



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

August 2, 2012

Joe Foss
Highland Golf
1400 North Highlands Parkway
Tacoma, WA 98406

Re: No Further Action at a Property associated with the Tacoma Smelter Plume Site:

- Name: Highland Golf
- Property Addresses: 1124 Newton Street North (lot 2A)
1130 Newton Street North (lot 2B)
1115 Newton Street North (lot 2C)
1211 Newton Street North (lot 2D)
- Facility/Site No.: 13708
- VCP Project No.: SW1158

Dear Mr. Foss:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of a Property associated with the Tacoma Smelter Plume Site (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issues Presented and Opinion

1. Is further remedial action necessary at the Property to clean up contamination associated with the Site?

NO. Ecology has determined that no further remedial action is necessary at the Property to clean up contamination associated with the Site.

2. Is further remedial action still necessary elsewhere at the Site?

YES. Ecology has determined that further remedial action is still necessary elsewhere at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.



Description of the Property and the Site

This opinion applies only to the Property and the Site described below. This opinion does not apply to any other sites that may affect the Property. Any such sites, if known, are identified separately below.

1. Description of the Property.

The Property is comprised of four newly created lots. These lots were created out of existing Pierce County parcels #4467121270 and #4467121280, which are located within the Site. At the time of the drafting of this letter, Pierce County had not assigned parcel numbers to the newly created lots. However, the City of Tacoma had assigned the following addresses to the newly created lots:

- 1124 Newton Street North (lot 2A)
- 1130 Newton Street North (lot 2B)
- 1115 Newton Street North (lot 2C)
- 1211 Newton Street North (lot 2D)

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

2. Description of the Site.

The Site is defined by the nature and extent of contamination associated with the following releases:

- Arsenic into the Soil.
- Lead into the Soil.

Those releases have affected more than one parcel of real property, including the parcels identified above.

Enclosure B includes a detailed description and diagram of the Site, as currently known to Ecology.

3. Identification of Other Sites that may affect the Property.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the Property is affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

- 1) Beyler Consulting, Highland's Golf & Racquet Club Plat No. 2 Plat Alteration, dated June 25, 2012.
- 2) Robinson Noble, Highland Twenty LLP, Remediation Action Completion Report, dated June 25, 2012.
- 3) ECI Environmental Consulting, Arsenic Contaminated Soil Corrective Action Plan (Revised), dated March 26, 2012.
- 4) Michael Erdahl (Friedman & Bruya), letter to Steven Spencer (EcoCon) with lead results, dated September 20, 2011.
- 5) Cheri Gibbons (City of Tacoma), e-mail correspondence with Elizabeth Weldin (Ecology) regarding new addresses for newly created lots, dated August 4, 2011.
- 6) Rodney M. Kerslake (City of Tacoma), Highland Hills Hearing Examiner's Findings of Fact, Conclusion of Law, Decision and Recommendation to the Tacoma City Council, dated November 10, 2010.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

1. Cleanup of the Property located within the Site.

Ecology has concluded that **no further remedial action** is necessary at the Property to clean up contamination associated with the Site. That conclusion is based on the following analysis:

a. Characterization of the Site.

The Site is described in **Enclosure B**.

For almost 100 years, the Asarco Company operated a copper smelter in Tacoma, Washington. 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 Lacey 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, and other heavy metals are still in the soil as a result of this pollution.

The Highland Hills Golf Course is located in Tacoma, Washington. Please see Enclosure A and Figures 1 and 2 for more information about the Property.

In January 2011, ECI Environmental Services collected soil samples from 10 locations for each lot (Figures 3, 4, 5, and 6). Soil samples were collected at 0 to 6 inches and 6 to 12 inches below ground surface (bgs), but only samples from 0 to 6 inches bgs were analyzed and only for arsenic using EPA Method 200.8. No samples collected at 6 to 12 inches were analyzed. No samples were analyzed for lead. Arsenic concentrations ranged from 13.2 to 253 milligram per kilogram (mg/kg). The MTCA Method A cleanup level for arsenic is 20 mg/kg.

On September 9, 2011, ECI Environmental Services collected soil samples from 10 locations from 1124 Newton Street North (lot 2A) at 18 to 24 inches bgs. Ecology received the lead results for three of ten sampling locations. The soil samples were analyzed for lead using EPA Method 200.8. Lead concentrations ranged from 28.6 to 116 mg/kg. Ecology did not receive arsenic results from the ten soil samples. Ecology did not receive a diagram showing sampling locations within the lot. The MTCA Method A cleanup level for lead is 250 mg/kg.

b. Establishment of cleanup standards for the Site.

Ecology has determined the cleanup levels and points of compliance established for the Site meet the substantive requirements of MTCA.

As part of the Interim Action Plan for the Tacoma Smelter Plume 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 cleanup level protective of human health and the environment for properties within the Tacoma Smelter Plume 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

OR

- No single soil sample has arsenic above 40 mg/kg
- No single soil sample has lead above 500 mg/kg

c. Selection of cleanup for the Property.

Ecology has determined the cleanup you selected for the Property meets the substantive requirements of MTCA and the IAP. The cleanup meets the minimum cleanup requirements and does not exacerbate conditions or preclude reasonable cleanup alternatives elsewhere at the Site.

Ecology recommended four model remedies in the IAP:

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

For the newly created lots at Highland Hills Golf Course, the Property owner chose to excavate the contaminated soil and take it to the Tacoma Landfill.

d. Cleanup of the Property

Ecology has determined the cleanup you performed meets the applicable Site cleanup standards within the Property.

The contractor started by excavating between 12 to 24 inches of the top layer of soil from each new lot. Robinson Noble collected at least ten compliance soil samples throughout each new lot (Figures 7, 8, 9, and 10, Table 1). Soil samples were analyzed using EPA Method 7010. In areas where concentrations of arsenic or lead exceeded the MTCA cleanup levels, the contractor did further excavation. In some parts of 1130 Newton Street North (lot 2B), 1115 Newton Street North (lot 2C), and 1211 Newton Street North (lot 2D), the contractor excavated and removed soil to 40 to 42 inches bgs. All compliance samples taken at the final grade had concentrations of arsenic and lead less than 20 mg/kg and 250 mg/kg, respectively.

The contractor excavated a total of 1534 cubic yards of arsenic- and lead- contaminated soil. The contractor took the contaminated soil to the Tacoma Landfill. The contractor removed all the trees on the lots.

2. Cleanup of the Site as a whole.

Ecology has concluded that **further remedial action** under MTCA is still necessary elsewhere at the Site. In other words, while your cleanup constitutes the final action for the Property, it constitutes only an **“interim action”** for the Site as a whole.

