

Evaluating, Optimizing, or Ending Post-Closure Care at MSW Landfills Based on Site-Specific Data Evaluations

September 2006

**Prepared by
The Interstate Technology & Regulatory Council
Alternative Landfill Technologies Team**

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444 North Capitol Street, NW, Suite 445, Washington, DC 20001**

EXECUTIVE SUMMARY

Post-closure care (PCC) at a municipal solid waste (MSW) landfill ensures that a solid waste facility is managed after final closure so that it does not pose a threat to human health and the environment (HH&E). Traditionally, 30 years has been considered the minimum period that PCC must be performed. However, there is no national—and to some extent no consistent state-based—structured process for evaluating, optimizing, or potentially ending PCC. This guidance illustrates a methodology to systematically evaluate the condition of the closed landfill, the waste it contains, the setting and the relevant decisions to manage, reduce, or potentially end PCC activities according to the reduced threat to HH&E.

Through the provisions of 40 CFR Part 258.61(b)(1) and (2), the U.S. Environmental Protection Agency (EPA) allows directors of approved states to either decrease or increase the traditional 30-year PCC period based on threat, as defined in (40 CFR 258.61(b)(1)). EPA does not, however, provide specific guidance for evaluating this landfill condition. This Interstate Technical & Regulatory Council document describes a method for evaluating PCC performance based on criteria established for a defined end-use strategy. It describes a systematic and hierarchical evaluation of (1) leachate, (2) landfill gas, (3) groundwater, and (4) the final cap. It offers a decision process the owner/operator can use to demonstrate that the landfill unit does not pose a threat based upon site-specific data and a defined end use of the property and that regulatory PCC elements can be reduced or ended in accordance with the provisions of Section §258.61(b)(1). Conversely, the same process may be used by regulators to demonstrate the need for continued PCC. Ongoing evaluation for more or less than the traditional 30 years can finally provide the necessary information that the material remaining in the landfill does not pose a potential threat to HH&E.

The Alternative Landfills Technologies Team recognizes that a performance-based evaluation of PCC as described in this guidance is compatible with the existing regulatory structure of PCC. Accordingly, the team supports the concept of reducing or ending PCC based on the outcome of the four module evaluations included in this text. The team further recommends that landfill performance data be used to extend or shorten the term. Some landfills may require additional data collected to perform this evaluation. The team recommends using a 30-year PCC period as a basis for initial financial assurance planning. Support for this approach is based on available technical journal articles (see EREF 2006) that indicate leachate quality and landfill gas production at many closed MSW landfills are expected to significantly reduce in concentration or quantity in less than 30 years.

The Alternative Landfills Technologies Team believes that communities can realize significant benefit from the reuse of former landfill properties, such as brownfields-type redevelopment, by following the processes outlined in this document. Even though the formal regulatory PCC ends, an obligation for continued management is required to maintain the property according to the potential threat at the point of exposure. This is referred to as “custodial care” (CC) of the facility and associated property. CC requires continued care to ensure that it does not pose a threat to HH&E. Institutional controls required by covenant, deed restriction, or other agency mechanisms continue to ensure the property is managed according to its planned end use and CC requirements. States should develop a template, adjustable to their specific state, to track and evaluate the environmental effectiveness of land use controls placed on a landfill site.

While the final draft of the document was in development, the team received state, federal, and peer review comments such as the following:

ITRC's goal of trying to define when a landfill's post-closure care can be ended is certainly a laudable one, and the draft document appears to be addressing the matter in a logical manner which would be consistent with the Department's regulations. There is currently a need for this guidance topic in that many states are beginning to address this matter at landfill sites nationwide, and without some form of standard guidance on this subject, the potential exists to have 50 different approaches being developed. It makes far better sense to establish a standard recommended process for the various states to use rather than to have multiple independent approaches to this matter.

Army concurs as is. Air Force has some editorial comments, and Navy also concurred with some editorial comments that they are vetting with the team. Please consider this e-mail as DoD concurrence with these editorial comments.

This document does not conflict with federal regulations or Illinois regulations.

Closed landfills are no longer isolated from rapidly encroaching development. Even though originally located away from residences or businesses communities, the landfill and material it contains must be managed and the land returned to its proper benefit to the community. Properly managed following closure and PCC, old landfill properties can once again contribute to the economic and social needs of the community. Land reuse should be a planning element (Section 2.1.1) of the waste management industry in support of the surrounding community resource availability and service capacity (ITRC 2006b).