



Standard Guide for Beneficial Use of Landfills and Chemically Impacted Sites¹

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INTRODUCTION

Over the last half-century, environmental protection programs have withdrawn from use properties posing significant adverse human health impacts, yet some with lesser potential impact continue to be heavily used [for example, pedestrian; recreational; or outdoor entertainment-related, concert audience seating] without evaluation. Assessment of environmental conditions for properties undergoing ownership transfer is now common (and often required), yet those of historic ownership are not similarly evaluated. This guide serves the need for a forward-looking program that allows a knowledgeable environmental professional to complete an evaluation of a proposed beneficial use, utilizing readily available information and her/his professional judgment whether property usage restrictions are necessary to be protective of human health. Two outcomes of such an evaluation include finding that the proposed beneficial use is acceptable, or a finding that the proposed beneficial use request is not acceptable. The environmental professional may condition her/his finding of acceptability of beneficial use with institutional and engineering controls based on actual or potential soil chemical concentrations, known background chemical concentrations, and other approaches that provide a barrier between a chemical and a site user or limit times of use.

1. Scope

1.1 This guide provides a beneficial, *acceptable use* framework for the *development* of: (1) Inactive and *pre-RCRA* (or *pre-regulatory*) *solid waste landfills* that are considered *orphan* or *latchkey* to be repurposed, despite having offsite migration impacts of *landfill gases* and/or *leachate*, albeit at *de minimis* levels; (2) other types of unregulated *waste landfills*; (3) sites impacted by chemical releases; (4) *legacy* or ongoing, intentional, or unintentional fill placement; (5) *closed*, open, or operating *post-RCRA landfills* or *landfills* in the planning stages such that materials may be placed in ways that optimize a *landfill's* use in future years; and (6) underutilized or heavily used (for example, pedestrian; recreational; or repetitive, entertainment, single event) *chemically impacted sites*. Also, this guide identifies land usage and conditions of adjacent/non-waste portions of a *landfill* (that is, *buffer* areas not within the footprint of an actual *landfill* or *chemically impacted site* itself) that should be evaluated before a *site use* is considered *acceptable*.

1.2 Provided herein is instruction on evaluating and judging the *acceptability* of: (1) Chemical exposure barrier(s) (and

other *engineering and institutional control* measures) in place between actual or potential chemically impacted soil; and/or (2) time of use restriction(s) established at a *waste / chemically impacted site*.

1.3 Additionally provided is instruction on assessing the *terminal conditions* at a *municipal solid waste (MSW) landfill*; that is, flows of methane below which passive rather than active venting is recommended, and flows of *leachate* of a long-term, consistent quality that is clean enough to allow direct discharge of the liquid to surface waters. See [Appendix X3](#) for additional information.

1.4 This guide complements *solid waste* regulatory programs where guidance on beneficial usage is unavailable or insufficient, thereby improving the chance that such sites may be repurposed for public and/or private benefit.

1.5 This guide may be implemented in conjunction with ASTM's Standard Guide for Integrating Sustainable Objectives in Cleanups (Guide [E2876-13](#)) with respect to *community engagement* activities. See Guide [E2876](#) for more information.

1.6 This guide should not be used as a justification to avoid, minimize, or delay implementation of specific cleanup activities as required by law or regulation.

1.7 This guide should not be used to characterize (that is, environmentally assess) a site for the purpose of ownership transfer, although it could supplement other environmental assessments that are used in such a transfer.

¹ This guide is under the jurisdiction of ASTM Committee [E50](#) on Environmental Assessment, Risk Management and Corrective Action and is the direct responsibility of Subcommittee [E50.03](#) on Beneficial Use.

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