



June 19, 2013

Ms. Kimberly Tisa  
PCB Coordinator  
U.S. Environmental Protection Agency Region 1  
5 Post Office Square – Suite 100  
Boston, Massachusetts 02109-3912

Re: PCB Remediation Plan Addendum  
Sylvan Residential Complex – Cashin and McNamara Interior Renovations  
University of Massachusetts  
Amherst, Massachusetts

Dear Ms. Tisa:

On behalf of the University of Massachusetts (UMass), this addendum has been prepared by Woodard & Curran to document the characterization and remediation of polychlorinated biphenyl (PCB) containing caulking masonry joints to be disturbed as part of interior renovations at the McNamara and Cashin buildings located within the Sylvan Residential Complex at 112 Eastman Lane on the UMass Amherst campus in Amherst, Massachusetts.

This addendum is intended to be incorporated into the existing PCB remediation plans submitted for both the McNamara and Cashin buildings within the overall Sylvan Residential Complex as described in the March 15, 2013 submittals.

This submittal includes a description of the materials identified, a summary of the remedial approach (waste segregation and in-place management approach consistent with the previously submitted plans for the Americans with Disability Act [ADA] restroom upgrades conducted at the Brown and McNamara buildings submitted in 2011 and 2012), the proposed verification sampling strategy, and a schedule for completing the work.

### **Project Summary**

The scope of work to be conducted at each of the two buildings is as follows:

Cashin Building – Interior renovations are planned to be conducted on the first floor as part of a reconfiguration of interior spaces for administrative offices in the Cashin Building. As part of the renovation, brick walls and a CMU block wall are scheduled for removal to allow for the construction of a new service desk window and overnight mail slot. In addition, an existing kitchen area, currently enclosed by the CMU block wall scheduled for removal, is being removed (the kitchen is not being replaced). The work area is depicted on Figure 1.

McNamara Building – Interior renovations are planned to be conducted in the basement level as part of a reconfiguration of a common study room area. The renovations include the removal of two CMU block walls and six doors (including frames) as well as the cleaning and painting of seven door frames (including four doors located along the structural concrete columns) with replacement of the existing door panels. The work area is depicted on Figure 2.

### **Inventory and Characterization Sampling**

In preparation for the renovation projects, a survey of caulking materials within the work areas was conducted and characterization samples of materials were collected. A total of six samples were collected and submitted for PCB analysis. Samples were collected by cutting the material from the joint



using hand tools. The locations of the samples are shown on Figures 1 and 2. Samples were transported to the analytical laboratory under standard chain of custody procedures. All samples were extracted using USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs using USEPA Method 8082.

A summary of the characterization sampling results are presented on Table 1 and described in the following sections. Analytical laboratory reports are provided in Attachment 1.

*Cashin Building* - Caulking was identified along the upper horizontal brick wall to concrete ceiling joints; the upper horizontal CMU block wall to concrete ceiling joints, and along the backsplash to CMU wall joints and the metal cabinet to CMU wall joints within the kitchen area. A summary of the samples collected is as follows:

- Brick Wall to Concrete Ceiling Joints (25 linear feet [l.f.]) – One sample of a tan, flexible caulking was collected from the horizontal brick wall to concrete ceiling joint. Analytical results indicated that PCBs were present at a concentration of 230,000 ppm. This result is consistent with PCB concentrations reported in visually similar caulking disturbed as part of the ADA restroom upgrade projects in the Brown and McNamara buildings;
- Concrete Masonry Unit (CMU) Block Wall to Ceiling Joints (30 l.f.) – One sample of a white, brittle caulking was collected from the horizontal CMU block wall to concrete ceiling joints. Analytical results indicated that PCBs were present at a concentration of 47 ppm.
- Two visually distinct types of caulking were present along the metal backsplash to CMU block joints (20 l.f.) and the metal cabinet to CMU block joints (20 l.f.) in the kitchen area. Analytical results indicated that PCBs were present at concentrations of 11 and 26 ppm, respectively.

*McNamara Building* – Two types of caulking were identified within the project work area. The first type was observed on the vertical frame to CMU wall joints of all 13 doors. The second type of caulking was observed on one vertical joint of the four doors adjacent to the structural concrete columns (this caulking was only observed on the joint in contact with the structural concrete). A summary of the samples collected is as follows:

- Metal Door Frame to Structural Concrete Columns (4 vertical joints; 32 l.f.) – One sample of a tan, flexible caulking was collected from the metal door frame to structural concrete column joints (caulking observed on the other vertical joint of each of the four doors was identified as < 50 ppm PCB materials as described below). Analytical results indicated that PCBs were present at a concentration of 450,000 ppm. This result is consistent with PCB concentrations reported in visually similar caulking disturbed as part of the ADA restroom upgrade projects in the Brown and McNamara buildings.
- One type of caulking was identified on vertical frame to CMU block joints on each of the thirteen doors. Analytical results indicated that PCBs were present at a concentration of 24 ppm.

All caulking in these areas is believed to be original to the building. Given the limited volume of materials, all caulking within the work area, regardless of PCB concentration will be removed and managed as a  $\geq 50$  ppm PCB waste for the purposes of off-site disposal. The remediation of building materials adjacent to the  $\geq 50$  ppm caulking is described below. For the caulking that tested < 50 ppm PCBs, UMass has determined that this caulking meets the definition of an Excluded PCB Product per 40 CFR 761.3 and therefore, any adjacent materials if scheduled for removal will be disposed of as general demolition debris.



## Site Preparation and Controls

Prior to initiating the remediation activities, the following controls will be implemented:

- The contractor will develop a Health & Safety Plan specific to the work activities. All workers will follow applicable Federal and State regulations regarding the work activities, including but not limited to OSHA regulations, respiratory protection, and personal protective equipment (PPE), etc.
- Access to the active work areas will be controlled by the contractor through fencing, posting of signs, or other equivalent means.
- Engineering controls and/or containment measures will be implemented to control any dust or debris generated during removal activities.
- All work surfaces will be wetted to minimize dust during removal.

Dust monitoring within the support work zone and perimeter to this zone will be conducted during active removal of caulking and brick to monitor for respirable dust in accordance with Attachment 2 (i.e., once every two hours during active removal). Dust levels and exposures to dust will be minimized by implementing a combination of engineering controls, wet work techniques, and personal protective equipment (e.g., respirators) as described above.

## Remedial Approach – Cashin Residence

As part of the interior renovation, brick walls within Room 108 are scheduled for removal. The overall remedial approach is to follow a waste segregation/cut-line approach for brick materials scheduled for removal and an in-place management strategy for materials scheduled to remain in place (i.e., concrete ceiling that cannot be removed from a structural standpoint).

During the survey of the work area, one type of caulking was identified through characterization sampling as  $\geq 50$  ppm PCB-containing material.

### *Remedial Plan*

A summary of the remedial approach to be implemented is as follows:

- Caulking along the brick wall to concrete ceiling joints (caulking present on both sides of the 12.5 foot long wall) is to be removed for off-site disposal as  $\geq 50$  ppm PCB wastes;
- The first row of brick materials (i.e., those in direct contact with the caulking and to a distance of approximately 3 inches below the joint) will be removed for off-site disposal as  $\geq 50$  ppm PCB wastes. Remaining portions of the brick walls are to be removed for disposal as general demolition debris based on the results of the verification samples collected (see below); and
- Concrete ceiling materials formerly in direct contact with the caulked joints and to a distance of 3 inches from the former joint to be encapsulated with two coats of Sikagard 62 liquid epoxy coating.

Concrete ceiling materials greater than 3 inches from the joint will be managed based on the results of verification sampling conducted as described below.

### Verification Sampling Program

Verification samples of brick wall and concrete ceiling materials will be collected to determine the extent of PCBs  $> 1$  ppm in support of the waste segregation and in-place management aspects of the PCB



Remediation activities. Following application of the liquid coatings, verification wipe samples of coated concrete ceiling materials will be collected. A summary of the verification sampling plan, including those samples already collected in support of plan development, is as follows:

- Brick Wall – A total of three characterization brick samples were collected from the second row of brick below the caulked joint (approximately 3 inches below the joint) and submitted for PCB analysis (see Figure 1). Analytical results indicated that PCBs were present at concentrations of 0.25, 0.63, and 0.70 ppm. Based on these results (an overall sampling frequency of greater than 1 sample per 10 l.f. of caulked joint) additional verification sampling of brick wall materials is not proposed to be conducted to confirm the proposed cut-line beyond the characterization samples already collected;
- Concrete Ceiling – Two verification sample will be collected at a distance of 3 inches from the caulked joint at a location selected using a random number generator. Analytical results will be evaluated as follows:
  - Total PCBs  $\leq$  1 ppm – no additional action, encapsulation of ceiling materials as described above; and
  - Total PCBs  $>$  1 ppm – Based on the overall project schedule which will not support multiple rounds of verification sampling, and the planned application of a final coat of interior paint to all ceiling materials within Room 108 (approximately 400 square feet), concrete ceiling materials  $>$  3 inches from the joints to be encapsulated with interior paint as part of the final restoration activities for the area.
- Verification Wipe Samples – following application of the liquid coatings to the concrete ceiling materials, verification wipe samples will be collected as follows:
  - Former Direct Contact Locations – One verification wipe sample will be collected of concrete ceiling materials coated with two coats of liquid epoxy coating. One sample will be collected from a randomly selected location along the joint using a random number generator. This will result in a sampling frequency of 1 sample per joint (or approximately 1 sample per 25 l.f.); and
  - Materials Away from the Joint (if required) – One verification wipe sample will be collected from concrete ceiling materials coated with two coats of interior latex paint. One sample will be collected at a distance of 12 inches from the former caulked joint at a location selected using a random number generator. This will result in a sampling frequency of 1 sample per joint (or approximately 1 sample per 25 l.f.).

Analytical results will be compared to the target encapsulation goal of  $\leq 1 \mu\text{g}/100\text{cm}^2$  as follows:

- Total PCBs  $\leq 1 \mu\text{g}/100\text{cm}^2$  – no additional action, materials incorporated into Sylvan Residential Complex long term maintenance and monitoring program; and
- Total PCBs  $> 1 \mu\text{g}/100\text{cm}^2$  – depending on the concentration, additional coating of liquid encapsulant may be applied to materials. Follow up verification wipe samples collected at an off-set location, as applicable; or continued monitoring in the long term maintenance and monitoring program.

### **Remedial Approach – McNamara Residence**

As part of the interior renovation, door frame caulking along four doors within the basement area is scheduled to be removed and replaced. During the survey and characterization sampling, caulking



containing  $\geq 50$  ppm PCBs was identified on one vertical joint of each of the four of the door frames adjacent to the structural concrete columns.

The overall remedial approach is to follow a decontamination (door frames) and in-place management strategy for materials scheduled to remain in place (i.e., structural concrete columns).

#### *Remedial Plan*

A summary of the remedial approach to be implemented is as follows:

- Caulking along the door frame to structural concrete column joints is to be removed for off-site disposal as  $\geq 50$  ppm PCB wastes;
- Door frames to be decontaminated using a citrus based cleaner to remove residual PCBs; door panels (not in direct contact with caulking) to be disposed of as general demolition debris; and
- Structural concrete column materials formerly in direct contact with the  $\geq 50$  ppm PCB caulked joints to be encapsulated with two coats of Sikagard 62 liquid epoxy coating and a replacement caulking (to be applied following installation of new door frame).

