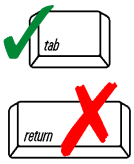
Massachusetts Department of Environmental Protection
Bureau of Air and Waste - Air Quality

BAW AQ Sorbent/Reactant Injection Technology

Submit with Form CPA-FUEL and/or CPA-PROCESS whenever construction, substantial reconstruction or alteration of a Sorbent/Reactant Injection Technology unit (e.g. carbon injection, lime injection) is proposed unless exempt per 310 CMR 7.02(2)(b).

Facility ID (if known)

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Inlet Operating Conditions

1. Complete the tables below with information on inlet gas flow(s).

Table 1a			
Emission Unit No(s). Being Controlled	**Average Inlet Gas Flow** (Actual Cubic Feet Per Minute)	**Inlet Temperature** (Degrees Fahrenheit (ºF))	**Moisture Content in the Inlet** (Pounds Per Minute)
Totals:			

Table 1b			
Provide the maximum gaseous emissions			
Emission Unit No(s). Being Controlled	**Air Contaminant** (e.g. VOC, HAP, PM)*	**Air Contaminant Range Before Control** (Pounds Per Hour)	**Air Contaminant Range Before Control** (Parts Per Million by Volume, Dry Basis)

*VOC = volatile organic compounds, HAP = hazardous air pollutant, PM = particulate matter

2. If the emission unit being controlled is a combustion source:
   a. What fuel is used? ☐ Oil ☐ Natural Gas ☐ Coal ☐ Other – Identify:
   b. What is the sulfur content of the fuel? _____ Weight Percent

3. If the emission unit being controlled is a process, describe the process:

_____

_____

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A. Inlet Operating Conditions (continued)

4. Identify the pollutant(s) to be controlled: ☐ Sulfur Dioxide ☐ Hydrogen Chloride ☐ Nitrogen Oxides ☐ Mercury ☐ Other – Identify:

B. Specifications

1. Manufacturer of Sorbent/Reactant Injection Technology Unit (S/RITU): _____ Company
2. Model Number (or Equivalent): _____ Number
3. Location of the S/RITU relative to other pieces of equipment: ☐ High Dust ☐ Low Dust ☐ Tail End ☐ Other – Identify:
4. Information about the sorbent or reactant used:
   a. Description of the sorbent or reactant: _____ Description
   b. Operating temperature range of the S/RITU: from _____ Degrees Fahrenheit (°F) to _____ Degrees Fahrenheit (°F)
5. Are you proposing a by-pass stack? ☐ Yes * ☐ No

   *If Yes, describe:

C. Description of Sorbent(s) or Reactant(s)

1. Type of sorbent or reactant proposed: ☐ Aqueous Ammonia ☐ Anhydrous Ammonia ☐ Urea ☐ Lime ☐ Carbon ☐ Other – Describe:
2. Form of sorbent or reactant proposed: ☐ Liquid ☐ Solid ☐ Slurry ☐ Other – Describe:
3. Method of reducing agent injection: ☐ Dry Injection ☐ Wet Injection ☐ Gaseous Injection ☐ Other – Describe:
4. Describe in detail how the concentration and usage rate of the sorbent or reactant agent were determined. Provide calculations on a separate attachment, if necessary.

C. Description of Sorbent(s) or Reactant(s) (continued)

5. Describe the process controls for proper mixing of the sorbent or reactant agent in the flue gas stream. Continue on a separate attachment, if necessary.

6. Describe storage of the sorbent or reactant agent, including details about any storage containment (e.g. silos, tanks, dimension of berms, evaporative mitigation). Continue on a separate attachment, if necessary.

7. Is the sorbent or reactant subject to 42 U.S.C. 7401, Section 112(r)? ☐ Yes * ☐ No

   *If Yes, attach a copy of the Risk Management Plan to this form.

8. If MassDEP determines that it is necessary, you MUST attach to this form a copy of an analysis of possible impacts to off-property locations from a catastrophic release of the sorbent or reactant, in comparison with American Industrial Hygiene Association Emergency Response Planning Guidelines. Contact the appropriate MassDEP regional office for additional information.

D. Emissions Data

1. Complete the table below to provide maximum air contaminant(s) emissions rates:

Table 2			
Air Contaminant	**Air Contaminant Emission Range After Control** (Pounds Per Hour)	**Air Contaminant Emission Range After Control** (Parts Per Million by Volume, Dry Basis)	**Control Efficiency** (Percent)

2. Explain how the above air contamination emission data were obtained. Attach appropriate calculations and documentation.

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E. Drawing of Sorbent/Reactant Injection Technology Unit

You must attach to this Form a schematic drawing of the proposed Sorbent/Reactant Injection Technology Unit. At a minimum, it must show the location(s) of the bypass damper(s) if applicable, bypass stack if applicable, and normal stack. Sampling ports for emissions testing must also be shown.

F. Monitoring, Record Keeping & Failure Notification

1. Provide the manufacturer, make and model number of the proposed continuous emissions and opacity monitoring system:

2. Identify the air contaminants that will be continuously monitored and recorded (e.g. NOx, opacity).

3a. Indicate the type of any proposed parametric process monitors: ☐ Inlet ☐ Outlet ☐ Feedback Systems ☐ pH Monitoring ☐ Other – Describe:

3b. Indicate the frequency of process monitor data recording:

4. Are there any alarms associated with the monitoring equipment? ☐ Yes – Complete Table Below ☐ No – Skip to 5

Table 3

Operating Parameter Monitored	Describe Alarm Trigger	Monitoring Device or Alarm Type	Does the Alarm Initiate an Automated Response?
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other – Describe:	☐ Yes ☐ No If Yes, Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other – Describe:	☐ Yes ☐ No If Yes, Describe:
		☐ Visual ☐ Auditory ☐ Automatic (Remote Monitoring) ☐ Other – Describe:	☐ Yes ☐ No If Yes, Describe:

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F. Monitoring, Record Keeping & Failure Notification (continued)

5. Describe the operating conditions that are monitored to determine the sorbent or reactant agent injection rate:

6. List and explain all of the operating and safety controls associated with the S/RITU system. Continue on a separate attachment, if necessary.

7. List the S/RITU system emergency procedures to be used during system upsets. Continue on a separate attachment, if necessary.

8. Describe the record keeping procedures to be used in identifying the cause, duration and resolution of each S/RITU system failure/emission(s) exceedance. Continue on a separate attachment, if necessary.

9. How will the S/RITU system be designed and operated so as to allow for emissions testing using MassDEP-sanctioned test methods?

G. Standard Operating & Maintenance Procedures

Attach to this form the standard operating and maintenance procedures for the proposed S/RITU system, as well as a list of the spare parts inventory that you will maintain on site, as recommended by the equipment vendor(s).