Focus on: Washington's Environmental Cleanup Law

More about the Model Toxics Control Act

www.ecology.wa.gov/MTCA

Contact information

Erika Beresovoy
509-385-2290
erika.beresovoy@ecy.wa.gov

ADA accessibility

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The Model Toxics Control Act

There are about 14,000 contaminated sites in Washington State. A little more than half of these are already cleaned up. Thousands more contaminate our soil, water, and air, and pose risks to human health and the environment.

The Model Toxics Control Act (MTCA) requires the cleanup of contaminated soil and groundwater to protect people and the environment. The Washington Department of Ecology (Ecology) worked with technical consultants, scientists, local government, citizens, and environmental and business groups to develop cleanup rules. These rules include MTCA (Chapter 173-340 Washington Administrative Code (WAC)) and the Sediment Management Standards (SMS, Chapter 173-204 WAC). Sediment is where aquatic animals live and includes silt, sand, cobble, and beaches. This document focuses on upland cleanup. For information on sediment cleanup, see the SMS rule or the Sediment Cleanup User's Manual (link on page 4).

MTCA began as a citizen's initiative that Washington voters approved in 1988. The law requires polluters to pay for cleanup, unless they can't be located or are financially unable. It also sets minimum requirements all cleanups must meet to protect people, animals, and plants.

Ideally, no contamination would remain when cleanup is finished. However, low levels of hazardous substances are sometimes safe even if people contact them. Further, some contamination may be left at cleanup sites due to the high risk and cost of relocation, because total removal is not technically possible, or because buildings, roads, or other structures would have to be demolished to retrieve it. In these cases, various types of barriers can block harmful exposures.

So, as we manage contaminated site cleanup, how do we make decisions that ensure the safety of people and the environment?

Getting Cleanups Done

MTCA defines a two-step approach for developing requirements for cleaning up contaminated sites.

1. **Establish cleanup standards.** Standards provide a uniform, statewide approach to cleanup. Cleanup standards have two primary components:
   a. **Cleanup levels** determine the concentration at which a hazardous substance that remains in soil or groundwater no longer threatens human health or the environment.
   b. **Points of compliance** designate where cleanup levels must be met.
2. **Select cleanup actions.** This step involves evaluating options for cleaning up a site, and then deciding which option would best achieve cleanup standards. A combination of different options can be used at a site.

Step 1. Establishing Cleanup Standards

"Clean" generally means a site no longer poses a threat to people, animals, or plants. To define when a site is clean, we establish cleanup levels and points of compliance for soil, groundwater, surface water, and air.

Methods for establishing cleanup levels

There are three options for establishing cleanup levels. More than one may be used at a site. The choice of method(s) used depends on the contaminants and how the property will be used after cleanup.

Method A: Common contaminants and routine cleanups

Method A is for cleanups that are relatively straight-forward or involve only a few hazardous substances. This method is typically used at smaller sites that do not warrant the costs of completing detailed site studies and site-specific risk assessments. ("Routine cleanup action" is defined in 173-340-200 WAC.)

Method A provides pre-determined cleanup levels that protect human health for more common hazardous substances found in soil and groundwater, such as petroleum and lead. These levels were developed using the procedures in Method B.

Method B: Multiple contaminants and complex cleanups

Method B can be used at any site. It is the most common method for setting cleanup levels when sites are contaminated with substances not listed under Method A. Since Method B cleanup levels are protective for residential and commercial use, sites that use them usually do not need future restrictions on property use.

Under Method B, we determine cleanup levels using standards established under state and federal laws and MTCA risk-assessment equations. Method B is divided into two tiers—standard and modified. Standard Method B uses generic assumptions to calculate cleanup levels. Modified Method B uses chemical-specific or site-specific information to change the assumptions.

Both standard and modified Method B cleanup levels must meet the following requirements:

- Exposure to a single cancer-causing hazardous substance (carcinogen) at a site must not increase an individual's lifetime risk of cancer by more than 1 in 1,000,000. If more than one carcinogen is present, the total risk from all of them must not exceed 1 in 100,000.
- Exposure to hazardous substances that are not known to cause cancer (non-carcinogens) cannot cause illness at a site.
- Animals and plants must not be adversely affected.

