



October 31, 2000

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Dear Dr. Fingerhut:

This is a follow-up letter to our meeting of August 10 and your subsequent letter of August 14 in which you responded to some of our concerns regarding NIOSH Hazard ID#10. Following please find a more detailed account of the concerns we have with several of NIOSH's specific recommendations in *Hazard ID#10: Workers Exposed to Class B Biosolids During and After Field Application*.

Our concerns are as follows:

#### **1. Storage Time for Dewatered Class B Biosolids**

NIOSH recommends, "storage time for dewatered (filter cake) Class B biosolids should be minimized at both the water treatment facility and in the field to prevent the growth of pathogens." AMSA and WEF disagree with NIOSH's broad assumption that longer storage times increase the pathogen population of Class B biosolids. Field practice has demonstrated that a well-stabilized, well-managed biosolids can be stored in a lagoon or the field for extended periods and can serve to further stabilize the biosolids. EPA has indicated that data shows levels of pathogens actually decrease with increased storage time.

For example, USDA and EPA published a "Biosolids Field Storage Guide" guidance document in August 2000 that provides a set of consistent recommended management practices for the field storage of biosolids. It identifies critical control points for system management of the wastewater facility, transportation process, and field storage site. The guide targets management practices to address odors, water quality, and pathogens that have potential environmental, public health, and community relation impacts.

The guide also discusses potential pathogen issues associated with both Class A and Class B biosolids, and supports a conclusion that pathogen growth potential is more a function of storage conditions (e.g., moisture, pH), rather than storage time. In a discussion on composting (page 30) the guidance notes that, "...if pathogen growth occurs, the material should be held in storage until populations decline to acceptable levels...." The guidance also discusses a series of management options to restrict potential movement of pathogens and recommends a series of good personal hygiene practices as the basis of a worker protection program.

From a regulatory point of view, storage is part of the wastewater and biosolids treatment process. Filter cake and digester draw stored in lagoons for up to three years have been shown to inactivate pathogens, not facilitate their growth. As documented by POTWs, EPA and others in scientific literature, the sludge digestion and biosolids lagooning and drying processes are hostile to pathogens and cause their elimination. The 40 CFR Part 503 regulations specifically refer to processes to further reduce pathogens as the means to comply with the requirements of Class A biosolids.

Based on the above guidance, NIOSH's recommended engineering control to minimize storage time of Class B biosolids should be deleted from the Hazard ID #10. EPA has already set a regulatory time limit of two years for storage in its Part 503 regulation. NIOSH's assumptions regarding pathogen growth do not accurately reflect the fact that pathogens are likely to be reduced when biosolids are stored and appropriate management practices are followed.

## **2. Soil Incorporation of Class B Biosolids**

In Hazard ID #10's *Recommendations for Prevention*, NIOSH recommends "Class B biosolids should be incorporated (thoroughly mixed) into the soil to prevent suspension into the air during periods of dryness." NIOSH qualifies this recommendation in the HID's *Actions That Should Be Taken -- Engineering Controls* to apply in those instances where soil incorporation is "feasible."

This conflicting language is confusing to the reader of the Hazard ID. We suggest that recommendations within the document be consistent and account for the appropriateness of soil incorporation in a given area. The term "feasibility" has recently been argued in the courts (*United States v. City of Toledo, Ohio* -- 63 F.Supp 2d 834, N.D. Ohio, 1999)<sup>1</sup> and due to its range of legal interpretations, it is recommended that NIOSH use more specific, alternative language in the HID (e.g., instead of "where feasible," NIOSH could insert "where availability of equipment, soil conditions, and types of crops allow").

Without changes to the HID, a recommendation to incorporate all Class B biosolids has extraordinary ramifications for biosolids beneficial use. If soil incorporation is required (or strongly recommended by NIOSH without a qualifier), land application could potentially be reduced to spring and fall operations. In seasons where fields are not available for land application, biosolids would have to be stored or disposed in a landfill. In areas where there are

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<sup>1</sup> Environmental Protection Agency (EPA) and Ohio Environmental Protection Agency (OEPA) sued city for violating Clean Water Act based on alleged discharge of untreated effluent from city-operated wastewater treatment plant during routine wet weather events. Plaintiffs moved for partial summary judgment on issue of definition of "no feasible alternative" exception to treatment bypass prohibition in EPA regulation. The District Court, Carr, J., held that feasible alternatives under regulation include added plant capacity requiring planning and construction.

no row crops, the hay and pasture crops would have to be re-established after application occurred. In most cases, farmers will not be willing to have their hay and pasture fields turned and then re-established.

