Flowers Timber Company, Inc.

Hearing Officer's Report and Recommendations

Virtual Public Hearing
August 30, 2021

Public Comment Period:
July 30, 2021 through September 1, 2021

Pertaining to Permit Application No. 9600280.20A and
Draft Air Quality Permit No. 10549/R01 for:

Flowers Timber Company, Inc.
140 Greenfield Cemetery Rd. | Seven Springs, North Carolina 28578
Wayne County
Facility ID No. 9600280
Classification: Synthetic Minor

Hearing Officer
Davis Murphy, EIT
Compliance Supervisor, Winston Salem Regional Office

Hearing Officers Report
Flowers Timber Company, Inc.
Table of Contents

I. Background

On December 2, 2020, the North Carolina Department of Environmental Quality (DEQ), Division of Air Quality (DAQ), received an Air Quality Permit modification application (App. No. 9600280.20A) from Flowers Timber Company, Inc. The purpose of the application to was establish new permit limits for methyl bromide and phosphine, in accordance with 15A NCAC 02D .1104- "Toxic Air Pollutant Guidelines" and 15A NCAC 02D .0546- "Control of Emissions from Log Fumigation Operations." The facility is located at 140 Greenfield Cemetery Road in Seven Springs, Wayne County, North Carolina, which is in the DAQ Washington Region (WaRO).

15A NCAC 02D .0546- "Control of Emissions from Log Fumigation Operations" became effective November 1, 2020. Additionally, State of North Carolina Air Toxics regulations were also amended effective November 1, 2020, to incorporate methyl bromide as a toxic air pollutant. On November 3, 2020, DAQ Washington Regional Office Supervisor Betsy Huddleston sent a letter to this facility outlining the new requirements of this regulation and requiring Flowers to submit a permit application that complies with the new rules by December 30, 2020. Application number 9600280.20A was submitted in accordance with this deadline.

II. Air Quality Permit Application and Permit Review

The DAQ's mission is to work with the state's citizens to protect and improve outdoor, or ambient, air quality in North Carolina for the health, benefit, and economic well-being of all. To accomplish this mission, the DAQ requires industrial facilities to apply for and receive Air Quality Permits prior to construction and operation of the air pollution sources and air pollution control equipment to ensure compliance with all applicable federal and state regulations.

This application is to modify the existing permit issued to Flowers Timber Company, Inc. to establish Toxic Air Pollutant (TAP) emissions limits for methyl bromide from the log fumigation process. Additionally, the application proposes to add the capability to utilize phosphine to fumigate tobacco and other commodities. The proposed processes are summarized as follows.

Tarpaulin Bulk Log Fumigation

For methyl bromide log fumigation, bulk logs are stacked on an impervious surface and covered by a plastic tarpaulin. Fans, monitoring lines, and gas lines are placed under the tarpaulin among the piles and the tarpaulin is secured with sand snakes and/or spray adhesives and impervious tape around the base. Methyl bromide is stored in pressurized cylinders and injected under the tarp for the required exposure period. Following treatment, the tarped pile is aerated. A blower is utilized to exhaust the fumigant through a vertical stack that is 40 feet high and 2 feet or "equivalent in diameter."

Container Commodity Fumigation

For commodity fumigation (such as tobacco), commodities are placed in shipping containers and treated with phosphine. Phosphine may be applied utilizing solid tablets or gaseous phosphine from a pressurized cylinder. Gas lines and monitoring lines are inserted into the container through

gaskets in the frame and door. Spray adhesive, plastic tape, and plastic barriers will be utilized to seal the container and limit fugitive emissions. Following fumigation for the required exposure period, the container is aerated using a blower that exhausts to a vertical stack that is 40 feet high and 2 feet or "equivalent in diameter."

In both cases, the concentration of fumigant in the enclosures is monitored. Additionally, monitoring devices are used to check for leaks outside the tarpaulin and containers. The draft Air Quality Permit includes a leak detection and repair (LDAR) program for leaks of fumigant from either process.

Methyl bromide is a Volatile Organic Compound (VOC), a federal hazardous air pollutant (HAP), and a North Carolina Toxic Air Pollutant (TAP). Phosphine is not a VOC but is both a HAP and TAP. The draft permit contains restrictions for both pollutants in accordance with 15A NCAC 02D .1104 and 15A NCAC 02Q .0315.

III. Notice of Public Hearing

At the discretion of the Director of the DAQ, a notice of the draft Air Quality Permit and a notice of Public Hearing on the draft Air Quality Permit was published in the Goldsboro News-Argus on July 30, 2021, which began the comment period. Likewise, a notice of the draft Air Quality Permit and a notice of Public Hearing on the draft Air Quality Permit was posted on the DAQ public engagement webpage. Due to safety concerns associated with the COVID-19 pandemic, the DAQ determined that it would be appropriate to hold the Public Hearing in a virtual, online format rather than an in-person Public Hearing in a public meeting place. In addition to the hearing and written public comment period, a dedicated voicemail was available during the public comment period for submission of verbal comments. Copies of the permit application, draft Air Quality Permit Review and draft Air Quality Permit were posted on the DAQ website. Copies were also available at the DAQ's WaRO for public review throughout the comment period. On July 30, 2021, the DEQ issued a press release as a reminder to the public.

The virtual, online Public Hearing was held on August 30, 2021, through WebEx online platform. The public comment period ended at 5 PM on Wednesday, September 1, 2021, and five email comments had been received.

IV. Overview of Public Comments Received

Over the duration of public comment period, five written comments were received. Likewise, three commenters signed up to speak and two commenters gave verbal comments during the August 30, 2021, virtual Public Hearing. No verbal comments were left in the voicemail box dedicated for public comments. Out of the total of five sets of written comments, three were in opposition of the proposed permitting action and one expressed general support of DAQ regulations for fumigation. One commenter provided significant written technical and regulatory comments. Out of the two oral commenters, one was in opposition of the proposed permitting

action and the other did not express a position in favor or in opposition of the proposed permitting action.

All comments received during the public comment period, both oral and written, have been evaluated and copies of all written comments and any attachments to those written comments can be made available by the DAQ upon request. **All comments were given equal consideration, whether they were written or made verbally at the August 30, 2021, virtual Public Hearing.**

A. Comments from Speakers at the August 30, 2021, Virtual Public Hearing

On August 30, 2021, the DAQ held a virtual Public Hearing, which began at approximately 6:05 PM. The hearing was held through the WebEx online platform. Additionally, a dedicated telephone number was provided to enable commenters to call in to the hearing and make comments if they had either no internet access or a poor internet connection. The hearing was hosted by Mr. Michael Pjetraj, Deputy Director of the DAQ. Mr. Kurt Tidd, Permitting Engineer of the DAQ Washington Regional Office (WaRO), gave a summary presentation of the application and the draft Air Quality Permit for the Flowers Timber facility.

