



3855 North Ocoee Street, Suite 200  
Cleveland, TN 37312

SENT BY FEDERAL EXPRESS

November 21, 2011

Mr. Patrick Bowe  
Director  
Remediation Division  
Bureau of Water Protection and Land Reuse  
State of Connecticut Department of Energy and Environmental Protection  
79 Elm Street  
Hartford, CT 06106

Re: Property-Specific Remedial Action Report  
Newhall Street Neighborhood  
481 Shelton Avenue, Block L  
Hamden, Connecticut 06517

Dear Mr. Bowe:

Enclosed please find the Property-Specific Remedial Action Report (RAR) prepared for the property located at 481 Shelton Avenue in Hamden, Connecticut. The Property-Specific RAR summarizes the remediation and restoration activities conducted at the property as required by Consent Order No. SRD-128. Remediation and restoration of this property are complete and were implemented in compliance with the Remedy Selection Plan, the Generic RAP, and the Property-Specific Remedial Action Plan (RAP) approved by the Connecticut Department of Energy and Environmental Protection (DEEP).

Section 2.0 of the enclosed report documents property-specific construction activities, as well as any adjustments to the Property-Specific RAP that were required due to the extent of fill encountered or other field conditions. Please note that any field adjustments made were pursuant to the approved Generic RAP and/or with CTDEP oversight and approval. Olin hereby submits this Property-Specific RAR for DEEP approval. As noted below and as required by the Remedy Selection Plan, a copy of the enclosed report has also been provided to the property owner.

Please contact me at (800) 295-6141 if you have any questions regarding this matter.

Sincerely,  
OLIN CORPORATION

A handwritten signature in black ink, appearing to read "David M. Share".

David M. Share  
Director, Environmental Remediation

cc: Chestnut Realty, LLC, C/O Bert Frankenberger, 82 Hampshire Lane, Boynton Beach, FL 33436  
Curt Richards – Olin  
Carrie Hunt – Olin  
Nelson Walter – AMEC  
Robert Bell – DEEP  
Ray Frigon – DEEP  
Richard Pearce – Newhall Street Neighborhood Community Liaison  
Robert Labulis – Town of Hamden Building Department

**PROPERTY-SPECIFIC REMEDIAL ACTION REPORT  
481 SHELTON AVENUE**

**NON-PUBLIC PROPERTIES  
NEWHALL STREET NEIGHBORHOOD  
HAMDEN, CONNECTICUT**

*Prepared for:*



**Olin Corporation**  
3855 North Ocoee Street, Suite 200  
Cleveland, TN 37312

*Prepared by:*



**AMEC Environment & Infrastructure**  
1090 Elm Street, Suite 201  
Rocky Hill, Connecticut 06067

**November 21, 2011**

**AMEC Project Number: 6107110004/125**

**PROPERTY-SPECIFIC REMEDIAL ACTION REPORT  
481 SHELTON AVENUE**

**NON-PUBLIC PROPERTIES  
NEWHALL STREET NEIGHBORHOOD  
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Rocky Hill, Connecticut 06067

**November 21, 2011**

**AMEC Project Number: 6107110004/125**

A handwritten signature in black ink that reads "Nelson Walter".

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Nelson Walter, P.E.  
Project Manager

A handwritten signature in black ink that reads "J. Rod Pendleton".

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Rod Pendleton, P.G  
Principal Scientist

**TABLE OF CONTENTS**

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1.0	INTRODUCTION .....	1-1
1.1	Regulatory Status.....	1-1
1.2	Description of Remedy Process .....	1-1
2.0	PROPERTY-SPECIFIC CONSTRUCTION ACTIVITIES.....	2-1
3.0	REFERENCES .....	3-1

**FIGURES**

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Figure 2-1 Post-Construction Conditions

**TABLES**

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Table 2-1 Excavation Confirmation XRF Sampling Results

**ATTACHMENTS**

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A Photographs

## ACRONYMS AND ABBREVIATION

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AMEC	AMEC Environment & Infrastructure
bgs	below ground surface
DEEP	Connecticut Department of Energy and Environmental Protection
MACTEC	MACTEC Engineering and Consulting, Inc.
NPP	non-public properties
Olin	Olin Corporation
RAP	Remedial Action Plan
RAR	Remedial Action Report
RSP	Remedy Selection Plan
XRF	X-ray fluorescence

