Professional Engineer's Statement
Everett Smelter Cleanup
June 16, 2008

Soil remediation was carried out at the following homes within the Everett Smelter Site during the period May 2007 to November 2007:

Address	Owner
229 Bridgeway	Arthur Guinn Shaffer
225 Bridgeway	Steffanie Campbell
223 Bridgeway	Godfrey and Ramona Holzinger
215 Bridgeway	Joshua & Michelle Allen
209 Bridgeway	Maria Paulay
207 Bridgeway	Paul D. King
205 Bridgeway	William C. MacPherson
201 Bridgeway	James and Kathleen Pankiewicz
115 Bridgeway	Mark & Lori Childress
109 Bridgeway	Bud E. Kast

Based on the results of testing and inspections, it is my opinion that the soil remediation carried out at these homes was performed in substantial compliance with the plans, specifications, and related documents governing the work

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REGISTERED
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EXPIRES 5/14/2009

Washington Department of Ecology
Everett Smelter Site
2007 Cleanup

Details of Cleanup Activities for 207 Bridgeway

In 2007, Department of Ecology (Ecology) selected 10 homes within the Everett Smelter Site for cleanup. These homes are located along the east side of Bridgeway in north Everett. Cleanup activities were conducted from May 21, 2007 – November 30, 2007. The cleanup was conducted according to the "Everett Smelter Site: Integrated Final Cleanup Action Plan and Final Environmental Impact Statement for the Upland Area" (see Document Repository information on page 4).

Where used for the first time, definitions for words marked in ***bold italics*** may be found in the definition section following this summary.

This report describes the cleanup actions that were conducted, where arsenic-contaminated soil was removed and where it remains for the following location:

Property Owner	Paul D. King
Address:	207 Bridgeway Everett, WA 98201
Snohomish County State of Washington Tax Parcel No.	# 005203-000-048-00

Purpose of Sampling

The purpose of sampling was to determine the required depth of excavation for this property. The property was divided into divided into four ***Decision Units*** A, B, C, and D, as shown on the attached map in Attachment A. A ***rotating laser level*** was used to measure the depth of the excavated soil in each decision unit.

The following is a summary of the work done to remediate the property within each of the decision units or other areas on the property.

DECISION UNIT A

Cleanup Activities

Results of pre-cleanup sampling indicated that no soil needed to be removed from this area. The average arsenic concentration does not exceed 20 ***parts per million (ppm)*** down to 24 inches nor do average sample concentrations exceed the remediation level 150 ppm below 24 inches.

Per the cleanup plan, the plants and small trees were removed along with the soil in a planting area (landscape samples M-1/M-2) at the south end of Decision Unit A. The soil in planting area M-1/M-2 was removed to a depth of 18 inches and ***backfilled*** with clean topsoil. The decision was made to remediate this planting area in order to be conservatively protective as a maximum sample result of 30 ppm was found at the 18 to 24 inch depth interval. Plants and small trees removed from this area during the remediation effort were replaced.

DECISION UNIT B

Cleanup Activities

Results of pre-cleanup sampling indicated 30 inches of soil would have to be excavated in this decision unit. Ecology on-site coordinator witnessed the soil being removed to a depth of 30 inches.

Attachment B shows that:

- Below 30 inches, the composite and maximum sample analyses are below the remediation levels of 150 parts per million (ppm) and 500 ppm, respectively.
- Below 30 inches, the soil contains arsenic above the cleanup level of 20 ppm; therefore, a ***geofabric*** marker was placed.

After placing a geofabric marker, the decision unit was backfilled with clean material as described in the "Specifications for Everett Residential Soil Remediation" (see Document Repository information on page 4).

Wooden Deck

Underneath the large wooden deck at the front of the house, the excavation was completed as planned except for an area (approximately 6'X 6') in the southwest quadrant under the deck where 24 inches was excavated. This change was made in the field after noting the uneven ground surface top. The decision was made to excavate in such a manner as to create a flat, slightly sloped surface, and not follow the uneven, rolling surface topography. Once the excavation was complete, the area was covered with a geofabric marker barrier, followed by a concrete cap, approximately 4 inches thick. Soil beneath supporting columns underneath deck area was excavated to a ***1:1 slope*** and likewise finished with concrete.

