



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

## **Public Participation Plan**

**Reserve Silica Reclamation Site  
26000 Black Diamond-Ravensdale Road SE  
Ravensdale, WA 98051**

---

**Facility Site ID: 2041**

*Cleanup Site ID: 4728*

January 2020



## Publication and Contact Information

This plan is available on the Department of Ecology's website at:  
<https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=4728>

For more information contact:

Northwest Regional Office  
3190 160<sup>th</sup> Ave SE  
Bellevue WA 98008  
425-649-7052

Washington State Department of Ecology – [www.ecology.wa.gov](http://www.ecology.wa.gov)

- Headquarters, Olympia 360-407-6000
- Northwest Regional Office, Bellevue 425-649-7000
- Southwest Regional Office, Olympia 360-407-6300
- Central Regional Office, Union Gap 509-575-2490
- Eastern Regional Office, Spokane 509-329-3400

*To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-7285 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.*

**Public Participation Plan**

---

**Reserve Silica Reclamation Site**

Solid Waste Management Program  
Northwest Region  
Washington State Department of Ecology  
Bellevue, Washington

*This page is purposely left blank*

# Table of Contents

Public Involvement in Contamination Cleanup.....	1
Site contacts .....	3
Ecology .....	3
Reserve Silica Corporation .....	3
Holcim (US) Inc.....	3
Public Participation Grants .....	3
Washington’s Cleanup Laws .....	4
Model Toxics Control Act (MTCA).....	4
State Environmental Policy Act.....	5
Site History .....	6
Mining background.....	6
Mine pit reclamation .....	7
Permits .....	7
Release of contamination .....	8
Cleanup work so far .....	9
Area community.....	11
Public Participation Activities .....	11
How we share information with the community.....	11
Postal mailing list.....	12
Site Register .....	12
Newspaper display ads or legal notices .....	12
Ecology’s website and social media platforms .....	12
Document repositories .....	13
Signs around the cleanup site.....	13
How to share information with us.....	13
Public comment periods.....	13
Public events .....	14
Plan Amendments .....	15



## **Public Involvement in Contamination Cleanup**

The Washington State Department of Ecology (Ecology) developed this public participation plan (plan) in cooperation with potentially liable persons (PLPs) Reserve Silica Corporation (Reserve Silica) and Holcim (US) Inc. (Holcim)<sup>1</sup>. The purpose of the plan is to promote meaningful community involvement during cleanup of the Reserve Silica Reclamation site.

The plan describes ways Ecology will inform the public about contamination investigations and cleanup options throughout the cleanup process. Ecology encourages the public to learn about and get involved in decision-making opportunities. This plan identifies how and when the public can get involved during different stages of the investigation and cleanup of contamination.

The Reserve Silica Corporation Site was renamed as the Reserve Silica Reclamation Site (Facility/Site ID 2041, Cleanup Site ID 4728). The Reclamation Site includes the landfill-impacted areas, but excludes the Plant Site parcel on the north side of Black Diamond-Ravensdale Road SE (see figure below).

Reserve Silica and Holcim entered into an Agreed Order with Ecology on December 16, 2019 for the investigation and cleanup of contamination on the Reserve Silica Reclamation Site (Site)<sup>2</sup> in accordance with Model Toxics Control Act (MTCA). This plan is developed for the Reserve Silica Reclamation site Agreed Order.

The Plant Site (Facility/Site ID 19532, Cleanup Site ID 15125) is managed as a separate site<sup>3</sup>, and is not subject to the Agreed Order. Reserve Silica plans to independently investigate and cleanup the Plant Site in accordance with MTCA.

