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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Southwest Region Office
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May 1, 2025

Jonathan Paul
Fulcrum Development Inc.
2100 N 30th Street
Tacoma, WA 98403
jon@fulcrumdevco.com

Re: No Further Action Likely opinion for the following contaminated Property associated with the Asarco Tacoma Smelter Site

Site name:	Arcadia Montessori
Site address:	5312 N 30th Street, Tacoma, WA 98407
Facility/Site ID:	100003450
Cleanup Site ID:	17192
VCP Project ID:	SW1856

Dear Jonathan Paul:

On March 28, 2025, the Washington State Department of Ecology[1] (Ecology) received your request for an opinion regarding the sufficiency of your independent cleanup of the Property associated with the Asarco Tacoma Smelter Site (Asarco Site) under the Voluntary Cleanup Program[2] (VCP).

This letter provides our opinion and analysis. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), chapter 70A.305 RCW.[3]

[1] https://ecology.wa.gov
[2] https://ecology.wa.gov/Spills-Cleanup/Contamination-cleanup/Voluntary-Cleanup-Program
[3] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305

Opinion

Upon completion of your planned cleanup, Ecology has determined no further remedial action is likely necessary at the Property to clean up contamination associated with the Asarco Site. However, further remedial action is still needed elsewhere at the Asarco Site to clean up contamination.

For this opinion, it's important to distinguish between a "Site" and a "Property" under MTCA. A "Site" is defined by the area where a hazardous substance released to the environment has come to be located – the extent of contamination. A "Property" is simply the tax parcel(s) of real property that comprise a facility. Property boundaries are based on associated legal description information. As such, a site can affect multiple real property parcels, and a real property parcel can be part of multiple sites. A site can also be wholly contained within the real property parcel(s) comprising a Property.

Ecology bases this opinion on an analysis of whether the remedial action meets the substantive requirements of MTCA and its implementing regulations specified in chapter 70A.305 RCW and chapter 173-340 WAC[4] (collectively called "MTCA").

Property identification

This opinion applies to only the Property described here and consists of the following real property parcels in Pierce County.

- 0221263043
- 5945620280

Enclosure A includes the Property legal description, and Property details, as currently known to Ecology.

Property and Asarco Site description

This opinion applies to only the Property described in this section. The Asarco Site is defined by the nature and extent of contamination associated with the following release.

- Arsenic in soil.

[4] https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340

Enclosure B includes the Asarco Site description, and Asarco Site diagram, as currently known to Ecology.

Ecology has no information indicating other sites affect any portion of the Property.

Basis for the opinion

Ecology bases this opinion on the following documents.

- Dixon Environmental Services, Arcadia Montessori Remediation Workplan, March 27, 2025.
- Dixon Environmental Services, Arsenic and Lead Evaluation, December 17, 2024.

You can request these documents by filing a records request.[5] For help making a request, contact the Public Records Officer at recordsofficer@ecy.wa.gov or call (360) 407-6040. Before making a request, check if the documents are available on the Arcadia Montessori Webpage.[6]

This opinion is void if anything in the documents is materially false or misleading.

Analysis of the cleanup

Ecology has determined, upon completion of your planned cleanup, no further remedial action will likely be necessary on the Property to clean up contamination associated with the Asarco Site, although further cleanup action still may be needed elsewhere at the Asarco Site. Ecology bases this conclusion on the following analysis.

Characterizing the Property

Ecology has determined your Property characterization appears to be sufficient for setting cleanup standards for the Site and selecting a cleanup action for the Property.

The Arcadia Montessori Property is currently improved with a single-story, 2,086 square foot structure positioned near the southeast portion of the Property. A small playground and two inactive swimming pools are also present on the property.

[5] https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests
[6] https://apps.ecology.wa.gov/cleanupsearch/site/17192

For more information about the Property, refer to Enclosure A.

The property is planned for redevelopment into residential townhomes, and associated site development. The City of Tacoma has requested a soil assessment on the Property to evaluate the potential environmental impacts associated with the Asarco Tacoma Smelter Plume (TSP).

