP-1.

Condition 57 – Added requirement to operate and maintain the engine in such a way that it achieves NSPS (Subpart JJJJ) emission standards for Unit ID CHP-1.

Condition 61 – Added engine compliance reference from 40 CFR 60 (Subpart JJJJ).

Condition 62 – Add Subpart JJJJ compliance requirements for a non-certified engine, including a maintenance plan, records of conducted maintenance, and compliance with the emission standards as required by Subpart JJJJ.

40 CFR 63 Subpart ZZZZ Requirements

Condition 59 – Added engine compliance reference from 40 CFR 63 (Subpart ZZZZ)

Condition 61 – The Unit ID CHP-1 shall meet the requirements of MACT Subpart ZZZZ by meeting the requirements of NSPS Subpart JJJJ.

### **Monitoring and Recordkeeping**

Monitoring and recordkeeping Conditions have been established to determine compliance with the limitations established for the Unit ID CHP-1, per NSPS Subpart JJJJ, in the Wastewater Treatment Requirements section of the Title V permit. As shown below, compliance is indicated in the TV permit, with Conditions for recordkeeping demonstrating compliance with the fuel type, records of engine maintenance performed, records that indicate that the Unit ID CHP-1 is a non-certified engine, and records that show the engine emissions comply with the process emission standards of the governing Subpart JJJJ. These records satisfy the Part 70 periodic monitoring requirements to ensure that the permit requires compliance with the applicable requirements.

Compliance assurance for the engine Unit ID CHP-1 requires performance (stack) test for VOC, NO<sub>x</sub>, and CO while firing digester gas (biogas), as discussed in “Testing”. This testing will assure engine compliance with the engine emission standards as listed in Subpart JJJJ.

#### Monitoring:

NSR Condition 16 – The permit requires that the biogas flare be equipped with a device to ensure continuous operation of the flare. A log is required to record non-operational periods.

NSR Condition 17 – The Unit ID CHP-1 is required to have a device to continuously measure and record the biogas flow to the unit.

NSR Condition 18 – All bin vent filters are required to be equipped with a device to continuously measure the differential pressure across the filter.

No other changes are made to the monitoring conditions except as what took place in the Significant Modification of May 2014. Compliance determination was changed from the calculation of air emissions every four-week period as the sum of 13 consecutive four-week periods, to a monthly demonstration by adding the total for the most recently completed calendar month to the individual monthly totals for the preceding 11 months

#### Recordkeeping:

Unit CHP-1:

75.a Records to show compliance with the operator training, procedures, and maintenance for the Unit ID CHP-1.

75.b Records to show compliance with the process emission limits for Unit ID CHP-1.

75.c. Monthly and annual emissions from the Unit ID CHP-1.

75j. Records of stack testing results for Unit CHP-1

75.k. Monthly and annual throughput of digester gas for the Unit ID CHP-1.

75.l All notifications submitted to comply with 40 CFR 60 Subpart JJJJ and all documentation supporting any notification.

75.m. Documentation that the Unit ID CHP-1 meets the emission standards if it is a non-certified engine.

Unit ID 16 (Lime Handling System):

75.e. Monthly and annual throughput of lime.

75.f. Monthly and annual particulate emissions (in tons) from the lime storage and handling system (Unit ID 16).

75.h. Differential pressure log drops for the bin-vent filter.

75.i. Records of all observations , VEE results, and corrective actions taken. .

Unit ID 33: (Wastewater Treatment Plant)

75.d. Monthly and annual VOC emissions (in tons), from the wastewater collection / treatment and sludge handling system.

75.g. Maintenance of a log to record any period when the biogas flare is non-operational.