Listing of the Site

Based on this opinion, Ecology will update the status of remedial action at the Site on our database of hazardous waste sites. However, because further remedial action is still necessary elsewhere at the Site, we will not remove the Site from our lists of hazardous waste sites. Furthermore, the Property will remain listed as part of the Site because the cleanup of the Property does not change the boundaries of the Site.

Limitations of the Opinion

1. Opinion does not 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 Property. This opinion **does not**:

- Change the boundaries of the Site.
- Resolve or alter a person’s liability to the state.
- 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 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you proposed will be substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. 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 70.105D.030(1)(i).

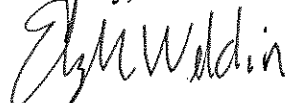
Mr. Joe Foss
August 2, 2012
Page 7

Termination of Agreement

Thank you for cleaning up your Property under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW1158). If you should decide to clean up the remainder of the Site, please do not hesitate to reapply and request additional services under the VCP.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at 360-407-7094 or by e-mail at ewel461@ecy.wa.gov.

Sincerely,



Elizabeth Weldin
SWRO Toxics Cleanup Program

EVW/ksc:NFA for Highland Golf 08022012

Enclosures (12): Enclosure A: Legal Description, addresses, and general description of the Property
Enclosure B: Site description of Tacoma Smelter Plume
Figure 1: Vicinity Map of Highland Twenty, LLP
Figure 2: Aerial Map of Lot Locations
Figure 3: Characterization Soil Sample Locations for Lot 2A
Figure 4: Characterization Soil Sample Locations for Lot 2B
Figure 5: Characterization Soil Sample Locations for Lot 2C
Figure 6: Characterization Soil Sample Locations for Lot 2D
Figure 7: Compliance Soil Sample Locations for Lot 2A
Figure 8: Compliance Soil Sample Locations for Lot 2B
Figure 9: Compliance Soil Sample Locations for Lot 2C
Figure 10: Compliance Soil Sample Locations for Lot 2D
Table 1: Final Confirmation Sampling Results

cc: John Hildenbrand, Robinson Noble, Inc.
Lisa Spondani, City of Tacoma, Community & Economic Development Department
Cheri Gibbons; City of Tacoma, Community & Economic Development Department
Marian Abbett - Ecology
Scott Rose - Ecology
Dolores Mitchell – Ecology w/o enclosures

Mr. Joe Foss
August 2, 2012
Page 8

Enclosure A
Legal Description of the Property

ASSESSOR PARCELS NO. 4467121270 & 4467121280
(PER FIDELITY NATIONAL TITLE PLAT CERTIFICATE ORDER NO. 7102853)

**TRACTS 'A' & 'B', HIGHLAND'S GOLF AND RACQUET CLUB-PLAT NO. 2 ACCORDING TO THE PLAT THEREOF
RECORDED ON JANUARY 8, 1982 UNDER RECORDING NO. 8201080070, WHICH IS A RE-RECORD OF PLAT
RECORDED IN VOLUME 55 OF PLATS, PAGES 5 THROUGH 13, INCLUSIVE, IN PIERCE COUNTY, WASHINGTON.**

SITUATE IN THE CITY OF TACOMA, COUNTY OF PIERCE, STATE OF WASHINGTON.

Property Description

The Property is comprised of four newly created lots at the Highland Hills Golf Course in Tacoma, Washington. These lots were created out of existing Pierce County parcels #4467121270 and #4467121280. At the time of the drafting of this letter, Pierce County had not assigned parcel numbers to the newly created lots. However, the City of Tacoma had assigned the following addresses to the newly created lots:

- 1124 Newton Street North (4995 square feet, Lot 2A)
- 1130 Newton Street North (5510 square feet, Lot 2B)
- 1115 Newton Street North (6002 square feet, Lot 2C)
- 1211 Newton Street North (6352 square feet, Lot 2D)

The Property owner created the new lots through a rezone modification, site plan approval modification, and preliminary plat/replat of the existing Highland Hills Golf Course. The lots are located in R-2-PRD Single Family Development, Planned Residential Development District with a Planned Residential Development overlay. The new lots are surrounded by single-family residences and the Highland Hills Golf Course.

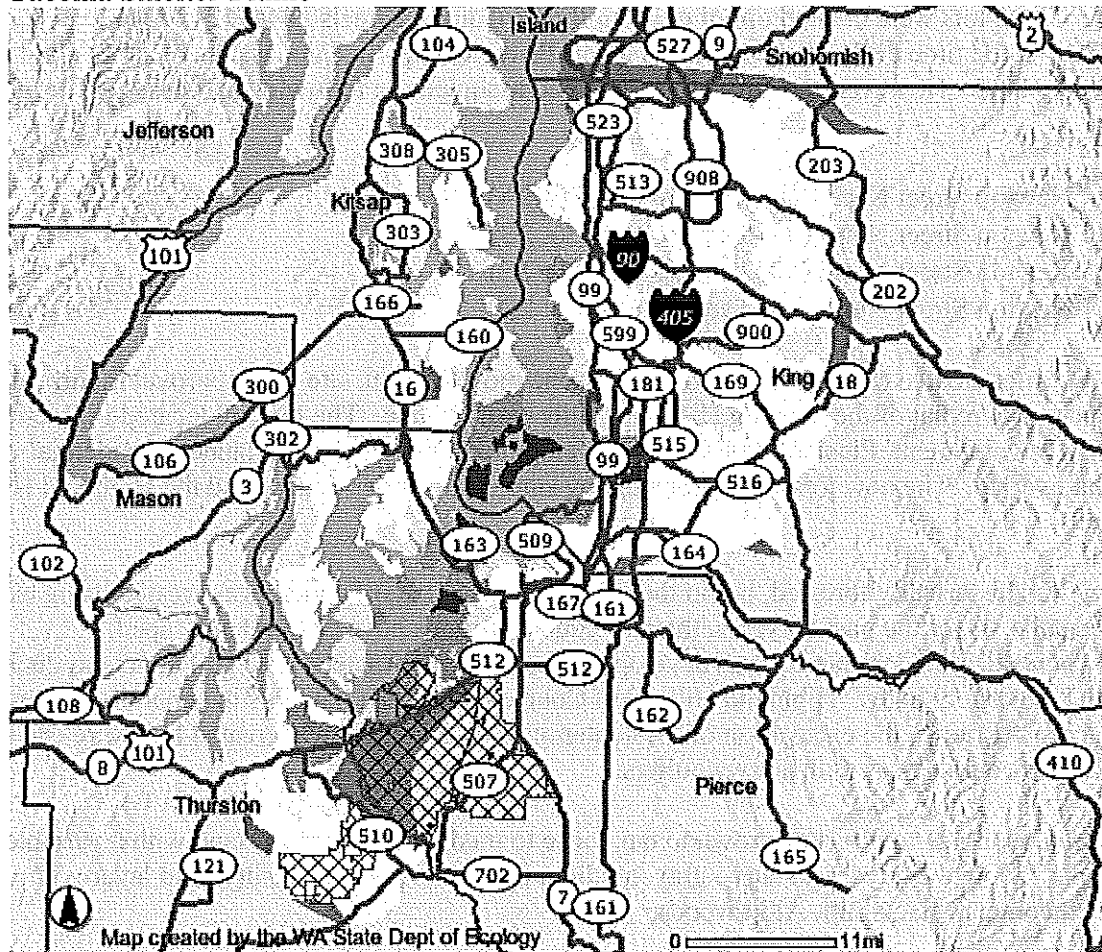
The Property was historically forested, but in the 1930's an 18-hole golf course was created using existing and imported soils. Over the past 80 years, the golf course grounds have been relandscaped. Additionally, a residential community was developed around the perimeter of the golf course, reducing the original 18 holes to 9 holes. Highland Hills Golf Course created the new lots in generally flat areas with street access. Prior to the excavation of the contaminated soil, the newly created lots were originally covered with golf course grass with a few conifers.

