GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

**Air Protection Branch**
4244 International Parkway
Suite 120
Atlanta, Georgia 30354
404-363-7000

# Compliance Monitoring Report

## 1. General Information

| | |
|---|---|
| Date of Inspection: | October 25, 2017 |
| Date of Report Completed: | October 31, 2017 |
| Compliance Monitoring Category: | Unannounced Inspection |
| Inspector Name: | Sherry Waldron SW |
| Reviewing Manager: | Michael Odom 11/7 230 |

## 2. Facility Information

| | |
|---|---|
| Facility Name: | Sterigenics U.S. LLC |
| Facility AIRS No.: | 067-00093 |
| Facility Location: | 2971 Olympic Industrial Drive SE, Suite 116<br>Atlanta, Georgia 30339, Cobb County |
| Facility Mailing Address: | 2015 Spring Road, Suite 650<br>Oak Brook, Illinois 60523 |
| Facility Contact: | Susan Reinhardt<br>Manager EH&S<br>630-928-1768<br>sreinhardt@sterigenics.com<br>Daryl Mosby, General Manager<br>404-355-4485<br>dmosby@sterigenics.com<br>Rich Pyant, Maintenance Supervisor |
| CMS Designation: | Synthetic Minor Source |

**Air Quality Permit No. 7389-067-0093-S-05-0** **Effective Date: May 27, 2014**

Issued for the operation of an ethylene oxide and propylene oxide sterilization facility. The Permit is also for the installation and operation of a 30-pallet sterilization chamber and an aeration room.

**Air Quality Permit Amendment No. 7389-067-0093-S-05-1** **Effective Date: November 17, 2014**

Issued for change of address from Smyrna to Atlanta.

**Air Quality Permit Amendment No. 7389-067-0093-S-05-2** **Effective Date: April 1, 2015**

Issued for the installation and operation of a new 30-pallet chamber and vacuum pump.

**Air Quality Permit Amendment No. 7389-067-0093-S-05-3** **Effective Date: August 27, 2015**

Issued for the installation and operation of a new 30-pallet chamber and vacuum pump (Chamber 11: SEV-11 and CEV-11), an ownership and address change, and the routing of the sterilization chamber back vents to the existing AAT scrubber (EC2).

*Permit(s) can be accessed at epd.georgia.gov/air*

## 3. Inspection Summary / Recommended Actions:

The facility was found to be in compliance with Georgia Air Quality Permit No. 7389-067-0093-S-05-0 and its amendments at the time of the inspection.

## 4. Previous Enforcement Actions and Inspections:

No enforcement actions for this facility during the previous five years. The most recent previous inspection was conducted on June 25, 2015.
See attached Full Compliance Evaluation (FCE) Report for details.

## 5. Complaint Investigations since last Full Compliance Evaluation:

No complaints received.

## 6. Applicable Requirements, Description of Regulated Emission Units, and Inspection Determinations:

Table 6

| Emission Units | | Corresponding Permit Conditions | Air Pollution Control Devices | | Inspection | |
|---|---|---|---|---|---|---|
| ID No. | Description | | ID No. | Description | Evaluated During Inspection? | Inspection Determination |
| SEV-1 | Six-pallet Sterilization Chamber 1 vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |
| SEV-2 | Six-pallet Sterilization Chamber 2 vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |

| Table 6 | | | | | | |
|---|---|---|---|---|---|---|
| Emission Units | | Corresponding Permit Conditions | Air Pollution Control Devices | | Inspection | |
| ID No. | Description | | ID No. | Description | Evaluated During Inspection? | Inspection Determination |
| SEV-3 | Nine-pallet Sterilization Chamber vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |
| SEV-4 | Five-pallet Sterilization Chamber vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |
| SEV-5 | Thirteen-pallet Sterilization Chamber vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |
| SEV-6 | Thirteen-pallet Sterilization Chamber vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |
| SEV-7 | Thirteen-pallet Sterilization Chamber vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |
| SEV-8 | Thirteen-pallet Sterilization Chamber vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |
| SEV-10 | Thirty-pallet Sterilization Chamber vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 6.2, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |
| SEV-11 | Thirty-pallet Sterilization Chamber vacuum pump | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 6.2, 6.4, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 8.1, 8.2, 8.3 | EC2<br>EC3 | AAT Scrubber System (with Dry Bed Adsorber)<br>Ceilcote Scrubber | | |
| CEV-1 | Back vent for Chamber 1 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| CEV-2 | Back vent for Chamber 2 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| CEV-3 | Back vent for Chamber 3 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| CEV-4 | Back vent for Chamber 4 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |

Individual chambers were not evaluated. Scrubbers were observed, along with the vent piping and tanks used to collect scrubbed vapors and adjust the resulting liquor to become a weak ethylene glycol liquor. The pH, ethylene glycol concentration, and tank level were obtained by the Maintenance Supervisor. All observations indicated compliance. No issues were noted with the scrubbers. Floors and piping were free of obvious leaks and housekeeping was excellent throughout the facility.

| Table 6 | | | | | | |
|---|---|---|---|---|---|---|
| Emission Units | | Corresponding Permit Conditions | Air Pollution Control Devices | | Inspection | |
| ID No. | Description | | ID No. | Description | Evaluated During Inspection? | Inspection Determination |
| CEV-5 | Back vent for Chamber 5 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| CEV-6 | Back vent for Chamber 6 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| CEV-7 | Back vent for Chamber 7 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| CEV-8 | Back vent for Chamber 8 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| CEV-9 | Back vent for Chamber 9 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| CEV-10 | Back vent for Chamber 10 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| CEV-11 | Back vent for Chamber 11 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 3.1, 4.1, 4.2, 4.3, 6.5 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |
| AR-1 | Aeration Room 1 | 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.4, 2.5, 3.1, 4.1, 4.2, 4.3, 5.1, 5.2, 5.4, 6.1, 6.3, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 8.1, 8.2, 8.3 | EC2 | AAT Scrubber System (with Dry Bed Adsorber) | | |

**7. Compliance Monitoring Activities – Details not included in table above:**

a. Describe any deviation from compliance noted during the inspection listed on Table 6: None observed.

b. Describe any compliance assistance provided during inspection: None needed.

c. Describe any action taken by the facility to come back into compliance during the inspection: None needed.

d. Deviations noted during the inspection, not previously listed. Include equipment ID or equipment description and condition number: None identified.

**8. Additional Permit Requirements:**

a. Periodic Reports:

Submitted as required.
See attached Full Compliance Evaluation (FCE) Report for details.

b. Permit Fees:
Paid as required.
See attached Full Compliance Evaluation (FCE) Report for details.

c. Permit Renewal and Expiration:
Not Applicable.

d. For any overall emission/production/usage limit:

| Table 8.d. | | |
|---|---|---|
| **Permit Condition** | **Permit Limit** | **Actual** |
| 2.1, 2.2, 2.3, 2.4 | Meet requirements of Ethylene Oxide Emission Standards for Sterilization Facilities.<br>Reduce emissions from each Sterilization Vent by 99%.<br>Reduce emissions from Aeration Vent AR-1 to 1 ppm or by 99%, whichever is less stringent. | Last tested on March 17-18, 2016.<br>efficiency – 99.9999%. See attachment for performance test details. |
| 2.6 | Fire only natural gas in all fuel burning units.<br>Periodic testing of liquid fuel shall not exceed 48 hours during any calendar year | I verbally confirmed this with Mr. Mosby during the inspection. No fuel oil has been burned for some time at the facility. |

## 9. Attachments:

a. Inspection Observations:
See attachment

b. Performance Tests:
See attachment

c. Full Compliance Evaluation (FCE) Report:
See attachment

# Attachment: Inspection Observations

### Fugitive Emissions

| Permit Condition | Permit Limit | Observation |
|---|---|---|
| 3.1 | Minimize fugitive emissions. | No fugitive emissions were observed during the inspection. |

### Process & Control Equipment

| Permit Condition | Permit Limit | Observation |
|---|---|---|
| 4.1 | Conduct routine maintenance as needed. Maintain maintenance records. | An in-house system, EAM, is used to track and schedule routine maintenance. Specific records were not requested but the good housekeeping and appearance of the facility indicated maintenance is conducted. |
| 4.2 | A spare parts inventory for control equipment shall be maintained. | Control equipment parts are primarily within the vacuum pumps and those needed to ensure the vent system is air tight. Redundant parts are maintained for critical systems. The process shuts down automatically if a vacuum is not established, according to Mr. Mosby. |
| 4.3 | Implement repairs to control equipment as expeditiously as possible. | Repairs appeared to be made as required. |