The permit requires MillerCoors to operate a biogas flare to control VOC emissions from the wastewater treatment facility. The flare must be equipped with a monitoring device to ensure continuous operation, as well as an automatic shutoff device and re-ignition controls. This device will satisfy the periodic monitoring requirement for operation of the biogas flare. There are VOC emission limits established for the wastewater collection/treatment and sludge handling systems, which are based on the beer production/processing limits contained within the permit, and the operation of the biogas flare. The beer waste rate (which at worst case is all of the beer that can be produced/processed) directly determines VOC emission rates. Therefore, as long as the biogas flare is operating and the beer production/processing limit is not violated, there is very little chance that the VOC emission limits will be violated. Recordkeeping demonstrating the total amount of beer wasted each year can be used to demonstrate compliance with the VOC emission limits, satisfying the periodic monitoring requirement.

The two biogas-fired boilers are moved to the Insignificant Units list. They are used to help combust excess biogas. They have no requirements.

Condition 17 of the permit requires the facility to continuously measure and record monthly, and annually, the biogas flow to the Unit ID CHP-1 via a device. MillerCoors currently does use flow meters on the flare, although not required by the permit.

MillerCoors is required to maintain records using DEQ-approved emission factors to demonstrate compliance with the VOC limits in the permit. Details discussing the determination of emission factors are provided in *Attachment B – 2014 Emissions Inventory*. Actual emissions from the wastewater treatment system operations shall be calculated using the following equation:

$$E = F \times N$$

Where: E = emission rate (lb/time period)  
F = pollutant specific emission factor  
N = throughput/time period

**Emission Factors – Unit ID 33**  
**Collection System**  
**Primary Treatment**  
**Biogas Flare**  
**Secondary Treatment System**

Process	Pollutant	Emission Factor	EF Units	EF Source
Collection System	VOC	3.75	lb/MG	Facility-provided emission factor based on process knowledge.
Primary Treatment	H <sub>2</sub> S	0.029	lb/Million BTU	
Biogas Flare	PM	0.14	lb/Million Btu	AP-42, Section 13.5 (5 <sup>th</sup> ed.)
	CO	0.37	lb/Million Btu	
	NO <sub>x</sub>	0.068	lb/Million Btu	
	SO <sub>2</sub>	0.05	lb/Million Btu	Facility-provided emission factor based on process knowledge.
Process	Pollutant	Emission Factor	EF Units	EF Source
Secondary Treatment	VOC	6.42	lb/MG	Facility-provided emission factor based on process knowledge.

## **Compliance Assurance Monitoring (CAM) Plan**

CAM does not apply to any of the Wastewater Treatment units, as none of the emission units has potential pre-control emissions for any pollutant that exceed major source thresholds.

### **Testing**

The permit does not require source tests for the wastewater treatment system, other than the testing necessary for the Unit ID CHP-1. The permit does require initial and subsequent testing of the Unit ID CHP-1 to determine compliance with the emission limits stated in Condition 56 for the Unit ID CHP-1 engine-generator. The initial test was conducted on April 22, 2014. The unit was in compliance with 40 CFR 60, Subpart JJJJ for the unit, with NOX = 0.61 g/HPhr, CO = 2.2 g/HPhr, and VOC = 0.06 g/HPhr. Subsequent testing is required every 8760 hours, or every three years, whichever comes first.

The DEQ and EPA have authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

Testing is required of the Unit ID CHP-1, as needed to ensure compliance with the visible emission limit in Condition 41 of the minor NSR, as last amended on 2/3/16.

### **Reporting**

Reporting, an initial notification, is required by 40 CFR 60.7(a)(1) for the Unit CHP-1. Specifics of the required information, primarily engine technical specifications, are listed in Condition 79 of the draft TV permit.

### **Streamlined Requirements**

There are no streamlined requirements for the Wastewater Treatment units.

### **Facility Wide Requirements**

The following requirements are from the minor new source review permit issued on 6/10/11 Permit as amended 11/18/13 and 2/3/16. The condition numbers reflect those in the minor NSR. A copy of the minor NSR permit is attached as *Attachment C*.

