

Response to Comments Received During the 2007 Public Notice of Renewal of NPDES General Permits for Facilities/Operations That Generate, Treat, and/or Use/Dispose of Sewage Sludge by Means of Land Application, Landfill, and Surface Disposal in EPA Region 8

The proposed renewal of the general permits was published in the Federal Register on July 3, 2007. 72 Fed. Reg. 36453 (July 3, 2007). A summary of each comment and the responses to each of the comments are given below:

- a. Comment: Previous and proposed EPA regulations require pathogen reduction and periodic monitoring of some metals prior to land application. There is, however, no requirement to test or monitor sewage sludge for the presence of organics.

Response: During the development of the 503 regulations for sewage sludge, EPA looked at various toxic organic pollutants in addition to metals and pathogens. Using information on the relative frequency and concentration of pollutants in sewage sludge, their toxicity and persistence, the pathways by which the pollutants travel through the environment to a receptor organism (plant, animal, or human), the mechanisms that transport or bind the pollutants in the pathway, and the effects of the pollutants on the target organism, EPA made an assessment of the likelihood that each pollutant would adversely affect human health or the environment. Due to the lack of data at the time, dioxin was not included in the evaluation. It was concluded that the concentrations of toxic organics (dioxin not included) found in sewage sludge did not present a risk to human health or the environment. EPA later collected data on dioxin concentrations in sewage sludge. On October 24, 2003 EPA gave final notice of its determination that neither numerical limitations nor requirements for management practices are currently needed to protect human health and the environment from reasonably anticipated adverse effects from dioxin and dioxin-like compounds in land-applied sewage sludge. 68 Fed. Reg. 61803 (Oct. 24, 2003).

The Region 8 Pretreatment Program requires publicly owned treatment works (POTWs) with a pretreatment program to periodically analyze its sewage sludge for metals and toxic organics. This provides a periodic check on the concentrations of toxic organics in the sewage sludge of the larger POTWs in Region 8.

The study of the presence in water, wastewater, and sewage sludge of organics such as pharmaceuticals, fragrances, hormones, plasticizers, etc. is relatively new compared to the more traditional pollutants such as metals, toxic organics, nutrients, pathogens, etc. EPA has ongoing studies in this area to evaluate the significance of these compounds in sewage sludge.

- b. Comment: Biosolids that meet regulatory criteria for land application have been found to contain a mixture of many anthropogenic organic compounds and degradates. It has been shown that earthworms bioaccumulate some of these organic chemicals, and may thus serve as a pathway for introducing these chemicals in the food web, which raises ecological concerns.

Response: Region 8's understanding regarding the bioaccumulation of some organic chemicals by earthworms is a preliminary finding of a study conducted by the United States Geological Survey (USGS), which was presented at a conference ) held in Vail, Colorado in the summer of 2007. However, to Region 8's knowledge, conclusive evidence is not available regarding bioaccumulation in earthworms and the ecological impact of such bioaccumulation.

- c. Comment: To be able to assess potential environmental risk from land application of biosolids, it becomes critical to survey chemicals and pathogens present in sewage sludge at a national level. Data generated from this survey should in turn be used to provide feedback to improve biosolids management practices and update regulatory criteria. Included in this survey should be an evaluation of the adequacy of detection methods and limits to support risk assessment.

Response: The Clean Water Act requires EPA to review the sewage sludge regulations (40 CFR Part 503) at least every two years for the purpose of identifying additional toxic pollutants and updating the regulations as appropriate. EPA is in the process of conducting a national survey of sewage sludges to determine concentrations of specific pollutants. Part of the survey results should be available later this year, with the rest of the results available sometime in 2008.