The Hearing Officer for the Public Hearing was Mr. Davis Murphy, Compliance Supervisor for the DAQ's Winston Salem Regional Office (WSRO). During the Public Hearing, commenters were allowed up to five minutes to speak, as three people signed up to speak. Of the commenters who were signed up to speak, one of them did speak, while the remaining commenters were either unable to connect or were not present to speak. An additional commenter that did not pre-register for the hearing requested to speak during the hearing. The request was granted, meaning a total of two commenters spoke during the hearing. Following the two speakers an additional attempt was made to establish a connection with the registered speaker who was unable to connect, but a connection was never established. A recording of the Public Hearing, as well as a listing of the persons who spoke at the hearing, can be made available by the DAQ upon request.

The first speaker, Ms. June Blotnick, spoke on behalf of the environmental advocacy organization Clean Air NC and expressed opposition to issuance of the proposed Flowers Timber draft Air Quality Permit. The statements and claims made by Ms. Blotnick are summarized as follows:

- Ms. Blotnick commended DAQ for creating an Acceptable Ambient Level (AAL) for methyl bromide but stated that the health effects of methyl bromide are so severe that it should not be used at all.

- Ms. Blotnick summarized health impacts of low- and high-level exposures of methyl bromide and expressed concern that health impacts of methyl bromide will be more apparent for communities living in close proximity of the Flowers Timber site due to exposure timeframes.

- Ms. Blotnick noted that DEQ's Environmental Justice (EJ) Report cited a large population near the site that includes elderly, Hispanic/Latino/Latinx, and non-English speaking people. Ms. Blotnick also indicated that the problems associated with methyl bromide exposure are exacerbated due to economic disparities, language barriers, and disproportionate long term health exposures for the surrounding population.

- Ms. Blotnick made the following specific recommendations:

    - A rigorous monitoring and reporting campaign to safeguard community health

    - A taller exhaust stack

    - A robust network of monitors placed across the dispersion zone

    - Notification of fenceline communities of access/availability to monitoring reports

    - Sharing of monitoring reports with the local health department

Hearing Officer's Response:

Some of the comments made and issues raised by Ms. Blotnick were similar in nature to the written comments made during the overall public comment period. Specifically, this speaker discussed the health effects of methyl bromide, and the demographics of the communities surrounding the Flowers Timber facility. These issues are addressed in this Hearing Officer's response to *Written Comments from Toxic Free NC*, below. All public comments, both written and at the Public Hearing, were considered carefully by the Hearing Officer.

Ms. Blotnick made some specific recommendations regarding monitoring, reporting, and notification of surrounding communities. Ms. Blotnick also recommended a taller exhaust stack. First, this Hearing Officer would like to note that the draft Air Quality Permit requires monitoring, recordkeeping, and reporting, including quarterly reporting to the DAQ. Reports that are submitted to DAQ are subject to the North Carolina Public Records Law and may be provided to the public, or any other state or local agencies, upon request. With regard to the exhaust stack height, the dispersion modeling submitted in support of this permit application stated that the exhaust stack will be 40 feet high (see Appendix C). As discussed in this Hearing Officer's Response to *Written Comments from Toxic Free NC*, below, the modeling demonstrated that the Acceptable Ambient Levels (AAL) are not expected to be exceeded beyond the source property boundary.

Following Ms. Blotnick, Mr. Bobby Jones requested to speak. This request was granted. Mr. Jones stated that he represented the Down East Coal Ash Environment and Social

Justice Coalition of Goldsboro/Wayne County and posed numerous questions to DAQ that are summarized as follows:

- Mr. Jones asked numerous general questions about the fumigation process.
- Mr. Jones asked what DAQ had done to educate the community about the fumigation process.
- Mr. Jones asked what DAQ had done to encourage participation of the community in the process.
- Mr. Jones expressed a general concern regarding, "the processes used to ensure that this poison does not get into the air that we breathe."

Hearing Officer's Response:

During the Public Hearing the Hearing Officer stated that questions directed to Division of Air Quality staff members would not be answered during the hearing. The Hearing Officer also noted that if a member of the public had questions for DAQ staff, they may contact them after the hearing during normal office hours. DAQ staff remains available to answer any questions that members of the public may have about this draft Air Quality Permit. Additionally, it is important to note the community outreach conducted during the public comment period, as discussed in this Hearing Officer's response to *Written Comments from Toxic Free NC*, below. With regard to this speaker's general concern regarding DAQ's processes, other written and verbal commenters expressed similar concerns regarding the health effects of the proposed fumigants. These comments are also addressed in this Hearing Officer's response to *Written Comments from Toxic Free NC,* below.

B. General Written Comments:

Five comments were submitted via email during the August/September 2021 public comment period. One of the commenters expressed general approval of DAQ actions pertaining to methyl bromide fumigation. The commenter stated that:

> *"My husband and I are members of the Cypress Group of the Sierra Club, which covers Eastern NC, and the area served by Flowers Timber Company in Wayne County.*
>
> *We are happy that DAQ has taken action in regulating methyl bromide in the logging industry. We feel this action by DAQ is an important step to protecting communities and the environment. We hope that DAQ will continue to monitor the impact of this chemical, and work toward lowering even further allowable concentrations of methyl bromide into the environment as indicated by monitoring data."*

Hearing Officer's Response:

This commenter did not make any specific requests or recommendations regarding the draft Air Quality Permit. This Hearing Officer recognizes the commenter's desire that DAQ continue to monitor the impacts of methyl bromide emissions. The NC Environmental Management Commission (EMC) adopted 15A NCAC 02D .0546 "Control of Emissions from Log Fumigation Operations" and established an annual and 24-hour Acceptable Ambient Level (AAL) for Methyl Bromide under 15A NCAC 02D .1104 "Toxic Air Pollutant Guidelines" on November 1, 2020. Current AALs are periodically reviewed to determine if new and relevant information has been published in peer reviewed journals which may influence the AAL determination.

Two of the written public commenters expressed concern over the activities proposed by the draft permit. These two comments were similar in nature and are shown below:

- *"These chemicals that they are using are banned in every country! They are hazardous to our health and we want them stopped now. Hasn't China done enough to our country and the world? Thx."*

- *"Please find alternatives to methyl bromide and phosphine! These chemicals cause long term neurological, cardiorespiratory and so many more negative health impacts. Their use has been banned in most states and countries worldwide so why aren't they banned in North Carolina! Please DEBARK and save our planet and our people!"*

Hearing Officer's Response:

Some of the issues raised by these commenters were similar in nature to other written comments made during the public comment period and verbal comments made during the Public Hearing. Specifically, these commenters expressed concern over the health effects of methyl bromide. These concerns will be addressed in the course of addressing the *Written Comments from Toxic Free NC,* below. Some of the other points expressed by these commenters are categorized and addressed by the Hearing Officer below.

Fumigants as a Banned Substances

Both commenters claimed that fumigants addressed by the draft Air Quality Permit have been banned. An international treaty referred to as the Montreal Protocol phases out production and use of certain chemicals that contribute to ozone layer depletion. Methyl bromide is addressed in the Montreal Protocol as an ozone layer depleting chemical; however, it is approved for certain critical uses, emergencies or other exempted processes. Fumigation for pest management is exempted and is an acceptable use of methyl bromide for quarantine and pre-shipment (QPS) in the United States. The compound is specifically authorized by the QPS exemption under Title VI (Stratospheric Ozone Protection) of the Clean Air Act. Phosphine is not addressed in the Montreal Protocol.

