Second Periodic Review
John Newbery Elementary School

850 N Western Avenue, Wenatchee, Chelan County
Facility Site ID: 352, Cleanup Site ID: 4416

Toxics Cleanup Program, Central Region

Washington State Department of Ecology
Union Gap, Washington

July 2022

Document Information

This document is available on the Department of Ecology's John Newbery Elementary School cleanup site page.[1]

Related Information

- Facility Site ID: 352
- Cleanup Site ID: 4416

Contact Information

Toxics Cleanup Program

Central Regional Office
Frank Winslow, Periodic Reviewer
1250 W Alder Street
Union Gap, WA 98903
Email: frank.winslow@ecy.wa.gov
Phone: 509-424-0543

Website: Washington State Department of Ecology[2]

ADA Accessibility

The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188.

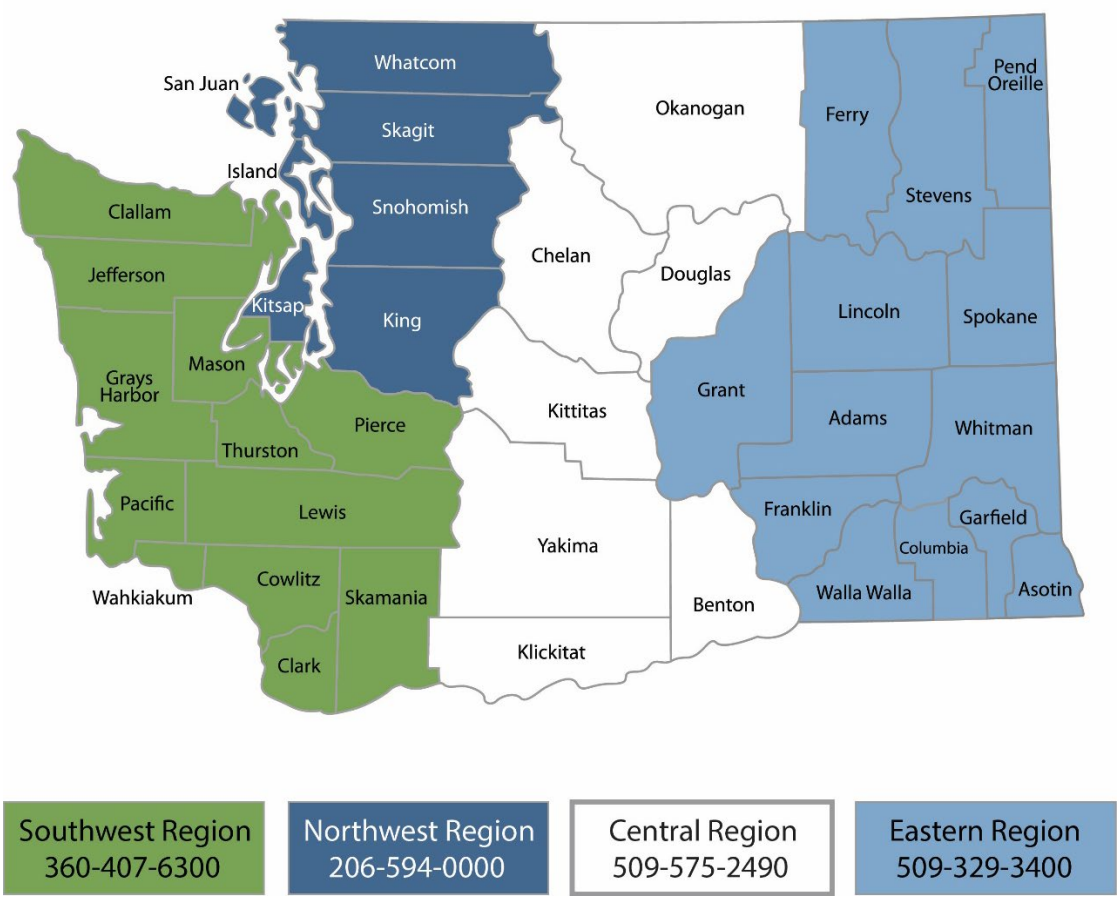
To request an ADA accommodation, contact the Ecology ADA Coordinator by phone at 360-407-6831 or email at ecyadacoordinator@ecy.wa.gov. For Washington Relay Service or TTY call 711 or 877-833-6341. Visit Ecology's website[3] for more information.

