

21 September 2012

Edward Doheney, Acting Chief, FMS
Veterans Administration Medical Center
830 Chalkstone Avenue
Providence, RI 02908

Dear Mr. Doheney:

The Department of Environmental Management, Office of Air Resources has reviewed and approved your application for the installation for process equipment and associated air pollution control equipment at your facility, located at 830 Chalkstone Avenue, Providence.

Enclosed are two minor source permits issued pursuant to our review of your application (Approval Nos. 2184-2185).

The VAMC was issued a Provisional Air Toxics Operating Permit (ATOP) on March 7, 2012 which required either installation of an ethylene oxide pollution control device or refined air quality modeling analysis to demonstrate compliance with RI Air Pollution Control Regulation No. 22. Issuance of this permit fulfills this requirement of the ATOP, specifically section B.

If there are any questions concerning this permit, please contact me at 401-222-2808, extension 7415.

Sincerely,

Carlene B. Newman
Air Quality Specialist
Office of Air Resources

cc: Providence Building Official

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES**

MINOR SOURCE PERMIT

VETERANS ADMINISTRATION MEDICAL CENTER

APPROVAL NOs. 2184 & 2185

Pursuant to the provisions of Air Pollution Control Regulation No. 9, this minor source permit is issued to:

Veterans Administration Medical Center

For the following:

Installation of a 3M Steri-Vac Ethylene Oxide Sterilizer/Aerator, Model 8XL (Approval No. 2184) and a 3M Ethylene Oxide Abator, Model 50 (Approval No. 2185) to treat ethylene oxide emissions prior to discharge to the atmosphere.

Located at: *830 Chalkstone Avenue, Providence*

This permit shall be effective from the date of its issuance and shall remain in effect until revoked by or surrendered to the Department. This permit does not relieve *Veterans Administration Medical Center* from compliance with applicable state and federal air pollution control rules and regulations. The design, construction and operation of this equipment shall be subject to the attached permit conditions and emission limitations.

**Douglas L. McVay, Chief
Office of Air Resources**

Date of Issuance

**STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR RESOURCES**

VETERANS ADMINISTRATION MEDICAL CENTER

APPROVAL NOs. 2184 & 2185

Permit Conditions and Emissions Limitations

A. Emission Limitations

1. Emissions of ethylene oxide discharged during the sterilization exhaust cycle shall be reduced by 99.9% or greater before discharge to the atmosphere.
2. Emissions of ethylene oxide discharged during the aeration exhaust cycle shall be reduced by 99.0% or greater when treated by the air pollution control equipment before discharge to the atmosphere.
3. Emissions of ethylene oxide discharged to the atmosphere from sterilization and aeration exhaust cycles, including fugitives, shall not exceed 0.3 pounds in any consecutive 12-month period.

B. Operating requirements

1. Emissions of ethylene oxide discharged from the 3M Steri-Vac Model 8XL Sterilizer shall be treated by the 3M Ethylene Oxide Model 50 Abator before discharge to the atmosphere.
2. Ethylene oxide shall be used only for sterilization in the sterilizer.
3. Maximum annual usage of ethylene oxide at the facility shall not exceed 30 pounds in any consecutive 12-month period.
4. The maximum number of sterilization cycles conducted at the facility in any consecutive 12-month period shall not exceed 80.
5. Each cartridge used in the 3M Steri-Vac Model 8XL Sterilizer shall not contain more than 170 grams of ethylene oxide.
6. The vacuum pump used to exhaust the sterilizer and aerator during the sterilization and aeration cycles shall be mounted within the air tight oxidizer housing.
7. Inlet temperature to the abator shall be maintained at or above 280°F whenever ethylene oxide is being discharged to the device.

8. Outlet temperature from the abator shall be maintained at or below 500°F whenever ethylene oxide is being discharged to the device.