Use of Alternatives/Debarking

One commenter requested the use of alternatives to the fumigants proposed by the draft Air Quality Permit and mentioned log debarking, presumably as a possible alternative to fumigation. The DAQ does not have the authority to require the use of alternatives by Flowers Timber. The facility is seeking to use methyl bromide to fumigate the wood logs and phosphine to fumigate tobacco and other commodities, and applied for an Air Quality Permit for such processes. The DAQ's role is to evaluate the permit application and determine if the facility can comply with applicable air quality regulations. Ultimately, it is the decision of the facility to pursue alternative methods if they believe it can satisfy their customers.

C. Written Comments from Toxic Free NC:

Mr. Connor Kippe, Policy Advocate for Toxic Free NC, submitted written comments expressing opposition to the issuance of the draft Air Quality Permit for the Flowers Timber facility. His comments are quoted below:

"Methyl Bromide is a highly neurotoxic chemical, at which even low levels of exposure to long term brain lesions can occur. It also has a range of other effects, including chronic respiratory disease and kidney disease, depending on dosage and length of exposure.

While the control measures at both of the facilities applying to permit, are likely sufficient to mitigate the worst impacts of exposure to methyl bromide outside of the mile surrounding the site - there are significant concerns for both the workers in these facilities and areas highly proximate to the use of this fumigation. Principally, that the technological control mechanisms are insufficient and that these permits do not consider other health burdens experienced.

Previous research suggests that environmental factors and seal quality effectiveness are critical in preventing leakage of fumigants such as methyl bromide to local populations. In both Seven Springs and Wilmington these factors could cause exposure in health affecting doses of methyl bromide - especially given the presence of other contaminants in both communities and underlying population demographics.

Both location sites are ranked as economically disadvantaged (Tier 1 - Wayne, Tier 2 - New Hanover) and for both within the local setting (a 1-mile radius) there were at risk populations, with both having a greater proportion of residents experiencing poverty. Both also continued populations more likely to

be strongly affected by cumulative toxic exposures, youth and elderly (respectively Seven Springs and Wilmington).

Additionally, Wayne County is a heavily pesticide-exposed county due to its largest industries being natural resources and agriculture related. Using USGS Pesticide Maps from 2017, you can determine that there are many pesticides applied at greater than 4.85 lbs. per square mile within Wayne County, and that many of the other pesticides are applied at rates greater than 0.86 lbs. per square mile.

These demographic variables are likely to impede the ability of either of these populations to provide long term care for themselves or others from health effects caused by leakages and/or exposure to methyl bromide. They are also likely to compound the incidence of health issues experienced by these residents. The State of North Carolina has a responsibility to reduce the economic and health burdens on these communities it has long historically underserved.

Methyl bromide is also a significant greenhouse gas, banned by adherents to the 1987 Montreal Protocol specifically for this cause. Under E.O. 80 put forth by Governor Cooper, NC aims to reduce greenhouse gas emissions 40% below 2005 emissions. Allowing for the permitting of these facilities when alternatives such as debarking in place of the use of this chemical are likely to make reducing emissions harder for our state and endanger our natural resources such as the lumber being fumigated with methyl bromide at both of these locations.

Permitting these locations for use and release of methyl bromide endangers the health of local residents, and the long-term health of our state. Toxic Free NC believes that these permits should be denied, as the control mechanisms may not be adequate to prevent leakage of methyl bromide, and general dispersion (permitted release not leakage) itself poses a danger depending on local weather conditions that do not receive guidance in these documents. These communities are already overburdened with toxic chemicals and layering another acutely poisonous one - which has already been banned for in residence and food uses - will only continue to perpetuate environmental injustice ongoing in these communities."

Mr. Kippe's comments were footnoted with references, which can be found in his original written comments (See Appendix E).

Hearing Officer's Response:

Some of the issues raised by Mr. Kippe were similar in nature to other written comments made during the public comment period and verbal comments made during the Public Hearing, as discussed above. These similar points are categorized and addressed by the Hearing Officer below.

Toxicity and Health Effects Associated with Fumigant Exposure

The DAQ is aware of the health risks associated with human exposure to methyl bromide. This is exactly why the NC Environmental Management Commission (EMC) adopted 15A NCAC 02D .0546 "Control of Emissions From Log Fumigation Operations," and amended 15A NCAC 02D .1104 "Toxic Air Pollutant Guidelines" to include methyl bromide as a NC Toxic Air Pollutant on November 1, 2020. These were significant steps in the effort to protect the health and safety of North Carolinians in relation to methyl bromide. Phosphine has been listed as a NC Toxic Air Pollutant for many years.

In accordance with DAQ's toxics permitting rules, the professional staff of the DAQ's Air Quality Analysis Branch (AQAB) reviewed dispersion modeling submitted with this permit application. Upon completion of this review, it was determined that ambient levels of methyl bromide and phosphine produced by fumigation activities at the Flowers Timber facility are not expected to exceed the Acceptable Ambient Levels (AAL) for those pollutants which are listed in 15A NCAC 2D .1104 "Toxic Air Pollutant Guidelines." A July 23, 2021, memorandum from Matthew Porter, Meteorologist of the AQAB to Kurt Tidd, Permit Engineer and Yongcheng Chen, Permitting Coordinator of the WaRO, is attached as Appendix C to this report. The table below summarizes the maximum modeled ambient impacts for methyl bromide and phosphine:

Pollutant	**Averaging Period**	**Max. Conc. ($\mu g/m^3$)**	**AAL ($\mu g/m^3$)**	**% of AAL**
Methyl bromide	24-hr	978.56	1000	98 %
	Annual	2.91	5	58 %
Phosphine	1-hr	126.43	130	97 %

The dispersion modeling accounted for a fugitive emission rate of 1% during fumigation (active application and exposure period) and 5% during aeration. Otherwise, emissions were modeled as point source emissions through the exhaust stack. For fugitive and point source emission rates, refer to Table A3 of Appendix C to this report. The DAQ ensures

that the inputs used in the computer dispersion modeling are accurate through periodic compliance inspections, and facility monitoring, recordkeeping, and reporting.

Demographics of Surrounding Communities and Environmental Justice

Mr. Kippe, along with Ms. June Blotnick (See section IV.A) noted the demographics of the communities surrounding the Flowers Timber site and expressed concern regarding these demographics as they relate to fumigant exposure. As the commenters point out, NCDEQ's Environmental Justice Report includes information on the elevated number of certain racial and ethnic groups. The report also includes information concerning the types of other permitted facilities located in the area around the Flowers Timber site (see page 23 of the Report). The EJ Report also includes information on Wayne County's health rankings and health outcomes, as well as sociodemographic data for the area. After preparing the Environmental Justice (EJ) Report (Appendix B of this Hearing Officer's Report) for the proposed revised draft Air Quality Permit, the DEQ performed the following enhanced engagement actions to ensure meaningful involvement of the community regarding the permit application review process for the facility:

- August 2, 2021: Translations into Spanish for the public notice and a flyer were completed.

- August 5, 2021: Outreach letters consisting of a flyer and public notice in both English and Spanish were sent out to the list of sensitive receptors in the EJ Report.

- August 12, 2021: In-person outreach was conducted for the area around Flowers Timber facility by handing out flyers to local businesses in English and in Spanish, as well as communicating the project to them.