- d. Comment: One comment reiterated several recommendations made to EPA by the National Research Council Committee on Toxicants and Pathogens in Biosolids Applied to Land in 2002. The recommendations included: EPA needs to expand oversight of activities to : 1) asses the reliability of biosolids treatment processes; 2) monitor compliance with chemical (including organics) and pathogen standards; and 3) conduct environmental hazard surveillance. Risk assessments need to be updated as data gaps are filled, and more knowledge from research activities sheds light on environmental risks from complex mixtures of chemicals and pathogens present in sewage sludge.

Response: In response to the recommendations by the National Research Council Committee on Toxicants and Pathogens in Biosolids Applied to Land in 2002, EPA published "Standards for the Use or Disposal of Sewage Sludge; Final Agency Response to the National Research Council Report on Biosolids Applied to Land and the Results of EPA's Review of Existing Sewage Sludge Regulations. 68 Fed. Reg. 75531 (Dec. 31, 2003). This document is available at:  
<http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2003/pdf/03-32217.pdf>. EPA's final action plan to address NRC recommendations included the following projects:

- Project 1: Biennial Review Under CWA Section 405(d)(2)(C);
- Project 2: Compliance Assistance and Enforcement Actions;
- Project 3: Methods Development, Optimization, and Validation for Microbial Pollutants in Sewage Sludge;
- Project 4: Field Studies of Application of Treated Sewage Sludge;
- Project 5: Targeted National Survey of Pollutants in Sewage Sludge;

- Project 6: Participate in an Incident Tracking Workshop;
- Project 7: Conduct Exposure Measurement Workshop;
- Project 8: Assess the Quality and Utility of Data, Tools, and Methodologies to Conduct Microbial Risk Assessments on Pathogens;
- Project 9: Support Pathogen Equivalency Committee;
- Project 10: Development and Application of Analytical Methods for Detecting Pharmaceutical and Personal Care Products in Sewage Sludge;
- Project 11: Publish the Proceedings of USEPA-USDA Workshop on Emerging Infectious Disease Agents and Issues Associated with Animal Manures, Biosolids, and Other Similar By-Products;
- Project 12: Support “Sustainable Land Application Conference”;
- Project 13: Review Criteria for Molybdenum in Land-applied Treated Sewage Sludge; and
- Project 14: Improve Stakeholder Involvement and Risk Communication

- e. Comment: A comment stated the language in the first paragraph of Section 6.1.1.2 (page 44 of 74) does not clearly state that the allowable boundaries for the disposal location of sewage sludge (distance from property line) within an active sewage sludge unit can change in accordance with the currently monitored concentrations of the pollutants in sewage sludge. The addition of the following language (in bold italics) may more directly state the intent of this section. This could ensure that facilities can use sewage sludge units to their maximum capacity, rather than restrict disposal boundaries permanently based on historical analytical data.

“6.1.1.2 Where distance from unit boundary to property line is less than 150 meters, sewage sludge to be placed in the active sewage sludge unit shall meet the limitations below, based on the distance from the unit boundary to the property line. ***The distance can change frequently (weekly, monthly, etc.), depending on the results of routine monitoring.*** If the sewage sludge does not meet these requirements it cannot be surface disposed.”

Response: The language in the permit is based on the biosolids regulations (40 CFR Part 503.23). Therefore, the permit language was not modified as requested. The disposal of a batch of sewage sludge must be in a sewage sludge unit that meets the permit requirements for the distance from the unit boundary to the nearest property line that corresponds to the metal concentrations for that batch of sewage sludge. The distance cannot be measured from within the boundary of the sewage sludge unit. If the next batch of sewage sludge has lower concentrations of metals, it might be possible to dispose of it in a sewage sludge unit that is located closer to the property line provided that the distance requirements specified in the permit for those metal concentrations are met.

## CONCLUSION:

EPA Region 8 has decided to issue the general permits without any change.

Bob Shankland, SEE  
8P-W-WW, EPA Region 8  
303-312-6143  
shankland.robert@epa.gov

Bob Brobst  
8P-W-WW, EPA Region 8  
303-312-6129  
brobst.bob@epa.gov