On December 3, 2024, Dixon Environmental Services (Dixon) collected soil and duff samples on the Property to evaluate the potential for environmental impacts associated with the TSP. The soil assessment was performed in accordance with Ecology's Tacoma Smelter Plume Model Remedies Guidance.[7]

Dixon identified two decision units for the Property. Decision Unit (DU) 1 is approximately 1.99 acres and is characterized by the developed and historically trafficked areas on the Property. DU 2 is approximately 0.21 acres and is characterized by the vegetated and undisturbed area on the southwest corner of the Property.

Dixon collected 33 soil samples from 26 locations throughout the Property (Figure 2). One six-point composite sample was also collected from the forested areas of the Property.

Decision Unit 1 Sample Results

At 0 to 6 inches below ground surface (bgs), arsenic exceeded the MTCA Method A cleanup level of 20 milligrams per kilogram (mg/kg) in eight samples. None of the samples exceeded the maximum allowable concentration for a single soil sample, or twice the cleanup level for arsenic (40 mg/kg). The arsenic concentrations ranged from 3.4 mg/kg to 35 mg/kg. The average arsenic concentration was 17.04 mg/kg. None of the samples exceeded the MTCA Method A cleanup level of 250 mg/kg for lead. Lead concentrations ranged from 5.6 mg/kg to 82 mg/kg. The average lead concentration was 24.05 mg/kg.

At 6 to 12 inches bgs, arsenic exceeded the MTCA Method A cleanup level of 20 mg/kg in one sample, but did not exceed the maximum allowable concentration for a single soil sample, or twice the cleanup level for arsenic (40 mg/kg). The arsenic concentrations ranged from 11 mg/kg to 25 mg/kg. The average arsenic concentration was 16.5 mg/kg. None of the samples exceeded the MTCA Method A cleanup level of 250 mg/kg for lead.

[7] https://apps.ecology.wa.gov/publications/SummaryPages/1909101.html

Lead concentrations ranged from 14 mg/kg to 25 mg/kg. The average lead concentration was 17.25 mg/kg.

