JACOBS

Memorandum

11001999 Bryan Street, Suite 1200
Dallas, Texas 75201
United States
T +1.214.638.0145
F +1.425.468.3100
www.jacobs.com

Subject	**Permit Modification Request, Response to Comments.**
Attention	Alfredo Arroyo/PSCAA
From	Stacia Dugan/Jacobs
Date	July 23, 2018
Copies to	**Cedar Grove Composting, Inc.**

On March 23, 2018 Cedar Grove Composting, Inc. (Cedar Grove) submitted "Permit Modification Request for Cedar Grove Composting, Maple Valley Facility" to the Puget Sound Clean Air Agency (PSCAA). On July 2, 2018 PSCAA requested Cedar Grove provide additional information regarding the permit modification request. PSCAA questions are listed below in **bold** along with responses from Cedar Grove and Jacobs.

NC11573 and NC10721 – removal of Condition #8 from current Order of Approval. The original request for this was submitted in January 2014 via NC10721. A new application that includes the same request was submitted in April of this year via NC11573. Cedar Grove two options: cancel the old NC10721 and continue with NC11573 as is, or amend NC11573 to remove the Condition #8 request and continue with the old NC10721 as is.

Cedar Grove would like to cancel the old NC10721.

What mechanical options did Cedar Grove investigate to assist the current tip building control/ventilation system?

Jacobs prepared a memorandum reviewing potential options that might help Cedar Grove accomplish 100 percent capture of the smoke from the smoke test, "Cedar Grove Composting, Inc. Tipping Building Ventilation Review," dated December 18, 2017. The document was included in Appendix A of the Permit Modification Request and has been included as an attachment to this information request.

In the document it was concluded that none of the modifications or new control technologies reviewed had demonstrated the ability to have no visible emissions during a smoke test. Therefore, the technologies could not be considered technically feasible as a means to provide 100 percent control of visible emissions. Cedar Grove and Jacobs have not seen the 100 percent capture requirement applied to other facilities similar to Cedar Grove's, including smaller, fully enclosed composting or co-composting facilities. For this reason, there are no examples of a proven technology that Cedar Grove and Jacobs can reference.

The odor curtain technology has not been used on a tipping building, since most agencies consider 80 percent capture and control to be BACT, which can be achieved by the building having four or more air exchanges per hour. The odor curtain technology has been used on doorways as large as the one on the

tipping building. It has demonstrated effectiveness at reducing odors but has not demonstrated the ability to control visible emissions to a level of 100 percent.

Can Cedar Grove provide research showing that the active ingredients of the liquid product/solution in the proposed spray unit will chemically transform or degrade the air contaminants?

Cedar Grove has not yet determined which company will be used to install the odor curtain. Different companies use different odor control agents. However, one potential company is NCM Odor control, *ncmodorcontrol.com*. NCM states that they can provide current toxicology reports on their products, which ensure a facility is using a product that promotes worker, environmental and community safety and meets all regulatory requirements. Another potential company is Benzaco Scientific, *benzaco.com*. A document provided by Benzaco Scientific, "FAQ on Odor Control" has been included as an attachment. The document describes how their odor control agent works.

The water droplets from the spray unit will react with sulfur/nitrogen containing compounds to form acid mist resulting in new emissions. How are these emissions controlled?

The proposed odor curtain will not use water and the odor control agents do not contain water.

Does the liquid product/solution in the proposed spray unit contain a fragrance/odor resulting in new odors? If so, how are these odors controlled?

Please see the attached document provided by Benzaco Scientific, "FAQ on Odor Control".

Condition #15 was written using general language to enable the development of case-by-case procedures outside the Order. This maximizes flexibility and enables adding more detail to any procedure for compliance demonstration. What test procedures options did Cedar Grove investigate to demonstrate that 100 percent of the odors and emissions generated by the tipping building are captured and vented to the biofilter.

