

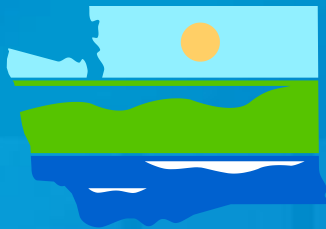
Tacoma Smelter Plume

EPA Study Area

Participating in the Yard Program

July 29th, 2013

Point Defiance Elementary School



DEPARTMENT OF
ECOLOGY
State of Washington

Meeting Agenda

6:00-6:45 pm Open house

6:45-7:15 pm **Presentation**

7:15-8:00 pm Question and Answer Session

8:00-8:30 pm Open house



Meeting Purpose

- Review project history and health information
- Go through the steps in the cleanup process
- Discuss next steps
- Answer your questions
- Set up home visit appointments



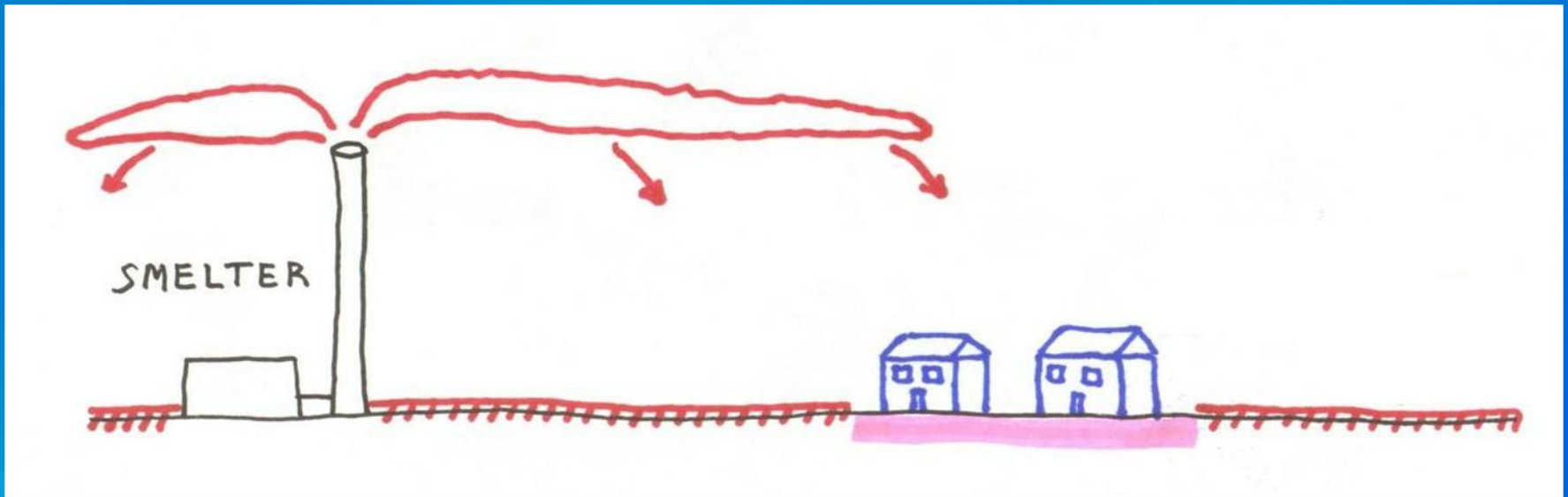
Asarco Smelter History

- **1890-1986:** Smelted lead, copper, and high arsenic ores
- **1983:** Became a Superfund site
- **1993:** EPA yard cleanup began in Ruston and north Tacoma



Tacoma Smelter Plume

- Arsenic, lead, other heavy metals
- Settled on surface soils
- Amount of contamination found varies