A sump area was installed at the eastern corner of the concreted space beneath the front wooden deck in this decision unit to facilitate drainage.

Driveway

At the driveway area along the southeastern boundary of the property (between 207 and 209 Bridgeway), the excavation was filled with clean sandy backfill and topped with ***crushed rock***.

DECISION UNIT C

Results of pre-cleanup sampling indicated 24 inches of soil would have to be excavated in this decision unit. The on-site coordinator witnessed the soil being removed to the target depth of 24 inches.

Attachment B shows that:

- Below 24 inches, the composite and maximum sample analyses are below the remediation levels of 150 parts per million (ppm) and 500 ppm, respectively.
- Below 24 inches, the soil contains arsenic above the cleanup level of 20 ppm; therefore, a geofabric marker was placed.

After placing a geofabric marker, the decision unit was backfilled with clean material as described in the "Specifications for Everett Residential Soil Remediation" (see Document Repository information on page 4). Approximately 6 inches of clean topsoil was placed above the backfill, and the surface was restored with sod.

Subsurface drains were installed in this decision unit. With the homeowner's approval, a flatter surface was graded with a 1:1 slope around the perimeter to make for a more level, terraced backyard.

DECISION UNIT D

Cleanup Activities

Results of pre-cleanup sampling indicated 12 inches of soil would have to be excavated in this decision unit. The on-site coordinator witnessed the soil being removed to a depth of 12 inches.

Attachment B shows that:

- Below 12 inches, the composite and maximum sample analyses are below the remediation levels of 60 parts per million (ppm) and 150 ppm, respectively.
- Below 12 inches, the soil contains arsenic above the cleanup level of 20 ppm; therefore, a geofabric marker was placed.

After placing a geofabric marker, the decision unit was backfilled with clean material as described in the "Specifications for Everett Residential Soil Remediation" (see Document Repository information on page 4). Approximately 6 inches of gravel was placed above the backfill, per the homeowner's choice not to have sod in this area.

RESTORATION SUMMARY

- As part of the property restoration, all roof drain downspouts were connected to a 4" corrugated plastic pipe subsurface drain system that surfaces at the down slope eastern property line.
- A perimeter footing drain was restored and connected to the subsurface drain system that leads off-site.
- The soil beneath the large front deck area was excavated, covered with a geofabric marker barrier and an approximately 4 inch thick concrete cap.

MATERIAL QUANTITIES

Quantity of contaminated soil removed:	244.33 Tons
Quantity of clean backfill used:	153.60 Cubic Yards
Quantity of clean topsoil used:	20 Cubic Yards

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January 31, 2008

Attachments: A. Site Map
B. Graphs of Arsenic Concentration vs. Depth
C. Explanation of graphs

