



# GEORGIA

DEPARTMENT OF NATURAL RESOURCES

## ENVIRONMENTAL PROTECTION DIVISION

**Richard E. Dunn, Director**

**Air Protection Branch**

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### NARRATIVE

TO: Heather Brown  
FROM: Joe Aisien  
DATE: December 13, 2018

Facility Name: **BD (Becton, Dickinson and Company) - Covington**  
AIRS No.: 21700021  
Location: Covington, GA (Newton County)  
Application #: 26803  
Date of Application: October 29, 2018

### Background Information

This facility sterilizes packaged medical equipment from other locations using ethylene oxide. After sterilization, the ethylene oxide is displaced with air and vented to a regenerative thermal oxidizer (RTO) for destruction.

### Purpose of Application

The purpose for this application is for ownership change from Bard Medical Division, Covington to BD (Becton, Dickinson and Company). BD acquired C.R. Bard, Incorporated on December 29, 2017.

### Updated Equipment List

Emission Units			Associated Control Devices	
Source Code	Description	Installation Date	Source Code	Description
SV1	Sterilization Vessel # 1	1991	RTO-1	Regenerative Thermal Oxidizer
SV2	Sterilization Vessel # 2	1991	RTO-1	Regenerative Thermal Oxidizer
SV3	Sterilization Vessel # 3	1991	RTO-1	Regenerative Thermal Oxidizer
SV4	Sterilization Vessel # 4	1991	RTO-1	Regenerative Thermal Oxidizer
SV5	Sterilization Vessel # 5	Future	RTO-1	Regenerative Thermal Oxidizer
A1A	Aeration Cell 1A	1991	RTO-1	Regenerative Thermal Oxidizer
A2A	Aeration Cell 2A	1991	RTO-1	Regenerative Thermal Oxidizer
A3A	Aeration Cell 3A	1991	RTO-1	Regenerative Thermal Oxidizer
A4A	Aeration Cell 4A	1991	RTO-1	Regenerative Thermal Oxidizer
A5A	Aeration Cell 5A	Future	RTO-1	Regenerative Thermal Oxidizer

Emission Units			Associated Control Devices	
Source Code	Description	Installation Date	Source Code	Description
A1B	Aeration Cell 1B	1991	RTO-1	Regenerative Thermal Oxidizer
A2B	Aeration Cell 2B	1991	RTO-1	Regenerative Thermal Oxidizer
A3B	Aeration Cell 3B	1991	RTO-1	Regenerative Thermal Oxidizer
A4B	Aeration Cell 4B	1991	RTO-1	Regenerative Thermal Oxidizer
A5B	Aeration Cell 5B	Future	RTO-1	Regenerative Thermal Oxidizer

Source Code	Description
STOR	Product Storage

### Emissions Summary

#### Facility-Wide Emissions (in tons per year)

Pollutant	Potential Emissions (before modification)	Actual Emissions (before modification)	Potential Emissions (after modification)	Actual Emissions (after modification)
	TPY	TPY		
PM	2.13	2.13	2.13	2.13
NO <sub>x</sub>	36.88	36.88	36.88	36.88
SO <sub>2</sub>	2.03	2.03	2.03	2.03
CO	26.98	26.98	26.98	26.98
VOC	5.55	5.55	6.79	6.79
Max. Individual HAP (Ethylene Oxide)	3.9	3.9	5	5
Total HAP*	3.96	3.96	5.06	5.06

\* includes HAPs from combustion units

Ethylene Oxide emissions were based on mass balance calculations. Emissions of PM, NO<sub>x</sub>, SO<sub>2</sub>, CO, and VOC were based on AP-42 factors for small boilers (Chapter 1.4), AP-42 factors for large diesel engines (Chapter 3.4), and AP-42 factors for natural gas engines (Chapter 3.2). For the emergency generators, 500 hrs/yr of operation were assumed. For the natural gas fired emergency generators, worst case factors from 2 stroke lean burn, 4 stroke lean burn, and 4 stroke rich burn were selected.