Under the sod/topsoil is 1 to 3 feet of brown to tan, loose to medium dense, silty sand with a variable gravel content. Below this layer is a tan to gray, medium dense to very dense, silty sand layer with varying gravel content (glacial till, Alderwood).

A review of well logs contained in the Washington State Department of Ecology's online database for sites located near the Property indicates groundwater is not encountered within 60 feet of the ground surface.

Enclosure B

Tacoma Smelter Plume



An interactive color map can be found at <https://fortress.wa.gov/ecy/smeltersearch/>

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, and other heavy metals are still in the soil as a result of this pollution. The area has elevated levels of arsenic and lead in the soil due to the Asarco smelter.

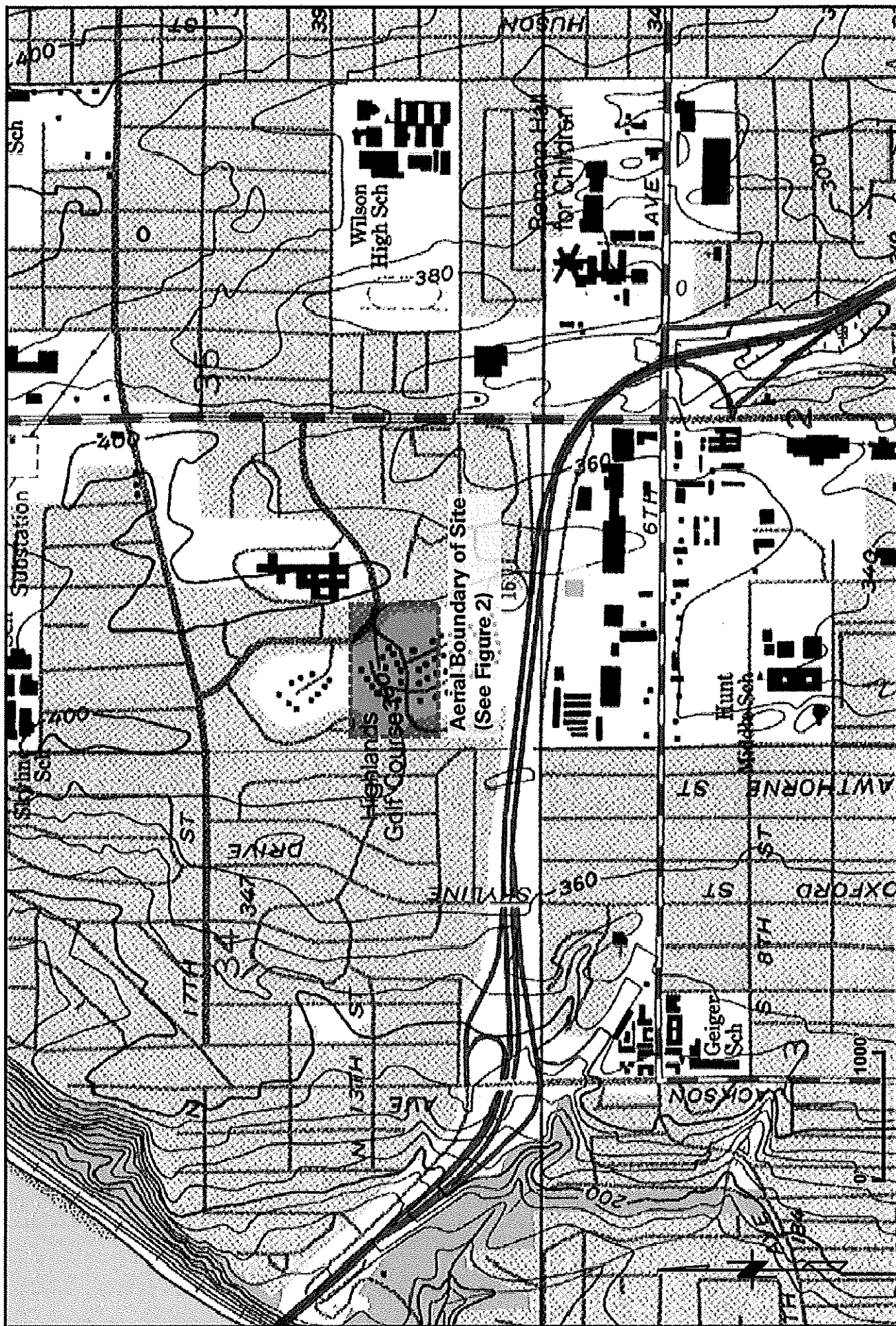
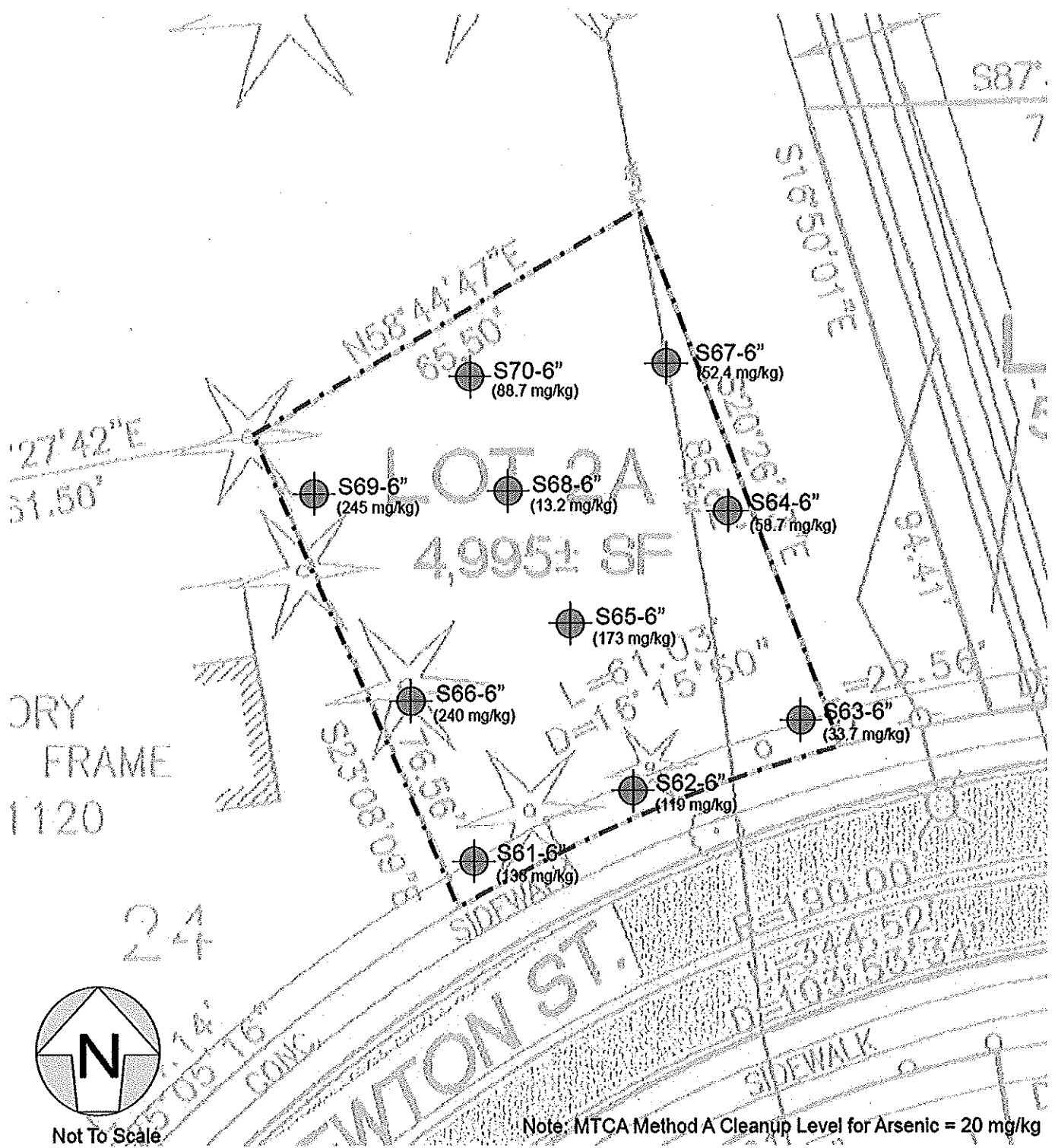