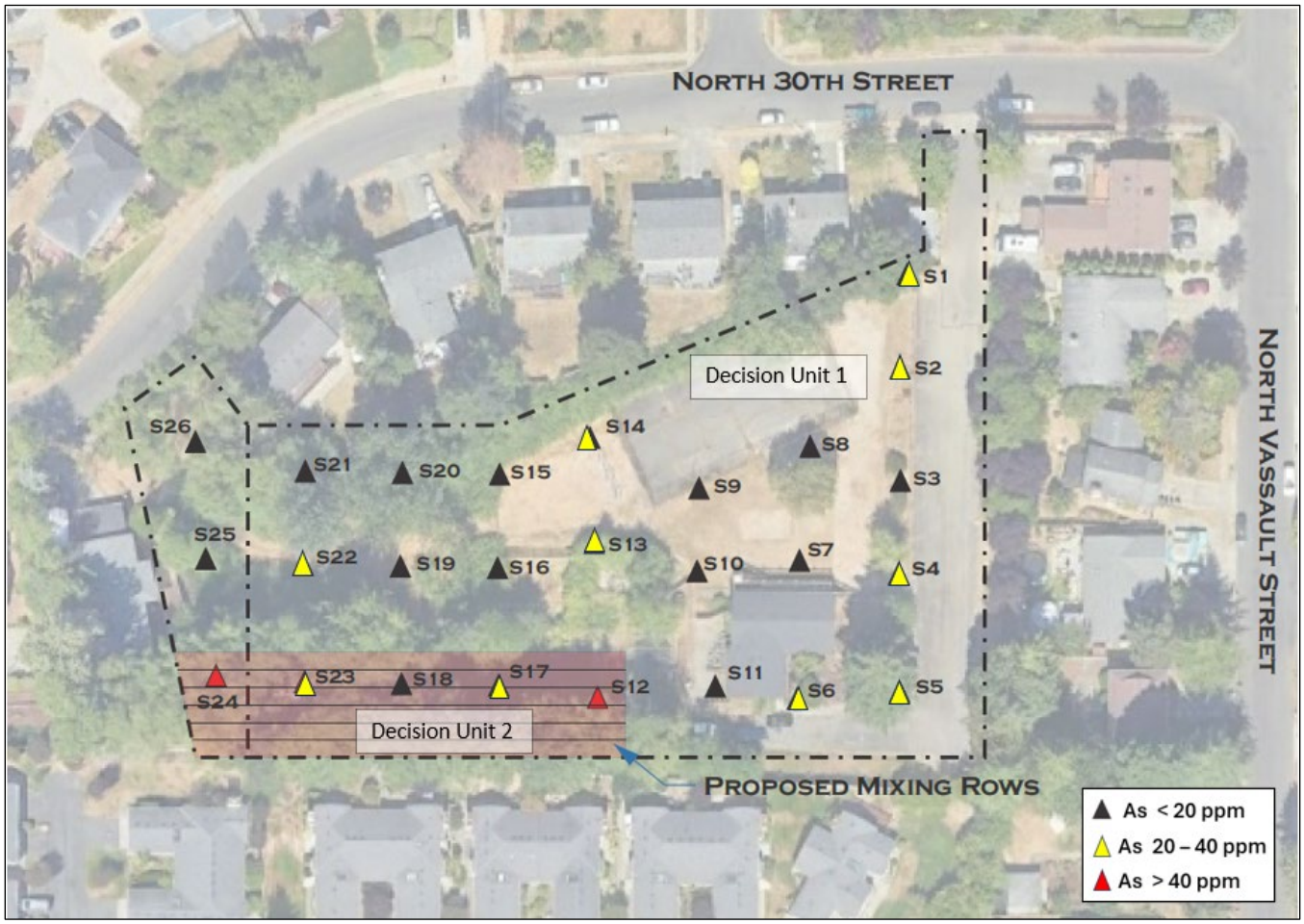

Figure 2. Approximate soil sample locations

Decision Unit 2 Sample Results

At 0 to 6 inches bgs, arsenic exceeded the MTCA Method A cleanup level of 20 mg/kg in four samples. Two of those samples also exceeded the maximum allowable concentration for a single soil sample, or twice the cleanup level for arsenic (40 mg/kg). The arsenic concentrations ranged from 16 mg/kg to 51 mg/kg. The average arsenic concentration was 33.6 mg/kg. None of the samples exceeded the MTCA Method A cleanup level of 250 mg/kg for lead. Lead concentrations ranged from 14 mg/kg to 59 mg/kg. The average lead concentration was 34 mg/kg.

At 6 to 12 inches bgs, arsenic exceeded the MTCA Method A cleanup level of 20 mg/kg in two samples. One of those samples also exceeded the maximum allowable concentration

for a single soil sample, or twice the cleanup level for arsenic (40 mg/kg). The arsenic concentrations ranged from 20 mg/kg to 70 mg/kg. The average arsenic concentration was 43 mg/kg. None of the samples exceeded the MTCA Method A cleanup level of 250 mg/kg for lead. Lead concentrations ranged from 24 mg/kg to 63 mg/kg. The average lead concentration was 46.67 mg/kg.

To further evaluate the vertical extent of contamination in the southwest portion of the property, Dixon returned to the Property to collect two additional samples from 12-18 inches bgs at sample locations S23 and S24. This is where the highest concentrations of arsenic were detected in the 6 to 12 inch depth interval. Neither of these samples exceeded the MTCA Method A cleanup level for arsenic or lead. Arsenic concentrations ranged from 2.3 mg/kg to 3.3 mg/kg. The average arsenic concentration was 2.8 mg/kg. Lead concentrations ranged from 53 mg/kg to 63 mg/kg. The average lead concentration was 58 mg/kg.

The composite duff sample was below the MTCA Method A cleanup level of 20 mg/kg for arsenic and 250 mg/kg for lead.