Structural concrete column materials adjacent to the former caulked joints to be managed based on the results of verification sampling described below.

#### Verification Sampling Program

Verification wipe samples of the door frames formerly in direct contact with the caulking are to be collected to confirm total PCBs  $\leq 10 \mu\text{g}/100\text{cm}^2$  following decontamination. Samples of structural concrete materials will be collected to determine the extent of PCBs  $> 1$  ppm in support of the in-place management aspect of the PCB Remediation activities. Following application of the liquid coatings, verification wipe samples of coated structural concrete materials will be collected. A summary of the verification sampling plan is as follows:

- Door Frames – Four verification wipe samples (1 per joint) will be collected from door frame materials formerly in direct contact with caulked joints following decontamination. The locations of the samples will be selected using a random number generator (from 0 to 8 based on the approximate height of the door frames). Results of the wipe sampling will be compared to the high occupancy clean up level for non-porous surfaces of  $\leq 10 \mu\text{g}/100\text{cm}^2$  as follows:
  - Total PCBs  $\leq 10 \mu\text{g}/100\text{cm}^2$  – no additional actions, encapsulant applied to structural concrete and caulking installed; and
  - Total PCBs  $> 10 \mu\text{g}/100\text{cm}^2$  – Additional decontamination conducted followed by the collection of additional verification wipe samples.
- Structural Concrete Columns – Two verification samples will be collected from concrete materials at a distance of 0.5 inches from the caulked joint to determine if PCB impacts  $> 1$  ppm are present in materials adjacent to the former joints (i.e., not formerly in direct contact). This will result in a sampling frequency of 1 sample per 2 doors. Results of the verification samples will be compared to the high occupancy clean up level of  $\leq 1$  ppm as follows:
  - Total PCBs  $\leq 1$  ppm – no additional actions, encapsulant applied to former direct contact materials as described above; and
  - Total PCBs  $> 1$  ppm - Based on the overall project schedule which will not support multiple rounds of verification sampling, and the planned application of a final coat of



interior paint to structural concrete materials within the area, structural concrete materials away from the joint to be encapsulated with acrylic latex paint as part of the final restoration activities for the area. The coating will be applied to all exposed structural concrete materials (i.e., floor to ceiling) from the joint to the first wall opening (i.e., to the first doorway), an area of approximately 40 square feet per location.

- Verification Wipe Sampling – Following application of the liquid coatings to the concrete ceiling materials, verification wipe samples will be collected as follows:
  - Former Direct Contact Locations – Two verification wipe samples will be collected of structural concrete materials coated with two coats of liquid epoxy coating. Sample locations will be randomly selected using a random number generator by first selecting the specific door (1 through 4) and then the location along the vertical joint (0 to 8 based on the approximate height of the door frame). This will result in an overall sampling frequency of 1 sample per 2 doors (or approximately 1 sample per 16 l.f.); and
  - Materials Away from the Joint (if required) – Two verification wipe samples will be collected from structural concrete materials coated with two coats of interior latex paint. One sample will be collected at a distance of 12 inches from two of the four joints at a location selected using a random number generator as described above. This will result in a sampling frequency of 1 sample per 2 doors.

Analytical results will be compared to the target encapsulation goal of  $\leq 1 \mu\text{g}/100\text{cm}^2$  as follows:

- Total PCBs  $\leq 1 \mu\text{g}/100\text{cm}^2$  – no additional action, materials incorporated into Sylvan Residential Complex long term maintenance and monitoring program; and
- Total PCBs  $> 1 \mu\text{g}/100\text{cm}^2$  – depending on the concentration, additional coating of liquid encapsulant may be applied to materials. Follow up verification wipe samples collected at an off-set location, as applicable; or continued monitoring in the long term maintenance and monitoring program.

## **Waste Storage and Disposal**

The following activities will be completed with regard to the proper storage and disposal of PCB waste:

- Secure, lined, covered, and marked waste containers (i.e., 55-gallon DOT-approved steel containers or roll-off container) will be staged for the collection of PCB wastes generated during the work activities in accordance with 40 CFR 761.65.
- All containers will be properly labeled and marked in accordance with 40 CFR 761.40.
- All caulking and brick to be removed will be managed as  $\geq 50$  ppm PCB wastes for disposal in a hazardous waste landfill (e.g., Environmental Quality's Wayne Disposal facility in Belleville, Michigan, or equivalent).
- Upon completion of the work or when a container is considered full, the waste will be transported off-site for disposal at the landfill specified above.
- All polyethylene sheeting, PPE, and other non-liquid materials generated during the work will be placed in the same container as the associated PCB waste for off-site disposal.





- Copies of all manifests, waste shipment records, and certificates of disposal will be collected and maintained as part of the final report.

### **Additional Considerations**

As noted above, this addendum has been prepared for incorporation into the existing remedial plans for the Sylvan Residential Complex. As such, components of a PCB remediation plan submittal including written owner certification, elements of the long term maintenance and monitoring plan for the in-place management of PCB impacted materials, and recordkeeping and documentation information have not been included in this addendum because they have either already been provided or will be provided as part of the overall Sylvan Residential Complex project.

### **Schedule**

The renovation activities are scheduled to be conducted during June and July 2013 to complete the renovation projects prior to students returning in the fall.

If you have any questions or require further information, please feel free to contact me at (978) 557-8150 or at [jhamel@woodardcurran.com](mailto:jhamel@woodardcurran.com).

Sincerely,

WOODARD & CURRAN INC.

Jeffrey A. Hamel, LSP, LEP  
Senior Vice President

cc: James Morrissey, University of Massachusetts  
Theresa Wolejko, University of Massachusetts

Enclosures:

Table 1- Summary of Characterization Sampling Results  
Figures 1 and 2 – Renovation Areas and Characterization Sample Locations  
Attachment 1 – Analytical Laboratory Reports  
Attachment 2 – Dust Monitoring Plan

**Table 1**  
**Summary of Sealant Characterization Sampling Results**  
**Sylvan Residential Complex - UMass Amherst**

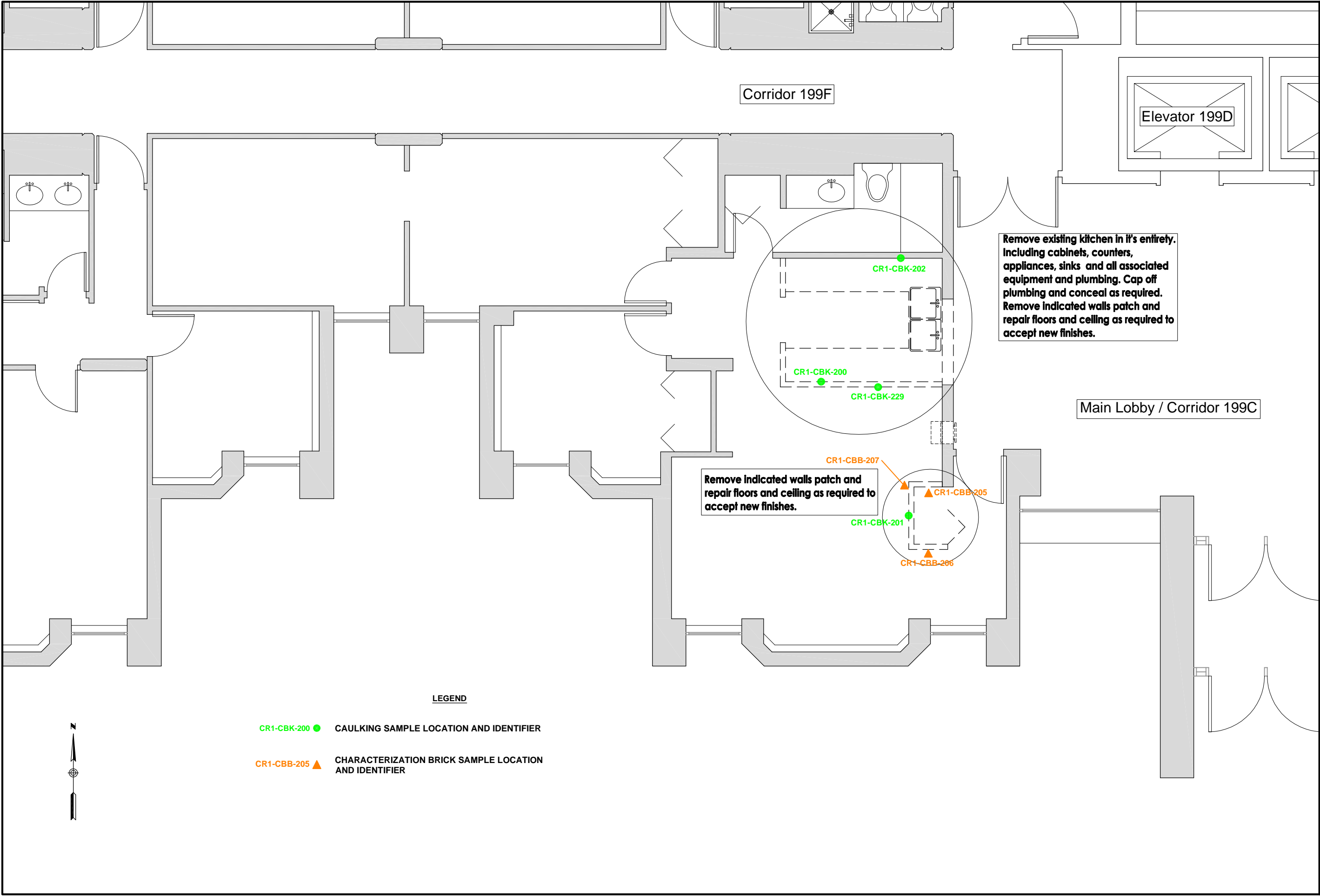
Joint Location	Description	Sample ID	Sample Date	Total PCBs
<b>Cashin Residence</b>				
Kitchen backsplash to CMU	1/2", white, flexible, smooth, non-tacky	CRI-CBK-200	5/28/2013	11
Kitchen cabinets to CMU	1/4", white, flexible, non-tacky	CRI-CBK-202	5/28/2013	26
Brick Wall to Concrete Ceiling	1/2", tan, flexible, non-tacky	CRI-CBK-201	5/28/2013	230,000
CMU Wall to Concrete Ceiling	1/2" white, brittle	CRI-CBK-229	6/7/2013	47
<b>McNamara Residence</b>				
Door Frame to CMU Wall	1/4' white, flexible, non-tacky	MRI-CBK-536	5/29/2013	24
Door Frame to Concrete Column	1/2", tan, flexible, non-tacky	MRI-CBK-537	5/29/2013	450,000

