Summary
Section 405(d)(2)(C) of the Clean Water Act (CWA) requires EPA to review the sewage sludge regulations every two years. The purpose of such reviews is to identify, where possible, additional toxic pollutants and promulgate regulations for those pollutants consistent with the requirements set forth in the Act. In fulfilling this commitment for Biennial Review Cycles 2005, 2007 and 2009, EPA collected and conducted a review of publicly available information. The Agency searched known databases and the published literature designed to capture available information on occurrence, fate and transport and human health or ecological effects, as well as other relevant information for pollutants that may occur in U.S. sewage sludge. The available exposure or toxicity data are not sufficient at this time for many of the pollutants using current biosolids modeling tools. We will continue this work subject to availability of resources and overall program priorities. At this time, EPA has not identified additional toxic pollutants for regulation under Section 405(d)(2)(C) of the CWA.

Standards for the Use or Disposal of Sewage Sludge
Under Section 405(d), EPA establishes numeric limits and management practices that protect public health and the environment from the reasonably anticipated adverse effects of chemical and microbial pollutants in sewage sludge. On February 19, 1993, EPA promulgated the CFR 40 Part 503 Standards for the Use or Disposal of Sewage Sludge, resulting in numeric standards for ten metals and operational standards for microbial organisms. The 1993 rule established requirements for the final use or disposal of sewage sludge when it is: (1) applied to land as a fertilizer or soil amendment; (2) placed in a surface disposal site, including sewage sludge-only landfills; or (3) incinerated.

These requirements apply to publicly and privately owned treatment works that generate or treat domestic sewage sludge and to anyone who uses or disposes of sewage sludge.

Since promulgation of 40 CFR 503, there have been three subsequent rounds of review: (1) the Agency’s decision in 2002 that regulation of dioxin and dioxin-like compounds disposed via incineration or land-filling was not needed for adequate protection of public health and the environment, (2) the Agency’s decision in 2003 that regulation of dioxin and dioxin-like compounds in land-applied sewage sludge was not needed for adequate protection of public health and the environment (68 FR 61084), and (3) a review that resulted in the ongoing analysis of nine pollutants and molybdenum; by late 2012, EPA expects to complete evaluation of these pollutants using available data and the recently released Targeted National Sewage Sludge Survey results prior to taking action or determining whether to propose regulating any of these pollutants under section 405(d) of the CWA.

Current Biennial Review
In conducting the biennial review for 2009, EPA collected publicly available information on pollutants. The purpose of reviewing information on pollutants, or potential pollutants, is to assess the availability and sufficiency of the data to conduct exposure and hazard assessments. Exposure and hazard assessments, where sufficient data exist, allow the Agency to determine the potential for harm to public health or the environment following use or disposal of biosolids. Some of the information generally needed to conduct exposure and hazard assessment includes the ability to detect and quantify a given pollutant in sewage sludge, concentration data in sewage sludge, fate and transport data for pollutants that may be present in sewage sludge, chemical and
physical properties and toxicity to human and ecological receptors. The Agency assessed whether data for pollutants were sufficient to conduct human health and ecological exposure and hazard assessments.

**Results of the Literature Search**

The Agency’s search of peer-reviewed literature identified information for 49 pollutants from the potential universe of pollutants for which some data were available. Some pollutants (e.g., triclosan and azithromycin) have been reported in previous biennial reviews. EPA revisits previously evaluated pollutants when literature searches of bibliographic databases reveal newer data. Even though critical pieces of data (e.g., human health toxicity and concentration data) were available for 14 pollutants, critical information gaps remain (e.g., ecological effects endpoints, aerobic biodegradation in soil and water, anaerobic biodegradation in sediment, bioconcentration, and biotransfer factors). Therefore, at this time EPA has not identified any additional toxic pollutants for regulation under Section 405(d)(2)(C) of the CWA. The Agency will continue to assess the availability of sufficient information for these 49 pollutants and other pollutants identified during the biennial review activities pursuant to section 405(d)(2)(C) of the CWA. As its first priority, EPA has begun the evaluation of 145 pollutants identified in the recent Targeted National Sewage Sludge Survey: http://water.epa.gov/scitech/wastetech/biosolids/upload/2009_01_15_biosolids_tnsss-tech.pdf.

**For More Information**

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