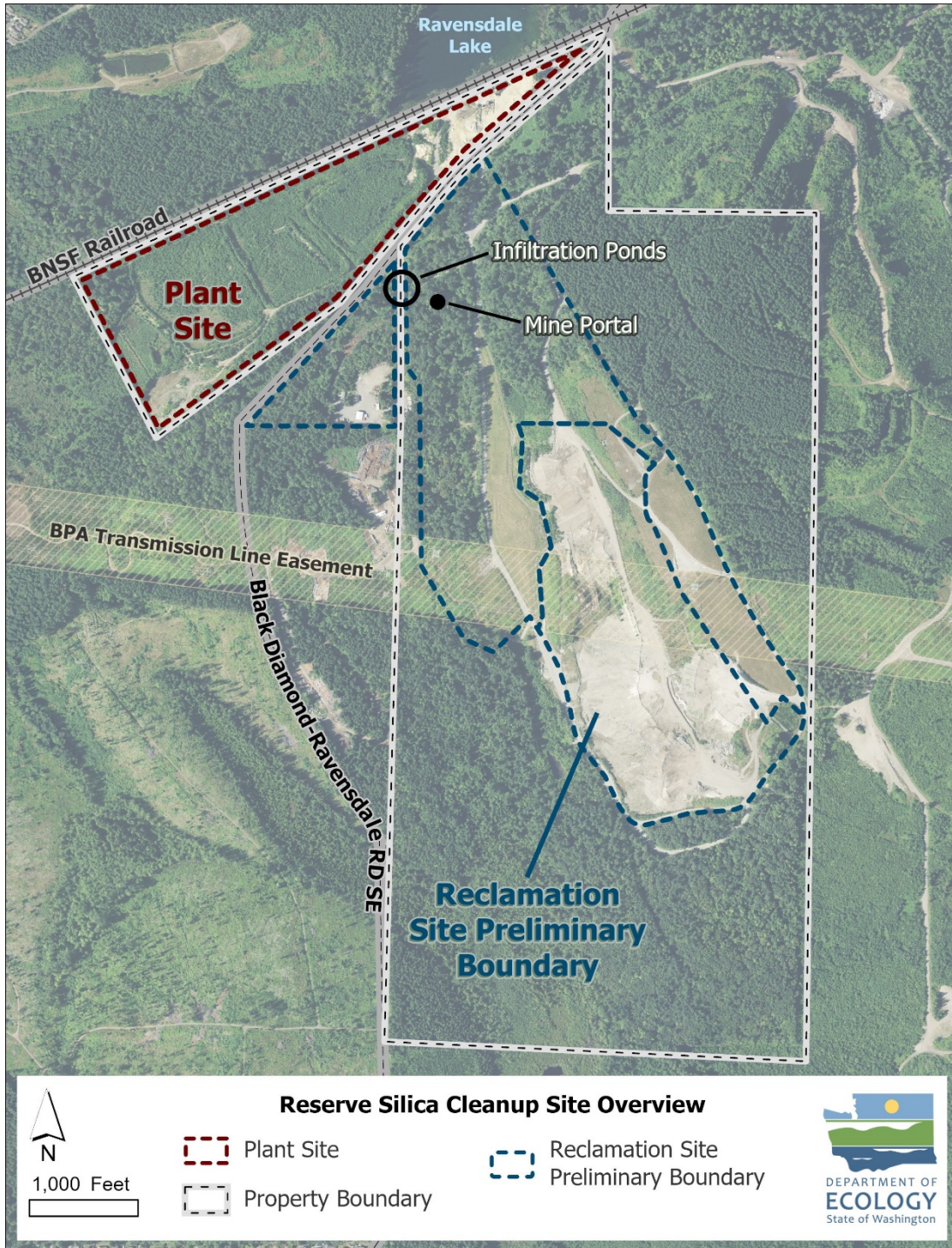
---

<sup>1</sup> On March 5, 2018, Ecology determined that BNSF Railway is also a PLP for the site, but BNSF Railway has declined to participate in the implementation of this Agreed Order.

