Second Periodic Review
LeRoi Co Smelter Site

117 Park Rd, Northport, Stevens County
Facility Site ID: 767, Cleanup Site ID: 47

Toxics Cleanup Program, Eastern Region

Washington State Department of Ecology
Spokane, Washington

November 2023

Document Information

This document is available on the Department of Ecology's LeRoi Co Smelter cleanup site page.[1]

Related Information

- Facility Site ID: 767
- Cleanup Site ID: 47

Contact Information

Toxics Cleanup Program

Eastern Regional Office
Sandra Treccani, Site Manager
4601 N Monroe St.
Spokane, WA 99205
Email: sandra.treccani@ecy.wa.gov
Phone: 509-724-1205

Website: Washington State Department of Ecology[2]

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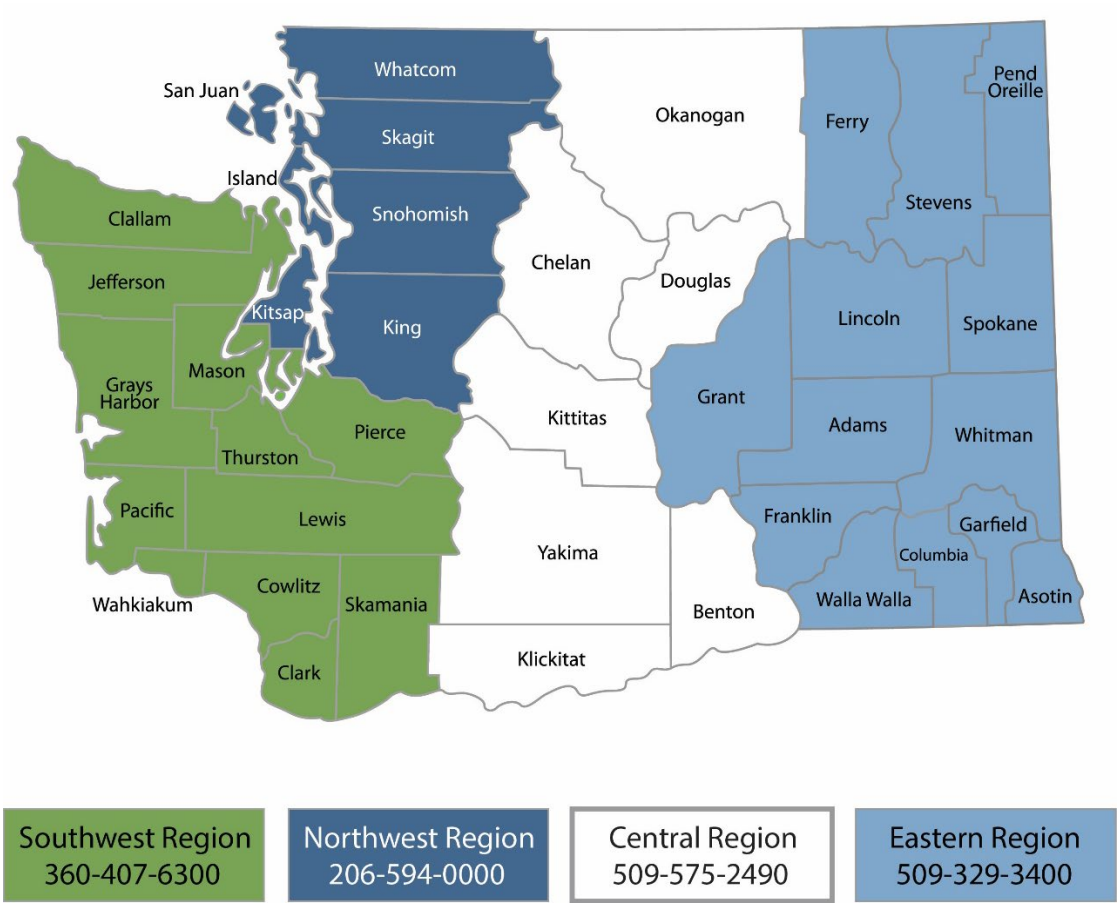
[1] https://apps.ecology.wa.gov/cleanupsearch/site/47
[2] https://ecology.wa.gov/About-us/Who-we-are/Our-Programs/Toxics-Cleanup
[3] https://ecology.wa.gov/About-us/Accountability-transparency/Our-website/Accessibility

Department of Ecology's Regional Offices

Map of Counties Served



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400

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 46700 Olympia, WA 98504	360-407-6000

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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 LeRoi Co Smelter cleanup site (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 September 2017.