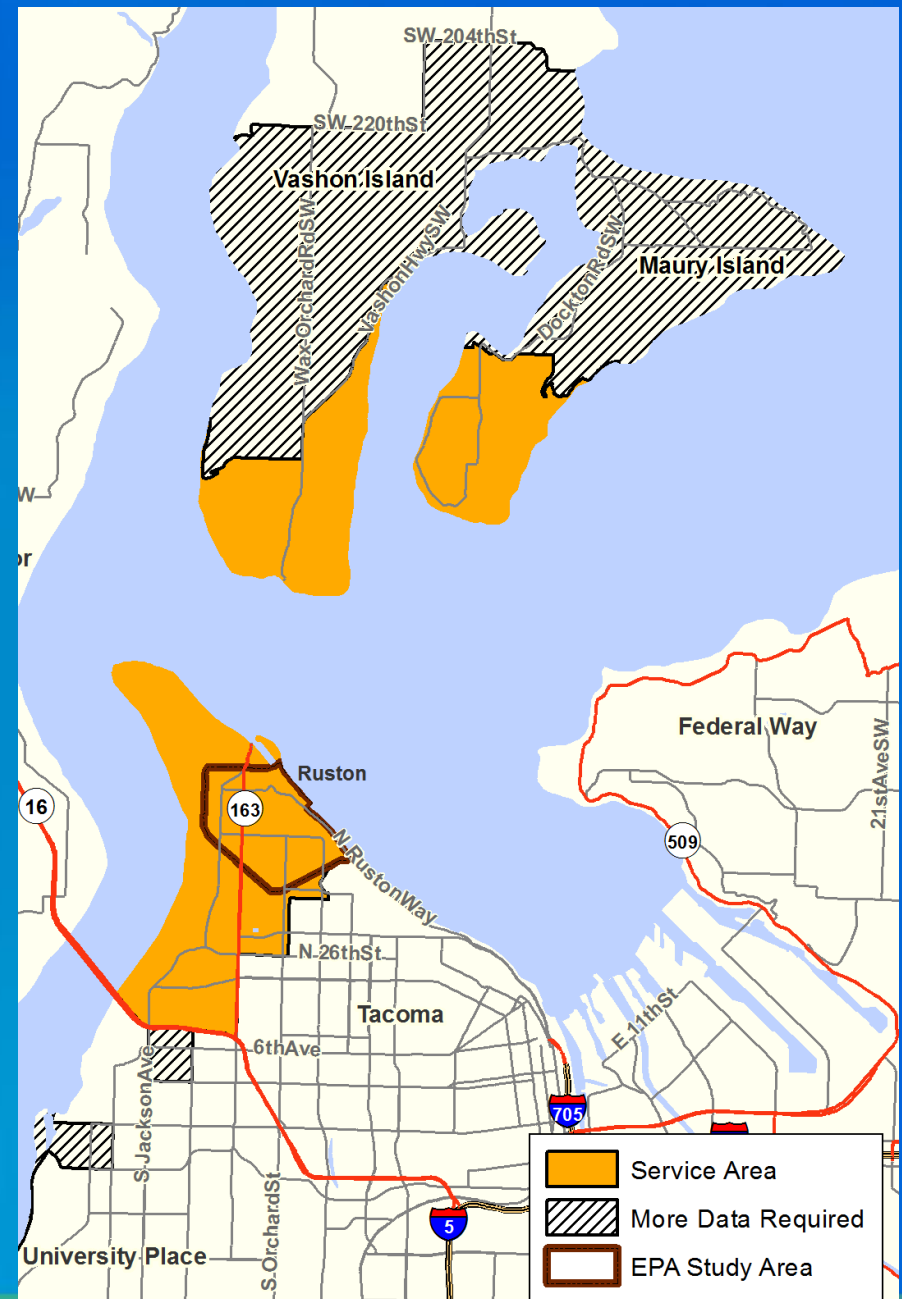
Yard Program Overview

- Existing residential
- State-led
- Voluntary

Action Levels

Average arsenic = 100 ppm

Average lead = 500 ppm



Yard Program Overview

Inside EPA Study Area

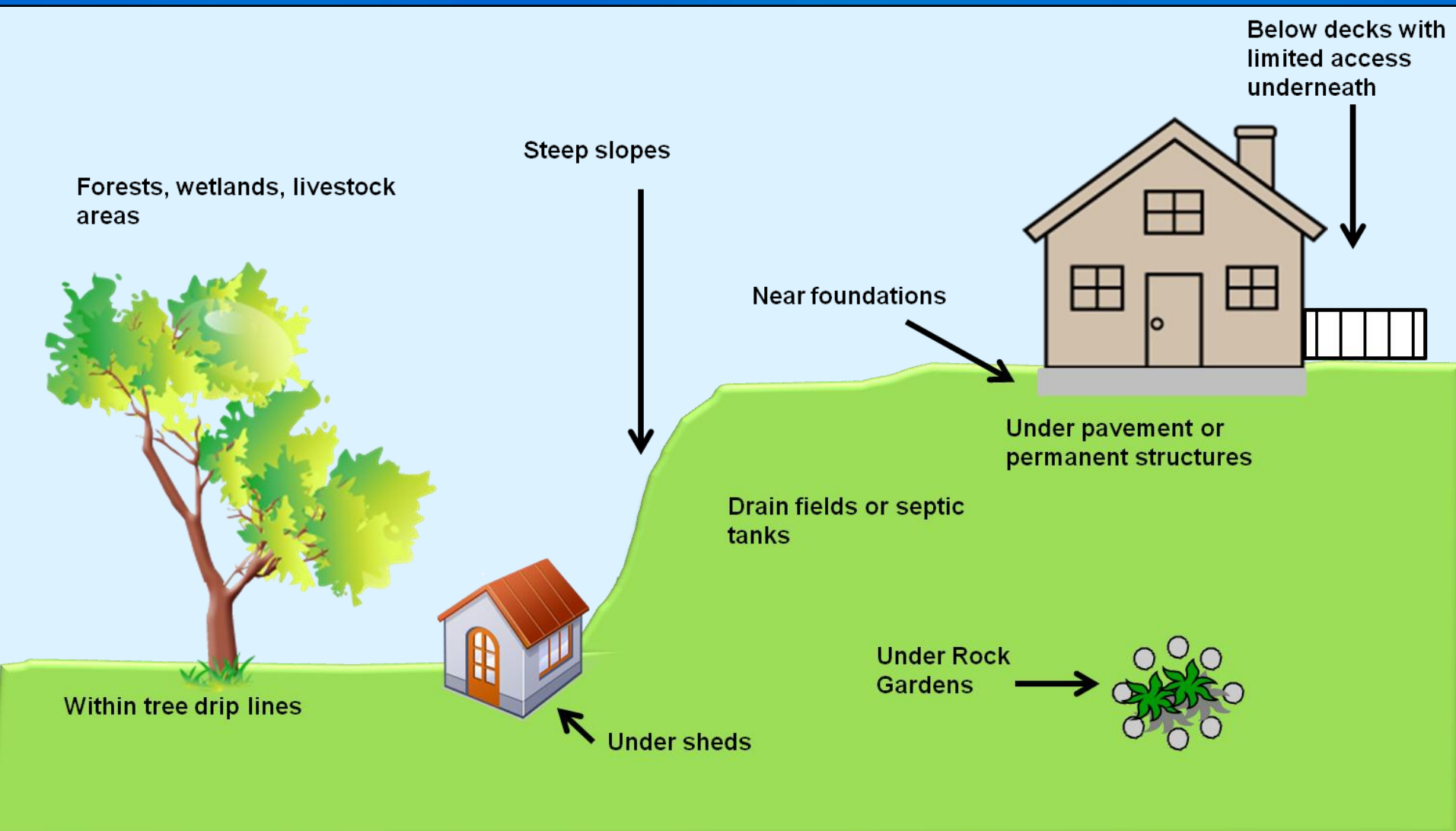
Review previous
sampling data

Results above action
levels

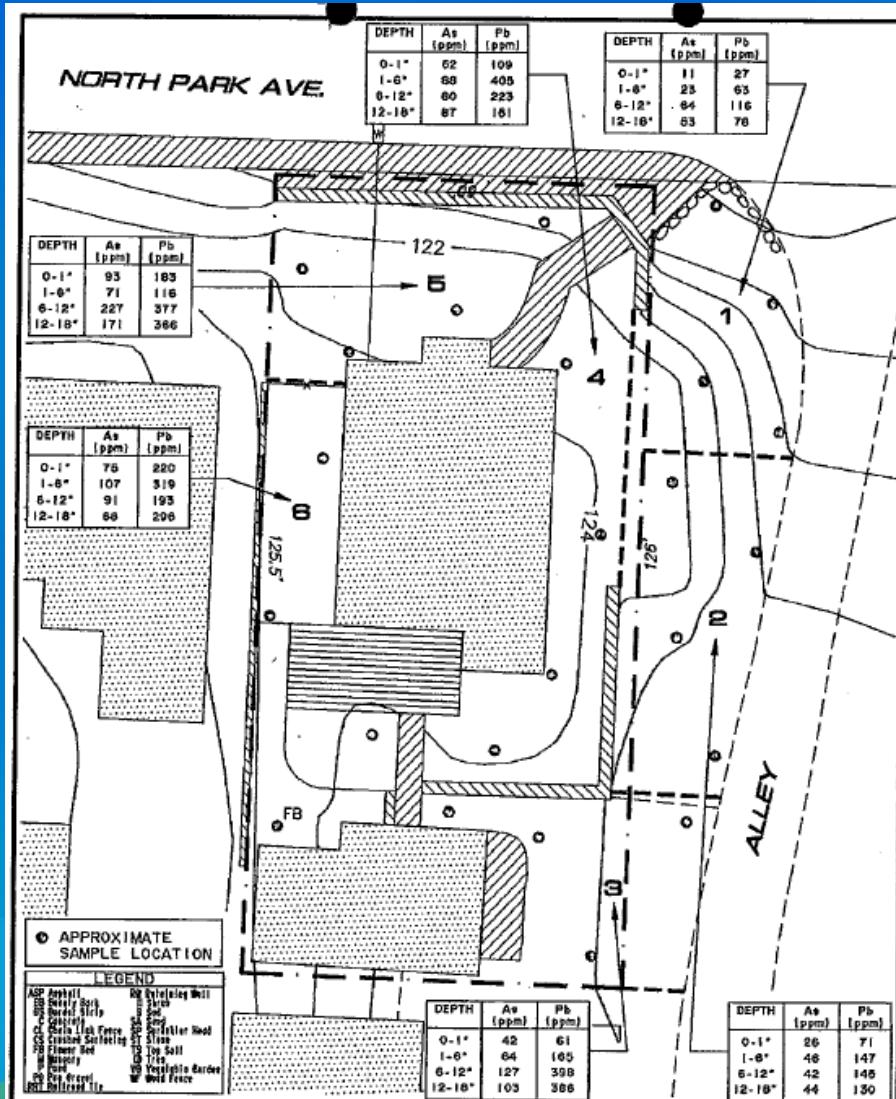
Cleanup

Restoration

Areas excluded from Cleanup



EPA Sampling Results



ASRS01 - Ruston Remediation

PRE-REMOVAL SAMPLE RESULTS

Remed Program

SITE ADDRESS	NAME	SITE CODE
		AF01

SUBUNIT	DEPTH	ARSENIC (mg/kg)	LEAD (mg/kg)	EPA RECOMMENDED REMOVAL DEPTH
1	0 - 1	11	27	NONE
1	1 - 6	23	63	
1	6 - 12	64	116	
1	12 - 18	53	78	
2	0 - 1	26	71	NONE
2	1 - 6	46	147	
2	6 - 12	42	145	
2	12 - 18	44	130	
3	0 - 1	42	61	NONE
3	1 - 6	64	165	
3	6 - 12	127	398	
3	12 - 18	103	366	
4	0 - 1	52	109	NONE
4	1 - 6	88	405	
4	6 - 12	80	223	
4	12 - 18	87	151	
5	0 - 1	93	183	NONE
5	1 - 6	71	116	
5	6 - 12	227	377	
5	12 - 18	171	366	
6	0 - 1	75	220	NONE
6	1 - 6	107	319	