<sup>2</sup> <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=4728>

<sup>3</sup> <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=15125>





## Site contacts

### Ecology

Northwest Regional Office  
3190 160<sup>th</sup> Ave SE  
Bellevue, WA 98008

Alan Noell, PhD, PE

Site Manager

[anoel461@ecy.wa.gov](mailto:anoel461@ecy.wa.gov)

425-649-7015

Nancy Lui

Public Participation Coordinator

[Nlui461@ecy.wa.gov](mailto:Nlui461@ecy.wa.gov)

425-649-7117

Dave Bennett

Communication Manager

[Dben461@ecy.wa.gov](mailto:Dben461@ecy.wa.gov)

360-407-6149

### Reserve Silica Corporation

20 First Plaza Ctr NW, Suite 308

Albuquerque, NM 87102

Marisa Floyd

Vice President

[mlfloyd@swcp.com](mailto:mlfloyd@swcp.com)

505-247-2384

### Holcim (US) Inc.

14500 C.R. 1550

Ada, OK 74820

Travis Bennett

Sr Manager, Closed Sites and Remediation

[travis.bennet@lafargeholcim.com](mailto:travis.bennet@lafargeholcim.com)

580-421-8926

## Public Participation Grants

Grants may be available to neighborhood committees, non-profits, and other groups interested in the Site. For contaminated sites, these funds can be used to:

- Hire an expert to help interpret technical information.<sup>4</sup>
- Conduct activities that enhance the public's understanding of, and participation in, the cleanup process.

For more information about public participation grants, please contact Lynn Gooding at 360-407-6062 or [lynn.gooding@ecy.wa.gov](mailto:lynn.gooding@ecy.wa.gov). You may also visit the [Public Participation Grant website](#).<sup>5</sup>

---

<sup>4</sup> Ecology currently does not have a citizen technical advisor for providing technical assistance to citizens on issues related to the investigation and cleanup of the site.

<sup>5</sup> [Public Participation grants - Washington State Department of Ecology](#)

---

# Washington's Cleanup Laws

Ecology uses the Model Toxics Control Act (MTCA) and accompanying regulations for cleanup activities.

This plan is required under MTCA, a law that passed in 1989. MTCA provides guidelines for contaminated site cleanup in Washington State and sets standards to ensure the cleanup protects human health and the environment.

## Model Toxics Control Act (MTCA)

MTCA began as a grassroots citizen's initiative in 1988, and started the process of systematically cleaning up contaminated sites in Washington. Under MTCA, a current or past property owner or operator may be held responsible for cleaning up contamination on, or coming from, their property to standards that are safe for human health and the environment.

Ecology implements MTCA, issues guidance governing cleanups, and oversees cleanups in the state. MTCA regulations are found in [Chapter 173-340 Washington Administrative Code \(WAC\)](#).<sup>6</sup> Ecology investigates reports of property contamination, and if the contamination is seen as a significant threat to human health or the environment, the contaminated property is placed on the Hazardous Sites List, and the cleanup process begins.

Public participation is an important part of cleanup under the MTCA process. Participation needs are assessed at each cleanup site according to the level of public interest and the degree of risk posed by the contamination. Individuals who live near the site, community groups, businesses, government, other organizations, and interested parties have the opportunity to get involved by commenting on the cleanup process.

Under MTCA, the cleanup process generally includes five phases. Each phase includes an opportunity for the public to review and comment on cleanup documents.

