



LETTER OF TRANSMITTAL

TO: 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	Date: March 8, 2012 Project No.: 6107120004.095 SUBJECT: Revised Property-Specific Remedial Action Report Newhall Street Neighborhood 220 Morse Street, Block K Hamden, Connecticut 06517
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WE TRANSMIT TO YOU: HEREWITH UNDER SEPARATE COVER

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- DRAWINGS
- SPECIFICATIONS
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1	March 2, 2012	Revised Property-Specific Remedial Action Report – 220 Morse Street

REMARKS:

Enclosed for your records please find the Revised Property-Specific Remedial Action Report for the property noted above.

CC: Margaret Lyons – 220 Morse Street, Hamden, CT 06517
 Jay Gear – Olin
 Ray Frigon – DEEP
 Richard Pearce – Newhall Street Neighborhood Community Liaison

By:
 Rod Pendleton
 Principal Scientist

**PROPERTY-SPECIFIC REMEDIAL ACTION REPORT
220 MORSE STREET**

**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, Inc.
1090 Elm Street, Suite 201
Rocky Hill, Connecticut 06067**

March 8, 2012

AMEC Project Number: 6107120004.095

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

Nelson Walter, P.E.
Project Manager

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

Rod Pendleton, P.G
Principal Scientist

DOCUMENT CERTIFICATION

I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, that the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that any false statement made in the submitted information is punishable as a criminal offense under §53a-157b of the Connecticut General Statutes and any other applicable law.

David M. Share, Director, Environmental Remediation



Chief Executive Officer (or duly authorized representative)
Olin Corporation

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Nelson Walter, Project Manager



AMEC Environment & Infrastructure, Inc.

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A Photographs

ACRONYMS AND ABBREVIATION

AMEC	AMEC Environment & Infrastructure, Inc.
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 revised Property-Specific Remedial Action Report (RAR) was prepared by AMEC Environment & Infrastructure, Inc. (AMEC) on behalf of Olin Corporation (Olin) for the property located at 220 Morse Street 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 220 Morse Street.

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 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, most 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. One sample collected from the perimeter of the excavated area indicated total lead concentrations that exceeded 400 mg/kg. Additional soil could not be removed from this location around the perimeter of the house, 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:

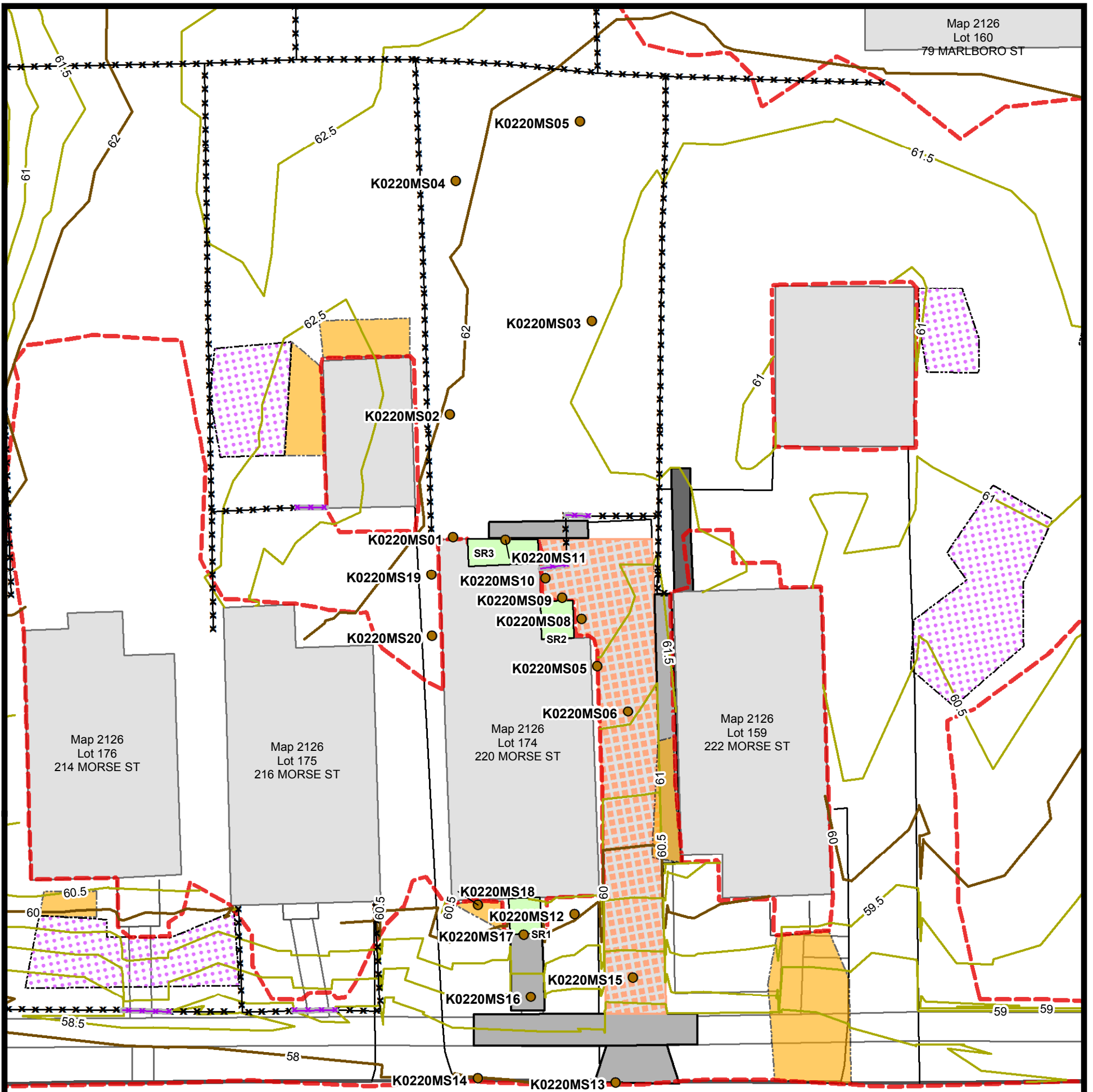
- In one location, it was necessary to leave fill material in place at depths less than 4 feet bgs in order to avoid jeopardizing the integrity of a structure. This fill material was left in place, covered by a marker barrier (an orange geotextile fabric and/or shotcrete), and backfilled with clean soil in accordance with the Final Design - Generic RAP. Figure 2-1 shows the approximate area of geotextile fabric/shotcrete 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 Environmental Protection, April 16, 2003.
- DEEP, 2007. Remedy Selection Plan, Newhall Street, Neighborhood Remediation Project. State of Connecticut Department of 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

