Landfill Closed

Learning Outcome	Assessment Criteria	Source
1. Understand the legislative and regulatory requirements for a closed landfill	1.1 Describe the legislative requirements, regulations, codes of practice and guidance applicable to landfill management during aftercare for sites that closed: - Prior to July 2001 - After July 2001	Landfill Directive pre-application service charging scheme tables of charges Landfill operators: environmental permits - Close your landfill site - Guidance - GOV.UK (www.gov.uk) Waste Framework Directive, article 13 written management system or working plan Waste Management Licensing Regulations 1994
	1.2 List the records that must be kept for a closed landfill and for how long	Landfill operators: environmental permits - Close your landfill site - Guidance - GOV.UK (www.gov.uk) NRW- Understanding the landfill Directive schedule 5, part 2 of the Environmental Permitting Regulations 2016.
	1.3 List the information that may need to be submitted to the regulator	Landfill operators: environmental permits - Monitor and report your performance - Guidance - GOV.UK (www.gov.uk)
	1.4 Describe the permit surrender process and data requirements	How to surrender your environmental permit - Additional guidance for landfill and other permanent deposits of waste (5.02) (cyfoethnaturiol.cymru) Landfill and deposit for recovery: aftercare and permit surrender - GOV.UK (www.gov.uk) continuous monitoring
2. Understand the requirements for site engineering at a closed landfill	2.1 Describe the characteristics of any capping system	Landfill operators: environmental permits - How to do a stability risk assessment: landfill sites for hazardous and non-hazardous waste - Guidance - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Design and build your landfill site - Guidance - GOV.UK (www.gov.uk) Using geosynthetic clay liners in landfill engineering (LFE3) Earthworks in landfill engineering (LFE4) Using geomembranes in landfill engineering (LFE5) Using non-woven protector geotextiles in landfill engineering (LFE7)
	2.2 Explain how to maintain a capping system during the closure and aftercare period	
	2.3 List the elements of site construction that require regulatory approval	

		Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) 2002 Landfill operators: environmental permits - Construction quality assurance (CQA) - Guidance - GOV.UK (www.gov.uk) 354_09 LFE4 - Earthworks on landfill sites (publishing.service.gov.uk) Landfill and deposit for recovery: aftercare and permit surrender - GOV.UK (www.gov.uk) how the Environment Agency makes decisions on landfill engineering
3. Understand how to manage a closed landfill	3.1 Describe the implications of standing water on a capping system	Landfill operators: environmental permits - Close your landfill site - Guidance - GOV.UK (www.gov.uk) How to comply with your environmental permit. Additional guidance for Landfill. Landfill operators: environmental permits - Monitor and report your performance - Guidance - GOV.UK (www.gov.uk) aftercare permit article 14 of the Landfill Directive financial provision Landfill operators: environmental permits - Review your hydrogeological risk assessment - Guidance - GOV.UK (www.gov.uk) hazardous substances non-hazardous pollutants Monitoring landfill gas surface emissions: LFTGN 07 - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Restore your landfill site - Guidance - GOV.UK (www.gov.uk) little or no additional benefit topographic survey EA EP171 (publishing.service.gov.uk) Guidance for monitoring trace components in landfill gas surface water and water balance assessment leachate groundwater surface water Read guidance on monitoring of landfill leachate, groundwater and surface water
	3.2 List the information that should be included in an up to date: - Closure plan - Aftercare plan - Closure report	
	3.3 Explain how to maintain a: - Closure plan - Aftercare plan - Closure report	
	3.4 Explain why groundwater and surface water monitoring is needed on a closed landfill site	
	3.5 Differentiate between monitoring for: - Compliance - Operational performance - Infrastructure failure - Surrender of the environmental permit	
	3.6 Describe the implications of 'settlement' and 'compaction'	

	within a landfill and the impact on aftercare	
	3.7 List the data that should be recorded for each gas monitoring point	
	3.8 Describe the information required in a: - Conceptual site model - Hydrogeological risk assessment - Subsequent reviews	
4. Understand the procedures for managing emissions from a closed landfill	4.1 Describe the requirements for on-going surface water management	Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk) Landfill operators: environmental permits - Manage leachate - Guidance - GOV.UK (www.gov.uk) Environment Agency - Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water GOV.UK - LFTGNo3: Guidance on the management of landfill gas EA EP171 (publishing.service.gov.uk) pres 17 (publishing.service.gov.uk) dispose of the leachate treat your leachate consent to discharge discharge to the sewerage network best available techniques low calorific engines or flares biological methane oxidation
	4.2 Explain why it is important to monitor and treat any leachate formed within the site	
	4.3 Explain how leachate generated on site should be managed to prevent pollution	
	4.4 Explain why landfill gas must be collected, utilised, and treated	
	4.5 List the elements that should be covered in a landfill gas management plan during aftercare	
	4.6 List what should be included in a landfill gas monitoring and sampling plan	
	4.7 Describe the actions to take if a perimeter borehole contains landfill gas components at a	

	range of levels (including above a compliance limit)	
	4.8 Describe the procedures for detecting and dealing with deep and shallow landfill fires	
5. Understand the main causes of accidents in relation to closed landfill activities and how to prevent them	5.1 Identify the causes of accidents in relation to closed landfill activities	Landfill operators: environmental permits - Develop and maintain management plans - Guidance - GOV.UK (www.gov.uk) cover waste promptly cap completed areas promptly waste acceptance procedures Environment Agency advice on managing accidents at landfills for inert waste.
	5.2 Identify the methods used to prevent accidents in relation to closed landfill activities	