

1. Is the process done under cover (shed or roof covering) or will the containers be placed outside?
 - a. At the Port facility, fumigation of logs occurs in containers, outdoors with no roof covering. Fumigation of produce occurs under warehouse roof, inside a chilled, insulated, and closed room. At the Flowers facility fumigation of tobacco will occur in container outdoors. Logs are fumigated in bulk secured under tarps, outdoors with no roof covering.
2. How many containers will be present and used each day?
 - a. The number of containers present onsite and used each day will vary by day, site, and by the type of wood and produce to be fumigated. Containers will be managed to ensure that the operations remain below the allowable rates in the permit.
3. Is the fan a forced draft or is it induced? Is there more than 1 fan or are there one for each container? Do all the containers use the same fan and vent to the same stack?
 - a. One forced draft fan will be used per stack. If multiple containers are being fumigated, multiple lines will connect via a manifold system to one primary stack. A J-system blower may be used as necessary to ensure fumigant is pulled from the container to the main stack. The fan is secured and sealed to the stack pushing emissions out the stack. The Port facility will operate with two stacks; one for produce and one for logs. The Flowers site will operate with one stack, as all fumigation will occur in the same area on site.
4. Are containers sealed prior to the introduction of the fumigant? How are they sealed? How are the containers checked to see if they are sealed?
 - a. Container vents are taped, and lines going into the container are taped. Container doors are sealed and padlocked. At the Flowers facility, logs are secured down via tarp to an impervious surface. The tarp is secured using 6" x 6' sand sleeves, over-lapped to create a solid seal to the ground. Tiger detectors are on-site to check for leaks.
5. Are both the methyl bromide and phosphine fumigation taking place in the same containers?
 - a. No, different fumigants used for different products and each product has its own container.
6. How is the fumigant introduced into the containers? Are they weighed before and after to determine the loading? How is this recorded?
 - a. Gas cylinders introduce Methyl Bromide or Phosphine through tubing. Cylinders are placed on scales to determine the appropriate amount of usage. Data points such as commodity fumigated, gas usage in pounds, temperature, date, and fumigation duration are recorded for each process. The process used is as prescribed by the USDA, and is discussed in Section 5 of their treatment manual:

https://www.aphis.usda.gov/import_export/plants/manuals/ports/downloads/treatment.pdf

7. In the application it says that you are going to be fumigating between 8 AM to 5 PM, so does this mean that the facility would be starting the last load at 5 or would the process be ending at 5?
 - a. The total process of fumigation includes treatment by Methyl Bromide or Phosphine, followed by aeration. As prescribed in the USDA treatment manual, the treatment hold time can be as long as 24 hours. During this time, there are no emissions to the atmosphere and there are buffer zones and other worker safety standards in place to ensure safe conditions. Aeration occurs after the appropriate hold time and that is when emissions are discharged through the stack. The stack emissions are what are limited by the operating schedule in the application (e.g. 8AM to 5PM at Flowers).
8. Describe all measures taken to minimize the leaks from shipping containers.
 - a. The team will visually inspect containers from the outside and seal areas, as necessary. If there are any issues the team will tarp the container.
9. Shipping containers are not leak proof. Provide a leak rate for the containers and the system used to convey methyl bromide to the stack.
 - a. Visual inspections will be performed on each container to identify any obvious leak risks. The aeration procedure is designed to eliminate any small leak sources associated with releasing the methyl bromide from the container to the atmosphere. Ecolab will run a tube from the fumigated container to a blower at the base of the aeration tower that will exhaust fumigant out the top of the stack.
10. How will the condition of containers be evaluated prior to their use?
 - a. The team will visually inspect containers from the outside and seal areas, as necessary. If there are any issues the team will tarp the container.
11. Modeling assumes that all the methyl bromide in the container would be discharged via the stack. What method(s) is/are used to convey methyl bromide from the container(s) to the stack? Describe in detail how this will be accomplished.
 - a. Container vents are taped, and lines going into the container are taped. Container doors are sealed and padlocked. At the Flowers facility, logs are secured down via tarp to an impervious surface. The tarp is secured using 6" x 6' sand sleeves, over-lapped to create a solid seal to the ground. Tiger detectors are on-site to check for leaks. One forced draft fan will be used per stack. If multiple containers are being fumigated, multiple lines will connect via a manifold system to the primary stack. A J-system blower system may be used as necessary to ensure fumigant is pulled from the container to the main stack. The fan is secured and sealed to the stack pushing emissions out the stack. The Port facility will operate with two stacks; one for produce and one for logs. The Flowers site will operate with one stack, as all fumigation will occur in the same area on site.
12. Based upon the expected concentration of methyl bromide inside the container, what aeration rate is required from each container, in order that the AAL for methyl bromide not be exceeded? Will different commodities (ie. Hard wood versus softwood) affect these rates?

- a. The modeling and application calculate a maximum emission rate that can occur in order to comply with the AAL. It is assumed that any rate less than this quantity would ensure the AAL is not exceeded. Each commodity has different fumigant quantity requirements. Operations will be managed such that the facility-wide limit, which is the total amount that will ensure compliance with the AAL, is not exceeded. For example, oak requires 40.5 pounds of fumigant per container, while southern yellow pine only requires 13.5 pounds. As such, the facility could fumigate three times as many southern yellow pine containers as oak in the same time period.
13. Will only one container at a time be aerated to the stack? If more will be aerated to the stack at a time, how will this be accomplished?
 - a. Multiple containers can be aerated to the stack. A tube will run from the fumigated container to a blower at the base of the aeration tower that will exhaust fumigant out the top.
14. The operational hours are given as 8-6 am for ES-1 and 6-10 pm for ES-2. Does these time spans include only aeration or fumigation and aeration?
 - a. As described in #8, aeration is the process where emissions are discharged through the stack and that will only take place during the operating schedule described in the application and as listed above.