**Notes:**

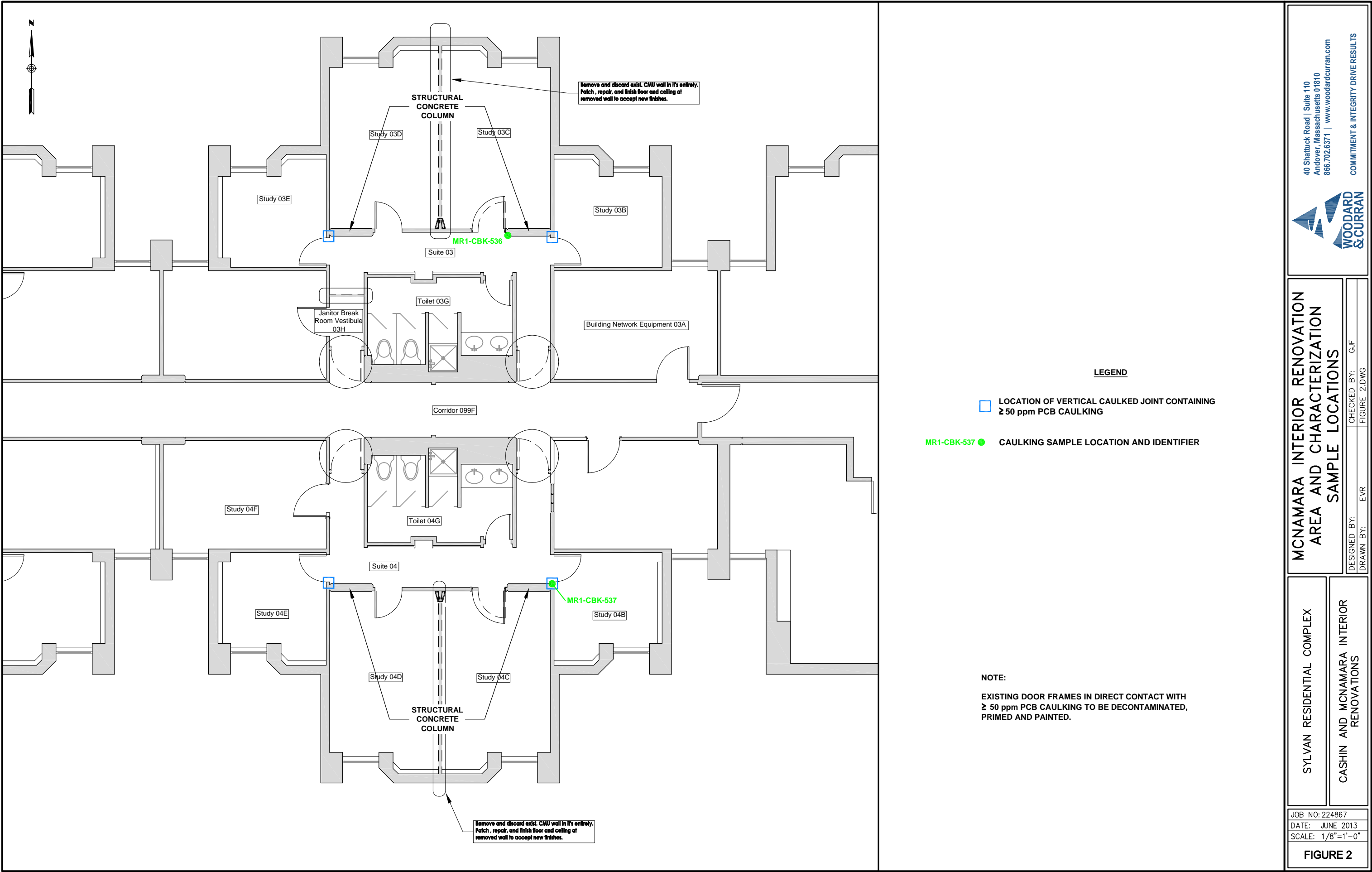
Samples submitted to ConTest Analytical Laboratory of East Longmeadow, MA for extraction via method 3540C (Soxhlet Extraction) and PCB analysis via EPA method 8082.

Total PCBs reported as Aroclor 1254. No other Aroclors reported above the minimum laboratory reporting limits.





<b>WOODARD &amp; CURRAN</b> 40 Shattuck Road   Suite 110 Andover, Massachusetts 01810 866.702.6371   www.woodardcurran.com COMMITMENT & INTEGRITY DRIVE RESULTS	
<b>CASHIN INTERIOR RENOVATION AREA AND CHARACTERIZATION SAMPLE LOCATIONS</b>	
DESIGNED BY: EVR	CHECKED BY: G-JF FIGURE 1.DWG
SYLVAN RESIDENTIAL COMPLEX CASHIN AND MCNAMARA INTERIOR RENOVATIONS	
JOB NO: 226020 DATE: JUNE 2013 SCALE: 3/16"=1'-0"	
<b>FIGURE 1</b>	





## **ATTACHMENT 1: ANALYTICAL LABORATORY REPORTS**

May 31, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: UMASS Cashin Res.  
Client Job Number:  
Project Number: 226020  
Laboratory Work Order Number: 13E0955

Enclosed are results of analyses for samples received by the laboratory on May 29, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Meghan E. Kelley". The signature is written in a cursive, flowing style.

Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 5/31/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 226020

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13E0955

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: UMASS Cashin Res.

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
CRI-CBK-200	13E0955-01	Caulk	1/2in Wide, White, Flexible Non Tacky	EPA/600/R-93/116  SW-846 8082A	MA AA000175/CT PH-0212/RI AAL-120/+others
CRI-CBK-201	13E0955-02	Caulk	1/2in Tan, Flexible, Non Tacky	EPA/600/R-93/116  SW-846 8082A	MA AA000175/CT PH-0212/RI AAL-120/+others
CRI-CBK-202	13E0955-03	Caulk	1/4in Off White, Flexible, Non Tacky	EPA/600/R-93/116  SW-846 8082A	MA AA000175/CT PH-0212/RI AAL-120/+others

## CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**SW-846 8082A**

### Qualifications:

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Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

### Analyte & Samples(s) Qualified:

**Aroclor-1254**

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Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.

### Analyte & Samples(s) Qualified:

**Aroclor-1254**

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The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

### Analyte & Samples(s) Qualified:

**Decachlorobiphenyl, Decachlorobiphenyl [2C], Tetrachloro-m-xylene, Tetrachloro-m-xylene [2C]**

13E0955-02[CRI-CBK-201], 13E0955-03[CRI-CBK-202].

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Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

### Analyte & Samples(s) Qualified:

**Aroclor-1016 [2C], Aroclor-1260 [2C]**

B073921-BS1, B073921-BSD1

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Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column.

All sample results are reported from the column within control criteria.

### Analyte & Samples(s) Qualified:

**Aroclor-1254**

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The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Daren J. Damboragian", is written over a light gray rectangular background.

Daren J. Damboragian  
Laboratory Manager



Project Location: UMASS Cashin Res.

Sample Description: 1/2in Wide, White, Flexible Non Tack

Work Order: 13E0955

Date Received: 5/29/2013

Field Sample #: CRI-CBK-200

Sampled: 5/28/2013 15:05

Sample ID: 13E0955-01

Sample Matrix: Caulk

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	3.8	mg/Kg	20		SW-846 8082A	5/29/13	5/30/13 17:38	MJC
Aroclor-1221 [1]	ND	3.8	mg/Kg	20		SW-846 8082A	5/29/13	5/30/13 17:38	MJC
Aroclor-1232 [1]	ND	3.8	mg/Kg	20		SW-846 8082A	5/29/13	5/30/13 17:38	MJC
Aroclor-1242 [1]	ND	3.8	mg/Kg	20		SW-846 8082A	5/29/13	5/30/13 17:38	MJC
Aroclor-1248 [1]	ND	3.8	mg/Kg	20		SW-846 8082A	5/29/13	5/30/13 17:38	MJC
Aroclor-1254 [2]	11	3.8	mg/Kg	20		SW-846 8082A	5/29/13	5/30/13 17:38	MJC
Aroclor-1260 [1]	ND	3.8	mg/Kg	20		SW-846 8082A	5/29/13	5/30/13 17:38	MJC
Aroclor-1262 [1]	ND	3.8	mg/Kg	20		SW-846 8082A	5/29/13	5/30/13 17:38	MJC
Aroclor-1268 [1]	ND	3.8	mg/Kg	20		SW-846 8082A	5/29/13	5/30/13 17:38	MJC
Surrogates	% Recovery	Recovery Limits	Flag						
Decachlorobiphenyl [1]	77.4	30-150						5/30/13 17:38	
Decachlorobiphenyl [2]	99.2	30-150						5/30/13 17:38	
Tetrachloro-m-xylene [1]	68.8	30-150						5/30/13 17:38	
Tetrachloro-m-xylene [2]	92.4	30-150						5/30/13 17:38	

Project Location: UMASS Cashin Res.

Sample Description: 1/2in Wide, White, Flexible Non Tack

Work Order: 13E0955

Date Received: 5/29/2013

Field Sample #: CRI-CBK-200

Sampled: 5/28/2013 15:05

Sample ID: 13E0955-01

Sample Matrix: Caulk

### Inorganic Analyses - Asbestos

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Asbestos - Chrysotile	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Amosite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Crocidolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Actinolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Tremolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Anthophyllite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Fiberglass	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Mineral Wool	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Cellulose	1		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Hair	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Synthetic	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Other Non-asbestos	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Non-Fibrous Minerals	99		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Binder/Filler	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Gypsum	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Organic Material	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL

Project Location: UMASS Cashin Res.

Sample Description: 1/2in Tan, Flexible, Non Tacky

Work Order: 13E0955

Date Received: 5/29/2013

Field Sample #: CRI-CBK-201

Sampled: 5/28/2013 15:10

Sample ID: 13E0955-02

Sample Matrix: Caulk

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	9600	mg/Kg	50000		SW-846 8082A	5/29/13	5/30/13 18:06	MJC
Aroclor-1221 [1]	ND	9600	mg/Kg	50000		SW-846 8082A	5/29/13	5/30/13 18:06	MJC
Aroclor-1232 [1]	ND	9600	mg/Kg	50000		SW-846 8082A	5/29/13	5/30/13 18:06	MJC
Aroclor-1242 [1]	ND	9600	mg/Kg	50000		SW-846 8082A	5/29/13	5/30/13 18:06	MJC
Aroclor-1248 [1]	ND	9600	mg/Kg	50000		SW-846 8082A	5/29/13	5/30/13 18:06	MJC
Aroclor-1254 [2]	230000	9600	mg/Kg	50000		SW-846 8082A	5/29/13	5/30/13 18:06	MJC
Aroclor-1260 [1]	ND	9600	mg/Kg	50000		SW-846 8082A	5/29/13	5/30/13 18:06	MJC
Aroclor-1262 [1]	ND	9600	mg/Kg	50000		SW-846 8082A	5/29/13	5/30/13 18:06	MJC
Aroclor-1268 [1]	ND	9600	mg/Kg	50000		SW-846 8082A	5/29/13	5/30/13 18:06	MJC
Surrogates	% Recovery	Recovery Limits			Flag				
Decachlorobiphenyl [1]	*	30-150			S-01			5/30/13 18:06	
Decachlorobiphenyl [2]	*	30-150			S-01			5/30/13 18:06	
Tetrachloro-m-xylene [1]	*	30-150			S-01			5/30/13 18:06	
Tetrachloro-m-xylene [2]	*	30-150			S-01			5/30/13 18:06	



39 Spruce Street \* East Longmeadow, MA 01028 \* FAX 413/525-6405 \* TEL. 413/525-2332

Project Location: UMASS Cashin Res.