**Regulatory Applicability***Sterilization Equipment including Sterilization Vessels and Aeration Cells*

40 CFR 63 Subpart O – Ethylene Oxide Emission Standards for Sterilization Facilities

40 CFR 63 Subpart A – General Provisions

The sterilization equipment, including Sterilization Vessels and Aeration Cells (existing and proposed) are subject to 40 CFR 63 Subpart O, which applies to both major and area sources and has a compliance date of December 6, 1998 except for new equipment which shall comply immediately upon startup. Because the facility's usage of Ethylene Oxide is 10 tons or greater, the facility is subject to both the Sterilization chamber vent standard and the aeration room vent standard.

*Equipment Exempt from Permitting*

The facility operates 72 fuel burning emission units with a rated heat input capacity of 1 million Btu/hr or less burning natural gas. Refer to the application for further details on these sources. All of these sources are exempt from permitting under the provisions of Georgia Rule 391-3-1-.03(6)(b)(3):

3. Any fuel-burning equipment with a rated input capacity of 2.5 million BTUs per hour or less.

The facility has 4 boilers which burn natural gas, two (2) rated at 6.276 MMBtu/hr each and two (2) rated at 4.186 MMBtu/hr. The RTO has two (2) burners which burn natural gas which are rated at 7.5 MMBtu/hr each. The facility also has fuel burning equipment that includes three natural gas fired units rated at 1.6 MMBtu/hr, 4.375 MMBtu/hr, and 4.375 MMBtu/hr. All units are exempt from permitting under the provisions of Georgia Rule 391-3-1-.03(6)(b)(1)

1. Fuel-burning equipment having a total heat input capacity of less than 10 million BTUs per hour burning only natural gas, LPG and/or distillate fuel oil containing 0.50% sulfur by weight or less.

The facility operates 2 units exempt from permitting under 391-3-1-.03(6)(h)(3)(v) –Bakery ovens and confection cookers. Refer to Application No. 18737.

The plant operates laboratory and R&D facilities. The operations are exempt from permitting under Georgia Rule 391-3-1-.03(6)(f)(1).

The plant operates equipment for the compression, molding, injection, and extrusion of plastics. This equipment is exempt from permitting under Georgia Rules 391-3-1-.03(6)(h)(5) and (13).

The facility operates two tanks that are exempt from permitting under Georgia Rules 391-3-1-.03(6)(c)(1) and (2)

The facility operates 4 stationary engines used for emergency power generation. The diesel fired emergency generator is 1865 HP. The 3 natural gas fired emergency generators are 2.3 MMBtu/hr total. This equipment is exempt from permitting under Georgia Rules 391-3-1-.03 (b)(11)(i).

The facility operates 2 stationary gasoline engines with combined hp < 225 Hp and operating < 1000 hr/yr each. One 18 hp engine is used approximately 12 hrs/year for repair work and One 9 hp engine used approximately 20 hrs/year for miscellaneous cleaning activities. These units are exempt from permitting under 393-3-1-.03(b)(11)(iv)

The facility has 20 portable drums and/or barrels < 550 gal each that are exempt from permitting under 391-3-1-.03(6)(c) (7)

The facility has brazing, soldering, and welding equipment which is exempt from permitting under 391-3-1-.03(6)(e) (3)

### **Permit Conditions**

Condition No. 2.1 requires BD to comply with 40 CFR 63 Subpart O.

Condition No. 2.2 requires BD to comply with 40 CFR 63 Subpart A, General Provisions.

Pursuant to 40 CFR 63.362(c), Condition No. 2.3 requires BD to reduce ethylene oxide emissions from the sterilizers by at least 99 percent.

Pursuant to 40 CFR 63.362(d), Condition No. 2.4 requires BD to reduce the ethylene oxide emissions vented from the aeration rooms to 1 part per million by volume (ppmv) or by 99 percent.

Pursuant to 40 CFR 63.362(b), Condition No. 2.5 requires BD to be in compliance with Condition Nos. 2.3 and 2.4 at all times during sterilization operation but not during any malfunctions.

Pursuant to 40 CFR 63.360(g), Condition No. 2.6 requires BD to comply with the emission limitations as stated therein.

Pursuant to 40 CFR 63.363(b)(3) and 40 CFR 63.363(f), Condition No. 4.1 requires BD to operate the RTO at a temperature at or above 1447 °F or a new minimum oxidation temperature approved in writing by the Division except during periods of startup, shutdown, or malfunction. The condition also defines a deviation for the RTO.

