



## Process for Ending of Post-Closure Care at Solid Waste Landfills

*This guidance summarizes Ohio EPA's process for owners and operator of municipal solid waste landfills and industrial or manufacturing waste landfills that request to end the post-closure care period. All landfill owners and operators are encouraged to begin this process at least five years prior to reaching the end of the post-closure care period.*

### Purpose

Post-closure care ensures that a solid waste landfill is managed after final closure so that it does not pose a threat to human health and the environment. Ohio regulations mandate a post-closure care period of 30 years for municipal solid waste landfills, or 15 years for industrial or manufacturing waste landfills, after which the post-closure care period can be ended or extended for cause by the director. This guidance illustrates a methodology for a systematic evaluation of four areas: (1) leachate; (2) landfill gas; (3) ground water; and, (4) the final cap. It offers a decision process the owner or operator can use to demonstrate that the landfill does not pose a threat based upon site-specific data and a defined end use of the property and that regulatory post-closure care elements can be reduced or ended.

Although this general guidance cites the municipal solid waste landfill requirements, owners and operators of industrial or manufacturing waste landfills follow the same process. All landfill owners and operators can expect to work with Ohio EPA in addressing issues related to ending post-closure care.

### Rule Requirements

Landfill owners and operators must perform obligations during the post-closure care period. These obligations may vary based on the closure date and any administrative order. To request an end to the post-closure care period, the landfill owner or operator must submit to Ohio EPA written certification that post-closure care activities have been completed in accordance with OAC Rule 3745-27-14 and the facility's closure/post-closure plan. The certification shall be accompanied by documentation which demonstrates that all post-closure care activities have been completed. The certification shall be signed and sealed by a professional engineer registered in Ohio. The director may either discontinue or extend the post-closure care period based on the certification, the self-inspections or monitoring results, required reports, and whether human health and safety and the environment will be protected.

The certification documentation shall include the following:

- A summary of changes to leachate quality and quantity.
- Rate of leachate generation and quantity of leachate in the landfill, with an explanation of how these figures were derived.

### Applicable Statutes and Rules

- ORC Chapters **3734**. Solid and Infectious Wastes and **6111**. Water Pollution Control
- OAC Rules **3745-27-14** and **3745-30-10**

### Contact

If you have questions regarding this document or would like more information, please contact the appropriate DMWM district office or Central Office staff.

- Central District Office (614) 728-3778
- Northeast District Office (330) 963-1200
- Northwest District Office (419) 352-8461
- Southeast District Office (740) 385-8501
- Southwest District Office (937) 285-6357
- Central Office-Land Management Unit (614) 644-2621

### Disclaimer

The procedures set out in this document are intended solely for guidance. The procedures are not intended and cannot be relied upon to create rights, substantive or procedural, enforceable by any party against Ohio EPA. While this guidance document is not legally binding, all statutes and rules referenced herein are binding and enforceable. Ohio EPA reserves the right to vary this guidance or to change it at any time without public notice and also reserves the right to deviate from this guidance on a case-by-case basis.

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- A summary of any on-going ground water assessment or corrective measures.
- A summary of explosive gas migration and generation by the landfill.
- An assessment of the integrity and stability of the cap system if post-closure care activities cease.

Some municipal solid waste landfills that closed before Ohio's Subtitle D rules became effective were not subject to requirements for comprehensive ground water monitoring and leachate monitoring. When evaluating a request to end post-closure care at these landfills, Ohio EPA will work with landfill owners and operators to identify all available data to assess the present conditions at the landfill.

The regulations for industrial or manufacturing waste landfills are different than municipal solid waste landfills. Therefore, the documentation required to end post-closure care at these types of landfills may not include the same information. Ohio EPA will work with landfill owners and operators in advance to communicate the needed information.

### Check-in Five Years Prior to the End of Post-Closure Care

While it is the responsibility of landfill owners and operators to timely apply for an end to post-closure care, Ohio EPA will attempt to contact each facility approximately five years prior to the end of the post-closure care period to initiate the process. Ohio EPA will begin discussions about available data, post-closure care compliance history, current and future land use, and the process for ending the post-closure care period. Ohio EPA and landfill owner and operator engagement facilitates the understanding of site-specific issues that should be considered when determining a landfill's current or possible future impact on human health, safety, and the environment.

