

**COMMITMENT & INTEGRITY  
DRIVE RESULTS**

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May 10, 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 Completion Report – September 25, 2012 Addendum  
Tobin Hall Concrete Deck – University of Massachusetts  
Amherst, Massachusetts

Dear Ms. Tisa:

On behalf of the University of Massachusetts (UMass), this polychlorinated biphenyl (PCB) Remediation Completion Report has been prepared by Woodard & Curran to document the removal and disposal PCB containing materials associated with the concrete stairs along the west side of Tobin Hall located at 135 Hicks Way on the UMass Amherst campus in Amherst, Massachusetts.

A PCB Remediation Plan for removal of the concrete decking on the west side of Tobin Hall was submitted to your office on July 20, 2011 and approved in a letter entitled *PCB Risk-Based Decontamination and Disposal Approval under 40 CFR 761.61(c) and 761.79(h)* dated February 28, 2012 (included as Attachment 1). This work was completed per the Approval and a Final Completion report and Monitoring and Maintenance plan for encapsulated surfaces was submitted to the United States Environmental Protection Agency (EPA) on March 13, 2012.

Since the submittal of the Completion Report, an existing concrete stair and a small portion of concrete decking adjacent to Tobin Hall were scheduled for removal as part of the on-going overall Commonwealth Honors College Residential Complex construction project. On September 25, 2012, a PCB Remediation Plan Addendum (the Addendum) detailing the proposed remediation of the joints and surrounding materials for this stair and decking was submitted to your office by Woodard & Curran. On October 2, 2012, a Contractor Workplan prepared by the selected contractor for the PCB remediation work was submitted to EPA.

Between October 5, 2012 and October 15, 2012, the remedial activities described in the Addendum were completed. Subsequent applications of the liquid encapsulant were applied in November 2012 and the waste materials were shipped off-site for disposal in January 2013. This Completion Report includes a description of the work area, a summary of the remediation activities (which were conducted consistent with the previously approved plan), the results of the verification sampling, and a summary of the continuing monitoring activities to be conducted.

### **Inventory and Characterization**

The removal of concrete stairs and concrete aggregate decking along the west side of Tobin Hall was required as part of the Commonwealth Honors College Residential Complex construction project. The area consisted of concrete stairs and aggregate decking within an approximately 28 foot long by 9 foot wide area on the west side of Tobin Hall. The concrete stairs consisted of four concrete steps arranged in an approximate horse shoe configuration leading upward to the aggregate deck. At the top of the stairs, the deck itself was comprised of concrete aggregate slabs separated by concrete bands. No caulking was observed on the concrete stairs or on the concrete to concrete joints of the decking.



Within the work area, two caulked joints were observed along the concrete decking to the Tobin Hall concrete façade joints on the north and south ends of the work area. Each joint was approximately 42 inches long for a total of approximately seven feet of caulking within the project work area. As presented in the Addendum, caulking within the joints was assumed to contain  $\geq 50$  ppm PCBs based on the similar physical appearance and type of joint that was tested during the 2011 remediation.

As documented in the Addendum, characterization samples of the concrete decking and concrete façade (above the joint) were collected to determine the extent of PCBs  $> 1$  ppm. A summary of the samples collected and analytical results is as follows:

- Concrete Decking – Characterization samples were collected of the concrete decking in support of the waste segregation cut line approach at a distance of 12 inches from the caulked joints. Two samples were collected (1 per joint) for an approximate sample frequency of 1 sample per 3.5 l.f. of caulked joint (2 joints of 42 inches each). Analytical results from both samples indicated that PCBs were non-detect ( $\leq 0.091$  and  $\leq 0.10$  ppm). Based on these results, the waste segregation cut line was established at a distance of 12 inches from the caulked joints.
- Concrete Façade Wall – One characterization sample was collected at a distance of 6 inches above the southern caulked joint to verify the required extent of encapsulation on the façade wall for an approximate sample frequency of 1 sample per 7 l.f. of caulked joint. Analytical results indicated that PCBs were non-detect ( $\leq 0.087$  ppm). Based on these results the extent of the liquid encapsulant to be applied to concrete materials was established at a distance of 6 inches above the joint (results of the verification sample collected from concrete below the joint are presented in the verification sampling summary below).

A depiction of the removal area, including the location of the caulked joints and the characterization samples collected is presented on Figure 1. Results of the characterization sampling are presented on Table 1 and complete analytical laboratory report and data validation summaries are provided in Attachment 2.

## Remediation Activities

Remediation activities were conducted in accordance with the February 2012 Approval and the September 2012 Addendum. A summary of the site preparation, remedial activities, and verification results is presented in the sections below.

The overall approach for the remediation was to implement a waste segregation cut-line approach for all materials scheduled for removal and off-site disposal as  $\geq 50$  ppm PCB wastes (caulking, concrete decking, and underlying soils). The sections of exterior wall along Tobin Hall adjacent to the caulked joints not scheduled to be removed were managed in-place through the application of a liquid encapsulant.

### *Site Preparation and Controls*

Prior to implementation, the general contractor, Dimeo Construction Company, isolated the remediation area from the larger construction site with temporary chain link fence, barrier tape, and signage.

PCB Remediation activities were conducted by LVI Services, Inc. Site preparations and controls were implemented as described in the Addendum. These preparations included the development of a Health & Safety Plan and a Contractor Work Plan and placing polysheeting and signage on the temporary



chain link to identify the work area, provide site security, and ensure safe passage to Tobin Hall for pedestrians.

A temporary waste storage shelter for the metal waste drums was erected southeast of the work area. Metal 55-gal drums, lined with polyethylene bags were staged in this shelter and labeled in accordance with 40 CFR 761.65. All containers were kept closed except during times of active loading of materials into the drums.

Dust control measures were implemented during concrete and soil excavation activities. Water suppression was the primary means of dust control used during the removal activities. LVI utilized pump sprayers with water and HEPA vacuums to control dust for the duration of the PCB remediation activities. LVI staff also placed polyethylene sheeting on ground surfaces around active work areas to capture dust and debris. At the end of each workday, materials, dust, and debris were removed and placed in the waste storage containers.

During the removal of the impacted concrete and soils, dust monitoring was conducted by Woodard & Curran personnel using a Thermo Electron PDR-1000AN. No exceedances of the project action level were observed for the duration of the activities. A summary of the dust readings is presented in Attachment 3.

#### *Removal of PCB-Containing and PCB-impacted Materials*

Based on results of the characterization sampling described above, concrete decking was cut at a distance of 12 inches from the caulked joints and concrete materials within the cut-line were removed using hand tools (pry bars and sledge hammers). Caulking materials were removed utilizing hand tools (utility knives, paint scrapers or putty knives) or cordless electrical caulk knives. LVI personnel removed the soils beneath the concrete decking to a depth of six inches using shovels. All PCB waste materials were collected in polyethylene bags and transferred directly into steel drums. Once full, the drums were transferred to the temporary waste storage area.

#### *Verification Inspection and Sampling*

Following the removal of the caulking, concrete decking, and underlying soils, Woodard & Curran field personnel inspected the concrete façade to verify removal of caulking and caulking residue. Select locations were identified for additional removal, which was completed by LVI staff prior to the application of the liquid encapsulant (see below).

Verification samples of the concrete façade below the joints and the soils at the extent of the excavation were collected following completion of the removal activities. A summary of the verification samples is as follows:

- Concrete Façade Verification Sample – One sample was collected at a distance of 6 inches below the caulked joint for a verification sample frequency of approximately 1 sample per 7 l.f. of caulked joint. Analytical results indicated that PCBs were non-detect (< 0.087 ppm); and
- Verification Soil Samples – Two verification soil samples were collected at a depth of 0 to 3 inches below the base of the excavation for a sample frequency of approximately 1 sample per 3.5 l.f. of excavation. Analytical results reported PCBs were non-detect (< 0.11 ppm) and present at a concentration of 0.18 ppm.

Based on these results, no additional removal activities were conducted. A summary of the verification sample results is presented on Table 1 and the complete analytical laboratory reports and data validation summaries are presented in Attachment 2.



### *Liquid Encapsulation*

In accordance with the Addendum, concrete façade materials scheduled to remain in place and containing PCBs > 1 ppm were to be encapsulated as follows following the completion of surface cleaning:

- Concrete materials formerly in direct contact with and to a distance of 6 inches below the caulked joint were encapsulated with two coats of Sikagard 62 liquid epoxy coating; and
- Concrete materials to a distance of 6 inches above the former caulked joint location were encapsulated with two coats of Sika 670W clear acrylic coating.

Prior to application, the concrete surfaces were prepared by wire brushing the surfaces to achieve an open textured sandpaper-like finish and all loose dust and surficial materials were removed through dry wiping the surface until a gloved hand came away clean.

Following preparation, the limits of the coatings were marked using tape and the liquid coatings were applied in accordance with the manufacturer's specifications. The Sikagard 62 epoxy was applied first followed by the Sikagard 670W product after the epoxy was tack-free.

Woodard & Curran field personnel inspected the applied coatings the day after application. Surface coatings not meeting the requirements called out in the September 25, 2012 addendum were re-cleaned and an additional coating of the liquid encapsulant was applied. A summary of the results of each type of coating is as follows:

- Sikagard 62 Liquid Epoxy Coatings – Two coats of the epoxy coating were applied in accordance with the manufacturer's specifications. In addition, the epoxy coating was also inadvertently applied to concrete materials to a distance of 6 inches above the joint over a limited portion of the work area. Analytical results from the wipe sample collected indicated that the concentration of PCBs met the project encapsulation target of  $\leq 1 \mu\text{g}/100\text{cm}^2$ , with total PCBs reported as non-detect ( $< 0.20 \mu\text{g}/100\text{cm}^2$ ).
- Sikagard 670W Clear Acrylic Coating – Two coats of the acrylic coating were applied in accordance with the manufacturer's specifications. However, flaking and peeling of the coating were observed during the initial visual inspection. Based on these results, the coating was removed and the surface preparation and application procedures were reviewed by the project team. Following this evaluation, additional surface preparation was conducted followed by reapplication of the acrylic coating; however, multiple attempts failed to achieve a uniform coating of the Sikagard 670W acrylic coating. Potential reasons for the poor performance of the coating may have included the temperature at the time of application or immediately thereafter (the coatings were applied in late October and November) or the settling of dust from outside the remediation area on the surfaces prior to coating application.

Based on the temperature requirements for application and the overall project schedule, the project team decided to conduct the application of the Sikagard 670W in 2013. Results of this application will be reported under a separate submittal as part of the long term maintenance and monitoring program reporting requirements for the Tobin Hall Decking project.

### **Waste Storage and Disposal**

All materials generated during remediation activities, including caulking, concrete, soils, polyethylene sheeting and PPE, were placed directly into lined and labeled 55-gallon DOT-approved steel drums and transferred to the temporary waste storage area.



On January 17, 2013, the drums were transferred off-site as  $\geq 50$  ppm PCB wastes under hazardous waste manifest for disposal at Chemical Waste Management's Model City, New York Landfill. Approximately 0.5 tons of waste in three drums were generated during the remediation activities. Copies of the waste documents are provided in Attachment 4.

### **Monitoring and Maintenance of Encapsulated Surfaces**

Encapsulated building wall materials will be incorporated into the existing monitoring and maintenance program for Tobin Hall. As described above, results of the clear coat application and subsequent monitoring and maintenance activities will be reported as part of the long term maintenance and monitoring program reporting requirements for the Tobin Hall Decking project.

### **Deed Restriction**

Pursuant to Condition 7 of EPA's February 28, 2012 Approval for the Tobin Hall Deck remediation, a draft deed restriction will be submitted to EPA for review and approval prior to recordation. This restriction is currently being developed by UMass and will be submitted under a separate cover. The restriction will include a description of the extent and levels of PCBs remaining on the building following remediation, a description of the actions taken, a description of the use restrictions, and the long-term monitoring and maintenance requirements.