6	6 - 12	91	193	
6	6 - 12	68	296	

DEPTH	ARSENIC MEAN (mg/kg)	LEAD MEAN (mg/kg)
0 - 1	50	112
1 - 6	67	203
6 - 12	100	250
12 - 18	92	222

NOTE: Arsenic Action Level = 230 mg/kg Lead Action Level = 500 mg/kg

Samprpt2 v1.0 11/93

Hydrometrics, Inc 12/09/94

Ecology Reviewed Your Results

- Average the 0-1" and 1-6" depths
- Look at 6-12"

ASRS01 - Ruston Remediation PRE-REMOVAL SAMPLE RESULTS Remed Program

SITE ADDRESS	NAME	SITE CODE
6002 NO Park Av	Jonathan R Holland (Owner) (206)756-9639	AF01

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3	1 - 6	64	165	
3	6 - 12	127	398	
3	12 - 18	103	386	
4	0 - 1	52	109	NONE
4	1 - 6	88	405	
4	6 - 12	80	223	
4	12 - 18	87	151	
5	0 - 1	93	183	NONE
5	1 - 6	71	116	
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SampRpt2 v1.0 11/93 Hydrometrics, Inc 12/09/94

Evaluation of EPA Results

- Compare 0-6" and 6-12" results to criteria

	Arsenic	Lead
Parcel average	≥90 ppm	≥500 ppm
Subunit maximum	≥200 ppm	≥1,000 ppm

- Only subunits ≥90 ppm qualify for cleanup