A landfill owner or operator, health district, or Ohio EPA may propose temporarily ceasing (stepdown) a post-closure care activity to evaluate the consequences. For example, turning off the leachate collection system to see how much head develops on the liner, or reducing the operation of an active gas collection system to determine the effect of gas migration at perimeter probes. Prior to commencing any stepdown, the landfill owner or operator must propose a monitoring strategy and obtain necessary authorization from Ohio EPA.

Facilities that go through the stepdown process may be best positioned to successfully evaluate ending post-closure care.

### Documentation for ending Post-Closure Care

To better define the data outlined by the general requirements in rule, Ohio EPA requests the following data to assess compliance with post-closure care requirements and other regulatory programs for air and water issues.

|  |   |
|--|---|
| <b>Leachate (quality, quantity)</b>                                      | Data trends for past 10 years (quality/quantity/rate of generation).  |
| <b>Ground water</b>  | Data trends for past 10 years, status of any assessment monitoring or corrective measures.  |
| <b>Explosive gas migration</b>   | Data trends for past 10 years, location of any occupied structures within 1,000 feet of waste placement. Please see guidance document " <a href="https://www.epa.ohio.gov/portals/34/document/guidance/Ending%20EG%20Monitoring%20GD.pdf">Ending Explosive Gas Monitoring for Solid Waste Landfills that Ceased Accepting Waste Prior to June 1, 1994</a> " located on our website at <a href="https://www.epa.ohio.gov/portals/34/document/guidance/Ending%20EG%20Monitoring%20GD.pdf">https://www.epa.ohio.gov/portals/34/document/guidance/Ending%20EG%20Monitoring%20GD.pdf</a> |
| <b>Landfill gas generation (quality, quantity)</b>                       | Data trends for past 10 years, status of any air permits for an active gas system and NSPS rule applicability.  |
| <b>Cap integrity (Self-inspection reports, surface water management)</b> | Summary of any maintenance or repair to the cap system, including surface water controls, slope stability, leachate outbreaks, erosion, vegetation quality and differential settlement; summary of any stormwater permits and compliance.   |
| <b>Post-closure care compliance history</b>                              | Summary of compliance with post-closure care plan, certification by a professional engineer, copy of deed notation required upon closure, complaints, elevated temperatures, including any environmental covenants or voluntary site restrictions.  |

### Additional Items Considered During Review

Ohio EPA will evaluate the data above and will consider relevant site-specific conditions for potential points of exposure. Even though originally located away from residential or business communities, closed landfills may no longer be isolated

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from rapidly encroaching development. Ohio EPA will consider historical data, maps, data from other agencies, and publicly available information regarding the surrounding area to evaluate relevant points of exposure for the landfill. Potential issues may include, but are not limited, to:

- Source Water Protection Areas defined by Ohio EPA, private and public drinking water wells within 2,000 feet of waste placement
- Proximate occupied structures (explosive gas)
- Proposed future land use, potential land use restrictions
- Site access (restricted or public)
- Proximity to 100 gallon per minute aquifer, proximity to sole source aquifer\*
- Proximate surface water impacts from leachate or waste washout (rivers, streams, lakes)\*
- Unstable areas, such as mine subsidence, landslides, etc.\*

*\*mostly applicable to historic landfills established prior to modern siting requirements*

### Extending Post-Closure Care

Should the director determine the need to extend the post-closure care period beyond 30 years for a specific activity, Ohio EPA will coordinate with the landfill owner and operator and approved health district to develop a plan for the activity. A plan to address any specific activity will include the monitoring strategy, the length of time the post-closure care period will be extended, and any necessary financial assurance adjustments. Examples of situations that may result in an extended post-closure care period may be:

- Extending explosive gas monitoring for landfills that have implemented explosive gas contingency monitoring anytime during the five years prior to ending post-closure care.
- Extending ground water monitoring for landfills that are currently implementing ground water assessment monitoring or corrective measures. These landfills are required by rule to complete both assessment and corrective measures before post closure care can be ended. Landfills that have entered corrective measures are required to meet the completion requirements of OAC Rule 3745-27-10(F)(15).

In these examples, the director may extend the post-closure care period for only those activities where additional monitoring or other action is needed to ensure protection of human health, safety, and the environment. Based on the activity and extension period, the existing financial assurance instrument should be adjusted to include updated cost estimates. It is the expectation that at some point in time the landfill will be able to meet all the post-closure care requirements and end their post-closure care obligation. Ohio EPA does not anticipate maintaining facilities in perpetual post-closure care.