Additionally, NIOSH fails to address the differences between applying cake and applying liquid. If the intent of the recommendation is to prevent dust dispersal, then perhaps liquid application is desirable in seasons where incorporation is not an option.

### **3. Avoidance of Mechanical Disturbances**

NIOSH recommends, "mechanical disturbance of applied Class B biosolids should be avoided during the restricted period."

On the matter of "mechanical disturbances" during periods of "restricted" application, the general public will interpret this suggestion as the need for signs, fencing or other restrictions; and, this point of view likely will be adopted by the state regulatory agencies. The elimination of any technique where incorporation is not conducted would be difficult for practical operations in agriculture. There is no basis for the recommendation.

### **4. Key Points and Description of Hazard**

In the Hazard ID, NIOSH describes the results of *NIOSH Health Hazard Evaluation Report, HETA 98-0118-2748 for the Bio-Solids Land Application Process*, dated August 1999. NIOSH notes that it collected air samples at the Class B application and storage site and concludes that "employee gastrointestinal illnesses at that facility may have been caused by ingestion or inhalation of Class B biosolids," and "the presence of enteric bacteria in air samples is sufficient justification to implement engineering controls and work practices that minimize employee exposure to biosolids aerosols"

All of the bacterial genera identified from these samples are associated with outdoor environments or mammals (i.e., does not conclusively tie cause-and-effect to sewage, sewage sludge or biosolids). OSHA, NIOSH or ACGIH (American Conference of Governmental Industrial Hygienists) has not established occupational exposure criteria for bacterial endotoxin for biosolids upwind of all Class B locations.

Further, there is nothing in the report/study which suggests that bacterial endotoxin levels would be any different if the air samples were taken at any street corner in Atlanta, GA, or from a rural setting, a farm or other location in the State of Georgia. No conclusive evidence or objective data are cited that indicate wastewater treatment plant workers, including those who handle processed or unprocessed sewage sludge/biosolids, are at any greater risk than workers in other industries.

### **5. General Comment**

The Report should differentiate between "Perceived Risk", "Risk Assessment," and "Managing Risk." EPA used the Highly Exposed Individual (HEI) to conduct the risk assessments for the final Part 503 rule. EPA considers the HEI to be more representative of that subset of the population of actual individuals at higher risk than the general population. It should be clarified that the NIOSH Report is not a risk assessment. The vast majority of scientific research proves that properly treated sludge (biosolids) is safe for the public and the environment when managed according to federal standards.

## 6. NIOSH's Hazard ID #10 Extends Beyond Guidance

NIOSH Hazard ID #10 is more than guidance or an interpretation; it could impose additional burdens on POTWs and applicators (minimizing storage time, incorporation into soil, avoidance of mechanical disturbances) that exceed current regulatory requirements for biosolids reuse.

In the recent case of *Appalachian Power Company et. al v. EPA*, U.S.C.A., DC Cir. Case No. 98-1512 (decided April 14, 2000), the Court struck down an EPA guidance document allegedly "interpreting" the periodic monitoring regulation found in EPA's Title V Clean Air Act permitting regulations. The Court stated the well-established principle of law that an agency may not ignore formal rulemaking procedures by labeling a major substantive legal addition mere interpretation or guidance. If guidance puts forth a duty that is not already fairly encompassed within an existing regulation (e.g., incorporation of Class B biosolids) then it crosses the boundary into substantive rulemaking

AMSA and WEF are concerned about the implications of the NIOSH Hazard ID#10 guidance to the wastewater treatment industry. Already, this Hazard ID is having a negative impact as evidenced by initiatives by both legislators and other outside interests, citing NIOSH's report and calling for the ban of Class B biosolids land application. Our suggested changes can correct some of the misinterpretations of the NIOSH report. However, a certain amount of damage has been permanently inflicted on the industry.

AMSA, WEF, and others in the biosolids management field encourage NIOSH to work collaboratively on a thorough study of the health and safety of those most highly exposed to Class B biosolids to advance understanding based on comprehensive scientific research. Thank you for your consideration of our concerns with the recommendations put forth in Hazard ID#10. AMSA and WEF would be glad to provide you with additional information on biosolids field application.

If you have any questions, please call either AMSA's Ken Kirk at 202/833-4653 or WEF's Al Gray at 703/684-2429.

Sincerely,

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