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: Andrew Soles, University of Massachusetts  
Terri Wolejko, University of Massachusetts  
Dennis Gagnon University of Massachusetts

Enclosures: Table 1- Summary of Characterization and Verification Sample Results  
Figure 1 – Tobin Hall Decking Layout and Characterization and Verification Sample Locations  
Attachment 1 – *PCB Risk-Based Decontamination and Disposal Approval under 40 CFR 761.61(c) and 761.79(h)*  
Attachment 2 – Analytical Laboratory Reports and Data Validation Summary  
Attachment 3 – Summary of Dust Monitoring Results  
Attachment 4 – Waste Documentation

Table 1  
Summary of Characterization and Verification Sample Results

Tobin Hall Decking Remediation Project Addendum  
University of Massachusetts Amherst  
Amherst, Massachusetts

| Sample ID   | Location Description   | Distance from Joint (inches) | Sample Date | Total PCBs (ppm) |
|---|--|------------------------------|-------------|------------------|
| <b>Characterization and Verification Bulk Samples</b> |  |                              |             |                  |
| THD-VBC-001   | Concrete decking on south side of removal area                   | 12                           | 9/20/2012   | ≤ 0.091          |
| THD-VBC-002   | Concrete decking on north side of removal area                   | 12                           | 9/20/2012   | ≤ 0.10           |
| THD-VBC-003   | Concrete building façade on south side of removal area, (6" ags) | 6                            | 9/20/2012   | ≤ 0.087          |
| THD-VBC-004   | Concrete building façade on south side of removal area, (6" bgs) | 6                            | 10/5/2012   | < 0.087          |
| <b>Verification Soil Samples</b>                      |  |                              |             |                  |
| THD-VBS-005   | 6" below concrete decking at 10-13" bgs on south end             | 10                           | 10/5/2012   | 0.18 J           |
| THD-VBS-006   | 6" below concrete decking at 10-13" bgs on north end             | 10                           | 10/5/2012   | < 0.11           |
| <b>Verification Wipe Samples</b>                      |  |                              |             |                  |
| THD-VWC-010   | Concrete building façade on north side                           | 3                            | 11/8/2012   | < 0.20           |

Notes:

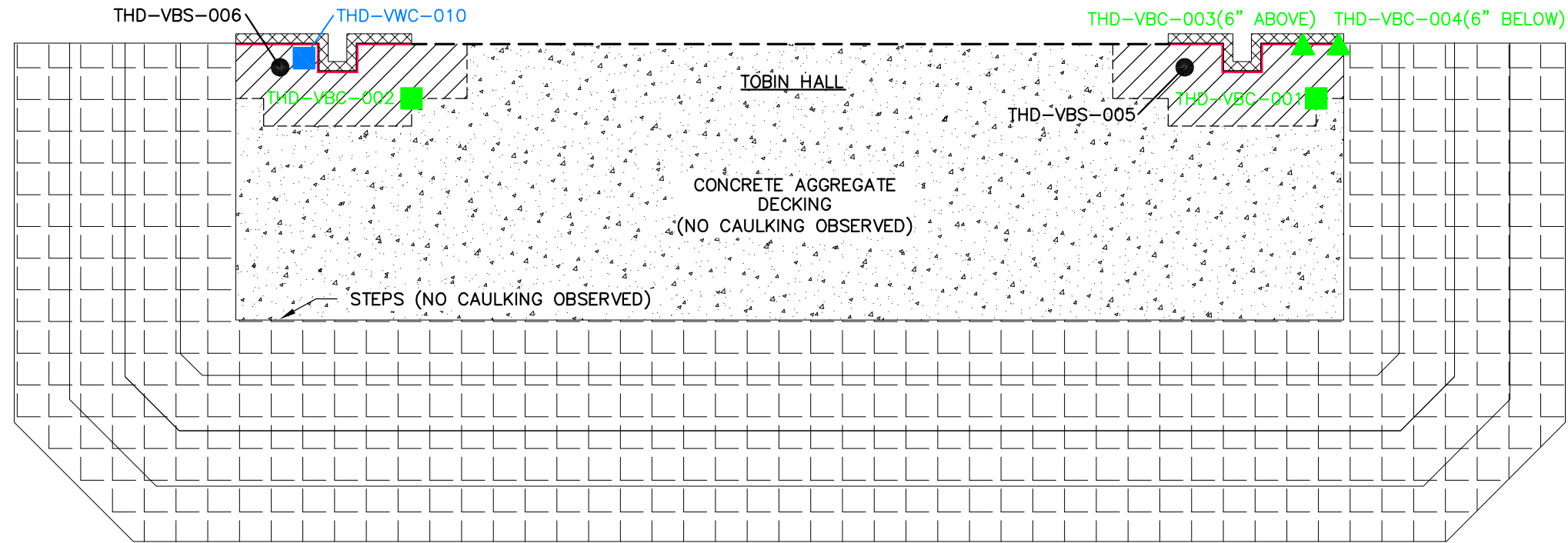
Concrete samples collected in accordance with USEPA Region 1 Standard Operating Procedure for Sampling Porous Surfaces for Polychlorinated Biphenyls (May 2011) from a depth of 0 to 0.5 inches.

Verification wipe samples collected in accordance with standard wipe test method of 40 CFR 761.123.










Samples were transported to Con Test Analytical Laboratory under standard chain of custody procedures.

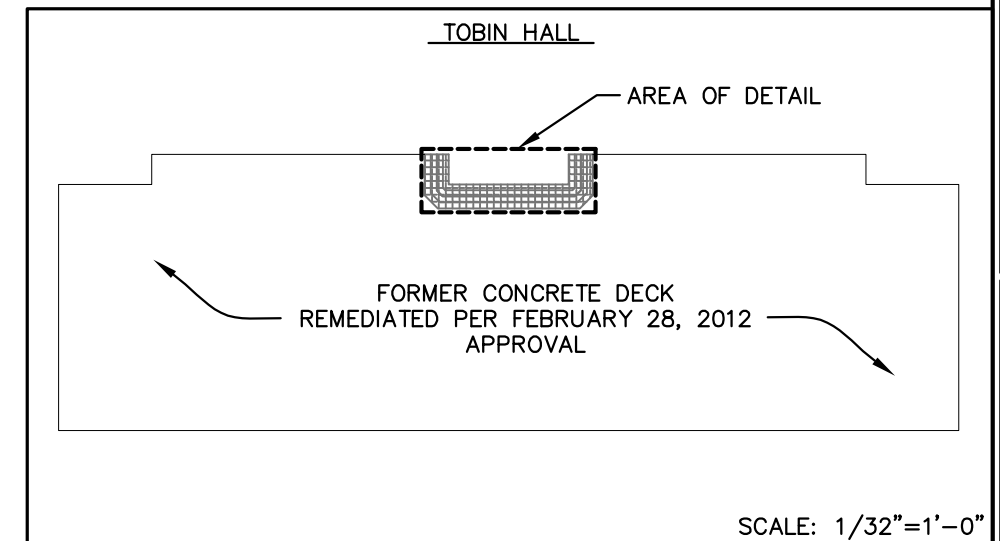
Samples were extracted via USEPA method 3540C (Soxhlet Extraction) and analyzed for PCBs via USEPA method 8082.

J = Analytical results qualified as estimated based on external data validation. Additional information is included in Attachment 1.



LEGEND

- |   |   |   |  |
|---|---|---|--|
|  | CAULKED CONCRETE WALL TO CONCRETE COLUMN JOINT  |  | THD-VBS-005 VERIFICATION SOIL SAMPLE LOCATION AND IDENTIFIER                                 |
|  | CONCRETE AGGREGATE DECKING (REMOVED FOR DISPOSAL AS GENERAL DEMOLITION DEBRIS)              |  | THD-VWC-010 VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER (LIQUID EPOXY COATING)          |
|  | AREA OF TOBIN HALL CONCRETE FACADE ENCAPSULATION (6" ABOVE AND 6" BELOW THE CAULKED JOINTS) |  | THD-VBC-003 CONCRETE FACADE CHARACTERIZATION AND VERIFICATION SAMPLE LOCATION AND IDENTIFIER |
|  | CONCRETE DECKING SEGREGATED FOR OFF-SITE DISPOSAL AS ≥ 50 ppm WASTE                         |  | THD-VBC-002 CONCRETE DECKING CHARACTERIZATION SAMPLE LOCATION AND IDENTIFIER                 |
|  | CUT LINE  |   |  |



BAR SCALE  
3/8" = 1'-0"  
CHECK GRAPHIC SCALE BEFORE USING





## **ATTACHMENT 1: EPA APPROVAL**





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

5 POST OFFICE SQUARE, SUITE 100  
BOSTON, MASSACHUSETTS 02109-3912

REC'D AT WIC  
March 1, 2012

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

**FEB 28 2012**

Donald A. Robinson, Director  
Environmental Health and Safety  
Draper Hall  
University of Massachusetts  
40 Campus Center Way  
Amherst, Massachusetts 01003-9244

Re: PCB Risk-Based Decontamination and Disposal Approval under  
40 CFR § 761.61(c) and § 761.79(h)  
Tobin Hall  
University of Massachusetts, Amherst, Massachusetts

Dear Mr. Robinson:

This is in response to the University of Massachusetts (UMASS) Notification<sup>1</sup> for approval of a proposed plan to address PCB contamination in a plaza area located on the west side of Tobin Hall. This area of the UMASS campus is part of the Commonwealth Honors College Residential Complex construction project. PCB-contaminated materials (e.g., caulk and concrete) that exceed the allowable PCB levels under 40 CFR § 761.20(a), § 761.61(a) and § 761.62 were identified in the area.

UMASS submitted a Notification under 40 CFR §§ 761.61(a) and (c) that included the following activities:

- Removal and disposal of caulk as a greater than or equal to ( $\geq$ ) 50 parts per million (ppm) PCB waste in a TSCA approved or RCRA hazardous waste landfill;
- Removal of PCB contaminated *porous surfaces* (i.e., concrete decking) within a 12-inch cut line of the caulk joint with disposal as a  $\geq$  50 ppm waste in a TSCA approved or RCRA hazardous waste landfill;

<sup>1</sup> The notification was prepared by Woodard & Curran on behalf of the UMASS to satisfy the requirements under 40 CFR §§ 761.61(a) and (c) and § 761.79(h). Information was submitted dated July 20, 2011 (PCB Remediation Approach Outline); August 5, 2011 (Status Update- Tobin Hall PCB Remediation Analytical results); and, February 21, 2012 (email PCB sampling results). These submittals shall be referred to as the "Notification".

- Removal of a minimum of six (6) inches of soil from within the 24 inch wide trenches below the concrete decking caulk joints with disposal as a  $\geq 50$  ppm PCB waste in a TSCA approved or RCRA hazardous waste landfill;
- Removal of PCB-contaminated *porous surfaces* (i.e., concrete retaining wall and planting beds) located within a 3-inch or 6-inch cut line with disposal as a  $\geq 50$  ppm waste in a TSCA approved or RCRA hazardous waste landfill; and,
- Encapsulation of PCB-contaminated *porous surfaces* (i.e., Tobin Hall concrete wall) located within six (6) inches above and below the caulk joint with two coats of an acrylic coating.

As indicated in the August 5, 2011 Status Update Technical Memorandum, the removal activities began on July 22, 2011 to support the overall Commonwealth Honors College Residential Complex construction project. The proposed removal and abatement work described in the Notification was completed in or about September 2011. On February 21, 2012, Woodard and Curran provided the analytical results of the PCB characterization and verification sampling of the concrete and the soils to support the work that was conducted.

Based on the EPA's review of the information provided in the Notification and the results of the characterization and verification sampling, EPA is approving UMASS's cleanup plan under § 761.61(c) and § 761.79(h). EPA finds that the encapsulation of PCB-contaminated *porous surfaces* should effectively prevent direct exposure of these PCB contaminated *porous surfaces* to building users provided the physical barriers are maintained.

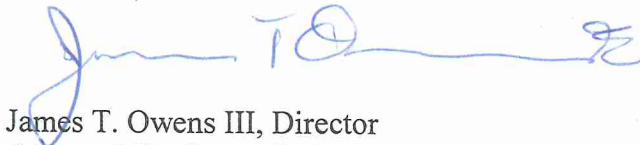
Under this Approval, EPA is reserving its rights to require additional investigation or mitigation measures should EPA determine that the encapsulation is not effective in eliminating exposure to PCBs. UMASS will be required to include these PCB-encapsulated surfaces in the deed restriction and in the long-term monitoring and maintenance implementation plan (MMIP) (See Attachment 1, Conditions 7 and 8).

Questions and correspondence regarding this Approval should be directed to:

Kimberly N. Tisa, PCB Coordinator (OSRR07-2)  
United States Environmental Protection Agency  
5 Post Office Square, Suite 100  
Boston, Massachusetts 02109-3912  
Telephone: (617) 918-1527  
Facsimile: (617) 918-0527

EPA shall not consider this project complete until it has received all submittals required under this Approval. Please be aware that upon EPA receipt and review of the submittals, EPA may request any additional information necessary to establish that the work has been completed in accordance with 40 CFR Part 761, the Notification, and this Approval.

Sincerely,



James T. Owens III, Director  
Office of Site Remediation & Restoration

cc J. Hamel, Woodard & Curran  
MassDEP – Western Region  
File

Attachment 1 – PCB Approval Conditions

**ATTACHMENT 1:**

**PCB DECONTAMINATION AND DISPOSAL APPROVAL CONDITIONS  
EXTERIOR WEST SIDE OF TOBIN HALL ("the Site")  
UNIVERSITY OF MASSACHUSETTS  
AMHERST, MASSACHUSETTS**

**GENERAL CONDITIONS**

1. This Approval is granted under the authority of Section 6(e) of the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2605(e), and the PCB regulations at 40 CFR Part 761, and applies solely to the *PCB bulk product waste* and the *PCB remediation waste* located at the Site and identified in the Notification.
2. In the event that the cleanup plan described in the Notification differs from the conditions specified in this Approval, the conditions of this Approval shall govern.
3. The terms and abbreviations used herein shall have the meanings as defined in 40 CFR § 761.3 unless otherwise defined within this Approval.
4. The University of Massachusetts (UMASS) is responsible for the actions of all officers, employees, agents, contractors, subcontractors, and others who are involved in activities conducted under this Approval. If at any time UMASS has or receives information indicating that UMASS or any other person has failed, or may have failed, to comply with any provision of this Approval, it must report the information to EPA in writing within 24 hours of having or receiving the information.
5. This Approval does not: 1) waive or compromise EPA's enforcement and regulatory authority; 2) release UMASS from compliance with any applicable requirements of federal, state or local law; or 3) release UMASS from liability for, or otherwise resolve any violations of federal, state or local law.

