DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF AIR AND WASTE MANAGEMENT
SITE INVESTIGATION & RESTORATION BRANCH

MEMORANDUM

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DATE: May 19, 2010

RE: **Policy Soil/ Material Re-use Policy at HSCA Regulated Sites**

The Department of Natural Resources and Environmental Control – Division of Air and Waste Management – Site Investigation and Restoration Branch (DNREC-SIRB) adopts this Policy to guide the re-use of soil/material from regulated (HSCA, RCRA) sites (sites) and non-regulated properties (properties) at HSCA regulated sites. The intent of this policy is to provide a mechanism for the safe and efficient re-use of suitable soils/materials that does not create an unacceptable risk to human health or the environment. Soil/material eligible for re-use under this policy is soil/material that will be removed from a regulated site or non-regulated property and transported to a HSCA-regulated site for use as a fill material (surface and/or subsurface applications). This policy specifically *excludes* soil/material excavated at a HSCA-site that is re-used at the *same* HSCA site as part of a DNREC-SIRB approved remedial action.

As mentioned above, this policy will address two (2) categories of re-use:

A) Soil/material removed from a regulated site for use at a HSCA regulated site either as surface or sub-surface material. Regulated refers to HSCA or other State or Federally regulated environmental program or guidance.

B) Soil/material removed from a non-regulated property for re-use at a HSCA regulated site as surface or subsurface material. Non-regulated properties may be commercial borrow pits, construction sites, or any other property not currently regulated under the HSCA program.

The soil/material that will be considered may come from several different types of sources. The following list is based upon current practice but any source may be considered, if it meets the requirements of this soil/material re-use policy.

Types of Sources and Data Availability:

1) Undisturbed property with no previous operational use and no Phase I,

2) Property with past operational use but Phase I investigation shows no likely environmental impact,

3) Developed property with potential for contamination based on Phase I investigation,

4) Site as defined by a DAWM program (SIRB, TMB, SHWMB) with confirmed environmental impact and data that meets the Soil Re-Use Policy volume and constituent criteria or a Beneficial Use Determination (BUD) from the SHWMB, or

5) Site as defined above with recently completed and approved Remedial Investigation (RI) Report.

Appropriate re-use will be based upon current data. Impacted soil/material is defined as having a compound present that exceeds the applicable Uniform Risk-Based Standard (URS) or equivalent standard as determined by SIRB for the intended re-use of soil/material. For example, if the soil/material is to be used as a surface cap at a site under an unrestricted (residential) use scenario, then the material will be compared to the unrestricted use URS value(s) to determine if it is an appropriate reuse.

Soil/Material Sampling

Soil/material may be found in multiple types of locations and dispositions. This policy provides the applicant with acceptable options for characterizing the soil/material where and how it is located. Soil/material may be re-used when it is found in-situ and when it has been excavated and staged, provided that it is adequately sampled. Samples will be tested for Target Analyte List and Target Compound List (TAL/TCL) contaminants in all cases. Composite sampling will not be considered appropriate for volatile sampling. Discrete sampling must occur for volatiles at the frequency listed for each situation listed below. The sampling frequency options are listed below.

Composite Sampling Composite sampling is most often used in locations where soil is easily accessed such as a stockpile or borrow pit.

Stockpiles- 1 (one) 30-point composite sample per 1,000 cubic yards and 5 volatile discrete sample. A typical residential lot is 0.25 acre. 1,000 cubic yards is equivalent to 1 sample per ¼ acre residential lot 2 feet deep.

In-situ Soil (Non-regulated properties) including Borrow Pits-1 (one) 20-point composite per 4,000 cubic yards and 4 volatile discrete samples with Phase 1 or DNREC determined comparable documentation indicates no evidence of potential impact. 4,000 cubic yards is equivalent to 1 sample per acre 2 feet deep.

Regulated Site - DNREC Project officers will evaluate if the soil is sufficiently characterized to use on another site. If additional sampling is judged to be necessary, one (1) 10 point composite per 8,000 cubic yards and 3 discrete volatile samples may be required to further characterize the site,8,000 cubic yards is equivalent to 1 sample per 2 acres, 2 feet deep.

Composite sampling criteria is based upon Hewitt, et al, *Validation of Sampling Protocol and the Promulgation of Method Modifications for the Characterization of Energetic Residues on Military Testing and Training Ranges*, June 2009 (ERDC/CRREL TR-09-6).

Discrete (Default) Sampling - Discrete sampling may be used in multiple situations but is most often used when soil/material is located in-situ at a site. Discrete or grab sampling is what a typical remedial investigation uses. The number of discrete samples to be taken should follow the table below.

