

# Impact of Hazardous Waste Rules on VAP

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# Contained-In Policy

- Defines as HW environmental media and debris become contaminated with hazardous waste or hazardous chemical products and as a result must be managed as HW
- Such materials include media and debris:

Soil	Groundwater	Surface water
Tree stumps	PPE	Gravel
Equipment	Containers	Concrete



# Contained-In Policy

- **Media and debris is said to “contain” a HW and therefore is a HW if:**
  - **Contaminated by:**
    - **Product (that is a listed HW when disposed)**
    - **Listed HW**
  - **It exhibits a HW characteristic**



# Contained-In Policy

- **Not defined as a HW:**
  - Media and debris contaminated with a characteristic HW or product (not otherwise listed) if the media or debris does not exhibit a HW characteristic at the point of generation
  - This does not apply to HW or products released after 1980



# Contained-In Policy

- Contaminated soil no longer “contains” a HW when the Agency makes such a determination (Contained-in decision)
- Contained-in decisions do not mean that hazardous constituents are not present but that the concentrations present do not warrant managing the contaminated soil as a HW



# Contained-In Policy

- **Approaches to making Contained-in decisions:**
  - Environmental media a risk-based approach
  - Debris has been treated with technology based standards in OAC 3745-270-45 or director determines based on extent of contamination is no longer contaminated



# Land Disposal Restrictions

## Purpose

- **Reduce the toxicity or mobility of HWs or hazardous constituents in order to minimize the short and long term threats to HH&E from the land disposal of HWs**



# Land Disposal Restrictions

## Purpose

- **Accomplish purpose by.....  
requiring the treatment of HWs to  
specified levels before they are land  
disposed (i.e., placed on the land)**



# Land Disposal Restrictions

## Land Disposal vs. Disposal

- **Land Disposal:** the placement of HW into a land based waste management unit (landfill, surface impoundment, waste pile)
- **Disposal:** the leaking, discharging, emitting, injection, spilling (etc.) of HW into the land, water, or air



# Land Disposal Restrictions

## Applicability

- **LDRs apply ...**
  - only to HWs
  - at the point of HW generation
  - when any portion of a HW will be land disposed



# Land Disposal Restrictions

## Treatment Standards

- **Given as a technology or numeric level**
- **Specified for all listed & characteristic HWs**
- **Must be met prior to HW being land disposed**
- **Treatment standards are not risk based**



# Land Disposal Restrictions

## Regulatory Status of Treated HW

- Treated listed HWs are still defined as listed HWs
  - Mngt. & disposal regulated under HW rules
- Treated characteristic HWs are no longer defined as HWs
  - Disposal regulated under non-hazardous waste program
- HW soil and debris that meet the LDR standards may still exhibit a characteristic



# Land Disposal Restrictions

## General Requirements

- **Waste analysis plan**
- **Notification requirements**
- **Verification of treatment**
- **Recordkeeping requirements**
- **Certification statement**



# Hazardous Debris

OAC 3745-270-45

FR Aug 18,1992

- **Definition**
- **Constituents to be Treated**
- **Treatment Standards**
- **Treatment Residuals**
- **Documentation/Recordkeeping**



# Hazardous Debris

## Purpose

- **Alternative LDR treatment standards were originally developed to overcome problems with treating larger remediation waste to LDR treatment standards for debris**
- **Generator may choose to treat debris to LDR treatment standards for wastes that meet the definition of debris**



# Hazardous Debris

## Definition of Debris

- **Solid material intended for disposal**
- **Manufactured object; plant or animal or natural geological material, > 60mm (2.5")**
- **Ruptured containers & intact containers holding < 75% of their volume**
- **A mixture of materials that is primarily debris by visual inspection**



# Hazardous Debris

## Definition of Debris

- **Materials not defined as debris:**
  - Intact containers that hold >75% of the volume
  - Any industrial waste for which a LDR treatment standard exists, even if > 60mm (slags and wastewater treatment sludge)



# Hazardous Debris

- **Hazardous debris means debris that:**
  - contains a listed HW, or
  - contains a product that is listed HW when disposed, or
  - exhibits a HW characteristic



# **Hazardous Debris**

## **Constituents to be Treated**

- **Constituent(s) for which debris exhibits toxicity characteristic**
- **Constituents that appear in LDR treatment standard for the listed HW that contaminates the debris**
- **Remove characteristic of ignitability, reactivity or corrosivity**



# **Hazardous Debris**

## **Alternative LDR Treatment Standards**

- **Specified technologies, not numerical standards**
- **Performance-based rather than technology design and operation based**
- **Seventeen technologies are given in OAC 3745-270-45**



# Hazardous Debris

## Alternative LDR Treatment Standards

- **Appropriate selection of treatment standard (i.e., technology) based on:**
  - **Constituent(s) to be treated**
  - **Type of debris**
- **May need to use treatment train; if so, immobilization must be last**



# **Hazardous Debris**

## **Regulation of Treatment Residuals**

- **Non-debris residues:**
  - **Must be separated from treated debris residue**
  - **If a HW, manage per HW rules**
  - **LDR treatments standards for industrial wastes apply (OAC 3745-270-40)**



# Hazardous Debris

## Regulation of Treatment Residuals

- **Debris residues:**
  - Treated debris is not a HW if it does not exhibit HW characteristic
  - Dispose of as non hazardous waste
  - Exception: listed debris treated by immobilization is still listed HW; must be managed in Subtitle C landfill