Condition 34 – PSD applicability

Condition 57 – Maintenance and Operating Procedures shall be implemented to minimize the duration and frequency of excess emissions, with respect to air pollution control equipment, monitoring devices, and process equipment, including: development of a maintenance schedule, an inventory of spare parts shall be maintained, written equipment operating

procedures will be available, and employees shall be trained in the proper operation of the equipment.

This requirement is listed separately for the Unit ID CHP-1, Condition 13 of the minor NSR permit dated 6/10/11 as amended 11/18/13 and 2/3/16. This was established as BACT for said engine-generator when the unit was considered for minor new source review permitting by the DEQ.

## **GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### **Comments on General Conditions:**

#### **Permit Expiration (Conditions 89 – 91)**

These Conditions refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the “Department of Environmental Quality Agency Policy Statement No. 2-2003”.

This general condition cites the sections that follow:

9 VAC 5-80-80. Application

9 VAC 5-80-140. Permit Shield

9 VAC 5-80-150. Action on Permit Applications

#### **Deviation, Failure, Malfunction Reporting (Conditions 96 – 97)**

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

These general Conditions cite the sections that follow:

9 VAC 5-40-41. Emissions Monitoring Procedures for Existing Sources

9 VAC 5-40-50. Notification, Records and Reporting

9 VAC 5-50-50. Notification, Records and Reporting

### **Permit Modification (Condition 101)**

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1605. Applicability, Permits For Major Stationary Sources and Modifications  
Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications  
Locating in Nonattainment Areas

### **Asbestos Requirements**

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos. This general condition contains a citation from the Code of Federal Regulations that follow:

40 CFR 61.145, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to demolition and renovation.

40 CFR 61.148, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to insulating materials.

40 CFR 61.150, NESHAP Subpart M. National Emissions Standards for Asbestos as it applies to waste disposal.

This general condition cites the regulatory sections that follow:

9 VAC 5-60-70. Designated Emissions Standards

9 VAC 5-80-110. Permit Content

### **STATE ONLY APPLICABLE REQUIREMENTS**

MillerCoors did not identify any state-only enforceable requirements in the Title V renewal application, and all requirements in the state operating permit are federally enforceable. Therefore, no state-only applicable requirements have been included in the Title V permit.

### **FUTURE APPLICABLE REQUIREMENTS**

MillerCoors did not identify any future applicable requirements in the renewal application.

## **INAPPLICABLE REQUIREMENTS**

40 CFR 60 Subpart Dc is listed as an inapplicable requirement in the Title V permit for Units 1, 2 and 3. The regulation applies to steam generating units for which construction commenced after June 9, 1989, and that have a maximum design heat input capacity of 100 MMBtu/hr or less, but greater than 10 MMBtu/hr. Construction on the three 18 MMBtu/hr boilers (Units 1, 2 and 3) began in November of 1985 and there has been no reconstruction or modification (as defined under Subpart A) that would trigger applicability of Subpart Dc. Therefore, 40 CFR 60 Subpart Dc does not apply to the three 18 MMBtu/hr boilers (Units, 1, 2 and 3).

40 CFR 60 Subpart DD is listed as an inapplicable requirement in the Title V permit. The regulation applies to each affected facility at any grain terminal elevator or any grain storage elevator that commenced construction, modification, or reconstruction after August 3, 1978. Grain terminal elevators located at breweries are exempt from 40 CFR 60 Subpart DD.

40 CFR 60 Subpart VV § 60.482 (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry) is listed as an inapplicable requirement in the Title V permit. The regulation applies to each affected facility in the synthetic organic chemicals manufacturing industry. Facilities that produce beverage alcohol are exempt from § 60.482.

40 CFR 60 Subpart Kb (Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Storage Vessels)) is listed as an inapplicable requirement in the Title V permit. This regulation applies to each storage vessels with a capacity greater than 75 m<sup>3</sup> that is used to store volatile organic liquids for which construction, reconstruction, or modification is commenced after July 23, 1984. This regulation does not apply to vessels used to store beverage alcohol.