C. Continuous Monitors

1. The inlet and outlet gas temperature of the catalyst bed shall be continuously monitored and recorded.

D. Emissions testing

1. Within 180 days of start up of the 3M Ethylene Oxide Model 50 Abator, emissions testing shall be conducted to demonstrate that the required efficiency of the control device is being achieved.
2. An emission testing protocol shall be submitted to the Office of Air Resources for review at least 60 days prior to the performance of any emissions tests. The owner/operator shall provide the Office of Air Resources at least 60 days prior notice of any emissions test.
3. All test procedures used for compliance testing shall be approved by the Office of Air Resources prior to the performance of any emissions test.
4. The owner/operator shall install any and all test ports or platforms necessary to conduct the required testing, provide safe access to any platforms and provide the necessary utilities for sampling and testing equipment.
5. All emissions testing shall be conducted under operating conditions deemed acceptable and representative for the purpose of assessing compliance with the applicable emission limitations.
6. A final report of the results of emissions testing shall be submitted to the Office of Air Resources no later than 60 days following completion of the testing.
7. All emissions testing must be observed by the Office of Air Resources or its authorized representatives to be considered acceptable, unless the Office of Air Resources provides authorization to the owner/operator to conduct the testing without an observer present.

E. Recordkeeping and reporting

1. The owner/operator shall maintain the following records for each sterilization cycle:
 - a. The date of the sterilization cycle;
 - b. The number of ethylene oxide cartridges used;

- c. The quantity of ethylene oxide used in grams; and
 - d. The inlet and outlet temperature of the control device.
2. The owner/operator shall, on a monthly basis, no later than 15 days after the first of the month, determine the quantity of ethylene oxide discharged to the atmosphere from the sterilization and aeration exhaust cycles, including fugitives. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
 3. The owner/operator shall notify the Office of Air Resources, in writing, within 15 days of determining that the total quantity of ethylene oxide emissions discharged to the atmosphere from the sterilization and aeration exhaust cycles, including fugitives exceeds 0.3 pounds in any one consecutive 12-month period.
 4. The owner/operator shall, on a monthly basis, no later than 15 days after the first of the month, determine the number of sterilization cycles performed during the previous 12-month. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
 5. The owner/operator shall notify the Office of Air Resources, in writing, within 15 days of determining that the total number of sterilizer cycles exceeds 80 in any one consecutive 12-month period.
 6. The owner/operator shall, on a monthly basis, no later than 15 days after the first of the month, determine total quantity of ethylene oxide used in the sterilizer during the previous 12-month. The owner/operator shall keep records of this determination and provide such records to the Office of Air Resources upon request.
 7. The owner/operator shall notify the Office of Air Resources, in writing, within 15 days of determining that quantity of ethylene oxide used in the sterilizer exceeds 30 pounds in any consecutive 12 month period.
 8. The owner/operator shall notify the Office of Air Resources, in writing, of the date of actual initial start-up of the 3M Ethylene Oxide Abator, no later than fifteen days after such date.
 9. The owner/operator shall maintain records of the date when the catalyst bed is replaced.
 10. The owner/operator shall notify the Office of Air Resources of any anticipated noncompliance with the terms of this permit or any other applicable air pollution control rules and regulations.
 11. The owner/operator shall notify the Office of Air Resources in writing, of any noncompliance with the terms of this permit or any other air pollution control rule or

regulation within 30 calendar days of becoming aware of such occurrence and supply the director with the following information:

- a. The name and location of the facility;
 - b. The subject source(s) that caused the noncompliance with the permit term;
 - c. The time and date of first observation of the incident of noncompliance;
 - d. The cause and expected duration of the incident of noncompliance;
 - e. The estimated rate of emissions (expressed in lbs/hr or lbs/day) during the incident and the operating data and calculations used in estimating the emission rate; and,
 - f. The proposed corrective actions and schedule to correct the conditions causing the incident of noncompliance.
12. The owner/operator shall notify the Office of Air Resources in writing of any planned physical or operational change to the equipment that would:
- a. Change the representation of the facility in the application.
 - b. Alter the applicability of any state or federal air pollution rules or regulations.
 - c. Result in the violation of any terms or conditions of this permit.
 - d. Qualify as a modification under APC Regulation No. 9.

Such notification shall include:

- Information describing the nature of the change.
- Information describing the effect of the change on the emission of any air contaminant.
- The scheduled completion date of the planned change.

Any such change shall be consistent with the appropriate regulation and have the prior approval of the Director.

13. All records required in this permit shall be maintained for a minimum of five years after the date of each record and shall be made available to representatives of the Office of Air Resources upon request.

