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January 13, 2014

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
Grayson and Field Houses Window and Door Replacement Project
Orchard Hill Residential Area
University of Massachusetts – Amherst Campus

Dear Ms. Tisa:

On behalf of the University of Massachusetts (UMass), please find attached a Polychlorinated Biphenyl (PCB) Remediation Completion Report and a Monitoring and Maintenance Implementation Plan (MMIP) prepared in accordance with the U.S. Environmental Protection Agency's (EPA's) April 30, 2012 PCB Decontamination and Disposal Approval under 40 CFR 761.61(c), and 79(h) for the Grayson and Field Houses located within the Orchard Hill Complex located at 141 Orchard Hill Drive on the UMass Campus in Amherst, Massachusetts.

PCB Remediation activities associated with the building wide window and door replacement project were conducted during the summer break periods in 2012 and 2013 and post-abatement indoor air monitoring was conducted in October 2013 as per Condition 14 of the Approval.

This work involved the removal and off-site disposal of PCB caulk and glazing sealants along with associated window/door frames and other materials as ≥ 50 parts per million (ppm) PCB wastes; and the encapsulation/in-place management of residual levels of PCBs on the building substrates (masonry).

As specified in the Approval conditions, the Notification and Approval did not address the cleanup of any PCB-impacted soils as the nature and extent has not been defined. The proposed plan to address any PCB-impacted ground surfaces adjacent to the Grayson and Field Houses as well as the Webster House (window and door replacement project conducted in 2011) is to assess and remediate, if necessary, surfaces adjacent to the three buildings as a single event. This will allow the remediation contractor access to the three buildings during the same mobilization and completion of the ground surfaces work surrounding the buildings as one removal project. At this time, UMass is evaluating potential schedules for these activities.

If you have any comments, questions, or require further information, please do not hesitate to contact me at the number listed above.

Sincerely,

WOODARD & CURRAN INC.

Jeffrey A Hamel

Jeffrey Hamel, LSP, LEP
Senior Vice President

cc: G. Kenny, UMass
T. Wolejko, UMass

PCB Remediation Completion Report

Grayson and Field Houses

University of Massachusetts

Amherst, Massachusetts

Project No. 224824

University of Massachusetts

January 2014

woodardcurran.com
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1. INTRODUCTION

This Polychlorinated Biphenyl (PCB) Remediation Completion Report has been prepared by Woodard & Curran on behalf of the University of Massachusetts (UMass) to comply with the requirements set forth in the U.S. Environmental Protection Agency's (EPA) April 30, 2012 PCB Decontamination and Disposal Approval under 40 CFR 761.61(c) and 761.79(h) (the Approval) for the subject work.

This report documents PCB remediation activities conducted in 2012 and 2013 at the Grayson and Field Houses within the Orchard Hill Residential Complex on the UMass campus in Amherst, Massachusetts (Figure 1-1).

1.1 SITE DESCRIPTION

The Orchard Hill Residential Area was constructed in 1964 and 1965 and includes four residential dormitories for undergraduate students. The Grayson and Field Houses are located on the eastern side of the complex and were the first of the buildings constructed in 1964 (see Figure 1-1). The buildings are constructed as a single structure with a stairway separating the two buildings. The buildings are of similar construction including seven stories with dormitories on the second through seventh floors and common areas and meeting rooms on the first floors. The Grayson and Field Houses have a total footprint of approximately 22,000 square feet.

The Orchard Hill Residential Area is surrounded by other dormitory buildings, parking areas, and open areas. Surrounding ground surfaces are generally flat or slightly sloped toward the building to the east and are either covered with grass, asphalt pavement, concrete, or landscaped areas.

1.2 SITE BACKGROUND / CONCEPTUAL SITE MODEL

The Grayson and Field Houses were constructed during a time period when PCBs were sometimes used in certain building materials (i.e. caulking). In preparation for a window and door replacement project, a materials survey was conducted of various hazardous materials that would be encountered during the project. This included inspection and sampling of buildings materials considered suspect for PCBs.

Analytical results indicated that certain caulking materials contained PCBs at concentrations greater than 50 parts per million (ppm), at concentrations up to 302,000 ppm. Adjacent building materials were also sampled to determine whether PCBs had migrated from the caulking into these adjacent materials and the characterization data confirmed that detectable concentrations of PCBs were present in certain adjacent materials at regulated concentrations. After completing the characterization of suspect materials, the results were used to develop a remedial approach that was incorporated into the overall project as presented in the Notification[1] and subsequently approved by EPA on April 30, 2012.

1.3 SUBMITTALS AND PROJECT TIMELINE

The following list provides a summary of the major activities conducted and document submittals prepared as part of the remediation activities. It should be noted that characterization sampling was conducted throughout the program in support of these submittals. Copies of EPA's Approval and other select submittals are provided in Appendix A.

[1] The Notification was prepared by Woodard & Curran on behalf of UMass to satisfy the requirements under 40 CFR 761.61(c) and 761.79(h). Information was submitted dated January 2012 (PCB Remediation Plan); January 30, 2012 (Remediation Plan Addendum/Clarification); February 6, 2012 (Response to Comments); April 24, 2012 (clarification on stairwell verification sampling); April 27, 2012 (Woodard & Curran telephone discussion with EPA on encapsulation and Webster House verification sampling data); and July 12, 2013 (PCB Remediation Plan Modification Request). These submittals are referred to as the "Notification".