40 CFR 60 Subpart NNN (Standards of Performance for VOC Emissions from Synthetic Organic Chemical Manufacturing Industry Distillation Operations) is listed as an inapplicable requirement in the Title V permit. This regulation applies to each affected facility that is part of a process unit that produces any of the chemicals listed in § 60.667 as a product, co-product, by-product, or intermediate. This regulation does not apply to any distillation unit operating as part of a process unit which produces beverage alcohols.

40 CFR 60 Subpart WW (Standards of Performance for the Beverage Can Surface Coating Industry) is listed as an inapplicable requirement in the Title V permit. This regulation applies to the following affected facilities in beverage can surface coating lines: each exterior base coat operation, each overvarnish coating operation, and each inside spray coating operation. This regulation does not apply to MillerCoors, L.L.C.

40 CFR 63 Subpart JJJJJ (National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources). MillerCoors is an area source of

HAP. It is not subject to this subpart because all of its boilers are gas-fired. Per §63.11195(e), gas-fired boilers are not subject to the subpart.

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A.4 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

## COMPLIANCE PLAN

MillerCoors is currently in compliance with all applicable requirements. No compliance plan was included in the application or in the permit.

## INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity 9 VAC 5-80-720 C)
19	Diesel Fuel Storage	9 VAC 5-80-720 A	--	--
22	Can 3 Pasteurizer	9 VAC 5-80-720 B	VOC	--
23	Bottle 4 Pasteurizers	9 VAC 5-80-720 B	VOC	--
24	Can 1 in-line densifiers	9 VAC 5-80-720 B	VOC	--
25	Can 2 in-line densifiers	9 VAC 5-80-720 B	VOC	--
26	Can 3 in-line densifiers	9 VAC 5-80-720 B	VOC	--
31	Rail and Truck Loading	9 VAC 5-80-720 A	--	--
36	Wet Spent Grain Storage and Loadout	9 VAC 5-80-720 B	VOC	--
34	Biogas fired boiler	9 VAC 5-80-720 B	NO <sub>x</sub> , SO <sub>2</sub> , PM-10,VOC,CO	
35	Biogas fired boiler	9 VAC 5-80-720 B	NO <sub>x</sub> , SO <sub>2</sub> , PM-10,VOC,CO	
37	Adjuncts Handling	9 VAC 5-80-720 B	PM, PM-10	--
51	Yeast Propagation	9 VAC 5-80-720 B	VOC, SO <sub>2</sub>	--
52	Cooling Towers	9 VAC 5-80-720 A	--	--
53	Deozonation Towers	9 VAC 5-80-720 B	VOC (ozone)	--
54	Packaging Traymaker	9 VAC 5-80-720 B	PM, PM-10, VOC	--