There is no state air quality law or regulation that either mandates or directs NCDEQ to perform any cumulative impact analysis. However, NCDEQ remains committed to EJ and equity, and as such, compiled the aforementioned information within the EJ Report in order to promote ease of access to this information for the public, the applicant and NCDEQ staff.

Mr. Kippe also expressed concern regarding pesticide exposure in Wayne County. The DAQ is sensitive to this issue. However, the decision of whether the draft Air Quality Permit should be issued to the Flowers Timber facility must be based on the facility's compliance with applicable state and federal air quality regulations. Comments and questions made regarding impact to medias regulated by other state or federal agencies may be addressed to said agencies.

Mr. Kippe made some specific comments that were distinct from other comments addressed in this report. These comments are categorized and addressed by the Hearing Officer below.

Worker Safety

Flowers Timber will be required to meet all applicable legal statutes and regulations addressing worker safety at this site. Generally, the statutory authority to regulate worker safety laws is vested in other state and federal agencies such as the Occupational Safety and Health Administration (OSHA), the US Department of Agriculture (USDA), and the NC Department of Agriculture & Consumer Services (NCDA&CS).

Seal Quality Effectiveness/Fumigant Leakage

Mr. Kippe noted that environmental factors and seal quality effectiveness are critical in preventing leakage of fumigants such as methyl bromide. Mr. Kippe also stated that the control mechanisms in the draft Air Quality Permit may not be adequate to prevent fumigant leakage. The DAQ is aware of the issues posed by excessive fugitive emissions from fumigation. In order to limit fugitive emissions, the draft Air Quality Permit for Flowers Timber contains adequate monitoring, recordkeeping, and reporting requirements, including a Leak Detection and Repair Program (LDAR). This Hearing Officer believes that these requirements are sufficient to ensure compliance with the inputs used in the dispersion modeling as they relate to fugitive emissions. As with any Air Quality Permit, the Director of the DAQ has the authority to reopen and modify the permit if data is found that indicates the parameters used in the model are not being met.

Greenhouse Gas/Executive Order 80

The DAQ recognizes there is significant public interest in the reduction of greenhouse gas emissions and Executive Order 80. This order led to the creation of the North Carolina Climate Change Interagency Council, of which the DEQ is a participating agency. Furthermore, the DEQ developed the NC Clean Energy Plan under the directive of this order. While this order does not have a direct impact on this draft Air Quality Permit, DEQ will continue to strive to accomplish the goals set forth by this order through participation in the North Carolina Climate Change Interagency Council, among other initiatives established by this order.

D. Written Comments from Ecolab, Inc:

Ms. Alison Marwitz, JD, Principal Regulatory Specialist for Ecolab, Inc., made significant regulatory and technical comments about the draft Air Quality Permit. Ms. Marwitz noted, "For more than 35 years, Ecolab has provided fumigation services for logs, produce, grains, and other commodities requiring fumigation for quarantine or pre-shipment purposes at ports and other locations in the US, particularly along the US East Coast." It is the

understanding of DAQ staff that Flowers Timber intends to contract out fumigation services to Ecolab, Inc. Ms. Marwitz's original comments are attached to this report (see Appendix D) and are summarized and quoted below.

Due to the level of specificity of these comments, this Hearing Officer will respond to portions of the comments individually. It should be noted that references to permit condition numbers in Ms. Marwitz's original comments (see Appendix D) were abbreviated and simply refer to the subsections of permit condition A.9. The discussion below lists the complete permit condition numbers for the sake of clarity.

- **Subject Matter Jurisdiction:**

  Ecolab contends that a number of the permit conditions in the draft Air Quality Permit address issues covered by other state and/or federal agencies. More specifically:

  United States Department of Agriculture (USDA):

  Ecolab makes the claim that USDA regulations and guidance documents related to preventing the introduction of invasive species, while ensuring bystander and worker safety, render certain proposed permit conditions of the draft Air Quality Permit unnecessary. Likewise, the permit conditions in question create "compliance risks due to differing interpretations, changing regulations, and potentially conflicting requirements." Ecolab wishes that these permit conditions be removed from the draft Air Quality Permit, so that the enforcement authority will remain with other state and federal agencies. The permit conditions that Ecolab wishes to be removed are listed in their written comments.

  US EPA Federal Insecticide, Fungicide, and Rodenticide Act (EPA IFRA):

  Ecolab makes the claim that requirements of this federal regulation ensure bystander and worker safety, while the permit conditions in question create "compliance risks due to differing interpretations, changing regulations, and potentially conflicting requirements." The permit conditions that Ecolab wishes to be removed are listed in their written comments.

- **Subject Matter Jurisdiction Specific Comments:**

  Ecolab contends that,

  "*…inserting already existing regulatory requirements governed by other state and federal agencies that have subject matter expertise and existing*

interpretations of those regulations into the Proposed Air Permit does not enhance the existing safety requirements or assurances."

Additionally,

"...it creates inconsistency through potential interpretation differences, is unduly burdensome, and is unnecessary given the fact that enforcement authority already exists with the USDA, EPA, and their counterpart state agencies. Including these overlapping conditions is contrary to the directive found in North Carolina's Administrative Procedure Act Article 2A Part 1 section 150B-19.1(d)."

Finally, as stated earlier, Ecolab is,

"...concerned that this significant overlap will create compliance risks and jurisdictional conflict among the agencies. Therefore, Ecolab respectfully requests that the DAQ withdraw all overlapping permit conditions (as identified in sections 1. a. and b.) thereby allowing the USDA, EPA, and their counterpart state agencies to continuing performing their responsibilities in regulating and enforcing their already existing respective regulations."

Hearing Officer's Response:

Ecolab's comments state that "including these overlapping conditions is contrary to the directive found in North Carolina's Administrative Procedure Act Article 2A Part 1 section 150B-19.1(d)." DAQ does not agree with this statement for several reasons.

First, Article 2A of the Administrative Procedure Act governs rulemaking proceedings conducted by state agencies such as the Environmental Management Commission. Indeed, 150B-19.1 is titled "Requirements for agencies in the rulemaking process." Therefore, this statutory provision does not apply to permit conditions that DAQ deems necessary to ensure compliance with North Carolina's air toxics regulations.

Second, to the extent Ecolab claims that DAQ's permit conditions overlap with requirements imposed by federal agencies, N.C. Gen. Stat. 150B-19.1(d) only governs coordination between state agencies in state rulemaking proceedings. See 150B-2(1a) (defining "agency" to mean "an agency or an officer in the executive branch of the government of this State").

Finally, these conditions are necessary to ensure compliance with North Carolina's air toxics rules. These conditions reflect operating practices that Ecolab has represented can and will be implemented to ensure that the leak rates used in Ecolab's air toxics modeling reflect Ecolab's real-world operations. Moreover, Ecolab has not identified

any requirements in this permit that would prevent Ecolab from complying with requirements imposed by any state or federal agency.

- **Additional Comments:**

Comment No. 1 - Emission Source Descriptions:

Ecolab lists alternatives to Emission Source descriptions, stack parameters, and operating limits "to allow for operational continuity should there be supply chain, weather created, or other damage preventing the use of the already submitted air dispersion modeling files." The suggested changes are listed in Addendum 1 of Ecolab's written comments.