### Monitoring

| Permit Condition | Monitoring Requirement | Observation |
|---|---|---|
| 5.1 | All monitoring systems shall be in continuous operation. Maintenance and repair shall be conducted to minimize periods of non-service. | .Monitoring systems consist of the tank level indicator (a visual non-mechanical indicator), a separate pH meter, a gas chromatograph and an ethylene oxide concentration meter. No continuous systems needing maintenance or repair are required for the facility. |

| | | |
|---|---|---|
| 5.2, 5.3 | For the AAT Scrubber (Source Code EC2) and the Ceilcote Scrubber (Source Code EC3) install and maintain monitoring devices for the measurement of scrubber liquor level in the recirculation tank (a liquid level indicator) and the pH of the scrubber liquor for each of the scrubbers.<br>Maintain the level of the scrubber liquor at or below the levels established during the initial performance testing. The pH levels of the scrubber liquor shall be maintained in accordance with the pH levels recommended by the manufacturers.<br>Measurements shall be made weekly. | pH levels below 2? YES – 1.06<br>Tank levels on EC-2 103 inches<br>Glycol concentration: 39.4% (not a compliance parameter)<br><br>During test: Ceilcote scrubber pH=1.2, storage tank level=186 inches; glycol concentration =36.3%<br><br>AAT scrubber: pH=0.9; tank level=105 inches; glycol concentration=36.8%<br>The readings above were taken during the inspection. Weekly records were also spot-checked and indicated compliance. An example checklist is attached. |
| 5.4 | Maintain and operate the AAT Scrubber System (Source Code: EC2) to ensure a maximum emission level of 1 ppmv or a reduction of 99% for aeration room vents (Source Code: AR-1) and a reduction efficiency of 99% for sterilization chamber vents (Source Codes SEV-1 through SEV-8, SEV-10 and SEV-11).<br>a. For Source Code AR-1, collect and record the concentrations of a 15-minute ethylene oxide bag sample from both the inlet and the outlet of the dry bed adsorber monthly.<br>i. When complying with the 1 ppmvd standard, if the concentration of ethylene oxide in the outlet sample of the dry bed adsorbers increases to 0.9 ppmv or greater, replace the dry bed material within 30 days.<br>ii. When complying with the 99% reduction efficiency standard, if the AAT Scrubber System reduction efficiency decreases to 99.1% or less, replace the dry bed material within 30 days. The AAT Scrubber System reduction efficiency shall be calculated by comparing the ethylene oxide loading into the AAT Scrubber System to the ethylene oxide mass exiting the dry bed adsorbers.<br><br>b. For Source Code AR-1and Source Codes SEV-1 through SEV- 8, SEV-10 and SEV-11, when sterilization chamber exhausts and aeration room exhausts are simultaneously vented through the AAT Scrubber System, comply with the 99% reduction efficiency standard. Collect and record the concentration of a 15-minute ethylene oxide bag sample from the outlet of the dry bed adsorbers within 96 hours of the changeover. The AAT | The facility uses a gas chromatograph to determine ethylene oxide concentrations from the inlet and outlet of the dry bed system. Records were spot-checked. A sample log is attached. |

| | | |
|---|---|---|
| | Scrubber System reduction efficiency shall be calculated by comparing the ethylene oxide loading into the AAT Scrubber System to the ethylene oxide mass exiting the dry bed adsorbers. If the reduction efficiency for the AAT Scrubber System is less than 99.1%, the Permittee shall not route any sterilization chamber exhausts through the AAT Scrubber System until the dry bed material has been replaced. Bag testing shall continue at a sampling frequency of once per week during the changeover of the sterilization chamber vents from the Ceilcote Scrubber (Source Code: EC3) to the AAT Scrubber System.<br>c. For a and b above, the AAT Scrubber System reduction efficiency shall be recorded for each sampling event.<br><br>d. The dates of dry bed material replacement shall be recorded and maintained on file. | As of the last inspection: Dry beds last replaced on August 15, 2014. No change-outs were reported since. Records indicated that replacement has not been necessary based on dry bed material inlet and outlet concentrations. |

## Notification, Reporting and Record Keeping

| Permit Condition | Permit Limit | Observation |
|---|---|---|
| 7.1 | Maintain records of any startup, shutdown, or malfunction, any malfunction of the air pollution control equipment or any periods during which a continuous monitoring system or monitoring device is inoperative. Retain records for a period of five years. | Operating records are maintained as required. |
| 7.2 | Maintain a file of all measurements required by this permit, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required by this part recorded in a permanent form suitable for inspection for five years. | All records requested were readily available. |
| 7.3 | Maintain general records and CMS records as specified by 40 CFR 63.10(b)(2) and (c), respectively, and Table 1 of 40 CFR 63 Subpart O. | All records requested were provided. |
| 7.4 | Include the following information in the semiannual report.<br>a. For the AAT Scrubber System (Source Code EC2), any occurrence when analysis of the dry bed adsorber outlet sample indicates that the concentration exceeds 1 ppmv.<br><br>b. For the AAT Scrubber System (Source Code EC2), any occurrence when AAT Scrubber System reduction efficiency indicates that the efficiency is | Semiannual reports are submitted as required. See the attached email and response regarding 7.4(c) clarification. |