Discrete Sampling Table

Volume of soils (Yd^3)	Sampling Frequency	Total # of Samples
0-500	1 sample per 100 yd^3.	1-5
501-5,000	5 samples plus 1 sample per 250 yd^3 >500.	5-23
>5,000	23 samples plus 1 sample per 500 yd^3 >5,000.	>23

Depending upon the source and potential re-use of the soil/material, different criteria may need to be met. The evaluation criteria are the minimum conditions that must be met in order to obtain approval from DNREC-SIRB. The evaluation criteria are presented below. Following the evaluation criteria listed below are the specific scenarios and the required evaluation criteria for each.

Section 1- Criteria Used to Evaluate the Suitability of Soil/Material for Re-use at a HSCA-regulated site

1) ***Consistent with Final Plan***: The re-use of the soil/material from the source site at the destination site is consistent with any Final (or Interim) Plan of Remedial Action that may exist for each site.

2) ***No Hazardous Waste***: The soil/material is not a hazardous waste as defined by the Delaware Regulations Governing Hazardous Waste, Part 261,

3) ***No Solid Waste***: The soil/material does not contain asphalt, trash, solid waste or yard-type waste,

4) ***Contaminant Type and Concentration Specific Evaluation*** : The source soil/material meets **one** of the conditions listed below:

    a) The soil/material contaminant concentration (95% UCL or mean) does not exceed background conditions as listed in the **Remediation Standards Guidance** or current SIRB guidance at the destination site,

b) The contaminant concentrations are less than the 95% upper confidence limit of contaminants that already exist on the destination site, and the cumulative risk of the contaminants is below the 1*10-5,

c) A quantitative risk assessment consistent with the current SIRB guidance shows that reuse of the proposed soil/material does not create an unacceptable risk (above 1*10-5 or HI above 1) at the destination site or,

d) The contaminant concentrations are less than what already exist onsite. Compare mean concentrations of source soil to mean soil concentrations for the destination site. A 95% UCL comparison of source and destination site soil may also be conducted in lieu of the mean.

5) ***No Groundwater Risk***: The soil/material does not contribute to groundwater contamination or increases groundwater risk at the destination site.

6) ***Letters to DNREC-SIRB:*** The owners of both sites will acknowledge in writing to DNREC-SIRB that they are aware of the quality of the soil/material proposed for re-use and are responsible for any potential future liability.

Section 2- Potential Reuse Scenarios and Appropriate Criteria

Scenario 1: Soil/ Material from a Regulated Site to HSCA Site

Soil shall meet Criteria:

#1) Consistent with Final Plan

#2) No Hazardous Waste

#3) No Solid Waste

#4) Contaminant Type and Concentration Specific Evaluation

#5) No Groundwater Risk

#6) Letters to DNREC-SIRB

Scenario 2a: Contaminant Impacted Soil/Material from a non-regulated property to HSCA site

#1) Consistent with Final Plan

#2) No Hazardous Waste

#3) No Solid Waste

#4) Contaminant Type and Concentration Specific Evaluation

#5) No Groundwater Risk

Scenario 2b: Non-impacted Soil/Material from a non-regulated property to HSCA site

#1) Consistent with Final Plan

#3) No Solid Waste

In all cases, the party proposing the soil re-use is responsible for presenting analytical data that shows the re-use meets all of the appropriate conditions for the scenario proposed **prior to transport**. The re-use proposal will be submitted to DNREC-SIRB at least two weeks prior to the intended date for transporting the soil/material. DNREC-SIRB will respond via email and in writing with an approval once the proposal is approved. Data obtained in the investigation may be adequate or may be supplemented with additional samples. In lieu of a site specific sampling plan, the individuals proposing the reuse may elect to use the default sampling frequency shown in the Discrete Sampling table or Composite Sampling description.

Material with BUD (Beneficial Use Determination) - Obtain a copy of BUD determination from Solid and Hazardous Waste Management Branch and review for potential contaminant issues for your site.

Other Material Debris -This scenario should be considered only if a BUD has not been obtained for the material but there appears to be a possible beneficial use of a recovered resource. For material other than that covered in a SHWMB-BUD, the process shall be the same as Scenario 1.

"Other" Material Reuse Determination

DNREC will evaluate on a case-by-case basis, any material that does not fit into the above criteria.

An approval granted by DNREC-SIRB for soil/material reuse is not to be construed as a substitute for any other permit or permission required by other agencies for the activity. Soil/Material reuse policy approval applies directly and only to the environmental (contaminants) suitability of the proposed soil/material. After soil from a source site has been approved, at the discretion of the DNREC-SIRB project officer, it may not need to be re-sampled in the future to determine if it is appropriate to use as a continued source.

This policy replaces "Policy for Presumptive Soil Re-use" dated September 21, 2004 and May 4, 2006.

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