

Landfill Hazardous Waste

Learning Outcome	Assessment Criteria	Source
1. Understand the legislative and regulatory requirements for a hazardous landfill	1.1 Describe the legislative requirements, regulations, codes of practice and guidance applicable to a hazardous landfill in terms of: <ul style="list-style-type: none"> - Design - Construction - Operation - Closure - Aftercare 	https://www.daera-ni.gov.uk/articles/regulation-landfills-northern-ireland https://www.daera-ni.gov.uk/articles/regulation-landfills-northern-ireland#:~:text=Article%20of%20the%20Landfill,of%20waste%20to%20be%20landfilled https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31999L0031&from=EN https://www.legislation.gov.uk/nisr/2003/496/contents/made https://www.gov.uk/government/publications/landfill-epr-502-and-other-permanent-deposits-of-waste-how-to-surrender-your-environmental-permit/landfill-and-deposit-for-recovery-aftercare-and-permit-surrender#aftercare https://www.gov.uk/guidance/landfill-operators-environmental-permits/close-your-landfill-site
	1.2 Describe the principles of financial provision for landfill (including when to take an assessment, the timeframe and financial costs associated with aftercare)	https://www.gov.uk/guidance/landfill-operators-environmental-permits/develop-and-maintain-management-plans https://www.gov.uk/guidance/landfill-operators-environmental-permits/calculate-your-financial-provision
	1.3 Explain the relationship between permit conditions and operating techniques	https://www.gov.uk/guidance/landfill-operators-environmental-permits/develop-and-maintain-management-plans
2. Understand the requirements for site engineering at a hazardous landfill	2.1 Describe the principles of containment	https://www.legislation.gov.uk/nisr/2003/496/schedule/2/made https://www.gov.uk/guidance/landfill-operators-environmental-permits/develop-and-maintain-management-plans#manage-landfill-gas
	2.2 Describe the characteristics of liner and capping designs	https://www.gov.uk/guidance/landfill-operators-environmental-permits/develop-and-maintain-management-plans#manage-landfill-gas
	2.3 List the elements of site construction that require regulatory approval	Landfill operators: environmental permits - Manage landfill gas - Guidance - GOV.UK (www.gov.uk)



		https://www.daera-ni.gov.uk/articles/regulation-landfills-northern-ireland https://assets.publishing.service.gov.uk/media/5a7e3fa7ed915d74e622513f/LFE5.pdf https://www.gov.uk/guidance/landfill-operators-environmental-permits/design-and-build-your-landfill-site https://www.gov.uk/guidance/landfill-operators-environmental-permits/construction-quality-assurance-cqa
3. Understand the waste reception procedures for a hazardous landfill	3.1 Define hazardous waste in relation to landfill activities	No test questions on this AC
	3.2 List the types of waste banned from a hazardous landfill	https://www.gov.uk/dispose-hazardous-waste/consignees https://www.daera-ni.gov.uk/sites/default/files/publications/daera/WM3%20NI%20v1.2.pdf
	3.3 Describe the legislative requirements, codes of practice and guidance applicable to the reception of hazardous waste at a hazardous landfill	https://www.gov.uk/guidance/landfill-operators-environmental-permits/accept-the-right-waste Dispose of waste to landfill - GOV.UK (www.gov.uk) https://www.daera-ni.gov.uk/publications/waste-summary-returns-form-and-guidance
	3.4 Describe the regulatory requirements and organisational procedures for dealing with unauthorised wastes	https://www.daera-ni.gov.uk/sites/default/files/publications/doe/waste-guidance-consigning-hazardous-waste-2015.pdf GOV.UK Hazardous Waste Consignment Notes
	3.5 Describe the waste inspection, identification procedures and handling requirements for the types of hazardous waste received on site (including asbestos). Included in site management plan for site	https://www.daera-ni.gov.uk/sites/default/files/publications/doe/duty-of-care-code-of-practice-june2016.pdf https://www.gov.uk/how-to-classify-different-types-of-waste https://www.gov.uk/government/publications/waste-classification-technical-guidance
	3.6 Describe the uses, purposes and processing requirements for documents relating to the reception and validation of hazardous waste received on the site	https://www.gov.uk/guidance/dispose-of-waste-to-landfill#banned-waste
	3.7 Describe the records required by legislation and by organisational	



	procedures relating to the reception, inspection, and validation of hazardous wastes	
4. Understand how to manage a hazardous landfill	4.1 Describe the procedures for managing vehicles on a landfill site	https://www.hseni.gov.uk/topic/workplace-transport HSE: Workplace Transport Safety
	4.2 Describe the implications of 'settlement' and 'compaction' for: - Restoration plan - Gas and leachate management	https://www.daera-ni.gov.uk/articles/regulation-landfills-northern-ireland https://assets.publishing.service.gov.uk/media/5a7db799ed915d2ac884d208/LFE4_earthworks_on_landfill_sites.pdf
	4.3 Describe the recommendations for managing landfill stability	https://assets.publishing.service.gov.uk/media/5a7e3fa7ed915d74e622513f/LFE5.pdf https://www.legislation.gov.uk/nisr/2003/496/schedule/2/made Landfill operators: environmental permits - Design and build your landfill site - Guidance - GOV.UK (www.gov.uk) https://www.metoffice.gov.uk/weather/guides/observations/how-we-measure-wind Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Monitor and report your performance - Guidance - GOV.UK (www.gov.uk) HSE: Workplace Transport Safety https://www.hseni.gov.uk/topic/workplace-transport GOV.UK - Using Geomembranes in landfill engineering LFE5
	4.4 Explain when landfill stability may be a problem	No test questions on this AC
	4.5 Explain why it is important to cover waste with suitable materials	https://www.hseni.gov.uk/topic/workplace-transport HSE: Workplace Transport Safety
	4.6 List the types of waste that might damage landfill liners and restoration layers	https://www.daera-ni.gov.uk/articles/regulation-landfills-northern-ireland