| Permit Condition | Permit Limit | Observation |
|---|---|---|
| | less than 99%.<br><br>c. For the acid-water scrubbers [AAT Scrubber System (Source Code EC2) and Ceilcote Scrubber (Source Code EC3)], any occurrence when the ethylene glycol concentration in the acid-water scrubber liquor is in excess of the maximum ethylene glycol concentration established during initial performance testing.<br><br>d. For the acid-water scrubbers [AAT Scrubber System (Source Code EC2) and Ceilcote Scrubber (Source Code EC3)], any occurrence when the liquor recirculation tank level of the acid-water scrubber is in excess of the maximum liquor tank level established during initial performance testing.<br><br>e. For the acid-water scrubbers [AAT Scrubber System (Source Code EC2) and Ceilcote Scrubber (Source Code EC3)], any occurrence when the scrubbing liquor pH rises above the manufacturers' recommended level of 2.<br><br>f. For the AAT Scrubber System (Source Code EC2), any occurrence when analysis of the dry bed adsorber outlet sample indicates that the concentration exceeds 0.9 ppmv, but is less than or equal to 1 ppmv.<br><br>g. For the AAT Scrubber System (Source Code EC2), any occurrence when AAT Scrubber System reduction efficiency indicates that the efficiency is less than 99.1%, but is greater than or equal to 99%.<br><br>h. For the AAT Scrubber System (Source Code EC2), any instance when the AAT Scrubber System breaches a dry bed adsorber material replacement threshold, but the dry bed material is not replaced within 30 days. | |
| 7.5, 7.8 | Submit notifications when proposed construction is completed | Construction completed |
| 7.6 | Submit the following reports as per Subpart O:<br>a. Deviation reports; and<br>b. Continuous Monitoring System performance and summary reports | All reports submitted as required. |

# Attachment: Performance Tests

Previous test results

| Source Tested | Pollutant | Date of Test | Required Testing Frequency | Limit | Actual | Percent of Allowable |
|---|---|---|---|---|---|---|
| Sterilization Chamber SEV-10 Scrubber EC-2 | EtO | October 23, 2014 | Upon startup | 99% DRE | 99.95% DRE | N/A |
| Aeration Chamber AR-1 Scrubber EC-3 | EtO | March 17-18, 2016 | Upon startup | 99% DRE | 99.9999% DRE | N/A |

Sterigenics

# Weekly Preventive Maintenance – Acid Scrubbers (All Types)

COPY

**SCRUBBER DOWN TIME IS NOT REQUIRED**

Scrubber Type: AHF Number/Location: 02-2

| | Description | | Inspectors Initials/Date |
|---|---|---|---|
| 1 | Check and record flow rate to Absorption Tower.<br>Flow Rate = _____<br>**Note: Acceptable Flow ranges - Environmental permit may dictate.** | OK☐ N/A☑ C/A☐ | NA BG<br>29Sep17 |
| 2 | Perform alarm light test. | OK☑ N/A☐ C/A☐ | BG 29Sep17 |
| 3 | Check the scrubber liquor and record the following values:<br>• Storage Tank level 104 In or Gal **(If liquor is shipped for recycling, record in MP2)**<br>• 1.2 pH **(Range ~ 0.5 to 1.0; Environmental permit may dictate)**<br>• Inlet Temperature 78 °F N/A☐ - System does not monitor this parameter<br>• Outlet Temperature 92 °F N/A☐ - System does not monitor this parameter<br>**Note: Acceptable ranges - Environmental permit may dictate. System capabilities determine parameters.** | OK☑ N/A☐ C/A☐ | BG<br>25Sep17 |
| 4 | Check all pumps, pipes, seals, and rings for leaks. | OK☑ N/A☐ C/A☐ | BG 29Sep17 |
| 5 | Check pressure relief valve for leaks or discharge. | OK☑ N/A☐ C/A☐ | BG 29Sep17 |
| 6 | Record Glycol concentration 37.3 %.<br>**Note: Ensure concentration does NOT exceed permit conditions.** | OK☑ N/A☐ C/A☐ | BG 29Sep17 |
| 7 | Check scrubber EO Levels.<br>Wet scrubber outlet/dry bed inlet 0 PPM EO (High flow system only)<br>Dry bed outlet 0 PPM EO<br>**Note: If dry bed outlet concentration reaches permitted maximum levels make the necessary arrangements for dry bed absorbent replacement.** | OK☑ N/A☐ C/A☐ | BG<br>29Sep17 |

Instructions:

- Write the scrubber type and number/location on the line provided above.
- If the inspection shows the item does not need further inspection or attention then mark the [OK] Checkbox.
- If a particular equipment item is not present, the inspector will mark the [N/A] Checkbox.
- If corrective action is required, mark the [C/A] Checkbox and then record the corrective action or Work Order # below.
- Work Order number must be recorded below whenever possible.