- Initial Site Inspection and Caulking Sample Collection – August 2011;
- PCB Remediation Plan submitted to EPA – January 6, 2012;
- PCB Remediation Plan Addendum/Clarification – January 30, 2012;
- Additional Clarification/Response to Questions – February 6, 2012;
- Receipt of EPA Approval – April 30, 2012;
- Phase 1 Remediation Activities Conducted – May through August 2012;
- PCB Remediation Plan Modification Request submitted to EPA – July 12, 2013 (comments/response not received from EPA to date); and
- Phase 2 Remediation Activities Conducted – May through August 2013.

1.4 PROJECT TEAM

The remediation project team consists of the following parties:

- University of Massachusetts Amherst - Owner
- Woodard & Curran – PCB Remediation Consultant
- CBI Consulting, Inc. – Project Manager/Architect
- GVW, Inc. – General Contractor
- MJ Environmental (MJE) – PCB Remediation Contractor (Phase 1 activities)
- Compass Restoration – PCB Remediation Subcontractor (Phase 2 activities)
- Con-Test Analytical Laboratory – Laboratory for sample analysis

2. WINDOW AND DOOR REPLACEMENT PROJECT IMPLEMENTATION

This section describes the PCB cleanup and disposal activities conducted at the Grayson and Field Houses in accordance with the Notification and requirements of 40 CFR 761. Active remediation activities on the building (removals and encapsulations) were conducted in two phases during the summer break sessions of the University (between May and August of 2012 and May and August 2013, respectively).

2.1 REMEDIATION OVERVIEW

Several types of windows and doors at Grayson House and Field House were found to contain ≥ 50 ppm PCB caulking and/or glazing sealants as described in the Notification. The remedial approach consisted of the following:

- Removal and off-site disposal of ≥ 50 ppm PCB caulking, glazing sealants, and backing materials in direct contact with caulking as ≥ 50 ppm PCB waste;
- Removal and off-site disposal of window and door frames and components (including glass) in direct contact with ≥ 50 ppm PCB caulking and glazing sealants as ≥ 50 ppm PCB waste; and
- Encapsulation of certain building materials that were scheduled to remain in place containing PCBs above the high or low occupancy clean up levels for PCB remediation wastes, as applicable.

Following removal of caulking, frames, and components, bulk verification samples were collected from the building materials formerly in direct contact with the caulking to determine if residual PCB impacts > 1 ppm were present in the materials. Given the overall project schedule and sequence, encapsulating coatings were applied to the substrate immediately after sample collection and prior to receipt of the results. The subsequent bulk sample results were used to establish the requirements for long term monitoring (i.e., materials identified as containing PCBs > 1 ppm would be included in the long term monitoring and maintenance program as described in Section 6). Based on the overall project schedule, verification samples were also collected at varying distances from the caulked joints to verify the required extent of encapsulation if results from the direct contact samples indicted that PCBs were present at concentrations > 1 ppm. Adjacent material samples were collected and placed on hold with the laboratory pending results of the former direct contact samples.

Following removal of the windows and the collection of the building material verification samples, the epoxy coating was immediately applied to allow for the installation of the replacement windows as quickly as possible (i.e., two coats of epoxy coating were installed on building materials formerly in direct contact with the caulked joints and to the distances specified in the PCB remediation plan without consideration to the results of the verification sampling). Following application of the second coat, the epoxy was allowed to cure overnight and verification wipe samples were collected in accordance with the Approval. Following collection of the verification wipe samples, the replacement windows were installed in accordance with the overall project schedule.

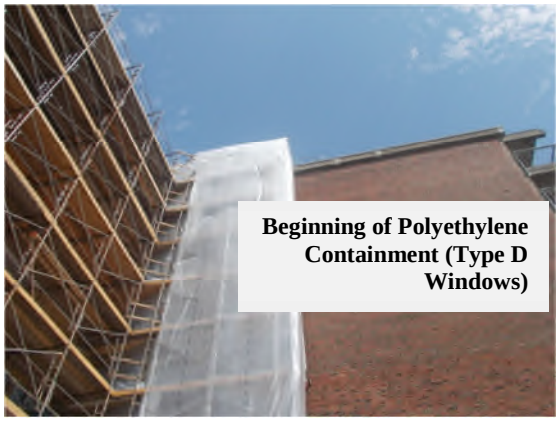
As described in the Notification and acknowledged in the Approval, certain glazing sealants and caulking, were managed for off-site disposal as excluded PCB products as defined in 40 CFR 761.3 as well as asbestos containing materials.

A detailed summary of the remediation activities, including site preparations and controls, PCB-impacted material removal and encapsulation, inspections and verification sampling, and off-site disposal of materials is presented in the following sections.

