

## Air Quality Permit Application Form 7.0: Control Equipment Information

### **INSTRUCTIONS:**

#### Section 7.4: Wet Scrubber

**IMPORTANT:** Do NOT use pencil to fill out the application. Please type responses or print using black ink. If you have any questions, feel free to contact the Nebraska Department of Water, Energy, and Environment (DWEE) via [DWEE.AirQuality@nebraska.gov](mailto:DWEE.AirQuality@nebraska.gov) or the Air Quality Permitting Section at (402) 471-2186.

Complete the information on the top of each page. Enter the name of the company/facility as it is known in Nebraska. The facility name on every page of the application should be identical. Enter the date the form was completed. Enter the DWEE Facility Identification Number (FID) assigned by the Nebraska Department of Water, Energy, and Environment. If this is a new facility, leave this space blank. Enter the Emission Point ID. Each place where emissions are emitted into atmosphere from your facility should be labeled with an individual identification number.

Complete a Form 7.0, Section 7.4 for each wet scrubber at your facility.

#### **General Information**

- 1) Enter the control equipment ID that is assigned to this wet scrubber. A unique control equipment ID# should be assigned to each control equipment device located at the facility.
- 2) Enter the date that the wet scrubber was installed at the facility. You need to include a month, day, and year. If this is a new unit, indicate this by checking the new unit box.
- 3) Enter the name and/or number for the wet scrubber and provide a brief description.

#### **4) Unit Information**

Include ALL of the emission units whose emissions will be controlled and then emitted from the wet scrubber. Each emission unit should be entered on its own line. Attach the manufacturer's specifications for each emission unit as part of the application (**Step 12 Manufacturer Specifications**).

- a) Enter the emission unit ID.
- b) Enter the emission unit type.
- c) Enter the emission unit name.
- d) Enter the maximum capacity of the emission unit (be sure to include appropriate units).
- e) Enter the installation date. You should include a month, day, and year of installation if known.

If more than four (4) emission units are controlled by the wet scrubber (identified at the top of the page), then multiple Section 7.4, page 1, forms should be completed for the emission point in order for all emission units to be accounted for.

#### **5) Wet Scrubber Information**

Attach the manufacturer's information for the wet scrubber as part of the application (**Step 12**).

- a) Enter the name of the wet scrubber manufacturer.
- b) Enter the model name if the manufacturer has assigned one.
- c) Enter the model number of the wet scrubber.
- d) Enter the type of wet scrubber (e.g., Venturi, preformed spray, moving bed, etc).

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### **INSTRUCTIONS:**

#### Section 7.4: Wet Scrubber (continued)

##### **6) Throat Type**

Check the applicable throat type and enter the dimensions of the throat including the units of measurement.

##### **7) Packing Tower Information**

- a) Enter the dimensions of the packing tower, including the units of measurement.
- b) Identify the type of packing used within the packing tower.
- c) Enter the size of the packing media (e.g., spherical media diameter, etc.)
- d) Indicate whether a mechanism exists for introducing liquid to the packing tower.
- e) Indicate whether the packing tower is equipped with a mist eliminator.

##### **8) Operational Information**

- a) Provide the inlet and outlet air flow in actual cubic feet per minute (acfm).
- b) Enter the minimum and maximum pump discharge pressures as measured in inches of water.
- c) Describe how the pump discharge pressure is monitored.
- d) Enter the type of additive scrubbing medium liquid that is used in the scrubber. If no additive is used, enter not applicable (n/a).
- e) Enter the percentage of scrubbing media that is re-circulated through the wet scrubber.
- f) Enter the make-up rate of scrubbing media in gallons per minute (gal/min) that is required during normal operation of the wet scrubber.
- g) Enter the minimum and maximum operating liquid flows in gal/min.
- h) Enter the minimum and maximum operating pressure drop, as measured in inches of water that can occur across the wet scrubber.
- i) Describe the direction of liquid/gas flow through the wet scrubber.
- j) Describe the maintenance procedures that are used on the wet scrubber. If you need more space, put the rest of the information on maintenance procedures on a sheet of paper and attach the sheet to the permit application.

##### **9) Monitoring**

- a) Identify the type of equipment that is used to monitor the wet scrubber.
- b) Indicate if the monitoring is continuous or non-continuous.
- c) Indicate whether or not test ports are available for future performance testing.
- d) Describe the monitoring procedures that are used to verify the wet scrubber is operating as expected and are removing pollutants as planned.

##### **10) Control Information**

- a) Enter the pollutant emission rate(s) before the exhaust passes through the wet scrubber, (i.e., the uncontrolled emission rate(s)).
- b) Enter the pollutant emission rate(s) after the exhaust passes through the wet scrubber, (i.e., the controlled emission rate(s)).

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### **INSTRUCTIONS:**

#### Section 7.4: Wet Scrubber (continued)

- c) Enter the name and CAS number of each pollutant captured by the wet scrubber as well as the capture efficiency for each pollutant in percent. If you need to enter more than three pollutants, then multiple Section 7.4, page 2, forms should be completed so all pollutants are accounted for.
- d) Indicate if test or manufacturer's data is available for the wet scrubber and whether the data is attached to the application.

#### **11) Potential to Emit Calculations**

**PTE calculations must be submitted with this application.** If there are questions on calculating the potential emissions associated with the wet scrubber, contact the Department. The Department may be able to send you electronic spreadsheets for ease in calculating the potential emissions. Calculation spreadsheets are also available on the Department's website. Be sure the potential emission calculations are attached and select the box to indicate it has been done.

#### **12) Manufacturer Specifications**

Attach the manufacturer specifications for each emission unit listed under **4) Unit Information** and for the wet scrubber listed under **5) Wet Scrubber Information**. Select the box to indicate it has been done.

#### **13) Additional Information**

Indicate if you attached additional information for the wet scrubber that will make your application more complete. Only check yes if the information attached was not requested elsewhere in Section 7.4.

**If you are completing Section 7.4 as part of an operating permit application, please include the following information.**

#### **14) Actual Operating Information**

Indicate the number of hours the wet scrubber operated for the each of the past five years. If this is a new source (i.e., obtaining its initial operating permit), provide the operating hours for the past year.

#### **15) Actual Emissions Calculations**

Indicate if actual emissions calculations are attached. You must attach actual emission calculations if you are submitting Section 7.4 as part of an operating permit application. Select the box to indicate it has been done.

#### **16) Additional Information**

Indicate if you attached additional operating information for the wet scrubber that will make your application more complete. Only check yes if the information attached was not requested elsewhere in Section 7.4.