CA - Corrective Action: (Include Item #, and action, i.e. W.O # or other)

Reviewed by: _____ Date: 29Sep17

Sterigenics

# Monthly Preventive Maintenance – Acid Scrubbers (All Types)



**SCRUBBER DOWN TIME IS NOT REQUIRED**

Scrubber Type: AAT Number/Location: CC - 2

| | Description | | Inspectors Initials/Date |
|---|---|---|---|
| 1 | Inspect the pump(s) head, mechanical seal, coupling, and motor. | OK☑ N/A☐ C/A☐ | BG 25 Sep 17 |
| 2 | Inspect the waste pump for leaks and damage. | OK☑ N/A☐ C/A☐ | BG 25 Sep 17 |
| 3 | Inspect the sight glass assembly for leaks and damage. | OK☑ N/A☐ C/A☐ | BG 25 Sep 17 |
| 4 | Inspect the heat exchanger for cooling water leaks.<br>Record Inlet Temperature 91<br>Record Outlet Temperature 101<br>**Note: If temperature differential is < 15°F, contact Corporate Engineering** | OK☑ N/A☐ C/A☐ | BG 25 Sep 17 |

Instructions:

- Write the scrubber type and number/location on the line provided above.
- If the inspection shows the item does not need further inspection or attention then mark the [OK] Checkbox.
- If a particular equipment item is not present, the inspector will mark the [N/A] Checkbox.
- If corrective action is required, mark the [C/A] Checkbox and then record the corrective action or Work Order # below.
- Work Order number must be recorded below whenever possible.

CA - Corrective Action: (Include item #, and action, i.e. W.O. # or other)

Reviewed by: _____ Date: 26 Sept 17

Sterigenics

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# Weekly Preventive Maintenance – Acid Scrubbers (All Types)

**SCRUBBER DOWN TIME IS NOT REQUIRED**

Scrubber Type: Calcicote Number/Location: EC-3

| | Description | | Inspectors Initials/Date |
|---|---|---|---|
| 1 | Check and record flow rate to Absorption Tower.<br>Flow Rate = 164<br>**Note: Acceptable Flow ranges - Environmental permit may dictate.** | OK☑ N/A☐ C/A☐ | BG 29 Sep 17 |
| 2 | Perform alarm light test. | OK☑ N/A☐ C/A☐ | BG 29 Sep 17 |
| 3 | Check the scrubber liquor and record the following values:<br>• Storage Tank level 92 In or Gal **(If liquor is shipped for recycling, record in MP2)**<br>• 1.9 pH **(Range ~ 0.5 to 1.0; Environmental permit may dictate)**<br>• Inlet Temperature 70 °F N/A☐ - System does not monitor this parameter<br>• Outlet Temperature 59 °F N/A☐ - System does not monitor this parameter<br>**Note: Acceptable ranges - Environmental permit may dictate. System capabilities determine parameters.** | OK☑ N/A☐ C/A☐ | BG 29 Sep 17 |
| 4 | Check all pumps, pipes, seals, and rings for leaks. | OK☑ N/A☐ C/A☐ | BG 29 Sep 17 |
| 5 | Check pressure relief valve for leaks or discharge. | OK☑ N/A☐ C/A☐ | BG 29 Sep 17 |
| 6 | Record Glycol concentration 38.9 %.<br>**Note: Ensure concentration does NOT exceed permit conditions.** | OK☑ N/A☐ C/A☐ | BG 29 Sep 17 |
| 7 | Check scrubber EO Levels.<br>Wet scrubber outlet/dry bed inlet _____ PPM EO (High flow system only)<br>Dry bed outlet _____ PPM EO<br>**Note: If dry bed outlet concentration reaches permitted maximum levels make the necessary arrangements for dry bed absorbent replacement.** | OK☐ N/A☑ C/A☐ | NA BG / 29 Sep 17 |

Instructions:

- Write the scrubber type and number/location on the line provided above.
- If the inspection shows the item does not need further inspection or attention then mark the [OK] Checkbox.
- If a particular equipment item is not present, the inspector will mark the [N/A] Checkbox.
- If corrective action is required, mark the [C/A] Checkbox and then record the corrective action or Work Order # below.
- Work Order number must be recorded below whenever possible.

