



**MINNESOTA POLLUTION CONTROL AGENCY
SITE RESPONSE SECTION**

**ATTENTION
OCTOBER 1997 INTERIM CHANGES TO
WORKING DRAFT (APRIL 26, 1997)
SITE SCREENING EVALUATION GUIDELINES**

**Contact: Guidance Coordination Team
Minnesota Pollution Control Agency
Site Response Section
520 Lafayette Road
St. Paul, Minnesota 55155-4194
Fax (612) 296-9707**

NOTICE

INTERIM CHANGES TO EITHER WORKING DRAFT OR INTERNAL REVIEW DRAFT DOCUMENTS. The Site Response Section of MPCA is developing guidelines for evaluating risks to human health and the environment at sites that may require investigation or response actions pursuant to the Minnesota Environmental Response and Liability Act, Minn. Stat. § 115B.01 to 115.24 (MERLA).

DEVELOPMENT OF A SITE RESPONSE SECTION SITE EVALUATION MANUAL. The attached document and other documents not yet developed will be incorporated into a Site Response Risk-Based Site Evaluation Manual which will contain guidelines for conducting MERLA-related evaluations, including risk evaluations under the State Superfund program and the MPCA Voluntary Investigation and Cleanup (VIC) Program.

MPCA staff intend to use the policies and procedures in the proposed manual as guidelines to evaluate the need for investigation or remedial actions to address releases and threatened releases of hazardous substances or pollutants or contaminants under MERLA, and the scope and nature of such actions. These policies and procedures are not exclusive and do not have the force and effect of law. MPCA staff may use other policies or procedures to evaluate the need for or adequacy of response actions under MERLA, including procedures set forth in outstanding MPCA Requests for Response Action and Consent Orders. The final standard for all such evaluations is the MERLA statutory requirement that such actions must be reasonable and necessary to protect the public health and welfare and the environment.

APPLICATION TO SITES MUST BE PRE-APPROVED. At this time, Site Response Section staff shall accept only written comments regarding this draft document (see comment period and address above). During guideline development, application of these guidelines or procedures shall be Site-specific, conducted in consultation with and upon approval of MPCA Site Response Section staff assigned to the specific site.

INTERIM CHANGES TO DRAFTS. Document users are responsible for contacting MPCA staff assigned to the site to get the latest unpublished changes to the document.

EXPLANATION:

The attached document provides the October, 1997 interim changes to the "Working Draft Site Screening Evaluation Guidelines," dated, April 26, 1996. The text document has not been changed. Screening criteria for several environmental media have undergone revision. See summary of revisions presented below.

Distribution List:

(NOTE TO PERSONS OTHER THAN THE SITE RESPONSE SECTION (SRS) STAFF: As necessary, please distribute this draft document to selected members of your staff for review and comment. Based on past interactions with SRS, suggested staff are indicated in parenthesis)

@SRS

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Site Screening Evaluation Guidelines

Summary of Revisions

The Working Draft Site Screening Evaluation Guidelines document (4/26/96) has not been revised, however, several of the screening criteria tables referenced in this document have undergone revision. The spreadsheets are available to select MPCA staff through the p drive (p:\srs_sect\guidance\spreadsh\).

NOTE:

Free electronic copies of the EXCEL Site Screening Evaluation spreadsheets are available for customers working with MPCA staff *on a specific site*. Requests should be sent in writing, along with 1) a self-addressed, stamped disk-envelope and a 3½-inch disk, and 2) a request for the supporting Working Draft Site Screening Evaluation Guidelines with \$25.00 photocopying fee, if the party requesting the spreadsheets does not yet have a copy. These requests should be sent to:

Trudy Cramlet
Minnesota Pollution Control Agency
Ground Water and Solid Waste Division
Site Response Section
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Information regarding the revisions is provided below.

SOIL - HUMAN HEALTH-BASED

- Human health-based residential Soil Reference Values (residential SRVs)

Previous spreadsheet - - resi0297.xls

Revised spreadsheet - - resi1097.xls.

The chemicals were rearranged to match the ordering used in the draft SRS Master Compound List.

The following additional contaminants have been added: benzoic acid, benzyl alcohol, butyl benzylphthalate, chloramben, 4-(2,4-dichlorophenoxy) butyric acid (2,4-DB), methyl mercury, n-nitroso-n-propylamine, phenol, picloram, trichlorofluoromethane, and trichlorophenoxyacetic acid (2,4,5-T).

Due to revisions in toxicity values the SRVs for the following contaminants has changed: bromodichloromethane, n-butylbenzene, sec-butylbenzene, tert-butylbenzene, chromium VI, cumene, 1,1-dichloroethane, trans-1,2-dichloroethylene, 1,2-dichloroethylene (mixed isomers), 1,2-dichloropropane, naphthalene, n-propylbenzene, 1,1,2,2-tetrachloroethane and 1,3,5-trimethylbenzene



The theoretical soil saturation limit (C_{sat}) was utilized when the estimated SRV exceeded the C_{sat} value. The C_{sat} value represents the soil concentration above which free-phase contamination may be present given the soil characteristics utilized. Contaminants for which C_{sat} was utilized as the SRV are: acenaphthene, anthracene, 2-chlorotoluene, ethylbenzene, and 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113).