Cleanup activities at this Site were completed as removal actions under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) authority by the United States Environmental Protection Agency (USEPA) in 2004. Residual concentrations of metals 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 an institutional control was 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 Site covers approximately 30 acres at the northeast end of Northport, Washington. Northport covers approximately 372 acres and is along the east bank of Franklin D. Roosevelt Lake (Lake Roosevelt) on the upper Columbia River. Northport is approximately 7 miles south of the Canadian border and 35 miles north of Colville, Washington.

The USEPA removal action is divided into two areas: the 30-acre abandoned smelter/lumber mill complex and the residential yard removal in the Northport community. This periodic review will focus on the smelter/lumber mill complex known as the LeRoi Co Smelter Site. A vicinity map is in Appendix A, and a Site plan is in Appendix B.

According to the results of a preliminary assessment/site inspection conducted in the area, the facility began smelting copper and gold tellurium ores from the Le Roi Mine in Rossland, British Columbia, and copper, lead, and silver ores from northeastern Washington in 1896. Heap roasting of tellurium ore involved open roasting on brick platforms. Burned ore was placed in a furnace that produced iron and slag waste. Some of the waste was formed into bricks that were then used as construction materials for on-site as well as off-site buildings. The gold and copper concentrate was shipped off the Site by rail for further refining.

At the peak of operation, the Le Roi Smelter processed 500 tons of ore per day; operations were suspended in 1909. In 1914, the Le Roi Smelter reopened to process lead ore from Leadpoint, Washington, to meet government demand during World War I. Lead smelting operations during this period produced up to 30 tons per day of airborne sulfur emissions. Operations ceased permanently in 1921, and the Site remained inactive until 1953. The furnace, roaster, crusher, and ore buildings were removed during this period of inactivity.

From 1953 to 2001, the Site was used as a lumber mill; the main lumber operations were in the western portion of the Site, and the eastern portion was used to store lumber products and old metal parts. The lumber mill processed mostly cedar wood from rough-dimension lumber into exterior siding and exterior paneling. Mill processes included cutting, drying, and shipping the wood products. Mill operations were run on propane; no wood treatment or chemical use was reported during the mill's operating history.

Site investigations

In October 2003, USEPA's Removal Evaluation Team analyzed 210 surface and subsurface soil samples from 118 locations at the Site. The Site was divided into the smelter complex and the lumberyard area. A 100-foot plot grid was used to collect the samples. Fifteen locations were not sampled: five were over concrete, five were within 50 feet of the property boundary, four were within 75 to 100 feet of city drinking water supply wells, and 1 was in a building.

In addition, USEPA analyzed 114 soil samples from 13 residential properties (owners volunteered for sampling), and 58 composite samples from 18 locations on the Northport school campus. USEPA screened the samples using X-ray fluorescence. Twenty percent of these samples were confirmed using inductively coupled plasma emission spectrometry.

Lead levels on the smelter site and tailings piles were extremely high (up to 99,700 parts per million [ppm]). Residential soil lead levels ranged from 195 ppm to 1,880 ppm. The results indicated lead and arsenic contamination is present throughout the smelter complex and areas within the town.

USEPA concluded hazardous substances at the Site and on surrounding properties present or may present an imminent and substantial endangerment to public health, welfare, and the environment. In an Action Memo dated June 6, 2004, USEPA implemented a removal action that involved excavating contaminated soil at the Site, from surrounding residential and common-use properties, and from the property BNSF Railway owned.

