MANAGEMENT AND DISPOSAL OF NONHAZARDOUS INDUSTRIAL WASTE

Charles Bock, P.E. MDEQ Waste Division September 28, 2018

Requirements for Waste Generators

- Each industry, business or organization in the state that generates waste is responsible for properly characterizing their solid wastes and determining how the wastes must be disposed.
- Each industry, business or organization must insure that its wastes are managed in a manner protective of the environment and public health and in a manner that prevents public nuisances.

Interim Storage of wastes should be:

- Properly <u>contained</u> to prevent loss of windblown materials and litter
- Properly contained and sited to <u>prevent run off</u> of contaminants and <u>wash out</u> of wastes
- Properly conducted in a manner consistent with the site Storm Water Pollution Prevention Plan (SWPPP)
- Properly <u>secured</u> to prevent animals/people from rummaging through wastes
- Properly located to <u>prevent odors and vectors</u> from becoming public nuisances
- Properly maintained to prevent <u>combustion or burning</u> of the wastes

Requirements for Disposal

- Remove the wastes on an adequate frequency to prevent problems or nuisances. This frequency may vary from daily to once per year or less depending on the type of solid wastes;
- Transport the wastes to a properly permitted solid waste facility or to a legitimate recycling facility;
 - On-Site Facility (*Must have a permit or be exempt*)
 - Off-Site Commercial Facility (*permitted Landfills, Transfer Stations, Land Application sites, Recycling Facilities, etc*).

Industry Wastes could include....

- <u>Industrial process wastes</u> includes materials such as sawdust, sludges, ashes, wood chips, wood cut-offs, ashes, lime muds, foundry sands, shredder residue, off-spec raw material, and unusable product
- <u>Extraction or clean-up wastes</u> such as contaminated soil and debris from spills, leaks, or un-contained discharges
- <u>Miscellaneous wastes</u> like floor sweepings, cleaning solvents and solutions, empty containers, packaging materials, and equipment maintenance wastes
- Automotive wastes such as tires, used oil and filters, batteries, etc;

Industry Wastes could include...

- Certain <u>architectural debris</u> (also known as construction and demolition debris, or "C&D") such as asbestos, lead-based paint debris, fluorescent light bulbs, light ballasts, treated wood products, paint cans, and other materials;
- <u>Medical wastes</u> such as syringes, vials, blood-soaked materials, pathological wastes, and pharmaceuticals; and
- <u>Other special wastes</u> that might include empty containers, maintenance wastes, CESQG wastes, electronic wastes, universal wastes, animal carcasses, NORM wastes, etc.

Off-Site Commercial Disposal

- May have to sample, prepare, and treat industrial process waste and other special wastes in order to dispose of the materials locally;
- Be aware that there may be permit restrictions or service area restrictions for a receiving solid waste facility or landfill;
- Maintain appropriate records that document proper solid waste management and disposal practices by the generator.

Options for Off-Site Disposal

- Municipal landfills permitted facility
- Rubbish sites permitted facility
- Beneficial fill regulatory exemption
- Land application permitted facility
- Beneficial use regulatory exemption
- Recycling

Municipal Solid Waste Landfill



Types of Wastes Accepted

- Residential and commercial garbage and wastes
- Nonhazardous industrial wastes
- CESQG wastes
- Treated medical wastes
- Sewage sludges
- Liquid wastes (only when solidification is available)

- Construction and demolition debris
- Asbestos, lead paint debris, etc.
- Household Hazardous Wastes (HHW)
- Electronics
- Processed waste tires
- Other putrescible wastes (animal carcasses, sludges, manures, etc)

Industrial Process Wastes

- Industrial waste generators must profile all "industrial process wastes" with the landfill prior to disposal;
- Landfill owner is required to submit to MDEQ a Waste Profile Form and supporting information describing:
 - Generator Information and Contacts:
 - Waste Generating Process;
 - Waste Description and Characterization analysis, MSDS sheets, physical sample, process knowledge statement, etc.;
 - Proposed Disposal Frequency/Amounts;
 - Description of any special characteristics of the wastes and how those characteristics will be addressed and mitigated;
 - Certification from the generator.