## **1.0 INTRODUCTION**

This Property-Specific Remedial Action Report (RAR) was prepared by AMEC Environment & Infrastructure (AMEC) on behalf of Olin Corporation (Olin) for the property located at 481 Shelton Avenue in Hamden, Connecticut. This Property-Specific RAR was prepared based on information obtained during remediation activities conducted at the property during the 2011 construction season. This document provides information about the remediation activities completed for the property, which are required by Consent Order SRD-128 entered into by Olin, the Town of Hamden, the Regional Water Authority, the State Board of Education, and the State of Connecticut Department of Energy and Environmental Protection (DEEP). The Consent Order requires Olin to excavate and remove fill material up to 4 feet below ground surface (bgs) from approximately 230 residential properties within the Consent Order boundary.

Section 1 of this report provides a summary of site history and a general description of the remedy process for the Newhall Street Neighborhood. Section 2 of this report describes the construction activities conducted at 481 Shelton Avenue.

### **1.1 Regulatory Status**

In April 2003, the DEEP issued a Consent Order to Olin, the Town of Hamden, South Central Connecticut Regional Water Authority, and the State Board of Education (DEEP, 2003). The Consent Order requires Olin to investigate and remediate the Non-Public Properties (NPP) within the Consent Order boundary of the Newhall Street Neighborhood.

### **1.2 Description of Remedy Process**

In October 2007, a Final Remedy Selection Plan (RSP) was approved and issued by the Commissioner of the DEEP (DEEP, 2007). The remedy for the NPP within the Consent Order boundary is summarized below:

- Excavation of fill within the top 4 feet;
- Disposition of excavated material at authorized off-site facilities;
- Backfilling of excavated areas with clean soil; and
- Restoration of existing features including landscaping, patios, fencing, driveways, etc. that are disturbed during construction activities.

The Final Design - Generic Remedial Action Plan (RAP) (MACTEC, 2008), was approved by the DEEP and serves as the basis for remedial action activities within the NPP. The Final Design - Generic RAP details remedial construction activities including excavation of fill to a depth of up to four feet, backfilling excavations, disposition of fill and debris, and restoration of disturbed areas. Detailed plans and specifications regarding the remediation are contained in the Generic RAP and other project plans which have been approved by the DEEP. The Final Design - Generic RAP and other plans are available at the Town of Hamden Miller Public Library located at 290

Olin Corporation  
Newhall Street Neighborhood Site, Hamden, Connecticut  
Property-Specific Remedial Action Report – 481 Shelton Avenue

Dixwell Avenue, and on the DEEP website at: at 290 Dixwell Avenue, and on the DEEP website at: <http://www.newhallinfo.org>.

Prior to implementing the approved remedial solution, a Property-Specific RAP was prepared for each property owner and submitted to the DEEP for approval. The purpose of the Property-Specific RAP was to provide the homeowner with information regarding the planned construction activities, temporary relocation requirements (if necessary), access provisions, an estimated time table to complete the planned work, and a description of plans to restore the property to existing conditions.

## 2.0 PROPERTY-SPECIFIC CONSTRUCTION ACTIVITIES

During the 2011 construction season, Olin completed the excavation, backfill, and restoration of the property in accordance with the Final Design - Generic RAP and the Property-Specific RAP. Figure 2-1 shows the areas where excavation occurred on the property and the locations of excavation confirmation samples. Excavation confirmation samples were collected in accordance with Section 3.2.3 - Confirmatory Sampling of the Final Design - Generic RAP, including adherence to the sampling frequency requirements. X-ray fluorescence (XRF) excavation confirmation sampling results are presented in Table 2-1.

As indicated in Table 2-1, some confirmation sampling results indicate total lead concentrations less than the criteria of 400 milligrams per kilogram (mg/kg) approved by DEEP in the Final Design - Generic RAP. Several samples collected from the perimeter of the excavated area indicated total lead concentrations that exceeded 400 mg/kg. Additional soil could not be removed from these locations because continued excavation could jeopardize the integrity of the structure.

