

SEPA Technical Guidance Note

Closure, restoration and aftercare plan for submission to SEPA

1 Introduction

- 1.1 This document applies to existing landfill sites controlled under a Waste Management Licence that are required to close under the provisions of the Landfill (Scotland) Regulations 2003. Separate guidance will be provided for landfill sites not previously regulated under waste management licences. This is for the use of SEPA officers and may be provided to operators, consultants and designers as guidance to SEPA's requirements. SEPA Interim Technical Guidance Note on 'Closure procedures for Landfill Sites currently operating under waste management licences' provides further guidance.
- 1.2 One of the key steps that licence holders for sites that are closing will require to undertake is the preparation of a detailed plan laying out the proposed closure, restoration and aftercare activities. The information to be provided in the plan must describe in detail the proposals and timescales at the landfill for ensuring compliance with the Landfill (Scotland) Regulations and the Waste Management Licence.
- 1.3 This document sets out the principal topics that require to be covered in a closure, restoration and aftercare plan. The level of detail will vary between sites and operators should contact the local offices to discuss the scope of their plan. Where existing plans are in place for closure, restoration and aftercare these will require to be reviewed and modified with due cognisance to the recommendations for capping and the requirements for monitoring and setting of trigger limits specified in the Landfill Regulations.
- 1.4 The site closure, restoration and aftercare plan should be developed to demonstrate that the installation can be maintained to avoid any pollution risk prior to the surrender of the site when it no longer poses a hazard to the environment. The plan should be kept updated as material changes occur. The plan must, as a minimum, include details on the aspects listed in Table 1.
- 1.5 The following guidance should be considered when preparing a closure, restoration and aftercare plan.
 - SEPA Interim Technical Guidance note on Closure Procedures for Landfill Sites Operating under Waste Management Licences
 - SEPA Interim Technical Guidance Note on Capping For Landfill Sites.
 - SEPA Interim Technical Guidance Note: Hydrogeological risk assessment for landfills and the derivation of control and trigger levels
 - SEPA guidance on 'Framework for Risk Assessment for Landfill Sites: The Geological Barrier, Mineral Layer and the Leachate Sealing and Drainage System'
 - The Waste Management Paper series (27, 26B etc) published by HMSO

2. Monitoring and Trigger Limits

- 1.1 The amount and design of monitoring required at sites should be based on an assessment of the risk the site poses to the local environment. One of the objectives of monitoring should be to collect the information likely to be required to support an application to surrender the licence. In the closure plan the operator should detail the monitoring protocol for the site in accordance with Schedule 4 of the Landfill Regulations. It may be that a monitoring protocol has already been agreed but this may need to be amended in accordance with the requirements of Schedule 4.
- 1.2 The closure plan should include a procedure for inspection and maintenance and the operator's method for recording and reporting such inspections and maintenance during the aftercare period. The operator will need to maintain the infrastructure and inspect and report on the site to ensure that monitoring and abstraction points are not damaged or falling into disrepair. The efficiency of the landfill gas abstraction systems will need to be regularly checked (Schedule 4, Table 1, suggests monthly during the operational phase and six-monthly during the aftercare period). Suggested rates of checking during the aftercare period may need to be increased for sites which continue to produce significant quantities of gas. Inspections should include the cap where present, possibly by measuring fugitive gas emissions.
- 1.3 Existing licence conditions may not require the operator to notify SEPA of significant environmental effects. Conditions may need to be modified, where necessary to ensure that such provision is included in the licence. For groundwater quality the trigger levels to be reported in accordance with Schedule 4, paragraph 5 of the Landfill Regulations will be used as the basis for reporting significant environmental effects. The appropriate control/trigger level will, where possible, be included in the modified licence.

Table 1

Topic	Provide details on;
Site Layout	drawings of capped areas and monitoring infrastructure.
	the proposed capping and pollution control measures (ie leachate control and gas management)
Pollution Control Systems	demonstration that the conditions of the Waste Management Licence will be complied with
	above ground management systems with measures to protect from damage (including vandalism) to ensure their continued suitability for use throughout the aftercare phase
	environmental management and monitoring infrastructure including maintenance to ensure their continued suitability for use throughout the aftercare phase.
	security measures to control access to the installation and to detect and discourage illegal dumping at the installation throughout the aftercare phase

Topic	Provide details on;
	landfill gas management systems, including gas treatment, utilisation plant or flares.
	leachate management systems, including extraction, treatment, and disposal.
	long and short term stability of the proposed landform including the waste deposits and associated structures such as the capping layer, drainage layer, soil cover and leachate and landfill gas management structures.
	proposed after-use and restoration giving consideration to access requirements for monitoring and maintenance of environmental management and monitoring systems
Restoration	plan of site to identify final landform. Consideration to the effects from settlement and stability will be required.
	procedures and timescales for ensuring final levels are achieved;
	proposals for post-closure settlement surveys.
	aftercare maintenance plan;
	decommissioning plan including removal of redundant facilities such as leachate and landfill gas plant and cleaning and backfilling of wells and lagoons.
	drawings showing the proposed final restored profile for the landfill accompanied by calculations of the remaining tonnages of waste (void space) and materials necessary to close, cap and restore the landfill must be submitted.
Monitoring	current locations identified on a site plan, including monitoring infrastructure and survey points.
	proposed infrastructure and procedures for monitoring (ie landfill gas, leachate, groundwater, surface water and stability/ settlement),
	aftercare inspection of site by operator include capping, monitoring infrastructure, site security, gas and leachate management, unauthorised deposits etc
Reporting	inspection, environmental and stability data including protocols for reporting monitoring data, site survey data, etc
	mechanism for reporting significant adverse environmental effects. Proposal for control/trigger levels and the mechanism for reporting exceedance of trigger levels.