Sample Description: 1/2in Tan, Flexible, Non Tacky

Work Order: 13E0955

Date Received: 5/29/2013

Field Sample #: CRI-CBK-201

Sampled: 5/28/2013 15:10

Sample ID: 13E0955-02

Sample Matrix: Caulk

Inorganic Analyses - Asbestos

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Asbestos - Chrysotile	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Amosite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Crocidolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Actinolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Tremolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Anthophyllite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Fiberglass	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Mineral Wool	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Cellulose	1		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Hair	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Synthetic	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Other Non-asbestos	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Non-Fibrous Minerals	99		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Binder/Filler	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Gypsum	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Organic Material	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL

Project Location: UMASS Cashin Res.

Sample Description: 1/4in Off White, Flexible, Non Tacky

Work Order: 13E0955

Date Received: 5/29/2013

Field Sample #: CRI-CBK-202

Sampled: 5/28/2013 14:45

Sample ID: 13E0955-03

Sample Matrix: Caulk

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	9.8	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 6:10	MJC
Aroclor-1221 [1]	ND	9.8	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 6:10	MJC
Aroclor-1232 [1]	ND	9.8	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 6:10	MJC
Aroclor-1242 [1]	ND	9.8	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 6:10	MJC
Aroclor-1248 [1]	ND	9.8	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 6:10	MJC
Aroclor-1254 [2]	26	9.8	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 6:10	MJC
Aroclor-1260 [1]	ND	9.8	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 6:10	MJC
Aroclor-1262 [1]	ND	9.8	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 6:10	MJC
Aroclor-1268 [1]	ND	9.8	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 6:10	MJC
Surrogates	% Recovery		Recovery Limits		Flag				
Decachlorobiphenyl [1]	*		30-150		S-01		5/31/13 6:10		
Decachlorobiphenyl [2]	*		30-150		S-01		5/31/13 6:10		
Tetrachloro-m-xylene [1]	*		30-150		S-01		5/31/13 6:10		
Tetrachloro-m-xylene [2]	*		30-150		S-01		5/31/13 6:10		

Project Location: UMASS Cashin Res.

Sample Description: 1/4in Off White, Flexible, Non Tacky

Work Order: 13E0955

Date Received: 5/29/2013

Field Sample #: CRI-CBK-202

Sampled: 5/28/2013 14:45

Sample ID: 13E0955-03

Sample Matrix: Caulk

### Inorganic Analyses - Asbestos

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Asbestos - Chrysotile	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Amosite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Crocidolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Actinolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Tremolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Anthophyllite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Fiberglass	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Mineral Wool	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Cellulose	1		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Hair	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Synthetic	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Other Non-asbestos	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Non-Fibrous Minerals	99		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Binder/Filler	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Gypsum	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Organic Material	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL

### Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13E0955-01 [CRI-CBK-200]	B073906	0.528	10.0	05/29/13
13E0955-02 [CRI-CBK-201]	B073906	0.523	10.0	05/29/13
13E0955-03 [CRI-CBK-202]	B073906	0.254	5.00	05/29/13



**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B073906 - SW-846 3540C**
**Blank (B073906-BLK1)**

Prepared: 05/29/13 Analyzed: 05/30/13

Aroclor-1016	ND	0.20	mg/Kg							
Aroclor-1016 [2C]	ND	0.20	mg/Kg							
Aroclor-1221	ND	0.20	mg/Kg							
Aroclor-1221 [2C]	ND	0.20	mg/Kg							
Aroclor-1232	ND	0.20	mg/Kg							
Aroclor-1232 [2C]	ND	0.20	mg/Kg							
Aroclor-1242	ND	0.20	mg/Kg							
Aroclor-1242 [2C]	ND	0.20	mg/Kg							
Aroclor-1248	ND	0.20	mg/Kg							
Aroclor-1248 [2C]	ND	0.20	mg/Kg							
Aroclor-1254	ND	0.20	mg/Kg							
Aroclor-1254 [2C]	ND	0.20	mg/Kg							
Aroclor-1260	ND	0.20	mg/Kg							
Aroclor-1260 [2C]	ND	0.20	mg/Kg							
Aroclor-1262	ND	0.20	mg/Kg							
Aroclor-1262 [2C]	ND	0.20	mg/Kg							
Aroclor-1268	ND	0.20	mg/Kg							
Aroclor-1268 [2C]	ND	0.20	mg/Kg							
Surrogate: Decachlorobiphenyl	3.93		mg/Kg	4.00		98.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	4.63		mg/Kg	4.00		116	30-150			
Surrogate: Tetrachloro-m-xylene	4.02		mg/Kg	4.00		101	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	4.90		mg/Kg	4.00		123	30-150			

**LCS (B073906-BS1)**

Prepared: 05/29/13 Analyzed: 05/30/13

Aroclor-1016	3.3	0.20	mg/Kg	4.00		81.4	40-140			
Aroclor-1016 [2C]	4.3	0.20	mg/Kg	4.00		106	40-140			
Aroclor-1260	3.2	0.20	mg/Kg	4.00		81.2	40-140			
Aroclor-1260 [2C]	3.9	0.20	mg/Kg	4.00		98.4	40-140			
Surrogate: Decachlorobiphenyl	3.50		mg/Kg	4.00		87.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	4.10		mg/Kg	4.00		103	30-150			
Surrogate: Tetrachloro-m-xylene	3.70		mg/Kg	4.00		92.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	4.52		mg/Kg	4.00		113	30-150			

**LCS Dup (B073906-BSD1)**

Prepared: 05/29/13 Analyzed: 05/30/13

Aroclor-1016	3.4	0.20	mg/Kg	4.00		85.5	40-140	4.93	30	
Aroclor-1016 [2C]	4.6	0.20	mg/Kg	4.00		114	40-140	6.95	30	
Aroclor-1260	3.6	0.20	mg/Kg	4.00		89.4	40-140	9.66	30	
Aroclor-1260 [2C]	4.4	0.20	mg/Kg	4.00		109	40-140	10.3	30	
Surrogate: Decachlorobiphenyl	3.83		mg/Kg	4.00		95.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	4.47		mg/Kg	4.00		112	30-150			
Surrogate: Tetrachloro-m-xylene	3.71		mg/Kg	4.00		92.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	4.45		mg/Kg	4.00		111	30-150			

**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B073921 - SW-846 3540C**
**Blank (B073921-BLK1)**

Prepared: 05/29/13 Analyzed: 05/31/13

Aroclor-1016	ND	0.20	mg/Kg							
Aroclor-1016 [2C]	ND	0.20	mg/Kg							
Aroclor-1221	ND	0.20	mg/Kg							
Aroclor-1221 [2C]	ND	0.20	mg/Kg							
Aroclor-1232	ND	0.20	mg/Kg							
Aroclor-1232 [2C]	ND	0.20	mg/Kg							
Aroclor-1242	ND	0.20	mg/Kg							
Aroclor-1242 [2C]	ND	0.20	mg/Kg							
Aroclor-1248	ND	0.20	mg/Kg							
Aroclor-1248 [2C]	ND	0.20	mg/Kg							
Aroclor-1254	ND	0.20	mg/Kg							
Aroclor-1254 [2C]	ND	0.20	mg/Kg							
Aroclor-1260	ND	0.20	mg/Kg							
Aroclor-1260 [2C]	ND	0.20	mg/Kg							
Aroclor-1262	ND	0.20	mg/Kg							
Aroclor-1262 [2C]	ND	0.20	mg/Kg							
Aroclor-1268	ND	0.20	mg/Kg							
Aroclor-1268 [2C]	ND	0.20	mg/Kg							
Surrogate: Decachlorobiphenyl	4.10		mg/Kg	4.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	4.03		mg/Kg	4.00		101	30-150			
Surrogate: Tetrachloro-m-xylene	3.99		mg/Kg	4.00		99.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	4.06		mg/Kg	4.00		101	30-150			

**LCS (B073921-BS1)**

Prepared: 05/29/13 Analyzed: 05/31/13

Aroclor-1016	3.6	0.20	mg/Kg	4.00		90.0	40-140			
Aroclor-1016 [2C]	4.4	0.20	mg/Kg	4.00		110	40-140			V-20
Aroclor-1260	3.7	0.20	mg/Kg	4.00		92.5	40-140			
Aroclor-1260 [2C]	4.2	0.20	mg/Kg	4.00		104	40-140			V-20
Surrogate: Decachlorobiphenyl	4.05		mg/Kg	4.00		101	30-150			
Surrogate: Decachlorobiphenyl [2C]	4.44		mg/Kg	4.00		111	30-150			
Surrogate: Tetrachloro-m-xylene	4.03		mg/Kg	4.00		101	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	4.50		mg/Kg	4.00		113	30-150			

**LCS Dup (B073921-BSD1)**

Prepared: 05/29/13 Analyzed: 05/31/13

Aroclor-1016	3.7	0.20	mg/Kg	4.00		92.5	40-140	2.80	30	
Aroclor-1016 [2C]	4.6	0.20	mg/Kg	4.00		114	40-140	3.63	30	V-20
Aroclor-1260	3.9	0.20	mg/Kg	4.00		97.3	40-140	5.02	30	
Aroclor-1260 [2C]	4.4	0.20	mg/Kg	4.00		111	40-140	6.12	30	V-20
Surrogate: Decachlorobiphenyl	4.14		mg/Kg	4.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	4.64		mg/Kg	4.00		116	30-150			
Surrogate: Tetrachloro-m-xylene	4.12		mg/Kg	4.00		103	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	4.69		mg/Kg	4.00		117	30-150			

**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
P-04	Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
V-24	Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column. All sample results are reported from the column within control criteria.

**CERTIFICATIONS****Certified Analyses included in this Report****Analyte****Certifications****No certified Analyses included in this Report**

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2013
FL	Florida Department of Health	E871027 NELAP	06/30/2013
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2013
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012



# con-test

ANALYTICAL LABORATORY

Phone: 413-525-2332  
Fax: 413-525-6405  
Email: info@contestlabs.com  
www.contestlabs.com

## CHAIN OF CUSTODY RECORD

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 1

Company Name: Woburn & Wren

Telephone:

Address: 40 Shattuck Rd Suite 110 Andover, MA

Project # 226020(XX)

Attention: KZinn, J. Hand, & Frick

Client PO#

DATA DELIVERY (check all that apply)

☐ FAX ☐ EMAIL ☐ WEBSITE

Fax #

Email:

Project Location: UMass Cashin - DC

Format:

☒ PDF ☒ EXCEL ☐ GIS

Sampled By: Kim Renard / Greg Reynolds

Project Proposal Provided? (for billing purposes)  
☐ yes ☐ no  
Proposal date

Con-Test Lab ID

Client Sample ID / Description

Beginning Date/Time

Ending Date/Time

Composite

Grid

Match Date

Collection

☐ "Enhanced Data Package"

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

☐ Other

ANALYSIS REQUESTED

# of Containers  
Preservation  
Container Code

Dissolved Metals

☐ Field Filtered  
☐ Lab to Filter

\*\*\*Cont. Code:

A=amber glass  
G=glass  
P=plastic  
ST=sterile  
V=vial  
S=summary can  
T=tear bag  
O=Other

\*\*\*Preservation

I = Ice  
H = HCL  
M = Methanol  
N = Nitric Acid  
S = Sulfuric Acid  
B = Sodium bisulfate  
X = Na hydroxide  
T = Na thiosulfate  
O = Other

\*\*\*Matrix Code:

GW = groundwater  
WW = wastewater  
DW = drinking water  
A = air  
S = soil/solid  
SL = sludge  
O = other

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:

H - High, M - Medium, L - Low, C - Clean, U - Unknown

Is your project MCP or RCP?