Table 1. Summary of Characterization soil Sampling by Decision Unit

DU	Sample Date	Depth (inches)	Arsenic Minimum (mg/kg)	Arsenic Maximum (mg/kg)	Arsenic Average (mg/kg)	Lead Minimum (mg/kg)	Lead Maximum (mg/kg)	Lead Average (mg/kg)
DU 1 soil	12/3/2024	0-6	3.4	35	17.04	5.6	82	24.05
	12/3/2024	6-12	11	25	16.50	14	25	17.25
DU 2 soil	12/3/2024	0-6	16	51	33.60	14	59	34.00
	12/3/2024	6-12	20	70	43.00	24	63	46.67
	3/18/2025	12-18	2.3	3.3	2.80	53	63	58.00
Duff	12/3/2024	surface			8.5			15
MTCA Cleanup Level				40	20		500	250

Bold values represent concentrations above the MTCA Method A Cleanup level; **bold red** values represent concentrations twice the MTCA Method A cleanup level for unrestricted land use.

Setting cleanup standards for the Asarco Site

Cleanup standards include cleanup levels, points of compliance, and other requirements. Asarco Site cleanup levels applied to the Property meet the substantive requirements of MTCA. Other requirements also apply to the cleanup action based on the type of action or location of the Site and Property.

As part of the Interim Action Plan for the Asarco Tacoma Smelter Site (June 2012) (IAP), Ecology completed a terrestrial ecological evaluation for properties with only Tacoma Smelter Plume contamination. Ecology determined the MTCA Method A cleanup levels for both arsenic and lead were protective of both human health and the environment. The MTCA Method A cleanup levels for soil are as follows:

- Arsenic is 20 mg/kg.
- Lead is 250 mg/kg.

The IAP determined that the soil and duff cleanup levels are protective of human health and the environment for properties within the Asarco Tacoma Smelter Site are the following:

- Average arsenic detected in the soil is less than 20 mg/kg.
- Average lead detected in the soil is less than 250 mg/kg.
- Duff composite sample is less than 20 mg/kg for arsenic.
- Duff composite sample is less than 250 mg/kg for lead.
- No single soil sample has arsenic above 40 mg/kg.
- No single soil sample has lead above 500 mg/kg.

Selecting the cleanup action

Ecology has determined the cleanup action you selected for the Property will likely meet the cleanup standards discussed in the "Setting cleanup standards for the Asarco Site" subsection. Your planned cleanup meets minimum cleanup requirements and likely won't exacerbate conditions or preclude reasonable cleanup alternatives elsewhere at the Asarco Site.

Ecology proposed four model remedies in the IAP:

- Excavation and removal.
- Mixing.
- Capping in place.
- Consolidation and capping.

The Property developer, Fulcrum Development Inc. (Fulcrum) decided to use mixing in DU 2.

Implementing the cleanup action

The planned Property cleanup actions will likely meet minimum requirements and should not make conditions worse or limit other reasonable cleanup alternatives elsewhere at the Asarco Site. However, additional cleanup will still be needed at other areas of the Asarco Site after your planned cleanup is completed. This cleanup is an interim action for the overall Site cleanup.

The entire property was sampled according to Ecology's Tacoma Smelter Plume Model Remedies Guidance. The concentrations of arsenic and lead detected in DU 1 do not meet Ecology's definition of elevated and does not require cleanup.

DU 2 does require remediation, as concentrations of arsenic in both the 0 to 6 inch and 6 to 12 inch intervals meet Ecology's definition of elevated. Additional sampling in DU 2 was conducted to evaluate the vertical extent of contamination where concentrations were highest at the 6 to 12 inch interval. Results from the 12 to 18 inch depth did not indicate elevated arsenic or lead.

Soil Mixing

During site development, soil mixing will be completed in DU 2 using conventional earthwork equipment, including excavators, backhoe loaders, and/or bulldozers.

