Best Management Practices for the Off-Site Reuse of Unregulated Fill

Remediation Division

This document defines **unregulated fill** and provides guidance from the Minnesota Pollution Control Agency (MPCA) Remediation Division regarding Best Management Practices for its off-site reuse.

Off-site reuse of excess soil as fill or aggregate is a common practice at many development and road construction projects. If no known or potential sources of contamination are identified during environmental due diligence and subsequent field observations, then sampling of excess soil for laboratory analysis is not necessary. However, when excess soil originates from a site with known or potential sources of contamination, characterization of the soil is warranted prior to off-site reuse in order to ensure the protection of public health and the environment.

If contamination is detected in the soil, the unregulated fill criteria and best management practices described herein provide a framework for making good decisions about the off-site reuse of the soil. If the soil does not meet the criteria for unregulated fill, the soil should be managed or disposed of in accordance with applicable regulations.

Definition of unregulated fill

Unregulated fill, for the purpose of this guidance, is defined as excess soil in which a release of contaminants has been identified at concentrations less than the MPCA's most conservative risk-based values (see complete criteria on the next page). Thus, the identified contaminants in the fill are present at concentrations that are not of regulatory concern to the MPCA. Unregulated fill is not a solid waste.*

Exclusions

1. Some excess soil and other material generated at a redevelopment site is regulated as either solid or hazardous waste and must be managed according to applicable solid or hazardous waste laws, including:
   - Soil that is characteristically hazardous or contaminated due to a release of a listed hazardous waste, as defined in Minn. R. ch. 7045. Such soil must be managed in accordance with the requirements of the MPCA's Resource Conservation and Recovery Act (RCRA) program.
   - Waste material such as salvaged bituminous, crushed concrete, bricks, fly ash, etc. proposed to be reused as fill. The beneficial reuse of solid wastes is governed by Minn. R. 7035.2860. Information regarding the beneficial reuse of solid wastes can be found on the MPCA's website at http://www.pca.state.mn.us/waste/sw-utilization.html.
2. The management and reuse of dredged material may be regulated by permit or subject to other regulations. Information about the management of dredged materials can be found on the MPCA's website at http://www.pca.state.mn.us/water/dredgedmaterials.html.

**If sent to a permitted landfill for disposal, unregulated fill may be subject to a solid waste tax.*

Criteria for unregulated fill

Unregulated fill is excess soil that meets all of the following field screening and contaminant concentration criteria:

- free from solid waste, debris, asbestos-containing material, visual staining, and chemical odor
- organic vapors less than 10 parts per million, as measured by a photoionization detector (PID)
- for petroleum-impacted soil, less than 100 mg/kg diesel range organics (DRO)/gasoline range organics (GRO)
- for contaminants detected in soil, less than the MPCA's Residential Soil Reference Values (SRVs) and Tier 1 Soil Leaching Values (SLVs)*

**Naturally-occurring concentrations of some metals, such as arsenic, selenium, or copper, sometimes exceed the SRV or SLV. Such soils are not considered impacted in the absence of a contaminant source or other field or laboratory indications of contamination.*

A list of current SRVs can be found in the MPCA's Risk-Based Guidance for the Soil-Human Health Pathway. A list of current SLVs can be found in the Risk-Based Guidance for Evaluating the Soil Leaching Pathway. Both documents can be found at http://www.pca.state.mn.us/cleanup/riskbasedoc.html. For contaminants detected in soil that do not have established SRVs or SLVs, additional evaluation may be needed to determine whether the soil can be considered unregulated fill.

Some detections of DRO in soil may stem from the presence of natural organic material or non-petroleum contaminants in the soil, such as coal tars or other material containing polynuclear aromatic hydrocarbons (PAHs). Evaluation of DRO data should take into consideration the history of the property, including the known or likely presence of a petroleum source, the presence (or lack thereof) of other contaminants in the soil sample, and the type of soil. If positive DRO results are related to non-petroleum contaminants, risk-based criteria for the non-petroleum contaminants should be applied. If necessary, laboratory analytical methods are available to help determine if the DRO is from natural organic material in the soil.