CA - Corrective Action: (Include Item #, and action, i.e. W.O # or other)

Reviewed by: _____ Date: 29 Sep 17

Sterigenics



# Monthly Preventive Maintenance – Acid Scrubbers (All Types)

**SCRUBBER DOWN TIME IS NOT REQUIRED**

Scrubber Type: Celicote Number/Location: EC-3

| | Description | | Inspectors Initials/Date |
|---|---|---|---|
| 1 | Inspect the pump(s) head, mechanical seal, coupling, and motor. | OK☑ N/A☐ C/A☐ | BG 25 Sep 17 |
| 2 | Inspect the waste pump for leaks and damage. | OK☑ N/A☐ C/A☐ | BG 25 Sep 17 |
| 3 | Inspect the sight glass assembly for leaks and damage. | OK☑ N/A☐ C/A☐ | BG 25 Sep 17 |
| 4 | Inspect the heat exchanger for cooling water leaks.<br>Record Inlet Temperature 84<br>Record Outlet Temperature 79<br>**Note: If temperature differential is < 15°F, contact Corporate Engineering** | OK☑ N/A☐ C/A☐ | BG 25 Sep 17 |

Instructions:

- Write the scrubber type and number/location on the line provided above.
- If the inspection shows the item does not need further inspection or attention then mark the [OK] Checkbox.
- If a particular equipment item is not present, the inspector will mark the [N/A] Checkbox.
- If corrective action is required, mark the [C/A] Checkbox and then record the corrective action or Work Order # below.
- Work Order number must be recorded below whenever possible.

CA - Corrective Action: (Include item #, and action, i.e. W.O. # or other)

