

Georgia Department of Natural Resources

Environmental Protection Division • Air Protection Branch

4244 International Parkway • Suite 120 • Atlanta • Georgia 30354

404/363-7000 • Fax: 404/363-7100

Judson H. Turner, Director

NARRATIVE

TO: David Matos

FROM: Chan Spraley

DATE: August 13, 2015

Facility Name: **Sterigenics U.S. LLC**

AIRS No.: 067-00093

Location: Atlanta, GA (Cobb County)

Application #: 22970, 23229, & 23461

Date of Application: November 18, 2014, April 27, 2015, & August 5, 2015

Background Information

Sterigenics U.S. LLC (“Sterigenics”) is permitted as an ethylene oxide and propylene oxide sterilization facility located at 2971 Olympic Industrial Park, Suite 116, Atlanta, Georgia (Cobb County). The facility operates under Permit No. 7389-067-0093-S-05-0, issued May 27, 2014. The facility is subject to 40 CFR 63 Subpart O – “Ethylene Oxide Emission Standards for Sterilization Facilities.” The facility was re-classified from Title V to Synthetic Minor with the most current permit, Air Quality Permit No. 7389-067-0093-S-05-0.

Purpose of Application

Sterigenics submitted Application No. 23461, dated August 3, 2015, to route the sterilization chamber back vent exhaust fans to the existing AAT scrubber system, which will reduce overall emissions. Currently, the back vents exhaust to the atmosphere with no controls.

Application No. 23229, dated April 27, 2015, was submitted to notify EPD that their facility address has been changed to 2971 Olympic Industrial Drive SE, Suite 116, Atlanta, Georgia 30339. An additional letter, dated May 1, 2015, notified EPD of a upstream ownership change over Sterigenics U.S., LLC. However, there will be no changes to the company’s operations or management as a result of the change of ownership, and no change to the operations and services provided to their customers.

Application No. 22970, dated November 18, 2014, was submitted for the installation and operation of a new 30-pallet chamber and vacuum pump (5,174 cubic feet: Chamber 11: SEV-11 and CEV-11). Air Quality Permit No. 7389-067-0093-S-05-2 was issued for this application, however, it is being revoked and reissued with this new permit amendment. It should also be noted that Sterilization Chamber 9 (15-pallet chamber: SEV-9 and CEV-9) and Aeration Rooms 11, 12, and 13 (Total = 55,562 cubic feet: AR-11, AR-12 and AR-13) have been decommissioned.

Updated Equipment List

Emission Units			Associated Control Devices	
Source Code	Description	Installation Date	Source Code	Description
SEV-1	Six-pallet Sterilization Chamber 1 vacuum pump	1967	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
SEV-2	Six-pallet Sterilization Chamber 2 vacuum pump	1967	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
SEV-3	Nine-pallet Sterilization Chamber vacuum pump	1967	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
SEV-4	Five-pallet Sterilization Chamber vacuum pump	1967	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
SEV-5	Thirteen-pallet Sterilization Chamber vacuum pump	1987	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
SEV-6	Thirteen-pallet Sterilization Chamber vacuum pump	1992	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
SEV-7	Thirteen-pallet Sterilization Chamber vacuum pump	1994	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
SEV-8	Thirteen-pallet Sterilization Chamber vacuum pump	1994	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
SEV-10	Thirty-pallet Sterilization Chamber vacuum pump	2014	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
SEV-11*	Thirty-pallet Sterilization Chamber vacuum pump*	2015*	EC2	AAT Scrubber System (with Dry Bed Adsorber)
			EC3	Ceilcote Scrubber
CEV-1	Back vent for Chamber 1	1967	EC2	AAT Scrubber System (with Dry Bed Adsorber)
CEV-2	Back vent for Chamber 2	1967	EC2	AAT Scrubber System (with Dry Bed Adsorber)
CEV-3	Back vent for Chamber 3	1967	EC2	AAT Scrubber System (with Dry Bed Adsorber)
CEV-4	Back vent for Chamber 4	1967	EC2	AAT Scrubber System (with Dry Bed Adsorber)
CEV-5	Back vent for Chamber 5	1987	EC2	AAT Scrubber System (with Dry Bed Adsorber)
CEV-6	Back vent for Chamber 6	1992	EC2	AAT Scrubber System (with Dry Bed Adsorber)
CEV-7	Back vent for Chamber 7	1994	EC2	AAT Scrubber System (with Dry Bed Adsorber)
CEV-8	Back vent for Chamber 8	1994	EC2	AAT Scrubber System (with Dry Bed Adsorber)
CEV-10	Back vent for Chamber 10	2014	EC2	AAT Scrubber System (with Dry Bed Adsorber)
CEV-11	Back vent for Chamber 11	2015	EC2	AAT Scrubber System (with Dry Bed Adsorber)
AR-1	Aeration Room 1	2014	EC2	AAT Scrubber System (with Dry Bed Adsorber)