---

[1] https://apps.ecology.wa.gov/cleanupsearch/site/4416
[2] https://ecology.wa.gov/About-us/Who-we-are/Our-Programs/Toxics-Cleanup
[3] https://ecology.wa.gov/About-us/Accountability-transparency/Our-website/Accessibility

Department of Ecology's Regional Offices

Map of Counties Served



Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 47600 Olympia, WA 98504	360-407-6000

Table of Contents

Introduction

The Washington State Department of Ecology (Ecology) reviewed post-cleanup site conditions and monitoring data to ensure human health and the environment are being protected at the John Newbery Elementary School (Site). Site cleanup was implemented under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC). This is the second periodic review conducted for this Site. Ecology completed the first periodic review in October 2013.

Cleanup activities at this Site were completed as an independent remedial action. Residual concentrations of lead and arsenic that exceeded MTCA cleanup levels remain on the property. The MTCA cleanup levels for soil and groundwater are established under WAC 173-340-740[4] and WAC 173-340-720,[5] respectively.

Ecology determined institutional controls in the form of an environmental covenant would be required as part of the cleanup action for the Site. WAC 173-340-420(2)[6] requires Ecology to conduct a periodic review of certain sites every five years. For this Site, a periodic review is required because the department issued a no further action opinion, and an institutional control is required as part of the cleanup action.

When evaluating whether human health and the environment are being protected, Ecology must consider the following factors (WAC 173-340-420(4)):

a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the site

b) New scientific information for individual hazardous substances or mixtures present at the site

c) New applicable state and federal laws for hazardous substances present at the site

d) Current and projected site and resource uses

e) The availability and practicability of more permanent remedies

f) The availability of improved analytical techniques to evaluate compliance with cleanup levels

Ecology publishes a notice of all periodic reviews in the *Site Register* and provides an opportunity for public comment.

[4] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-740
[5] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-720
[6] https://app.leg.wa.gov/wac/default.aspx?cite=173-340-420

Summary of Site Conditions

Site description and history

The John Newbery Elementary School site is located at 850 North Western Avenue, in the City of Wenatchee in Chelan County, Washington. John Newbery Elementary School is in Wenatchee School District #246.

Prior to construction of the elementary school, the Site had been cultivated as fruit orchard. Prior to 1948, pear and apple orchards used lead arsenate as a pesticide to control the codling moth. By 1948, lead arsenate use generally ceased because the codling moth had developed resistance to the arsenate compound, and dichlorodiphenyltrichloroethane (DDT) was found to be a much more effective control agent.

The application of lead arsenate over several decades resulted in the accumulation of lead and arsenic in surface soils at levels that are hazardous to human health and the environment. Lead and arsenic are relatively immobile in soil and generally remain in the top 12 inches of the soil column, even though application ceased prior to 1950.

A vicinity map is in Appendix A, and a Site plan is in Appendix B.

Site investigations

Olympus Environmental conducted a Site investigation in 1991 to evaluate impacts to soil at the Site from former orchard activities. Thirteen soil samples were collected from random locations across the Site and analyzed for lead, arsenic, DDT and chlordane. Arsenic was detected at a maximum concentration of 120 milligrams per kilogram (mg/kg) with a mean of 56 mg/kg. Lead, DDT, and chlordane were detected at maximum concentrations of 450 mg/kg, 8.5 mg/kg, and 170 micrograms per kilogram, respectively. The maximum concentration for each contaminant exceeds its respective MTCA cleanup level.

Cleanup actions

Protective capping was selected as the remedial action for the pesticide contamination at the Site. Following constructing of the school buildings, all grass and landscaped areas were covered with a minimum of 15 inches of clean soil. Areas surrounding play equipment were also covered with landscaping fabric followed by wood chips. A no further action determination was issued by Ecology in 2010.

Post-remediation compliance sampling

Soil sampling was conducted by Ecology in 2002 as part of an evaluation of construction and remediation activities. A total of 21 samples were collected from the top six inches of soil. Samples were analyzed for lead and arsenic. Arsenic was detected in two samples at

concentrations (27 mg/kg and 66 mg/kg) exceeding MTCA Method A cleanup levels. Lead was not detected in any of the samples at concentrations exceeding MTCA Method A cleanup levels.

In 2013, additional soil samples were collected and analyzed for the purpose of the first periodic review. Samples were collected directly from the soil surface on a grid pattern across the property. Each sample was analyzed with an x-ray fluorescence detector. Lead was detected in every sample at concentrations below MTCA Method A cleanup levels. Arsenic was detected in two samples at concentrations exceeding MTCA Method A cleanup levels (38 and 31 mg/kg). Although two arsenic sample results exceeded MTCA Method A cleanup levels, none were more than twice the cleanup level, and 10% or fewer of the samples exceeded the cleanup level. This meets the statistical compliance requirements of MTCA.