2.2 SITE PREPARATION AND CONTROLS

Prior to initiating the remediation activities, site preparations and controls were implemented and maintained for the duration of the project in accordance with the PCB Remediation Plan and the Contractor Work Plans. Containments and site controls were established as follows:

- Polyethylene sheeting containments were constructed on the interior of the building at each work area prior to work;
- Exterior to the building a single containment was constructed around the scaffolding spanning all floors within a single work area (i.e., set of windows);
- Negative pressure controls with HEPA filtration were established within each containment;
- Access to the active work areas was through a single access point on the ground floor and controlled by the on-site supervisor; and
- At the conclusion of each work day or following completion of work within an area, the work area, tools, and equipment were decontaminated by vacuuming and wiping of the equipment using diesel or hexane soaked rags.



In accordance with the PCB Remediation Plan, dust monitoring was conducted during active dust-generating activities such as the saw cutting of the stucco overhang ceiling materials (conducted in 2013). To evaluate the dust controls being implemented during other activities such as window removal, perimeter dust monitoring was also conducted periodically by Woodard & Curran. No dust readings above the project action limit were noted during monitoring. A summary of the dust monitoring readings is provided in Appendix B.

2.3 VERIFICATION SAMPLING AND ANALYTICAL METHODS

Verification samples collected in support of the remediation activities described herein were collected in accordance with generally accepted procedures for environmental sampling. Masonry samples were collected consistent with the EPA Region I Standard Operating Procedure for Sampling Porous Surfaces for PCBs (May 2011). Surface wipe samples were collected using hexane-saturated gauze wipes in accordance with the standard wipe test method under 40 CFR 761.123.

Samples were transferred on ice to Con-Test Analytical Laboratory of East Longmeadow, Massachusetts under standard chain of custody procedures. Samples were extracted using USEPA Method 3540C (Soxhlet extraction) and analyzed for PCBs using USEPA Method 8082.

A summary of the analytical results are presented on Tables 2-1 and 2-2 and are further described in the sections below. Locations of the samples are depicted on drawings included in Appendix C. The complete analytical laboratory reports are provided in Appendix D.

2.4 WEST ELEVATION STOREFRONT WINDOWS AND DOORS (TYPE N-02)

Storefront windows and doors on the first floor west elevation of the Grayson and Field Houses contained ≥ 50 ppm PCB exterior perimeter caulking and glazing sealants (up to 200 ppm). Caulking and glazing sealants were also identified as asbestos containing materials (ACM). A summary of the removal and verification program is provided below.

West Elevation Storefront Windows

2.4.1 Caulking and Window/Door Removal

Following the establishment of site controls as described above, window/door caulking, glazing sealants, and frames and

components were removed using hand tools and/or power tools equipped with HEPA filtration for off-site disposal as ≥ 50 ppm PCB and asbestos waste (i.e., no segregation of materials). Window frames and components larger than four feet in any dimension were reduced in size for disposal facility acceptance. All materials were double wrapped in polyethylene sheeting and transported at the conclusion of each work day to the on-site waste storage area.

After removal of the caulking and window/doors, adjacent materials in former direct contact with the caulking were addressed as described below. The stucco overhang ceiling on the west side of the buildings was removed for off-site disposal as described in Section 2.4.2 (no stucco overhang was present on the east side of the buildings), and adjacent building materials scheduled to remain in place were subject to verification sampling and encapsulation as described in Section 2.4.3.

2.4.2 Stucco Overhang Ceiling Verification Sampling and Removal

In accordance with the PCB Remediation Plan, six verification samples were collected from the stucco ceiling materials adjacent to the first floor storefront windows and doors at a frequency of one sample per 50 linear feet (l.f.) of caulked joints at a distance of five inches from the caulked joints. Analytical results indicated that PCBs were either non-detect (three samples at < 0.099 ppm) or present at concentrations < 1 ppm (three samples with reported concentrations of 0.10, 0.11, and 0.15 ppm). Refer to Table 2-1 for a summary of results and Appendix C for sample location drawings.

Based on these results, stucco ceiling materials within five inches of the caulked joints were removed for off-site disposal as ≥ 50 ppm PCB and ACM wastes. The stucco ceiling was removed by saw cutting in full containment with negative pressure controls. The rotary saw was equipped with HEPA filtration and wet techniques were utilized to minimize dust generation. The remaining portions of the stucco ceiling (beyond five inches from the caulked joint) were removed for off-site disposal as ACM waste.

2.4.3 Building Material Verification Sampling

Following removal of caulking, frames, and components, bulk verification samples were collected from the concrete foundation walls and slate building materials in former direct contact with the caulking in accordance with the Approval. A summary of the sampling results is as follows:

- Concrete Foundation (144 l.f. – Verification samples were collected at a frequency of one sample per 50 l.f. for a total of three samples. Analytical results indicated that PCBs were non-detect (< 0.098 ppm) or present at concentrations of 0.16 and 0.24 ppm; and
- Vertical Slate (22 l.f.) – One verification sample was collected from each building for a total of two samples. Analytical results indicated that PCBs were non-detect in both samples (< 0.099 ppm).

Based on these results, residual PCBs > 1 ppm were not present in concrete or slate building materials associated with the west elevation storefront windows and doors; therefore, no samples of adjacent materials beyond the direct contact surfaces were analyzed and although epoxy encapsulation was applied to the former direct contact areas, these building materials are not subject to long term monitoring and maintenance activities.

