

**MINNESOTA POLLUTION CONTROL AGENCY
SITE RESPONSE SECTION**

**DRAFT SITE SCREENING EVALUATION
GUIDELINES
APRIL 1996**

EXECUTIVE SUMMARY

In order to rationalize and streamline its Superfund and Voluntary Investigation and Cleanup Programs, the Minnesota Pollution Control Agency (MPCA) has adopted a risk-based decision making approach. Risk-based decision making provides a means for making technically defensible decisions which allocate resources to sites and conditions posing the greatest long-term risks to humans and the environment.

The screening evaluation comprises the second major step of the Site Response Section's hazardous waste site investigation and clean-up process. It follows the site evaluation phase, during which contaminant conditions at a site are characterized, providing information and data for the screening evaluation.

The screening evaluation then helps determine whether conditions at a site require further investigation and possible cleanup due to potential risks to human health and the environment. To do this, the evaluation employs a media-based approach. Appropriate exposure concentrations in each environmental medium are compared to screening criteria for that medium.

The screening criteria represent contaminant levels in the media above which unacceptable risks could occur under the general exposure conditions used in developing the criteria. During the screening evaluation, it is assumed that the site will be developed for residential purposes, and thus, that exposures related to residential uses may occur. This relatively conservative land use assumption helps to ensure that protective decisions result from the screening evaluation, because the evaluation depends on information from site characterizations that may not be comprehensive at this early stage of the investigation and clean-up process.

Section I, Introduction, of the "Site Screening Evaluation" guidance document explains the purpose of the screening evaluation, its context in the overall site investigation process, and the possible outcomes of the evaluation. The introduction also provides a brief overview of the evaluation and of its applicability outside the traditional Superfund program.

Section II of the "Site Screening Evaluation" briefly reviews the types of site information needed to conduct the screening. Future guidance on site evaluation will explain these information needs. Future guidance on sampling will explain options for planning and conducting sampling to ensure collection of accurate and representative quantitative data for use in the Screening Evaluation.

Section III explains how to identify chemicals of potential concern at a site. This step is necessary to determine which chemicals may pose risks, and, therefore, whether the site requires further evaluation. Identification of chemicals of potential concern depends on the adequacy of

sampling data from the site evaluation. The main factors which affect identification of chemicals of potential concern are: the chemicals detected at the site, data quality, and comparison of site concentrations to background levels.

Section IV contains the central elements of the screening evaluation, comparison of media concentrations to media-based screening criteria. The section is therefore divided into six media-specific subsections: soil, ground water, surface water, sediment, air, and biota.

These subsections for each medium include the following main screening steps:

- determine representative exposure concentrations;
- calculate hazards quotients and excess cancer risks;
- for ecological receptors, compare concentrations to toxicological benchmarks;
- sum individual values to derive cumulative risks when appropriate or feasible; and
- evaluate results of calculations and make final determination on further investigation.

Section V contains a discussion of short-term hazard evaluations. It also provides examples of site conditions or circumstances which might constitute short-term hazards, as well as examples of response actions which can be used to address these hazards.

The document concludes with a brief review of the possible outcomes of the screening evaluation. If a site does not “pass” the screening for one or more of the media, because screening levels are exceeded, conditions at the site must be evaluated further. Finally, definitions and references are attached to assist the reader.

Criteria tables referenced in the guidance will be available on the *P:drive* of the Ground Water and Solid Waste Division computer system. The “Technical Support Document,” also referenced in the guidance, is under development and, upon completion, will be made available. Copies of the documents will be made available to the public on a unit cost basis.