- Yards with a 6" cap are lower priority

Next Steps...



Set up a home visit

Review the homeowner checklist and map

1st home visit


Optional 2nd home visit


Home Visit with Ecology Staff

Home Visit #1:

- ✓ Discuss your sampling results
- ✓ Discuss Ecology's recommendations for soil removal
- ✓ Walk the property and decide on the details of the cleanup plan

Preparing for the first home visit


- Walk through your property
- Fill out the checklist included in the packet 
- Make notes on your EPA sampling map
- Flag any plants you want Ecology to remove during cleanup.

 DEPARTMENT OF
ECOLOGY
State of Washington

**Tacoma Smelter Plume
Property Owner Checklist**


This form is to help you prepare for cleanup on your property. Ecology set up a home visit with you to discuss your sampling results and start planning for cleanup.

Please take some time to fill out the form before Ecology staff meet with you. We will use this information to develop a cleanup plan for your property.

Plants
 During cleanup, Ecology can remove small plants from your yard and replace them with a younger, smaller version of the same plant. We leave shrubs and larger plants in place during cleanup, but some contamination will remain around the plant. Alternatively, you can transplant plants you want to keep prior to cleanup and bring them back once the cleanup is complete. Mature trees are left in place during cleanup. Crews will use hand tools to excavate around the roots of the tree to remove as much contamination as possible, but some contamination will be left beneath the tree.


Questions:

- Are there any plants you don't want removed? _____
- Are there any plants you want removed and replaced with grass? _____

Landscaping
 Crews will not dig under permanent features like sidewalks, rock walls, retaining walls, driveways, sheds, decks, pools/hot tubs, etc. We will take measures to protect retaining walls and foundations during excavation. Please provide us with details on the landscape features of your yard.