Cleanup standards

Cleanup standards include cleanup levels, the location where these cleanup levels must be met (point of compliance), and any other regulatory requirements that apply to the Site. WAC 173-340-704[7] states MTCA Method A may be used to establish cleanup levels at sites that have few hazardous substances, are undergoing a routine cleanup action, and where numerical standards are available for all indicator hazardous substances in the media for which the Method A cleanup level is being used.

MTCA Method A cleanup levels for unrestricted land use were determined to be appropriate for contaminants at this Site. The cleanup actions conducted at the Site were determined to be routine, few hazardous substances were found at the Site, and numerical standards were available in the MTCA Method A table for each hazardous substance.

The point of compliance is the area where the cleanup levels must be attained. For soil cleanup levels based on the protection of groundwater, as they are for this Site, the point of compliance is established as soils throughout the Site (standard point of compliance).

Environmental Covenant

Ecology determined that institutional controls would be required as part of the cleanup action to document the remaining contamination, protect the cleanup action, and protect human health and the environment. On September 2, 2008, institutional controls in the form of an environmental covenant[8] (Covenant) were recorded for the Site.

The Covenant recorded for the Site imposes the following limitations:

1. Any activity on the Property that may result in the significant release or exposure to the environment of the contaminated soil that was contained as part of the Remedial Action, or create a new exposure pathway, is prohibited. Some examples of activities that are prohibited in the capped areas include: drilling, digging, placement of any

[7] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-704
[8] https://apps.ecology.wa.gov/cleanupsearch/document/2063

objects or use of any equipment which deforms or stresses the surface beyond its load bearing capability, bulldozing or earthwork. This does not include normal maintenance activities, including soil aeration and irrigation system repair.

2. Any activity on the Property that may interfere with the integrity of the Remedial Action and continued protection of human health and the environment is prohibited.
3. Any activity on the Property that may result in the release or exposure to the environment of a hazardous substance that remains on the Property as part of the Remedial Action, or create a new exposure pathway, is prohibited without prior written approval from Ecology.
4. The Owner of the property must give thirty (30) day advance written notice to Ecology of the Owner's intent to convey any interest in the Property. No conveyance of title, easement, lease, or other interest in the Property shall be consummated by the Owner without adequate and complete provision for continued monitoring, operation, and maintenance of the Remedial Action.
5. The Owner must restrict leases to uses and activities consistent with the Covenant and notify all lessees of the restrictions on the use of the Property.
6. The Owner must notify and obtain approval from Ecology prior to any use of the Property that is inconsistent with the terms of this Covenant. Ecology may approve any inconsistent use only after public notice and comment.
7. The Owner shall allow authorized representatives of Ecology the right to enter the Property at reasonable times for the purpose of evaluating the Remedial Action; to take samples, to inspect remedial actions conducted at the property, to determine compliance with this Covenant, and to inspect records that are related to the Remedial Action.
8. The Owner of the Property reserves the right under WAC 173-340-440 to record an instrument that provides that this Covenant shall no longer limit use of the Property or be of any further force or effect. However, such an instrument may be recorded only if Ecology, after public notice and opportunity for comment, concurs.

Periodic Review

Effectiveness of completed cleanup actions

During the Site visit Ecology conducted on July 11, 2022, Site conditions overall appeared to be protective in preventing contact with contaminated soils remaining at the Site. The Site is currently operating as a public school. A photo log is in Appendix C.

Direct contact

The cleanup actions were intended to eliminate exposure to contaminated soil at the Site. Exposure pathways to contaminated soils by ingestion and direct contact were reduced by the cap. The clean soil cap on the Site continues to prevent the human exposure to contaminated soils.

The school has planted a vegetable garden at the base of the slope on the north side of the school (Photo 2). The garden was planted in raised beds that were filled with imported clean soil, which was confirmed by soil samples analyzed during the first periodic review (see Section 2.4.1). The use of raised beds with clean soil does not allow produce from this garden to come in contact with contaminated soils at the Site. School personnel should monitor and maintain this garden area to verify that clean soil in the raised beds does not mix or come in contact with the contaminated soils beneath.

Based on the Site visit, some maintenance activities are warranted to address the following:

- Distressed turf in the field located northwest of the school (Photos 3 and 4).
- Exposed soil in the playground area (Photo 6).
- Distressed turf and exposed soil on the sloped area just west of the school (Photo 7).