A summary of the analytical results is presented on Table 2-1. Sample locations are depicted on drawings provided in Appendix C.

2.5 EAST ELEVATION STOREFRONT WINDOWS (TYPE N-02)

Interior caulking along two vertical storefront window frame to concrete masonry unit (CMU) block walls at the east elevation of the Field House contained PCBs ≥ 50 ppm (75 ppm). A summary of the removal and verification program is provided below.

2.5.1 Caulking and Window Removal

Following the establishment of site controls as described above, window caulking and frames and components in direct contact with the caulking were removed using hand tools and/or power tools equipped with HEPA filtration for off-site disposal as ≥ 50 ppm PCB and asbestos waste. Consistent with the Notification and Approval, the remaining portions of the window frames were removed for off-site disposal as asbestos waste with < 50 ppm PCBs (as an Excluded PCB Product). All materials were double wrapped in polyethylene sheeting and transported at the conclusion of each work day to the on-site waste storage area.

2.5.2 Building Material Verification Sampling

Following removal of the caulking and window frames, verification samples were collected in accordance with the Approval. One verification sample was collected from CMU block materials formerly in direct contact with the caulked joints (total of 18 l.f. of caulking). Analytical results indicated that PCBs were non-detect (< 0.10 ppm) in the sample collected.

Based on this result, residual PCBs > 1 ppm were not present in CMU block materials associated with the east elevation storefront windows. Therefore, no samples of adjacent materials beyond the direct contact surfaces were analyzed and although epoxy encapsulation was applied to the former direct contact areas, these building materials are not subject to long term monitoring and maintenance activities. A summary of the analytical results is presented on Table 2-1. Sample locations are depicted on drawings provided in Appendix C.

2.6 ELEVATOR HALL WINDOWS (TYPE D)

Elevator hall windows, identified as Type D windows on the project drawings, are present on each side of the elevator halls in the Grayson and Field Houses from the second through seventh floors for a total of 48 windows (four banks of six pairs of windows in two buildings). Windows located in the elevator halls were identified as containing PCBs ≥ 50 ppm on the following joints: interior upper horizontal metal window frame to CMU wall joints (288 l.f. with 400 ppm PCBs); interior vertical metal frame to metal frame joints (144 l.f. with up to 140,000 ppm PCBs); and exterior expansion joints (43.5 l.f. per joint with up to 302,000 ppm PCBs) runs in a continuous bead from the bottom of the second floor to the top of the building along exterior metal to metal joints of the Type D elevator hall windows [144 l.f.] and concrete to concrete expansion joints on the concrete spans between each floor [30 l.f.]. Caulking and glazing sealants were also identified as ACM. A summary of the removal and verification program is provided below.

Typical Elevator Hall Window

2.6.1 Caulking and Window Removal

Following the establishment of site controls as described above, window caulking and frames and components in direct contact with the caulking were removed using hand tools and/or power tools equipped with HEPA filtration for off-site disposal as ≥ 50 ppm PCB and asbestos waste. Consistent with the Notification and Approval, the remaining portions of the window frames were removed for off-site disposal as asbestos waste with < 50 ppm PCBs (as an

Excluded PCB Product). All materials were double wrapped in polyethylene sheeting and transported at the conclusion of each work day to the on-site waste storage area.

2.6.2 Building Material Verification Sampling

Following removal of the caulking and window frames, verification samples were collected in accordance with the Approval. A summary of the analytical results is presented on Table 2-1. Sample locations are depicted on figures provided in Appendix C. Summaries of the samples collected are presented below.

Interior Building Materials

One verification sample was collected from CMU block materials formerly in direct contact with the interior caulking on each floor (for a total of six samples and a sampling frequency of approximately one sample per 50 l.f. of caulking [288 l.f.]). Analytical results were as follows:

- Total PCBs were reported as non-detect (2 samples at < 0.10 ppm) or < 1 ppm (3 samples with reported concentrations of 0.16, 0.19, and 0.24 ppm); and
- Total PCBs were reported as > 1 ppm in one sample collected from the sixth floor in the Grayson House with a reported concentration of 1.8 ppm.

Based on the sample collection frequency, the PCB > 1 ppm result was applied to the sixth floor CMU block materials away from the former caulking joints in both Grayson and Field Houses. To verify the extent of PCBs > 1 ppm (and the required extent of encapsulation), the adjacent material sample collected from the sixth floor CMU block wall in the Grayson House was released for analysis. Total PCBs were reported at a concentration of 0.7 ppm in concrete ceiling materials immediately beyond the wall to ceiling joint (i.e., approximately 15 inches above the former caulked joint).

Based on these results, liquid coatings were applied to interior CMU block materials formerly in direct contact with the caulking and beyond the joint to a distance of approximately 15 inches above the elevator lobby windows in the two sixth floor lobbies (Grayson and Field). Additional information is presented in Section 2.6.3.