# **Hazardous Debris**

## **Documentation/Recordkeeping**

- **No WAP is required for generator**
- **One-time Notification to director**
- **Record inspections, evaluations, analyses**
- **Record data or information identifying key operating parameters of the treatment unit**
- **Certification of compliance**



# Contaminated Soil

OAC 3745-270-49

FR May 26, 1998

- **Definition**
- **Constituents to be Treated**
- **LDR Soil Treatment Standards**
- **Regulation of Treatment Residuals**
- **LDR Variance & Contained-In Decisions**



# Contaminated Soil

## Purpose

- **Overcome treatment difficulties associated with soil matrix**
- **Promote removal and treatment of contaminated soil and facilitate cleanups**



# Contaminated Soil

## Alternative LDR Treatment Standards

- **An alternative standard – generator may choose to treat waste per LDR standards for industrial wastes**
- **Important: The standards are neither cleanup action levels nor clean levels...they are required treatment levels necessary prior to land disposal**



# Contaminated Soil

## Definition of Soil

Unconsolidated earth material composing the superficial strata consisting of clay, silt, sand, or gravel size particles as defined by the U.S. Soil Conservation Service, or

Mixture of such materials with liquids, sludge, or solids which is inseparable by simple mechanical processes and is made up primarily of soil by volume based on visual inspection



# **Contaminated Soil**

## **Definition of Contaminated Soil**

- **Contains a listed HW upon generation**
- **Exhibits a HW characteristic upon generation**
- **Exhibited a HW characteristic upon generation that was subsequently removed by treatment (may be a solid waste)**



# Contaminated Soil

## Point of Generation

- **Point of Generation: when HW soil is removed from the land**
  - Exception – when HW soil is removed from the land and only moved around within the contaminated area (AOC policy)
- **LDRs (generally) attach at the point of generation**



# Contaminated Soil

## Constituents Subject to Treatment

- Each hazardous constituent
  - reasonably expected to be present
  - initially found at conc. greater than 10X the LDR universal treatment standards (UTS)
- This includes hazardous. constituents that are present in the soil but did not originate from the contaminating waste or material



# Contaminated Soil

## Alternative LDR Treatment Standards

- Non-metals: 90% reduction in total constituent conc. but no less than 10X UTS
- Metals: 90% reduction in total constituent conc. or TCLP constituent level but no less than 10X UTS
- Remove characteristic of I, C, and R



# Contaminated Soil

## Determination of 90% Reduction Treatment

- Use normal soil characterization techniques and procedures for representative sampling and site characterization to establish baseline
- 90% reduction does not need to be determined from lowest constituent conc. found



# Contaminated Soil

## Treatment Processes

- Any type of legitimate treatment process that removes, destroys or immobilizes hazardous constituent can be used
- Impermissible dilution prohibition
  - normal mixing of soil during cleanup is not impermissible dilution



# Contaminated Soils

## Measure of Compliance

Grab sample of treated soil



# Contaminated Soil

## Regulation of Treatment Residuals

- **Types of treatment residuals**
  - Soil residues
  - Non-soil residues



# Contaminated Soil

## Soil Residues

Listed soil residue:

- meets LDR treatment standards;
- subject to disposal at a Subtitle C landfill;
- Manage according to the HW rules

Decharacterized soil residue:

- meets LDR treatment standards;
- may be disposed of at a MSWLF (Subtitle D), or
- placed back on the land



# Contaminated Soil

## Soil Residues

**Listed soil residue that:**

- meets LDR treatment standards
- Agency determines soil residue does not contain a HW (Contained-in decision) and
- Doesn't exhibit characteristic

**Can be:**

- Placed back on the land
- Disposed of in a MSWLF (Subtitle D)



# Contaminated Soil

## Soil Residues

- **Treated TC characteristic soils may still exhibit the TC after treatment since 10X UTS is often above the TC level**
  - Such soil residues are still defined as HW
  - Treat soil residues to below TC level to render non hazardous



# Contaminated Soil

## Non-soil Residues

- Residue will be listed HW; characteristic HW; non hazardous waste
- Apply HW rules as you would for any other industrial or “as generated” waste



# **Contaminated Soil**

## **Recordkeeping/Documentation**

- **One-time notification**
- **No Waste analysis plan required**
- **Record & keep information demonstrating that soil was properly treated or contained-in decision given**
- **Certification**



# How to Minimize Impact of HW Rules

- Area of Contamination (AOC) Policy
- Generator treatment
- In situ treatment
- LDR Variances



# Area of Contamination Policy

## Purpose

Facilitate clean ups by reducing the impact of the HW requirements, including permitting

AOC is viewed as a landfill unit; HW (including LDRs) requirements are not triggered when HWs are moved within a landfill unit

Area of Contamination is an area of generally dispersed contamination



# AOC Policy

HW requirements, including LDRs, are triggered when HW soils are:

- removed from the AOC, or
- placed into another HW management unit as defined in 3745-50-10



# In situ Treatment

HW permitting requirements do not apply

LDR treatment standards do not apply



# Generator Treatment

- A HW generator can treat its HW without obtaining a permit
- The treatment must be done:
  - In a tank, container, or containment building
  - On-site where the HW was generated
  - According to operational standards for the units