Figure 1
Vicinity Map
Highlands Twenty, LLP: Arsenic and Lead Clean up


 ROBINSON NOBLE	Note: Basemap taken from USGS Gig Harbor Quadrangle	PM: JFH June 2012 2727-001A	Pierce County T 21 NR 02 E - 35 Scale 1" = 1000'
--	--	-----------------------------------	--

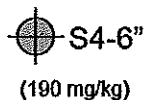
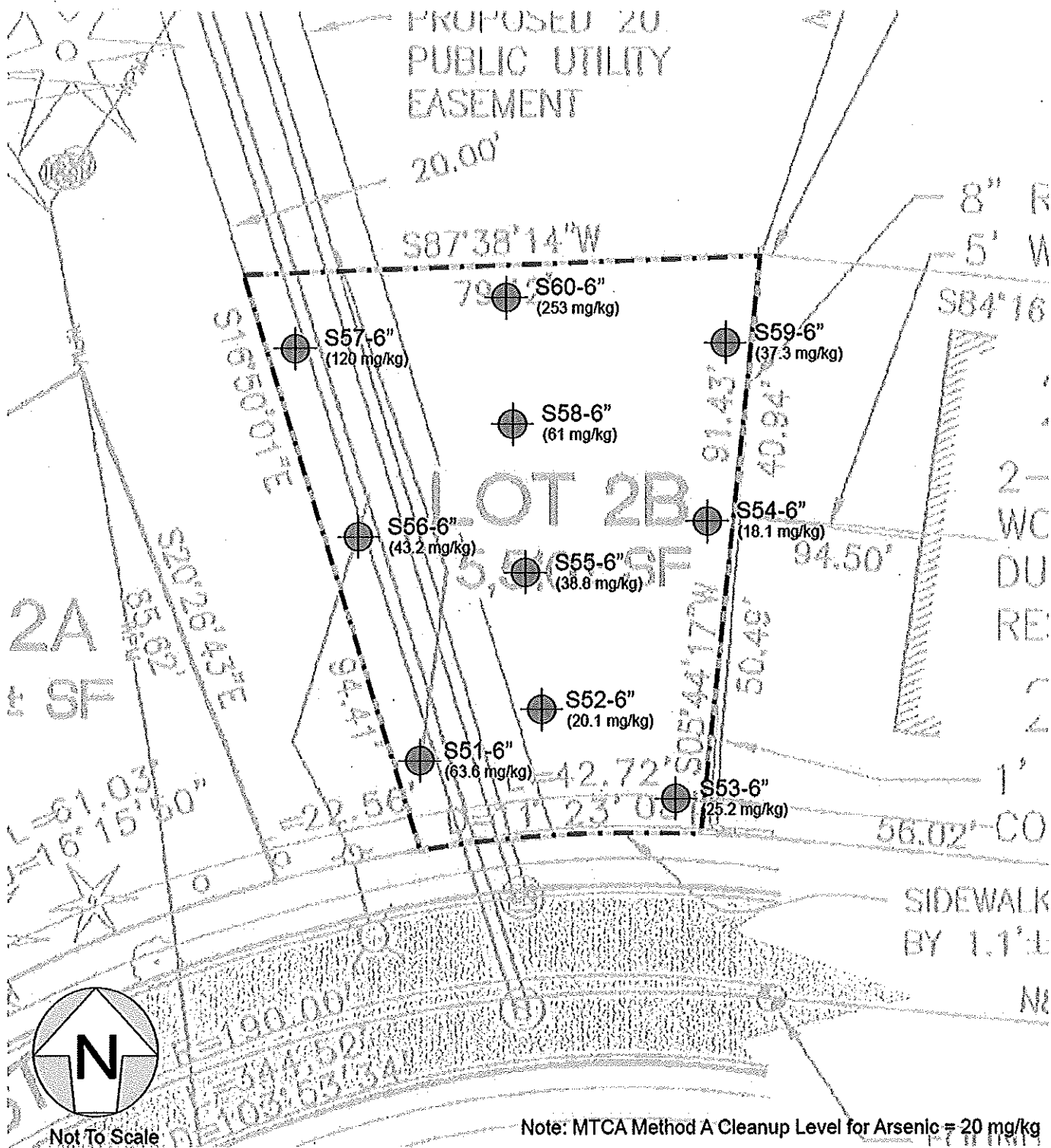