Questions:

- Do you have any fences in your yard? ____ If yes, does the fence belong to you? _____
- Do you have any rockeries, rock walls or retaining walls? _____
- Do you have a shed? ____ If yes, does it have a foundation? _____
- Do you have a deck or patio? _____
- Are there other features on your property we should know about? _____

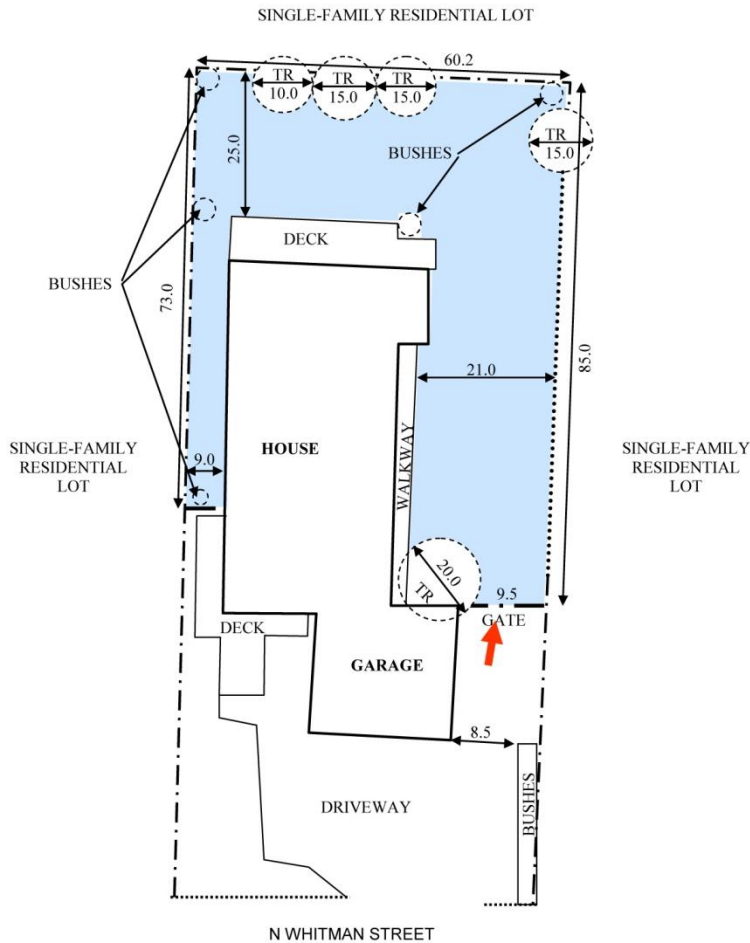
Utilities
 Ecology's contractors will identify most public utilities before construction. However, we have encountered drain fields and other small, private utilities during cleanup. If any utilities are broken during cleanup, they will be repaired immediately by the contractor. If you are aware of any unmarked utilities on your property, please let us know.

Questions:

- Do you have a sprinkler or irrigation system or any unmarked utilities in your yard? _____

Questions continued on next page...

Cleanup Plan



VIEW LOOKING EAST FROM SOUTHWEST CORNER OF PROPERTY



VIEW LOOKING EAST FROM SOUTH SIDE OF HOUSE



VIEW LOOKING SOUTH FROM EAST SIDE OF HOUSE



REMEDIATION PLAN NOTES:

1. CONTRACTOR WILL CONDUCT UTILITY LOCATES.
2. CONTRACTOR WILL EXCAVATE CONTAMINATED SOILS IN THE CLEANUP AREA 18 INCHES AND IN THE CRITICAL ROOT ZONE UP TO 6 INCHES. REMOVE ALL PLANTS THAT ARE SHADED BLUE ON PLAN, AND LEAVE PLANTS SHADED WHITE.
3. ECOLOGY WILL PERFORM CONFIRMATION SAMPLING AT THE BOTTOM OF THE EXCAVATION.
4. ECOLOGY MAY DIRECT CONTRACTOR TO LAY GEOTEXTILE FABRIC IF ARSENIC RESULTS ARE OVER 100 PPM.