**NOTIFICATION AND CERTIFICATION CONDITIONS**

6. This Approval may be revoked if the EPA does not receive written notification from UMASS of its acceptance of the conditions of this Approval within 10 business days of receipt.

### **DEED RESTRICTION AND USE CONDITIONS**

7. Within forty-five (45) days of receipt of this Approval, UMASS shall submit for EPA review and approval, a draft deed restriction for the Site. The deed restriction shall include: a description of the extent and levels of contamination at the Site following abatement; a description of the actions taken at the Site; a description of the use restrictions for the Site; and the long-term monitoring and maintenance requirements on the Site. Within ten (10) business days of receipt of EPA's approval of the draft deed restriction, UMASS shall record the deed restriction and shall submit a copy of the recorded deed restriction to EPA. A copy of this Approval shall be attached to the deed restriction.

### **INSPECTION, MODIFICATION AND REVOCATION CONDITIONS**

8. Within fifteen (15) days of receipt of this Approval, UMASS shall submit for EPA's review and approval, a detailed monitoring and maintenance implementation plan (MMIP) for the surface coatings. UMASS shall incorporate any changes to the MMIP required by EPA.
  - a. The MMIP shall include: a description of the activities that will be conducted, including inspection criteria, frequency, and routine maintenance activities; sampling protocols, sampling frequency, and analytical criteria; and, reporting requirements, as applicable.
  - b. The MMIP shall include a communications component which details how the maintenance and monitoring results will be communicated to the Site users, including parents, students, other on-site workers, and interested stakeholders.
  - c. The MMIP also shall include a worker training component for maintenance workers or for any person that will be conducting work that could impact the coatings encapsulating the PCB-contaminated surfaces.
  - d. UMASS shall submit the results of these long-term monitoring and maintenance activities to EPA. Based on its review of the results, EPA may determine that modification to the MMIP is necessary in order to monitor and/or evaluate the long-term effectiveness of the coatings.
  - e. Activities required under the MMIP shall be conducted until such time that EPA determines, in writing, that such activities are no longer necessary.
9. UMASS shall allow any authorized representative of the Administrator of the EPA to inspect the Site and to inspect records and take samples as may be necessary to determine compliance with the PCB regulations and this Approval. Any refusal by UMASS to allow such an inspection (as authorized by Section 11 of TSCA) shall be grounds for revocation of this Approval.

10. Any modification(s) in the plan, specifications, or information submitted by UMASS, contained in the Notification, and forming the basis upon which this Approval has been issued, must receive prior written approval from the EPA. UMASS shall inform the EPA of any modification, in writing, at least ten (10) days prior to such change. No action may be taken to implement any such modification unless the EPA has approved of the modification, in writing. The EPA may request additional information in order to determine whether to approve the modification.
11. If such modification involves a change in the use of the Site which results in exposures not considered in the Notification, the EPA may revoke, suspend, and/or modify this Approval upon finding that this risk-based disposal action may pose an unreasonable risk of injury to health or the environment due to the change in use. EPA may take similar action if the EPA does not receive requested information needed from UMASS to make a determination regarding potential risk.
12. Any misrepresentation or omission of any material fact in the Notification or in any records or reports may result in the EPA's revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.

#### **RECORDKEEPING AND REPORTING CONDITIONS**

13. UMASS shall prepare and maintain all records and documents required by 40 CFR Part 761, including but not limited to the records required under Subparts J and K. A written record of the cleanup and disposal activities and the analytical sampling shall be established and maintained by UMASS in one centralized location, until such time as EPA approves in writing a request for an alternative disposition of such records. All records shall be made available for inspection to authorized representatives of EPA.
14. As required under Condition 8 of this Approval, UMASS shall submit the results of the long-term monitoring and maintenance activities to EPA as specified in the final MMIP to be approved by EPA.
15. UMASS shall submit a final report to the EPA within thirty (30) days of receipt of this Approval. At a minimum, this final report shall include: a short narrative of the project activities; characterization and confirmation sampling analytical results; copies of the accompanying analytical chains of custody; field and laboratory quality control/quality assurance checks; an estimate of the quantity of PCB waste disposed of and the size of the PCB cleanup area(s); copies of manifests and bills of lading; and copies of certificates of disposal or similar certifications issued by the disposer. The report shall include a certification signed by a UMASS official verifying that the authorized activities have been implemented in accordance with this Approval and the Notification.

16. Required submittals shall be mailed to:

Kimberly N. Tisa, PCB Coordinator  
United States Environmental Protection Agency  
5 Post Office Square, Suite 100 – (OSRR07-2)  
Boston, Massachusetts 02109-3912  
Telephone: (617) 918-1527  
Facsimile: (617) 918-0527

17. No record, report or communication required under this Approval shall qualify as a self-audit or voluntary disclosure under EPA audit, self-disclosure or penalty policies.

\*\*\*\*\*

**END OF ATTACHMENT 1**







## **ATTACHMENT 2: ANALYTICAL LABORATORY REPORTS AND DATA VALIDATION SUMMARY**

## UMASS TOBIN HALL - PROJECT SUMMARY

### ConTest Analytical Laboratory Job Numbers: 12I0642, 12J0268, & 12K0330

A modified Tier II validation was performed on the data. The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

Samples were received at 3.0, 3.9, and 7.0 degrees Celsius. Since the samples received at 7.0 degrees Celsius arrived at the laboratory direct from sampling, no qualifications will be applied.

#### PCBs:

All polychlorinated biphenyl compound (PCB) samples were extracted and analyzed within technical holding times. No qualifications will be applied.

All PCB surrogates met acceptance criteria. No qualifications will be applied.

The PCB method blanks were non-detect (ND) for all target analytes. No qualifications will be applied.

The PCB field blank sample THD-VBQ-008 (12J0268-05) was ND for all target analytes. No qualifications will be applied.

No PCB matrix spike/matrix spike duplicate (MS/MSD) was performed on a sample from these analytical packages. No qualifications will be applied.

The PCB laboratory control samples (LCS) and/or laboratory control sample duplicates (LCSD) met acceptance criteria. No qualifications will be applied.

PCB field duplicate samples THD-VBS-006 (12J0268-03)/THD-VBSD-007 (12J0268-04) met acceptance criteria. No qualifications will be applied.

The relative percent difference (RPD) between the column results for all detected PCBs met acceptance criteria ( $\leq 25\%$ ) with the following exception:

| LAB ID     | SAMPLE ID   | PCB  | RPD  | QUALIFIER |
|------------|-------------|------|------|-----------|
| 12J0268-02 | THD-VBS-005 | 1254 | 26.4 | J         |

Data Check, Inc.  
P.O. Box 29  
81 Meaderboro Road  
New Durham, NH 03855

Gloria J. Switalski:  
President



Date:

1/17/2013

September 24, 2012

George Franklin  
Woodard & Curran - Andover, MA  
35 New England Business Center  
Andover, MA 01810

Project Location: UMass - Tobin Hall  
Client Job Number:  
Project Number: 224867  
Laboratory Work Order Number: 12I0642

Enclosed are results of analyses for samples received by the laboratory on September 20, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Meghan E. Kelley  
Project Manager

Woodard & Curran - Andover, MA  
35 New England Business Center  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 9/24/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224867

#### ANALYTICAL SUMMARY

WORK ORDER NUMBER: 1210642

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

PROJECT LOCATION: UMass - Tobin Hall


| FIELD SAMPLE # | LAB ID:    | MATRIX        | SAMPLE DESCRIPTION | TEST         | SUB LAB |
|----------------|------------|---------------|--------------------|--------------|---------|
| THD-VBC-001    | 1210642-01 | Product/Solid |                    | SW-846 8082A |         |
| THD-VBC-002    | 1210642-02 | Product/Solid |                    | SW-846 8082A |         |
| THD-VBC-003    | 1210642-03 | Product/Solid |                    | 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.

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 "M. Erickson", is displayed on a light gray rectangular background.

Michael A. Erickson  
Laboratory Director

Project Location: UMass - Tobin Hall

Sample Description:

Work Order: 1210642

Date Received: 9/20/2012

Field Sample #: THD-VBC-001

Sampled: 9/20/2012 13:45

Sample ID: 1210642-01

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

| Analyte                  | Results    | RL              | Units | Dilution | Flag | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-------|----------|------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1]         | ND         | 0.091           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:00       | JMB     |
| Aroclor-1221 [1]         | ND         | 0.091           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:00       | JMB     |
| Aroclor-1232 [1]         | ND         | 0.091           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:00       | JMB     |
| Aroclor-1242 [1]         | ND         | 0.091           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:00       | JMB     |
| Aroclor-1248 [1]         | ND         | 0.091           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:00       | JMB     |
| Aroclor-1254 [1]         | ND         | 0.091           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:00       | JMB     |
| Aroclor-1260 [1]         | ND         | 0.091           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:00       | JMB     |
| Aroclor-1262 [1]         | ND         | 0.091           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:00       | JMB     |
| Aroclor-1268 [1]         | ND         | 0.091           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:00       | JMB     |
| Surrogates               | % Recovery | Recovery Limits | Flag  |          |      |              |               |                    |         |
| Decachlorobiphenyl [1]   | 81.0       | 30-150          |       |          |      |              |               |                    |         |
| Decachlorobiphenyl [2]   | 70.0       | 30-150          |       |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [1] | 84.4       | 30-150          |       |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [2] | 74.3       | 30-150          |       |          |      |              |               |                    |         |



Project Location: UMass - Tobin Hall

Sample Description:

Work Order: 1210642

Date Received: 9/20/2012

Field Sample #: THD-VBC-002

Sampled: 9/20/2012 13:50

Sample ID: 1210642-02

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

| Analyte                  | Results | RL         | Units           | Dilution | Flag | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|---------|------------|-----------------|----------|------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1]         | ND      | 0.10       | mg/Kg           | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:13       | JMB     |
| Aroclor-1221 [1]         | ND      | 0.10       | mg/Kg           | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:13       | JMB     |
| Aroclor-1232 [1]         | ND      | 0.10       | mg/Kg           | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:13       | JMB     |
| Aroclor-1242 [1]         | ND      | 0.10       | mg/Kg           | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:13       | JMB     |
| Aroclor-1248 [1]         | ND      | 0.10       | mg/Kg           | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:13       | JMB     |
| Aroclor-1254 [1]         | ND      | 0.10       | mg/Kg           | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:13       | JMB     |
| Aroclor-1260 [1]         | ND      | 0.10       | mg/Kg           | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:13       | JMB     |
| Aroclor-1262 [1]         | ND      | 0.10       | mg/Kg           | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:13       | JMB     |
| Aroclor-1268 [1]         | ND      | 0.10       | mg/Kg           | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:13       | JMB     |
| Surrogates               |         | % Recovery | Recovery Limits |          | Flag |              |               |                    |         |
| Decachlorobiphenyl [1]   |         | 107        | 30-150          |          |      |              |               | 9/22/12 4:13       |         |
| Decachlorobiphenyl [2]   |         | 92.8       | 30-150          |          |      |              |               | 9/22/12 4:13       |         |
| Tetrachloro-m-xylene [1] |         | 115        | 30-150          |          |      |              |               | 9/22/12 4:13       |         |
| Tetrachloro-m-xylene [2] |         | 98.3       | 30-150          |          |      |              |               | 9/22/12 4:13       |         |

Project Location: UMass - Tobin Hall

Sample Description:

Work Order: 1210642

Date Received: 9/20/2012

Field Sample #: THD-VBC-003

Sampled: 9/20/2012 13:55

Sample ID: 1210642-03

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

| Analyte                  | Results    | RL              | Units | Dilution | Flag | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-------|----------|------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:26       | JMB     |
| Aroclor-1221 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:26       | JMB     |
| Aroclor-1232 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:26       | JMB     |
| Aroclor-1242 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:26       | JMB     |
| Aroclor-1248 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:26       | JMB     |
| Aroclor-1254 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:26       | JMB     |
| Aroclor-1260 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:26       | JMB     |
| Aroclor-1262 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:26       | JMB     |
| Aroclor-1268 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 9/20/12       | 9/22/12 4:26       | JMB     |
| Surrogates               | % Recovery | Recovery Limits | Flag  |          |      |              |               |                    |         |
| Decachlorobiphenyl [1]   | 102        | 30-150          |       |          |      |              |               | 9/22/12 4:26       |         |
| Decachlorobiphenyl [2]   | 88.1       | 30-150          |       |          |      |              |               | 9/22/12 4:26       |         |
| Tetrachloro-m-xylene [1] | 110        | 30-150          |       |          |      |              |               | 9/22/12 4:26       |         |
| Tetrachloro-m-xylene [2] | 96.0       | 30-150          |       |          |      |              |               | 9/22/12 4:26       |         |

**Sample Extraction Data**

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

| Lab Number [Field ID]    | Batch   | Initial [g] | Final [mL] | Date     |
|--------------------------|---------|-------------|------------|----------|
| 12I0642-01 [THD-VBC-001] | B059240 | 2.20        | 10.0       | 09/20/12 |
| 12I0642-02 [THD-VBC-002] | B059240 | 2.00        | 10.0       | 09/20/12 |
| 12I0642-03 [THD-VBC-003] | B059240 | 2.30        | 10.0       | 09/20/12 |

