

# Dirt Alert



## **Soil Safety Guidance**

for Owners, Operators and Employees of  
**Small Properties** Where Children Play

Publication #06-09-049

This Soil Safety Guide describes actions that owners, operators and employees of small properties where children play can take to protect children and others from arsenic and lead pollution in soil. These small properties include homes and home-based childcares.





# Protecting Children in Your Care

## Who should read this guide?

Everyone who plays a role in keeping children safe at home and at home-based childcares located in counties with lead and arsenic soil pollution should read this guide.

Information on affected Washington counties is available in the General Information guide that can be found at your local health department or district or regional Department of Ecology office. Contact information is also provided at the end of this guide.

You can take some easy soil safety actions to protect children and others from polluted soil. Some actions are for outside areas where children play, and others are for inside buildings. You may already be taking many of these soil safety actions.

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## There are two types of soil safety actions:

**Action 1** Soil safety actions you can take now.

**Action 2** Soil safety actions you should plan for.

# Action 1



## Soil Safety Actions You Can Take Now



If your property is in an affected county, you should assume your soil has arsenic or lead, or you should sample and test your soil to learn whether these pollutants are present. Soil sampling guides to tell you how to sample your soil are available from your local health department or district or regional Department of Ecology office.

If your property has polluted soil, you need to protect the children in your care. There are several easy and no-cost or low-cost actions you can take now. Property owners, managers, employees, and parents can all play a role in these steps. By working together, we can reduce the health problems caused by polluted soil.



| Soil Safety Actions   | Inside   | Outside   |
|---|--|---|
| <p><b>Inform employees, children, and parents</b><br/>Teach others about soil pollution, health problems, and actions they can take to protect themselves and others.</p>   |    |    |
| <p><b>Keep children away from polluted soil</b><br/>Fence off areas of polluted soil until it can be covered, mixed, or removed.</p>  |  |    |
| <p><b>Wash hands and face</b><br/>Have children wash their hands and face with soap and water after playing outside and before eating.</p>  |    |   |
| <p><b>Keep soil outside</b><br/>Cover bare patches of soil with bark, clean soil or other material and cover high-traffic areas to reduce the soil tracked inside. Use doormats at every door. Take shoes off when coming inside.</p>   |    |    |
| <p><b>Mop, dust, and vacuum</b><br/>Damp mop or damp-dust floors, windowsills, bookcases, and other surfaces at least once a week. Vacuum carpets and upholstered furniture several times a week. Use a vacuum cleaner with a filter that captures dust and allergens such as a High Efficiency Particulate Arrestor (HEPA) filter.</p> |    |   |
| <p><b>Keep rooms easy to clean</b><br/>Reduce clutter where dust can collect. Minimize hard to clean surfaces. Reduce carpets and upholstered furniture.</p>  |  |   |
| <p><b>Wash and rinse toys often</b><br/>Use plenty of soap and water to clean inside toys and pacifiers. Wash off outside toys and play equipment.</p>  |  |  |
| <p><b>Maintain your grounds</b></p> <ul style="list-style-type: none"> <li>• Sweep, pressure wash, or hose off paved areas to remove soil and minimize dust.</li> <li>• Cover bare soil with grass, wood chips, clean soil, gravel, or other materials.</li> <li>• Minimize dust during dry weather by watering play areas.</li> </ul>  |  |  |

# Action 2



*Photo courtesy of Seattle SPU*



## Future Soil Safety Actions You Should Plan For

As a property owner, manager, or administrator you can cover, mix, or remove the polluted soil—providing long-term protection for children in your care.

### Planning

The best time to cover, mix, or remove polluted soil is during a landscaping or construction project you already have planned. If you have soil with high levels of arsenic or lead, you should take steps sooner rather than later.

#### High levels of arsenic are over:

- 100 milligrams per kilogram (mg/kg)

#### High levels of lead are over:

- 500 mg/kg

It is best to work with the polluted soil during damp but not rainy weather (during spring or fall is best).

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## Covering polluted soil

You can cover polluted soil with materials such as:

- bark, gravel, or sand
- clean soil and grass
- rubber playground mats
- concrete or asphalt

These materials become the barrier between children and the polluted soil.

You should first cover the polluted soil with a layer of heavy-duty plastic or weed barrier fabric. Then cover the plastic or fabric with your bark, gravel, sand, or clean soil. You will need to add 6 to 12 inches of cover material. Over time, make sure to replace cover material so the fabric does not show through. This will protect the underlying fabric barrier, and the children.

Many of these materials also protect children when they fall from playground equipment.

## Mixing polluted soil

You can mix polluted soil with deeper, cleaner soil. This dilutes the amount of arsenic and lead in the soil—reducing the concentration. Soil mixing works best when arsenic levels are less than 40 mg/kg. You will want to test the soil after mixing to make sure the concentrations are less than 20 mg/kg.

## Removing polluted soil

You can remove polluted soil and take it to a landfill. Some landfills may not take the soil, so call first. Polluted soil must be disposed of properly so other land does not become polluted.

# How Much Will It Cost To Cover, Mix, or Remove Polluted Soil?



Covering, mixing, or removing polluted soil at your home or home-based childcare is more costly than the soil safety actions you can take now. Planning what you are going to do for the extra cost will help you get good, cost-effective results.

## **The cost\* will depend on:**

- The size of area you need to cover or mix, or the amount of soil you need to remove.
- The type of cover you choose (bark, gravel, clean soil/grass, asphalt, etc.).
- How often you need to re-cover the polluted soil.