Maintenance activities are warranted to prevent erosion in areas of uncovered soil that could lead to potential future exposures to contaminated soils.

Institutional controls

Institutional controls in the form of a Covenant were implemented at the Site in 2008. The Covenant remains active and discoverable through the Chelan County Auditor's Office. Ecology found no evidence a new instrument has been recorded that limits the effectiveness or applicability of the Covenant. This Covenant prohibits activities that will result in the release of contaminants contained as part of the cleanup action and prohibits any use of the property that is inconsistent with the Covenant, unless approved by Ecology in advance. This Covenant ensures the long-term integrity of the cleanup action will be protected.

New scientific information for individual hazardous substances or mixtures present at the Site

There is no new relevant scientific information for the hazardous substances remaining at the Site.

New applicable state and federal laws for hazardous substances present at the Site

There are no new applicable or relevant state or federal laws for hazardous substances remaining at the Site.

Current and projected site and resource uses

The Site is used for commercial purposes. There have been no changes in current or projected future Site or resource uses. The current Site use is not likely to have a negative impact on the protectiveness of the cleanup action.

Availability and practicability of more permanent remedies

The remedy implemented included containing hazardous substances, and it continues to be protective of human health and the environment. While more permanent remedies may be available, they are still not practicable at this Site.

Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used at the time of the cleanup action were capable of detection below the selected MTCA cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

Conclusions

- The cleanup actions completed at the Site appear to be protective of human health and the environment.
- Soil cleanup levels have not been met at the Site; however, the cleanup action is determined to comply with cleanup standards under WAC 173-340-740(6)(f), since the long-term integrity of the containment system is ensured and the requirements for containment technologies have been met.
- The Covenant for the property is in place and is effective in protecting human health and the environment from exposure to hazardous substances and the integrity of the cleanup action.

Based on this periodic review, Ecology has determined the requirements of the Covenant are being followed. Some surface maintenance activities are recommended as discussed herein. No additional cleanup actions are required by the property owner at this time. The property owner is responsible for continuing to inspect the Site to ensure the integrity of the cap is maintained.

Next review

Ecology will schedule the next review for the Site five years from the date of this periodic review. If additional cleanup actions or institutional controls are required, the next periodic review will be scheduled five years after those activities are completed.

References

Olympus Environmental, Inc. *Wenatchee Schools Soil Sampling*. June 1991.

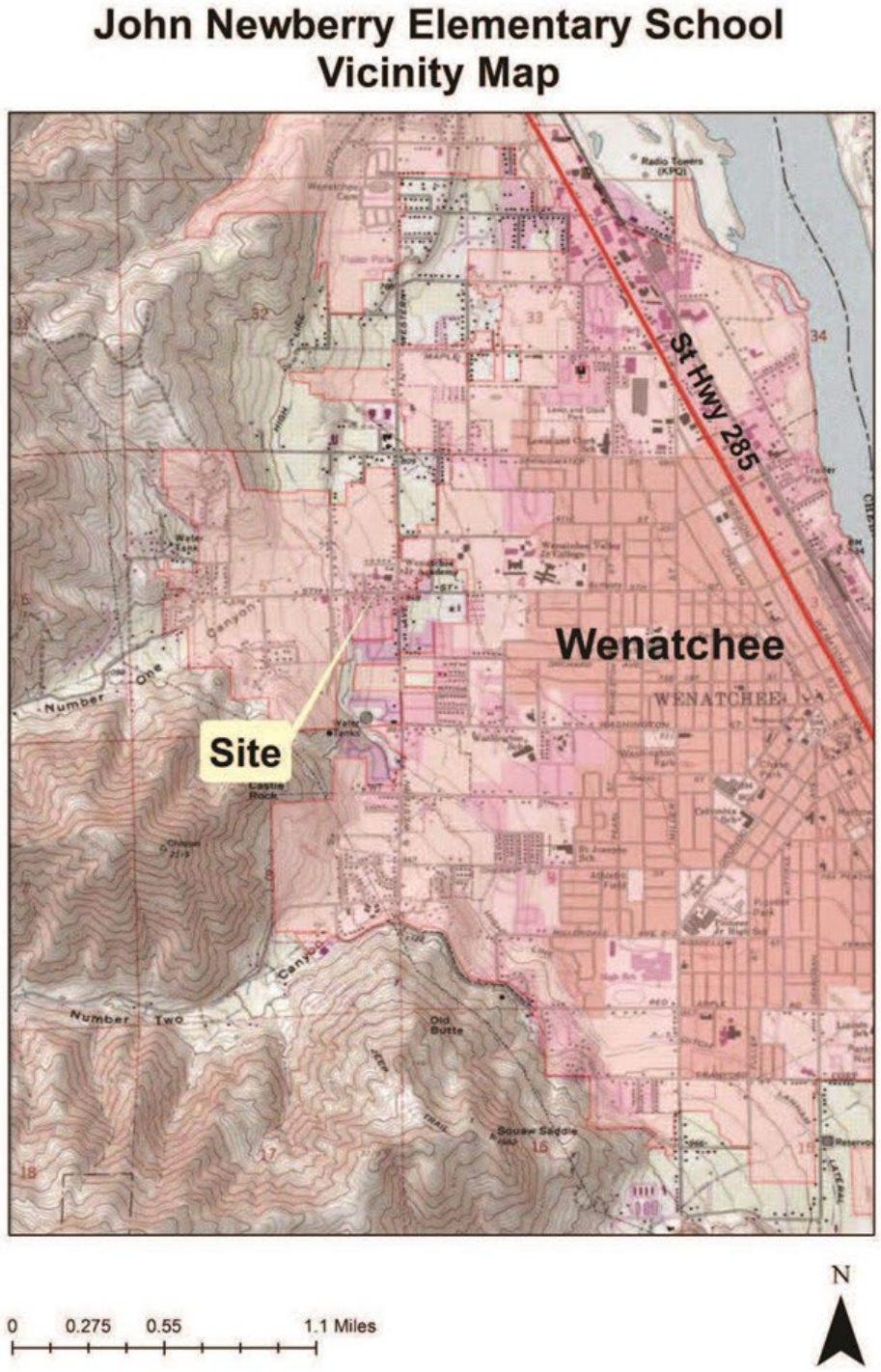
Ecology. *Environmental Covenant*. September 2, 2008.]