**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 B059240 - SW-846 3540C**
**Blank (B059240-BLK1)**

Prepared: 09/20/12 Analyzed: 09/21/12

|                                      |       |      |       |      |  |      |        |  |  |  |
|--------------------------------------|-------|------|-------|------|--|------|--------|--|--|--|
| 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        | 0.943 |      | mg/Kg | 1.00 |  | 94.3 | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 0.812 |      | mg/Kg | 1.00 |  | 81.2 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 1.06  |      | mg/Kg | 1.00 |  | 106  | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 0.902 |      | mg/Kg | 1.00 |  | 90.2 | 30-150 |  |  |  |

**LCS (B059240-BS1)**

Prepared: 09/20/12 Analyzed: 09/21/12

|                                      |       |      |       |       |  |      |        |  |  |  |
|--------------------------------------|-------|------|-------|-------|--|------|--------|--|--|--|
| Aroclor-1016                         | 0.28  | 0.10 | mg/Kg | 0.250 |  | 113  | 40-140 |  |  |  |
| Aroclor-1016 [2C]                    | 0.25  | 0.10 | mg/Kg | 0.250 |  | 102  | 40-140 |  |  |  |
| Aroclor-1260                         | 0.26  | 0.10 | mg/Kg | 0.250 |  | 102  | 40-140 |  |  |  |
| Aroclor-1260 [2C]                    | 0.24  | 0.10 | mg/Kg | 0.250 |  | 96.2 | 40-140 |  |  |  |
| Surrogate: Decachlorobiphenyl        | 0.997 |      | mg/Kg | 1.00  |  | 99.7 | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 0.860 |      | mg/Kg | 1.00  |  | 86.0 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 1.13  |      | mg/Kg | 1.00  |  | 113  | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 0.961 |      | mg/Kg | 1.00  |  | 96.1 | 30-150 |  |  |  |

**LCS Dup (B059240-BSD1)**

Prepared: 09/20/12 Analyzed: 09/22/12

|                                      |       |      |       |       |  |      |        |       |    |  |
|--------------------------------------|-------|------|-------|-------|--|------|--------|-------|----|--|
| Aroclor-1016                         | 0.29  | 0.10 | mg/Kg | 0.250 |  | 114  | 40-140 | 0.792 | 30 |  |
| Aroclor-1016 [2C]                    | 0.26  | 0.10 | mg/Kg | 0.250 |  | 105  | 40-140 | 3.14  | 30 |  |
| Aroclor-1260                         | 0.27  | 0.10 | mg/Kg | 0.250 |  | 107  | 40-140 | 4.77  | 30 |  |
| Aroclor-1260 [2C]                    | 0.25  | 0.10 | mg/Kg | 0.250 |  | 100  | 40-140 | 4.35  | 30 |  |
| Surrogate: Decachlorobiphenyl        | 1.07  |      | mg/Kg | 1.00  |  | 107  | 30-150 |       |    |  |
| Surrogate: Decachlorobiphenyl [2C]   | 0.921 |      | mg/Kg | 1.00  |  | 92.1 | 30-150 |       |    |  |
| Surrogate: Tetrachloro-m-xylene      | 1.14  |      | mg/Kg | 1.00  |  | 114  | 30-150 |       |    |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 0.953 |      | mg/Kg | 1.00  |  | 95.3 | 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.

# CERTIFICATIONS

## Certified Analyses included in this Report

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

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   | 04/1/2013  |
| NH   | New Hampshire Environmental Lab              | 2516 NELAP    | 02/5/2013  |
| RI   | Rhode Island Department of Health            | LAO00112      | 12/30/2012 |
| NC   | North Carolina Div. of Water Quality         | 652           | 12/31/2012 |
| 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         | 02/23/2013 |
| ME   | State of Maine                               | 2011028       | 06/9/2013  |
| VA   | Commonwealth of Virginia                     | 1381          | 12/14/2012 |

CHAIN OF CUSTODY RECORD

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 1

Company Name: Woburn & Co. Inc.

Telephone: 978 557 8150

Address: 35 N.E. Business Ctr Suite 180

Project #

Attention: George Francis

Client PO#

Project Location: UMass - Tabor Hall

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

Sampled By: George Francis

Fax #

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

Email: gfrancis@umass.edu

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

Format: ☒ PDF ☐ EXCEL ☐ OGIS

Con-Test Lab ID

Client Sample ID / Description

Beginning Date/Time

Ending Date/Time

Composite

Grab

\*Matrix Code

Lab Code

Concentration

Matrix Code

Lab Code

Concentration

Matrix Code

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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: Wooden + Curran RECEIVED BY: JSM DATE: 9.20.12

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 30

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)       | <u>3</u>        | 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 \_\_\_\_\_ Unpreserved \_\_\_\_\_

Time and Date Frozen:

**12I0585-01** 091912-13S

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Surrogates           |         |          |      |
| Tetrachloro-m-xylene | 0.891   | 0.774895 | 13.9 |
| Decachlorobiphenyl   | 0.835   | 0.758665 | 9.58 |

**12I0642-01** THD-VBC-001

| Analyte              | Results |           | %RPD |
|----------------------|---------|-----------|------|
| Surrogates           |         |           |      |
| Decachlorobiphenyl   | 0.736   | 0.6365182 | 14.5 |
| Tetrachloro-m-xylene | 0.768   | 0.6752136 | 12.9 |

**12I0642-02** THD-VBC-002

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Surrogates           |         |          |      |
| Decachlorobiphenyl   | 1.07    | 0.927555 | 14.3 |
| Tetrachloro-m-xylene | 1.15    | 0.983365 | 15.6 |

**12I0642-03** THD-VBC-003

| Analyte              | Results |           | %RPD |
|----------------------|---------|-----------|------|
| Surrogates           |         |           |      |
| Decachlorobiphenyl   | 0.887   | 0.7663435 | 14.6 |
| Tetrachloro-m-xylene | 0.953   | 0.8348696 | 13.2 |

**B059240-BLK1** Blank

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Surrogates           |         |          |      |
| Decachlorobiphenyl   | 0.943   | 0.812165 | 14.9 |
| Tetrachloro-m-xylene | 1.06    | 0.902065 | 16.1 |

**B059240-BS1** LCS

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Aroclor-1016         | 0.28    | 0.254845 | 9.41 |
| Aroclor-1260         | 0.26    | 0.240515 | 7.79 |
| Surrogates           |         |          |      |
| Tetrachloro-m-xylene | 1.13    | 0.961115 | 16.2 |
| Decachlorobiphenyl   | 0.997   | 0.85987  | 14.8 |

**B059240-BSD1** LCS Dup

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Aroclor-1016         | 0.29    | 0.26297  | 9.78 |
| Aroclor-1260         | 0.27    | 0.2512   | 7.21 |
| Surrogates           |         |          |      |
| Decachlorobiphenyl   | 1.07    | 0.92054  | 15   |
| Tetrachloro-m-xylene | 1.14    | 0.953325 | 17.8 |

**B059240-MS1** Matrix Spike

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Aroclor-1016         | 0.25    | 0.241715 | 3.37 |
| Aroclor-1260         | 0.21    | 0.20395  | 2.92 |
| Surrogates           |         |          |      |
| Decachlorobiphenyl   | 0.905   | 0.831    | 8.53 |
| Tetrachloro-m-xylene | 1.08    | 0.94062  | 13.8 |

**B059240-MSD1** Matrix Spike Dup

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Aroclor-1016         | 0.24    | 0.223485 | 7.13 |
| Aroclor-1260         | 0.20    | 0.19265  | 3.74 |
| Surrogates           |         |          |      |
| Tetrachloro-m-xylene | 0.974   | 0.849425 | 13.7 |
| Decachlorobiphenyl   | 0.839   | 0.77797  | 7.55 |

October 10, 2012

George Franklin  
Woodard & Curran - Andover, MA  
35 New England Business Center  
Andover, MA 01810

Project Location: UMA Tobin Hall Concrete Deck  
Client Job Number:  
Project Number: 224733.01  
Laboratory Work Order Number: 12J0268

Enclosed are results of analyses for samples received by the laboratory on October 5, 2012. 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  
35 New England Business Center  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 10/10/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733.01

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 12J0268

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

PROJECT LOCATION: UMA Tobin Hall Concrete Deck

| FIELD SAMPLE # | LAB ID:    | MATRIX                | SAMPLE DESCRIPTION | TEST         | SUB LAB |
|----------------|------------|-----------------------|--------------------|--------------|---------|
| THD-VBC-004    | 12J0268-01 | Concrete              |                    | SW-846 8082A |         |
| THD-VBS-005    | 12J0268-02 | Soil                  |                    | SM 2540G     |         |
|                |            |                       |                    | SW-846 8082A |         |
| THD-VBS-006    | 12J0268-03 | Soil                  |                    | SM 2540G     |         |
|                |            |                       |                    | SW-846 8082A |         |
| THD-VBSD-007   | 12J0268-04 | Soil                  |                    | SM 2540G     |         |
|                |            |                       |                    | SW-846 8082A |         |
| THD-VBQ-008    | 12J0268-05 | Equipment Blank Water |                    | 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.

REVISED REPORT - 10/10/2012 - Sample 12J0268-04 ID revised.

#### Login

#### Qualifications:

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Samples were received directly from sampling in the field on ice.

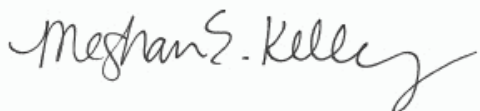
#### Analyte & Samples(s) Qualified:

12J0268-01[THD-VBC-004], 12J0268-02[THD-VBS-005], 12J0268-03[THD-VBS-006], 12J0268-04[THD-VBSD-007], 12J0268-05[THD-VBQ-008]

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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.



Meghan E. Kelley  
Project Chemist

Project Location: UMA Tobin Hall Concrete Deck

Sample Description:

Work Order: 12J0268

Date Received: 10/5/2012

Field Sample #: THD-VBC-004

Sampled: 10/5/2012 13:40

Sample ID: 12J0268-01

Sample Matrix: Concrete

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

| Analyte                  | Results    | RL              | Units | Dilution | Flag | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-------|----------|------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:26      | JMB     |
| Aroclor-1221 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:26      | JMB     |
| Aroclor-1232 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:26      | JMB     |
| Aroclor-1242 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:26      | JMB     |
| Aroclor-1248 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:26      | JMB     |
| Aroclor-1254 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:26      | JMB     |
| Aroclor-1260 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:26      | JMB     |
| Aroclor-1262 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:26      | JMB     |
| Aroclor-1268 [1]         | ND         | 0.087           | mg/Kg | 1        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:26      | JMB     |
| Surrogates               | % Recovery | Recovery Limits | Flag  |          |      |              |               |                    |         |
| Decachlorobiphenyl [1]   | 90.3       | 30-150          |       |          |      |              |               |                    |         |
| Decachlorobiphenyl [2]   | 102        | 30-150          |       |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [1] | 86.7       | 30-150          |       |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [2] | 94.8       | 30-150          |       |          |      |              |               |                    |         |

Project Location: UMA Tobin Hall Concrete Deck

Sample Description:

Work Order: 12J0268

Date Received: 10/5/2012

Field Sample #: THD-VBS-005

Sampled: 10/5/2012 13:50

Sample ID: 12J0268-02

Sample Matrix: Soil

### Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte                  | Results    | RL              | Units     | Dilution | Flag | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/9/12 10:05      | PJG     |
| Aroclor-1221 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/9/12 10:05      | PJG     |
| Aroclor-1232 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/9/12 10:05      | PJG     |
| Aroclor-1242 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/9/12 10:05      | PJG     |
| Aroclor-1248 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/9/12 10:05      | PJG     |
| Aroclor-1254 [2]         | 0.18       | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/9/12 10:05      | PJG     |
| Aroclor-1260 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/9/12 10:05      | PJG     |
| Aroclor-1262 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/9/12 10:05      | PJG     |
| Aroclor-1268 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/9/12 10:05      | PJG     |
| Surrogates               | % Recovery | Recovery Limits | Flag      |          |      |              |               |                    |         |
| Decachlorobiphenyl [1]   | 99.1       | 30-150          |           |          |      |              |               |                    |         |
| Decachlorobiphenyl [2]   | 106        | 30-150          |           |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [1] | 101        | 30-150          |           |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [2] | 97.2       | 30-150          |           |          |      |              |               |                    |         |



Project Location: UMA Tobin Hall Concrete Deck

Sample Description:

Work Order: 12J0268

Date Received: 10/5/2012

Field Sample #: THD-VBS-005

Sampled: 10/5/2012 13:50

Sample ID: 12J0268-02

Sample Matrix: Soil

## Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

| Analyte  | Results | RL | Units | Dilution | Flag | Method   | Date<br>Prepared | Date/Time<br>Analyzed | Analyst |
|----------|---------|----|-------|----------|------|----------|------------------|-----------------------|---------|
| % Solids | 94.3    |    | % Wt  | 1        |      | SM 2540G | 10/8/12          | 10/9/12 10:49         | RH      |

Project Location: UMA Tobin Hall Concrete Deck

Sample Description:

Work Order: 12J0268

Date Received: 10/5/2012

Field Sample #: THD-VBS-006

Sampled: 10/5/2012 13:55

Sample ID: 12J0268-03

Sample Matrix: Soil

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

| Analyte                  | Results | RL         | Units           | Dilution | Flag | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|---------|------------|-----------------|----------|------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1]         | ND      | 0.11       | mg/Kg dry       | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:18      | JMB     |
| Aroclor-1221 [1]         | ND      | 0.11       | mg/Kg dry       | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:18      | JMB     |
| Aroclor-1232 [1]         | ND      | 0.11       | mg/Kg dry       | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:18      | JMB     |
| Aroclor-1242 [1]         | ND      | 0.11       | mg/Kg dry       | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:18      | JMB     |
| Aroclor-1248 [1]         | ND      | 0.11       | mg/Kg dry       | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:18      | JMB     |
| Aroclor-1254 [1]         | ND      | 0.11       | mg/Kg dry       | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:18      | JMB     |
| Aroclor-1260 [1]         | ND      | 0.11       | mg/Kg dry       | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:18      | JMB     |
| Aroclor-1262 [1]         | ND      | 0.11       | mg/Kg dry       | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:18      | JMB     |
| Aroclor-1268 [1]         | ND      | 0.11       | mg/Kg dry       | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:18      | JMB     |
| Surrogates               |         | % Recovery | Recovery Limits |          | Flag |              |               |                    |         |
| Decachlorobiphenyl [1]   |         | 91.8       | 30-150          |          |      |              |               | 10/8/12 22:18      |         |
| Decachlorobiphenyl [2]   |         | 96.2       | 30-150          |          |      |              |               | 10/8/12 22:18      |         |
| Tetrachloro-m-xylene [1] |         | 72.5       | 30-150          |          |      |              |               | 10/8/12 22:18      |         |
| Tetrachloro-m-xylene [2] |         | 84.8       | 30-150          |          |      |              |               | 10/8/12 22:18      |         |

Project Location: UMA Tobin Hall Concrete Deck

Sample Description:

Work Order: 12J0268

Date Received: 10/5/2012

Field Sample #: THD-VBS-006

Sampled: 10/5/2012 13:55

Sample ID: 12J0268-03

Sample Matrix: Soil

## Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

| Analyte  | Results | RL | Units | Dilution | Flag | Method   | Date Prepared | Date/Time Analyzed | Analyst |
|----------|---------|----|-------|----------|------|----------|---------------|--------------------|---------|
| % Solids | 93.4    |    | % Wt  | 1        |      | SM 2540G | 10/8/12       | 10/9/12 10:49      | RH      |

Project Location: UMA Tobin Hall Concrete Deck

Sample Description:

Work Order: 12J0268

Date Received: 10/5/2012

Field Sample #: THD-VBSD-007

Sampled: 10/5/2012 13:55

Sample ID: 12J0268-04

Sample Matrix: Soil

### Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte                  | Results    | RL              | Units     | Dilution | Flag | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:30      | JMB     |
| Aroclor-1221 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:30      | JMB     |
| Aroclor-1232 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:30      | JMB     |
| Aroclor-1242 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:30      | JMB     |
| Aroclor-1248 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:30      | JMB     |
| Aroclor-1254 [2]         | 0.12       | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:30      | JMB     |
| Aroclor-1260 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:30      | JMB     |
| Aroclor-1262 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:30      | JMB     |
| Aroclor-1268 [1]         | ND         | 0.10            | mg/Kg dry | 5        |      | SW-846 8082A | 10/5/12       | 10/8/12 22:30      | JMB     |
| Surrogates               | % Recovery | Recovery Limits | Flag      |          |      |              |               |                    |         |
| Decachlorobiphenyl [1]   | 90.7       | 30-150          |           |          |      |              |               |                    |         |
| Decachlorobiphenyl [2]   | 93.9       | 30-150          |           |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [1] | 72.4       | 30-150          |           |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [2] | 84.6       | 30-150          |           |          |      |              |               |                    |         |

Project Location: UMA Tobin Hall Concrete Deck

Sample Description:

Work Order: 12J0268

Date Received: 10/5/2012

Field Sample #: THD-VBSD-007

Sampled: 10/5/2012 13:55

Sample ID: 12J0268-04

Sample Matrix: Soil

## Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

| Analyte  | Results | RL | Units | Dilution | Flag | Method   | Date<br>Prepared | Date/Time<br>Analyzed | Analyst |
|----------|---------|----|-------|----------|------|----------|------------------|-----------------------|---------|
| % Solids | 93.7    |    | % Wt  | 1        |      | SM 2540G | 10/8/12          | 10/9/12 10:49         | RH      |

Project Location: UMA Tobin Hall Concrete Deck

Sample Description:

Work Order: 12J0268

Date Received: 10/5/2012

Field Sample #: THD-VBQ-008

Sampled: 10/5/2012 17:30

Sample ID: 12J0268-05

Sample Matrix: Equipment Blank Water

### Polychlorinated Biphenyls By GC/ECD

| Analyte                  | Results    | RL              | Units | Dilution | Flag | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-------|----------|------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1]         | ND         | 0.20            | µg/L  | 1        |      | SW-846 8082A | 10/8/12       | 10/9/12 15:40      | MJC     |
| Aroclor-1221 [1]         | ND         | 0.20            | µg/L  | 1        |      | SW-846 8082A | 10/8/12       | 10/9/12 15:40      | MJC     |
| Aroclor-1232 [1]         | ND         | 0.20            | µg/L  | 1        |      | SW-846 8082A | 10/8/12       | 10/9/12 15:40      | MJC     |
| Aroclor-1242 [1]         | ND         | 0.20            | µg/L  | 1        |      | SW-846 8082A | 10/8/12       | 10/9/12 15:40      | MJC     |
| Aroclor-1248 [1]         | ND         | 0.20            | µg/L  | 1        |      | SW-846 8082A | 10/8/12       | 10/9/12 15:40      | MJC     |
| Aroclor-1254 [1]         | ND         | 0.20            | µg/L  | 1        |      | SW-846 8082A | 10/8/12       | 10/9/12 15:40      | MJC     |
| Aroclor-1260 [1]         | ND         | 0.20            | µg/L  | 1        |      | SW-846 8082A | 10/8/12       | 10/9/12 15:40      | MJC     |
| Aroclor-1262 [1]         | ND         | 0.20            | µg/L  | 1        |      | SW-846 8082A | 10/8/12       | 10/9/12 15:40      | MJC     |
| Aroclor-1268 [1]         | ND         | 0.20            | µg/L  | 1        |      | SW-846 8082A | 10/8/12       | 10/9/12 15:40      | MJC     |
| Surrogates               | % Recovery | Recovery Limits | Flag  |          |      |              |               |                    |         |
| Decachlorobiphenyl [1]   | 60.3       | 30-150          |       |          |      |              |               |                    |         |
| Decachlorobiphenyl [2]   | 61.7       | 30-150          |       |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [1] | 63.7       | 30-150          |       |          |      |              |               |                    |         |
| Tetrachloro-m-xylene [2] | 72.4       | 30-150          |       |          |      |              |               |                    |         |

**Sample Extraction Data****Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID]     | Batch   | Date     |
|---------------------------|---------|----------|
| 12J0268-02 [THD-VBS-005]  | B060349 | 10/08/12 |
| 12J0268-03 [THD-VBS-006]  | B060349 | 10/08/12 |
| 12J0268-04 [THD-VBSD-007] | B060349 | 10/08/12 |

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

| Lab Number [Field ID]    | Batch   | Initial [g] | Final [mL] | Date     |
|--------------------------|---------|-------------|------------|----------|
| 12J0268-01 [THD-VBC-004] | B060265 | 2.30        | 10.0       | 10/05/12 |

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

| Lab Number [Field ID]     | Batch   | Initial [g] | Final [mL] | Date     |
|---------------------------|---------|-------------|------------|----------|
| 12J0268-02 [THD-VBS-005]  | B060257 | 10.1        | 10.0       | 10/05/12 |
| 12J0268-03 [THD-VBS-006]  | B060257 | 10.1        | 10.0       | 10/05/12 |
| 12J0268-04 [THD-VBSD-007] | B060257 | 10.2        | 10.0       | 10/05/12 |

**Prep Method: SW-846 3510C-SW-846 8082A**

| Lab Number [Field ID]    | Batch   | Initial [mL] | Final [mL] | Date     |
|--------------------------|---------|--------------|------------|----------|
| 12J0268-05 [THD-VBQ-008] | B060292 | 1000         | 10.0       | 10/08/12 |

**QUALITY CONTROL**
**Polychlorinated Biphenyls By GC/ECD - Quality Control**

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

**Batch B060292 - SW-846 3510C**
**Blank (B060292-BLK1)**

Prepared: 10/08/12 Analyzed: 10/09/12

|                                      |       |      |      |       |  |      |        |  |  |  |
|--------------------------------------|-------|------|------|-------|--|------|--------|--|--|--|
| Aroclor-1016                         | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1016 [2C]                    | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1221                         | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1221 [2C]                    | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1232                         | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1232 [2C]                    | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1242                         | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1242 [2C]                    | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1248                         | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1248 [2C]                    | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1254                         | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1254 [2C]                    | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1260                         | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1260 [2C]                    | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1262                         | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1262 [2C]                    | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1268                         | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Aroclor-1268 [2C]                    | ND    | 0.20 | µg/L |       |  |      |        |  |  |  |
| Surrogate: Decachlorobiphenyl        | 0.281 |      | µg/L | 0.400 |  | 70.3 | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 0.291 |      | µg/L | 0.400 |  | 72.8 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 0.229 |      | µg/L | 0.400 |  | 57.3 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 0.264 |      | µg/L | 0.400 |  | 66.1 | 30-150 |  |  |  |

**LCS (B060292-BS1)**

Prepared: 10/08/12 Analyzed: 10/09/12

|                                      |      |      |      |       |  |      |        |  |  |  |
|--------------------------------------|------|------|------|-------|--|------|--------|--|--|--|
| Aroclor-1016                         | 0.44 | 0.20 | µg/L | 0.500 |  | 88.1 | 40-140 |  |  |  |
| Aroclor-1016 [2C]                    | 0.51 | 0.20 | µg/L | 0.500 |  | 102  | 40-140 |  |  |  |
| Aroclor-1260                         | 0.44 | 0.20 | µg/L | 0.500 |  | 88.7 | 40-140 |  |  |  |
| Aroclor-1260 [2C]                    | 0.44 | 0.20 | µg/L | 0.500 |  | 87.6 | 40-140 |  |  |  |
| Surrogate: Decachlorobiphenyl        | 1.77 |      | µg/L | 2.00  |  | 88.3 | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 1.82 |      | µg/L | 2.00  |  | 90.9 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 1.43 |      | µg/L | 2.00  |  | 71.3 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 1.61 |      | µg/L | 2.00  |  | 80.7 | 30-150 |  |  |  |

**LCS Dup (B060292-BSD1)**

Prepared: 10/08/12 Analyzed: 10/09/12

|                                      |      |      |      |       |  |      |        |      |    |  |
|--------------------------------------|------|------|------|-------|--|------|--------|------|----|--|
| Aroclor-1016                         | 0.40 | 0.20 | µg/L | 0.500 |  | 79.4 | 40-140 | 10.4 | 20 |  |
| Aroclor-1016 [2C]                    | 0.44 | 0.20 | µg/L | 0.500 |  | 88.6 | 40-140 | 13.9 | 20 |  |
| Aroclor-1260                         | 0.38 | 0.20 | µg/L | 0.500 |  | 76.8 | 40-140 | 14.3 | 20 |  |
| Aroclor-1260 [2C]                    | 0.38 | 0.20 | µg/L | 0.500 |  | 76.2 | 40-140 | 13.9 | 20 |  |
| Surrogate: Decachlorobiphenyl        | 1.43 |      | µg/L | 2.00  |  | 71.3 | 30-150 |      |    |  |
| Surrogate: Decachlorobiphenyl [2C]   | 1.48 |      | µg/L | 2.00  |  | 73.8 | 30-150 |      |    |  |
| Surrogate: Tetrachloro-m-xylene      | 1.22 |      | µg/L | 2.00  |  | 61.0 | 30-150 |      |    |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 1.38 |      | µg/L | 2.00  |  | 69.0 | 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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch B060257 - SW-846 3540C**
**Blank (B060257-BLK1)**

Prepared: 10/05/12 Analyzed: 10/08/12

|                                      |       |       |           |       |  |      |        |  |  |  |
|--------------------------------------|-------|-------|-----------|-------|--|------|--------|--|--|--|
| Aroclor-1016                         | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1016 [2C]                    | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1221                         | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1221 [2C]                    | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1232                         | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1232 [2C]                    | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1242                         | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1242 [2C]                    | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1248                         | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1248 [2C]                    | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1254                         | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1254 [2C]                    | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1260                         | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1260 [2C]                    | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1262                         | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1262 [2C]                    | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1268                         | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Aroclor-1268 [2C]                    | ND    | 0.020 | mg/Kg wet |       |  |      |        |  |  |  |
| Surrogate: Decachlorobiphenyl        | 0.194 |       | mg/Kg wet | 0.200 |  | 97.0 | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 0.199 |       | mg/Kg wet | 0.200 |  | 99.4 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 0.158 |       | mg/Kg wet | 0.200 |  | 78.9 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 0.177 |       | mg/Kg wet | 0.200 |  | 88.6 | 30-150 |  |  |  |