The process will involve scraping and removing the upper 24 inches of soil in distinct rows, each measuring approximately 8 to 10 feet in width. In sequence, beginning on the southern boundary of the Property, the soil will be temporarily stockpiled adjacent to the north of each row, which will then be redistributed back into the excavated void space, resulting in a uniformly mixed backfill. The process will then be repeated in the subsequent row to the north.

Compliance Sampling

Following soil mixing operations, compliance soil samples will be collected from the mixed soil to a total depth of 24 inches, or the entire mixed depth profile. Each discrete sample will be analyzed for total arsenic. In accordance with Ecology's Tacoma Smelter Plume Model Remedies Guidance, Dixon anticipates collecting confirmational samples from eight sample locations.

For mixed areas, at each sample location, a sample should be collected at six inch intervals from the entire mixed depth profile. If soil is mixed to a depth of 24 inches, at each sample location, a sample should be collected at 0 to 6 inches bgs, 6 to 12 inches bgs, 12 to 18 inches bgs, and 18-24 inches bgs. Confirmational sample results should show that the mixing has successfully remediated soil to below the applicable cleanup levels. If average arsenic results are above 20 mg/kg at any of the sampled depth intervals, or if any single sample is above 40 mg/kg for arsenic. Additional mixing should occur, until the soil in this area has been successfully remediated. All final confirmational soil samples should be analyzed at a lab.

Environmental Information Management Database

In accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840[8] (Data Submittal Requirements), data generated for Independent Remedial Actions will need to be confirmed as uploaded, accepted, and approved in Ecology's Environmental Information Management (EIM) database prior to issuing a no further action (NFA) determination. For additional information regarding electronic format requirements, see the website http://www.ecy.wa.gov/eim.

Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-site activities is submitted pursuant to this policy.

Data must be submitted to Ecology in this format for Ecology to issue an NFA determination. Please be sure to submit all soil data collected to date, as well as any future data, in this format.

Cleanup of the Asarco Site as a Whole

Ecology has determined your planned Property cleanup will likely meet cleanup standards of the Asarco Site. While your proposed cleanup may constitute the final action for the Property, it will constitute only an "interim action" for the Asarco Site as a whole.

[8] https://apps.ecology.wa.gov/publications/SummaryPages/1609050.html

Limitations of the opinion

Opinion doesn't settle liability with the state

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion doesn't resolve or alter a person's liability to the state or protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70A.305.040(4).[9]

Opinion doesn't constitute a determination of substantial equivalence

To recover remedial action costs from other liable persons under MTCA, one must demonstrate the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. See RCW 70A.305.080[10] and WAC 173-340-545.[11]

State is immune from liability

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. See RCW 70A.305.170(6).[12]

[9] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.040
[10] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.080
[11] https://apps.leg.wa.gov/WAC/default.aspx?cite=173-340-545
[12] https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.170

Contact us for more information

Thank you for choosing to clean up your Property under the VCP. After addressing our comments, you may request another review of your cleanup activities. If you have any questions about this opinion, please contact me at 360-999-9593 or diana.ison@ecy.wa.gov.

Sincerely,

Diana Ison
Southwest Region Office
Toxics Cleanup Program
DI / kw

Encl: A — Property description
B — Asarco Site description, history, and diagrams
C — Soil Characterization Results

cc: Brian Dixon, Dixon Environmental Services LLC, brian@dixones.com
Deidra Miller, Miller Investment Partnership, deidra.miller@attglobal.net
Kristina Haycock, City of Tacoma, khaycock@cityoftacoma.org
Marian Abbett, PE, Ecology, marian.abbett@ecy.wa.gov
Tim Mullin, LHG, Ecology, tim.mullin@ecy.wa.gov
Ecology site file