Hearing Officer's Response:

Toxics computer dispersion modeling demonstrations submitted in accordance with 15A NCAC 02Q .0709 "Demonstrations" have the option of including multiple operating scenarios to account for operational variability. Parameters that may be adjusted under alternative operating scenarios include emission release points, exhaust flow rates, emission rates, and any other changes that could affect compliance with the Acceptable Ambient Levels (AALs). The dispersion modeling that was submitted in support of this application did not contain multiple operating scenarios. Dispersion modeling submitted to DAQ is subject to review by a Meteorologist with the Air Quality Analysis Branch (AQAB). If Ecolab wishes to operate the fumigation operation with parameters that vary from those in the approved modeling analysis, a permit modification application must be submitted by Flowers Timber and should include modeling files for the other modeled operating scenarios listed in Addendum 1 of this Ecolab comment. Inclusion of the requested changes to the draft Air Quality Permit is not recommended.

Comment No. 2 - Permit Testing Requirements:

Ecolab references draft Permit Conditions A.9.A.5.a.ii through viii and A.9.B.5.a.i through vii, and requests changes to the testing timeline.

Hearing Officer's Response:

As noted by this Ecolab comment, DAQ regulations require that the owner or operator of an air emission source submit a stack testing protocol at least 45 days prior to conducting the stack emissions test if pre-test approval of the protocol is desired. This comment also notes that, 15A NCAC 02D .2602 "General Provisions on Test Methods and Procedures" requires that any person proposing to conduct an emissions test must notify the DAQ at least 15 days before beginning the test. The comment incorrectly states that the 15-day notice "cannot be provided until DAQ protocol approval." This is not stated in the regulation. Furthermore, it is common practice for Air Quality

Permit holders to submit a test notification to DAQ prior to receiving approval of the test protocol. **Since this draft Air Quality Permit requires pre-approval of the test protocol, this Hearing Officer recommends that the test deadline in permit conditions A.9.A.5.a.v and A.9.B.5.a.iv be changed to 90 days.** A 90-day test deadline allows ample time for the permittee to submit and obtain approval of the test protocol following permit issuance. A test deadline of 120 days is not necessary. The testing required by this permit condition is relatively simple, so the process of preparing and submitting a test protocol should not be overly burdensome.

This comment also requests to amend each of the sub-conditions requiring testing to read: "within 120 days of issuance of this permit and after installation of the permanent stack in accordance with…" The comment goes on to outline that, "due to COVID-related supply chain interruptions and weather impacts, the permanent design may not be operational at the time of permit issuance." **This Hearing Officer finds that Ecolab has had sufficient time since 15A NCAC 02D .0546 became effective on November 1, 2020 to build a permanent stack that would allow the facility to be compliant with the rule.**

Like most permit conditions that contain toxics restrictions under 15A NCAC 02D .1104 "Toxic Air Pollutant Guidelines," this permit condition states that, "Placement of the emission sources, configuration of the emission points, and operation of the sources shall be in accordance with the approved dispersion modeling analysis." Permit conditions A.9.A.4.a and A.9.B.4.a of the permit condition go on to state that:

> *"The exhaust stack shall be located, built and operated as described in the approved dispersion modeling submission to the DAQ, dated July 8, 2021. The stack shall be used for all fumigation operations during the aeration periods. The stack shall be no less than 40 feet in height and 2 feet in equivalent diameter and construction must be confirmed with as-built construction documentation."*

Adding language that states: "…within 120 days of issuance of this permit and after installation of the permanent stack in accordance with…" to the testing requirements would make this permit condition contradictory and ambiguous. While testing may not be required immediately upon permit issuance, this draft Air Quality Permit is clear that compliance with the inputs used in the modeling analysis (e.g. stack characteristics, exhaust flow rate, etc.) is required immediately upon permit issuance and at all times thereafter. Therefore, the requested changes to the draft Air Quality Permit are not recommended.

<u>Comment No. 3 - Minimum Pressure Requirements</u>:

Ecolab made references to Permit Conditions A.9.A.5.a.ix and A.9.B.5.a.viii and made the following comments:

"*In the above requirement, the DAQ is requiring each of three test runs to be averaged. The DAQ is then averaging the three runs and is calling the average of the three runs a minimum for demonstrating compliance with velocity. In reality, the minimum run should be deemed the minimum for demonstrating compliance with velocity. Otherwise, DAQ will be requiring Ecolab to operate a higher pressure during normal operation which will result in a higher velocity and will incur additional power usage and wear and tear on the fan and system. Operating at the minimum average pressure of the three runs should be adequate if the final testing demonstrates compliance with the velocity requirements. There have been several federal NESHAP rules that follow this logic for developing minimum operating limits for source operating parameters.*"

Hearing Officer's Response:

It is common practice in Air Quality permitting to set parametric monitoring values to demonstrate compliance with an emissions limit. Typically, these values are set by performing source emission testing and recording parameter values during the test period. The values are then averaged across the test period since compliance with the emission limit is also determined across the same timeframe (as prescribed by 15A NCAC 02D .2608 "Number of Runs and Compliance Determination").

In the case of this monitoring requirement, the parameter is not being tied directly to an emissions limit, rather it is being tied to an operational requirement. If the test run with the lowest recorded pressure demonstrates compliance with the minimum stack velocity and flow requirements contained in permit conditions A.9.A.5.a.i and A.9.B.5.a.i, using the value from this run would be adequate. **Therefore, this Hearing Officer recommends that permit conditions A.9.A.5.a.ix and A.9.B.5.A.viii be revised to allow for the test run with the lowest average total pressure be used to demonstrate compliance, provided that compliance with the minimum effluent velocity and flow rate are met.**

Comment No. 4- Ground and Container Distance Readings:

Ecolab referred to draft Permit Conditions A.9.A.3.b.ii, A.9.B.1.a.i, A.9.B.3.b.ii, and A.9.B.3.c.iv and made the following comments:

"As previously discussed with DAQ, these devices have fragile tips that are made of glass. They are highly sensitive and will pick up readings at greater than 12 inches and, in fact, can pick up leaks from several feet away. This is acceptable by the USDA and the EPA under FIFRA. The 3 inches provided in the Proposed Air Permit is not operationally feasible nor is it necessary. Requiring this unnecessarily close distance with a glass device will only result in frequent damage and will not improve the detection ability of the device. Moreover, there are times when shipping containers are parked such that

access to all sides of the containers is not readily feasible. In these instances, Ecolab does check for leaks but may not be able to access the side of the container in the manner prescribed within the Proposed Air Permit. Ecolab therefore requests that a specific distance be removed and the language be changed to reflect that leak detection will occur and be corrected for should leaks be identified."

Hearing Officer's Response:

Leak Detection and Repair (LDAR) programs are a common requirement in state air quality permits and are also included in numerous federal regulations. LDAR program requirements are codified under various sections of the federal New Source Performance Standards promulgated in 40 CFR Part 60 and the National Emissions Standards for Hazardous Air Pollutants promulgated in 40 CFR Part 63. There are some variations between the programs in each respective subpart, but the regulations share many commonalities. Specifically:

- The regulations reference Method 21 of 40 CFR part 60, appendix A for determining the presence of leaking sources.