	<p>4.7 Describe the procedures for controlling:</p> <ul style="list-style-type: none"> - Mud and other debris - Noise - Dust - Odour - Litter 	<p>https://assets.publishing.service.gov.uk/media/5a7db799ed915d2ac884d208/LFE4_earthworks_on_landfill_sites.pdf</p> <p>https://assets.publishing.service.gov.uk/media/5a7e3fa7ed915d74e622513f/LFE5.pdf</p> <p>https://www.legislation.gov.uk/nisr/2003/496/schedule/2/made/Landfill_operators:_environmental_permits_-_Design_and_build_your_landfill_site_-_Guidance_-_GOV.UK_(www.gov.uk)</p> <p>https://www.metoffice.gov.uk/weather/guides/observations/how-we-measure-wind</p> <p>Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk)</p> <p>Landfill operators: environmental permits - Monitor and report your performance - Guidance - GOV.UK (www.gov.uk)</p> <p>HSE: Workplace Transport Safety</p> <p>https://www.hseni.gov.uk/topic/workplace-transport</p> <p>GOV.UK - Using Geomembranes in landfill engineering LFE5</p>
	<p>4.8 Explain why it is important to plan the phasing of filling operations</p>	<p>No test questions on this AC</p>
<p>5. Understand the procedures for managing landfill gas from a hazardous landfill</p>	<p>5.1 Explain why it is important to manage landfill gas</p> <p>5.2 List the information that should be included in a landfill gas management plan</p> <p>5.3 List the information that should be included in a landfill gas monitoring and sampling plan</p> <p>5.4 Outline the actions to take if a perimeter borehole contains landfill gas components (methane, CO₂) at a range of levels (Including above a compliance limit)</p>	<p>https://www.legislation.gov.uk/nisr/2003/496/contents/made</p> <p>https://www.daera-ni.gov.uk/articles/regulation-landfills-northern-ireland</p> <p>https://www.gov.uk/government/publications/management-of-landfill-gas-lftgn-03</p> <p>https://www.gov.uk/guidance/landfill-operators-environmental-permits/develop-and-maintain-management-plans</p> <p>Review and investigation of deep-seated fires within landfill sites</p> <p>https://www.legislation.gov.uk/nisr/2003/496/contents/made</p>



	5.5 Explain why it is important to collect, utilise and treat landfill gas	
	5.6 Explain why it is important to control landfill gas emissions and manage gas field balancing	
	5.7 Describe the procedures for dealing with deep and shallow fires within a hazardous landfill	
6. Understand the procedures for managing leachate from a hazardous landfill	6.1 Describe the requirements for managing leachate	Landfill operators: environmental permits - Monitor and report your performance - Guidance - GOV.UK (www.gov.uk) https://www.daera-ni.gov.uk/articles/regulation-landfills-northern-ireland https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/321602/LFTGN02.pdf https://eippcb.jrc.ec.europa.eu/reference/waste-treatment-0 IPPC S5.03 Guidance for the Treatment of Landfill Leachate Part 1 (sepa.org.uk) A technical assessment of leachate recirculation Landfill operators: environmental permits - Manage leachate - Guidance - GOV.UK (www.gov.uk)
	6.2 Explain why leachate levels must be maintained below a limit	
	6.3 Describe the procedure for dealing with: <ul style="list-style-type: none"> - Leachate above control levels - A breach of compliance limit occurring 	
	6.4 Describe the principles of leachate treatment and the associated pollution risks	
	6.5 Describe when a leachate re-circulation system may be permitted and any requirements for its use	
7. Understand how to monitor groundwater and surface water at a hazardous landfill	7.1 Explain why monitoring groundwater and surface water is needed at a hazardous landfill site	https://www.daera-ni.gov.uk/articles/regulation-landfills-northern-ireland https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/321602/LFTGN02.pdf
	7.2 Differentiate between monitoring for: <ul style="list-style-type: none"> - Operational performance - Permit compliance limits 	



8. Understand the procedure for closure and aftercare of a hazardous landfill	8.1 Explain why it is important to develop a restoration and aftercare scheme for a hazardous landfill	No test questions on this AC
	8.2 Describe the records required in relation to the closure and aftercare of landfill sites	Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk) Landfill and deposit for recovery: aftercare and permit surrender - GOV.UK (www.gov.uk)
	8.3 Describe the process of surrendering an environmental permit for a hazardous landfill	Landfill operators: environmental permits - Close your landfill site - Guidance - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Monitor and report your performance - Guidance - GOV.UK (www.gov.uk) Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste (legislation.gov.uk)
9. Understand the main causes of accidents in relation to hazardous landfill activities and how to prevent them	9.1 Identify the causes of accidents in relation to hazardous landfill activities	Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk) HSE: DSEAR for the waste management industry The Dangerous Substances and Explosive Atmospheres Regulations 2002 - Fire and explosion (hse.gov.uk) HSE: Landfill fires – controlling the risk
	9.2 Identify the methods used to prevent accidents in relation to hazardous landfill activities	No test questions on this AC
	9.3 Describe the dangerous substances and areas of explosive atmospheres that may exist on a landfill site	Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk) HSE: DSEAR for the waste management industry
	9.4 Outline the operator's responsibilities for area classification and marking zones	The Dangerous Substances and Explosive Atmospheres Regulations 2002 - Fire and explosion (hse.gov.uk) HSE: Landfill fires – controlling the risk
	9.5 Explain how to control ignition sources to reduce fire risk at a hazardous landfill site	https://www.esauk.org/application/files/1815/3579/2854/20716_lcop_f_or_landfill_gas.pdf