Reviewed by: _____ Date: 26 Sep 17

Sterigenics

COPY

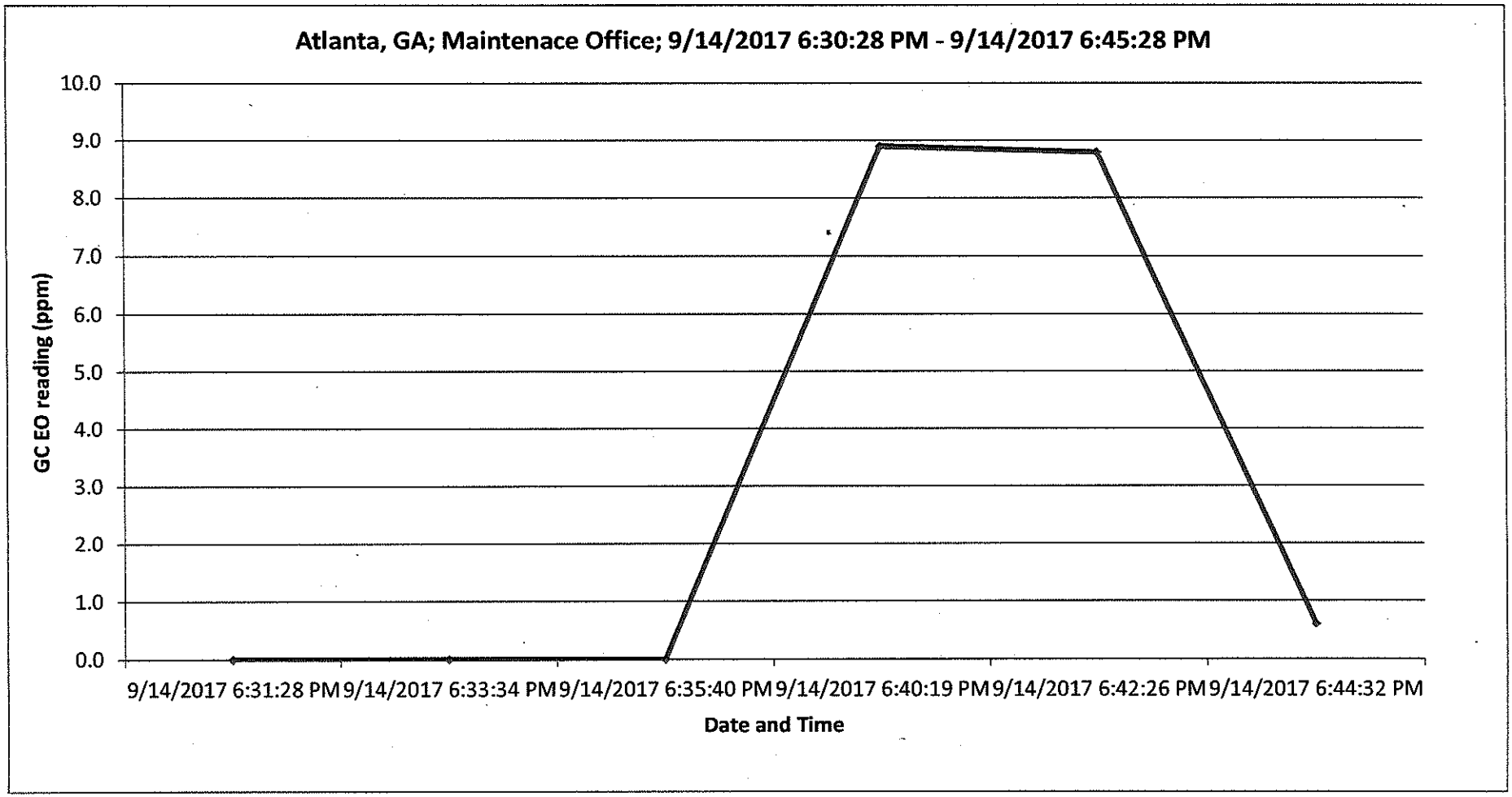
# AAT Sampling Log

**Emission samples of the AAT will be recorded below. The sample will be taken once each month or when needed as per permit.**

| | |
|---|---|
| Date of sample collection/testing: 14-Sep-2017 | |
| Location / Emission type tested: (Aeration) Chamber | Position tested: (Inlet) (Outlet) |
| ☑ Aeration ☐ 1 Chamber Vacuum | |
| Person collecting the sample: Ken Martin | |
| Collection time (15 minute minimum): 18:07 GMT - 18:24 GMT | |
| Type of bag used and amount of gas collected: SKC TEDLAR | |
| Analysis system used: ☑ In-house SRI ☐ Other: | |
| Last system calibration Date & Time: 9/14/2017 12:08 GMT | |
| Sample results: ☐ Inlet<br>Run 1: 8.9 Run 2: 8.8 Run 3: 0.6 Average: 6.1 | |
| Sample results: ☐ Outlet<br>Run 1: 0.0 Run 2: 0.0 Run 3: 0.0 Average: 0.0 | |
| Comments: Test performed in accordance with AT-WI-025. | |

Reviewed By: _____ Date: 15 Sep 17

| Date and Time | EO (ppm) | |
|---|---|---|
| 9/14/2017 6:31:28 PM | 0.0 | Outlet |
| 9/14/2017 6:33:34 PM | 0.0 | Outlet |
| 9/14/2017 6:35:40 PM | 0.0 | Outlet |
| 9/14/2017 6:40:19 PM | 8.9 | Inlet |
| 9/14/2017 6:42:26 PM | 8.8 | Inlet |
| 9/14/2017 6:44:32 PM | 0.6 | Inlet |


Atlanta, GA; Maintenace Office; 9/14/2017 6:30:28 PM - 9/14/2017 6:45:28 PM
GC EO reading (ppm)
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
9/14/2017 6:31:28 PM
9/14/2017 6:33:34 PM
9/14/2017 6:35:40 PM
9/14/2017 6:40:19 PM
9/14/2017 6:42:26 PM
9/14/2017 6:44:32 PM
Date and Time

**Waldron, Sherry**

**From:** Mosby, Daryl <DMosby@sterigenics.com>
**Sent:** Monday, October 30, 2017 4:04 PM
**To:** Waldron, Sherry
**Subject:** RE: Inspection follow-up question



Hi Sherry,

Thank you for your thorough review of our processes.

We do not have a maximum glycol concentration for either scrubber. Instead we use a maximum tank level as our operating condition. The maximum tank level is based on the initial performance tests. Please see the following explanation.

Our permit and the EO NESHAP allow flexibility in setting an operating parameter of either (1) the maximum glycol concentration or (2) the maximum scrubber level. This is consistent in our permit section 5.3 which states the permittee shall either (a) sample and analyze the glycol percent concentration or (b) measure the tank level and pH. In addition, the performance testing requirements in 63.363(b)(2), require either a maximum glycol concentration or a maximum liquor tank level to be determined during the test. In accordance with these requirements, we have set a maximum tank level as our operating parameter based on the initial performance tests.