The cost of covering polluted soil includes the labor, the fabric and cover material, and the maintenance of the cover (which may need to be replaced periodically).

- The cost for placing 12 inches of woodchips on top of weed barrier fabric is about \$3,000 for a 900 square foot (30' x 30') area (the approximate size of a small play area). About \$200 may be needed each year to replace the woodchips.

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The cost of mixing polluted soil includes the labor, the tools (for example, renting a rototiller), and testing of the soil.

- The cost for mixing a 900 square foot (30' x 30') area (the approximate size of a small play area) is about \$100 (cost to rent a rototiller). Buying clean soil to mix in costs about \$400. The cost for testing the soil before and after it is mixed ranges from \$300 to \$750.

The cost of removing soil includes the labor, the transport of the polluted soil to a proper landfill, the landfill fee, and the clean soil needed to replace the polluted soil.

- The cost of removing and replacing 6 inches of contaminated soil is about \$6,000 for a 900 square foot (30' x 30') area (the approximate size of a small play area).

\*costs calculated in 2006

## Do These Steps Comply with the Law?

Many of these polluted areas are subject to the requirements of the Model Toxics Control Act (MTCA) state cleanup law (Chapter 70.105D RCW). The actions described in this guide provide some protection from potential health effects. However, these actions may not meet all the legal requirements for soil cleanup actions under the MTCA. Contact your regional Department of Ecology office or see Ecology's web-page for more information about the law.

# Help is Available

The Washington Department of Ecology or your local health department or district is available to assist as you plan each step. We want you to succeed in protecting children, employees, and yourself from harmful arsenic and lead in soil.

## **Learn more about your soil**

Assistance is available to help you learn about your soil. Sampling guides with step-by-step instructions are available that can guide you through the sampling process. Please call your regional Department of Ecology office or local health department or district for these guides.

## **Learn about funding**

Funding options are available and vary by region. Public properties may apply for state remedial action grants to help pay for testing, covering, mixing, and removing polluted soil. These grants require a 50% match.

## **Information is available from your regional Department of Ecology office:**

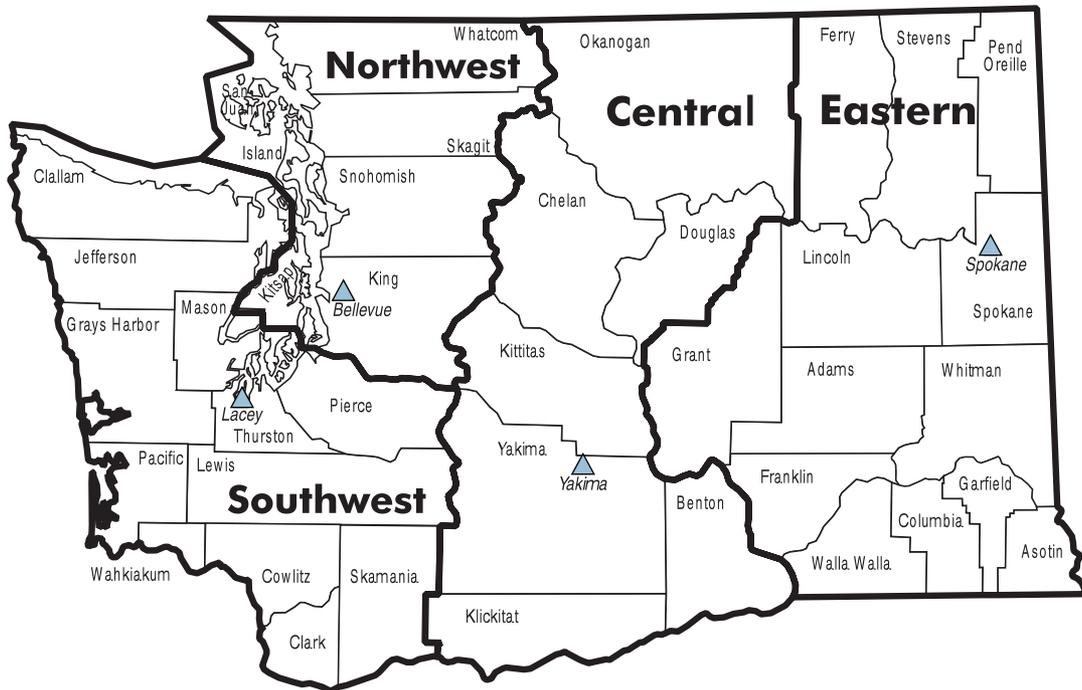
To find Ecology staff in your region to assist you with polluted soil, visit the **Ecology web-site:** [http://www.ecy.wa.gov/programs/tcp/sites/dirt\\_alert/dirt\\_alert\\_hp.htm](http://www.ecy.wa.gov/programs/tcp/sites/dirt_alert/dirt_alert_hp.htm), **or call:**

**Southwest Regional Office:** 360-407-6300

**Northwest Regional Office:** 425-649-7000

**Central Regional Office:** 509-575-2490

**Eastern Regional Office:** 509-329-3400



▲ = Regional Office Location



Your local health department or district may have information about lead or arsenic in your area.

If you need this publication in an alternate format, please contact the Toxics Cleanup Program at 360-407-7170. For persons with a speech or hearing impairment call 711 for relay service or 800-833-6341 for TTY.



Toxics Cleanup Program  
P.O. Box 47600  
Olympia, WA 98504-4600