Exterior Building Materials

As described in the Notification, based on the reported concentrations of PCBs in the exterior expansion joint caulking (302,000 and 296,000 ppm), building materials within the return of the concrete expansion joints were assumed to contain residual PCBs above the applicable clean up criteria and no direct contact samples collected. Building material samples were collected from areas away from the caulked joint to confirm the extent of PCB impacts > 25 ppm (the low-occupancy clean up criteria as described in the July 12, 2013 PCB Remediation Plan Modification Request). One sample was collected from each of the four building elevations at a distance of three inches from the former caulked joints for a total of four samples. Analytical results indicated that PCBs were present at concentrations of 1.41, 1.8, 3.2, and 8.3 ppm.

Based on these results, a liquid epoxy coating was applied to exterior concrete materials formerly in direct contact with the caulking and beyond the joint to a distance of three inches from the expansion joints. The remainder of the exterior concrete building materials beyond 3 inches from the windows are restricted to low-occupancy usage based on the presence of PCBs > 1 ppm and < 25 ppm. Additional information is presented in Section 2.6.3.

2.6.3 Encapsulation and Verification Wipe Sampling

Based on the results of bulk verification sampling, certain interior and exterior building materials required in-place management through the application of liquid coatings. A summary of these materials is as follows:

- Interior Upper Horizontal Joint Direct Contact Materials – In accordance with Section 7.3 of the PCB Remediation Plan, building materials formerly in direct contact with the upper horizontal caulked joints (the

header) were managed in-place through the application of two coats of Sikagard 62 liquid epoxy coating followed by the installation of new window frames and caulking.

Based on the results of the bulk verification sampling, which indicated that the in-place management of building materials containing PCBs > 1 ppm was warranted in the sixth floor elevator lobby of both buildings, the epoxy wipe sample collected from the sixth floor in the Grayson House was released for laboratory analysis. Analytical results indicated that PCBs were non-detect (< 0.20 µg/100cm^2).

- Interior Upper Horizontal Joint Adjacent Materials – Interior CMU block wall materials above the Grayson and Field Houses elevator lobby windows on the sixth floor were managed in-place through the application of two coats of Sikagard 550W acrylic coating (although only managed as an encapsulating coating on the sixth floor, the Sikagard 550W coating was applied to all interior CMU block walls in the elevator lobby areas based on the overall project requirements). Following application of the interior coating, a verification wipe sample was collected from coated CMU block materials on the sixth floor of the Grayson House. Analytical results indicated that PCBs were non-detect (< 0.20 µg/100cm^2).
- Exterior Expansion Joint Concrete Spans – Exterior concrete formerly in direct contact with and to a distance of three inches from the caulked joints was managed in-place through the application of two coats of Sikagard 62 liquid epoxy coating. Following application, one verification wipe sample was collected from materials within the return of the joint on each of the four building elevations (total of four samples). Analytical results indicated that PCBs were non-detect (<0.20 µg/100cm^2) in all four samples collected.

A summary of the analytical results for verification wipe samples is presented on Table 2-2 and sample locations are depicted on drawings provided in Appendix C. Additional information regarding continued the in-place management of building materials containing residual PCBs > 1 ppm is presented in Section 6.

2.7 NARROW STAIRWELL WINDOWS (TYPE G, H, AND I)

Narrow stairwell windows, identified as Type G, H, and I windows on the project drawings, are located on the east and west elevations of the northern and southern stairwells. Exterior perimeter window caulking along the narrow stairwell windows on the west side of the Grayson House (northern stairwell) was identified as containing ≥ 50 ppm PCBs (52 ppm) and ACM. A summary of the removal and verification program is provided below.

2.7.1 Caulking and Window Removal

Following the establishment of site controls as described above, perimeter window caulking and frames and components in direct contact with the caulking were removed using hand tools and/or power tools equipped with HEPA filtration for off-site disposal as ≥ 50 ppm PCB and asbestos waste. Consistent with the Notification and Approval, the remaining portions of the windows were removed for off-site disposal as asbestos waste with < 50 ppm PCBs (as an Excluded PCB Product). All materials were double wrapped in polyethylene sheeting and transported at the conclusion of each work day to the on-site waste storage area.

2.7.2 Building Material Verification Sampling

Following removal of the caulking and window frames, verification samples were collected in accordance with the Approval. Verification samples were collected from the exterior brick materials formerly in direct contact with the caulking at a frequency of one sample per 50 l.f. of caulking for a total of three samples. Analytical results indicated that PCBs were non-detect (two samples at < 0.10 ppm) and present at a concentration of 1.6 ppm.

Based on the sample collection frequency and locations, the PCB > 1 ppm result was applied to brick materials on the sixth and seventh floors. To verify the extent of PCBs > 1 ppm (and the required extent of encapsulation), the adjacent material sample collected from the sixth floor was released for analysis. Total PCBs were reported as non-detect (< 0.095 ppm) in the brick materials immediately beyond the window recess (approximately three inches from the joint).

Based on these results, exterior brick materials formerly in direct contact with the perimeter caulking and within the window recess on the sixth and seventh floors were managed in-place through encapsulation. Analytical results are presented on Table 2-1 and sample locations are depicted on drawings provided in Appendix C.

