



# Surface Water Toxics Impact Assessment Request

Remediation Division

Doc Type: Exposure Pathway Risk Evaluation

## Detailed instructions on page 3

**Instructions:** Requester should supply any other data or information pertinent to the assessment. Parts A and B are to be completed by the requester; Parts C and D are to be completed by Minnesota Pollution Control Agency (MPCA) Water Quality Standards Unit. If you have any questions regarding this form, you may contact Phil Monson at 651-727-2258 or by email at [phil.monson@state.mn.us](mailto:phil.monson@state.mn.us).

**Purpose:** Assure protection of surface water resources and provide consistent assessment of potential impacts on surface waters from contaminated ground water at Superfund, Resource Conservation and Recovery Act (RCRA), Underground Storage Tank (UST), Brownfields, or other groundwater or surface water potential or actual contamination sites.

### Part A (Completed by the requester)

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#### Submittal:

Submit request to Phil Monson, Water Assessment Section, Water Quality Standards Unit

Date submitted (mm/dd/yyyy): \_\_\_\_\_ Date received (mm/dd/yyyy): \_\_\_\_\_

#### Requester(s):

Name: \_\_\_\_\_ Division/Section: \_\_\_\_\_

Phone: \_\_\_\_\_ Other contact (Consultant): \_\_\_\_\_

Information or data attached: \_\_\_\_\_

#### Point source:

Name: \_\_\_\_\_ Permit number: \_\_\_\_\_

Location (*Provide coordinates and a location map*):

<Insert coordinates and map here>

Discharge flow: \_\_\_\_\_ Name of receiving water: \_\_\_\_\_

Description of problem:

#### Nonpoint source:

Site name: \_\_\_\_\_

Location: \_\_\_\_\_ Discharge flow (if available): \_\_\_\_\_

Location (*Provide coordinates and a location map*):

<Insert coordinates and map here>

Discharge type:  Spill  Contaminated groundwater  Leachate  UST

Permanent  Temporary

Groundwater plume: \_\_\_\_\_ Spill amount: \_\_\_\_\_ Other flow info: \_\_\_\_\_

Plume width (W) feet: \_\_\_\_\_

Plume thickness (H) feet: \_\_\_\_\_

Hydraulic conductivity (K)  
gal/day/ft<sup>2</sup>: \_\_\_\_\_

Hydraulic gradient (dh/dl): \_\_\_\_\_

Discharge (Q) =  
 $H*W*K*(dh/dl)/1440$ , gal/min: \_\_\_\_\_



# Instructions

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## Guidance

The assessment form and this guidance can be used by all MPCA staff to evaluate the environmental risks to surface waters near the contamination site themselves, or it can be used to request help with the assessment from Environmental Analysis and Outcomes Division staff in the Water Quality Standards Unit.

The primary information needed for staff to complete the assessment themselves is listed below:

1. **Classification** of the impacted or threatened surface waters from Minn. R. 7050.0400 through 7050.0470. If the water is not listed in Minn. R. 7050.0470, it is classified 2B, 3B, 4A, 4B, and 5.
2. **Numerical water quality standards** for the appropriate use class from Minn. R. 7050.0220. Standards for class 2 waters will control the need for treatment or remediation in most instances. Most class 2 standards for toxics have three parts: chronic standard (CS), maximum standard (MS) and final acute value (FAV).
3. **Concentrations of pollutants** in the groundwater as measured in the well(s) closest to the down gradient surface water.
4. **Allowable dilution**. If the water of concern is a river or stream, dilution of the plume may be allowed at the specified low flow ( $7Q_{10}$ ).
  - a. Large rivers usually provide ample dilution for groundwater plumes or seeps. Plume quality may be compared to MSs or, in some cases, to FAVs.
  - b. No dilution is allowed for plumes threatening low-flow streams, lakes or most wetlands. Plume quality is compared to CSs.
  - c. Allowable concentrations in plumes threatening small streams can be determined through a mass balance calculation or simple dilution ratio calculation. These situations should be submitted to Environmental Outcomes staff for assessment.
5. Actual or predicted **exceedance of the appropriate standard** in the plume and/or the receiving water is an indication of unacceptable impacts on the surface waters. Treatment or remedial action is probably needed.

## Requesting review by water quality staff

If the requester has questions, are unsure of provisions in Minn. R. ch. 7050, or in the situations listed below, the form should be forwarded to the head of the Water Quality Standards Unit in the Environmental Analysis and Outcomes Division.

1. Review by the Water Quality Standards Unit staff is needed if:
  - a. The threatened surface water in an Outstanding Resource Value Water as listed in Minn. R. 7050.0180;
  - b. a  $7Q_{10}$  must be calculated;
  - c. backgroundwater quality data are needed, or total hardness is needed for hardness dependent metal standards;
  - d. criteria are needed for pollutants for which standards are not available;
  - e. multiple toxics are present in the plume or seep at acutely toxic levels (exceed FAVs);
  - f. highly bioaccumulative pollutants such as mercury or PCBs are involved; and
  - g. the situation may become controversial, or there are complicating factors.

The requester initiating the assessment should complete Parts A (except date received). The requester also should complete Part B unless this information is tabulated separately and attached to the form. Also, the name of the receiving water in Part B should be provided by the requester.

The Part C and Part D can be completed by the requester if Water Quality Standards Unit help is **not** needed, otherwise Water Quality Standards Unit staff will complete these parts when the form is sent to them.

Any pertinent information such as monitoring results, maps showing well locations with respect to the surface water, contamination source, groundwater flow direction, etc. should be attached to the form when submitted to Environmental Outcomes.

Assessment requests will be completed within **three weeks** of receipt, or the requester will be contacted. If the assessment is needed sooner than three weeks, the requester should indicate this on the form or contact Water Quality Standards Unit staff directly. If the requester completes the form without Water Quality Standards Unit involvement, please forward a copy of the form to the Water Quality Standards Unit for their files.