



## FACT SHEET: ADDITION OF DIOXINS/DIBENZOFURANS AND CO- PLANAR PCB'S TO THE LIST OF POLLUTANTS COVERED BY THE SEWAGE SLUDGE REGULATION

### Summary

*The U. S. Environmental Protection Agency (EPA) is required to identify, and set limits for, toxic pollutants in sewage sludge that may present a risk to human health or the environment. These limits are used by municipalities and others to help determine which practices (such as land application, surface disposal, and incineration) can be used to dispose of sewage sludge or use it in a beneficial manner. Sewage sludge is a product of the treatment of domestic sewage or the treatment of a combination of domestic sewage and industrial wastewater.*

*In February, 1993 under the authority of the Clean Water Act, EPA issued a regulation that sets limits for nine toxic pollutants in sewage sludge. This regulation is known as the "Round 1" sewage sludge regulation. As a follow-on action, EPA has identified two additional toxic pollutants that warrant further consideration to be included on this list of pollutants. These pollutants are: Dioxins/dibenzofurans (all monochloro- to octochloro-congeners) and Polychlorinated biphenyls (co-planar). Limits for these pollutants will be established in a "Round 2" sewage sludge regulation.*

### The Round 1 Sewage Sludge Regulation

On February 19, 1993 EPA published the Standards for the Use or Disposal of Sewage Sludge (40 CFR Part 503) in the *Federal Register*. These standards, which are known as the Round 1 sewage sludge regulation, contain the requirements that have to be met when sewage sludge is applied to the land, placed on a surface disposal site, placed in a municipal solid waste landfill, or fired in a sewage sludge incinerator.

This regulation was developed under the authority of section 405(d) of the Clean Water Act, as amended. It contains limits for nine metals in sewage sludge that is land applied, three metals in sewage sludge

that is surface disposed, and five metals for sewage sludge that is incinerated. These limits, together with the management practices included in the regulation, protect human health and the environment from adverse effects that may result from these pollutants.

### Candidate Pollutants for Round 2

In May 1993, under the terms of a consent decree, EPA submitted to the court a list of 31 candidate pollutants that were being considered for a Round 2 sewage sludge regulation. These pollutants were selected based on their frequency of detection in EPA's 1988 *National Sewage Sludge Survey*, on their observed concentrations in

sewage sludge, and on their actual or potential toxicity.

#### ROUND 1 POLLUTANTS

<u>Land Application</u>		<u>Surface Disposal</u>	
Arsenic	Copper	Arsenic	Nickel
Cadmium	Lead	Chromium	
Nickel	Zinc		
Selenium	Mercury		
Molybdenum			
<u>Incineration</u>			
Arsenic	Nickel		
Cadmium	Lead		
Chromium			

#### Risk Assessments for Round 2 Pollutants

Subsequent to submission of the list of candidate pollutants to the court, EPA conducted "screening" risk assessments to determine which of the candidate pollutants should be on the final list of pollutants. Risk assessments were done for surface disposal, land application, and incineration.

The methodologies from the risk assessments for the Round 1 regulation were used in the screening assessments along with certain assumptions to estimate the dose of a pollutant that a *Highly Exposed Individual* receives from exposure to sewage sludge with a pollutant concentration equal to the 95th percentile concentration from the National Sewage Sludge Survey. In the case of non-carcinogenic pollutants, the estimated dose was divided by the allowable dose (e.g., an oral reference dose, or "RfD") to obtain a *Hazard Index* for each pollutant. For carcinogenic pollutants, a risk level was calculated.

If the hazard index for a non-carcinogenic pollutant was equal to or greater than one, the pollutant was considered further for the list of Round 2 pollutants. If the calculated risk level for carcinogenic pollutants was greater than  $10^{-4}$  (i.e., the chances of getting cancer are one in ten thousand), the pollutant was considered further for Round 2.

#### Additions to the Final List

Based on the results of the screening risk assessments and various risk management decisions, EPA concluded that two of the 31 candidate pollutants warrant further consideration for regulation:

- o Dioxins/dibenzofurans (all monochloro- to octochloro-congeners)
- o Polychlorinated biphenyls (coplanar)

On November 28, 1995, EPA notified the court that these two pollutants warranted further consideration for the Round 2 regulation. The notice also indicated that EPA may add or delete pollutants at the time the Round 2 regulation is proposed. The Consent Decree requires that the Round 2 regulation be proposed by December 1999, and published as final by December 2001.

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