☐ MCP Form Required  
☐ RCP Form Required

☐ MA State DW Form Required  
☐ PWSID #

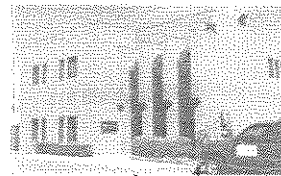


NELAC & AIHA-LAP, LLC  
Accredited  
WBE/DBE Certified

IS INCORRECT, TURNAROUND TIME WILL NOT START UNTIL ALL QUESTIONS ARE ANSWERED BY OUR CLIENT.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.contestlabs.com



### Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: CFC DATE: 5/29/13

1) Was the chain(s) of custody relinquished and signed? ☒ Yes ☐ No No CoC Included

2) Does the chain agree with the samples? ☒ Yes ☐ No

If not, explain:

3) Are all the samples in good condition? ☒ Yes ☐ No

If not, explain:

4) How were the samples received:

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? ☒ Yes ☐ No N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 3.7°C

5) Are there Dissolved samples for the lab to filter? Yes ☒ No ☐

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples? ☒ Yes ☐ No

Who was notified Sub Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored:

19

Permission to subcontract samples? Yes No  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes No ☒ N/A

9) Do all samples have the proper Base pH: Yes No ☒ N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No ☒ N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	<u>3</u>
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

40 mL vials: # HCl \_\_\_\_\_ # Methanol \_\_\_\_\_  
# Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_  
# Thiosulfate \_\_\_\_\_ Unpreserved \_\_\_\_\_

Time and Date Frozen:

Doc# 277

Rev. 3 May 2012

May 31, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: UMASS McNamara Res Interior  
Client Job Number:  
Project Number: 224867  
Laboratory Work Order Number: 13E0996

Enclosed are results of analyses for samples received by the laboratory on May 29, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager



Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 5/31/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224867

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13E0996

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: UMASS McNamara Res Interior

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
MRI-CBK-536	13E0996-01	Caulk	Metal Frame To CMU	EPA/600/R-93/116  SW-846 8082A	MA AA000175/CT PH-0212/RI AAL-120/+others
MRI-CBK-537	13E0996-02	Caulk	Metal Frame To Concrete Column	EPA/600/R-93/116  SW-846 8082A	MA AA000175/CT PH-0212/RI AAL-120/+others

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**SW-846 8082A****Qualifications:**

---

Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

**Analyte & Samples(s) Qualified:****Aroclor-1254, Aroclor-1254 [2C]**13E0996-01[MRI-CBK-536], 13E0996-02[MRI-CBK-537]

---

Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.

**Analyte & Samples(s) Qualified:****Aroclor-1254**13E0996-01[MRI-CBK-536], 13E0996-02[MRI-CBK-537]

---

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

**Analyte & Samples(s) Qualified:****Decachlorobiphenyl, Decachlorobiphenyl [2C], Tetrachloro-m-xylene, Tetrachloro-m-xylene [2C]**13E0996-01[MRI-CBK-536], 13E0996-02[MRI-CBK-537]

---

Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.

**Analyte & Samples(s) Qualified:****Aroclor-1016 [2C], Aroclor-1260 [2C]**B073928-BS1, B073928-BSD1

---

Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column.

All sample results are reported from the column within control criteria.

**Analyte & Samples(s) Qualified:****Aroclor-1254**13E0996-01[MRI-CBK-536], 13E0996-02[MRI-CBK-537]

---

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

A handwritten signature in black ink, appearing to read "Daren J. Damboragian", is displayed on a light gray rectangular background.

Daren J. Damboragian  
Laboratory Manager

Project Location: UMASS McNamara Res Interior

Sample Description: Metal Frame To CMU

Work Order: 13E0996

Date Received: 5/29/2013

Field Sample #: MRI-CBK-536

Sampled: 5/29/2013 11:10

Sample ID: 13E0996-01

Sample Matrix: Caulk

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	23	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 13:32	MJC
Aroclor-1221 [1]	ND	23	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 13:32	MJC
Aroclor-1232 [1]	ND	23	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 13:32	MJC
Aroclor-1242 [1]	ND	23	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 13:32	MJC
Aroclor-1248 [1]	ND	23	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 13:32	MJC
Aroclor-1254 [1]	24	23	mg/Kg	50	O-03, P-04, V-24	SW-846 8082A	5/29/13	5/31/13 13:32	MJC
Aroclor-1260 [1]	ND	23	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 13:32	MJC
Aroclor-1262 [1]	ND	23	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 13:32	MJC
Aroclor-1268 [1]	ND	23	mg/Kg	50		SW-846 8082A	5/29/13	5/31/13 13:32	MJC
Surrogates	% Recovery	Recovery Limits			Flag				
Decachlorobiphenyl [1]	*	30-150			S-01			5/31/13 13:32	
Decachlorobiphenyl [2]	*	30-150			S-01			5/31/13 13:32	
Tetrachloro-m-xylene [1]	*	30-150			S-01			5/31/13 13:32	
Tetrachloro-m-xylene [2]	*	30-150			S-01			5/31/13 13:32	

Project Location: UMASS McNamara Res Interior

Sample Description: Metal Frame To CMU

Work Order: 13E0996

Date Received: 5/29/2013

Field Sample #: MRI-CBK-536

Sampled: 5/29/2013 11:10

Sample ID: 13E0996-01

Sample Matrix: Caulk

### Inorganic Analyses - Asbestos

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Asbestos - Chrysotile	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Amosite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Crocidolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Actinolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Tremolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Anthophyllite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Fiberglass	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Mineral Wool	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Cellulose	1		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Hair	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Synthetic	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Other Non-asbestos	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Non-Fibrous Minerals	99		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Binder/Filler	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Gypsum	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Organic Material	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL

Project Location: UMASS McNamara Res Interior

Sample Description: Metal Frame To Concrete Column

Work Order: 13E0996

Date Received: 5/29/2013

Field Sample #: MRI-CBK-537

Sampled: 5/29/2013 11:15

Sample ID: 13E0996-02

Sample Matrix: Caulk

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	100000	mg/Kg	1000000		SW-846 8082A	5/29/13	5/31/13 14:02	MJC
Aroclor-1221 [1]	ND	100000	mg/Kg	1000000		SW-846 8082A	5/29/13	5/31/13 14:02	MJC
Aroclor-1232 [1]	ND	100000	mg/Kg	1000000		SW-846 8082A	5/29/13	5/31/13 14:02	MJC
Aroclor-1242 [1]	ND	100000	mg/Kg	1000000		SW-846 8082A	5/29/13	5/31/13 14:02	MJC
Aroclor-1248 [1]	ND	100000	mg/Kg	1000000		SW-846 8082A	5/29/13	5/31/13 14:02	MJC
Aroclor-1254 [1]	450000	100000	mg/Kg	1000000	O-03, P-04, V-24	SW-846 8082A	5/29/13	5/31/13 14:02	MJC
Aroclor-1260 [1]	ND	100000	mg/Kg	1000000		SW-846 8082A	5/29/13	5/31/13 14:02	MJC
Aroclor-1262 [1]	ND	100000	mg/Kg	1000000		SW-846 8082A	5/29/13	5/31/13 14:02	MJC
Aroclor-1268 [1]	ND	100000	mg/Kg	1000000		SW-846 8082A	5/29/13	5/31/13 14:02	MJC
Surrogates	% Recovery	Recovery Limits			Flag				
Decachlorobiphenyl [1]	*	30-150			S-01			5/31/13 14:02	
Decachlorobiphenyl [2]	*	30-150			S-01			5/31/13 14:02	
Tetrachloro-m-xylene [1]	*	30-150			S-01			5/31/13 14:02	
Tetrachloro-m-xylene [2]	*	30-150			S-01			5/31/13 14:02	

Project Location: UMASS McNamara Res Interior

Sample Description: Metal Frame To Concrete Column

Work Order: 13E0996

Date Received: 5/29/2013

Field Sample #: MRI-CBK-537

Sampled: 5/29/2013 11:15

Sample ID: 13E0996-02

Sample Matrix: Caulk

### Inorganic Analyses - Asbestos

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Asbestos - Chrysotile	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Amosite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Crocidolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Actinolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Tremolite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Asbestos - Anthophyllite	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Fiberglass	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Mineral Wool	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Cellulose	1		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Hair	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Synthetic	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Other Non-asbestos	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Non-Fibrous Minerals	99		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Binder/Filler	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Gypsum	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL
Organic Material	ND		%	1		EPA/600/R-93/116		5/30/13 0:00	OAL



### Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13E0996-01 [MRI-CBK-536]	B073928	0.430	10.0	05/29/13
13E0996-02 [MRI-CBK-537]	B073928	2.01	10.0	05/29/13

**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B073928 - SW-846 3540C**
**Blank (B073928-BLK1)**

Prepared: 05/29/13 Analyzed: 05/31/13

Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	1.08		mg/Kg	1.00		108	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.08		mg/Kg	1.00		108	30-150			
Surrogate: Tetrachloro-m-xylene	1.05		mg/Kg	1.00		105	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.08		mg/Kg	1.00		108	30-150			

**LCS (B073928-BS1)**

Prepared: 05/29/13 Analyzed: 05/31/13

Aroclor-1016	0.27	0.10	mg/Kg	0.250		109	40-140			
Aroclor-1016 [2C]	0.31	0.10	mg/Kg	0.250		125	40-140			V-20
Aroclor-1260	0.27	0.10	mg/Kg	0.250		109	40-140			
Aroclor-1260 [2C]	0.30	0.10	mg/Kg	0.250		118	40-140			V-20
Surrogate: Decachlorobiphenyl	1.07		mg/Kg	1.00		107	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.10		mg/Kg	1.00		110	30-150			
Surrogate: Tetrachloro-m-xylene	1.04		mg/Kg	1.00		104	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.11		mg/Kg	1.00		111	30-150			

**LCS Dup (B073928-BSD1)**

Prepared: 05/29/13 Analyzed: 05/31/13

Aroclor-1016	0.27	0.10	mg/Kg	0.250		108	40-140	1.03	30	
Aroclor-1016 [2C]	0.35	0.10	mg/Kg	0.250		138	40-140	9.78	30	V-20
Aroclor-1260	0.26	0.10	mg/Kg	0.250		106	40-140	3.35	30	
Aroclor-1260 [2C]	0.29	0.10	mg/Kg	0.250		117	40-140	1.18	30	V-20
Surrogate: Decachlorobiphenyl	0.999		mg/Kg	1.00		99.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.06		mg/Kg	1.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	1.03		mg/Kg	1.00		103	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.12		mg/Kg	1.00		112	30-150			

**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.
P-04	Due to continuing calibration non-conformance on the confirmatory detector, the lower of two results was reported.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.
V-20	Continuing calibration did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound.
V-24	Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column. All sample results are reported from the column within control criteria.