Unauthorized Waste

- Hazardous waste as defined by and subject to RCRA Subtitle C
- PCB wastes
- Liquid wastes, except if solidification is available
- Regulated asbestos containing materials, except under approved plan
- Whole waste tires

Features of the MSW Landfill

- Has to meet all of the siting criteria
- Composite Liner System
 - (Two feet of compacted clay, synthetic liner, drainage media)
- Leachate Collection and Disposal System
- Storm Water Management System
- Groundwater Monitoring System
- Methane Monitoring System
- Methane Collection and Disposal/Use System
- Daily, Intermediate and Final Cover Systems



Operating Conditions of the MSW Landfill

- Adequate compaction/compaction equipment;
- Program for detecting/preventing unauthorized waste
- Daily cover systems (earthen, tarps, spray-on, inert wastes);
- Waste monitoring system (radiation monitors, waste profile process, inspections);
- Confine waste to manageable area;
- Run-on/run-off controls;
- Recordkeeping/reporting;

There are currently 20 Municipal Solid Waste (MSW) Landfills permitted in the State of Mississippi



Industrial Landfill



Features of the Industrial Landfill

- Liner system designed for the wastes disposed (Standard: Composite Liner System)
- Leachate Management System
- Storm Water Management System
- Groundwater Monitoring System
- Compaction equipment
- Daily/Periodic and Final Cover Systems

Types of Wastes Accepted

- Bulk Industrial Wastes
 - Air pollution control residuals (ash, sludges, etc)
 - Wastewater treatment sludge
 - Drilling muds/materials
 - Site remediation wastes from spills, leaks, etc.
 - Maintenance wastes (floor sweepings, empty containers, etc).
 - Some construction and demolition debris
 - Other facility special wastes

Rubbish Sites



Rubbish sites generally manage construction and demolition types of wastes



What is "rubbish"?

• <u>Rubbish</u>

is a subset of solid wastes defined by statute as: any nonputrescible solid wastes (excluding ashes) consisting of both combustible and noncombustible wastes. Combustible rubbish includes paper, rags, carton, wood, furniture, rubber plastics, yard trimmings, leaves and similar material. Noncombustible rubbish includes glass, crockery, metal, and like material which will not burn at ordinary temperatures (not less than 1600 degrees F.).

Two Classes of Rubbish Sites

- Class I rubbish sites (for construction and demolition debris and other wastes of low solubility)
- Class II rubbish sites (for more inert types of rubbish)

Types of Wastes at Class I Sites

- Construction and demolition debris, (wood, metals, etc.)
- Brick, mortar, concrete, stone, and asphalt
- Cardboard boxes
- Natural vegetation, such as tree limbs, stumps, and leaves
- Appliances which have had the motor removed, except for refrigerators
- Furniture
- Plastic, glass, crockery, and metal, except containers
- Sawdust, wood shavings, and wood chips
- Other materials approved by MDEQ

Prohibited Wastes

- Any waste listed above contaminated by a possible pollutant, such as a food or chemical
- Household garbage, food or drink waste
- Industrial waste, unless approved by MDEQ
- Liquids and sludge
- Contaminated soils
- Paint or paint buckets, oil containers and chemical containers
- Any metal, glass, plastic, or paper container, unless specifically approved

Prohibited Wastes

- Bulk fabrics, unless specifically approved by MDEQ
- Bulk paper wastes, unless specifically approved by MDEQ
- Engines or motors, batteries, electronics, refrigerators and other bulky appliances,
- Whole tires and
- Cut or shredded tires, unless specifically approved by MDEQ
- Hazardous or toxic wastes (including HHW)
- Asbestos containing material from a regulated facility
- Medical Wastes
- Other wastes determined to have an adverse effect on the environment if disposed in a rubbish site

