



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT

December 15, 2011

Brian Fuchs
GORE® Cover
W. L. Gore & Associates
105 Vieve's Way
Elkton, MD 21921

Subject: GORE® Cover Assessment for District Rules 4565 and 4566 and District Best Available Control Technology for Composting Operations

Dear Mr. Fuchs:

The San Joaquin Valley Air Pollution Control District (District) has received your correspondence requesting concurrence from the District that the GORE® Cover is capable of meeting and/or exceeding the emission requirements of District Rule 4565 (*Biosolids, Animal Manure, and Poultry Litter Operations*), District Rule 4566 (*Organic Material Composting Operations*) and District Best Available Control Technology (BACT) for co-composting operations. We appreciate the information, cooperation, and positive interaction we have shared in recent communications and meetings. The District would like to take this opportunity to provide further clarification and summarize our understanding of, and position on, the GORE® Cover System as it relates to your request.

The District's position within this assessment is based on the following understanding of the GORE® Cover system as a volatile organic compound (VOC) control system for co-composting operations using biosolids as component of the feedstock. Enclosed is a summary document from W. L. Gore & Associates, titled *The GORE™ Cover Principle*.

GORE® Cover system

The GORE® Cover system employs a waterproof, windproof, and breathable three layer laminate technology as a cover material to completely enclose a co-compost window. The cover includes a middle layer that is a waterproof, microporous membrane based on expanded polytetrafluoroethylene (ePTFE). The cover is designed to protect the composting material from the elements, allow moisture and air to escape, and trap odor, dust, germs, and bacteria (see Figure 1 below). Another key element to the GORE® Cover system is the use of controlled pressurized aeration. That is, anaerobic conditions are minimized by the use of a positive aeration system where air is forced up through the pile and out through the GORE™ Cover. Oxygen and temperature are

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controlled to ensure ideal composting conditions. The GORE™ Cover membrane allows air (oxygen and carbon dioxide) and water vapor to escape, while extensively retaining odor compounds. During the composting process, a fine film of water condensation develops on the inside of the covers which capturing odors and other gases like VOCs. The majority of these gases are dissolved in the film of water and drop back into the composting material where they can be consumed by microorganisms.

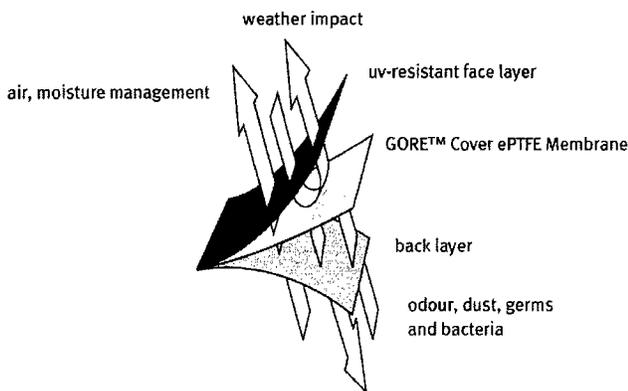


Figure 1: The GORE™ Cover Principle.

BACT (Best Available Control Technology)

BACT is triggered on an emission unit-by-emission unit basis, as well as a pollutant-by-pollutant basis, for a post-project potential to emit (PE2) of greater than 2.0 lb/day for a new emissions unit, or an adjusted increase in potential to emit (AIPE) of greater than 2.0 lb/day for a modified emissions unit. For composting operations, the compost windrows are considered an emission unit. Depending on the operation, each phase that the windrows go through may be considered an emission unit. The District has developed a BACT guideline for co-composting operations, which is BACT Guideline 6.4.7 (*Co-Composting with Biosolids*). For your reference BACT Guideline 6.4.7 can be found at <http://www.valleyair.org/busind/pto/bact/bactLoader.htm>.

Achieved-in-Practice (AIP) BACT controls are those that are the minimum requirement if BACT is triggered, regardless of cost. The AIP BACT controls for VOC for active-phase co-composting operations have been determined to be a negative aerated static pile (ASP) vented to a control device with $\geq 80\%$ control for VOC emissions.

Technologically Feasible (TF) BACT controls are those that are required if they are cost effective per District policy. The TF BACT controls for VOC and NH₃ for both active and curing phase co-composting operations have been determined to be enclosed (100% capture) windrows or ASPs vented to a control device with $\geq 80\%$ control for VOC

emissions for a resulting overall capture and control efficiency requirement of $\geq 80\%$ for VOC emissions. Please note, by policy, any other control system that achieves equivalent or better control than any BACT-required equipment is acceptable. Based on the information submitted to the District, if properly installed, operated and maintained per GORE[®] specifications, the GORE[®] Cover System is capable of satisfying District BACT Guideline 6.4.7 (*Co-Composting with Biosolids*) with an overall capture and control efficiency of $\geq 80\%$ for VOC emissions.

Rule 4565 (Biosolids, Animal Manure, and Poultry Litter Operations)

District Rule 4565 applies to all facilities whose throughput consists entirely or in part of biosolids, animal manure, or poultry litter and the operator who landfills, land applies, composts, or co-composts these materials.

Composting and co-composting facilities are potentially subject to control system requirements of: 1) aerated static pile (ASP) vented to a VOC control device of at least 80%. 2) in-vessel composting systems with a VOC control device of at least 80%, or 3) a system of equivalent control to those previously identified. Based on the information submitted to the District, if properly installed, operated and maintained per GORE[®] specifications, the GORE[®] Cover System is capable of satisfying the rule with an overall capture and control efficiency of $\geq 80\%$ for VOC emissions. For your reference, District Rule 4565 can be found at <http://www.valleyair.org/rules/currentrules/r4565.pdf>.

Rule 4566 (Organic Material Composting Operations)

District Rule 4565 applies to composting facilities that compost and/or stockpile organic material.

Composting facilities are potentially subject to the following control system requirements: 1) an overall 19% reduction of VOC emissions, 2) an overall 60% reduction of VOC emissions, or 3) an overall 80% reduction of VOC emissions. Based on the information submitted to the District, if properly installed, operated and maintained per GORE[®] specifications, the GORE[®] Cover System is capable of satisfying the rule with an overall capture and control efficiency of $\geq 80\%$ for VOC emissions. For your reference, District Rule 4566 can be found at the following link:
<http://www.valleyair.org/rules/currentrules/Rule4566CleanRule.pdf>.

Please be aware that a District Authority to Construct (ATC) is required prior to the installation of your system on any facility requiring District permits. Any changes or modifications to an approved or permitted system require prior District approval. Please note that like all equipment subject to District rules, these systems can and will be

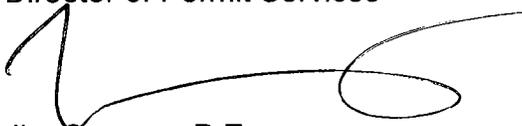
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inspected by the District. The owners and/or operators found operating in non-compliance with rule and/or permit conditions will be cited.

Please note that the requirements identified in this letter are subject to change at the discretion of the APCO. You may also subscribe to the District's email listserve for future rulemaking updates at the following link: <http://www.valleyair.org/lists/list.htm>.

Thank you for your time and assistance with this evaluation. Should you have any questions please contact Jim Swaney, Permit Services Manager, at (559) 230-5900.

Sincerely,
David Warner
Director of Permit Services

A handwritten signature in black ink, appearing to read 'Jim Swaney', with a large, stylized flourish extending to the right.

Jim Swaney, P.E.
Permit Services Manager

DW:BC