---

<sup>6</sup> <https://fortress.wa.gov/ecy/publications/publications/9406.pdf>

## Steps in Washington's Cleanup Process

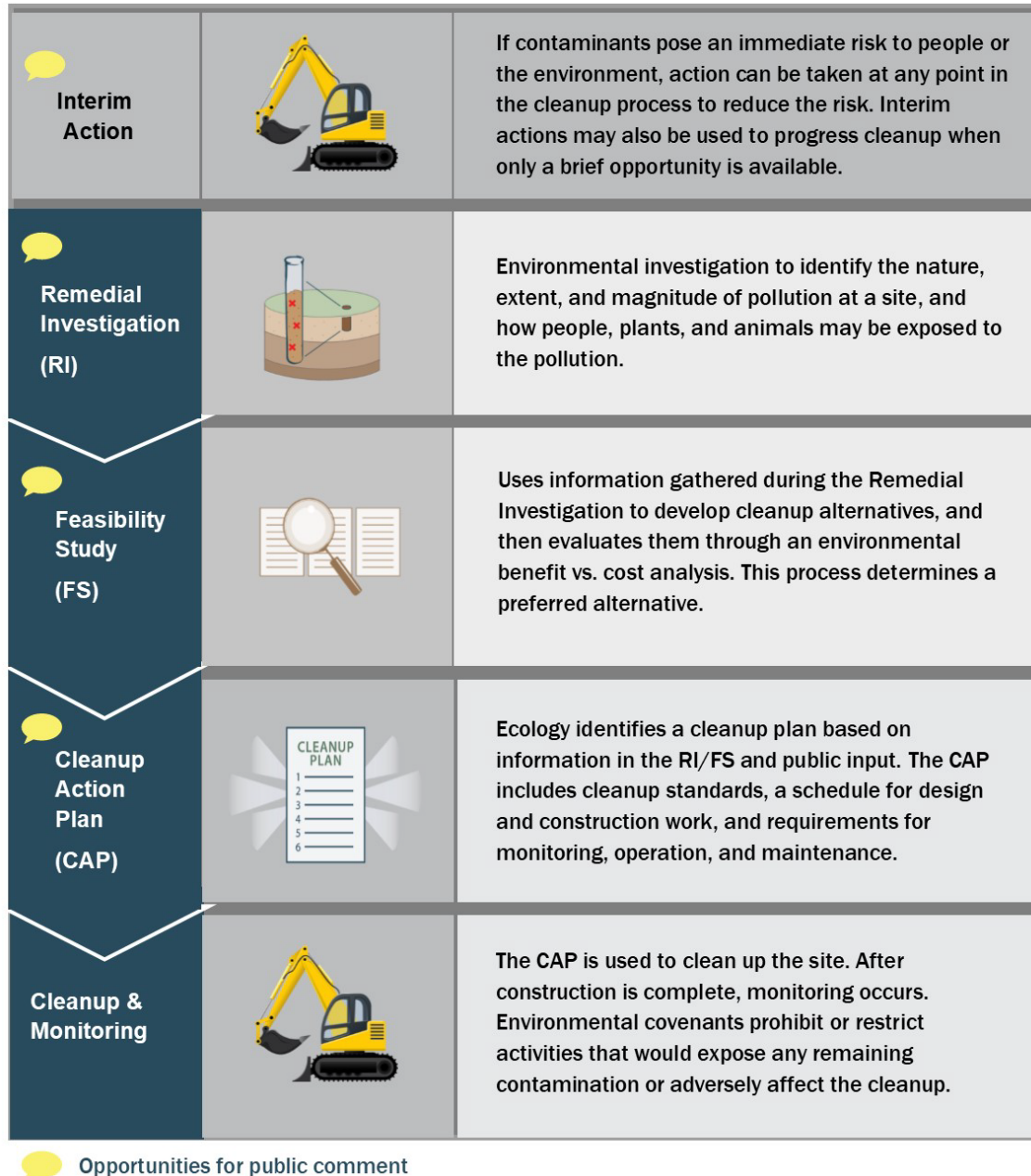


Figure 1. Steps in Washington's Cleanup Process

## State Environmental Policy Act

The State Environmental Policy Act (SEPA) is followed during review and development of cleanup plans. Ecology is the lead agency. SEPA documents are often made available for review with other cleanup documents going out for public comment.

---

# Site History

## Mining background

Coal and sand were mined from a stratified geologic rock formation that is tilted approximately 55 degrees from horizontal. The tilted sand and coal seams are shown in the picture below.