Cedar Grove and Jacobs submitted a memo to PSCAA titled "Cedar Grove Composting, Inc. Building Ventilation Test Procedures" on April 13, 2017. This document was also mentioned in the permit modification request. The document discusses the evolution of the smoke test procedures and PSCAA's changes to the smoke test procedures which led to the establishment of 100 percent control of odors as BACT. PSCAA is the only agency that considers BACT for a tipping building to be 100 percent control and this requirement has not been implemented for the other composting facilities in their region. In addition, there is no tipping building that has ever demonstrated the ability to capture 100 percent of smoke emissions, so this BACT requirement has never been demonstrated in practice.

The new language omits the following sentence: "The Agency reserves the right to require modification to the approved test procedures following written notice to Cedar Grove by the Agency." This omitted sentence is an integral aspect to the compliance demonstration intent. Since Cedar Grove is currently not adequately demonstrating compliance, it is to the Agency's best interest to have flexibility in modifying or suggesting any changes to any procedure at any given time.

Installation of the new odor curtain is a new technology and that will have its own BACT determination. Cedar Grove would like to establish a method of demonstrating compliance, with input from PSCAA, and have the procedures be part of the permit. The procedures could still be modified in the future but would require a permit modification. Cedar Grove hopes this will avoid the type of evolution the smoke test procedures experienced, where the test went from making sure the ventilation system was working, to demonstrating that the ventilation system was capturing 100 percent of the air in the building. Again, no tipping building has demonstrated that this is achievable in practice.

The proposed smoke testing procedure leaves out observation of the main tipping building door during the smoke test. The original intent of compliance demonstration is to verify that no smoke is escaping to the outside through the main tipping building door. Any test procedure that involves smoke testing must include observation of the tipping building door unless it is to remain shut.

Installation of the new odor curtain is a new technology and that will have its own BACT determination. This technology has proven extremely successful at other facilities in the area that store and transfer solid wastes. The odor curtain technology does not need to demonstrate no visible emissions at the doorway to be effective at reducing odors that may exit the tipping building door. The odor neutralizing agent will attach itself to odor molecules that may exit the doorway and neutralize them as they move down wind. This technology should significantly reduce the probability that odors exiting the building will travel off-site.

The proposal to modify Condition #9 to return to biannual inspections and increase the report submittal time. I review these types of proposals by considering the regulatory intent of the original inspection frequency. The intent of this Condition was to establish a schedule as a consequence to past inadequate maintenance of the biofilter. Cedar Grove must provide reasoning showing improvement in maintaining the biofilter.

The quarterly inspections and the data provided by the continuous parameter monitoring system have demonstrated that changes in the biofilter system are very slow. The increase from biannual inspections to quarterly inspections has not had a significant effect on maintenance activities, since activities like media replacement, may only take place from late fall to early spring, when production is reduced. Conducting inspections twice a year is sufficient for monitoring changes to the system.

The proposal to modify Condition #13 to remove the closed-door requirement and replace with a unit that sprays a liquid product/solution to control odors at the main tipping building door. This is dependent on whether the spray unit is approvable.

Agreed.

The proposal to remove Condition #14 requiring no visible emissions. Since Condition #14 is a BACT emissions limitation, it is not approvable without an alternative. Cedar Grove must provide an alternative or surrogate emissions limitation.

Cedar Grove is proposing that the smoke test go back to being used as originally intended, as a means of verifying that the ventilation system is on and sending air from inside the building to the ventilation system. In addition, the airflows to the tipping and sorting biofilters will be measured to determine if the airflow is greater than four air exchanges per hour, as designed. The odor curtain will be inspected to determine that it is on and operating as designed. Design requirements for the odor curtain will be established with the assistance to the company selected to install the system.

Attachment 1	Cedar Grove Composting, Inc. Tipping Building Ventilation Review, dated December 18, 2017
Attachment 2	Benzaco Scientific, "FAQ on Odor Control"
Attachment 3	Cedar Grove Composting, Inc. Building Ventilation Test Procedures, dated April 13, 2017.