- The regulations require that "The instrument probe shall be traversed around all potential leak interfaces as close to the interface as possible." (40 CFR 63.180(c)(3))

It is noted that Method 21, which is "applicable for the determination of VOC leaks from process equipment," dictates that when checking for leaks, the tester should "place the probe inlet at the surface of the component interface where leakage could occur" (see section 8.3.1). Furthermore, Appendix B of the EPA document, "Control of Volatile Organic Compound Leaks from Gasoline Tank Trucks and Vapor Collection Systems (EPA-450/2-78-051)" contains a Gasoline Leak Detection Procedure by Combustible Gas Detector. This procedure states that, "The probe inlet shall be 2.5 cm from the potential leak source." Guidance provided in both federal regulations and promulgated test methods/procedures consistently state that when conducting leak testing, it is desirable to be as close as possible to the potential source. Therefore, the requested changes to the draft Air Quality Permit are not recommended.

Comment No. 5 - Recording and Submittal of Concentration Readings:

Ecolab referred to draft Permit Conditions A.9.A.1.a.ii, A.9.A.1.b.ii, A.9.A.6.b.i, A.9.A.6.c, A.9.B.1.a.ii, A.9.B.1.b.ii, A.9.B.1.c, A.9.B.3.c.ii, and A.9.B.6.b.i and made the following comments:

"The above Proposed Air Permit Conditions discuss the placement, reading, recording, and submittal of bulk pile and container methyl bromide concentrations using 'internal monitoring lines.' As has been discussed with

the DAQ, once the fumigant is entered into the shipping container or the tarpaulin and has reached homeostasis, leaks do not occur, or if they do it is within the already accounted for fugitive emission rate. During the treatment period, which is when internal monitors are used to record the concentration of methyl bromide within the shipping container or under the tarpaulin, the concentration of methyl bromide fluctuates due to its absorption and desorption into and out of the commodity. This is a natural and necessary part of fumigation and ensures that all life stages of the pest of concern are terminated prior to import or export. The recording, as required by USDA, is necessary to ensure that the minimum concentration is maintained throughout the treatment period to ensure termination occurs. Recording and documenting these numbers for potential leak detection purposes is not of value because they will naturally fluctuate. These values may be misinterpreted and therefore pose a compliance risk when none exists. Ecolab therefore respectfully requests that all language referencing use, placement, recordkeeping, and submittal of these values be removed from the Proposed Air Permit."

Hearing Officer's Response:

This comment pertains to the permit requirements for placement, reading, and recording of bulk pile and container fumigant concentrations using internal monitoring lines. The permit also requires quarterly summary/deviation reporting. This comment states that, "Recording and documenting these numbers for potential leak detection purposes is not of value because they will naturally fluctuate. These values may be misinterpreted and therefore pose a compliance risk when none exists."

It should be noted that, except for condition A.9.B.3.c.ii, the permit conditions identified in this comment are not listed under the "Leak Detection and Repair Program (LDAR)" provisions of the permit. (permit conditions A.9.A.3 and A.9.B.3) Rather, this comment refers to the following permit conditions:

- Fumigation Preparation (condition A.9.A.1 and A.9.B.1)
- De-tarping/Opening Bulk Pile (condition A.9.A.6)
- Opening Containers (condition A.9.B.6)

It should also be noted that this comment discusses natural fluctuations of the fumigant concentrations *during the treatment period* and expresses concern that such fluctuations could pose a compliance risk. The conditions of the permit identified by this comment state that the monitoring of fumigant concentrations is conducted "To demonstrate the end of the aeration period." (See permit conditions A.9.A.6.a and A.9.B.6.a). Since the permit does not require this monitoring during treatment, concentration fluctuations should not pose a compliance issue.

The toxics modeling submitted in support of this application assumed that 1% by weight of the total amount of fumigant used is fugitive during fumigation (active application and exposure period) and 5% by weight of the total amount of fumigant used is fugitive during aeration. Should the tarpaulin be removed from a bulk log pile, or the container door be opened while significant quantities of fumigant remained in the respective enclosure, the assumption made in the toxics modeling may not be valid. The requirements identified by this comment are not leak detection and repair requirements. Rather, these requirements are designed to ensure that no more than 5 ppm of fumigant remains in the enclosure prior to opening and that in doing so, the estimated 5% fugitive emissions rate used as an input for the modeling during aeration is not exceeded. These requested changes of the draft Air Quality Permit are not recommended.

It should be noted that this comment references a recordkeeping requirement under the LDAR conditions of the permit (A.9.B.3.c.ii). It is unclear how this recordkeeping requirement relates to the fumigant concentration measurement requirements discussed by this comment, so changes to this condition of the draft Air Quality Permit are not recommended.

Comment No. 6 - Fumigant Monitoring Line Seal, Tarpaulin:

Ecolab referred to draft Permit Conditions A.9.A.2.a.iv and A.9.A.2.b.v and made the following comments:

> *"In the above conditions, the DAQ is requiring that tape be used to seal the ends of the fumigant administration lines. This requirement is operationally unnecessary for tarpaulin fumigation events and creates potential OSHA and EPA FIFRA violations. These lines are used for USDA purposes to take readings of the fumigant concentration for tarp and container fumigations. Once those readings are taken, the lines are placed under the tarps thereby preventing emission leaks. Additionally, unnecessarily placing hands (bare or gloved) over methyl bromide is not allowed under relevant OSHA and the EPA regulations. Ecolab therefore requests language requiring taping the ends of these devices be removed."*

Hearing Officer's Response:

As previously discussed, the toxics modeling submitted in support of this application assumed that 1% by weight of the total amount of fumigant used is fugitive *during fumigation* (active application and exposure period). The intent of the requirement referenced by this comment is to ensure compliance with the toxics modeling by limiting the potential for fugitive emissions from the fumigant supply lines. It is important to note that this comment also points out that these lines are also used to take readings of the fumigant concentration inside the tarpaulin or container enclosures. The two conditions referenced do not pertain to lines used to sample fumigant

concentrations inside the container but refer to instead the line used to deliver fumigant to the container. As discussed under Ecolab's comments 5 and 11, these requirements are designed to ensure that no more than the estimated 5% fugitive emissions rate used as an input for the modeling *during aeration* is not exceeded and the 1% fugitive emissions rate used as an input for the modeling *during fumigation* is not exceeded. Ecolab's Bulk Log Fumigation Standard Operating Procedure (SOP), which was submitted to DAQ on April 14, 2021, states that:

> *"Once the bulk pile has received the desired level of fumigant (as prescribed in the APHIS Treatment Manual), the fumigant supply line will be disconnected from the methyl bromide cylinders and the ends are taped, rolled up and laid under the excess tarp on the outside of the row of sand bags."*

The assertion in this comment that "the lines are placed under the tarps thereby preventing emission leaks" is misleading because, per the SOP, the lines are placed *outside* of the row of sandbags. These requirements are necessary to assure compliance with the toxics modeling demonstration. Furthermore, this requirement is included in Ecolab's internal SOPs. Therefore, the requested changes of the draft Air Quality Permit are not recommended by this Hearing Officer.