*Photo courtesy of George Bennett Consulting PLLC*

Underground coal was mined from 1924 to 1933 through the Dale mine portal. The coal mine was advanced southwest up the Dale No. 1 seam, and then cross-cut near a northwest-southeast trending fault line to intercept the Dale No. 4 and Dale No. 7 coal seams. Additional underground mining was conducted from the Dale No. 7 seam from 1945 to 1948 from a surface drift down to the old mine level.

The underground mine workings were developed as a water level mine, where the mine water drains by gravity through the mine portal. The underground mine continues to drain from a pipe installed in the collapsed Dale mine portal.

Surface coal mining was performed from the Dale No. 4 seam from 1946 to 1950, in an area referred to as the **Dale Strip Pit (DSP)**.

Surface sand mining operations were performed from 1968 to 2007. The area referred to as the **Lower Disposal Area (LDA)** was mined from the Bonneville Power Administration (BPA) transmission lines to the northwest-southeast trending fault line near Dale No. 1 portal. The surface pit was mined until inhibited by standing water at the bottom of the pit. Sand mining was performed from additional seams between the DSP and the LDA toward the southeast.

## **Mine pit reclamation**

Surface mining areas were reclaimed with fill material to re-contour the surface pits. The LDA and DSP were reclaimed using **cement kiln dust (CKD)** as fill material.

- Approximately 175,000 tons of CKD were disposed in the LDA from June 1979 to October 1982. The clay-cemented sandstone at the bottom of the pit inhibited the infiltration of surface water. After pumping water from the surface pit, CKD was placed directly on the bottom of the pit with the assumption that the cementitious nature of the dust would further seal the bottom of the pit. CKD fill was placed above the old haul road and retained by a non-engineered berm. The CKD was graded, covered by a 2-foot thick layer of clayey material and a 7-foot layer of overburden from the sand mining operations, and the area was seeded with grass.
- The DSP was reclaimed with CKD between November 1982 and 1989 with an estimated 250,000 cubic yards of fill material. The top 7 feet of the DSP was reclaimed with 4 feet of on-site clay soil and 3 feet of overburden from the sand mine, and the completed surface was seeded with grass.
- Additional sand-mining pits—the North Pit, Tan Sand Pit, Upper Pit, Lower Pit, and Middle Pit—were filled with inert materials. Reserve Silica continues to reclaim the Lower Pit and the Middle Pit; the remaining sand pits have been reclaimed.

## **Permits**

Mining reclamation and landfilling activities are regulated by:

### **Washington State Department of Natural Resources (DNR)**

DNR issued a Surface Mining Permit for sand mining and reclamation in 1971. This permit was cancelled on April 15, 2010 following King County's request to assume primacy.

---

### **Washington State Department of Ecology (Ecology)**

Ecology grants coverage under the Sand and Gravel General Permit for the discharge of surface water at the mining Site.

### **King County Department of Permitting and Environmental Review (DPER) (formerly Department of Development and Environmental Services)**

King County issues a Grading Permit to regulate reclamation activities.

### **Public Health – Seattle & King County (Public Health).**

- Public Health issues a Post-Closure Maintenance Permit for the Lower Disposal Area and the Dale Strip Pit.
- Public Health issues an Inert Waste Landfill Permit for filling of the Lower Pit and Middle Pit area.

## **Release of contamination**

Cement kiln dust reacts with water to form calcium hydroxide, which can increase the pH to greater than 12 standard units. Some naturally occurring metals are mobilized in high pH water. Arsenic solubility increases above pH 9 due to the formation of anionic species, and lead solubility increases above pH 11 due to the dissolution of calcium silicates.

In June 1981, Ecology became aware that caustic storm water was released from the LDA during the filling of the surface pit from June 1979 to October 1982. Industrial Mineral Products, a predecessor company of Holcim (US) Inc., alleged that the cementitious CKD would cure and harden like concrete, preventing further releases.