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
55	CIP (Clean-in-Place) System	9 VAC 5-80-720 B	VOC	--
56	Hops Staging Room	9 VAC 5-80-720 B	VOC	--
57	Inline Defill Units – Bottle Line 3	9 VAC 5-80-720 B	VOC	--
58	Warehouse Keg Defill	9 VAC 5-80-720 B	VOC	--
59	Keg Line Defill	9 VAC 5-80-720 B	VOC	--
60	Five-liter Keg Can Filling	9 VAC 5-80-720 B	VOC	--
61	Bottle Warmer	9 VAC 5-80-720 B	VOC	--
62	Flash Pasteurization	9 VAC 5-80-720 B	VOC	--
63	Central Vacuum System	9 VAC 5-80-720 B	PM, PM-10, VOC	--
64	Green Beer Centrifuges	9 VAC 5-80-720 B	VOC	--
65	Emergency Malt Loadout	9 VAC 5-80-720 B	PM, PM-10	--
--	General Ventilation	9 VAC 5-80-720 A	--	--
--	Portable Heaters	9 VAC 5-80-720 A	--	--
--	Space Heaters	9 VAC 5-80-720 A	--	--
--	Office Activities	9 VAC 5-80-720 A	--	--
--	Janitorial Cleaning/Maintenance	9 VAC 5-80-720 A	--	--
--	Architectural Repair Activities	9 VAC 5-80-720 A	--	--
--	Grounds Maintenance	9 VAC 5-80-720 A	--	--
--	Locker Room Ventilation	9 VAC 5-80-720 A	--	--
--	Copier Activities	9 VAC 5-80-720 A	--	--
--	Blueprint Duplication	9 VAC 5-80-720 A	--	--
--	Cafeteria Activities	9 VAC 5-80-720 A	--	--
--	Safety Devices	9 VAC 5-80-720 A	--	--
--	Air Contaminate Test Equipment	9 VAC 5-80-720 A	--	--
--	Welding, Soldering Equipment	9 VAC 5-80-720 A	--	--
--	Forklift, Truck Engines	9 VAC 5-80-720 A	--	--
--	Firefighting Equipment and Training	9 VAC 5-80-720 A	--	--
--	Quality Control Lab Activities	9 VAC 5-80-720 A	--	--
--	Air Compressors	9 VAC 5-80-720 A	--	--
--	Dumpster	9 VAC 5-80-720 A	--	--
--	Air Dryers for Instrument Air	9 VAC 5-80-720 A	--	--
--	Laboratory Activities	9 VAC 5-80-720 A	--	--

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
--	Sampling Activities	9 VAC 5-80-720 A	--	--
--	Solvent Storage	9 VAC 5-80-720 A	--	--
--	Cooling Ponds	9 VAC 5-80-720 A	--	--
--	Maintenance Activities	9 VAC 5-80-720 A	--	--
--	Spill Collection Tanks	9 VAC 5-80-720 A	--	--
--	Steam Vents	9 VAC 5-80-720 A	--	--
--	Boiler Treatment Operations	9 VAC 5-80-720 A	--	--
--	Nonhazardous Boiler Cleaning Activities	9 VAC 5-80-720 A	--	--
--	Portable Containers	9 VAC 5-80-720 A	--	--
--	Vents or Stacks for Sewer Lines	9 VAC 5-80-720 A	--	--
--	Purging of Natural Gas Lines	9 VAC 5-80-720 A	--	--
--	Sealed Batteries	9 VAC 5-80-720 A	--	--
--	Parking Lot Resurfacing	9 VAC 5-80-720 A	--	--
--	Decarbonators Vents	9 VAC 5-80-720 A	--	--
--	Relief Valves (excluding air pollution bypass valves)	9 VAC 5-80-720 A	--	--

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

## CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

## PUBLIC PARTICIPATION

A public notice regarding the draft permit was placed in the Daily News Record, Harrisonburg, Virginia, on May 6, 2016. The 30-day public comment period ran from May 7, 2016 through June 7, 2016. No comments were received.

EPA was sent a copy of the draft permit and notified of the public notice on May 5, 2016. West Virginia, the only affected state, was sent a copy of the public notice in a letter on May 6, 2016. EPA had no comment.

All persons on the Title V mailing list were sent a copy of the public notice by either electronic mail or in letters on May 6, 2016.

## **ATTACHMENTS**

A – Unit ID 10 Fabric Filters CAM Plan

B – 2014 Emissions Inventory

C – Minor NSR Permit - June 10, 2011, as amended November 18, 2013 and February 3, 2016.

D – Engineering Memorandum to minor NSR permit - June 10, 2011, as amended November 18, 2013 and February 3, 2016

ATTACHMENT A

UNIT ID 10 FABRIC FILTERS CAM PLAN

ATTACHMENT B  
2014 EMISSIONS INVENTORY

ATTACHMENT C

MINOR NSR PERMIT

June 10, 2011 as amended November 18, 2013 and February 3, 2016.

ATTACHMENT D

ENGINEERING MEMORANDUM to MINOR NSR PERMIT

June 10, 2011 as amended November 18, 2013 and February 3, 2016.