RESTORATION PLAN NOTES:

1. RESTORATION WILL START WHEN ECOLOGY APPROVES EXCAVATION.
2. CONTRACTOR WILL INSTALL REPLACEMENT TOPSOIL TO ORIGINAL GRADE.
3. CONTRACTOR WILL INSTALL SOD OVER ENTIRE REMOVAL AREA. NO PLANTS ARE BEING REPLACED.
4. CONTRACTOR WILL CLEAN UP SITE.
5. ONCE SITE IS STABILIZED CONTRACTOR WILL REMOVE STORMWATER CONTROLS.
6. FINAL WALKTHROUGH WILL BE PERFORMED WITH PROPERTY OWNER OR REPRESENTATIVE UPON COMPLETION.

LEGEND:

- CLEANUP AREA
- WOODEN FENCE
- CHAINLINK FENCE
- TREE TR
- PROPOSED ACCESS POINT
- METAL FENCE

REMEDIAL EXCAVATION QUANTITIES			
REMEDIAL AREA	APPROX. AREA (SF)	EXCAVATION DEPTH (IN)	INPLACE VOLUME, (CY)
CA	2885	18	160
CRZ	515	0-6	5

RESTORATION TREATMENTS & QUANTITIES		
AREA	RESTORATION TYPE (SEE DETAILS)	APPROX. AREA, (SF)
ALL	TOPSOIL/SOD	3400

Cleanup Agreement



Yard Cleanup and Restoration Plan Agreement

Tacoma Smelter Plume Residential Yard Sampling and Cleanup Program
(Yard Program)

Property address: [PROPERTY ADDRESS]
Property owner name: [PROPERTY OWNER NAME]
Parcel number: [PARCEL NUMBER]
Site identification number: [ID #]

Introduction

This is an agreement between the Washington Department of Ecology (Ecology) and [PROPERTY OWNER NAME] (Property Owner).

Ecology notified you of arsenic and lead soil contamination in this yard, over the Yard Program threshold levels. Ecology then worked with the property owner on a cleanup and restoration plan for the yard. Ecology will manage and pay for the work described in this agreement, in Attachments A and B.

What to Do Before Signing This Agreement

This agreement and all attachments require the property owner's initials or signature. Please read the entire cleanup and restoration plan carefully before signing the cleanup agreement. Read all four pages of this agreement and the two attachments:

- Attachment A: Cleanup and Restoration Description
- Attachment B: Map of the Property

If you do not understand or agree to property specific work please contact Ecology so changes can be made before the document is final. Once you have signed the cleanup agreement and all attachments, Ecology cannot make further edits. Ecology needs a final cleanup plan before hiring a contractor to do the work.

Purpose of the Agreement

The purpose of this agreement is to:

- Explain the cleanup and restoration plan for this property that Ecology and the property owner agree on.
- Allow Ecology, contractors, and subcontractors access to the property.

After your first home visit

Home Visit # 2*:

- ✓ Review the cleanup plan
- ✓ Sign cleanup agreement
- ✓ No changes are made to plan after the agreement is signed.

* Some yards will only require one home visit.