The following is a description of changes from the Property-Specific RAP that were necessitated because of field conditions and/or details regarding the marker barrier installed following excavation activities:

- In some locations, fill material was encountered at greater than 4 feet in depth below ground surface (bgs). This fill material was left in place, covered by an orange geotextile fabric, and backfilled with clean soil in accordance with the Final Design - Generic RAP. Figure 2-1 shows the approximate area of geotextile fabric identifying the presence of fill at a depth greater than 4 feet bgs.
- In some locations, it was necessary to leave fill material in place at depths less than 4 feet bgs in order to avoid jeopardizing the integrity of a structure. This fill material was left in place, covered by a marker barrier (orange geotextile fabric and/or shotcrete), and backfilled with clean soil in accordance with the Final Design - Generic RAP. Figure 2-1 shows the approximate area of marker barrier identifying the presence of fill at a depth less than 4 feet bgs.

Photographs of construction activities and the restored property are presented in Attachment A.



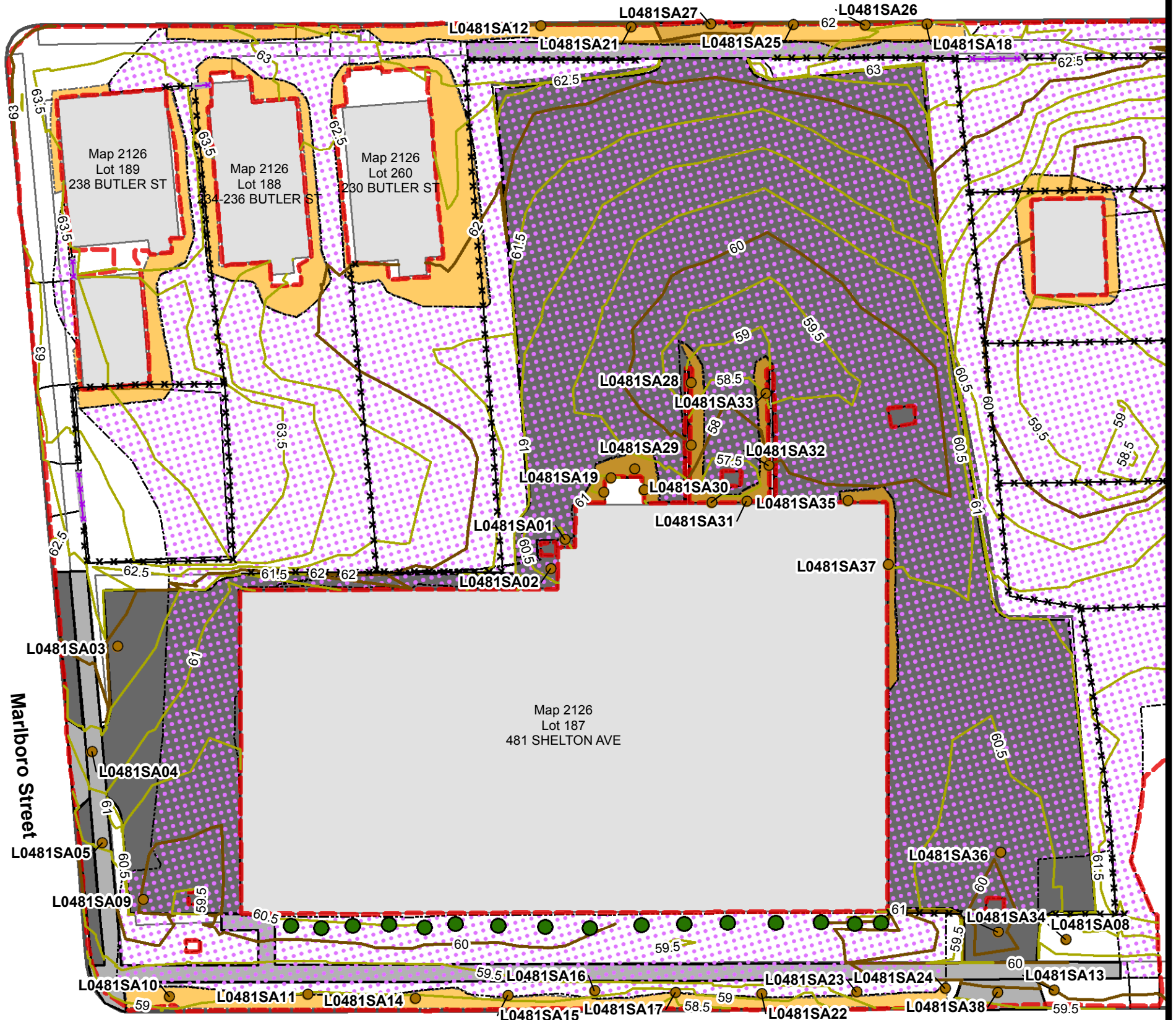
### **3.0 REFERENCES**

- DEEP, 2003. Order No. SRD-128, State Of Connecticut vs. Town Of Hamden, South Central Connecticut Regional Water Authority, State Board Of Education, and Olin Corporation. State of Connecticut Department of Energy and Environmental Protection, April 16, 2003.
- DEEP, 2007. Remedy Selection Plan, Newhall Street, Neighborhood Remediation Project. State of Connecticut Department of Energy and Environmental Protection, October 2007
- MACTEC, 2008. Final Design - Generic Remedial Action Plan, Non-Public Properties, Newhall Street Neighborhood, Hamden, Connecticut. MACTEC Engineering and Consulting, Inc., August 19, 2008.

## FIGURES

Map 2126 Lot 125 237 BUTLER ST	Map 2126 Lot 126 231 BUTLER ST	Map 2126 Lot 129 221-223 BUTLER ST	Map 2126 Lot 130 217-219 BUTLER ST	Map 2126 Lot 131 213-215 BUTLER ST	Map 2126 Lot 137 245 GOODRICH ST
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Butler Street



Shelton Avenue

Map 2126	Map 2126	Map 2126 Lot 225 466 SHELTON AVE Map 2126
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Legend

- Approximate Extent of Orange Marker Barrier Covering Fill > 4 ft bgs Remaining on Property
- Approximate Extent of Marker Barrier Covering Fill < 4 ft bgs Remaining on Property
- Excavation Confirmation Sample