# CERTIFICATIONS

## Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8082A in Product/Solid</i>	
Aroclor-1016	CT,NH,NY,ME,NC,VA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1221	CT,NH,NY,ME,NC,VA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1232	CT,NH,NY,ME,NC,VA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1242	CT,NH,NY,ME,NC,VA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1248	CT,NH,NY,ME,NC,VA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1254	CT,NH,NY,ME,NC,VA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1260	CT,NH,NY,ME,NC,VA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2013
FL	Florida Department of Health	E871027 NELAP	06/30/2013
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2013
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012



**con-test**  
ANALYTICAL LABORATORY

Phone: 413-525-2332  
Fax: 413-525-6405  
Email: info@contestlabs.com  
www.contestlabs.com

**CHAIN OF CUSTODY RECORD**

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 1

Company Name: Webster's Jewelers

Telephone:

Address: 40 Southside Rd Suite 110 Andover, MA

Project # \*224867\*

Attention: J Hensley, G Frankley, K Rinald

Project Location: WMASS McNamara Res Interior

Fax #

Sampled By: Kim Rinald / Greg Reynolds

Email:

Project Proposal Provided? (for billing purposes)  
☐ Yes ☐ No  
proposal date

Format:

☒ PDF ☒ EXCEL ☐ OGIS  
☐ OTHER

Collection

☐ "Enhanced Data Package"

Con-Test Lab ID

Beginning Date/Time

Ending Date/Time

Composite

Grab

Matrix Code

Lab Code

Matrix Code

Lab Code

Matrix Code

Lab Code

Client Sample ID / Description

5/29/13

5/29/13

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MRE - CAR - 536

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MRE - CAR - 537

5/29/13

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MRE - CAR - 537

5/29/13

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MRE - CAR - 537

5/29/13

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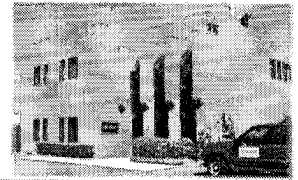
28

MRE - CAR - 537

5/29/13

1110

39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.contestlabs.com



## Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: Jma DATE: 5/21/13

- 1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included  
2) Does the chain agree with the samples? Yes No  
If not, explain:  
3) Are all the samples in good condition? Yes No  
If not, explain:

4) How were the samples received:

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 14.5 KM

- 5) Are there Dissolved samples for the lab to filter? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

- 6) Are there any RUSH or SHORT HOLDING TIME samples? Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

- 7) Location where samples are stored:

19

Permission to subcontract samples? Yes No  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

- 8) Do all samples have the proper Acid pH: Yes No N/A

- 9) Do all samples have the proper Base pH: Yes No N/A

- 10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	<u>2</u>
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____	Time and Date Frozen:
Doc# 277 # Bisulfate _____ # DI Water _____	
Rev. 3 May 2012 # Thiosulfate _____ Unpreserved _____	

June 7, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: Umass Cashin Res., Interior  
Client Job Number:  
Project Number: 226020  
Laboratory Work Order Number: 13E1092

Enclosed are results of analyses for samples received by the laboratory on May 31, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 6/7/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 226020

#### ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13E1092

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Umass Cashin Res., Interior

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
CRI-CBB-205	13E1092-01	Brick		SW-846 8082A	
CRI-CBB-206	13E1092-02	Brick		SW-846 8082A	
CRI-CBB-207	13E1092-03	Brick		SW-846 8082A	



### CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

SW-846 8082A

#### Qualifications:

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Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.

#### Analyte & Samples(s) Qualified:

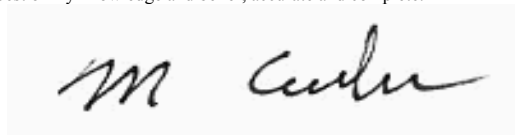
Aroclor-1016 [2C], Aroclor-1260, Aroclor-1260 [2C]

B074348-MS1, B074348-MSD1

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The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Michael A. Erickson  
Laboratory Director

Project Location: Umass Cashin Res., Interior

Sample Description:

Work Order: 13E1092

Date Received: 5/31/2013

Field Sample #: CRI-CBB-205

Sampled: 5/29/2013 14:20

Sample ID: 13E1092-01

Sample Matrix: Brick

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:20	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:20	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:20	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:20	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:20	MJC
Aroclor-1254 [2]	0.70	0.095	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:20	MJC
Aroclor-1260 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:20	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:20	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:20	MJC
Surrogates	% Recovery		Recovery Limits		Flag				
Decachlorobiphenyl [1]	95.6		30-150				6/7/13 12:20		
Decachlorobiphenyl [2]	95.2		30-150				6/7/13 12:20		
Tetrachloro-m-xylene [1]	96.6		30-150				6/7/13 12:20		
Tetrachloro-m-xylene [2]	99.0		30-150				6/7/13 12:20		

Project Location: Umass Cashin Res., Interior

Sample Description:

Work Order: 13E1092

Date Received: 5/31/2013

Field Sample #: CRI-CBB-206

Sampled: 5/29/2013 14:35

Sample ID: 13E1092-02

Sample Matrix: Brick

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:33	MJC
Aroclor-1221 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:33	MJC
Aroclor-1232 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:33	MJC
Aroclor-1242 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:33	MJC
Aroclor-1248 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:33	MJC
Aroclor-1254 [2]	0.25	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:33	MJC
Aroclor-1260 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:33	MJC
Aroclor-1262 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:33	MJC
Aroclor-1268 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:33	MJC
Surrogates	% Recovery	Recovery Limits	Flag						
Decachlorobiphenyl [1]	105	30-150							
Decachlorobiphenyl [2]	105	30-150							
Tetrachloro-m-xylene [1]	98.5	30-150							
Tetrachloro-m-xylene [2]	101	30-150							

Project Location: Umass Cashin Res., Interior

Sample Description:

Work Order: 13E1092

Date Received: 5/31/2013

Field Sample #: CRI-CBB-207

Sampled: 5/29/2013 14:50

Sample ID: 13E1092-03

Sample Matrix: Brick

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:46	MJC
Aroclor-1221 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:46	MJC
Aroclor-1232 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:46	MJC
Aroclor-1242 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:46	MJC
Aroclor-1248 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:46	MJC
Aroclor-1254 [2]	0.63	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:46	MJC
Aroclor-1260 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:46	MJC
Aroclor-1262 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:46	MJC
Aroclor-1268 [1]	ND	0.083	mg/Kg	1		SW-846 8082A	6/5/13	6/7/13 12:46	MJC
Surrogates	% Recovery	Recovery Limits	Flag						
Decachlorobiphenyl [1]	98.9	30-150							
Decachlorobiphenyl [2]	99.1	30-150							
Tetrachloro-m-xylene [1]	95.4	30-150							
Tetrachloro-m-xylene [2]	98.1	30-150							

### Sample Extraction Data

Prep Method: SW-846 3540C-SW-846 8082A

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13E1092-01 [CRI-CBB-205]	B074348	2.10	10.0	06/05/13
13E1092-02 [CRI-CBB-206]	B074348	2.40	10.0	06/05/13
13E1092-03 [CRI-CBB-207]	B074348	2.40	10.0	06/05/13

**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B074348 - SW-846 3540C**
**Blank (B074348-BLK1)**

Prepared: 06/05/13 Analyzed: 06/07/13

Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	0.933		mg/Kg	1.00		93.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.937		mg/Kg	1.00		93.7	30-150			
Surrogate: Tetrachloro-m-xylene	0.940		mg/Kg	1.00		94.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.970		mg/Kg	1.00		97.0	30-150			

**LCS (B074348-BS1)**

Prepared: 06/05/13 Analyzed: 06/07/13

Aroclor-1016	0.26	0.10	mg/Kg	0.250		104	40-140			
Aroclor-1016 [2C]	0.29	0.10	mg/Kg	0.250		114	40-140			
Aroclor-1260	0.23	0.10	mg/Kg	0.250		93.6	40-140			
Aroclor-1260 [2C]	0.26	0.10	mg/Kg	0.250		104	40-140			
Surrogate: Decachlorobiphenyl	0.921		mg/Kg	1.00		92.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.923		mg/Kg	1.00		92.3	30-150			
Surrogate: Tetrachloro-m-xylene	0.987		mg/Kg	1.00		98.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.02		mg/Kg	1.00		102	30-150			

**LCS Dup (B074348-BSD1)**

Prepared: 06/05/13 Analyzed: 06/07/13

Aroclor-1016	0.26	0.10	mg/Kg	0.250		103	40-140	1.06	30	
Aroclor-1016 [2C]	0.26	0.10	mg/Kg	0.250		106	40-140	7.91	30	
Aroclor-1260	0.25	0.10	mg/Kg	0.250		101	40-140	7.24	30	
Aroclor-1260 [2C]	0.25	0.10	mg/Kg	0.250		102	40-140	2.66	30	
Surrogate: Decachlorobiphenyl	1.00		mg/Kg	1.00		100	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.00		mg/Kg	1.00		100	30-150			
Surrogate: Tetrachloro-m-xylene	0.964		mg/Kg	1.00		96.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.996		mg/Kg	1.00		99.6	30-150			

## QUALITY CONTROL

## Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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## Batch B074348 - SW-846 3540C

Matrix Spike (B074348-MS1)		Source: 13E1092-01		Prepared: 06/05/13 Analyzed: 06/07/13						
Aroclor-1016	0.28	0.095	mg/Kg	0.238	0.0	118	40-140			
Aroclor-1016 [2C]	0.40	0.095	mg/Kg	0.238	0.0	167 *	40-140			MS-21
Aroclor-1260	0.38	0.095	mg/Kg	0.238	0.0	161 *	40-140			MS-21
Aroclor-1260 [2C]	0.36	0.095	mg/Kg	0.238	0.0	151 *	40-140			MS-21
Surrogate: Decachlorobiphenyl	0.913		mg/Kg	0.952		95.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.915		mg/Kg	0.952		96.1	30-150			
Surrogate: Tetrachloro-m-xylene	0.898		mg/Kg	0.952		94.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.933		mg/Kg	0.952		98.0	30-150			
Matrix Spike Dup (B074348-MSD1)		Source: 13E1092-01		Prepared: 06/05/13 Analyzed: 06/07/13						
Aroclor-1016	0.34	0.10	mg/Kg	0.250	0.0	135	40-140	18.0	50	
Aroclor-1016 [2C]	0.48	0.10	mg/Kg	0.250	0.0	192 *	40-140	18.6	50	MS-21
Aroclor-1260	0.55	0.10	mg/Kg	0.250	0.0	219 *	40-140	35.2	50	MS-21
Aroclor-1260 [2C]	0.51	0.10	mg/Kg	0.250	0.0	205 *	40-140	34.7	50	MS-21
Surrogate: Decachlorobiphenyl	1.06		mg/Kg	1.00		106	30-150			
Surrogate: Decachlorobiphenyl [2C]	1.06		mg/Kg	1.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	0.992		mg/Kg	1.00		99.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	1.02		mg/Kg	1.00		102	30-150			