Method C: Special circumstances and industrial use soil and air cleanup levels

Method C cleanup levels may be used to set soil and air cleanup levels at industrial sites and to set air cleanup levels in manholes and utility vaults. For groundwater, surface water, and air cleanup levels, Method C may also be used, with certain restrictions, when Method A or B cleanup levels are lower than is technically possible, or when reaching those levels may result in a greater overall threat to human health and the environment.

We set cleanup levels under Method C similar to how we set cleanup levels under Method B, using standards established under state and federal laws and risk-assessment equations. Method C is also divided into

standard and modified tiers. The main differences between the two methods are:

- Cleanup levels are based on less stringent exposure assumptions in Method C.
- The lifetime increased cancer risk is set at 1 in 100,000 people for both individual substances and for the total cancer risk caused by all carcinogens at a site.

How points of compliance are determined

"Point of compliance" defines the place or places on a site where cleanup levels must be met. There are two types:

- Standard point of compliance. MTCA generally defines the standard point of compliance for soil, groundwater, surface water, and air as throughout the site.
- Conditional point of compliance. For certain media (such as groundwater and air), MTCA allows for less strict "conditional" points of compliance where it is not practicable (due to technological limitations, environmental conditions, or other factors) to meet the cleanup level throughout the site within a reasonable time frame. Meeting cleanup levels under a landfill, for example, would require excavating tons of garbage, possibly causing more harm than good. In such cases, Ecology may approve a conditional point of compliance, provided the point is as close to the source of contamination as possible. Any contamination left on the site must be contained within a specified area that protects humans, plants, and animals from exposure.

Step 2. Selecting Cleanup Actions

Step 2 of the cleanup process involves evaluating cleanup options (sometimes called “alternatives”) that achieve cleanup standards and selecting a cleanup action from the options presented. All cleanups must meet general minimum requirements, which include but are not limited to:

- **Using permanent solutions**, whenever possible and practical, to remove or reduce all hazardous substances to levels that protect human health and the environment in a reasonable time frame
- **Monitoring progress** to verify the cleanup is effectively reducing hazardous substance concentrations to safe levels
- **Considering the public’s concerns**

Protecting People after Cleanup

Institutional controls limit or prohibit activities that interfere with a cleanup action or may result in exposure to remaining contamination. MTCA requires the use of institutional controls when:

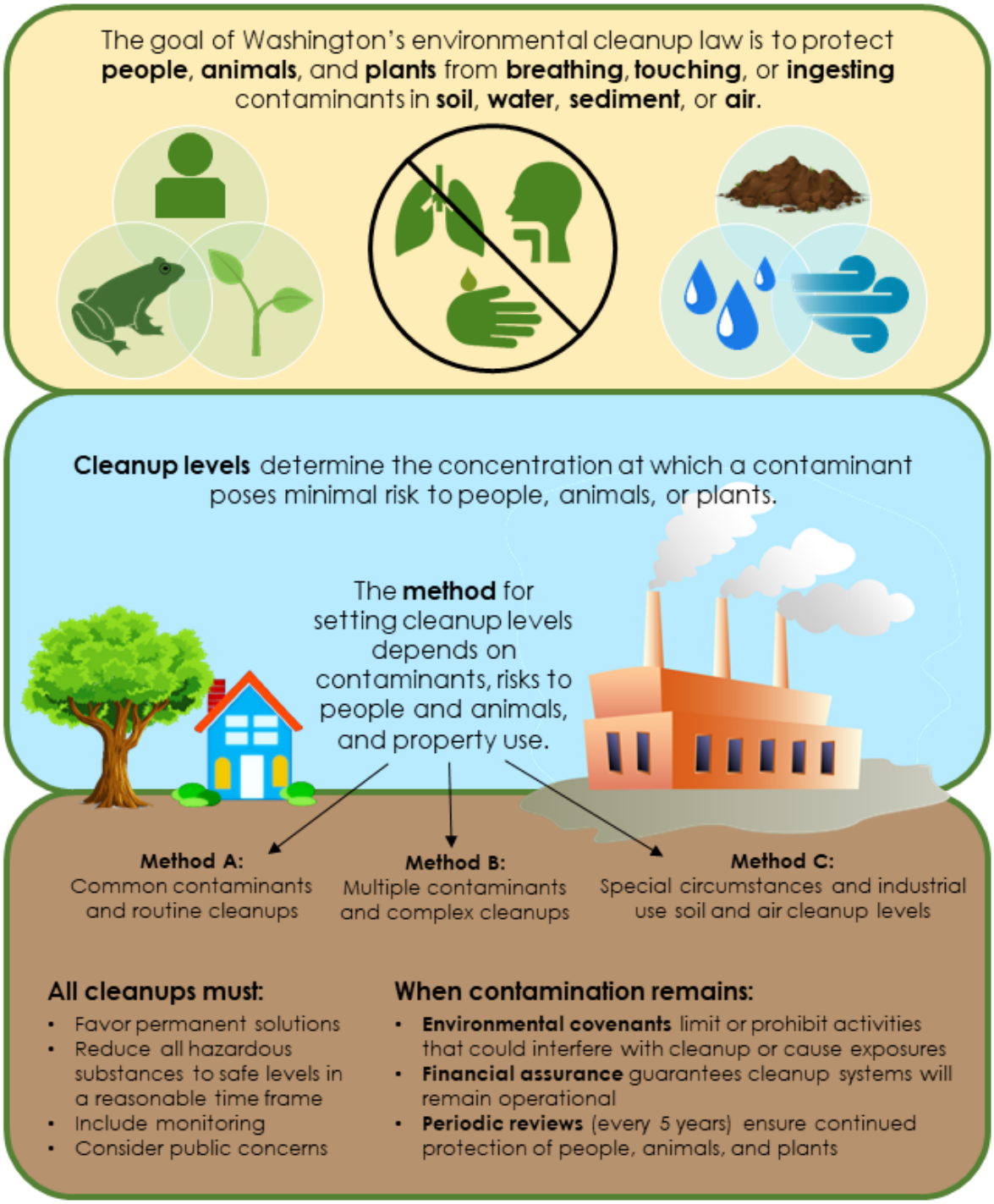
- Contamination remains at concentrations that exceed Method A or B cleanup levels
- Method C is used to establish cleanup levels
- Soil cleanup levels are established based on industrial land use
- A conditional point of compliance is used

In most cases, institutional controls are recorded in an **environmental covenant** that becomes part of the property deed. This covenant warns future property owners and restricts activities or use of the property that could result in exposure to the contamination. Tenants must also be notified of these restrictions in any lease agreement.

Parties responsible for sites with containment systems may be required to provide **financial assurance** to maintain the system as long as contamination remains above cleanup levels.

Monitoring, such as analyzing groundwater samples four times a year, must be done to confirm the long-term effectiveness of a cleanup action.

Where institutional controls or financial assurances are required, Ecology conducts a **periodic review** of the site every five years to ensure the continued protection of human health and the environment. Ecology publishes a notice of periodic reviews in the *Contaminated Site Register* and provides an opportunity for public review and comment. If we find site conditions have changed and require additional work, it is the property owner’s responsibility to enact our recommended improvements to protect human health and the environment.



More information about establishing cleanup levels

Soil: https://apps.ecology.wa.gov/publications/SummaryPages/0109071.html
Groundwater: https://apps.ecology.wa.gov/publications/SummaryPages/0109049.html
Surface water: https://apps.ecology.wa.gov/publications/SummaryPages/0109050.html
Air: https://apps.ecology.wa.gov/publications/SummaryPages/0109072.html
Sediment: https://apps.ecology.wa.gov/publications/SummaryPages/1209057.html