- Limits of Excavation
- Final Elevation Contour (2-ft interval)
- Final Elevation Contour (0.5-ft interval)
- New Fence
- New Fence Gate
- New Asphalt Driveway/Sidewalk
- New Concrete Driveway/Sidewalk
- New Shrub

Note: All grass areas disturbed by excavation were restored with sod and/or seed/mulch.



Prepared/Date: BRP 11/02/11  
Checked/Date: DRP 11/02/11

## TABLES

**TABLE 2-1  
EXCAVATION CONFIRMATION XRF SAMPLING RESULTS**

**481 SHELTON AVENUE  
NEWHALL STREET NEIGHBORHOOD  
HAMDEN, CONNECTICUT**

Location ID	Location Type	Field Sample ID	Sample Date	Top Depth (ft,bgs)	Bottom Depth (ft,bgs)	Parameter	Result	Final Qualifier	Unit of Measure
L0481SA01EX	PES	L0481SA-SON0102EX	07-Jun-11	2	2	Lead	938		MG/KG
L0481SA02EX	PES	L0481SA-SON0202EX	07-Jun-11	2	2	Lead	1288		MG/KG
L0481SA03EX	PEB	L0481SA-SON0302EX	07-Jun-11	2	2	Lead	50	U	MG/KG
L0481SA04EX	PEB	L0481SA-SON0401EX	08-Jun-11	1	1	Lead	50	U	MG/KG
L0481SA05EX	PEB	L0481SA-SON0501EX	08-Jun-11	1	1	Lead	136		MG/KG
L0481SA06EX	PES	L0481SA-SON0602EX	08-Jun-11	2	2	Lead	5787		MG/KG
L0481SA07EX	PES	L0481SA-SON0702EX	08-Jun-11	2	2	Lead	2041		MG/KG
L0481SA08EX	PEB	L0481SA-SON0802EX	09-Jun-11	2	2	Lead	50	U	MG/KG
L0481SA09EX	PEB	L0481SA-SON0903EX	09-Jun-11	3	3	Lead	50	U	MG/KG
L0481SA10EX	PES	L0481SA-SON1002EX	09-Jun-11	2	2	Lead	314		MG/KG
L0481SA11EX	PES	L0481SA-SON1102EX	09-Jun-11	2	2	Lead	545		MG/KG
L0481SA12EX	PES	L0481SA-SON1202EX	10-Jun-11	2	2	Lead	361		MG/KG
L0481SA13EX	PES	L0481SA-SON1302EX	10-Jun-11	2	2	Lead	78		MG/KG
L0481SA14EX	PES	L0481SA-SON1402EX	10-Jun-11	2	2	Lead	555		MG/KG
L0481SA15EX	PES	L0481SA-SON1502EX	10-Jun-11	2	2	Lead	207		MG/KG
L0481SA16EX	PES	L0481SA-SON1602EX	13-Jun-11	2	2	Lead	480		MG/KG
L0481SA17EX	PES	L0481SA-SON1702EX	14-Jun-11	2	2	Lead	766		MG/KG
L0481SA18EX	PES	L0481SA-SON1803EX	14-Jun-11	3	3	Lead	910		MG/KG
L0481SA19EX	PES	L0481SA-SON1903EX	14-Jun-11	3	3	Lead	802		MG/KG
L0481SA20EX	PES	L0481SA-SON2003EX	14-Jun-11	3	3	Lead	1382		MG/KG
L0481SA21EX	PES	L0481SA-SON2103EX	15-Jun-11	3	3	Lead	673		MG/KG
L0481SA22EX	PES	L0481SA-SON2203EX	16-Jun-11	3	3	Lead	687		MG/KG
L0481SA23EX	PES	L0481SA-SON2303EX	16-Jun-11	3	3	Lead	559		MG/KG
L0481SA24EX	PES	L0481SA-SON2403EX	16-Jun-11	3	3	Lead	90		MG/KG
L0481SA25EX	PES	L0481SA-SON2503EX	20-Jun-11	3	3	Lead	201		MG/KG
L0481SA26EX	PES	L0481SA-SON2603EX	20-Jun-11	3	3	Lead	1228		MG/KG
L0481SA27EX	PES	L0481SA-SON2702EX	20-Jun-11	2	2	Lead	357		MG/KG
L0481SA28EX	PES	L0481SA-SON2803EX	21-Jun-11	3	3	Lead	3267		MG/KG
L0481SA29EX	PES	L0481SA-SON2903EX	21-Jun-11	3	3	Lead	2660		MG/KG