**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
MS-21	Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.



# CERTIFICATIONS

## Certified Analyses included in this Report

Analyte	Certifications
<i>SW-846 8082A in Product/Solid</i>	
Aroclor-1016	CT,NH,NY,ME,NC,VA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1221	CT,NH,NY,ME,NC,VA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1232	CT,NH,NY,ME,NC,VA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1242	CT,NH,NY,ME,NC,VA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1248	CT,NH,NY,ME,NC,VA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1254	CT,NH,NY,ME,NC,VA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1260	CT,NH,NY,ME,NC,VA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2013
FL	Florida Department of Health	E871027 NELAP	06/30/2013
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2013
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012



# con-test

ANALYTICAL LABORATORY

Phone: 413-525-2332  
Fax: 413-525-6405

Email: info@contestlabs.com  
www.contestlabs.com

## CHAIN OF CUSTODY RECORD

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 1

Company Name: Wendover 3 Curran

Address: 40 Shattuck Rd Suite 110 Andover, MA

Telephone: 93E 1092

Attention: J Hanel / K Renard / A Franklin

Project Location: Mass Cassin Res Interior

Sampled By: Kim Renard

Project Proposal Provided? (for billing purposes)  
☐ Yes ☐ No

Con-Test Lab ID (Laboratory use only)

Client Sample ID / Description  
01 MRE CRI-CRB-205  
02 CRI-CRB-206  
03 CRI-CRB-207

Collection

Beginning Date/Time

Ending Date/Time

Composite

Grab

Matrix

Count

Field

Lab

Time

Result

Unit

Notes

Comments

Signature

Date

Time

Initials

Signature

Rev 04.05.12

226020 (interior)

Project #

Client PO#

DATA DELIVERY (check all that apply)  
☐ FAX ☒ EMAIL ☐ WEBSITE

Fax #

Email

Format

☒ PDF ☒ EXCEL ☐ OGIS

☐ OTHER

☐ "Enhanced Data Package"

Composite

Grab

Matrix

Count

Field

Lab

Time

Result

Unit

Notes

Comments

Signature

Date

Time

Initials

### ANALYSIS REQUESTED

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# of Containers

\*\* Preservation

\*\*\* Container Code

Dissolved Metals

☐ Field Filtered

☐ Lab to Filter

\*\*\* Cont. Code:

A=amber glass

G=glass

P=plastic

ST=sterile

V=vial

S=summary can

T=tedlar bag

O=Other

\*\* Preservation

I=iced

N=HCl

M=Methanol

N=Nitric Acid

S=Sulfuric Acid

B=Sodium bisulfate

X=Na hydroxide

T=Na thiosulfate

O=Other

\* Matrix Code:

GW=gro undwater

WW=wastewater

DW=drinking water

A=air

S=soil/solid

SL=sludge

O=other

### Is your project MCP or RCP?

☐ MCP Form Required

☐ RCP Form Required

☐ MA State DW Form Required PWSD #

☐ NELAC & AIHA-LAP, LLC

☐ Accredited

☐ WBE/DBE Certified

☐ NELAC & AIHA-LAP, LLC

☐ Accredited

☐ WBE/DBE Certified

☐ NELAC & AIHA-LAP, LLC

☐ Accredited

☐ WBE/DBE Certified

☐ NELAC & AIHA-LAP, LLC

☐ Accredited

☐ WBE/DBE Certified

☐ NELAC & AIHA-LAP, LLC

☐ Accredited

☐ WBE/DBE Certified

☐ NELAC & AIHA-LAP, LLC

☐ Accredited

☐ WBE/DBE Certified

☐ NELAC & AIHA-LAP, LLC

☐ Accredited

☐ WBE/DBE Certified

☐ NELAC & AIHA-LAP, LLC

☐ Accredited

☐ WBE/DBE Certified

☐ NELAC & AIHA-LAP, LLC

☐ Accredited

☐ WBE/DBE Certified

☐ NELAC & AIHA-LAP, LLC

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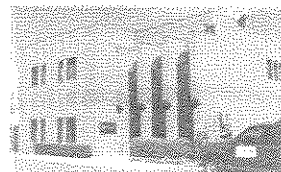
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39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.contestlabs.com



### Sample Receipt Checklist

CLIENT NAME: Woodward & Curran RECEIVED BY: RLF/WW DATE: 5/31/13

1) Was the chain(s) of custody relinquished and signed? ☒ Yes ☐ No ☐ No CoC Included

2) Does the chain agree with the samples? ☒ Yes ☐ No

If not, explain:

3) Are all the samples in good condition? ☒ Yes ☐ No

If not, explain:

4) How were the samples received:

On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒

Were the samples received in Temperature Compliance of (2-6°C)? ☒ Yes ☐ No ☐ N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 58°

5) Are there Dissolved samples for the lab to filter? Yes ☐ No ☒

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples? Yes ☐ No ☒

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored:

19

Permission to subcontract samples? Yes ☐ No ☐  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes ☐ No ☒ N/A

9) Do all samples have the proper Base pH: Yes ☐ No ☒ N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes ☐ No ☒ N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	<u>3</u>
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

40 mL vials: # HCl _____ # Methanol _____	Time and Date Frozen:
Doc# 277 # Bisulfate _____ # DI Water _____	
Rev. 3 May 2012 # Thiosulfate _____ Unpreserved _____	

**13E1092-01** CRI-CBB-205

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.70	0.6351858	9.71
Surrogates			
Decachlorobiphenyl	0.911	0.9064429	0.501
Tetrachloro-m-xylene	0.920	0.9427572	2.44

**13E1092-02** CRI-CBB-206

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.25	0.2206375	12.5
Surrogates			
Decachlorobiphenyl	0.876	0.8733291	0.305
Tetrachloro-m-xylene	0.820	0.8385041	2.23

**13E1092-03** CRI-CBB-207

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.63	0.551475	13.3
Surrogates			
Decachlorobiphenyl	0.824	0.8254458	0.175
Tetrachloro-m-xylene	0.795	0.8174375	2.78

**B074348-BLK1** Blank

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	0.933	0.936905	0.418
Tetrachloro-m-xylene	0.940	0.969635	3.1

**B074348-BS1** LCS

Analyte	Results		%RPD
Aroclor-1016	0.26	0.285685	9.41
Aroclor-1260	0.23	0.26071	12.5
Surrogates			
Tetrachloro-m-xylene	0.987	1.01906	3.2
Decachlorobiphenyl	0.921	0.923235	0.242

**B074348-BSD1** LCS Dup

Analyte	Results		%RPD
Aroclor-1016	0.26	0.26394	1.5
Aroclor-1260	0.25	0.253855	1.53
Surrogates			
Decachlorobiphenyl	1.00	1.00111	0.111
Tetrachloro-m-xylene	0.964	0.99594	3.26

**B074348-MS1** Matrix Spike

Analyte	Results		%RPD
Aroclor-1016	0.28	0.3986286	35
Aroclor-1260	0.38	0.3606714	5.22
Surrogates			
Decachlorobiphenyl	0.913	0.9147905	0.196
Tetrachloro-m-xylene	0.898	0.9328905	3.81

**B074348-MSD1** Matrix Spike Dup

Analyte	Results		%RPD
Aroclor-1016	0.34	0.48035	34.2
Aroclor-1260	0.55	0.51219	7.12
Surrogates			
Tetrachloro-m-xylene	0.992	1.022995	3.08
Decachlorobiphenyl	1.06	1.059125	0.0826

June 11, 2013

George Franklin  
Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810

Project Location: UMass Cashin  
Client Job Number:  
Project Number: 226020  
Laboratory Work Order Number: 13F0269

Enclosed are results of analyses for samples received by the laboratory on June 7, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
40 Shattuck Road., Suite 110  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 6/11/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 226020

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 13F0269

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: UMass Cashin

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
CRI-CBK-229	13F0269-01	Caulk		SW-846 8082A	

**CASE NARRATIVE SUMMARY**

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

**SW-846 8082A****Qualifications:**

The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

**Analyte & Samples(s) Qualified:****Decachlorobiphenyl, Decachlorobiphenyl [2C], Tetrachloro-m-xylene, Tetrachloro-m-xylene [2C]**

13F0269-01[CRI-CBK-229]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.



Michael A. Erickson  
Laboratory Director

Project Location: UMass Cashin

Sample Description:

Work Order: 13F0269

Date Received: 6/7/2013

Field Sample #: CRI-CBK-229

Sampled: 6/7/2013 13:45

Sample ID: 13F0269-01

Sample Matrix: Caulk

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	9.5	mg/Kg	50		SW-846 8082A	6/7/13	6/10/13 18:03	JMB
Aroclor-1221 [1]	ND	9.5	mg/Kg	50		SW-846 8082A	6/7/13	6/10/13 18:03	JMB
Aroclor-1232 [1]	ND	9.5	mg/Kg	50		SW-846 8082A	6/7/13	6/10/13 18:03	JMB
Aroclor-1242 [1]	ND	9.5	mg/Kg	50		SW-846 8082A	6/7/13	6/10/13 18:03	JMB
Aroclor-1248 [1]	ND	9.5	mg/Kg	50		SW-846 8082A	6/7/13	6/10/13 18:03	JMB
Aroclor-1254 [1]	47	9.5	mg/Kg	50		SW-846 8082A	6/7/13	6/10/13 18:03	JMB
Aroclor-1260 [1]	ND	9.5	mg/Kg	50		SW-846 8082A	6/7/13	6/10/13 18:03	JMB
Aroclor-1262 [1]	ND	9.5	mg/Kg	50		SW-846 8082A	6/7/13	6/10/13 18:03	JMB
Aroclor-1268 [1]	ND	9.5	mg/Kg	50		SW-846 8082A	6/7/13	6/10/13 18:03	JMB
Surrogates	% Recovery		Recovery Limits		Flag				
Decachlorobiphenyl [1]	*		30-150		S-01		6/10/13 18:03		
Decachlorobiphenyl [2]	*		30-150		S-01		6/10/13 18:03		
Tetrachloro-m-xylene [1]	*		30-150		S-01		6/10/13 18:03		
Tetrachloro-m-xylene [2]	*		30-150		S-01		6/10/13 18:03		



**Sample Extraction Data**

**Prep Method: SW-846 3540C-SW-846 8082A**

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13F0269-01 [CRI-CBK-229]	B074533	0.527	10.0	06/07/13

**QUALITY CONTROL**
**Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B074533 - SW-846 3540C**
**Blank (B074533-BLK1)**

Prepared: 06/07/13 Analyzed: 06/10/13

Aroclor-1016	ND	0.20	mg/Kg							
Aroclor-1016 [2C]	ND	0.20	mg/Kg							
Aroclor-1221	ND	0.20	mg/Kg							
Aroclor-1221 [2C]	ND	0.20	mg/Kg							
Aroclor-1232	ND	0.20	mg/Kg							
Aroclor-1232 [2C]	ND	0.20	mg/Kg							
Aroclor-1242	ND	0.20	mg/Kg							
Aroclor-1242 [2C]	ND	0.20	mg/Kg							
Aroclor-1248	ND	0.20	mg/Kg							
Aroclor-1248 [2C]	ND	0.20	mg/Kg							
Aroclor-1254	ND	0.20	mg/Kg							
Aroclor-1254 [2C]	ND	0.20	mg/Kg							
Aroclor-1260	ND	0.20	mg/Kg							
Aroclor-1260 [2C]	ND	0.20	mg/Kg							
Aroclor-1262	ND	0.20	mg/Kg							
Aroclor-1262 [2C]	ND	0.20	mg/Kg							
Aroclor-1268	ND	0.20	mg/Kg							
Aroclor-1268 [2C]	ND	0.20	mg/Kg							
Surrogate: Decachlorobiphenyl	3.58		mg/Kg	4.00		89.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	3.01		mg/Kg	4.00		75.2	30-150			
Surrogate: Tetrachloro-m-xylene	3.48		mg/Kg	4.00		87.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	3.17		mg/Kg	4.00		79.3	30-150			

