Technical Guidance

Subject: The Landfilling of Asbestos Waste

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Responsibility:
The Office of Licensing and Guidance
The Office of Environmental Enforcement
Landfill Operators

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Introduction
Council Decision 2003/33/EC establishes criteria and procedures for the acceptance of granular waste at landfills pursuant to Article 16 and Annex II of the Directive 1999/31/EC on the landfill of waste.

The recent implementation of Section 2 of Council Decision 2003/33/EC on establishing criteria and procedures for the acceptance of waste at landfills has permitted (from 16th July 2005) the landfilling of suitable asbestos waste, a hazardous material, in non-hazardous landfills (but only if the cell is sufficiently self-contained). However, no limits are specified regarding the amount of this waste type that can be deposited.

Article 48(1) of the Waste Management (Licensing) Regulations 2004 require the classification of all landfill facilities. It is therefore necessary to articulate how much suitable hazardous waste can be deposited in a non-hazardous landfill before its designation has to be altered. There are also EIA implications that need to be considered in relation to the acceptance of hazardous waste at a non-hazardous landfill. This document sets out a discussion basis and guidance in relation to the classification of landfills accepting asbestos waste.

Asbestos
Asbestos is a term used to describe a number of naturally occurring fibrous silicate minerals. There are three main types of asbestos; chrysolite (white asbestos), amosite (brown asbestos) and crocidolite (blue asbestos). Asbestos is known for its unique properties of being resistant to abrasion, inert to acid and alkaline solutions and stable at high temperatures and because of these attributes it was used widely in construction and industry. Most common applications include moulded thermal lagging around pipes and boilers, sprayed asbestos fire protection, insulation panels and ducts as well as cement bonded asbestos used as roofing and gutters.

The proportion of asbestos in construction materials can vary hugely between products. Asbestos insulation and lagging can contain up to 85% asbestos. Asbestos cement, depending on its use, can contain anything from 20-30% asbestos for roofing to 50% asbestos for products used near heat sources such as fireplaces (from 'Guidance for Controlling Asbestos-Containing Materials in Buildings' US, EPA). Construction Material Containing Asbestos (CMCA) is classified as hazardous waste under European waste legislation, and a specific EWC code applies (EWC 17-06-05).

Landfilling Rules
At the moment there is no approved hazardous waste landfill in the State. However, certain hazardous waste is suitable for disposal in non-hazardous landfills: so called stable non-reactive hazardous waste (SNRHW). Article 6(c)(iii) of Council Directive 1999/31/EC on the landfill of waste specifies those wastes which may be accepted in a non-hazardous landfill and allows for certain hazardous wastes to be deposited provided they are stable and non-reactive.

> *(c) [a] landfill for non-hazardous waste may be used for:*
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> *(i) municipal waste;*
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> *(ii) non-hazardous waste of any other origin, which fulfill the criteria for the acceptance of waste at landfill for non hazardous waste set out in accordance with Annex II;*
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> *(iii) stable, non-reactive hazardous wastes (e.g. solidified, vitrified), with leaching behaviour equivalent to those of the non-hazardous wastes referred to in point (ii), which fulfil the relevant acceptance criteria set out in accordance with Annex II. These hazardous wastes shall not be deposited in cells destined for biodegradable non-hazardous waste,*

CMCA can be determined to meet the definition and criteria of a stable[1] non-reactive hazardous waste suitable for disposal in a non-hazardous landfill provided it is landfilled in accordance with the requirements of Section 2.3.3 of the Annex to the Council Decision, 2003/33/EC, on the criteria and procedures for the acceptance of waste at landfills.