We collect a grab sample to estimate a concentration during the weekly preventative maintenance. The weekly preventative maintenance includes additional maintenance activities for all Sterigenics acid scrubbers including Atlanta's and captures good operating practices.

Since we have not set the maximum glycol concentration as an operating parameter, we do not have any exceedances for glycol concentration.

Please let me know if you have any additional questions.

Regards,
Daryl-

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**From:** Waldron, Sherry [mailto:Sherry.Waldron@dnr.ga.gov]
**Sent:** Friday, October 27, 2017 7:49 AM
**To:** Mosby, Daryl
**Subject:** Inspection follow-up question

Thank you for your time assisting me in my inspection the other day.
I was able to review the notes and records I obtained during the inspection. I have a question.

The permit says in Condition 7.4 that you must sample monthly and include in the semiannual report, in part (c), for the acid-water scrubbers [ATT Scrubber System (Source Code EC2) and Ceilcote Scrubber (Source Code EC3)], any occurrence when the ethylene glycol concentration in the acid-water scrubber liquor is in excess of the maximum ethylene glycol concentration established during initial performance testing. I attached a summary of the most recent testing I could find.

During the inspection, the ethylene glyc oncentration was determined to be - or 39.4% after looking up the correlating concentration on the chart. The sample records I obtained for September 29, 2017 indicated the glycol concentrations for EC2 and EC3 were 37.3% and 38.9%, respectively.

The attached testing from March 2016 indicated the maximum ethylene glycol concentration would be 36.8% for EC2 and 36.3% for EC3. These are the concentrations I would expect the maximum to be set at.
Before that, the October 2014 testing indicated the max would be 30.4% for EC2 and 35.7% for EC3.

So it appears to me that the readings obtained during the inspection and on the sample record were both above the most recent testing as well as the October 2014 testing. What am I missing here?

What ethylene glycol concentration % are you currently calling your maximum for both scrubbers? What is this maximum level based on?

Thanks for your assistance.

Sherry Waldron
Environmental Engineer
Georgia Environmental Protection Division
Air Protection Branch
404-362-4569

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

**Richard E. Dunn, Director**

**Air Protection Branch**
4244 International Parkway, Suite 120
Atlanta, Georgia 30354
404-363-7000

Full Compliance Evaluation Report

# Sterigenics U.S. LLC, Atlanta

# 067-00093

Facility description: Ethylene Oxide Sterilization

2971 Olympic Industrial Drive, suite 116
Atlanta, GA 30339

Cobb County
Lat: 33.831, Long: -84.467

| | |
|---|---|
| Operating status: | Operational |
| Classification: | Synthetic minor |
| CMS status: | SM |
| SIC code: | 7389 |
| NAICS code: | 561910 |
| Air Programs: | SIP, MACT |
| Classifications: | None |

## Full Compliance Evaluation

**FCE Year:** **2018**

FCE tracking number: 9138

Reviewed by: Waldron, Sherry

Date completed: 31-Oct-2017

On-site inspection conducted

*Comments:* N/A

Supporting compliance data for October 31, 2016 through October 31, 2017

## Inspections

| Tracking # | Date | Inspector | Reason for inspection | Operating | Compliance status |
|---|---|---|---|---|---|
| 70702 | 25-Oct-2017 | Waldron, Sherry | Planned Unannounced | Yes | Compliant |

## RMP Inspections

None

## Annual Compliance Certifications

None

## Reports

| Tracking # | Report period | Date received | Reviewer | Deviations reported |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 69405 | First Semiannual<br>1-Jan-2017 – 30-Jun-2017 | 3-Aug-2017 | Waldron, Sherry | No |
| | *Comments:* Deviation report was submitted in accordance with Permit No. 7389-067-0093-S-05-0. | | | |
| 65912 | Second Semiannual<br>1-Jul-2016 – 31-Dec-2016 | 17-Jan-2017 | Holder, Don | No |
| | *Comments:* In compliance. | | | |

## Notifications

None

## Source Tests

None

## Fees Data

| Fee year | Invoiced amount | Amount paid | Balance | Status |
|---|---|---|---|---|
| 2012 | $4,500.00 | $4,500.00 | $0 | Paid in Full |
| 2013 | $4,500.00 | $4,500.00 | $0 | Paid in Full |
| 2014 | $1,700.00 | $1,700.00 | $0 | Paid in Full |
| 2015 | $1,700.00 | $1,700.00 | $0 | Paid in Full |
| 2016 | $1,700.00 | $1,700.00 | $0 | Paid in Full |

## Five-Year History of Enforcement Actions

None