**TABLE 2-1  
EXCAVATION CONFIRMATION XRF SAMPLING RESULTS**

**481 SHELTON AVENUE  
NEWHALL STREET NEIGHBORHOOD  
HAMDEN, CONNECTICUT**

Location ID	Location Type	Field Sample ID	Sample Date	Top Depth (ft,bgs)	Bottom Depth (ft,bgs)	Parameter	Result	Final Qualifier	Unit of Measure
L0481SA30EX	PES	L0481SA-SON3003EX	21-Jun-11	3	3	Lead	1242		MG/KG
L0481SA31EX	PES	L0481SA-SON3103EX	21-Jun-11	3	3	Lead	1099		MG/KG
L0481SA32EX	PES	L0481SA-SON3203EX	21-Jun-11	3	3	Lead	2911		MG/KG
L0481SA33EX	PES	L0481SA-SON3303EX	21-Jun-11	3	3	Lead	13785		MG/KG
L0481SA34EX	PES	L0481SA-SON3402EX	22-Jun-11	2	2	Lead	50	U	MG/KG
L0481SA34EX	PES	L0481SA-SON3404EX	21-Jun-11	4	4	Lead	1944		MG/KG
L0481SA35EX	PES	L0481SA-SON3503EX	21-Jun-11	3	3	Lead	530		MG/KG
L0481SA36EX	PES	L0481SA-SON3603EX	22-Jun-11	3	3	Lead	102		MG/KG
L0481SA37EX	PES	L0481SA-SON3703EX	22-Jun-11	3	3	Lead	1096		MG/KG
L0481SA38EX	PEB	L0481SA-SON3803EX	28-Jun-11	3	3	Lead	93		MG/KG

Notes: bgs - below ground surface

ft - feet

KG - kilograms

MG - milligrams

PEB - sample from bottom of excavation

PES - sample from perimeter of excavation

U - not detected at a concentration above the reporting limit

XRF - x-ray fluorescence

**ATTACHMENT A  
PHOTOGRAPHS**



**View looking North at excavated Western side of property during placement of marker barrier**



**View looking West at excavation along Northern side of property**





**View looking South at partially backfilled area with marker barrier and sidewall marked out for concrete**



**View looking Northwest at Southern side of building during placement of marker barrier**



**View looking West at concrete marker barrier placed near loading dock**



**View looking Southwest at excavated Eastern edge of property**



**View looking North at restored Western side of property**



**View looking West at restored parking area**



**View looking West at restored parking area on southern side of property**