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Acceptable Uses of a Closed Landfill - PUB2430

Waste Management Program

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fact sheet

PUB2430

Division of Environmental Quality

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The Waste Management Program (WMP) regulates the operation and maintenance of both actively operating and closed landfills in Missouri. This oversight is necessary due to the potential for landfills, if not properly maintained, to have a negative impact upon public health and safety or the environment. Because of this potential, the WMP is authorized to regulate the use of the permitted landfill property. This fact sheet is written to provide general information to anyone who desires to change the approved post-closure use of their landfill.

Once landfills cease accepting waste, both the landfill owner and operator may be required to perform actions to properly close the landfill. These actions are taken in accordance with the Missouri Solid Waste Management Law and regulations and the landfill's approved closure plan. Closure activities include construction of a composite cap over the waste, consisting of soil and since 1994, a geotextile liner over the waste to reduce the amount of infiltration into the waste below. Vegetation is then established over the soil/geotextile cap and documentation is submitted to the WMP describing locations and depths of waste, the location of the existing environmental control systems and any planned future use of the site. After the landfill owner has filed the approved submittals with the county recorder of deeds, the WMP approves closure of the landfill in writing and the landfill's post-closure period begins.

Once the landfill's post-closure period begins, maintenance, care and activities on the landfill are governed by the Missouri Solid Waste Management Law and regulations and the landfill's approved post-closure care plan. Although more recently, closed landfills were also required to set aside monetary funds for potential problems during a specified time throughout the post-closure care period, those who own landfills are required to maintain and care for their landfills indefinitely. The monetary funds are maintained until the department approves the landfill for completing the post-closure period in which it has been determined that the landfill no longer poses a potential threat to public safety or the environment. The length of this period varies with each landfill and is not easily quantifiable—there are numerous examples of landfills that have caused public safety concerns or environmental problems past the standard 20- or 30-year post-closure care periods.

Under Title 10 of the Code of State Regulations, Division 80, Chapter 2.010 (**10 CSR 80-2.010**

(<http://www.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c80-2a.pdf>), post-closure care is defined as the maintenance and monitoring performed after closure to prevent or minimize existing or potential health hazards, public nuisance or environmental pollution and in accordance with the terms of the landfill's permit and the Missouri Solid Waste Management Law and regulations. Therefore, any proposed reuse of the landfill property must not conflict with the landfill's post-closure care, which is set out in the landfill's post-closure care plan, and the Missouri Solid Waste Management Law and regulations. The WMP has observed numerous landfill sites which were subjected to poorly planned and implemented uses, in some cases creating public safety hazards, resulting in damage to the landfill, and costly corrective actions to repair the damage and prevent recurring problems. In order to prevent conflicts with the landfill's post-closure plan or the Missouri Solid Waste Management Law and regulations and future problems, a change of use proposal must be submitted to the WMP to address the considerations provided below.

Considerations when Planning a Change of Use Proposal

When considering a possible change to a landfill's approved post-closure use, there are numerous variables to consider:

1. **Protection of the landfill cap.** Any planned reuse of the landfill shall be one that does not damage the landfill's composite cap. Damage to the cap increases infiltration into the waste which in turn increases the generation of decomposition products such as leachate and landfill gas. Therefore, grazing of livestock or cultivation of row crops is not allowed on landfills, but the cultivation and cutting of hay is an approved use.
2. **Methane gas generation and migration.** Methane and other trace gases are generated during waste decomposition. In low concentrations, methane is explosive and at higher concentrations it may displace oxygen, creating a risk of asphyxiation. Hydrogen sulfide, also generated during decomposition, may cause an asphyxiation risk, as well. Because many variables influence the amount of the gases generated on-site, the distances they may migrate through the soil or nearby utility lines and their accumulation in confined spaces, the WMP is extremely conservative and protective in its review of any landfill reuse proposal. This is to ensure that the proposal does not expose the public to the hazards of these gases. Any proposal for the construction of enclosed structures on the landfill property must ensure that these gases will be controlled and not cause hazards to the occupants of the structures.
3. **Differential settlement of waste.** Depending upon how much decomposition occurs in the waste, the waste material breaks down and settles at differing rates, creating instability and causing the soil above the waste to settle. This results in the creation of dips and depressions over the surface of the landfill. Because of this occurrence and the potential for the landfill gas hazards identified above, the WMP does not approve the building of any enclosed structures over waste on a landfill. This phenomenon may also impact open structures or utility lines installed over landfills.
4. **Existing environmental monitoring or control systems.** For landfills with environmental monitoring or control systems in place during the post-closure care period, their systems must be protected from access to, interference by or damage from interaction with those using the landfill property. Proposals for reuse of the landfill must include provisions to ensure protection of these systems.

Submission of a Change of Use Proposal

If you are interested in submitting a proposal to amend the approved use of a landfill, the WMP recommends you contact them to review all the plans, files and information available about the landfill property. This will enable you to have a greater knowledge and deeper understanding of the restrictions and limitations that will be placed upon any reuse of the property. Landfills are issued a solid waste disposal area permit when they are constructed. Therefore, the landfill owner is considered the permittee, even after the landfill is closed. Any change an owner makes (or allows to be made) to a closed landfill, that was not included in the approved post-closure plan, is a modification to the landfill's permit. The modification(s) request must be formally submitted by the landfill owner to the WMP and approved prior to making the modification(s) to the permitted property. **10 CSR 80-2.020(4)(A)**

(<http://www.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c80-2a.pdf>) includes a list of documents and information required to be submitted to the WMP with a permit modification request. The owner should also be aware that **10 CSR 80- 2.030(3)** (<http://www.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c80-2a.pdf>) prohibits anyone from excavating, disrupting or removing waste from a landfill without prior WMP approval. This requirement applies to both permitted and unpermitted solid waste disposal areas.

The WMP understands the desire for a property to have a sustainable future use. However, a desire to reuse a property which contains a landfill must be tempered with a comprehensive understanding of general landfill decomposition processes and the knowledge of site-specific factors that impact or influence these processes. The final determination of the reuse of a landfill property is governed by the mandate that the reuse be conducted in such a way that protects public health and safety and the environment.

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Nothing in this document may be used to implement any enforcement action or levy any penalty unless promulgated by rule under chapter 536 or authorized by statute.

For more information

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