A Site investigation was conducted by the Washington State Historic Preservation Society to investigate any structures or features that might be of historic importance. The Historic Preservation Society concluded that structures at the abandoned smelter site are eligible under Criterion A for listing under the National Register of Historic Places. Additionally, a biological assessment was conducted by the Washington Department of Fish and Wildlife to determine if Site operations would impact any endangered or threatened species. The biological assessment concluded that Site operations were not likely to adversely affect any endangered or threatened species within the area.

USEPA also conducted a hazardous materials investigation, discovering one 30-gallon drum on-site with an unknown liquid (likely oil waste); one 850-gallon underground storage tank; and one above-ground storage tank that was 1/3 full of an unknown liquid (likely oil waste).

Cleanup actions

USEPA began Site operations on July 19, 2004. Site operations included getting Columbia River water supply access from the Bureau of Reclamation, conducting Site cleanup, and consolidating materials on-site. USEPA consolidated all the metal on-site for the landowner to recycle when operations concluded.

USEPA excavated smelter-waste-contaminated materials that were distributed across the Site, consolidated the materials on the Site, and covered the materials with a containment barrier. In addition, the USEPA removed smelter-waste-contaminated materials from residential properties in the Northport community and transported the materials to the consolidation area on the smelter property. The additional hazardous materials on-site were taken off-site for proper disposal.

Outside the boundaries of the Site, 191 residential properties were sampled. Sixty-nine properties required no action because they were below 250 ppm and met Washington cleanup levels under MTCA. Seventy-eight properties had results greater than 250 ppm, but because

they were less than 1,000 ppm, they were not considered sufficiently high in lead concentration as to warrant emergency removal. Instead, residences were advised to exercise exposure reduction measures. Thirty-three properties were eligible for emergency removal because of results greater than a 1,000 ppm. However, three of the 33 properties had results between 700 and 1,000 ppm but were eligible for emergency removal work because children lived there.

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. Method B may be used at any site and is the most common method for setting cleanup levels when sites are contaminated with substances not listed under Method A. Method C cleanup levels may be used to set soil and air cleanup levels at industrial sites.

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 August 1, 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 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 objects or use of any equipment which deforms or stresses the surface beyond its load bearing capability, bulldozing or earthwork. This restriction does not include minor

[7] https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-704
[8] https://apps.ecology.wa.gov/cleanupsearch/document/63229

maintenance activities including: repairing or replacing sprinkler heads, re-seeding or re-sodding portions of the fields, or minor repairs to the sprinkler system plumbing.

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 Restrictive 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 Restrictive 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, 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 Restrictive 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 October 27, 2022, the remedy appears to be functioning as intended. The Site is vacant. The capped consolidation areas are in good condition. The vegetative cover in some areas is failing and/or worn, but the soil and wood chip cap remains intact. Woody debris placed to minimize vehicle access is still present and appears functional. The fence surrounding portions of the property remains intact. Evidence of some pedestrian access is present, but it appeared transitory and did not indicate any extended public use. The clean soil cap continues to eliminate direct human and ecological exposure pathways (ingestion, contact) to contaminated soils. 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 a combination of physical access restrictions and institutional controls. Fencing and the lack of direct vehicular access are effective at minimizing public access to the Site. The clean soil and wood chip cover on the portions of the Site containing contamination effectively prevents possible exposure to these materials.

Institutional controls

Institutional controls in the form of a Covenant were implemented at the Site in 2010. The Covenant remains active and discoverable through the Stevens County Auditor. 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 currently vacant. It was sold in August 2018 to the Town of Northport in compliance with the terms of the Covenant. There have been no changes in current or projected Site and resource uses. However, the Town intends to develop portions of the property into community service buildings and vehicle storage. The areas being considered for redevelopment are areas that were not used to consolidate contaminated soils, on the lower flat portion of the property. Any actions will comply with the Covenant and occur with Ecology consultation. 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. 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

Weston Solutions, Inc. *Underground Waterways Assessment Report.* November 2004.

USEPA. *LeRoi Smelter Pollution Reports #1 - #5.* January 10, 2005.