High pH seepage continues to be released on the northwest side of the LDA, and elevated pH and arsenic and lead concentrations have been observed in surface water and groundwater at the Site. Ecology issued a Notice of Violation on June 29, 2016 for the release of high pH surface water. Seepage of hazardous constituents from the LDA led to the regulation of the Site under the state cleanup law, the MTCA.

## **Cleanup work so far**

Early attempts to control leachate from the LDA:

- 1979-1980: Industrial Mineral Products allowed caustic surface water to flow unconfined to a borrow pit along Black Diamond-Ravensdale Road, about a 1,000 feet from the seepage face. The impacted surface water was allowed to percolate to groundwater in the advance outwash formation.
- 1981: Ecology requested that the caustic discharge be neutralized with acid at its point of origin. Industrial Mineral Products dismissed acid neutralization due to the absence of power needed for a metering pump, and concerns about spillage and vandalism.
- 1981: Industrial Mineral Products collected the caustic discharge and conveyed it through a corrugated pipe to mix with purported acid mine drainage from the Dale mine portal. The drainage pipe was routed along an old drainage ditch adjacent to the mine road. The relatively large flow of weakly acidic mine drainage (pH 6.6) was reported to neutralize the relatively small flow of strongly caustic leachate (pH 12.4) to a pH of 8.1, which met the state discharge criteria (pH 6.5–8.5). The mixed discharge then flowed overland to the borrow pit.

In 2002, Reserve Silica executed an Agreement to allow Holcim to conduct monitoring and remediation activities for the CKD landfills. The investigation and remediation activities for the CKD include:

- 2002: Developed a monitoring well system and reported data quarterly to Ecology and Public Health.
- October 2006: Submitted post-closure plan for the LDA and DSP. Evaluated remediation alternatives for the LDA, including construction of a clay cap and a shallow leachate collection interceptor trench. Evaluated leachate treatment options, including wetlands, onsite chemical treatment, and discharge to an offsite wastewater treatment plant.
- September to October 2007: The cover of the LDA was upgraded to reduce infiltration. A minimum 2-foot thick low permeability soil cover was constructed and the surface was graded to drain stormwater from the cover and vegetated with grass. A surface water diversion ditch was constructed on the uphill side of the cover.
- September 2008: Constructed and monitored two test trenches to collect high pH seepage from the LDA.



- 2009 to 2013: Performed hydrogeological studies for the LDA. The studies included test trenches and borings, seismic refraction to evaluate depths to bedrock, electromagnetic imaging to evaluate interconnected porosity, moisture content, and dissolved ion concentrations, and groundwater tracer studies to evaluate groundwater flow.
- November 2010 to July 2011: The DSP soil cover was upgraded. The cover was regraded to promote drainage and a minimum 2-foot thick low permeability soil cover was constructed and vegetated with grass to reduce infiltration.
- February 2013: Constructed an approximately 400-foot-long surface water collection ditch and concrete catch basin to collect seepage and surface water runoff from the LDA and divert the flow to the infiltration pond.
- September 2013: Installed a gravel-filled trench to intercept and divert groundwater flowing into the southeast portion of the LDA (See picture to the right).
- April 2015: The approximate 1,000-foot-long, 4-inch diameter seepage diversion pipe was replaced with a 12-inch-diameter pipe to alleviate plugging problems associated with carbonate precipitation.
- December 2017: Extended the surface water collection approximately 100 feet to capture additional seepage from the LDA.
- September 2018: Constructed a seepage treatment system to neutralize the pH and lower the concentration of arsenic before discharge to the infiltration pond. The treatment system includes a carbon dioxide sparging system to lower the pH and concentration of dissolved arsenic and steel filings to adsorb residual arsenic before discharge. The treatment system began operation on September 18, 2018 (see picture to the right).
- Chain-link fencing has been installed to restrict access to high pH surface water, including the seepage collection trench, the south pond, and the infiltration pond (see picture to the right).



## **Area community**

The Site is located in a rural area with a mix of mining, forestry, and residential zoning. The Greater Maple Valley Unincorporated Area Council has shown interest in being involved in the cleanup process for this site.