**LCS (B060257-BS1)**

Prepared: 10/05/12 Analyzed: 10/08/12

|                                      |       |      |           |       |  |      |        |  |  |  |
|--------------------------------------|-------|------|-----------|-------|--|------|--------|--|--|--|
| Aroclor-1016                         | 0.19  | 0.10 | mg/Kg wet | 0.200 |  | 93.0 | 40-140 |  |  |  |
| Aroclor-1016 [2C]                    | 0.22  | 0.10 | mg/Kg wet | 0.200 |  | 109  | 40-140 |  |  |  |
| Aroclor-1260                         | 0.19  | 0.10 | mg/Kg wet | 0.200 |  | 94.1 | 40-140 |  |  |  |
| Aroclor-1260 [2C]                    | 0.19  | 0.10 | mg/Kg wet | 0.200 |  | 97.2 | 40-140 |  |  |  |
| Surrogate: Decachlorobiphenyl        | 0.185 |      | mg/Kg wet | 0.200 |  | 92.3 | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 0.187 |      | mg/Kg wet | 0.200 |  | 93.4 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 0.149 |      | mg/Kg wet | 0.200 |  | 74.7 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 0.175 |      | mg/Kg wet | 0.200 |  | 87.4 | 30-150 |  |  |  |

**LCS Dup (B060257-BSD1)**

Prepared: 10/05/12 Analyzed: 10/08/12

|                                      |       |      |           |       |  |      |        |      |    |  |
|--------------------------------------|-------|------|-----------|-------|--|------|--------|------|----|--|
| Aroclor-1016                         | 0.19  | 0.10 | mg/Kg wet | 0.200 |  | 94.3 | 40-140 | 1.39 | 30 |  |
| Aroclor-1016 [2C]                    | 0.22  | 0.10 | mg/Kg wet | 0.200 |  | 111  | 40-140 | 1.80 | 30 |  |
| Aroclor-1260                         | 0.19  | 0.10 | mg/Kg wet | 0.200 |  | 96.0 | 40-140 | 1.97 | 30 |  |
| Aroclor-1260 [2C]                    | 0.20  | 0.10 | mg/Kg wet | 0.200 |  | 98.6 | 40-140 | 1.51 | 30 |  |
| Surrogate: Decachlorobiphenyl        | 0.190 |      | mg/Kg wet | 0.200 |  | 95.1 | 30-150 |      |    |  |
| Surrogate: Decachlorobiphenyl [2C]   | 0.193 |      | mg/Kg wet | 0.200 |  | 96.6 | 30-150 |      |    |  |
| Surrogate: Tetrachloro-m-xylene      | 0.152 |      | mg/Kg wet | 0.200 |  | 76.0 | 30-150 |      |    |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 0.178 |      | mg/Kg wet | 0.200 |  | 88.9 | 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 |
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|
|---------|--------|-----------------|-------|-------------|---------------|------|-------------|-----|-----------|-------|

**Batch B060265 - SW-846 3540C**
**Blank (B060265-BLK1)**

Prepared: 10/05/12 Analyzed: 10/08/12

|                                      |       |      |       |      |  |      |        |  |  |  |
|--------------------------------------|-------|------|-------|------|--|------|--------|--|--|--|
| 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        | 0.900 |      | mg/Kg | 1.00 |  | 90.0 | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 1.01  |      | mg/Kg | 1.00 |  | 101  | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 0.860 |      | mg/Kg | 1.00 |  | 86.0 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 0.938 |      | mg/Kg | 1.00 |  | 93.8 | 30-150 |  |  |  |

**LCS (B060265-BS1)**

Prepared: 10/05/12 Analyzed: 10/08/12

|                                      |       |      |       |       |  |      |        |  |  |  |
|--------------------------------------|-------|------|-------|-------|--|------|--------|--|--|--|
| Aroclor-1016                         | 0.27  | 0.10 | mg/Kg | 0.250 |  | 106  | 40-140 |  |  |  |
| Aroclor-1016 [2C]                    | 0.26  | 0.10 | mg/Kg | 0.250 |  | 103  | 40-140 |  |  |  |
| Aroclor-1260                         | 0.26  | 0.10 | mg/Kg | 0.250 |  | 102  | 40-140 |  |  |  |
| Aroclor-1260 [2C]                    | 0.27  | 0.10 | mg/Kg | 0.250 |  | 106  | 40-140 |  |  |  |
| Surrogate: Decachlorobiphenyl        | 0.928 |      | mg/Kg | 1.00  |  | 92.8 | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 1.05  |      | mg/Kg | 1.00  |  | 105  | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 0.885 |      | mg/Kg | 1.00  |  | 88.5 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 0.966 |      | mg/Kg | 1.00  |  | 96.6 | 30-150 |  |  |  |

**LCS Dup (B060265-BSD1)**

Prepared: 10/05/12 Analyzed: 10/08/12

|                                      |       |      |       |       |  |      |        |      |    |  |
|--------------------------------------|-------|------|-------|-------|--|------|--------|------|----|--|
| Aroclor-1016                         | 0.27  | 0.10 | mg/Kg | 0.250 |  | 108  | 40-140 | 1.52 | 30 |  |
| Aroclor-1016 [2C]                    | 0.27  | 0.10 | mg/Kg | 0.250 |  | 107  | 40-140 | 3.50 | 30 |  |
| Aroclor-1260                         | 0.26  | 0.10 | mg/Kg | 0.250 |  | 104  | 40-140 | 1.94 | 30 |  |
| Aroclor-1260 [2C]                    | 0.27  | 0.10 | mg/Kg | 0.250 |  | 109  | 40-140 | 2.05 | 30 |  |
| Surrogate: Decachlorobiphenyl        | 0.931 |      | mg/Kg | 1.00  |  | 93.1 | 30-150 |      |    |  |
| Surrogate: Decachlorobiphenyl [2C]   | 1.05  |      | mg/Kg | 1.00  |  | 105  | 30-150 |      |    |  |
| Surrogate: Tetrachloro-m-xylene      | 0.911 |      | mg/Kg | 1.00  |  | 91.1 | 30-150 |      |    |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 1.00  |      | mg/Kg | 1.00  |  | 100  | 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. |
| T-06 | Samples were received directly from sampling in the field on ice.  |

# CERTIFICATIONS

## Certified Analyses included in this Report

| Analyte                                     | Certifications    |
|---|-------------------|
| <b><i>SW-846 8082A in Product/Solid</i></b> |                   |
| Aroclor-1016                                | CT,NH,NY,ME,NC    |
| Aroclor-1016 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1221                                | CT,NH,NY,ME,NC    |
| Aroclor-1221 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1232                                | CT,NH,NY,ME,NC    |
| Aroclor-1232 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1242                                | CT,NH,NY,ME,NC    |
| Aroclor-1242 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1248                                | CT,NH,NY,ME,NC    |
| Aroclor-1248 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1254                                | CT,NH,NY,ME,NC    |
| Aroclor-1254 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1260                                | CT,NH,NY,ME,NC    |
| Aroclor-1260 [2C]                           | CT,NH,NY,ME,NC    |
| <b><i>SW-846 8082A in Soil</i></b>          |                   |
| Aroclor-1016                                | CT,NH,NY,ME,NC    |
| Aroclor-1016 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1221                                | CT,NH,NY,ME,NC    |
| Aroclor-1221 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1232                                | CT,NH,NY,ME,NC    |
| Aroclor-1232 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1242                                | CT,NH,NY,ME,NC    |
| Aroclor-1242 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1248                                | CT,NH,NY,ME,NC    |
| Aroclor-1248 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1254                                | CT,NH,NY,ME,NC    |
| Aroclor-1254 [2C]                           | CT,NH,NY,ME,NC    |
| Aroclor-1260                                | CT,NH,NY,ME,NC    |
| Aroclor-1260 [2C]                           | CT,NH,NY,ME,NC    |
| <b><i>SW-846 8082A in Water</i></b>         |                   |
| Aroclor-1016                                | CT,NH,NY,RI,NC,ME |
| Aroclor-1016 [2C]                           | CT,NH,NY,RI,NC,ME |
| Aroclor-1221                                | CT,NH,NY,RI,NC,ME |
| Aroclor-1221 [2C]                           | CT,NH,NY,RI,NC,ME |
| Aroclor-1232                                | CT,NH,NY,RI,NC,ME |
| Aroclor-1232 [2C]                           | CT,NH,NY,RI,NC,ME |
| Aroclor-1242                                | CT,NH,NY,RI,NC,ME |
| Aroclor-1242 [2C]                           | CT,NH,NY,RI,NC,ME |
| Aroclor-1248                                | CT,NH,NY,RI,NC,ME |
| Aroclor-1248 [2C]                           | CT,NH,NY,RI,NC,ME |
| Aroclor-1254                                | CT,NH,NY,RI,NC,ME |
| Aroclor-1254 [2C]                           | CT,NH,NY,RI,NC,ME |
| Aroclor-1260                                | CT,NH,NY,RI,NC,ME |
| Aroclor-1260 [2C]                           | CT,NH,NY,RI,NC,ME |
| Aroclor-1262                                | NC                |
| Aroclor-1262 [2C]                           | NC                |

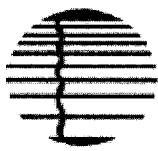
# CERTIFICATIONS

## Certified Analyses included in this Report

| Analyte                      | Certifications |
|------------------------------|----------------|
| <i>SW-846 8082A in Water</i> |                |
| Aroclor-1268                 | NC             |
| Aroclor-1268 [2C]            | NC             |

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   | 04/1/2013  |
| NH   | New Hampshire Environmental Lab              | 2516 NELAP    | 02/5/2013  |
| RI   | Rhode Island Department of Health            | LAO00112      | 12/30/2012 |
| NC   | North Carolina Div. of Water Quality         | 652           | 12/31/2012 |
| 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         | 02/23/2013 |
| ME   | State of Maine                               | 2011028       | 06/9/2013  |
| VA   | Commonwealth of Virginia                     | 1381          | 12/14/2012 |



**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 & Curran

Telephone: \_\_\_\_\_

Address: 35 N.E. Busch Drive Andover, MA

Project # 224733.01

Attention: J. Hamel, G. Franklin, K. Rinald

Client PO# \_\_\_\_\_  
DATA DELIVERY (check all that apply)  
☐ FAX ☒ EMAIL ☐ WEBSITE

Project Location: UMA Tobin Hall Concrete Deck

Fax # Franklin.woodwardcurran.com

Sampled By: Kim Rinald

Email: jhamel@ " " " "

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

Format: ☒ PDF ☐ EXCEL ☐ OGIS  
☐ OTHER \_\_\_\_\_

| Con-Test Lab ID<br>(Laboratory use only) | Client Sample ID / Description | Beginning Date/Time | Ending Date/Time | Composite | Grab | *Matrix Code | *Matrix Conc. Code | ANALYSIS REQUESTED |  |  |  |  |  |  |  |  |  | # of Containers |
|--|--------------------------------|---------------------|------------------|-----------|------|--------------|--------------------|--------------------|--|--|--|--|--|--|--|--|--|-----------------|
| -01                                      | THD-VB8-004                    | 10/5/12             | 1340             |           |      | C            | U                  |                    |  |  |  |  |  |  |  |  |  |                 |
| -02                                      | THD-VB8-005                    |                     | 1350             |           |      | S            | U                  |                    |  |  |  |  |  |  |  |  |  |                 |
| -03                                      | THD-VB8-006                    |                     | 1355             |           |      | S            | U                  |                    |  |  |  |  |  |  |  |  |  |                 |
| -04                                      | THD-VB8D-007                   |                     | 1355             |           |      | S            | U                  |                    |  |  |  |  |  |  |  |  |  |                 |
| -05                                      | THD-VB8D-008                   | 10/5/12             | 1730             |           |      | AQ           | L                  |                    |  |  |  |  |  |  |  |  |  |                 |

Comments: ① EPA 8082 PCBs via 3540c Soxhlet ② 48H-TAT PUSH TAT!  
③ RL ± 1mg/kg

Relinquished by: (signature) [Signature] Date/Time: 10/6/12 1735

Received by: (signature) [Signature] Date/Time: 10/5/12 1735

Relinquished by: (signature) [Signature] Date/Time: \_\_\_\_\_

Received by: (signature) \_\_\_\_\_ Date/Time: \_\_\_\_\_

Turnaround <sup>†</sup>  
☐ 7-Day ☐ 10-Day ☐ Other \_\_\_\_\_

Detection Limit Requirements  
Massachusetts: \_\_\_\_\_

Connecticut: \_\_\_\_\_

Other: RL ± 1mg/kg

Is your project MCP or RCP?  
☐ MCP Form Required  
☐ RCP Form Required  
☐ MA State DW Form Required PWSID # \_\_\_\_\_

NECAC & AIHA-LAP, LLC Accredited

WBEDBE Certified

Matrix Code:  
GW = groundwater  
WW = wastewater  
DW = drinking water  
A = air  
S = solid  
SL = sludge  
O = other  
C = concrete

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

\*\*\*Container Co  
Dissolved Metals  
☐ Field Filtered  
☐ Lab to Filter

\*\*\*Cont. Code:  
A = amber glass  
G = glass  
P = plastic  
ST = sterile  
V = vial  
S = summa can  
T = tedlar bag  
O = Other

TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR 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: Woodward & Curran RECEIVED BY: SD DATE: 10/5/12