Comment No. 7 - Cubic Feet vs. Cubic Meters:

Ecolab referred to draft Permit Condition A.9.A.2.b.iv and made the following comments:

> *"Ecolab is required by the USDA to record the amount of commodity being treated in cubic feet as opposed to cubic meters. Should the DAQ choose to duplicate this requirement, Ecolab requests that the units of measurement be consistent with already existing regulations and be changed to cubic feet instead of cubic meters."*

Hearing Officer's Response:

The proposed change is aesthetic in nature and does not affect the compliance status of any state or federal air quality regulations. **The Hearing Officer recommends that this request be granted.**

Comments No. 8 - Leak Detection Devices and Reading Levels:

Ecolab referred to draft Permit Conditions A.9.A.3.a.iii, A.9.A.3.b.iii, A.9.A.3.c.iii, A.9.A.3.c.iv, A.9.A.3.c.vii, A.9.A.6.a.i, A.9.A.6.a.ii, A.9.A.6.a.iii, A.9.B.3.a.ii, A.9.B.3.b.iii, A.9.B.3.c.iii, A.9.B.6.a.i, A.9.B.6.a.ii, and A.9.B.6.a.iii. The following comments were made:

"The air dispersion modeling accounts for a 1% non-active and 5% active fugitive emission rate with compliance demonstration of the fugitive leaks contemplated by the LDAR Monitoring and Recordkeeping for Bulk Fumigation requirements. Demonstrating compliance with fugitive emission rates removes the need for specific leak detection in that leakage is already contemplated and accounted for in the air dispersion modeling. Compliance with the fence line concentration requirements is therefore accomplished with these assumed leakage rates.

Should the DAQ want additional assurances, Ecolab is concerned with the detection limit requirements as currently drafted within the Proposed Air Permit. As described, the DAQ is using parts per million measurements to indicate leaks. The device used for this type of leak detection measures leakage rates in ounces and not parts per million. Ecolab does use another device to determine final methyl bromide concentration which does generate results in parts per million but, as with the other devices contemplated in the Proposed Air Permit it is not methyl bromide specific. Moreover, the device which measures concentration in parts permit million cannot operationally be used in the manner described in the Proposed Air Permit.

Ecolab would also like to address the challenges associated with placing detection limits that fall outside of the detection limit of the device's reading capabilities. Under federal regulations, leak thresholds are required to be set at measurable levels. While the devices are used to read leaks, the zero ppm (or ounce) requirement may fall outside of the detection limit thereby creating a compliance issue.

Finally, the only existing devices that can be used to detect leaks by generating a measurable value detect an entire category of chemicals, volatile organic compounds (VOCs), of which methyl bromide is one. The devices described in the Proposed Air Permit are not specific to methyl bromide. Because the devices also pick up on other VOCs, such as gasoline and diesel emissions, benzene, ethylene glycol, formaldehyde, methylene chloride, tetrachloroethylene, toluene, xylene, and 1,3-butadiene, the device will pick up and read these concentrations in addition to methyl bromide. Due to the highly sensitive nature of these devices, this reality creates a situation where false positives occur as do inaccurately high concentration levels.

Based on the above concerns, Ecolab respectfully requests that the leak detection language either be removed or modified to only include "reading levels indicating a leak" without a value or unit of measurement (ounce, ppm, etc…) and that there be removal of recording a value due to the inaccuracy and existence of false positives and false high readings."

Hearing Officer's Response:

While the narrative portion of this comment makes numerous references to the leak detection requirements of the permit, it is important to note that this comment references permit conditions that contain both leak detection and repair requirements (LDAR) and the monitoring of fumigant concentrations during fumigation and prior to aeration (inside the containers or tarpaulins). It is also important to note that Ecolab has indicated in various correspondence with the DAQ during the permitting process that it utilizes two different types of monitoring devices:

- USDA-recommended instrumentation for monitoring the concentration of fumigant in the enclosure.

- A handheld photoionization detector for monitoring for leaks

This comment expresses concern that the device used by the facility cannot measure in parts per million (ppm) and goes on to suggest that the detection limits in the permit may fall outside the device detection limits of the permittee. Additionally, the comment states that Ecolab does use another device that generates results in ppm, but that this device cannot be operationally used as described in the Air Permit. This comment does not provide specifics regarding the type of instrumentation referenced. Nor does it provide specific details regarding why this instrument cannot be operationally used in the manner described in the draft Air Permit. Correspondence between Ecolab and DAQ personnel indicate that Tiger handheld VOC photoionization detectors (PIDs) are utilized to check for leaks. The website of the manufacturer of this product (Ion Science Ltd) indicates that, "The Tiger handheld VOC gas detector provides a dynamic detection range of 0 to 20,000 parts per million (ppm) with a minimum sensitivity of 0.001ppm (1 ppb)" Ecolab has indicated in various correspondence with the DAQ during the permitting process that the methyl bromide detection device provides concentration in units of oz/1000 ft^3. Ecolab has also indicated to DAQ that it follows the guidelines set forth for fumigation in The United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Treatment Manual. The treatment manual contains a conversion factor for the conversion from oz/1000 ft^3 to ppm. **This Hearing Officer recommends that Permit Conditions A.9.A.3.a.ii, A.9.A.6.a.i, A.9.B.3.a.ii, and A.9.B.6.a.i be revised to remove the detection limit and require use of USDA-recommended instrumentation that will detect and analyze fumigant gases.**

This comment also expresses concern that the device used to demonstrate compliance with the LDAR requirements may generate false positives by detecting other volatile organic compounds (VOCs), aside from methyl bromide or phosphine. This comment goes on to request that the leak detection language be removed or the specific concentration that constitutes a leak be removed from the permit.

LDAR programs are frequently included in Air Quality permits for sources of volatile organic compounds (VOC) or hazardous air pollutants (HAP) where equipment leaks may result in substantial emissions. LDAR programs are also codified in numerous federal New Source Performance Standards (40 CFR 60) and National Emission Standards for Hazardous Air Pollutants (40 CFR 63) including standards that apply to the Synthetic Organic Chemicals Manufacturing and the Gasoline Distribution Industries, among many others. The EPA document, "Protocol for Equipment Leak Emission Estimates (EPA-453/R-95-017)" presents standard procedures for estimating mass emissions from equipment leaks. This document also explains how to estimate the control efficiency of equipment leak emission control techniques, such as LDAR. Section 5-8 of this document notes that one of the key parameters for estimating the control effectiveness of an LDAR program is the leak definition (concentration). Removing the leak detection concentration would render the LDAR program ineffective and unenforceable. Furthermore, removing the LDAR language from the permit leaves the permit without any enforceable mechanism to assure that the fumigant used during fumigation and aeration are ventilated out the exhaust stack in the quantities stated in the permit application. These requested changes of the draft Air Quality Permit are not recommended.