Enclosure A

Property description

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Legal Property Description

Parcel 0221263043: Section 26 Township 21 Range 02 Quarter 33 : BEG 290 FT N OF SE COR OF SW OF SW ON E LI SD SUBD TH W 400 FT TH N 175 FT TH E 120 FT TH NELY TO A PT ON E LI SD SUBD 280 FT N OF SD POB TH SLY ALG SE E LI TO POB EASE OF REC TOG/W E 30 FT B "C" WHICH ABUTTS L 9 & USED FOR DRIVEWAY OF MILLERS SKYLINE TERRACE 7TH ADD ASSESSED UNDER 594562-033-2 COMB 3-026 & 594562-033-1 SEG T-0735 BC ES

Parcel 5945620280: Section 26 Township 21 Range 02 Quarter 33 MILLERS SKYLINE TERRACE 7TH ADD: MILLERS SKYLINE TERRACE 7TH ADD L 4 BLK C EASE OF RECORD

General Property Description

The property is currently improved with a single-story, 2,086 square foot day care center, generally positioned on the south-east portion of Parcel # 0221263043. The Property is also improved with a small playground and two inactive swimming pools.

Research indicates this property was vacant and undeveloped prior to construction of the existing building and associated features in 1968.

The building was reportedly utilized as a community center for homeowners in the immediate vicinity, followed by a pre-school, then a day care/Montessori.

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Enclosure B

Site description, history, and diagrams

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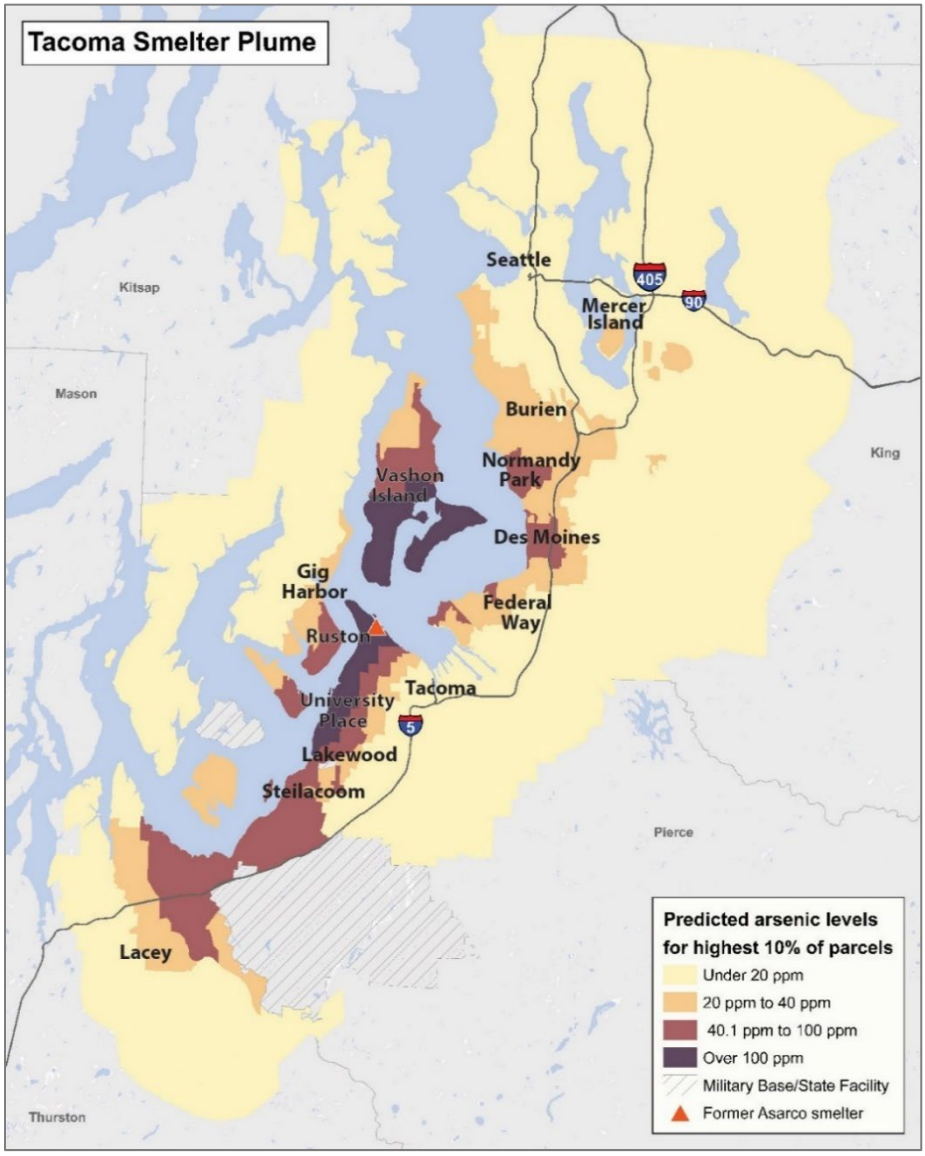
Asarco Tacoma Smelter Site Description