> *2.3.3 Asbestos waste*
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> *Construction materials containing asbestos and other suitable asbestos waste may be landfilled at landfills for non-hazardous waste in accordance with Article 6(c)(iii) of the Landfill Directive without testing. For landfills receiving construction materials containing asbestos and other suitable asbestos waste the following requirements must be fulfilled:*
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> - *the waste contains no other hazardous substances than bound asbestos, including fibers bound by a binding agent or packed in plastic,*
> - *the landfill accepts only construction material containing asbestos and other suitable asbestos waste. These wastes may also be landfilled in a separate cell of a landfill for non-hazardous waste, if the cell is sufficiently self-contained,*
> - *in order to avoid dispersion of fibres, the zone of deposit is covered daily and before each compacting operation with appropriate material and, if the waste is not packed, it is regularly sprinkled,*
> - *a final top cover is put on the landfill/cell in order to avoid the dispersion of fibres,*
> - *no works are carried out on the landfill/cell that could lead to a release of fibres (e.g. drilling of holes),*
> - *after closure a plan is kept of the location of the landfill/cell indicating that asbestos wastes have been deposited,*
> - *appropriate measures are taken to limit the possible uses of the land after closure of the landfill in order to avoid human contact with the waste.*
>
> *For landfills receiving only construction material containing asbestos, the requirements set out in Annex I, point 3.2 and 3.3 of the Landfill Directive can be reduced, if the above requirements are fulfilled.*

How Much Hazardous Waste Can Be Accepted At A Non-Hazardous Facility?

No limits are specified in the Directive regarding the amount of stable non-reactive hazardous waste that can be accepted at a non-hazardous facility.

Furthermore, both EU and National (Article 48, Waste Management (Licensing) Regulations, 2004) legislation states that every landfill has to be classed as inert, hazardous or non-hazardous but no guidance or threshold limits are given.

It is, therefore, necessary to determine what amount of stable non-reactive hazardous waste can be deposited at a facility classified and designed as a non-hazardous facility before that classification and design must be revised to a hazardous class facility. Of particular significance in this need to determine a limit, is that hazardous waste, unlike other waste types, generally does not degrade nor does the hazardous classification diminish when placed in a landfill. Such waste will represent a perpetual risk, and consequently facilities will need active and sustained management for the foreseeable future. This kind of a risk profile is not normally attached to a conventional non-hazardous waste facility.

[1] *The term stable, does not mean that the waste is stabilized as provided in European Commission Decision (2001/118/EC) amending Decision 2000/532/EC as regards the list of wastes. That defines stabilized wastes to be ones that have been treated so that they are no longer hazardous (i.e., stabilized wastes have had the hazard removed, whereas, in stable hazardous wastes the hazard is still present).*

It is also important to note the requirements of the Environmental Impact Assessment Regulations, (1989 to 2001), Part I, Class 9 which states that "*A waste disposal installation for the incineration or chemical treatment of hazardous waste, or the filling of land with such waste"* is considered to be a development for the purposes of these regulations. Council Decision of 23 July 2001 amending Commission Decision 2000/532/EC as regard the list of wastes (2001/573/EC) has classified CMCA waste as a hazardous waste. This further reiterates the need for the establishment of limits to ascertain how much stable non-reactive hazardous waste can be accepted at a non-hazardous landfill before it substantially alters the classification of that landfill and/or triggers the requirement for an Environmental Impact Statement (EIS).

Having regard to the arguments advanced, and the hazardous classification of the material, the view has been taken that where a non-hazardous landfill proposes to accept more than 10% (total intake) or 50,000 tonnes (whichever is the least) of stable non-reactive hazardous waste its classification will change to hazardous - if not for the entire landfill but at the very least for the cell containing the hazardous waste. Moreover, the Local Authority in whose functional area the facility is situated should be made aware of the requirements of the Environmental Impact Assessment Regulations, (1989 to 2001), Part I, Class 9.

The reasoning for these particular limits is that the specific engineering requirements of a separate cell for 50,000 tonnes of hazardous waste would be economically and technically feasible. The 10% is based on the view that from an operational control perspective any waste stream contributing >10% intake is significant with respect to the classification and risk profile of a site.

Additional Matters

A facility that accepts SNRHW is unlikely to be in a position to surrender its licence - as the hazardous waste, as cited above, will represent a perpetual risk. Consequently, there is a need for sustained institutional control to ensure the deposited waste remains undisturbed. The financing of such aftercare must be facilitated into the costing structure for the site.

Additionally, and as stated earlier the environmental risk profile for the site changes when hazardous waste is deposited. This will influence the indemnities required for both accidental and planned liabilities.

Comments and Feedback

Comments and feedback are welcome on these guidelines and should be addressed to Dr. Karen Creed, Office of Licensing and Guidance, P.O. Box 3000, Environmental Protection Agency, Johnstown Castle Estate, Wexford.