Acute exposure was the limiting exposure scenario for the following contaminants: free cyanide, carbon disulfide, 2-methylphenol, 3-methylphenol, 4-methylphenol, and phenol. The SRVs based on acute effects represent maximum exposure concentration not an average concentration.

Staff are reminded that site specific soil characteristics (e.g., soil moisture and organic carbon) should be utilized to calculate site specific SRV-based cleanup goals for volatile contaminants. If a single cleanup goal for carcinogenic polyaromatic hydrocarbons (cPAHs) or 2,3,7,8-substituted dioxins and furans is desired the SRV for benzo(a)pyrene and 2,3,7,8-TCDD, respectively, should be utilized along with the equivalency calculation worksheets. The equivalency calculation worksheets convert individual cPAHs or 2,3,7,8-substituted dioxins and furans into benzo(a)pyrene or 2,3,7,8-TCDD equivalents.

- *Draft human health-based industrial SRVs and recreational SRVs are also available on the p drive (p:\srs_sect\guidance\spreadsh\internal\indu1097.xls and recr1097.xls). These criteria are for internal staff use only at this time.*

SOIL - ECOLOGICAL-BASED

- Ecological Direct Contact Soil Screening Criteria

Previous spreadsheet - - ecoscrn1.xls

Revised spreadsheet - - ecoscr1a.xls

A column for CAS numbers was added to the spreadsheet and the chemicals were rearranged to match the ordering used in the draft SRS Master Compound List.

SOIL - GROUND WATER IMPACT-BASED

- Soil to Ground Water Pathway Screening Values

Current externally available spreadsheet - - soil_add.xls.

Also available on the p drive (p:\srs_sect\guidance\spreadsh\internal\soil0997.xls). These criteria are for internal staff use only at this time. This spreadsheet contains Tier I look-up values that are designed for screening the soil leaching pathway. The spreadsheet also contains a worksheet entitled "Tier 2 SLV Calculations" that is designed to allow users to enter site specific inputs in order to calculate Tier II SLVs. Application of the spreadsheet should be accompanied by reference to the "Risk Based Guidance for the Soil Leaching Pathway - User's Guide". For questions regarding use of the User's Guide and the soil0997.xls spreadsheet please contact Rick Jolley, Lifeng Guo, or Bill VanRyswyk, members of the Soil-to-Ground Water Workgroup.



GROUND WATER -

- Drinking Water Criteria Summary Table

Previous spreadsheet - - drin0297.xls

Revised spreadsheet - - dw1097.xls

The following additional contaminants have been added:

Dinoseb - health-based value (HBV) of 7 ug/l based on effects on development.

Endrin - HBV of 2 ug/l based on effects on the liver.

HMX - HBV of 300 ug/l based on effects on the liver.

d-Limonene - HBV of 17500 ug/l based on effects on the liver.

RDX - HBV of 20 ug/l based on effects on the prostate.

The following errors have been corrected:

Strontium - Health-based value corrected to 4,000 ug/l.

Bentazon - delete MCLG, change lifetime health advisory to 200 ug/l.

Chromium VI - deleted target endpoint from comparison worksheet.

Cobalt - added target endpoint to comparison worksheet.

Copper - deleted target endpoint from comparison worksheet.

Di(2-ethylhexyl)-phthalate - change health based value to 100 based on effects on liver.

Manganese - changed target endpoint on comparison worksheet.

Nickel - deleted target endpoint from comparison worksheet.

Nitrate - added target endpoint to comparison worksheet.

Silver - deleted target endpoint from comparison worksheet.

Strontium - changed target endpoint to comparison worksheet.

Tetrahydrofuran - added target endpoint.

Thallium - changed target endpoint to comparison worksheet.

SEDIMENT

- Ecological Sediment Screening Criteria

Previous spreadsheet - - sed0896.xls

Revised spreadsheet - - sed1096.xls.

A column for CAS numbers was added to the spreadsheet and the chemicals were rearranged to match the ordering used in the draft SRS Master Compound List.

SURFACE WATER

- Screening Level Surface Water Standards and Criteria

Previous spreadsheet - - sw0297.xls.

Revised spreadsheet - - sw1097.xls.

A column for CAS numbers was added to the spreadsheet and the chemicals were rearranged to match the ordering used in the draft SRS Master Compound List.



Two chemicals, tetrachloromethane and tribromomethane, were deleted because they are synonyms for carbon tetrachloride and bromoform, respectively, which are also in the spreadsheet. The chronic criteria for iron was corrected from 2726 ug/l to 1245 ug/l.

The following screening criteria tables have not been revised and remain the current version of the screening criteria:

SOIL - ECOLOGICAL-BASED

- Ecological Bioaccumulation Soil Screening Criteria

Current spreadsheet - - ecoscrn2.xls

AIR

- ACLs (Human health-based air concentration levels)

Current spreadsheet - - air0496.xls