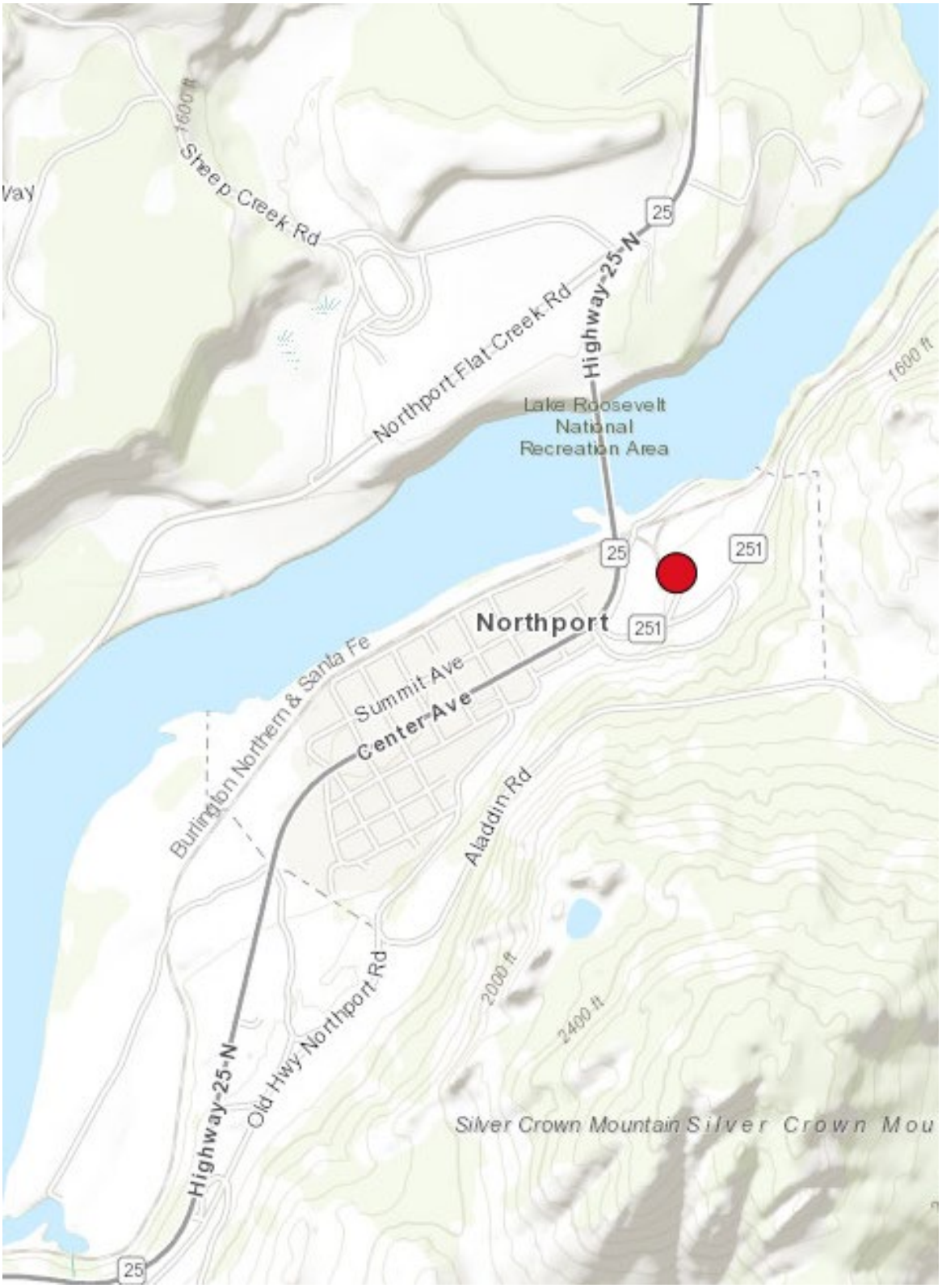
U.S. Department of Health and Human Services. *Health Consultation.* December 6, 2005.

Ecology. *Environmental Covenant*. January 12, 2010.