2.7.3 Encapsulation and Verification Wipe Sampling

As described above, residual PCBs > 1 ppm were identified in brick materials within the window recess on the sixth and seventh floors. As such, these materials were subject to in-place management through the application of two coats of Sikagard 62 liquid epoxy coating and the installation of the replacement window frames and sheet metal cladding. However, the liquid epoxy was applied to all brick material within the recess (i.e., on all floors) due to the overall project schedule as described above.

Based on the results of the bulk verification sampling, the epoxy verification wipe sample collected from the sixth floor was released for laboratory analysis. Analytical results indicated that PCBs were non-detect (< 0.20 µg/100cm^2). A summary of the analytical results for the verification wipe sample is presented on Table 2-2 and the sample location is depicted on drawings provided in Appendix C. Additional information regarding the continued in-place management of building materials containing residual PCBs > 1 ppm is presented in Section 6.

2.8 STAIRWELL WINDOWS (TYPE J)

Stairwell windows, identified as Type J windows on the project drawings, are located on the east and west elevation stairwell landings in the northern stairwell, the southern stairwell, and the central stairwell separating the Grayson and Field Houses. Interior perimeter window caulking along frame to masonry joints (brick and concrete) within the northern stairwell, the southern stairwell, and the eastern side of the central stairwell was identified as containing ≥ 50 ppm PCBs (up to 170 ppm) and ACM. A summary of the removal and verification program is provided below.

Typical Type J Window Opening (post-removal)

2.8.1 Caulking and Window Removal

Following the establishment of site controls as described above, perimeter window caulking and frames and components in direct contact with the caulking were removed using hand tools and/or power

tools equipped with HEPA filtration for off-site disposal as ≥ 50 ppm PCB and asbestos waste (based on the size of the windows no segregation was conducted of Type J window components). All materials were double wrapped in polyethylene sheeting and transported at the conclusion of each work day to the on-site waste storage area.

2.8.2 Building Material Verification Sampling

Following removal of the caulking and windows, verification samples of concrete and brick materials formerly in direct contract with the joints were collected to determine if residual PCBs > 1 ppm were present in the building materials. A summary of the verification sampling results is as follows:

- Brick - Verification samples were from two randomly selected locations formerly in direct contact with window caulking within each stairwell (or approximately one sample per 21 l.f. of caulking) for a total of six samples. Analytical results were as follows:
    - PCBs were reported as either non-detect (2 samples at < 0.10 ppm) or present at concentrations < 1 ppm (3 samples with reported concentrations of 0.15, 0.15, and 0.44 ppm); and
    - Total PCBs were reported at a concentration of 2.2 ppm in one sample (south stairwell landing between the second and third floors).
- Concrete – Verification samples were collected from two randomly selected locations formerly in direct contact with window caulking within each stairwell (or approximately one sample per 42 l.f. of caulking) for a total of six samples. Analytical results were as follows:
    - Total PCBs were reported at concentrations < 1 ppm in five of the six samples with concentrations ranging from 0.16 to 0.43 ppm; and
    - Total PCBs were reported at a concentration of 1.8 ppm in one sample (north stairwell landing between the fourth and fifth floors).

Based on the sample collection frequency and locations, the PCB > 1 ppm results were applied to former direct contact brick materials within the southern stairwell and in concrete materials in the northern stairwell from the locations reported to contain PCBs > 1 ppm to the next sample point with < 1 ppm PCB concentrations in either direction (or the remaining materials in a given direction with the applicable stairwell). To verify the extent of PCBs > 1 ppm (and the required extent of encapsulation), the corresponding adjacent material samples collected at a distance of two inches from the former caulked joints (equivalent to edge of the concrete sill and the extent of the replacement window frames) were released for analysis. Total PCBs were reported at concentrations of 0.18 ppm (brick) and 0.14 ppm (concrete).

Based on these results, building materials required in-place management as follows:

- Brick materials formerly in direct contact with and to a distance of two inches from the former interior Type J window joints within the southern stairwell from the 2nd/3rd floor landing to the top of the stairwell; and
- Concrete sill and header materials formerly in direct contact with and to a distance of two inches from the former interior Type J window joints within the northern stairwell from the 2nd/3rd floor landing to the top of the stairwell.

Additional information regarding the in-place management of these materials is presented in the section below. Analytical results are presented on Table 2-1 and sample locations are depicted on drawings provided in Appendix C.

2.8.3 Encapsulation and Verification Wipe Sampling

As described above, residual PCBs > 1 ppm were identified in certain brick and concrete materials associated with Type J windows in the southern and northern stairwells. As such, these materials are subject to in-place management through the application of two coats of Sikagard 62 liquid epoxy coating and the installation of the

replacement window frames and new caulking. However, the liquid epoxy was applied to all brick and concrete materials formerly in direct contact with and to a distance of two inches from the former caulked joints (i.e., on all floors).

Based on the results of the bulk verification sampling, the corresponding epoxy verification wipe samples from the southern stairwell brick and the northern stairwell concrete were released for laboratory analysis. Analytical results indicated that PCBs were non-detect (< 0.20 µg/100cm^2) in both samples. A summary of the analytical results for verification wipe samples is presented on Table 2-2 and the sample locations are depicted on drawings provided in Appendix C. Additional information regarding the continued in-place management of building materials containing residual PCBs > 1 ppm is presented in Section 6.