Timeline

2013



2014

August-
September

- Meet with homeowners
- Develop Cleanup Plans

October-March

- Sign cleanup agreements
- Hire a contractor
- Prepare for construction

April - August

- Construction
- Landscape Restoration
- Cleanup paperwork

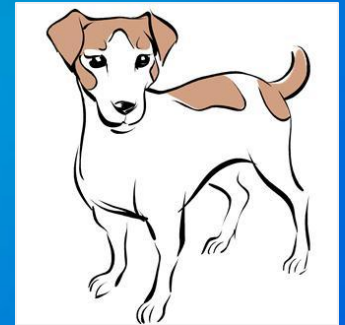
Post Cleanup

- On-going landscape care
- Collect feedback

Prepare for Cleanup

The home owner must:

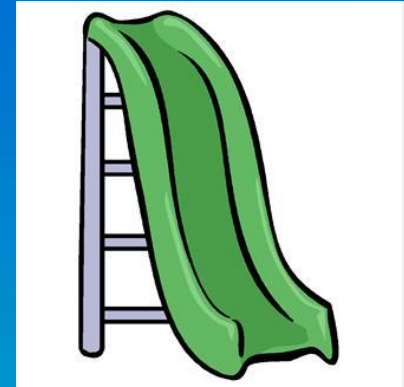
- Notify renters
- Maintain yard until work begins
- Transplant any rare or special plants
- Remove personal items from construction area



Preparing for Cleanup

Personal items include:

- Decorations
- Potted plants
- Portable sheds
- Patio furniture
- Sports Equipment
- Toys
- Gardening tools
- Cars, boats, and trailers



Starting Cleanup

The home owner must:

- Allow reasonable access
- Watch children
- Secure pets
- Contact Ecology with any issues or concerns

Cleanup includes...

- Remove the top 18 inches



Cleanup includes...

Take samples and review results

If ≥ 100 ppm – lay geotextile fabric



Cleanup includes...

- Restore landscaping



Yard Restoration Options

1. Restore to existing
2. Replace some or all lawn with mulch and small plants
3. Possible rain garden option

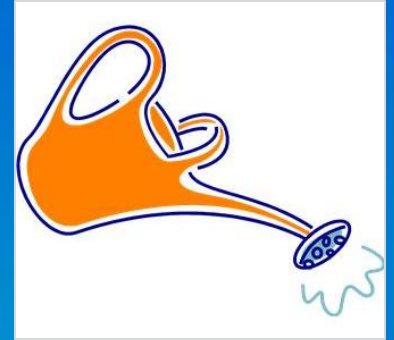


Homeowners must water and maintain landscaping

On-going Landscape Care

Landscape care includes:

- Watering plants, sod and hydro-seed.
- Weeding regularly.
- Replenishing mulch.
- Adding fertilizers as needed.



Please contact Ecology if you notice a problem with your plants or lawn immediately.



Arsenic in Soil Database

Arsenic in Soil (AREIS)

Find Property



Project Information

Arsenic and lead in the soil

The mining company Asarco once operated two copper smelters in Washington State; in Everett and Tacoma. Emissions of arsenic and lead contaminated soils for miles around the former stacks.

[Information about arsenic and lead](#)

The [Tacoma Smelter Plume](#) covers 1,000 square miles of King, Pierce, and Thurston counties. The [Everett Smelter](#) contaminated northeast Everett. Ecology and [EPA](#) have been cleaning up yards and play areas in both plumes since 1993.

[Healthy Actions to reduce contact with soil](#)

Search here for soil sampling results and cleanup records!

Right now, the database only has records for 2,000 properties in Ruston and north Tacoma.

Contact
[Nida Taylor](#)
360-407-6248

1. Enter your address or parcel number and click "search."
2. You will see a map of the area.
3. The property you searched for should be in the center of the screen. Click on the dot, check the address and see what records are available.

I can't find my property/I live outside of north Tacoma

Within the next year, we plan to add records for the Everett smelter cleanup and more areas of the Tacoma Smelter Plume.

Search for a Property

(do not include the city or state)

- OR -

Questions?

Contact

Amy Hargrove, Cleanup Manager

Email: Amy.Hargrove@ecy.wa.gov

Phone: (360) 407-6262

Website: ecy.wa.gov/toxics/tacoma-smelter.html



You Qualify for Cleanup