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 7.0

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                  | <u>1</u>        | 8 oz amber/clear jar  |                 |
| 500 mL Amber                   |                 | 4 oz amber/clear jar  |                 |
| 250 mL Amber (8oz amber)       | <u>1</u>        | 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 \_\_\_\_\_ Unpreserved \_\_\_\_\_

Time and Date Frozen:

**12J0049-02** OW-11

| Analyte              | Results |         | %RPD |
|----------------------|---------|---------|------|
| Surrogates           |         |         |      |
| Tetrachloro-m-xylene | 1.34    | 1.5205  | 12.6 |
| Decachlorobiphenyl   | 1.46    | 1.51012 | 3.37 |

**12J0195-06** WG-21

| Analyte              | Results |           | %RPD |
|----------------------|---------|-----------|------|
| Aroclor-1254 [2C]    | 0.95    | 0.7984932 | 17.3 |
| Surrogates           |         |           |      |
| Decachlorobiphenyl   | 0.201   | 0.2081786 | 3.51 |
| Tetrachloro-m-xylene | 0.163   | 0.1895194 | 15   |

**12J0268-01** THD-VBC-004

| Analyte              | Results |           | %RPD |
|----------------------|---------|-----------|------|
| Surrogates           |         |           |      |
| Decachlorobiphenyl   | 0.785   | 0.8836957 | 11.8 |
| Tetrachloro-m-xylene | 0.754   | 0.8243869 | 8.92 |

**12J0268-02** THD-VBS-005

| Analyte              | Results |           | %RPD |
|----------------------|---------|-----------|------|
| Aroclor-1254 [2C]    | 0.18    | 0.1380416 | 26.4 |
| Surrogates           |         |           |      |
| Decachlorobiphenyl   | 0.208   | 0.2232552 | 7.07 |
| Tetrachloro-m-xylene | 0.212   | 0.204183  | 3.76 |

**12J0268-03** THD-VBS-006

| Analyte              | Results |           | %RPD |
|----------------------|---------|-----------|------|
| Surrogates           |         |           |      |
| Decachlorobiphenyl   | 0.195   | 0.2039243 | 4.47 |
| Tetrachloro-m-xylene | 0.154   | 0.1798609 | 15.5 |

**12J0268-04** THD-VBS-007

| Analyte              | Results |           | %RPD |
|----------------------|---------|-----------|------|
| Aroclor-1254 [2C]    | 0.12    | 0.1028418 | 15.4 |
| Surrogates           |         |           |      |
| Tetrachloro-m-xylene | 0.151   | 0.1770304 | 15.9 |
| Decachlorobiphenyl   | 0.190   | 0.196497  | 3.36 |

**12J0268-05** THD-VBQ-008

| Analyte              | Results |         | %RPD |
|----------------------|---------|---------|------|
| Surrogates           |         |         |      |
| Decachlorobiphenyl   | 1.21    | 1.23345 | 1.92 |
| Tetrachloro-m-xylene | 1.27    | 1.44717 | 13   |

**B060257-BLK1** Blank

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Surrogates           |         |          |      |
| Decachlorobiphenyl   | 0.194   | 0.198762 | 2.42 |
| Tetrachloro-m-xylene | 0.158   | 0.177163 | 11.4 |

**B060257-BS1** LCS

| Analyte              | Results |          | %RPD  |
|----------------------|---------|----------|-------|
| Aroclor-1016         | 0.19    | 0.21861  | 14    |
| Aroclor-1260         | 0.19    | 0.19433  | 2.25  |
| Surrogates           |         |          |       |
| Tetrachloro-m-xylene | 0.149   | 0.174825 | 15.9  |
| Decachlorobiphenyl   | 0.185   | 0.186745 | 0.939 |

**B060257-BSD1** LCS Dup

| Analyte      | Results |         | %RPD |
|--------------|---------|---------|------|
| Aroclor-1016 | 0.19    | 0.22258 | 15.8 |



|                      |       |          |      |
|----------------------|-------|----------|------|
| Aroclor-1260         | 0.19  | 0.197295 | 3.77 |
| Surrogates           |       |          |      |
| Tetrachloro-m-xylene | 0.152 | 0.177735 | 15.6 |
| Decachlorobiphenyl   | 0.190 | 0.19321  | 1.68 |

### B060257-MS1 Matrix Spike

| Analyte              | Results |           | %RPD |
|----------------------|---------|-----------|------|
| Aroclor-1016         | 0.21    | 0.247759  | 16.5 |
| Aroclor-1260         | 0.29    | 0.3019266 | 4.03 |
| Surrogates           |         |           |      |
| Tetrachloro-m-xylene | 0.168   | 0.1962456 | 15.5 |
| Decachlorobiphenyl   | 0.208   | 0.2152386 | 3.42 |

### B060257-MSD1 Matrix Spike Dup

| Analyte              | Results |           | %RPD |
|----------------------|---------|-----------|------|
| Aroclor-1260         | 0.28    | 0.3134633 | 11.3 |
| Aroclor-1016         | 0.21    | 0.2495052 | 17.2 |
| Surrogates           |         |           |      |
| Decachlorobiphenyl   | 0.199   | 0.2086845 | 4.75 |
| Tetrachloro-m-xylene | 0.166   | 0.1941269 | 15.6 |

### B060265-BLK1 Blank

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Surrogates           |         |          |      |
| Decachlorobiphenyl   | 0.900   | 1.014185 | 11.9 |
| Tetrachloro-m-xylene | 0.860   | 0.937555 | 8.63 |

### B060265-BS1 LCS

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Aroclor-1260         | 0.26    | 0.266155 | 2.34 |
| Aroclor-1016         | 0.27    | 0.257885 | 4.59 |
| Surrogates           |         |          |      |
| Decachlorobiphenyl   | 0.928   | 1.047045 | 12.1 |
| Tetrachloro-m-xylene | 0.885   | 0.96583  | 8.73 |

### B060265-BSD1 LCS Dup

| Analyte              | Results |          | %RPD |
|----------------------|---------|----------|------|
| Aroclor-1260         | 0.26    | 0.27167  | 4.39 |
| Aroclor-1016         | 0.27    | 0.26706  | 1.09 |
| Surrogates           |         |          |      |
| Decachlorobiphenyl   | 0.931   | 1.052765 | 12.3 |
| Tetrachloro-m-xylene | 0.911   | 1.001705 | 9.48 |

### B060292-BLK1 Blank

| Analyte              | Results |         | %RPD |
|----------------------|---------|---------|------|
| Surrogates           |         |         |      |
| Tetrachloro-m-xylene | 0.229   | 0.26425 | 14.3 |
| Decachlorobiphenyl   | 0.281   | 0.29109 | 3.53 |

### B060292-BS1 LCS

| Analyte              | Results |         | %RPD  |
|----------------------|---------|---------|-------|
| Aroclor-1016         | 0.44    | 0.50867 | 14.5  |
| Aroclor-1260         | 0.44    | 0.43777 | 0.508 |
| Surrogates           |         |         |       |
| Tetrachloro-m-xylene | 1.43    | 1.61435 | 12.1  |
| Decachlorobiphenyl   | 1.77    | 1.81865 | 2.71  |

### B060292-BSD1 LCS Dup

| Analyte              | Results |         | %RPD  |
|----------------------|---------|---------|-------|
| Aroclor-1016         | 0.40    | 0.44276 | 10.1  |
| Aroclor-1260         | 0.38    | 0.38082 | 0.216 |
| Surrogates           |         |         |       |
| Decachlorobiphenyl   | 1.43    | 1.47603 | 3.17  |
| Tetrachloro-m-xylene | 1.22    | 1.38029 | 12.3  |

**B060292-MS1****Matrix Spike**

| Analyte              | Results |         | %RPD |
|----------------------|---------|---------|------|
| Aroclor-1016         | 0.41    | 0.48356 | 16.5 |
| Aroclor-1260         | 0.43    | 0.42246 | 1.77 |
| Surrogates           |         |         |      |
| Decachlorobiphenyl   | 1.37    | 1.43047 | 4.32 |
| Tetrachloro-m-xylene | 1.29    | 1.45487 | 12   |

**B060292-MSD1****Matrix Spike Dup**

| Analyte              | Results |         | %RPD |
|----------------------|---------|---------|------|
| Aroclor-1016         | 0.40    | 0.47161 | 16.4 |
| Aroclor-1260         | 0.42    | 0.4129  | 1.7  |
| Surrogates           |         |         |      |
| Tetrachloro-m-xylene | 1.27    | 1.44269 | 12.7 |
| Decachlorobiphenyl   | 1.37    | 1.42979 | 4.27 |

November 16, 2012

George Franklin  
Woodard & Curran - Andover, MA  
35 New England Business Center  
Andover, MA 01810

Project Location: UMASS Tobin Hall  
Client Job Number:  
Project Number: 224733.01  
Laboratory Work Order Number: 12K0330

Enclosed are results of analyses for samples received by the laboratory on November 9, 2012. 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  
35 New England Business Center  
Andover, MA 01810  
ATTN: George Franklin

REPORT DATE: 11/16/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733.01

**ANALYTICAL SUMMARY**

---

WORK ORDER NUMBER: 12K0330

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

PROJECT LOCATION: UMASS Tobin Hall

| FIELD SAMPLE # | LAB ID:    | MATRIX | SAMPLE DESCRIPTION | TEST         | SUB LAB |
|----------------|------------|--------|--------------------|--------------|---------|
| THD-VWC-008    | 12K0330-01 | Wipe   |                    | 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.

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 Tobin Hall

Sample Description:

Work Order: 12K0330

Date Received: 11/9/2012

Field Sample #: THD-VWC-008

Sampled: 11/8/2012 09:00

Sample ID: 12K0330-01

Sample Matrix: Wipe

**Polychlorinated Biphenyls with 3540 Soxhlet Extraction**

| Analyte                  | Results    | RL              | Units   | Dilution | Flag | Method       | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|---------|----------|------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1]         | ND         | 0.20            | µg/Wipe | 1        |      | SW-846 8082A | 11/9/12       | 11/13/12 10:16     | JMB     |
| Aroclor-1221 [1]         | ND         | 0.20            | µg/Wipe | 1        |      | SW-846 8082A | 11/9/12       | 11/13/12 10:16     | JMB     |
| Aroclor-1232 [1]         | ND         | 0.20            | µg/Wipe | 1        |      | SW-846 8082A | 11/9/12       | 11/13/12 10:16     | JMB     |
| Aroclor-1242 [1]         | ND         | 0.20            | µg/Wipe | 1        |      | SW-846 8082A | 11/9/12       | 11/13/12 10:16     | JMB     |
| Aroclor-1248 [1]         | ND         | 0.20            | µg/Wipe | 1        |      | SW-846 8082A | 11/9/12       | 11/13/12 10:16     | JMB     |
| Aroclor-1254 [1]         | ND         | 0.20            | µg/Wipe | 1        |      | SW-846 8082A | 11/9/12       | 11/13/12 10:16     | JMB     |
| Aroclor-1260 [1]         | ND         | 0.20            | µg/Wipe | 1        |      | SW-846 8082A | 11/9/12       | 11/13/12 10:16     | JMB     |
| Aroclor-1262 [1]         | ND         | 0.20            | µg/Wipe | 1        |      | SW-846 8082A | 11/9/12       | 11/13/12 10:16     | JMB     |
| Aroclor-1268 [1]         | ND         | 0.20            | µg/Wipe | 1        |      | SW-846 8082A | 11/9/12       | 11/13/12 10:16     | JMB     |
| Surrogates               | % Recovery | Recovery Limits | Flag    |          |      |              |               |                    |         |
| Decachlorobiphenyl [1]   | 91.2       | 30-150          |         |          |      |              |               | 11/13/12 10:16     |         |
| Decachlorobiphenyl [2]   | 102        | 30-150          |         |          |      |              |               | 11/13/12 10:16     |         |
| Tetrachloro-m-xylene [1] | 75.2       | 30-150          |         |          |      |              |               | 11/13/12 10:16     |         |
| Tetrachloro-m-xylene [2] | 90.4       | 30-150          |         |          |      |              |               | 11/13/12 10:16     |         |

**Sample Extraction Data**

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

| Lab Number [Field ID]    | Batch   | Initial [Wipe] | Final [mL] | Date     |
|--------------------------|---------|----------------|------------|----------|
| 12K0330-01 [THD-VWC-008] | B062574 | 1.00           | 10.0       | 11/09/12 |

**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 B062574 - SW-846 3540C**
**Blank (B062574-BLK1)**

Prepared: 11/09/12 Analyzed: 11/13/12

|                                      |      |      |         |      |  |      |        |  |  |  |
|--------------------------------------|------|------|---------|------|--|------|--------|--|--|--|
| Aroclor-1016                         | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1016 [2C]                    | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1221                         | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1221 [2C]                    | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1232                         | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1232 [2C]                    | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1242                         | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1242 [2C]                    | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1248                         | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1248 [2C]                    | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1254                         | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1254 [2C]                    | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1260                         | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1260 [2C]                    | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1262                         | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1262 [2C]                    | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1268                         | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Aroclor-1268 [2C]                    | ND   | 0.20 | µg/Wipe |      |  |      |        |  |  |  |
| Surrogate: Decachlorobiphenyl        | 2.05 |      | µg/Wipe | 2.00 |  | 103  | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 2.30 |      | µg/Wipe | 2.00 |  | 115  | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 1.69 |      | µg/Wipe | 2.00 |  | 84.3 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 2.07 |      | µg/Wipe | 2.00 |  | 103  | 30-150 |  |  |  |