207 Bridgeway
Everett, WA 98201

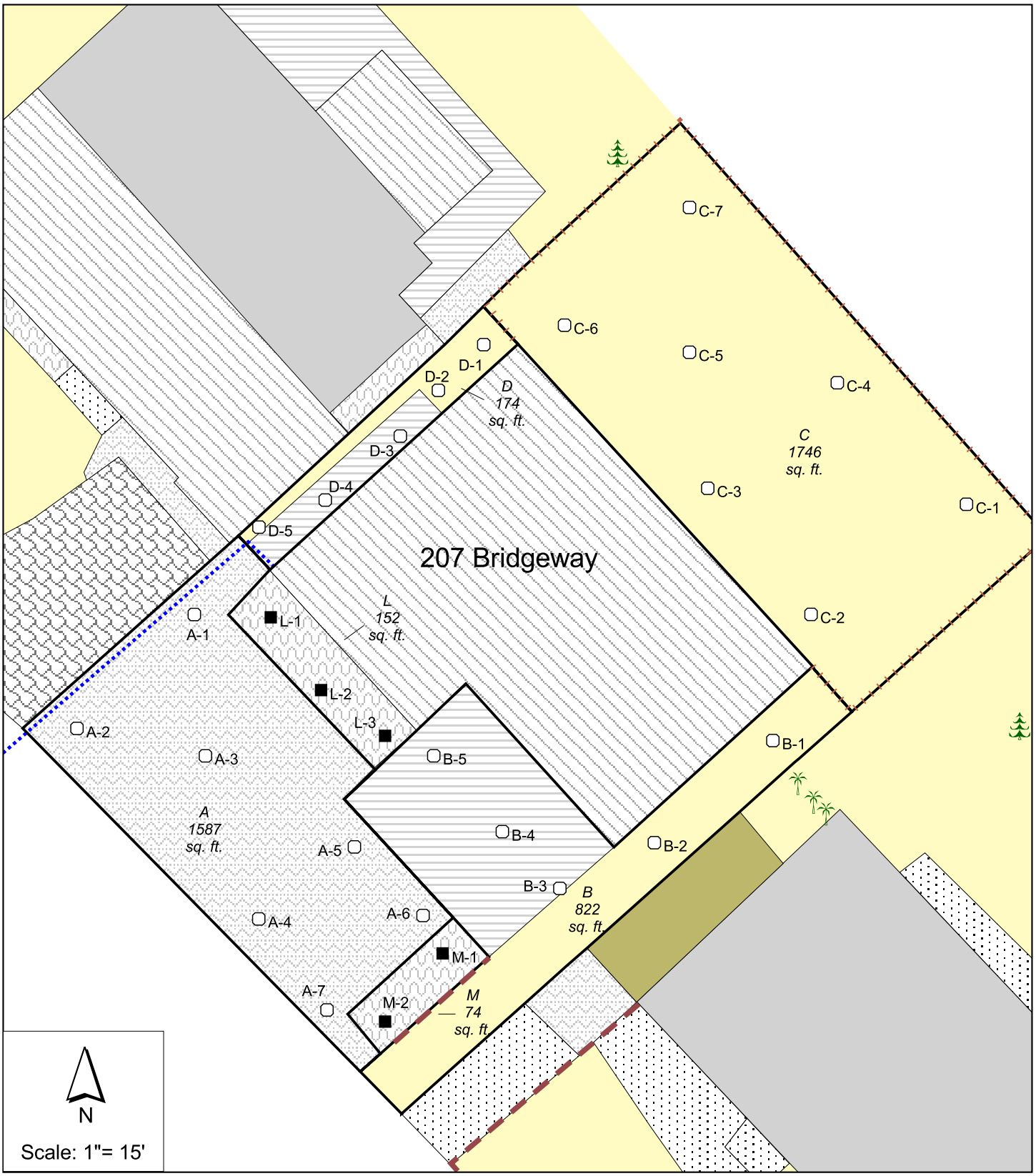
Note

If the attachments listed above do not accompany this document, copies may be obtained from Ecology. Please contact Central Records at Ecology's Northwest Regional Office (NWRO) at (425) 649-7190 for information on obtaining copies.

Document Repository
These following documents can also be found at NWRO:

- Integrated Final Cleanup Action Plan
- Final Environmental Impact Statement for the Upland Area
- Specifications for Everett Residential Soil Remediation

cc: City of Everett Public Works
Ecology Central Files, Northwest Regional Office
Ecology Contract Officer, Headquarters
Ecology, Office of the Attorney General
Ecology On-site Coordinator, SAIC
Everett Public Library
Northeast Everett Community Organization
Northwest Everett Neighborhood Association
Snohomish PUD
Wyser Construction, Inc.



LEGEND

- Decision Unit Samples
- Landscape Samples

207 Bridgeway (Home 47)

Everett Smelter Homesite Cleanup

Source: Snohomish Health District