



Legal requirements for landfill mining and aftercare in Germany

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Legislative framework

- In general landfills are subject to waste management legislation
 - ⇒ EU Landfill Directive
 - ⇒ German (Federal) Circular Economy Act (*KrWG*)
 - ⇒ German (Federal) Landfill Regulations (*DepV*)
 - ⇒ NRW Waste Act (*LAbfG*)



Waste management law

- Landfill Directive => Closure and after-care procedures (Article 13)
- Circular Economy Act => requirements for establishment, operation, closure as well as any substantial changes
- Landfill Regulations (Federal) => Specification of the requirements imposed by the Circular Economy Act

=> no rules specifically governing landfill mining



Closure phase

- Period between the end of waste disposal at the site - or parts thereof - and final closure
- ⇒ During this stage, landfill operators must, without delay, take all the steps necessary to prevent any adverse impact on public health and wellbeing.
- ⇒ Essentially, this includes these measures:
 - Placement of temporary capping
 - Collection and treatment of leachate
 - Groundwater monitoring



- Surface water management
- Upgrading the necessary technical installations
- Landfill gas control and treatment
- Surface sealing and restoration works
- Dismantling installations no longer needed
- Repairing, servicing, maintenance and supervision of the facilities
- Other inspection and monitoring measures; documentation



Aftercare phase

- Period between final closure of a landfill – or parts thereof - and the determination by the competent authority that aftercare management is complete.
 - ⇒ During this stage, landfill operators must take all the steps necessary to prevent any adverse impact on public health and wellbeing.
 - ⇒ Includes these key measures for emission and pollution control as well as reduction or avoidance of nuisance and hazards:



- Leachate collection and treatment
- Groundwater monitoring
- Surface water management
- Upgrading the necessary technical installations
- Venting residual gases
- Removal of installations no longer needed
- Repairing, servicing, maintenance and supervision of the facilities
- Measurement and inspection programmes (meteorological data, emission data, groundwater data and details of the landfill facility)
- Documentation



Completion of the aftercare phase

- Key consideration of whether the completion of the aftercare phase can be determined:
 - Possible future adverse effects on public health and wellbeing arising from the conduct of the landfill
- The Landfill Regulations name criteria such as
 - biological degradation processes have decayed
 - stability
 - no active degassing process necessary
 - maintenance of buildings or technical facilities no longer needed



Excursus: Security deposit

- Landfill operator's obligation
- Ahead of storage
- To ensure compliance with content requirements and other conditions designed to prevent or remove adverse effects on public wellbeing
 - => covering storage, closure and after-care phases
- Type, size and scope of the deposit set by the competent authority



- The costs for an ideal aftercare phase without additional charge for any unexpected incidents are taken into consideration
- Deposit must be insolvency-proof; bank bonds are typically used
- Deposit to be released in full as soon as the competent authority has determined the aftercare phase to be complete
- Or in the case of deconstruction (as the costs of the closure or aftercare phase reduce or drop fully)



Legal authority

- For actual deconstruction:
 - Waste or soil protection laws
- More extensive rules governing waste storage or treatment facilities:
 - Immission control law



▪ **Relationship of waste and soil protection laws:**

As a rule, landfill sites are subject to waste management legislation. Once the aftercare phase has ended, soil protection legislation kicks in.

- There are as yet no explicit regulations governing landfill mining.



Soil protection laws

- Soil protection rules apply as soon as the aftercare phase has ended
- The focus is on aspects of public safety rather than landfill mining
- In the absence of a public hazard, soil protection legislation is not the legal authority for landfill mining



Approval procedures for landfill deconstruction

Approval under **waste
management law**

=> If deconstruction works
start **before** after-care
phase is completed

Direction order under **soil
protection law**

=> If deconstruction
begins **after** post-closure
management has ended



Approval procedure under waste management rules

- Landfill mining subject to approval since it constitutes significant change with regard to character or operation of the site
- Plan approval procedure with Environmental Impact Assessment, given the similarity to the establishment of a landfill site (due to lack of explicit rules for landfill mining)
- Or planning permission (fast-track procedure)
- Authority may issue plan approval decision or planning permission only if steps are taken to protect public health and wellbeing, especially if there is no threat to human health, water bodies, soil, animals and plants.



- Adverse effects on the environment, such as air pollution or noise, must be avoided
 - Public order and safety must not be jeopardised.
 - Operating procedures and the site's structures must incorporate best available technologies to ensure that protected resources are not harmed.
- ⇒ During the planning procedure, the authority must take the impact on protected resources into consideration
- ⇒ In the event that the approval is granted, technical measures must be implemented to minimise the impact, and specified in the decision as conditions



Legal effects of the planning decision

- The planning decision for a landfill site replaces all licences, permits and exemptions required under other legislation

=> No other authorisation (under building, water management, conservation or immission control regulations) needed



Required application documents

- The Landfill Regulations (*DepV*) list the documents that must be submitted along with the application for a permit to build and operate a landfill => **cover landfill mining to some extent:**
 - Name and address of the organisation or individual in charge of the project, the operator and the author of the planning application
 - Location, description and capacity of the landfill facility
 - Necessity of the project
 - Details of the security deposit



- Full illustration of the deconstruction plans, incl. removal and re-emplacement
- Explanation of the timeline
- Details of additional adverse effects on protected resources (What emissions had already occurred at the original facility?)
- Outlining the steps taken to reduce emissions during the deconstruction phase
- Plan for recovering and disposing of waste materials which have been removed and separated
- Workplace health and safety measures



Order under soil protection legislation

- Old landfills classed as contaminated sites are subject to soil protection laws => deconstruction only for public safety reasons
- Germany's federal Soil Protection Act (BBodschG): **remediation plan** if the landfill is likely to be the source of significant adverse effects on soil, or pose any other threat to public or individual wellbeing.
- This means: **no legal authority** for deconstruction of sites where aftercare has long been completed and which are today largely non-hazardous



Outlook: Future rules and regulations

- Legal loophole
- Demand: landfill deconstruction should be incorporated explicitly into circular economy and landfill regulations
- ⇒ It would be good to apply landfill laws beyond the end of the aftercare stage
- ⇒ That would provide the legal authority for landfill mining activities after completion of the aftercare phase
- ⇒ Legal certainty would be achieved



Thank you.

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