An interactive color map can be found at: https://dirtalert.info/

For almost 100 years, the Asarco Company operated a copper smelter in Tacoma. Air pollution from the smelter settled on the surface soil over a vast region—more than 1,000 square miles of the Puget Sound basin. Elevated levels of contamination are found as far south as the Nisqually Ridge and as far north as Seattle (West Seattle). Additionally, elevated levels of contamination are found as far west as the Kitsap Peninsula and as far east as Kent and Bellevue. Arsenic, lead, cadmium, and other heavy metals are still in the soil as a result of this pollution. The area has elevated levels of arsenic, lead, and cadmium in the soil due to air emissions from the Asarco smelter.

Enclosure C

Soil Characterization Results

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Soil Characterization Results

Sample ID	Decision Unit	Sample Date	Sample Depth (inches)	Arsenic (mg/kg)	Lead (mg/kg)
S1-6	DU 1	12/3/2024	0-6	35	38
S2-6	DU 1	12/3/2024	0-6	23	15
S3-6	DU 1	12/3/2024	0-6	14	14
S4-6	DU 1	12/3/2024	0-6	32	30
S5-6	DU 1	12/3/2024	0-6	35	66
S6-6	DU 1	12/3/2024	0-6	24	23
S7-6	DU 1	12/3/2024	0-6	4.0	13
S8-6	DU 1	12/3/2024	0-6	3.9	11
S9-6	DU 1	12/3/2024	0-6	4.9	13
S10-6	DU 1	12/3/2024	0-6	14	19
S11-6	DU 1	12/3/2024	0-6	7.6	7.9
S13-6	DU 1	12/3/2024	0-6	30	8.5
S14-6	DU 1	12/3/2024	0-6	27	82
S15-6	DU 1	12/3/2024	0-6	15	30
S16-6	DU 1	12/3/2024	0-6	17	21
S18-6	DU 1	12/3/2024	0-6	16	14
S19-6	DU 1	12/3/2024	0-6	3.4	5.6
S20-6	DU 1	12/3/2024	0-6	15	22
S21-6	DU 1	12/3/2024	0-6	11	21
S22-6	DU 1	12/3/2024	0-6	23	47
S25-6	DU 1	12/3/2024	0-6	12	16
S26-6	DU 1	12/3/2024	0-6	8.1	12
S4-12	DU 1	12/3/2024	6-12	25	25
S8-12	DU 1	12/3/2024	6-12	11	14
S14-12	DU 1	12/3/2024	6-12	17	16
S20-12	DU 1	12/3/2024	6-12	13	14
S12-6	DU 2	12/3/2024	0-6	51	59
S17-6	DU 2	12/3/2024	0-6	21	25
S18-6	DU 2	12/3/2024	0-6	16	14
S23-6	DU 2	12/3/2024	0-6	37	24
S24-6	DU 2	12/3/2024	0-6	43	48
S17-12	DU 2	12/3/2024	6-12	20	24
S23-12	DU 2	12/3/2024	6-12	39	53
S24-12	DU 2	12/3/2024	6-12	70	63
S23-18	DU 2	3/18/2025	12-18	2.3	53
S24-18	DU 2	3/18/2025	12-18	3.3	63
Duff		12/3/2024	surface	8.5	15