F. Other permit conditions

1. There shall be no bypassing of the abator during times when ethylene oxide is being discharged from the sterilizer.
2. Sterilization with ethylene oxide at the entire facility shall only be conducted in the 3M Steri-Vac Model 8XL Sterilizer and in compliance with the terms and conditions of this permit.
3. To the extent consistent with the requirements of this permit and applicable federal and state laws, the facility shall be designed, constructed and operated in accordance with the representation of the facility in the permit application.
4. Employees of the Office of Air Resources and its authorized representatives shall be allowed to enter the facility at all times for the purpose of inspecting any air pollution source, investigating any condition it believes may be causing air pollution or examining any records required to be maintained by the Office of Air Resources.
5. At all times, including periods of startup, shutdown and malfunction, the owner/operator shall, to the extent practicable, maintain and operate the facility in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Office of Air Resources, which may include, but is not limited to, monitoring results, opacity observations, review of operating maintenance procedures and inspection of the source.
6. The owner/operator shall, on an annual basis, conduct testing, using the equipment manufacturer's recommended procedures, to determine if the catalyst bed in the control device requires replacement. Testing to evaluate the catalyst bed shall not be considered compliance testing. A copy of the results of this testing shall be submitted to the Office of Air Resources within 30 days of completion of the testing. Any catalyst bed determined to be in need of replacement shall be replaced as expeditiously as practicable.
7. The facility is subject to the requirements of 40 CFR 63, Subpart A, "General Provisions" and Subpart WWWW, "National Emission Standards for Hospital Ethylene Oxide Sterilizers". Compliance with all applicable provisions therein is required unless otherwise stated in this permit. If there is any conflict between any term or condition of this permit and the applicable provisions of 40 CFR 63, the owner/operator shall comply with the most stringent requirement.

G. Malfunctions

1. Malfunction means a sudden and unavoidable breakdown of process or control equipment. In the case of a malfunction of any air pollution control system, all

reasonable measures shall be taken to assure resumption of the designed control efficiency as soon as possible. In the event that the malfunction of an air pollution control system is expected or may reasonably be expected to continue for longer than 24 hours and if the owner/operator wishes to operate the source on which it is installed at any time beyond that period, the Director shall be petitioned for a variance under Section 23-23-15 of the General Laws of Rhode Island, as amended. Such petition shall include, but is not limited to, the following:

- a. Identification of the specific air pollution control system and source on which it is installed;
 - b. The expected period of time that the air pollution control system will be malfunctioning or out of service;
 - c. The nature and quantity of air contaminants likely to be emitted during said period;
 - d. Measures that will be taken to minimize the length of said period;
 - e. The reasons that it would be impossible or impractical to cease the source operation during said period.
2. The owner/operator may seek to establish that a malfunction of any air pollution control system that would result in noncompliance with any of the terms of this permit or any other applicable air pollution control rules and regulations was due to unavoidable increases in emissions attributable to the malfunction. To do so, the owner/operator must demonstrate to the Office of Air Resources that:
- a. The malfunction was not attributable to improperly designed equipment, lack of preventative maintenance, careless or improper operation or operator error;
 - b. The malfunction is not part of a recurring pattern indicative of inadequate design, operation or maintenance;
 - c. Repairs were performed in an expeditious fashion. Off-shift labor and overtime should be utilized, to the extent practicable, to ensure that such repairs were completed as expeditiously as practicable.
 - d. All possible steps were taken to minimize emissions during the period of time that repairs were performed.
 - e. Emissions during the period of time that repairs were performed will not:
 - (1) Cause an increase in the ground level ambient concentration at or beyond the property line in excess of that allowed by Air Pollution

Control Regulation No. 22 and any Calculated Acceptable Ambient Levels; and

- (2) Cause or contribute to air pollution in violation of any applicable state or national ambient air quality standard.
- f. The reasons that it would be impossible or impractical to cease the source operation during said period.
- g. The owner/operator's actions in response to the excess emissions were documented by properly signed, contemporaneous operating logs or other relevant evidence.

This demonstration must be provided to the Office of Air Resources within two working days of the time when the malfunction occurred and contain a description of the malfunction, any steps taken to minimize emissions and corrective actions taken.

The owner/operator shall have the burden of proof in seeking to establish that noncompliance was due to unavoidable increases in emissions attributable to the malfunction.