Ecology will reach out to cultural community organizations as part of our outreach and provide information in other languages as appropriate following federal guidance.<sup>7</sup> When appropriate, Ecology will provide outreach in non-English language(s). According to census data, less than 5% of the population in this area speaks English “less than very well.” We strive to make our public participation efforts as inclusive as possible and welcome your input about how to best reach the nearby community.

The Muckleshoot Tribe is a federally recognized tribe that owns land nearby. Ecology will ensure that the Tribe stays informed of the decision-making process for this site and has ample opportunity to be involved throughout the process on a government-to-government basis.

## **Public Participation Activities**

Members of the public may ask questions, submit informal comments, or share site information at any time. Interested parties do not need to wait for a formal public comment period to contact Ecology.

However, to be included in the formal site record, comments about the site investigation, cleanup alternatives, or cleanups must be submitted during formal comment periods. In addition, the public is invited to review site documents before they become final. This is the most direct and influential way to learn more about the site and be involved in the cleanup’s decision-making.

## **How we share information with the community**

During specific stages of the cleanup, Ecology will mail notices about public comment periods to addresses surrounding the site. Ecology has compiled and maintained a list of interested parties, organizations, and residents within a radius of approximately ¼ mile around the site, and applicable government entities. These notices will provide general information about the site,

---

<sup>7</sup> Guidance to Environmental Protection Agency Financial Assistance Recipients Regarding Title VI Prohibition Against National Origin Discrimination Affecting Limited English Proficient Persons, 69 Fed. Reg. § 35602 (June 15, 2004).

---

contact information for submitting comments, and times and locations of public meetings, or how to request one if not yet scheduled.

Ecology may also develop documents outside of comment periods to keep the community updated on the site's status. These informational documents will be available online and at document repositories. Print copies may be mailed to the nearby community if we feel the message warrants the associated cost and resources.

Comment period notices and other site announcements may also be posted in various locations throughout the community (for example, local businesses, schools, libraries).

## Postal mailing list

Ecology will add additional individuals, organizations, and other interested parties to the mailing list as requested. If you would like to be added to the mailing list for this site, please contact Nancy Lui at 425-649-7117 or [Nancy.Lui@ecy.wa.gov](mailto:Nancy.Lui@ecy.wa.gov) and reference the Reserve Silica Reclamation Site.

## Site Register

Public comment periods, events, and other cleanup notices are published in Ecology's [Site Register](#).<sup>8</sup> To receive the *Site Register* by email, please contact Marcus Humberg at 360-407-7213 or [marcus.humberg@ecy.wa.gov](mailto:marcus.humberg@ecy.wa.gov), or [subscribe online](#).<sup>9</sup>

## Newspaper display ads or legal notices

We announce public comment periods and events in ads or notices published in *Voice of the Valley*. We will also publish notice on our [Public Input & Events Listing](#).<sup>10</sup>

## Ecology's website and social media platforms

We maintain a website for the Reserve Silica Reclamation Site.<sup>11</sup> The website provides site information, and you may download cleanup documents.

---

<sup>8</sup> [ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Site-Register-lists-and-data](http://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Site-Register-lists-and-data)

<sup>9</sup> <http://listserv.wa.gov/cgi-bin/wa?SUBED1=siteregister&A=1>

<sup>10</sup> [ecology.wa.gov/Events/Search/Listing](http://ecology.wa.gov/Events/Search/Listing)

<sup>11</sup> <https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=4728>

We may also share information about cleanup sites through [news releases, our ECOconnect blog, and social media](#).<sup>12</sup>

## **Document repositories**

During public comment periods, you can find print documents at the following locations:

Maple Valley Library  
21844 SE 248th St  
Maple Valley, WA 98038  
Phone: 425-432-4620

Washington Department of Ecology  
Northwest Regional Office  
3190 160<sup>th</sup> Ave SE  
Bellevue, WA 98008

To schedule an appointment, please contact Sally Perkins at 425-649-7190 or [nwro\\_public\\_request@ecy.wa.gov](mailto:nwro_public_request@ecy.wa.gov).