Regarding the possibility of false positive readings, this Hearing Officer agrees that the potential for false positives may exist. The DAQ requested information on monitoring equipment and monitoring that Ecolab regularly performs and incorporated that monitoring into the permit. Neither the permit application, nor additional information submitted to DAQ during the application process contain specific information regarding the calibration procedures or manufacturer's recommended operating procedures for the Tiger handheld PID or any other leak detection device. Method 21 of 40 CFR part 60, appendix A- "Determination of Volatile Organic Compound Leaks" contains a procedure in section 8.3.2 for accounting for local ambient VOC concentration during leak testing. **This Hearing Officer recommends that the procedures from section 8.3.2 of Method 21 be incorporated into the LDAR requirements of the permit.**

Comment No. 9 - Fumigant Leak Detection during Entry, Mid, and End of Fumigant Addition to the Shipping Containers and Tarpaulin Covered Piles:

Ecolab referred to draft Permit Conditions A.9.A.3.c.iii, A.9.A.3.c.iv, and A.9.B.3.c.iv and made the following comments:

> *"With the permit, the DAQ is requiring that leak checks be performed at the "onset", "midpoint," and "end" of fumigant addition to the enclosure (tarpaulin covered pile or shipping container). Fumigant addition to the described enclosure can take anywhere from 3 minutes for a shipping container and 15 minutes for a large tarpaulin covered pile. The timeframe which is required to perform a typical leak check is proportionate to the size of the*

container and, in each instance, would be approximately the same as the duration required to add the fumigant to the enclosure. This reality makes separating into 3 separate leak checks at the onset, midpoint, and end of fumigation window impossible because they are not distinguishable. Ecolab therefore requests removal of requiring these separate leak checks due to the inability to comply with the requirement."

Hearing Officer's Response:

This comment points out that fumigant addition timeframes range from between 3 and 15 minutes, and notes that the permit requirement to perform three distinct leak checks during this time frame is impractical and difficult to comply with. This condition requires the Permittee to leak check the fumigation delivery system at the onset of fumigant application. Additionally, the Permittee is required to leak check the tarpaulin enclosure or shipping container at the midpoint and end of addition of fumigant.

As previously discussed, the leak check requirements in this permit condition are designed to ensure that fugitive emission rates do not exceed 1% by weight of the total amount of fumigant used during fumigation (active application and exposure period). Both the fumigant delivery system, and the tarpaulin enclosure or shipping container, are potentially significant sources of fugitive emissions. Therefore, it is necessary to maintain leak check requirements for this equipment. However, this Hearing Officer agrees that it may be difficult to distinguish between the two leak checks that are required at the midpoint and end of fumigant addition. **Therefore, this Hearing Officer recommends that permit conditions A.9.A.3.c.iv and A.9.B.3.c.iv be revised to require a single leak check at the onset and the end of fumigant addition. This Hearing Officer does not recommend any changes to permit condition A.9.A.3.c.iii.**

Comment No. 10 - Fumigant Leak Detection After Aeration Fan Turn-Off:

Ecolab referred to draft Permit Condition A.9.A.3.c.v and made the following comments:

"...the timing of the leak detection as it relates to fan operation is redundant. For fumigation operations, fans are used during the window in which the fumigant is added to ensure circulation of the fumigant throughout the enclosure. Once the fumigant reaches the required volume/concentration, the fans are turned off and the treatment period begins. During the time frame associated with the treatment period, the fumigant is not circulating and leaks do not occur (as previously discussed potential fugitive emissions are accounted for in the air modeling). The additional checks are therefore unnecessary. Ecolab requests removal of these steps."

Hearing Officer's Response:

This comment notes that recirculation fans are not used in the tarpaulin enclosure after fumigant application is complete. This permit condition requires an additional leak check following the completion of fumigant application *if recirculation fans are used*. **Since recirculation fans are not used following the completion of fumigant application, this Hearing Officer recommends the removal of permit condition A.9.A.3.c.v.**

Comment No. 11 - De-tarping and Container Opening Delays:

Ecolab referred to draft Permit Conditions A.9.A.6.a.i, A.9.A.6.a.ii, A.9.B.6.a.i, and A.9.B.6.a.ii and made the following comments:

> *"The USDA and EPA directly address the aeration procedures with specific direction given on how and when to complete aeration. In the Proposed Air Permit conditions listed above, the DAQ's instruction is inconsistent with the USDA and EPA requirements. The requirements are written with worker and bystander safety as the primary focus with fumigation operational needs accounted for as well. Ecolab therefore respectfully requests that the DAQ's inconsistent direction of taking multiple readings be removed."*

Hearing Officer's Response:

This comment states that the permit conditions pertaining to monitoring of fumigant concentration inside the tarpaulin or shipping container enclosure at the end of aeration are inconsistent with EPA and USDA requirements. This comment does not specifically state how the requirements of the Air Quality permit are inconsistent with EPA and USDA requirements. As previously discussed in this report under comment #5, the toxics modeling submitted in support of this permit application estimates that that no more than 5 ppm of fumigant remains in the enclosure prior to opening and that in doing so, the estimated 5% fugitive emissions rate used as an input for the modeling during aeration is not exceeded. The monitoring requirements identified by this comment are necessary to ensure compliance with the toxics modeling, therefore changes to these conditions of the draft Air Quality Permit are not recommended.

The Hearing Officer's recommended technical revisions to the draft Air Quality Permit should not have an impact on the DAQ's ability to evaluate Flowers Timber's compliance with state and federal air quality regulations. A summary of these technical revisions can be found in the Conclusions and Recommendations Section of this Report.

V. Conclusions and Recommendations

After considering all public comments addressing whether the DAQ should issue a modified Air Quality Permit (Permit No. 10549R01) to Flowers Timber Company, Inc. to establish Toxic Air Pollutant (TAP) emissions limits for methyl bromide and phosphine, the recommendations of the Hearing Officer are as follows:

- Air Quality Permit No. 10549R01 should be issued to Flowers Timber Company, Inc. with the following modifications:
  - The test deadlines in permit conditions A.9.A.5.a.v and A.9.B.5.a.iv should be changed to 90 days.
  - Permit conditions A.9.A.5.a.ix and A.9.B.5.A.viii should be revised to allow for the test run with the lowest average total pressure be used to demonstrate compliance, provided that compliance with the minimum effluent velocity and flow rate are met.
  - The units in permit condition A.9.A.2.b.iv should be changed to cubic feet.
  - Permit Conditions A.9.A.3.a.ii, A.9.A.6.a.i, A.9.B.3.a.ii, and A.9.B.6.a.i should be revised to remove the detection limit and require use of USDA-recommended instrumentation that will detect and analyze fumigant gases.
  - The procedures from section 8.3.2 to Method 21 of 40 CFR part 60, appendix A should be incorporated into the LDAR requirements of the draft Air Quality Permit (Conditions A.9.A.3 and A.9.B.3).
  - Permit Conditions A.9.A.3.c.iv and A.9.B.3.c.iv should be revised to require a single leak check at the onset and the end of fumigant addition.
  - Permit Condition A.9.A.3.c.v related to recirculation fans should be removed.

Davis M. Murphy

Davis Murphy, EIT
Hearing Officer

9/27/2021

Date

Appendix A:

Draft Air Quality Permit and Permit Review

Appendix B:

Flowers Timber Company Environmental Justice Report

Appendix C:

DAQ Memorandum on Air Toxics Modeling

Appendix D:

Comments from Ecolab, Inc.

Appendix E:

Comments from Toxic Free NC