

Building Homes on Former Orchard Lands

A Guide for Developers and Homebuilders



Dirt Alert Program:

<https://ecology.wa.gov/DirtAlert>

Former Orchard Lands:

<https://ecology.wa.gov/FormerOrchards>

Model Remedies

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Increasingly, historical orchards are becoming a place for new homes. Construction and residential developments are a common sight. Unfortunately, some of the pesticides applied back then don't degrade and are still around. Lead arsenate was a pesticide used from 1890 to 1950. It saved the fruit, but left lead and arsenic in the soil, often at high levels.

Building on Former Orchard Land

For new residential developments, Ecology requires soil sampling for all properties that were orchard land when lead arsenate was used. If high levels are found, mitigation is required.

Our goal is to help developers and homebuilders navigate through the sampling and mitigation process. Here are the basic steps:

- **First, check to see if your building site is located on a former orchard.** Enter an address on our Dirt Alert maps¹.
- **Second, take advantage of Ecology's free sampling service.** Properties that were former orchards are required to complete soil sampling. Ecology will conduct sampling at no cost to you. Send an email to FormerOrchards@ecy.wa.gov to schedule with us. Ecology staff will also help you understand your results and next steps.
- **Third, use one of our model remedies.** If sampling shows elevated lead and arsenic, Ecology offers four different model remedies to make mitigation easier. Ecology can also provide free technical guidance through the mitigation process.
- **Finally, report your results to Ecology and your local building authority.** Use the Building Self-Certification form² or Subdivision Self-Certification form³. Send them to your local building authority and to Ecology.

What are Model Remedies?

Model remedies are pre-approved cleanups.

¹ <https://apps.ecology.wa.gov/DirtAlert>

² <https://apps.ecology.wa.gov/publications/documents/070667.pdf>

³ <https://apps.ecology.wa.gov/publications/documents/070668.pdf>

This means costs and timelines can be quickly determined. Ecology has four different model remedies available. More information can be found in the Model Remedies for Cleanup of Former Orchard Properties in Central and Eastern Washington⁴.

1. EXCAVATION AND REMOVAL

Excavation and removal is the most straightforward option. Contaminated soils are excavated and disposed of properly, usually at a certified landfill. All contaminated soil must be removed from the property and once complete, no additional actions are required. This is a permanent option and the most expensive due to the large quantity of soil that must be removed.



2. HARD OR SOFT CAPPING

This option involves placing a barrier to prevent exposure to contaminated soil. This barrier can be hard, like asphalt, or it can be soft, like soil, grass or gravel. The cap must be maintained over time and any future property owner must be notified about maintaining the cap. This option is generally the most cost effective.

3. CONSOLIDATE AND CAP

Contaminated soil is excavated from portions of a property and consolidating them on the same property below a protective cap. Contaminated soils can be consolidated under permanent surfaces such as asphalt or buildings, or they may be placed in excavated holes or above-ground mounds covered by an *engineered* clean soil cap. This remedy is an excellent option for larger developments with space to create a consolidation area. For example an apartment building may have a large parking area that could contain all the contaminated soil under a layer of asphalt.



4. MIXING

For this remedy, contaminated soil is mixed with deeper, clean soil or imported clean soil. This option is not suitable for soils with high-levels of contamination. The remedy can easily fail if areas of elevated concentrations are missed, so proper sampling is important. Mixing requires availability of enough clean soil, either on-site or imported, to successfully mix contaminated soil to concentrations below state cleanup levels. Any soil used must be sampled to ensure it's not contaminated.

State Environmental Policy Act (SEPA)

Your building project may be subject to the State Environmental Policy Act⁵ (SEPA) process. For large projects, SEPA identifies and analyzes environmental impacts with a specific project, ultimately helping determine if the project moves forward.

⁴ <https://apps.ecology.wa.gov/publications/SummaryPages/2109006.html>

⁵ <https://apps.leg.wa.gov/rcw/default.aspx?cite=43.21C>

If you submit a SEPA checklist, be sure to answer these questions in your application:

- Was the property was a **former orchard**?
- Did you **sample**? What were the results? Are they above state cleanup levels?
- What **model remedy** did you select? When will you implement that?

Working with Local Governments

Ecology and local governments have a shared goal to provide predictability and certainty for new housing projects. Follow these steps to ensure all rules and regulations are met.



Pre-application Meeting

Meeting with your City or County development staff is helpful to understand what requirements are applicable to your project. Ecology is willing to attend these meetings to answer any specific questions.

Preliminary Approval

Typically, the local government will require certain conditions are met prior to final approval, but the project will continue to move forward. If your sampling results show mitigation is required, you will need to share which model remedy you have chosen with the City or County. They will then require implementation before final approval.

Model Remedy Implementation

Many local governments will not issue final plat approval and/or an occupancy permit until a model remedy has been implemented. Use Ecology's self-certification form ([LINK](#)) to show you have completed the model remedy you choose. Refer to [GUIDANCE](#) for additional information. If you have additional questions, reach out to Ecology for help. Once Ecology receives the self-certification form, we will notify the local government that state cleanup requirements have been met and an occupancy permit can be issued.

Other environmental considerations

Building projects can also have other requirements.

Stormwater

Construction sites must have a **Construction Stormwater General Permit** if they:

- Disturb one or more acres of land or are part of a larger project that will disturb one or more acres; and
- Discharge stormwater from the site into, or through a storm drain system that discharges into, surface waters of the state; or



- Use best management practices (BMPs) from the 2019 Stormwater Management Manual for Eastern Washington⁶ (SWMMEW) or an approved local BMP manual.

Ecology can also require a permit for a site with pollutants impacting waters of the state. This includes arsenic and lead in soil of former orchard lands.

Dust control

Don't allow dust from your construction site to cross onto another property. State air quality regulations allow heavy fines for not controlling dust. Dust containing arsenic and lead can impact neighboring properties and pose a risk to human health. Contact your local air quality agency for additional information.



- Benton Clean Air Agency⁷ serves Benton County.
- Ecology's Central Regional Office⁸ serves Chelan, Douglas, and Okanogan counties.
- Yakima Regional Clean Air Agency⁹ serves Yakima County.

To reduce dust:

- Water down your work site during dry weather.
- Cover soil stockpiles and trucks loaded with contaminated soil.
- Limit traffic and traffic speeds onsite.
- Maintain as much plant cover as possible.

Soil Disposal

Reusing, giving away, or selling contaminated soils could put others at risk. All soils leaving the site must go to a landfill. In some cases, contaminated soils can be mixed or capped in place. State Solid Waste Handling Standards govern the disposal of contaminated soils. Landfills may require data about the toxicity of the soil.

Workplace safety rules

The Washington Department of Labor and Industries¹⁰ (LNI) has rules to protect workers from arsenic and lead in the workplace. These apply to any employees exposed to soil within former orchard lands. For help understanding and complying with these rules, please contact LNI Safety & Health at 1-800-423-7233.

To request Americans with Disabilities Act (ADA) accommodation, or printed materials in a format for the visually impaired, contact Rhonda Luke at 509-454-7838 or Rhonda.Luke@ecy.wa.gov, or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

⁶ <https://apps.ecology.wa.gov/publications/SummaryPages/181044.html>

⁷ <https://bentoncleanair.org>

⁸ <https://ecology.wa.gov/About-us/Our-role-in-the-community/Partnerships-committees/Clean-air-agencies>

⁹ <https://www.yakimacleanair.org/>

¹⁰ <https://lni.wa.gov/safety-health/>