2.9 POST-ABATEMENT INDOOR AIR MONITORING

Indoor air samples were collected from one elevator lobby in Grayson House and one elevator lobby in Field House on October 15, 2013 to monitor PCB concentrations in indoor air following the completion of the remediation activities in accordance with Approval Condition 14a. An ambient outdoor background sample was also collected at the same time. Air samples were collected in accordance with US EPA Compendium Method TO-10A *"Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)"* and submitted for laboratory analysis of PCB homologs.

At each of the sample locations a low volume PUF cartridge was connected to a personal air pump (SKC PCXR8 Air pump) with flexible silicone tubing. The cartridge was positioned between 3 and 5 feet above the floor using a telescoping tripod assembly placed within the elevator lobby.

Samples were collected at a rate of 2.6 liter per minute (L/min) for a period of four hours. The pump flow rates were set by the equipment rental supply company prior to delivery and verified in the field by Woodard & Curran personnel using a DryCal DC-Lite flow meter. Ambient temperature and barometric pressure were recorded prior to the start of the sampling and used to correct the laboratory provided results for standard temperature and pressure in accordance with Section 13.1.7 of Method TO-10A. Pumps were monitored periodically throughout the sample collection period and observations were recorded. At the end of the required sampling interval, the pumps were shut off and the cartridge placed in aluminum foil, labeled and placed on ice for delivery to Con-Test Analytical Laboratory of East Longmeadow Massachusetts by laboratory courier.

Analytical results from the indoor air sample collected from the sixth floor of the Grayson House were reported non-detect for total PCB Homologs, as PCBs were not detected above the laboratory's minimum reporting limit of 8 nanograms per cubic meter (ng/^{3}). Total PCBs were detected at a concentration of 6.7 ng/m^3 in the indoor air sample collected from the second floor of the Field House, below EPA's published guidance indoor air levels for schools (September 2009) of 450 ng/m^3 for adults and 600 ng/m^3 for children 15 to 19 years of age. The reported concentrations are also well below the threshold level of 300 ng/m^3 specified in the Approval. Of note, a PCB concentration of 22.2 ng/m^3 was detected in the ambient outdoor background sample. A summary of the results is presented in Table 2-3 and the complete laboratory analytical report and data validation summary are provided in Appendix D.

2.10 RESTORATION

Upon completion of the PCB remediation activities, the window and door replacement project was completed in accordance with the overall project specifications. All site controls, including fencing and scaffolding were dismantled and removed from the site. All PCB wastes were transported off-site for proper disposal in accordance with 40 CFR 761.

3. DATA USABILITY ASSESSMENT

This data quality and data usability assessment has been conducted to review the samples collected in support of the remediation and verification activities. Data validation and review was conducted by a third-party validator, Data Check, Inc. of New Durham, New Hampshire. This review included a check of field documentation including: sample collection and preservation methods; a check of the laboratory data and documentation; a review of the internal laboratory QA/QC procedures and results including surrogate recoveries, blank results, matrix spike (MS) and matrix spike duplicate (MSD) results, laboratory control standard (LCS) and laboratory control standard duplicate (LCSD) results; and an evaluation of sample holding times and field duplicate results. Data Check's data validation summaries are provided in Appendix D.

A summary of the data usability assessment for the data is presented below:

- The data packages were reviewed to ensure that all sample and associated quality assurance results were available. Results of the completeness review indicated that all collected samples were analyzed and all quality control results were available to complete the data validation process.
- All bulk and wipe samples were extracted by USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs by USEPA Method 8082.
- All air samples were collected in accordance with EPA Method TO-10A and submitted for laboratory analysis of PCB homologs by Method 3540C.
- Consistent procedures and laboratory analysis of the data were achieved. Sample containers were packed on ice and delivered to the laboratory under standard chain of custody procedures. Although some samples were not received within the allowable temperature range, all samples were extracted and analyzed within allowable holding times for the method. No qualifications were applied.
- Some samples were analyzed at dilutions due to the concentration of PCBs present in the samples and/or due to sample matrix. Elevated quantitation limits are reported in these samples as a result of the dilutions.
- A total of four field duplicate samples were collected during the sampling events to evaluate the precision of the verification sample results. Relative percent difference (RPD) between the primary and associated duplicate samples met the acceptance criteria. No qualifications were applied.
- The RPD between sample column results for individual samples was evaluated to evaluate the precision of the results. The RPD met acceptance criteria (≤ 25 %) with the exception of one sample (GH-VBC-154). Analytical results from this sample were qualified as estimated based on this evaluation.
- The RPD between column results for the LCS/LCSD was evaluated to evaluate the precision of the results. The RPD met acceptance criteria (<25%) for all samples. No qualifications were applied.
- Accuracy of the analytical data was assessed by reviewing the recoveries for MS/MSD results. Results of the MS/MSD recoveries on six of the samples were outside acceptance limits; however, no qualifications were applied due to either interference from Aroclor 1254 detected in the primary sample, results being outside limits on only one of the columns, or the associated Aroclor result reported as non-detect in the primary sample.
- All surrogates met the acceptance criteria. No qualifications were applied.
- No analytes were detected in the method blanks or the field blank samples collected during the sampling events.