*proposed within current application

Emissions Summary**Facility-Wide Emissions**
(in tons per year)

Pollutant	Potential Emissions			Actual Emissions		
	Before Mod.	After Mod.	Emissions Change	Before Mod.	After Mod.	Emissions Change
PM	<100	<100	0	0.08	0.08	0
NO _x	<25	<25	0	3.1	3.1	0
SO ₂	<100	<100	0	0.007	0.007	0
CO	<10	<10	0	0.93	0.93	0
VOC	<25	<25	0	1.6	1.6	0
Max. Individual HAP	<10	<10	0	3.1	1.47	-1.63
Ethylene Oxide (EtO)	<10	<10	0	3.1	1.47	-1.63
Propylene Oxide (PPO)	<10	<10	0	0.014	0.006	-0.008
Total HAP	<25	<25	0	3.114	1.476	-1.638

Application No. 22970 indicated that the only change in emissions is an increase of Ethylene Oxide emissions by 0.8 tpy. There were no other emissions change resulting from the addition of the new 30-pallet chamber and vacuum pump.

Application No. 23461 indicated that actual emissions would decrease as a result of the routing of the sterilization chamber back vent exhaust fans to the existing AAT scrubber. Currently, the back vents exhaust to the atmosphere with no controls. The routing of the back vent exhaust fans to the scrubber will reduce emissions.

Regulatory Applicability

There are no new rules or regulation applicability associated with this proposed project. The facility will continue to comply with all applicable rules and regulations.

Sterilization Equipment

Both the new (Chamber 11: SEV-11 and CEV-11) and old sterilization operations are regulated under 40 CFR 63 Subpart O – “Ethylene Oxide Emissions Standards for Sterilization Facilities.” Sterigenics will continue to utilize the AAT Scrubber System (ID No. EC2) to scrub the ethylene oxide emissions from the aeration rooms. Scrubber EC2 exhausts through a dry bed adsorber. This scrubber system also backs up the Ceilcote Acid Water Scrubber (ID No. EC3) and will now receive emissions from the sterilization chamber back vent exhaust fans. Ceilcote Acid Water Scrubber (ID No. EC3) receives the exhaust (mostly ethylene oxide) from the sterilization chamber vacuum pumps. Scrubber with ID No. EC3 causes the ethylene oxide to react to form ethylene glycol.

Permit Conditions

Condition 2.3 was modified to omit Chamber 9 (SEV-9) and add Chamber 11 (SEV-11).

Condition 2.4 was modified to omit Aeration Rooms 11, 12, and 13 (AR-11, AR-12, and AR-13) as they have been decommissioned.

Condition 5.4 was modified to omit Chamber 9 (SEV-9) and Aeration Rooms 11, 12, and 13 (AR-11, AR-12, and AR-13) as they have been decommissioned. Chamber 11 (SEV-11) was added to the condition.

Condition 6.4 is a new condition requiring the facility to conduct performance testing for the new EtO sterilization chamber SEV-11.

Condition 6.5 is a new condition requiring the facility to conduct performance testing after the completion of the routing of the sterilization chamber back vents to the AAT Scrubber (EC2).

Condition 7.8 is a new condition requiring the facility to report requirements for new Part 63 Subpart O emission units per 40 CFR 63.366(c)(1)(ii) for new EtO sterilization chamber SEV-11.

Condition 8.4 is a new condition revoking Permit No. 7389-067-0093-S-05-2.

Toxic Impact Assessment

No Toxic Impact Assessment (TIA) was performed as no significant change in toxics emissions is expected to result from this modification.

Summary & Recommendations

I recommend issuing Air Quality Permit Amendment No. 7389-067-0093-S-05-3 to Sterigenics for the installation and operation of a new 30-pallet chamber and vacuum pump (Chamber 11: SEV-11 and CEV-11), the change in ownership and facility address, and the routing of the sterilization chamber back vents to the existing AAT Scrubber (EC2). No public advisory was issued for this modification since applicable emissions will not increase above levels in specified by Georgia Rule 391-3-1-.03(6)(i) according to Application Nos. 22970, 23229, and 23461. The facility will remain as a synthetic minor source. Compliance responsibility for the source will remain with SSCP.