 ROBINSON NOBLE	Note: Image from Tacoma govME database	PM: JFH June 2012 2727-001A	Pierce County T 21 N/R 02 E - 35 Scale 1" = ~100'	Figure 2 Aerial Map of Lot Locations Highlands Twenty, LLP: Arsenic and Lead Clean up
--	--	-----------------------------------	---	---



S41-6" Soil sample identification and location - 0-6" below ground surface
 (190 mg/kg) Total Arsenic Concentration *Characterization Samples*

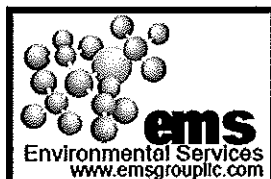
	<p align="center"> Sample Location Map Lot 2A 1400 Highlands Parkway North Tacoma, Washington </p>	<p> Date: February 10, 2011 Completed: K. Spencer Checked By: S. Spencer EMS Project No: 0393-01 </p>	<p> Figure No. <div style="font-size: 2em; text-align: center;">3</div> Lot 2A </p>
---	---	--	---

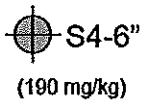
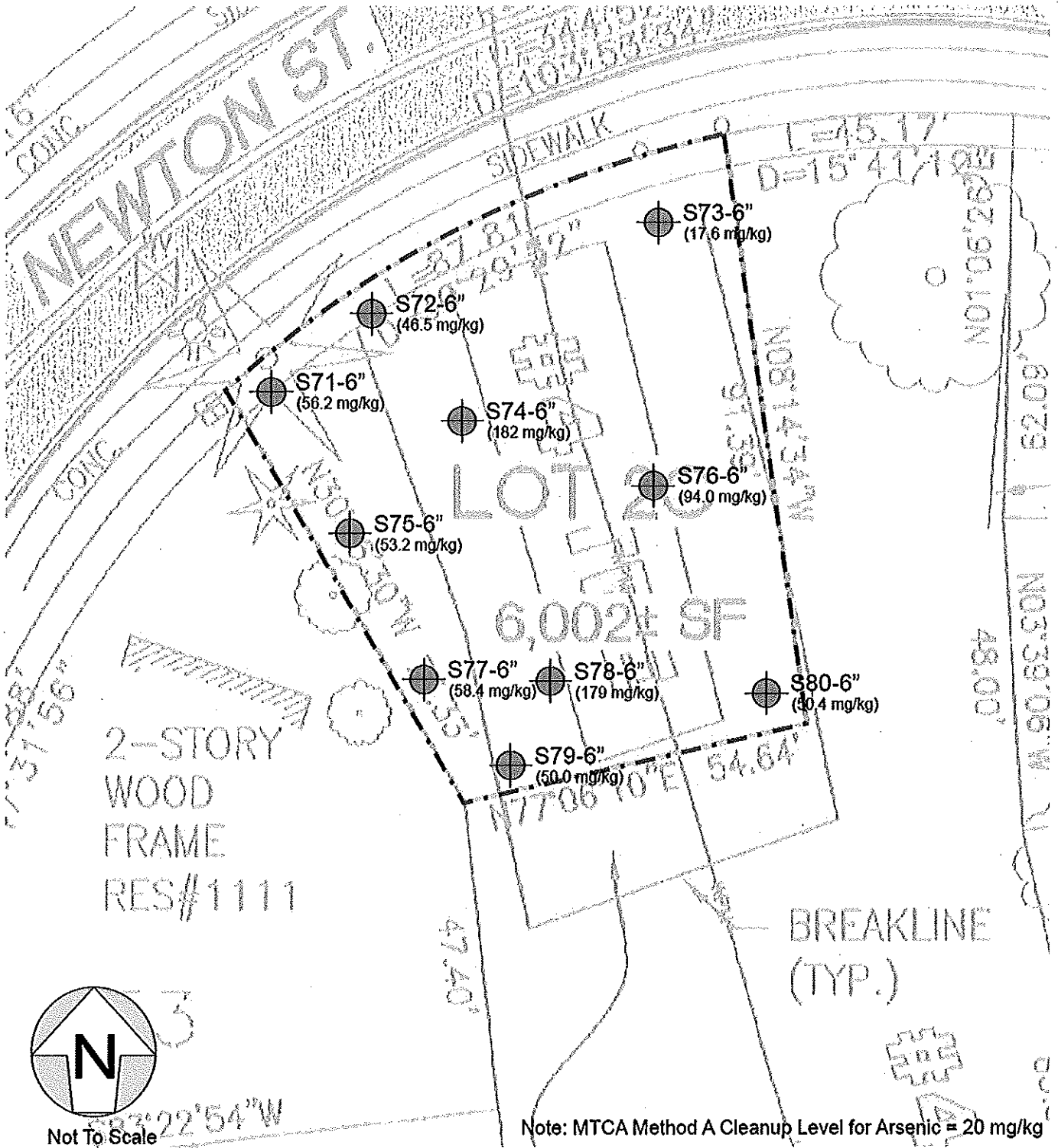


Soil sample identification and location - 0-6" below ground surface

Total Arsenic Concentration

Characterization Samples

 <p>Environmental Services www.emsgroupinc.com</p>	<p>Sample Location Map Lot 2B 1400 Highlands Parkway North Tacoma, Washington</p>	<p>Date: February 10, 2011 Completed: K. Spencer Checked By: S. Spencer EMS Project No: 0393-01</p>	<p>Figure No. 4 Lot 2B</p>
---	---	---	------------------------------------



