ENCLOSURE 4

ISSUES FOR THE WATER BOARD'S CONSIDERATION - NURSERY PRODUCTS HAWES COMPOSTING FACILTY PROPOSED WDR

Lahontan Water Board staff received numerous comments on the tentative Waste Discharge Requirements for Nursery Products LLC that will be heard at the March 10 Board meeting. In particular, comments dated November 23, 2009 contain three main areas of concern. This issue paper provides information to assist the Board members in considering the adequacy of the proposed waste discharge requirements related to these concerns. The three main issues raised in the comments are:

1. Concerns regarding odors from the Facility.

2. The potential effect of toxic gases that could be released from the Facility.

3. The potential effect of dust containing pathogenic bacteria that could be released from the Facility.

Water Board Jurisdiction

The Water Board's jurisdiction is limited to the effects of disposal of waste on water quality and the beneficial uses of waters of the State. In addition, the Water Board has the authority to address nuisance conditions that result from the treatment or disposal of wastes that are within its jurisdiction.

A nuisance condition is defined in section 13050 (m) of the California Water Code:

> ""Nuisance" means anything which meets all of the following requirements:
> (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
> (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
> (3) Occurs during, or as a result of, the treatment or disposal of wastes."

Clearly, the treatment and disposal of wastes at this Facility have the potential to adversely affect the quality and beneficial uses of waters of the State. Therefore, the Water Board has the authority to address nuisance conditions that may result from the treatment and disposal of wastes at this Facility.

As indicated in the above definition, all three of the conditions in the definition must be met for a nuisance condition to exist. Many waste treatment and disposal operations that the Water Board regulates generate odors. However, due to site-specific

circumstances, including proximity to receptors, nature of the odor, and on-site mitigation measures, the odors do not result in a condition of nuisance.

Odor Concerns

Odor production is common at composting operations. Under certain situations, these odors can constitute a nuisance. Composting operations generate volatile organic compounds or VOCs which produce odor and also mix with nitrogen compounds and sunlight to produce ground-level ozone (Horowitz, 2008). During inversion weather conditions compost odors can be detected miles away from a compost facility and can create a nuisance (Williams, 2007).

As indicated above, it is within the Water Board's authority to require that necessary mitigation measures be implemented to prevent nuisance conditions from developing due to odors that will likely be produced at the Nursery Products Facility. In this situation, the two nearest residences are approximately 1.5 miles and 2.5 miles east of the proposed Facility. The nearest community is Hinkley; approximately eight miles east of the proposed Facility. Within this community is a school (approximately nine miles east) and a senior center (approximately 10 miles east). This significant distance between the proposed facility and the nearest community will mitigate the effects of odors that may likely be generated. Additionally, the site-specific Odor Impact Minimization Plan (OIMP) that is required pursuant to Title 14 California Code of Regulations, Chapter 3.1 §17863.4 is required of all composting operations in California and is a condition of the draft Conditional Use Permit that will be considered by San Bernardino County. A similar requirement for development and implementation of an OIMP in the proposed waste discharge requirements will further mitigate the potential for odors to create a condition of nuisance. Lastly, the Monitoring and Reporting Program will require that Nursery Products monitor for odors near its Facility and implement mitigation measures before any odors create nuisance conditions.

Toxic Gas

While VOCs are known to cause offensive odors at compost facilities, they are not produced in large enough concentrations to exceed the threshold levels to cause physiological harm in humans (CIWMB, 2007). This would indicate that the levels of VOCs would not be sufficient to create nuisance conditions with respect to human health.

