

contaminants resulting from land application of sewage sludge. Depending on resources, items that will be investigated include, but are not limited to: (1) Quantification of aerosol components such as pathogens, endotoxins, particulate matter, odor compounds, and volatile organic compounds (VOCs); (2) quantification of sewage sludge components such as pathogens and metals, and (3) effects of these components on the soil to which the sewage sludge is applied. Quality Assurance (QA) and specific research plans are being developed. EPA plans to initiate peer review on this research plan in 2004 and field work will not begin until the plan has been peer reviewed. The Agency plans to complete the study and draft a report two years after the QA plan has been approved.

Project 5: Targeted National Survey of Pollutants in Sewage Sludge

As EPA described in the April 9, 2003, **Federal Register** notice, EPA has concluded that undertaking a targeted survey is at present more useful than conducting a comprehensive survey modeled on the 1988–89 National Sewage Sludge Survey (NSSS) (68 FR 17385). Some commenters liked the targeted survey approach, but most commenters requested that EPA consider another national full-scale survey and made suggestions as to which pollutants should be included, or excluded, from such a survey.

Pending results of ongoing research projects and regulatory review, EPA will design and conduct a targeted survey of select chemical pollutants. Microbial pollutants (pathogens) in sewage sludge may also be included, depending on availability of resources and adequacy of methods. A survey may provide feedback for updating the science and technology of sewage sludge applied to land, disposed of in a surface disposal unit, or incinerated. The new concentration data would be used to assess human and ecological risk of identified, unregulated pollutants found in sewage sludge and identify pollutants for potential regulation.

EPA is committed in FY 2005 to starting a limited analytical survey of chemical pollutants found in sewage sludge. EPA expects this survey to address the pollutants identified by the exposure and hazard screening assessment as presenting a potential hazard, as identified in the current section 405(d)(2)(C) biennial review. The Agency will evaluate the extent to which methodology will allow expansion of the survey scope within available resources to include additional

pollutants (*e.g.*, the survey may also include metals regulated in Round One using improved methods while surveying for new metals identified as presenting a potential hazard in the current review). See section X of this notice for a list of these pollutants.

Furthermore, the results of current research projects may help determine the scope of a survey. The survey design and pollutants to be included in the survey may be influenced based on factors that include:

- Whether to survey pollutants that were not previously detected in sewage sludge, but where new or improved methods are available and other data may indicate a potential for hazard,
- Whether to survey pollutants with reported occurrences in sewage sludge from other countries only (*i.e.*, not studied in U.S. sewage sludge),
- Whether to include pathogens, and
- Whether to include pollutants with a high indication of potential hazard when the scientific basis of the human health benchmarks in IRIS or OPP databases for these pollutants is in the process of reassessment.

EPA will design the survey starting in FY 2005. The Agency will seek stakeholder involvement in the design and implementation of the survey.

Project 6: Participate in an Incident Tracking Workshop

One of the highest research priorities identified by the NRC and participants at the July 2003 WERF Biosolids Research Summit is the need for rapid response investigations of reported health effects potentially resulting from land application practices. EPA also received many public comments urging development of an incident tracking and response process. The Agency agrees that developing an incident tracking program is important. However, the Agency believes that it should not develop an incident monitoring program on its own, but should include various stakeholders who have had experiences with incidents related to sewage sludge, stakeholders who may be interested in participating, and those who have the expertise and should take part in helping to develop such a program.

As stated above, stakeholders who have had experiences with reported incidents related to land application of sewage sludge should be consulted. A program of incident monitoring and investigation could be modeled after an existing program. Once such organization that has experience with such incidents is the State of North Carolina (NC). The North Carolina Department of Environment and Natural Resources is responsible for

environmental programs in the state, including biosolids and residuals management. One purpose of the program is to assure timely and meaningful response to perceived and actual environmental incidents. The experiences of NC and others could be helpful in developing such a program and determining the next steps.

In order to respond to reported incidents of human illnesses and adverse health effects alleged to have been caused by land application of sewage sludge, and to determine the appropriate next steps in the process, EPA believes that local and State health agencies, in addition to other Federal health agencies, such as the Center for Disease Control and Prevention (CDC), are positioned best and have the necessary expertise to respond to allegations of adverse health effects following use or disposal of sewage sludge. However, EPA is committed to participating in activities related to this issue and plans to participate in the incident tracking workshop with WERF and other stakeholders in developing the research concepts and methods, and in interpreting and summarizing results.

The first step in the process will take place when WERF assembles stakeholders in a workshop to be held in 2004. EPA will participate in the workshop, which will begin evaluating the next steps for investigating adverse human health allegations following land application of sewage sludge. Ultimately, the objective is to determine whether such reported symptoms of illness can be attributed to the land application of sewage sludge.

The Cornell Waste Management Institute (CWMI) has collected over 300 incidents over the past several years in which residents living near sites where sewage sludge has been applied have reported illness (Cornell Waste Management Institute, 2003; Harrison and Oakes, 2002). However, the CWMI states that it has not been confirmed by scientific investigation that illnesses have resulted from land application of sewage sludge. The information provided by the CWMI may be useful as stakeholders begin to plan for a workshop to address such incidents.

This process, starting with the multi-stakeholder workshop, will take place at least through FY 2005. Additional activities beyond that time frame will depend on the outcome of the workshop, work with local, State and Federal agencies, as well as other stakeholders and availability of resources. Additional activities may include participating in subsequent stakeholder meetings or workshops and