Ecology. "No Further Action Determination." June 22, 2010.

Ecology. *Periodic Review*. October 2013.

Ecology. Site visit. July 11, 2022.

Appendix A. Vicinity Map



Appendix B. Site Plan

Appendix C. Photo Log

Photo 1: John Newberry School (view to the west)

Photo 2: Vegetable Garden Area (view to northwest)

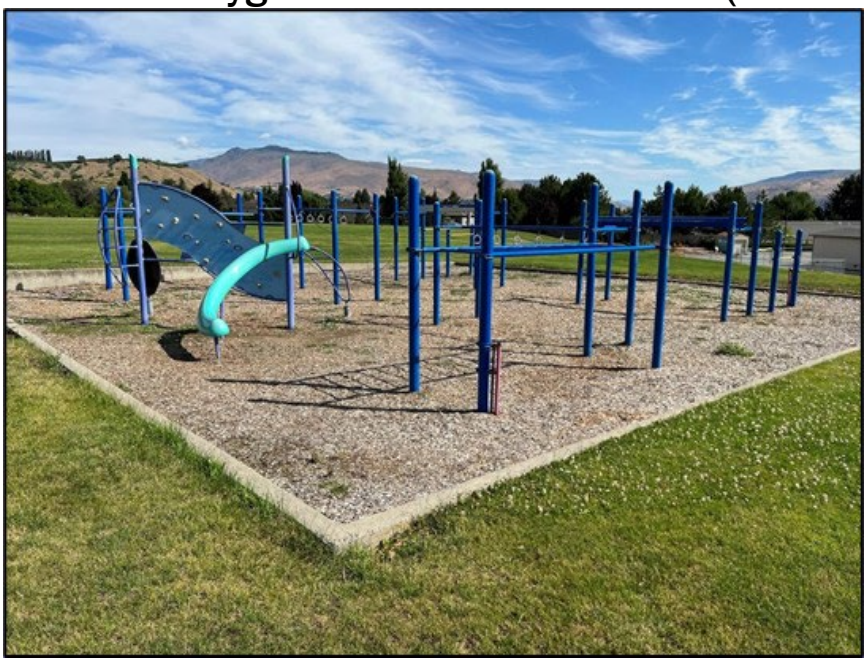
Photo 3: Field to northwest of the school (view to the west)

Note distressed turf in foreground.

Photo 4: Field to northwest of the school (view to the west)

Note distressed turf in foreground.

Photo 5: Playground west of the school (view to the north)



Note the bare surface.

Photo 6: Close-up view of playground (view to the north)

Note exposed soil.

Photo 7: Sloped area behind school (view to the east)

Note distressed turf.