### Reaching the End of Post-Closure Care

If Ohio EPA determines that post-closure care can be terminated, then the landfill owner and operator will receive a Director's letter ending the post-closure care requirements of OAC Rule 3745-27-14. Once the Director has authorized ending the post-closure care period, the landfill owner and operator may request the termination of the financial assurance instrument, as outlined in [\*OAC Rule 3745-27-15\*](#).

### Continuing Obligations

Ohio EPA's evaluation and release from post-closure care is based on site conditions and available data at the time of the evaluation and release. After the regulatory post-closure care period has ended, however, the landowner is obligated to ensure the landfill does not threaten public health, safety and the environment in the future. The Director's release letter will reference the basic ongoing obligations that remain for the property. These obligations include, at a minimum, obtaining authorization to disturb the cap, preventing pollution of waters of the state, and controlling explosive gas migration.

- **Obtaining authorization to disturb the landfill:** The landowner must obtain a "Rule 513 Authorization" or authorization under [\*OAC Chapter 3745-513\*](#), to disturb a waste disposal facility if that activity has not already been authorized through a permit or other action of the director. This includes facilities that are no longer subject to post-closure care. Routine maintenance does not require a Rule 513 Authorization. For more information, see [\*DMWM guidance 0631 -Implementation of Chapter 513 \[OAC Ch. 3745-513\]\*](http://epa.ohio.gov/portals/34/document/guidance/gd_631.pdf) located on our website at [epa.ohio.gov/portals/34/document/guidance/gd\\_631.pdf](http://epa.ohio.gov/portals/34/document/guidance/gd_631.pdf).
- **Preventing pollution of waters of the state:** The responsible party must maintain the integrity of the landfill to prevent pollution to waters of the state under ORC Chapter 6111. This may include repair and maintenance of the

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cap, leachate management systems, surface water diversion structures, and preventing unauthorized access to the facility.

- **Controlling explosive gas migration:** In the unlikely event that gas migration reoccurs and presents a threat to public safety or the environment due to encroaching development or other reason, the director may require the responsible party to prepare and submit a new or revised explosive gas monitoring plan that provides for evaluation of explosive gas generation at and migration from the landfill in accordance with ORC Section 3734.041.
- **Adhering to institutional controls:** The landowner must adhere to any applicable institutional controls on the land that may be required by an environmental covenant, deed restriction, or other legal mechanism. The director's release of post-closure care requirements does not negate or supersede these conditions.

### Voluntary Action Program (VAP) Eligibility

A landfill is eligible for Ohio EPA's Voluntary Action Program when it no longer is subject to all the closure requirements under ORC Chapter 3734. This occurs once the facility has completed post-closure care activities, has sent written certification to Ohio EPA, the director has determined no further monitoring or maintenance is required and the permit is no longer in effect. Note that an authorization pursuant to **OAC Chapter 3745-513** is still required if the landfill itself is to be disturbed due to VAP activities. For more information on the VAP, visit [epa.ohio.gov/derr/volunt/volunt](http://epa.ohio.gov/derr/volunt/volunt).

### Additional Resources

- SWANA, Solid Waste Association of North America, T-9.3 *SWANA Technical Policy, Termination of Municipal Solid Waste Landfill Post-Closure Care Requirements*, January 11, 2019. Retrieved from [swana.org](http://swana.org)
- National Waste and Recycling Association, Position Statement, *Performance-Based Approaches to Evaluate the Termination of Landfill Post-Closure Care Requirements*, December 2018. Retrieved from [wasterecycling.org](http://wasterecycling.org)
- U.S. EPA. (2016, December 15). *Guidelines for Evaluating the Post-Closure Care Period for Hazardous Waste Disposal Facilities under Subtitle C of RCRA*. Retrieved from [epa.gov/sites/production/files/2017-01/documents/pcc\\_guidance\\_508\\_withdateandletterhead.pdf](http://epa.gov/sites/production/files/2017-01/documents/pcc_guidance_508_withdateandletterhead.pdf)
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- Wisconsin DNR. (2007, March). *Guidance for Landfill Organic Stability Plans*. Retrieved from [dnr.wi.gov/files/PDF/pubs/wa/wa1125.pdf](http://dnr.wi.gov/files/PDF/pubs/wa/wa1125.pdf)