Soil sample identification and location - 0-6" below ground surface

Total Arsenic Concentration

Characterization Sample

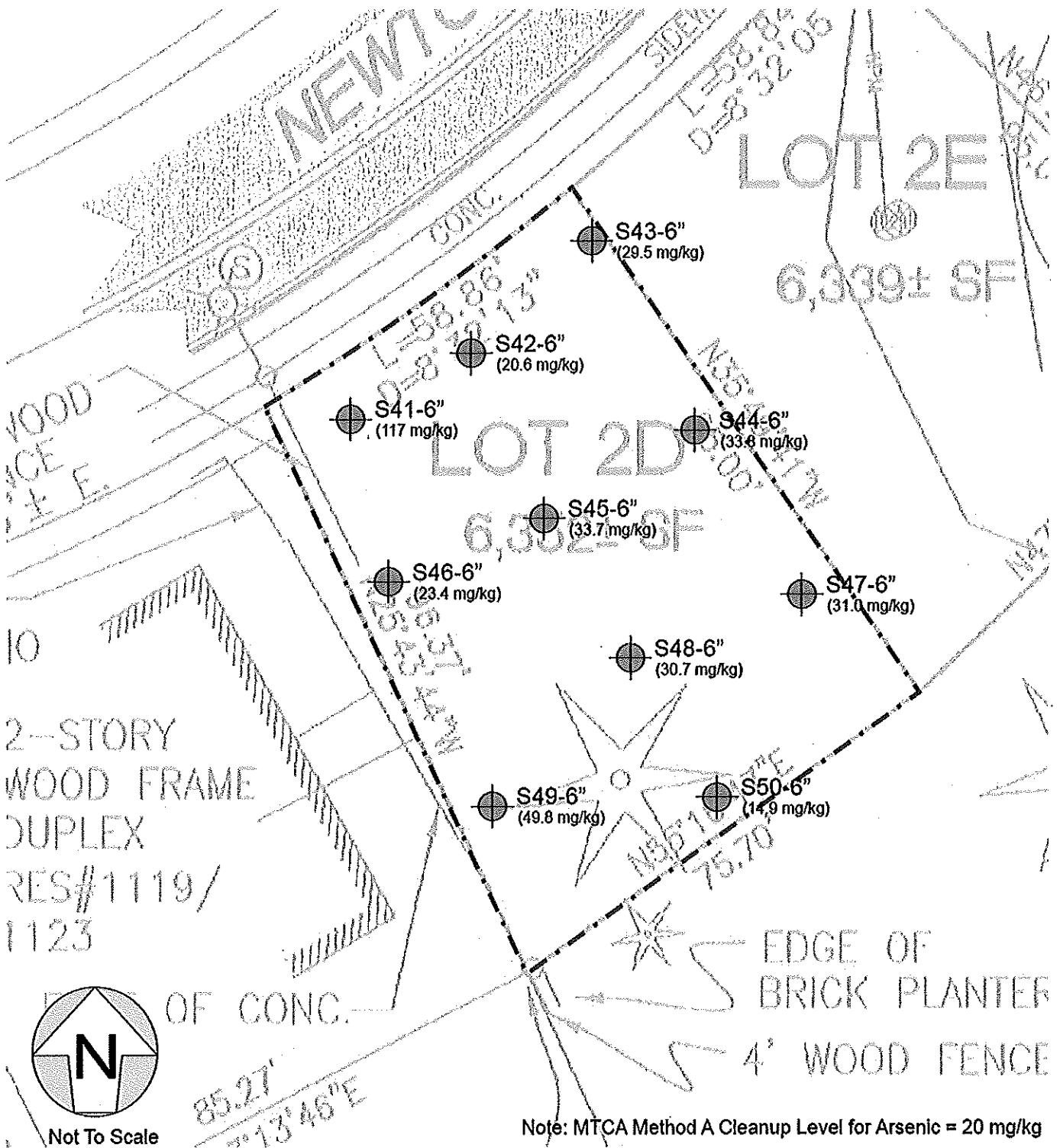



Sample Location Map
Lot 2C
1400 Highlands Parkway North
Tacoma, Washington

Date: February 10, 2011
Completed: K. Spencer
Checked By: S. Spencer
EMS Project No: 0393-01

Figure No.

5
Lot 2C





S4-6"
 (190 mg/kg)

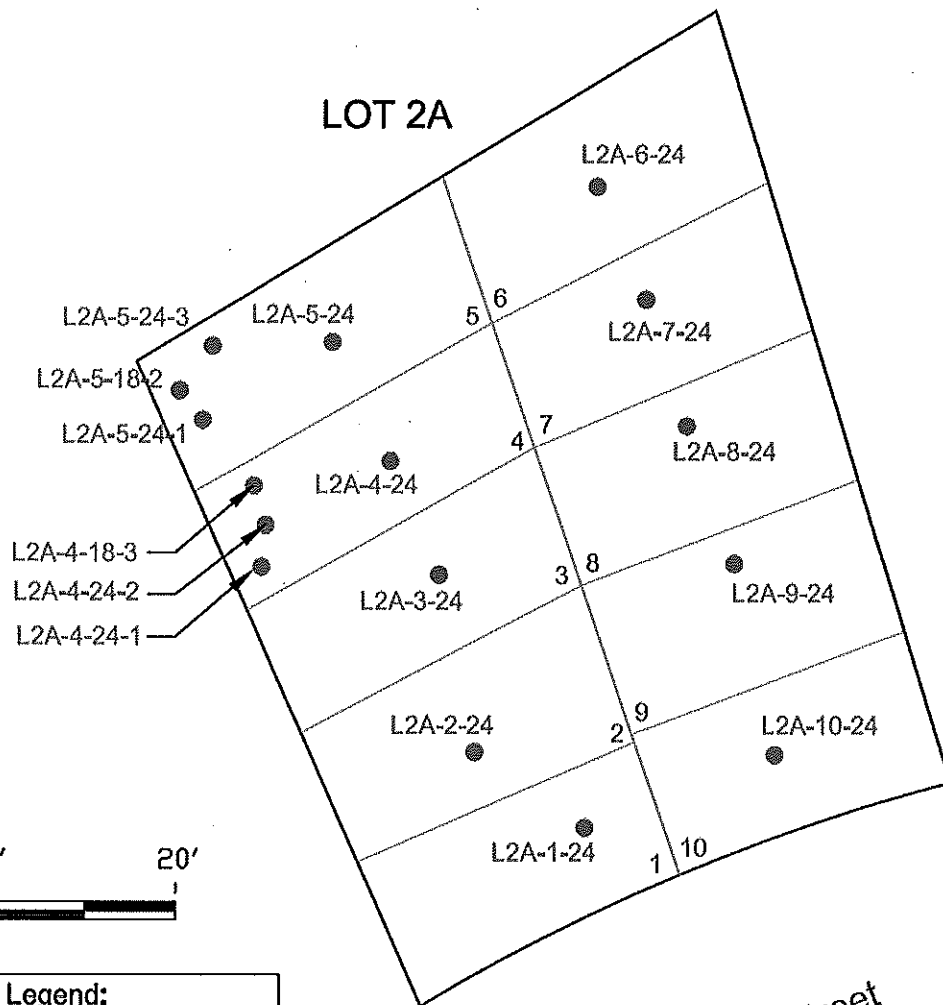
Soil sample identification and location - 0-6" below ground surface