Features of the Class I Site

- Has to meet a subset of the siting criteria
- Demonstrated Natural Liner and/or constructed clay/synthetic liner
- Storm water management system
- Periodic and Final Cover Systems
- Compaction and confinement of the wastes
- Groundwater monitoring is only required where determined needed in permitting process

Features of the Class I Site





There are currently 83 class I rubbish sites permitted in Mississippi with 77 actively operating

Types of Wastes at Class II Sites

- Natural vegetation, such as trees, tree limbs, stumps, and leaves
- Brick and mortar,
- Concrete, stone, and rock
- Used asphalt

Features of the Class II Rubbish Site

- Has to meet a subset of the siting criteria;
- Must not be disposing of wastes in groundwater
- Storm Water Management system
- Compaction and confinement of the wastes
- Periodic and final cover systems



There are currently 61 class II rubbish sites permitted in Mississippi with 54 actively operating.

Beneficial Fill Sites



Parameters For Beneficial Fill Sites

- Exemption is self-implementing
- No siting criteria demonstration is required
- Fill to bring a low area to grade for land improvement purposes
- Fill must use only non-soluble, non-decomposable class II rubbish
- Fill must not cover more than 1 acre*
- Fill must not last for a duration of more than 120 days*
- Fill must not be conducted for commercial purposes

* MDEQ may approve alternate area or duration

Solid Waste Land Application Sites



Features of a Land Application Site

- Has to meet a subset of the siting criteria
- Wastes must be incorporated below ground surface by disking or subsurface injection (unless otherwise approved by MDEQ)
- Upfront sampling and characterization of wastes
- Application rate approved based on waste characteristics and crop types
- Post-application sampling of receiving soils
- Restrictions on access and property use
 - public access, livestock/animals, crops, etc

Types of Wastes Land Applied

- Class B Biosolids (treated municipal wastewater sludges)
- Industrial sludges and ashes
- Water treatment sludge (alum, lime, etc)
- Drilling muds and cuttings

Lagoon Cleanouts/Closure

- Cleanout/closure guidance for municipal and industrial lagoons available through MDEQ
- Plan must be approved by MDEQ including:
 - How sludge/liquids will be managed
 - Quantities of sludge/liquids to be managed
 - Precautions for storm water
 - Closure timeline and post-closure use of lagoon
- Certification of closure is required

Beneficial Use



Beneficial Use is the legitimate use of a solid waste in the manufacture of a product or as a product for construction, soil amendment, or other purposes, where the solid waste replaces a natural or other resource material by its utilization.

MDEQ Beneficial Use Program

- Only non-hazardous, non-putrescible wastes may be considered;
- Must be a by-product of a process;
- Must be a replacement for raw material or other component;
- Must possess suitable chemical/physical properties;
- Must request a Beneficial Use Determination (BUD) from MDEQ;
- Must report annually on quantities distributed for use.

BUD Request Procedures

- Category I "standing" uses do not require submittal of a request nor a review by MDEQ.
- Categories II (Construction), III (Soil Amendment) and IV (Other) require completed request forms and review by MDEQ.
- Applicants must request a Beneficial Use Determination (BUD) on forms provided by MDEQ.
- Applicants can be a generator, processor, distributer, or end user of the material.
- May require small scale demonstration project and review of summary report before BUD issued

Common Materials Covered Under BUD's in Mississippi

- Wood fired boiler ash/residuals
- Coal combustion residuals
- Certain industrial process wastes (FGD, paper mill wastes, process silica, etc)
- Class A/EQ Biosolids
- Various lime by-products
- Foundry sand, slag, etc

Questions?

Charles Bock, P.E. Manager – Policy, Planning, & Special Programs Branch Waste Division Mississippi Department of Environmental Quality (601) 961-5232 <u>cbock@mdeq.ms.gov</u>