**LCS (B062574-BS1)**

Prepared: 11/09/12 Analyzed: 11/13/12

|                                      |      |      |         |       |  |      |        |  |  |  |
|--------------------------------------|------|------|---------|-------|--|------|--------|--|--|--|
| Aroclor-1016                         | 0.46 | 0.20 | µg/Wipe | 0.500 |  | 91.9 | 40-140 |  |  |  |
| Aroclor-1016 [2C]                    | 0.49 | 0.20 | µg/Wipe | 0.500 |  | 98.4 | 40-140 |  |  |  |
| Aroclor-1260                         | 0.54 | 0.20 | µg/Wipe | 0.500 |  | 108  | 40-140 |  |  |  |
| Aroclor-1260 [2C]                    | 0.54 | 0.20 | µg/Wipe | 0.500 |  | 109  | 40-140 |  |  |  |
| Surrogate: Decachlorobiphenyl        | 1.90 |      | µg/Wipe | 2.00  |  | 95.1 | 30-150 |  |  |  |
| Surrogate: Decachlorobiphenyl [2C]   | 2.12 |      | µg/Wipe | 2.00  |  | 106  | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene      | 1.50 |      | µg/Wipe | 2.00  |  | 75.2 | 30-150 |  |  |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 1.83 |      | µg/Wipe | 2.00  |  | 91.4 | 30-150 |  |  |  |

**LCS Dup (B062574-BSD1)**

Prepared: 11/09/12 Analyzed: 11/13/12

|                                      |      |      |         |       |  |      |        |      |    |  |
|--------------------------------------|------|------|---------|-------|--|------|--------|------|----|--|
| Aroclor-1016                         | 0.42 | 0.20 | µg/Wipe | 0.500 |  | 83.9 | 40-140 | 9.10 | 30 |  |
| Aroclor-1016 [2C]                    | 0.43 | 0.20 | µg/Wipe | 0.500 |  | 85.3 | 40-140 | 14.3 | 30 |  |
| Aroclor-1260                         | 0.49 | 0.20 | µg/Wipe | 0.500 |  | 98.8 | 40-140 | 8.96 | 30 |  |
| Aroclor-1260 [2C]                    | 0.50 | 0.20 | µg/Wipe | 0.500 |  | 99.4 | 40-140 | 8.76 | 30 |  |
| Surrogate: Decachlorobiphenyl        | 1.80 |      | µg/Wipe | 2.00  |  | 89.9 | 30-150 |      |    |  |
| Surrogate: Decachlorobiphenyl [2C]   | 2.01 |      | µg/Wipe | 2.00  |  | 101  | 30-150 |      |    |  |
| Surrogate: Tetrachloro-m-xylene      | 1.25 |      | µg/Wipe | 2.00  |  | 62.5 | 30-150 |      |    |  |
| Surrogate: Tetrachloro-m-xylene [2C] | 1.50 |      | µg/Wipe | 2.00  |  | 75.2 | 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.

**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   | 04/1/2013  |
| NH-S | New Hampshire Environmental Lab              | 2516 NELAP    | 02/5/2013  |
| RI   | Rhode Island Department of Health            | LAO00112      | 12/30/2012 |
| NC   | North Carolina Div. of Water Quality         | 652           | 12/31/2012 |
| 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         | 02/23/2013 |
| ME   | State of Maine                               | 2011028       | 06/9/2013  |
| VA   | Commonwealth of Virginia                     | 460217        | 12/14/2012 |
| NH-P | New Hampshire Environmental Lab              | 2557 NELAP    | 09/6/2012  |



con-test

Phone: 413-525-2332

Fax: 413-525-6405

ANALYTICAL LABORATORY

Email: info@contestlabs.com

www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street  
East Longmeadow, MA 01028

Page 1 of 10

Company Name: Woodbury & Curran

Telephone:

Address: 35 N.E. Busch Drive Suite 180

Project # 224733.01

Andover, MA

Client PO#

Attention: Franklin, J. Hanel, K. Richard

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

Project Location: UMMS Tobin Hall

Fax# sample woodbury.com

Sampled By: Kim Richard

Email: gfranklin@umms.org

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

Format: ☒ PDF ☒ EXCEL ☐ OGIS

Con-Test Lab ID

Client Sample ID / Description

Beginning Date/Time

Ending Date/Time

Composite

Grab

\*Matrix

Canine

Ende

W1

U

U

01

THD-VWC-008

11/8/12

0900

W1

U

U

U

U

U

U

U

02

THD-VWC-009

11/8/12

0915

W1

U

U

U

U

U

U

U

Rev 04.05.12

12K0330

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=tedlar bag  
O=Other

\*\* Preservation

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

2=Hexane

\* Matrix Code:

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

W1=wipe

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

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

Detection Limit Requirements

Massachusetts:

Connecticut:

RI = 1/5 wipe



TURNAROUND TIME STARTS AT 9:00 A.M. THE DAY AFTER SAMPLE RECEIPT UNLESS THERE ARE QUESTIONS ON YOUR CHAIN. IF THIS FORM IS NOT FILLED OUT COMPLETELY OR 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: AP DATE: 11/9/12

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 3.9°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 \_\_\_\_\_ 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>2</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 \_\_\_\_\_

Time and Date Frozen:

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

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



## **ATTACHMENT 3: SUMMARY OF DUST MONITORING RESULTS**

## Attachment 3: Dust Monitoring for the Tobin Hall PCB Remediation Activities

**Date: 10/5/2012**

| Time | Location   |                                     | Reading | Met. Conditions | Activity  |
|------|------------|-------------------------------------|---------|-----------------|---|
| 830  | Background | Due west of Tobin Hall Loading Dock | 0.002   | Clear           | No activity being conducted   |
| 930  | Background | Due west of Tobin Hall Loading Dock | 0.003   | Clear           | LVI doing removal of concrete stairs/decking with sledge hammers, chisels and pry bars at south end. Soils are removed with small hand tools and buckets.                                       |
|      | North      | North end of stairs                 | 0.008   |                 |   |
|      | Center     | Due west of center of stairs        | 0.005   |                 |   |
|      | South      | South end of stairs                 | 0.002   |                 |   |
| 1120 | Background | Due west of Tobin Hall Loading Dock | 0.006   | Clear           | LVI doing removal of concrete stairs/decking with sledge hammers, chisels and pry bars at north end. Soils are removed with small hand tools and buckets.                                       |
|      | North      | North end of stairs                 | 0.002   |                 |   |
|      | Center     | Due west of center of stairs        | 0.01    |                 |   |
|      | South      | South end of stairs                 | 0.008   |                 |   |
| 1300 | Background | Due west of Tobin Hall Loading Dock | n/a     | Clear           | No additional dust generating activity conducted in afternoon. All dust generating activity for material removal completed prior to lunch. LVI prepping surface for application of encapsulant. |
|      | North      | North end of stairs                 | n/a     |                 |   |
|      | Center     | Due west of center of stairs        | n/a     |                 |   |
|      | South      | South end of stairs                 | n/a     |                 |   |

**Date: 10/15/2012**

LVI on site applying liquid coatings. No dust generating activities conducted.

**Date: 11/1/2012**

LVI on site re-applying liquid coatings. No dust generating activities conducted.

**Date: 11/6/2012**

LVI on site re-applying liquid coatings. No dust generating activities conducted.

**Date: 11/12/12**

LVI on site re-applying liquid coatings. No dust generating activities conducted.



## **ATTACHMENT 4: WASTE DOCUMENTATION**



cc: Generator State  
T. Wolejko

Form Approved. OMB No. 2050-0039

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

|  |  |  |                |   |   |                 |
|--|--|--|----------------|---|---|-----------------|
| <b>UNIFORM HAZARDOUS WASTE MANIFEST</b>  |  | 1. Generator ID Number<br>MAD000844676   | 2. Page 1 of 1 | 3. Emergency Response Phone<br>(877) 818-0007 | 4. Manifest Tracking Number<br><b>000695547 VES</b> |                 |
| 5. Generator's Name and Mailing Address<br>UM FIELD<br>117 DRAPER HALL<br>48 CAMPUS CENTER WAY<br>AMHERST, MA 01003  |  | Generator's Site Address (if different than mailing address)<br>UMASS TOBIN HALL<br>135 HICKS WAY<br>AMHERST, MA 01003 |                | Generator's Phone: 413 545 2600               |   |                 |
| 6. Transporter 1 Company Name<br>VEOLIA ES TECHNICAL SOLUTIONS   |  | U.S. EPA ID Number<br>NJ D080631369  |                | U.S. EPA ID Number<br>NY D049836679           |   |                 |
| 7. Transporter 2 Company Name<br>ERETHOLS CARTAGE INC  |  | U.S. EPA ID Number<br>NJ D080631369  |                | U.S. EPA ID Number<br>NY D049836679           |   |                 |
| 8. Designated Facility Name and Site Address<br>CWM CHEMICAL SERVICES, L.L.C.<br>1550 BALMER ROAD<br>MODEL CITY, NY 14107  |  | Facility's Phone: 716 286-1550   |                | U.S. EPA ID Number<br>NY D049836679           |   |                 |
| 9a. HM   | 9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) | 10. Containers<br>No. Type   |                | 11. Total Quantity                            | 12. Unit Wt./Vol.                                   | 13. Waste Codes |
| X  | 1. UN3432, POLYCHLORINATED BIPHENYLS, SOLID, 9, III, RQ  | 3 DM   |                | 546   | K   | MA02<br>B007    |
|  | 2.   |  |                |   |   |                 |
|  | 3.   |  |                |   |   |                 |
|  | 4.   |  |                |   |   |                 |
| 14. Special Handling Instructions and Additional Information<br>ADDENDUM ATTACHED FOR ADDITIONAL TSCA INFORMATION - ER Service Contracted<br>by VESTS - 1) ERG:171 W:338554<br>81659354  |  |  |                |   |   |                 |
| 15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.<br>I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true. |  |  |                |   |   |                 |
| Generator's/Officer's Printed/Typed Name<br>DENNIS D. GAGNON   |  | Signature<br><i>Dennis D. Gagnon</i>   |                | Month Day Year<br>10 17 13                    |   |                 |
| 16. International Shipments<br><input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.   |  | Port of entry/exit:<br>Date leaving U.S.:  |                |   |   |                 |
| 17. Transporter Acknowledgment of Receipt of Materials   |  | Signature  |                | Month Day Year                                |   |                 |
| Transporter 1 Printed/Typed Name<br>Jeremy U. Neal   |  | <i>Jeremy U. Neal</i>  |                | 10 17 13                                      |   |                 |
| Transporter 2 Printed/Typed Name<br>DAVID STRECKENYOS  |  | <i>David Streckenyos</i>   |                | 10 28 13                                      |   |                 |
| 18. Discrepancy  |  |  |                |   |   |                 |
| 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection  |  |  |                |   |   |                 |
| Manifest Reference Number: U.S. EPA ID Number  |  |  |                |   |   |                 |
| 18b. Alternate Facility (or Generator)   |  |  |                |   |   |                 |
| Facility's Phone: Month Day Year   |  |  |                |   |   |                 |
| 18c. Signature of Alternate Facility (or Generator)  |  |  |                |   |   |                 |
| 19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)  |  |  |                |   |   |                 |
| 1. H132  |  | 2.   |                | 3.  |   | 4.              |
| 20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a   |  |  |                |   |   |                 |
| Printed/Typed Name<br>Jarrod Cramer  |  | Signature<br><i>Jarrod Cramer</i>  |                | Month Day Year<br>11 23 13                    |   |                 |





VEDUA 01/17/13

**CWM CHEMICAL SERVICES, LLC**

1550 Balmer Road  
Model City, NY 14107  
(716) 286-1550  
(716) 286-0211 Fax

UNIVERSITY OF MASSACHUSETTS  
ATTN: JIM FIELD  
MAD000844670  
117 DRAPER HALL 40 CAMPUS CENTER WAY  
AMHERST MA 01003

CERTIFICATE OF DISPOSAL

CWM CHEMICAL SERVICES, L.L.C., EPA ID: NYD049836679, has received waste material from UNIVERSITY OF MASSACHUSETTS on 01/23/13 as described on Shipping Document number 000695547VES Sequence number 01. CWM CHEMICAL SERVICES, L.L.C. hereby certifies that the above described material was landfilled in accordance with the 40 CFR part 761 as it pertains to the land disposal of polychlorinated biphenyl contaminated materials.

Profile Number: 338554  
CWM Tracking ID: 8165935403  
CWM Unit #: 1\*0 thru 3\*0  
Disposal Date: 02/01/13

Under civil and criminal penalties of law for the making or submission of false or fraudulent statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615) I certify that the information contained in or accompanying this document is true accurate and complete. As to the identified section(s) of this document for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made the verification that this information is true accurate and complete.

A handwritten signature in black ink, appearing to read 'Michael D. Mahar'.

MICHAEL D MAHAR  
DISTRICT MANAGER  
Certificate # 363824  
02/06/13

For questions please call  
our Customer Service Dept.  
at (800) 843-3604