**LCS (B074533-BS1)**

Prepared: 06/07/13 Analyzed: 06/10/13

Aroclor-1016	3.8	0.20	mg/Kg	4.00		95.4	40-140			
Aroclor-1016 [2C]	2.9	0.20	mg/Kg	4.00		72.5	40-140			
Aroclor-1260	3.5	0.20	mg/Kg	4.00		88.4	40-140			
Aroclor-1260 [2C]	2.9	0.20	mg/Kg	4.00		72.2	40-140			
Surrogate: Decachlorobiphenyl	3.87		mg/Kg	4.00		96.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	3.30		mg/Kg	4.00		82.4	30-150			
Surrogate: Tetrachloro-m-xylene	3.56		mg/Kg	4.00		89.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	3.26		mg/Kg	4.00		81.5	30-150			

**LCS Dup (B074533-BSD1)**

Prepared: 06/07/13 Analyzed: 06/10/13

Aroclor-1016	3.8	0.20	mg/Kg	4.00		96.0	40-140	0.661	30	
Aroclor-1016 [2C]	2.9	0.20	mg/Kg	4.00		73.7	40-140	1.57	30	
Aroclor-1260	3.5	0.20	mg/Kg	4.00		86.4	40-140	2.26	30	
Aroclor-1260 [2C]	3.0	0.20	mg/Kg	4.00		74.8	40-140	3.44	30	
Surrogate: Decachlorobiphenyl	3.72		mg/Kg	4.00		93.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	3.24		mg/Kg	4.00		81.0	30-150			
Surrogate: Tetrachloro-m-xylene	3.50		mg/Kg	4.00		87.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	3.23		mg/Kg	4.00		80.7	30-150			

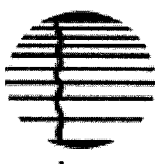
**FLAG/QUALIFIER SUMMARY**

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
S-01	The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences.

**CERTIFICATIONS****Certified Analyses included in this Report****Analyte****Certifications****No certified Analyses included in this Report**

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC	100033	02/1/2014
MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Public Health	PH-0567	09/30/2013
NY	New York State Department of Health	10899 NELAP	04/1/2014
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2014
RI	Rhode Island Department of Health	LAO00112	12/30/2013
NC	North Carolina Div. of Water Quality	652	12/31/2013
NJ	New Jersey DEP	MA007 NELAP	06/30/2013
FL	Florida Department of Health	E871027 NELAP	06/30/2013
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2013
WA	State of Washington Department of Ecology	C2065	02/23/2014
ME	State of Maine	2011028	06/9/2015
VA	Commonwealth of Virginia	460217	12/14/2013
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2012



**con-test**  
ANALYTICAL LABORATORY

Phone: 413-525-2332  
Fax: 413-525-6405  
Email: info@contestlabs.com  
www.contestlabs.com

# CHAIN OF CUSTODY RECORD

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 1

Company Name: Woodward & Lozano  
Address: 40 Shattuck Rd Suite 110 Andover, MA  
Project # 226020

Client PO#

Attention: J. Howard, G. Franklin, K. Leonard

Project Location: WMASS CASHAN RES. (RM 100)

Sampled By: Kim Leonard

Project Proposal Provided? (for billing purposes)  
☐ Yes ☐ No proposal date

DATA DELIVERY (check all that apply)  
☐ FAX ☐ EMAIL ☐ WEBSITE

Fax #

Email:

Format

☒ PDF ☒ EXCEL ☐ OGIS

Collection

☐ "Enhanced Data Package"

Con-Test Lab ID

Beginning Date/Time

Ending Date/Time

Composite

Grab

Matrix Code

Lab Code

Conc.

Code

Code

Code

Code

Code

Code

Code

Client Sample ID / Description

6/13/13 1345

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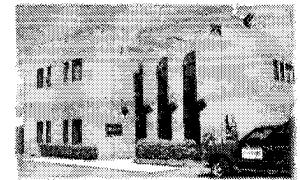
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39 Spruce St.  
East Longmeadow, MA. 01028  
P: 413-525-2332  
F: 413-525-6405  
www.contestlabs.com



## Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: JMH DATE: 6-7-13

1) Was the chain(s) of custody relinquished and signed? Yes No No CoC Included

2) Does the chain agree with the samples?

Yes No

If not, explain:

3) Are all the samples in good condition?

Yes No

If not, explain:

4) How were the samples received:

On Ice ☐ Direct from Sampling ☐ Ambient ☒ In Cooler(s) ☐

Were the samples received in Temperature Compliance of (2-6°C)? Yes No N/A

Temperature °C by Temp blank \_\_\_\_\_ Temperature °C by Temp gun 26.3

5) Are there Dissolved samples for the lab to filter?

Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

6) Are there any RUSH or SHORT HOLDING TIME samples?

Yes No

Who was notified \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

7) Location where samples are stored:

19

Permission to subcontract samples? Yes No  
(Walk-in clients only) if not already approved  
Client Signature: \_\_\_\_\_

8) Do all samples have the proper Acid pH: Yes No N/A

9) Do all samples have the proper Base pH: Yes No N/A

10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

### Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	<u>1</u>
250 mL Amber (8oz amber)		2 oz amber/clear jar	
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

40 mL vials: # HCl \_\_\_\_\_ # Methanol \_\_\_\_\_

Doc# 277 # Bisulfate \_\_\_\_\_ # DI Water \_\_\_\_\_

Rev. 3 May 2012 # Thiosulfate \_\_\_\_\_

Time and Date Frozen:

**13F0269-01****CRI-CBK-229**

Analyte	Results		%RPD
Aroclor-1254	47	43.33207	8.12

**B074533-BLK1****Blank**

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	3.48	3.17286	9.23
Decachlorobiphenyl	3.58	3.00632	17.4

**B074533-BS1****LCS**

Analyte	Results		%RPD
Aroclor-1260	3.5	2.8896	19.1
Aroclor-1016	3.8	2.90056	26.8
Surrogates			
Tetrachloro-m-xylene	3.56	3.2617	8.75
Decachlorobiphenyl	3.87	3.2951	16

**B074533-BSD1****LCS Dup**

Analyte	Results		%RPD
Aroclor-1260	3.5	2.99086	15.7
Aroclor-1016	3.8	2.94644	25.3
Surrogates			
Tetrachloro-m-xylene	3.50	3.22982	8.03
Decachlorobiphenyl	3.72	3.24	13.8



## **ATTACHMENT 2: DUST MONITORING PLAN**



## ATTACHMENT 2 – SUPPORT ZONE/PERIMETER DUST MONITORING PLAN

Airborne particulate matter (PM) consists of many different substances suspended in air in the form of particles (solids or liquid droplets) that vary widely in size. Inhalation hazards are caused if the intake of these particles includes intake of vapors and/or contaminated dust. Particles less than 10 micrometers in diameter (PM-10), which include both respirable fine (less than 2.5 micrometers) and coarse (less than 10 micrometers) dust particles, pose the greatest potential health concern because they can pass through the nose and throat and get into the lungs.

During the performance of the planned remediation activities, particulate matter in the form of potentially PCB-affected dust may be generated. The greatest potential for the generation of affected dust is during the removal of PCB containing building materials.

As indicated in the remediation plan, the main dust control mechanism to be employed on the project will be the use of engineering controls (e.g. wet techniques and misting), polyethylene containment structures, and personal protective equipment (PPE). In addition, particulate air monitoring will be conducted during intrusive or dust-generating activities in the Support Work Zone (SWZ) and perimeter to the SWZ. The SWZ is the area just outside of the active work areas, in designated safe work zones or support zones. Particulate air monitoring will determine if fugitive dust particles are present in the ambient air within the designated SWZ and/or perimeter during active removal activities. A direct-reading particulate meter will be used to monitor airborne particulate concentrations during site activities. Particulate concentrations shall be utilized as an indirect indicator of exposures to on-site receptors.

Dust concentrations in the SWZ will be measured using a suitable real time aerosol particulate monitor capable of determining ambient air fugitive dust concentrations to 0.001 milligrams per cubic meter (mg/m<sup>3</sup>). Dust monitoring shall be conducted while parapet wall segregation activities are occurring at a frequency of one reading every two hours. Prior to the active removal actions and at periodic points during the project, dust monitoring readings will be recorded to document background particulate matter concentrations.

If total particulate concentrations in the SWZ exceed the action limits (as specified below and incorporating background readings) and are sustained (i.e. greater than 5 minutes), then the following actions will be taken:

- Engineering controls (HEPA filtration, containment, etc.) will be inspected to insure proper operation;
- Work practices will be evaluated;
- Additional dust suppression techniques to mitigate fugitive dust shall be initiated.

If applicable, the dust suppression techniques shall involve the application of a fine mist of water over the area creating the fugitive dust condition. The water shall be applied either by small hand held sprayers or sprinklers. In the event that the total of airborne particulate cannot be maintained below the action limit in the SWZ, then work activities shall be ceased until sustained readings are below the action limit or the SWZ designation is re-evaluated.

OSHA has published the following permissible exposure limits (8 hour time weighted average) for air contaminants (29 CFR 1910.1000):

Air Contaminant	PEL (8-hour TWA)
Total Dust	15 mg/m <sup>3</sup>
Respirable Dust Fraction	5 mg/m <sup>3</sup>
PCBs (42% Chlorine)	1 mg/m <sup>3</sup>
PCBs (54% Chlorine)	0.5 mg/m <sup>3</sup>

In addition, EPA has established a National Ambient Air Quality Standard for PM-10 of 0.150 mg/m<sup>3</sup> (24-hr average).

A total airborne particulate action limit has been established for the building material removal work to be conducted at the Cashin Residence with consideration of the specific receptors, PCB concentrations, work activities, and OSHA

## ATTACHMENT 2 – SUPPORT ZONE/PERIMETER DUST MONITORING PLAN

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permissible exposure limits. The action limit applies only to dust monitoring within the SWZ and perimeter to the SWZ; an action limit has not been set for the active work zones (exclusion zones) as engineering controls and PPE will be used within these zones.

Given the residential nature of surrounding buildings and the anticipated PCB concentration in dust that may be generated during abatement activities, a conservative action limit of 0.1 mg/m<sup>3</sup> above background will be maintained during site work. Dust monitoring at a location representative of background conditions (i.e. a location upwind without active remedial activities in progress) will be conducted at the same frequency as SWZ monitoring to obtain data representative of real-time background conditions. The action limit will be used to determine if and when additional engineered controls and/or work stoppages would be necessary.