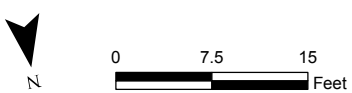


Morse Street

Legend

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

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



Prepared/Date: BRP 02/13/12
Checked/Date: DRP 02/13/12

TABLES

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

**220 MORSE STREET
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
K0220MS01EX	PES	K0220MS-SON0101EX	06-Jul-11	1	1	Lead	168		MG/KG
K0220MS02EX	PEB	K0220MS-SON0202EX	07-Jul-11	2	2	Lead	124		MG/KG
K0220MS03EX	PEB	K0220MS-SON0302EX	07-Jul-11	2	2	Lead	106		MG/KG
K0220MS04EX	PEB	K0220MS-SON0403EX	07-Jul-11	3	3	Lead	50	U	MG/KG
K0220MS05EX	PEB	K0220MS-SON0502EX	07-Jul-11	2	2	Lead	50	U	MG/KG
K0220MS06EX	PES	K0220MS-SON0602EX	12-Jul-11	2	2	Lead	50	U	MG/KG
K0220MS07EX	PES	K0220MS-SON0701EX	12-Jul-11	1	1	Lead	84		MG/KG
K0220MS08EX	PES	K0220MS-SON0801EX	12-Jul-11	1	1	Lead	60		MG/KG
K0220MS09EX	PES	K0220MS-SON0901EX	12-Jul-11	1	1	Lead	81		MG/KG
K0220MS10EX	PES	K0220MS-SON1001EX	12-Jul-11	1	1	Lead	93		MG/KG
K0220MS11EX	PES	K0220MS-SON1101EX	12-Jul-11	1	1	Lead	198		MG/KG
K0220MS12EX	PES	K0220MS-SON1202EX	12-Jul-11	2	2	Lead	50	U	MG/KG
K0220MS13EX	PES	K0220MS-SON1301EX	12-Jul-11	1	1	Lead	50	U	MG/KG
K0220MS14EX	PES	K0220MS-SON1401EX	12-Jul-11	1	1	Lead	55		MG/KG
K0220MS15EX	PEB	K0220MS-SON1502EX	12-Jul-11	2	2	Lead	50	U	MG/KG
K0220MS16EX	PEB	K0220MS-SON1603EX	12-Jul-11	3	3	Lead	50	U	MG/KG
K0220MS17EX	PES	K0220MS-SON1702EX	12-Jul-11	2	2	Lead	50	U	MG/KG
K0220MS18EX	PES	K0220MS-SON1801EX	12-Jul-11	1	1	Lead	495		MG/KG
K0220MS19EX	PES	K0220MS-SON1902EX	19-Jul-11	2	2	Lead	50	U	MG/KG
K0220MS20EX	PES	K0220MS-SON2002EX	19-Jul-11	2	2	Lead	50	U	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 back yard



View looking Northeast at excavation along side of house



View looking Southeast at excavation along front and side of house



View looking Southeast at restored front of property



View looking South at partially restored back yard



View looking East at partially restored back of house