## **Signs around the cleanup site**

We may also install signs displaying information about project status, traffic impacts, and health risks around the cleanup site.

## **How to share information with us**

At minimum, MTCA requires 30-day public comment periods for draft cleanup documents and 14-day comment periods State Environmental Policy Act (SEPA) documents. SEPA documents are often made available for review with other cleanup documents. We may hold comment periods longer than 30 days.

We may also identify public concerns and cleanup goals by meeting with and soliciting information from interested community members and organizations. To collaborate with us about this site, please contact Nancy Lui at 425-649-7117 or [Nancy.Lui@ecy.wa.gov](mailto:Nancy.Lui@ecy.wa.gov).

## **Public comment periods**

Formal 30-day comment periods allow interested members of the public to comment on draft documents, legal agreements, and proposed cleanup actions. If there is significant interest, Ecology may extend the public comment period. When Ecology oversees SEPA determinations,

---

<sup>12</sup> [ecology.wa.gov/About-us/Get-to-know-us/News](http://ecology.wa.gov/About-us/Get-to-know-us/News)

---

we hold comment periods for at least two weeks. Ecology typically does not request comments for work plans on PLP-led sites.

Following a formal comment period, we publish all the input we received and respond to significant comments and questions. If the comments result in significant changes to the cleanup documents, then the documents will be revised and re-issued for public review. If the comments do not result in significant changes, then they become final.

Ecology will send a notice of availability of the Remedial Investigation Work Plan to those individuals who submitted written comments on the Draft Agreed Order or Public Participation Plan. The Remedial Investigation Work Plan will be made available to the public for a two-week period for review and comment before it is implemented.

Notice of its availability will be posted on the Site webpage and the document will be added to the Document Repository for the Reserve Silica Reclamation Site, accessible through the Site webpage. Ecology will consider all comments received. Ecology does not plan to provide a responsiveness summary for the Remedial Investigation Work Plan comments.

Formal 30-day comment periods will be for the:

- Draft Remedial Investigation
- Draft Feasibility Study.
- Draft Cleanup Action Plan and State Environmental Policy Act.

Ecology will provide a responsiveness summary letter to address public comments for formal comment periods.

## **Public events**

We hold public meetings, workshops, and open houses based on community interest. If we have not scheduled a meeting, we will hold one if 10 people request it, and this may cause us to extend a public comment period so the meeting occurs during it.

Events are held at locations close to the site that meet Americans with Disabilities Act (ADA) standards. Public meetings, workshops, and open houses are always announced in advance using a variety of methods. To request ADA accommodation or materials in a format for the visually impaired, visit <https://ecology.wa.gov/accessibility>, call Ecology at 360-407-6831, Relay Service 711, or TTY 877-833-6341.

Information regarding site activities will be presented periodically to the Greater Maple Valley Unincorporated Area Council. This is an opportunity to hear about the cleanup status and ask questions.

To arrange for a briefing with project personnel, ask questions, or provide comments on the plan or other aspects of the cleanup, please contact Ecology's Site Manager listed on page 3.

## **Plan Amendments**

Ecology developed this plan following MTCA regulations (WAC 173-340-600). We review it as the cleanup progresses and amend it as necessary. You may suggest amendments to Nancy Lui at 425-649-7117 or [nlui461@ecy.wa.gov](mailto:nlui461@ecy.wa.gov).

This plan includes information for the public regarding opportunities for public involvement and comment. The outreach activities discussed in this section reflect Ecology's current plans for keeping the public informed and providing ways for those interested in the site to communicate their concerns and questions to us.

If you feel the planned outreach activities and mechanisms described in this plan are insufficient, or should otherwise be modified, we will work to find solutions. New outreach activities or outreach tools established as a result can be implemented right away, with or without amending this plan.