Placement of unregulated fill

To avoid potential problems or public concern stemming from the placement of unregulated fill in sensitive settings, the MPCA recommends the following Best Management Practices:

- Avoid placing unregulated fill at schools, playgrounds, daycares, and residential properties. Unregulated fill is most suitable for use at industrial or commercial properties.
- Avoid placing unregulated fill in gardens where food for human/animal ingestion will be grown.
- Observe a minimum ten-foot separation distance between unregulated fill and the water table.
- Avoid placing unregulated fill where contaminants may be transported by run-off to lakes, rivers, wetlands, or streams.

Sampling decisions

Decisions of whether to sample soil for contamination prior to off-site reuse should be based on the history of the source area, the nature of the source material, the extent to which the soil has been previously characterized, and other factors that are part of a due diligence assessment of the environmental condition of the source property.

If the soil originates from a site where known or potential sources of contamination are present, samples of the soil should be collected for field screening and laboratory analyses. Examples of sites where environmental due diligence may reveal known or potential sources of contamination include sites where contamination was previously identified as a result of regulatory action or voluntary

investigation, previously developed sites (commercial, industrial, recreational, or residential), agricultural properties, or land that may have been subject to dumping, spills, or historic filling activities.

If no known or potential sources of contamination are identified during environmental due diligence and subsequent field observations, then sampling of excess soil for laboratory analyses is not necessary.

Sample type and frequency

When soil sampling is appropriate, the frequency and type of samples should be based on the potential sources of contamination, the depth, volume, and heterogeneity of the source material, and the availability of existing data. At a minimum, analytical parameters should include volatile organic compounds, PAHs, RCRA metals, DRO, and GRO. Other contaminants of concern should be included as appropriate, based on the history of the source location. Analytical data should be age-appropriate and representative of the source material.

Some soils even lightly impacted by heavy metals have the potential to leach at concentrations at or above the Toxicity Characteristic Leaching Procedure (TCLP) regulatory limit. As a rule-of-thumb, a TCLP analysis for RCRA metals should be conducted if the soil concentration of a metal is 20 times or greater the TCLP regulatory criteria.

A typical frequency for the field screening of potentially contaminated soil using a PID is one measurement for every ten cubic yards of soil. For analytical samples, the stockpile sampling guidance presented in Section 7.3 of the MPCA's Site Characterization and Sampling Document can be used as a frame of reference for the appropriate sampling frequency based on soil volume: http://www.pca.state.mn.us/cleanup/pubs/sitechar.pdf. Soil sampling guidelines for the Petroleum Remediation Program are presented in guidance Document 4-04: http://www.pca.state.mn.us/publications/c-prp4-04.pdf. Flexibility in the number of samples may be warranted, depending on the site-specific circumstances. Sound professional judgment, taking into account all of the factors discussed above, should be used when developing a sampling plan to determine whether excess soil meets the criteria for unregulated fill.

Implementation

All parties are encouraged to use the best management practices described herein in order to make good decisions about the off-site reuse of unregulated fill. It is the responsibility of the property owners and other parties engaged in development and construction activities to make sure that their activities include appropriate environmental due diligence and that excess soil and other materials generated by these activities are managed in an environmentally responsible manner.

Note that some local units of government, including Dakota County, may have local ordinances which restrict the off-site reuse of unregulated fill within their boundaries. Parties seeking to import unregulated fill should check with local regulators to determine if such ordinances are in effect in their project area.

Nothing in this guidance excuses anyone from compliance with any law, rule, or other legal obligation (including any environmental covenant) that applies to any development or construction activity, including the generation, management, transport, and reuse of excess soil.

For more information

Questions about the information presented above can be directed to the MPCA at 651-296-6300 or 1-800-657-3864.