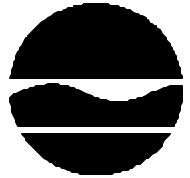


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Erin M. Crotty
Commissioner

MEMORANDUM

To: Bureau Directors, Section Chiefs, Regional Spill Engineers, Regional Hazardous Waste Remediation Engineers
From: Michael J. O'Toole, Jr, Director, Division of Environmental Remediation
Subject: Soil Cleanup Consolidation - Further Clarifications
Date: *signed July 10, 2001*

On December 20, 2000, guidance was issued that identified the soil cleanup objectives included in TAGM 4046 as the appropriate values to be used in determining soil cleanup levels at petroleum spill sites. The intent of this guidance was not to change the process of determining a remedy at petroleum spill sites, but only to substitute the soil cleanup objectives contained in TAGM 4046 for the numerical values in STARS #1. A number of comments resulted from the issuance of this guidance and on April 10, 2001, a Responsiveness Summary was issued to address those comments. Since that time, several additional comments and questions have been received. The purpose of this memo is to provide clarifications to those comments and questions and to clarify some responses provided in the April 10th summary. If there are additional questions, please contact Jim Harrington or Frank Peduto.

Item #1

A recurring question relates to the allowable actions concerning excavated soil at petroleum remediation sites (Response Summary Questions #1 and #14).

Response Excavated soil may be placed back in the hole or left at the surface on the site if levels are less than TAGM 4046 soil cleanup objectives. Excavated soil may be sent to offsite locations if levels are less than STARS#1 Guidance Values and the material is used in accordance with the predetermined beneficial uses defined in the STARS guidance document. In summary, TAGM is used for onsite soil disposal and STARS is used for offsite soil disposal.

Item #2

Can I adjust the TAGM criteria based on revised groundwater standards?

Response Yes. While the TAGM itself cannot be changed without going through the entire policymaking process, soil cleanup levels can be adjusted for those compounds where the groundwater standards have changed. The manner in which soil cleanup objectives are calculated is contained in the TAGM and specifies use of the groundwater standard. Recomputing the soil cleanup objective based on

groundwater standards which have changed since the TAGM was issued is appropriate. An example is benzene. When TAGM was issued in 1992, the groundwater standard for benzene was 0.7 ppb which resulted in a recommended soil cleanup objective of 0.06 ppm. The groundwater standard was changed to 1 ppb which results in a soil cleanup objective of 0.08 ppm. This revised level may be used.

Item #3

Will tertiary butyl alcohol (TBA) be added to the petroleum list of compounds of concern?

Response While TBA is not a contaminant routinely sampled for at petroleum spill sites, the Department is reviewing its investigative protocols with regard to TBA and other oxygenates. Upon completion of the review a determination will be made whether to include TBA and other oxygenate compounds to the list of sampled compounds of concern.

Item #4

Several commenters questioned Response #16 with regard to low levels of contamination being moved from one location to another.

Response That response referred to common fill from construction sites and not soil removed from petroleum spills.

Item #5

With the changeover to TAGM 4046 what is the status of the exposure guidance values previously used by the Spill program?

Response When in-situ petroleum contaminated soil could not meet STARS, remedial activities at the site could still be terminated if exposure guidance criteria provided by the Bureau of Spill Prevention and Response were met. After comparing the TAGM 4046 soil cleanup objectives with the exposure guidance values, we found the TAGM to be equal to, and in some cases, more stringent than the exposure values. There were only a few that were less stringent and those by an insignificant amount. Therefore, with the adoption of the TAGM 4046 values, the exposure guidance values will no longer be used.

If, after site investigation and remediation, (free-product, source removal and residual contamination to the extent practicable), have been completed and the residual levels still exceed the TAGM soil cleanup objectives, a qualitative exposure assessment must be conducted. This assessment consists of evaluating exposure pathways to determine if they present an opportunity for contaminant migration. It may be necessary to conduct a more quantitative assessment (e.g. soil gas survey) to confirm that exposures are acceptable. The Department of Health may be consulted regarding exposures. If there are no unacceptable exposures, remediation activity at the site may be terminated.