Condition No. 4.2 requires BD to perform routine maintenance on all air pollution control equipment and that maintenance records be kept in a permanent form suitable and available for Division inspection.

Condition No. 4.3 requires BD to maintain a spare parts inventory for control equipment.

Condition No. 4.4 requires BD to repair expeditiously malfunctioning components of air pollution control systems.

Pursuant to 40 CFR 63.364(c), Condition No. 5.1 requires BD to measure and record either the ethylene oxide concentration or to continuously monitor and record the oxidation temperature of the RTO. Note that monitoring is required only when the RTO is in operation.

Pursuant to 40 CFR 63.364(c), Condition No. 5.2 requires BD to install, calibrate, maintain, and operate a system to continuously monitor the oxidation temperature of the RTO and determine the average oxidation temperature.

Pursuant to 40 CFR 63.364(c)(4), Condition No. 5.3 requires BD to verify the accuracy of the temperature monitoring system twice each calendar year using a reference temperature monitor or an independent temperature measurement device.

Condition No. 5.4 requires BD to ensure that any monitoring system installed is in continuous operation except during calibration checks, zero and span adjustments or periods of repairs.

Condition No. 5.5 requires BD to maintain a spare parts inventory for any monitoring system installed.

[Note that Condition Nos. 6.2 and 6.3 of Permit No. 3841-217-0021-S-03-0 have been deleted because the testing requirements have been completed.]

Pursuant to 40 CFR 63.7(b) and 63.9(e), Condition No. 6.2 requires BD to notify the Division of intent to conduct a performance test at least 60 days before the performance test.

Pursuant to 40 CFR 63.7(c)(4), Condition No. 6.3 requires BD to analyze performance audit samples during each performance test.

Pursuant to 40 CFR 63.7(d), Condition No. 6.4 requires BD to provide performance testing facilities and to ensure that performance tests are conducted based on representative normal operating conditions.

Pursuant to 40 CFR 63.7(c)(2), Condition No. 6.5 requires BD to submit a site-specific test plan along with the notification of intent to conduct a performance test.

Pursuant to 40 CFR 63.7(g), 63.9(h), 63.10(d), and 63.366(a), Condition No. 6.6 requires BD to submit the results of a performance test within 60 days after the completion of the test.

[Note that Condition Nos. 7.2 and 7.9 of Permit No. 3841-217-0021-S-03-0 have been deleted because Condition No. 7.2 is not applicable to synthetic minor sources and the notification requirement of Condition No. 7.9 has been completed.]

Condition No. 7.1 requires BD to maintain records of and duration of any startup, shutdown, and malfunction as well as any malfunction of the air pollution control equipment and continuous monitoring system or device and retain a record for at least five years after the date of any such event.

Condition No. 7.2 requires BD to maintain a file of all measurements required by the permit as stated therein.

Pursuant to 40 CFR 63.364(c), Condition No. 7.3 requires BD to compute and record a daily average oxidation temperature from the 15-minute or shorter period temperature values. Strip chart data are required to be converted to record a daily average oxidation temperature for each day any instantaneous temperature recording falls below the minimum temperature.

Pursuant to 40 CFR 63.10(b)(1), Condition No. 7.4 requires BD to maintain files of all information required by the permit and by 40 CFR 63.

Pursuant to 40 CFR 63.10(b)(2) and (c), respectively, and Table 1 of 40 CFR 63 Subpart O, Condition No. 7.5 requires BD to maintain General records and CMS records.

Pursuant to 40 CFR 63.10, 63.366(a), and Table 1 of 40 CFR 63 Subpart O, Condition No. 7.6 requires BD to submit the reports stated therein.

Pursuant to 40 CFR 63.10(e), Condition No. 7.7 requires BD to submit a semiannual report for any excess emissions, exceedances, and excursions as stated therein.

Condition No. 8.3 revokes Air Quality Permit No. 3841-217-0021-S-03-0 in its entirety.

**Summary & Recommendations**

I recommend issuing this ownership change permit for this synthetic minor source. The source is assigned to the Northeast District for compliance purposes.