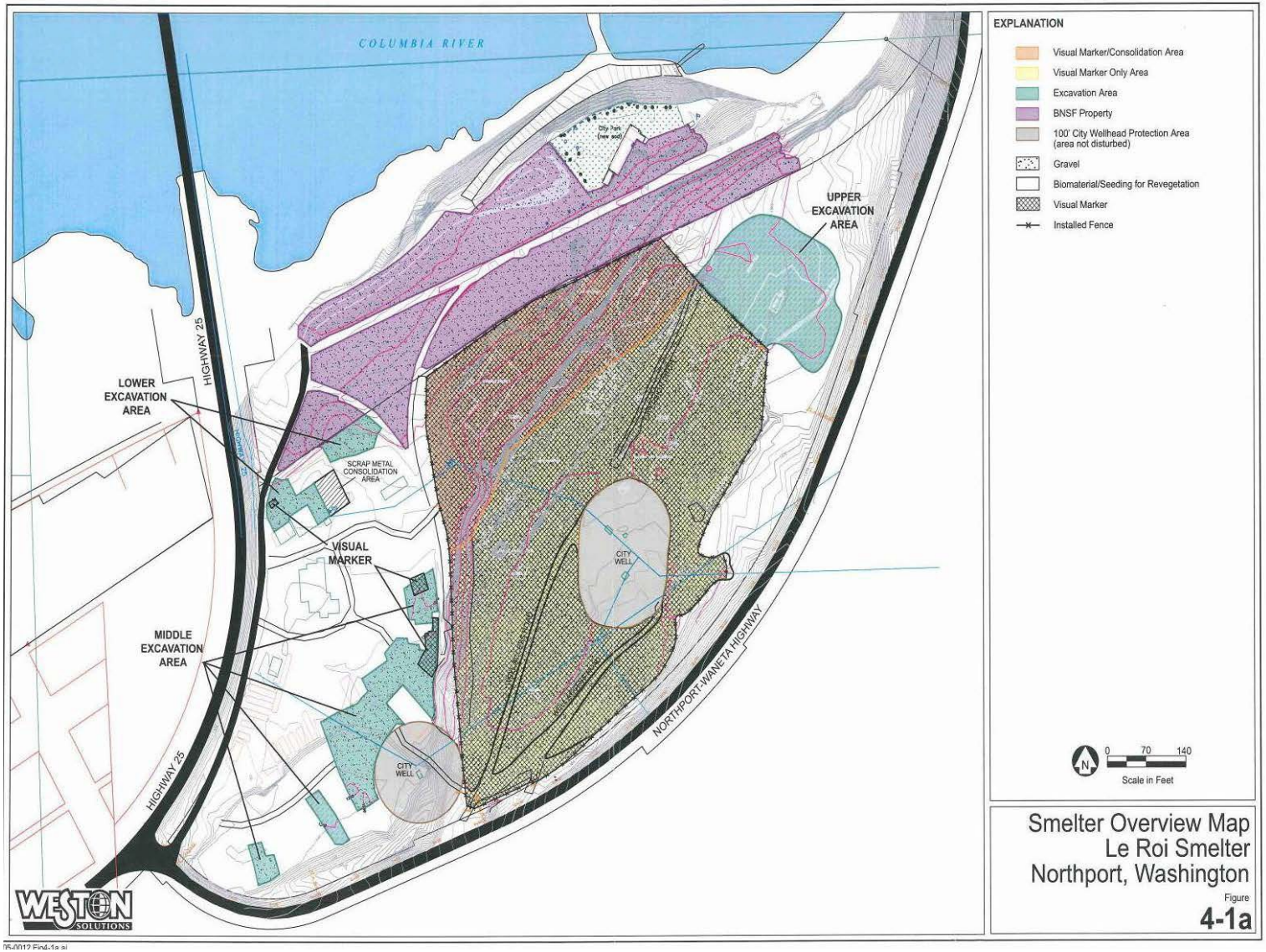
Ecology. *First Periodic Review*. September 2017.

Ecology. Site visit. October 27, 2022.

Appendix A. Vicinity Map



Appendix B. Site Plan



Appendix C. Photo Log

Photo 1: View of capped area looking south

Photo 2: View of capped area surface looking southwest

Photo 3: View of fence line looking north