Total Arsenic Concentration

CHARACTERIZATION SAMPLES

 <p>ems Environmental Services www.emsgroupinc.com</p>	<p>Sample Location Map Lot 2D 1400 Highlands Parkway North Tacoma, Washington</p>	<p>Date: February 10, 2011 Completed: K. Spencer Checked By: S. Spencer EMS Project No: 0393-01</p>	<p>Figure No. 6 Lot 2D</p>
--	---	---	---

LOT 2A



Legend:

L2A-1-24

Sample Identifier



Sample Location



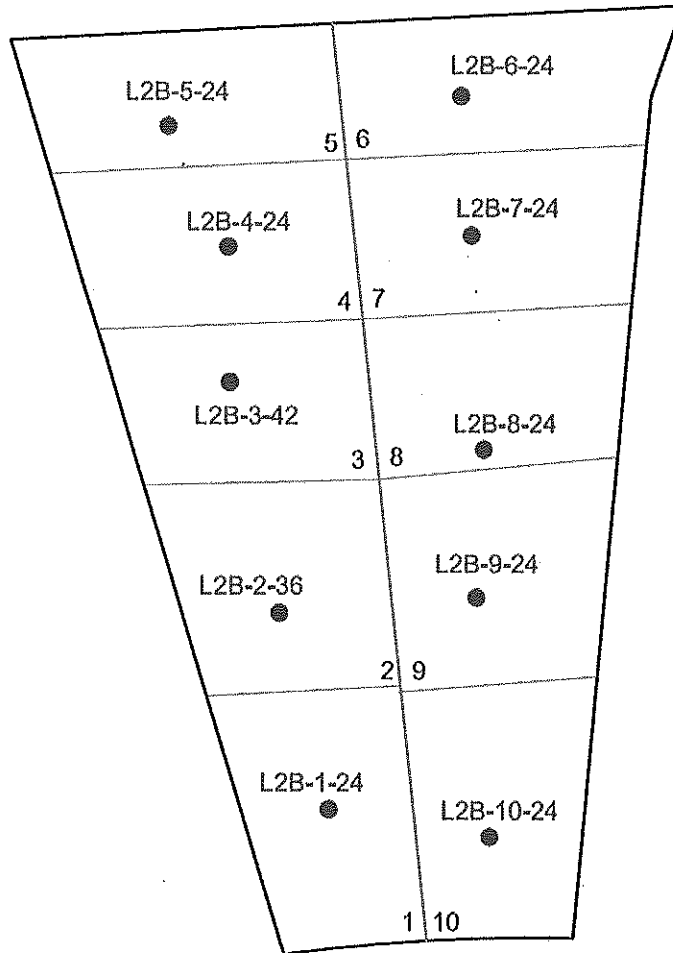
Cell Location

Newton Street

COMPLIANCE SAMPLES

1997 (40000)

LOT 2B



Newton Street



Legend:

- L2B-4-24 Sample Identifier
- Sample Location
- Cell Location

COMPLIANCE SAMPLES

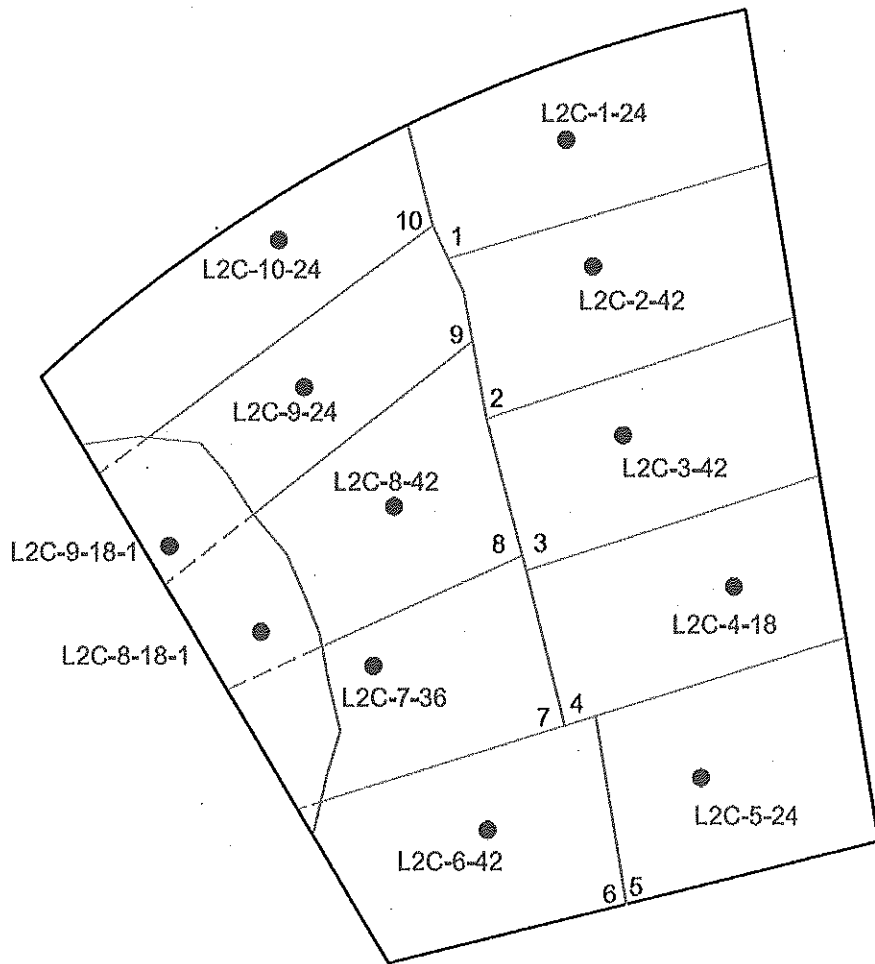


PM: JFH
June 2012
2727-001A

Pierce County
T 21 N/R 02 E - 35
Scale 1" = 20'

Figure 8
Lot 2B Sample Diagram
Highlands Twenty, LLP; Arsenic and Lead Clean up

Newton Street



LOT 2C

Legend:

- L2B-4-24 Sample Identifier
- Sample Location
- Cell Location

COMPLIANCE SAMPLES

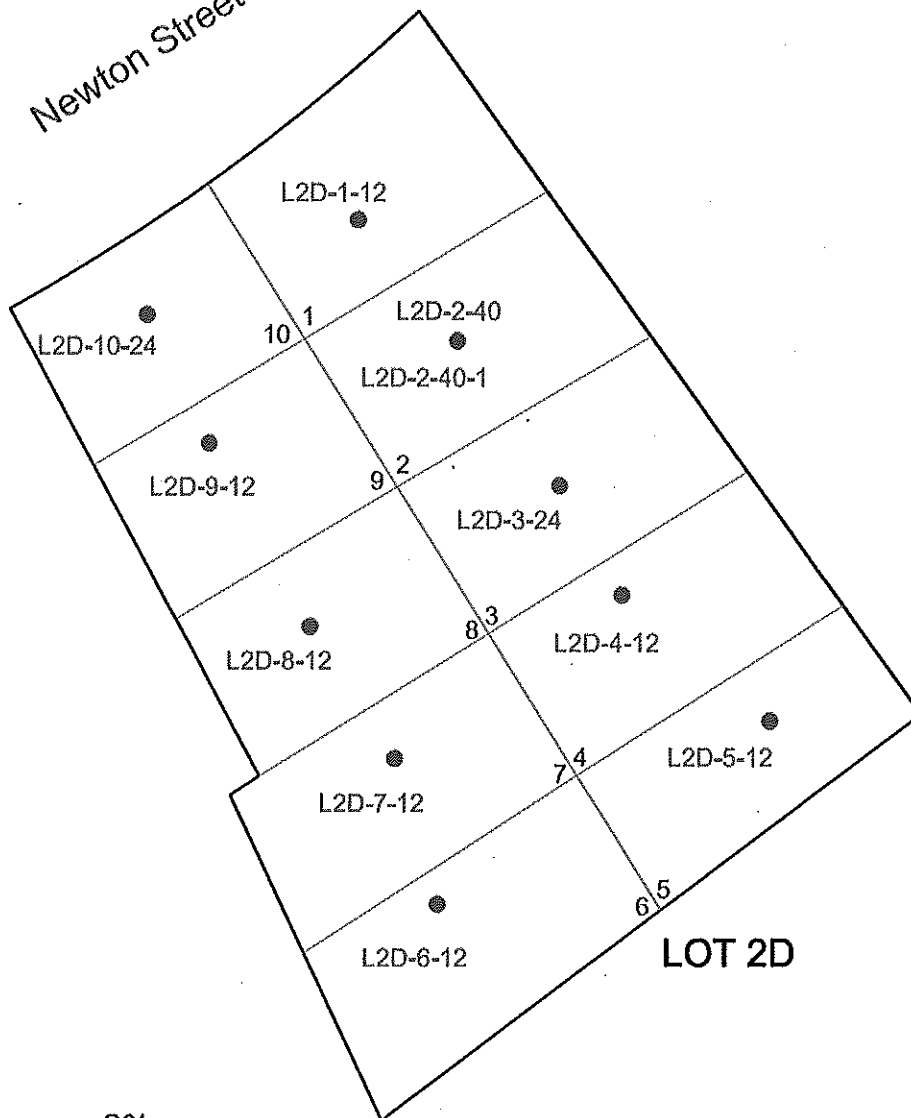


PM: JFH
June 2012
2727-001A

Pierce County
T 21 N/R 02 E - 35
Scale 1" = 20'

Figure 9
Lot 2C Sample Diagram
Highlands Twenty, LLP: Arsenic and Lead Clean up

Newton Street



Legend:

- L2D-4-12 Sample Identifier
- Sample Location
- Cell Location

COMPLIANCE SAMPLES



PM: JFH
June 2012
2727-001A

Pierce County
T 21 N/R 02 E - 35
Scale 1" = 20'

Figure 10

Lot 2D Sample Diagram

Highlands Twenty, LLP: Arsenic and Lead Clean up

Table / Final Confirmation Sampling Results

Lot	Sample ID	Depth (Inches)	Lead (mg/kg)	Arsenic (mg/kg)
2A	L2A-1-24	24	63.6	7.4
	L2A-2-24	24	<5.0	7.2
	L2A-3-24	24	<5.0	5.0
	L2A-4-24	24	<5.0	11.2
	L2A-4-24-1	24	<5.0	10.0
	L2A-4-24-2	24	<5.0	10.0
	L2A-4-18-3	18	<5.0	9.8
	L2A-5-24	24	<5.0	8.7
	L2A-5-24-1	24	<5.0	6.4
	L2A-5-18-2	18	<5.0	9.6
	L2A-5-24-3	24	<5.0	8.5
	L2A-6-24	24	7.7	<5.0
	L2A-7-24	24	<5.0	<5.0
	L2A-8-24	24	<5.0	<5.0
	L2A-9-24	24	<5.0	<5.0
	L2A-10-24	24	<5.0	<5.0
Lot 2A Mean Post Excavation Concentration			6.6	6.6

Lot	Sample ID	Depth (Inches)	Lead (mg/kg)	Arsenic (mg/kg)
2B	L2B-1-24	24	44.2	8.4
	L2B-2-36	36	11.8	<5.0
	L2B-3-42	42	12.6	<5.0
	L2B-4-24	24	<5.0	<5.0
	L2B-5-24	24	<5.0	5.0
	L2B-6-24	24	91.8	7.6
	L2B-7-24	24	5.6	6.2
	L2B-8-24	24	<5.0	<5.0
	L2B-9-24	24	<5.0	<5.0
	L2B-10-24	24	<5.0	<5.0
Lot 2B Mean Post Excavation Concentration			33.2	6.8
2C	L2C-1-24	24	14.9	<5.0
	L2C-2-42	42	<5.0	<5.0
	L2C-3-42	42	49.8	<5.0
	L2C-4-18	18	215	8.5
	L2C-5-24	24	53.6	<5.0
	L2C-6-42	42	<5.0	<5.0
	L2C-7-36	36	<5.0	<5.0
	L2C-8-42	42	<5.0	<5.0
	L2C-9-18-1	18	<5.0	<5.0
	L2C-9-24	24	8.3	<5.0
	L2C-9-18-1	18	<5.0	<5.0
	L2C-10-24	24	<5.0	<5.0
Lot 2C Mean Post Excavation Concentration			30.0	2.8
2D	L2D-1-12	12	<5.0	<5.0
	L2D-2-40	40	50	<5.0
	L2D-2-40-1	40	40	<5.0
	L2D-3-24	24	5.8	<5.0
	L2D-4-12	12	<5.0	<5.0
	L2D-5-12	12	<5.0	<5.0
	L2D-6-12	12	42.7	<5.0
	L2D-7-12	12	<5.0	<5.0
	L2D-8-12	12	<5.0	<5.0
	L2D-9-12	12	<5.0	<5.0
	L2D-10-24	24	161	6.3
Lot 2D Mean Post Excavation Concentration			28.6	—
MTCA Method A			250.0	20.0

c denotes that the target analyte was not detected above the corresponding PCL. Mean concentrations were calculated by inserting a value (2.5 mg/kg) equal to ½ of the PCL for all results reported with c values.

