

Discharging contaminated groundwater

Petroleum Remediation Program

This document provides guidance for handling and discharging contaminated groundwater in response to petroleum releases, including from remediation systems and under emergency conditions.

1.0 General requirements

Prior to discharge, permits and/or approvals must be obtained from the appropriate authority depending on the discharge type. Discharge may be to surface water, including via a storm sewer, publicly owned treatment works (POTW), land surface, or subsurface. Generally, permits and/or approvals include conditions limiting the volume and/or quality of the discharged water.

2.0 Discharge to surface water

Discharge of contaminated water to surface water, including via a ditch, field tile, or storm sewer, requires authorization by a National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit prior to discharge except under emergency situations. Temporary emergency discharge approvals may be given and are discussed in Section 6.

Contact the Minnesota Pollution Control Agency's (MPCA) Industrial Wastewater Program for information about applying for an individual NPDES/SDS permit or coverage under an existing general permit. Additional information and permit applications can be found at the following MPCA website: <https://www.pca.state.mn.us/water/water-permits-and-forms>. Contact the storm sewer owner or property owner for permission to use the facilities. Applicable effluent limits will be defined in the permit and are governed by the Clean Water Act.

Although this document does not intend to specify the treatment technology that must be used for contaminant removal to meet the requirements of the Clean Water Act, any proposed treatment system must demonstrate 95 to 99.5% removal efficiency. Air stripping and granular activated carbon adsorption systems have been shown to be the most cost effective and widely used treatment technologies capable of removing volatile organic compounds from water with 95 to 99.5% removal efficiency.

3.0 Discharge to a publically owned treatment works

The authority operating the POTW is responsible for controlling discharges of contaminated water to its treatment plant. Before discharging to a POTW, you must obtain approval from the authority operating the POTW. You will need to describe the discharge and/or complete an application, whereupon the authority will evaluate your request and notify you of its decision. A POTW may be willing to accept a discharge of contaminated water but has no obligation under federal or state law to do so. If the POTW is willing to accept contaminated water, the POTW has the authority to impose limitations and other requirements on the discharge based on:

1. Available capacity at the treatment works
2. Its judgment of what is acceptable
3. Specific needs to protect its POTW
4. Discharge prohibitions in its ordinance
5. Guidance provided by the MPCA

Limitations or requirements may vary from one POTW to another. The limitations or requirements may make pretreatment necessary. Discharge monitoring and reporting may be required. If the discharge becomes a problem at any time, the POTW may terminate or suspend the discharge. POTWs have the right to inspect or sample the discharge at any time. The POTW may take enforcement action if there are violations of discharge limitations or requirements.

4.0 Discharge to the land surface

Discharge of contaminated water to the land surface, such as spray or drip irrigation and rapid infiltration basins, require a State Disposal System (SDS) Permit. Contact the MPCA's Industrial Wastewater Program for information about applying for an SDS permit. Information and permit applications can be found at <https://www.pca.state.mn.us/water/water-permits-and-forms>. Property owner permission to use the land is required.

5.0 Discharge to the subsurface

Discharge of contaminated water to the vadose zone, such as to a drain field or infiltration gallery, requires an SDS permit. Contact the MPCA's Industrial Wastewater Program for the necessary documents and procedures for obtaining an SDS permit or coverage under an appropriate general permit. Information and permit applications can be found at <https://www.pca.state.mn.us/water/water-permits-and-forms>. Property owner permission to use the land is required.

Discharge of contaminated water to the saturated zone, such as through an injection well or boring, requires both an SDS permit and a variance from the Minnesota Department of Health (MDH) Well Management Program (see Minn. R.4725.2050). The application form for a variance is available at: <https://www.health.state.mn.us/communities/environment/water/wells/lwcinfo/variance.html>. You must obtain access and permission from the owner of the property where the well and/or boring is located.

6.0 Temporary emergency discharge approvals

Petroleum Remediation Program (PRP) staff may approve discharge on a temporary basis in certain situations until discharge authorization is provided by an NPDES/SDS permit. Provide PRP staff with the following information to approve a temporary discharge:

- Site name, address, and Leak Site ID
- Contaminant source and type
- Groundwater contaminant concentrations before and after treatment
- Description of treatment system for contaminant removal
- Expected discharge rate
- Name of receiving water, use classifications, and point of discharge into receiving water map showing route to surface water and the point of discharge into the surface water

Approvals cannot be given if:

- Discharge to a sanitary sewer is an option
- Discharge is to an Outstanding Resource Value Water or designated trout stream
- Non-petroleum contaminants are present
- MPCA staff does not believe the situation is an emergency

Requirements:

1. Submit the required information listed above to PRP staff to receive temporary emergency discharge approval.

2. Submit a completed NPDES/SDS permit application form along with the appropriate application fee to the MPCA within 45 days of emergency discharge approval. NPDES/SDS application forms can be obtained by contacting the MPCA's Industrial Wastewater Program or from the MPCA website. The applicant will also need to submit a Water Quality Transmittal form and the Industrial Groundwater Pump Out Application form, which can be found at <https://www.pca.state.mn.us/water/water-permits-and-forms>.
3. If the treatment technology involves an air stripper system, evaluate the need for air emission controls as outlined in [Air emission controls](#).
4. Submit system influent and effluent monitoring results to PRP staff on a monthly basis.
5. Effluent limitations for an emergency discharge are based on the receiving water classification and will be provided upon approval.