In the Mojave Desert of southern California, the Mojave Desert Air Quality Management District (MDAQMD) is "the local agency with the primary responsibility for the development, implementation, monitoring and enforcement of air pollution control strategies..." (see Health and Safety Code section 41211). During MDAQMD federal PM_{10} planning efforts, VOC emissions from composting operations were not identified as a significant contributor to PM_{10} emissions in the Mojave Desert (MDAQMD, 2007). Therefore, the Facility's VOC emissions will not be regulated by the MDAQMD. However, the MDAQMD may enforce existing regulations concerning dust (see below). In contrast, the San Joaquin Valley Unified Air Pollution District (SJVUAPCD) and the

South Coast AQMD (SCAQMD) have established attainment classifications for $PM_{2.5}$ precursor emissions (VOCs) and have implemented VOC standards for composting operations.

Public concerns have also been raised about the potential for VOCs from composting operations to be transported via winds to degrade or pollute nearby surface or groundwater. There are numerous ephemeral washes in the vicinity of the Facility and the closest potential surface water is the Mojave River which is located over 8 miles southeast of the Facility. Due to the chemical and physical behavior of VOCs, airborne contamination of surface or groundwater is an unlikely transport mechanism. Moreover, local storm events would likely impede the liberation of VOCs once waste piles become wetted thereby reducing the potential for VOCs to be introduced to ephemeral streams, the closest surface water to the Facility. It is equally unlikely that VOC emissions from this Facility would be concentrated enough to pass through the underlying waste pile pad and 300 feet of vadose zone to degrade groundwater.

Airborne Transport of Bacteria

There are concerns that as the waste piles dry out during the composting process fugitive dust may carry pathogens off site to enter surface water and/or underlying groundwater. According to the MDAQMD, the transport of pathogens via air or air vectors is "hypothesized, but there is no substantiation in researched literature to support this as a method of disease transmission from biosolids operations." (MDAQMD, 2007).

Fugitive dust and pathogen regulatory controls are addressed below:

1. Fugitive Dust
   The control of fugitive dust is regulated by both San Bernardino County (the land use agency) and the Mojave Desert Air Quality Management District (MDAQMD). The MDAQMD's nuisance and dust regulations are enforced at the Facility property line (MDAQMD Rule 401 – *Nuisance* and Rule 402 – *Fugitive Dust*). Moreover, Nursery Products has developed an Odor Impact Minimization Plan that will be approved and enforced by San Bernardino County. This plan requires air speed monitoring at the Facility and also requires windrow turning activities cease when winds exceed 30 miles per hour which will mitigate the likelihood of creating dust during conditions when wind could transport the dust. In addition, the Monitoring and Reporting Program contained in the proposed WDRs requires moisture monitoring of the windrows as a dust mitigation measure.

2. Pathogens
   Nursery Products will comply with regulations specified in Part 503 in Title 40 of the Federal Code of Regulations for composting of biosolids. Part 503 regulations stipulate that biosolids applied to land must also be treated for pathogen and vector attraction reduction. Class B biosolids must meet a fecal coliform density of 2 million Most Probable Number (MPN) per gram of biosolids (dry weight basis). Note that the Facility will receive biosolids that conform to

Class B pathogen reduction standards contained in Part 503. The composting process is designed to further reduce the pathogens to a Class A compost which must meet a fecal coliform density of 1000 MPN per gram.

Summary

Based on best professional judgment, project site conditions, best management practices proposed by Nursery Products, and mitigation measures imposed in the WDRs, staff finds that a nuisance condition will not occur when the Nursery Products operates the Facility in accordance with the proposed waste discharge requirements.

References

CIWMB, 2007, Contractor's Report to the Board, Comprehensive Compost Odor Response Project, by San Diego State University for the California Integrated Waste Management Board, Sacramento, CA

Horowitz, R, 2008, The CIWMB's Modesto Compost Emissions Study, Presentation to the BioCycle West Coast Conference, April 14-16, 2008, San Diego, CA

MDAQMD, 2007, Addendum to Technical Report on Composting and Related Operations – Issues Raised, Mojave Desert Air Quality Management District, Victorville, CA

Williams, T.O., 2007, Control of Odorous and Volatile Organic compound Emissions from Composting Facilities, Cary, NC