- According to the case narratives, for Aroclor 1254 in two samples, the samples contained two incompletely resolved Aroclors. The Aroclor with the closest matching pattern (Aroclor 1254 in both samples) was reported by the laboratory. No qualifications were applied.

Based on this review, the data adequately represents the materials tested, and is considered usable for its intended purpose.

4. WASTE STORAGE, DISPOSAL, AND EQUIPMENT DECONTAMINATION

Waste storage and disposal activities were completed in accordance with the procedures described in the PCB Remediation Plan. Caulking containing ≥ 50 ppm PCBs and window frames and components as described in the previous report sections were managed as a single waste stream and designated for disposal as ≥ 50 ppm PCB and asbestos waste. All polyethylene sheeting, PPE, and other disposable equipment and tools were also managed as ≥ 50 ppm PCB wastes within the same waste stream. Materials identified as containing < 50 ppm PCBs were managed for off-site disposal as asbestos waste with < 50 ppm (Excluded PCB Product) at the Minerva Enterprises landfill in Waynesburg, Ohio.

Following use, non-disposable equipment and tools were decontaminated using a double wipe with diesel or hexane soaked rags following gross removal of any dust or debris. Decontamination materials were managed for off-site disposal as ≥ 50 ppm PCB waste.

Wastes generated during the project were collected in secured, lined and covered roll-off waste containers and steel 55-gal drums in accordance with 40 CFR 761.65. These containers were properly labeled and marked in accordance with 40 CFR 761.40.

A total of 7.4 tons of material in two roll-offs were shipped off-site as ≥ 50 ppm PCB wastes for disposal at Environmental Quality's Wayne Disposal Landfill in Belleville, Michigan. Copies of all PCB waste shipment records including manifests and certificates of disposal are provided in Appendix E.

5. DEED RESTRICTION

Pursuant to Condition 16 of EPA's April 30, 2012 Approval, 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 remedial actions taken, a description of the use restrictions, and the long-term monitoring and maintenance requirements.

6. LONG TERM MONITORING AND MAINTENANCE OF ENCAPSULATED SURFACES

Pursuant to Condition 17 of EPA's April 30, 2012 Approval, a Monitoring and Maintenance Implementation Plan (MMIP) has been prepared to monitor the effectiveness of the remedy over time. The MMIP, which is being submitted concurrently with this Report and is included as Appendix F, includes the following:

- A description of the monitoring and maintenance activities that will be conducted, including inspection criteria, frequency, and routine maintenance activities;
- Sampling protocols, sampling frequency, analytical criteria and reporting requirements;
- A communications component, which details how the maintenance and monitoring results will be communicated to EPA and personnel responsible for the building use;
- A worker training component for maintenance workers or for persons that will be conducting work that could impact the building coatings/barriers; and
- A recordkeeping and reporting schedule to submit the results of the MMIP activities to EPA.

7. SUMMARY AND CONCLUSIONS

The PCB remediation activities described in this Completion Report have been completed in accordance with the PCB Remediation Plan and the Approval.

As indicated in the Plan, five areas were identified with ≥ 50 ppm PCB sealants, ranging in concentrations from 52 to 302,000 ppm. As part of this work, all identified ≥ 50 ppm PCB sealants as well as associated window/door frames and components were removed and disposal of off-site. Approximately 7.4 tons of bulk PCB waste (caulking, window/door frames and components, poly sheeting, etc.) contained in two roll-off containers were removed for off-site disposal as ≥ 50 ppm PCB wastes at Environmental Quality's Wayne Disposal Landfill in Belleville, Michigan.

Following removal of the ≥ 50 ppm caulking/glazing sealants and window/door frames and components, verification bulk samples were collected from substrate materials formerly in direct contact with the caulking to determine whether or not PCBs were present at concentrations above the applicable cleanup levels. Due to the overall project schedule, an epoxy coating was immediately applied to all former direct contact surfaces to allow for the installation of the replacement windows and the sheet metal cladding as quickly as possible (i.e., two coats of epoxy coating were installed on all building materials formerly in direct contact with the caulked joints and to the distances specified in the PCB remediation plan without consideration to the results of the bulk verification sampling).

Results of the verification bulk sampling indicated that residual concentrations of PCBs above the applicable high or low occupancy use criteria were present in substrate materials at five locations requiring subsequent long term monitoring and maintenance. The locations of these areas are:

- Elevator Hall CMU Block Walls (Type D windows) – Interior CMU block walls on the sixth floors of the Grayson and Field House;
- Grayson and Field House Concrete Spandrel Beams (exterior of building between Type D windows) – Exterior concrete spandrel beam materials on the north and south elevations and located in line with the Elevator Hall Windows;
- Grayson House Exterior Narrow Stairwell Window Jambs (Type G, H, and I windows) – Exterior brick materials on the jambs of the northern stairwell west elevation narrow stairwell windows on the sixth and seventh floor;
- Grayson House Interior Stairwell Concrete Sills (Type J windows) – Interior concrete window sill and header materials at the northern stairwell landings from the second through seventh floors; and
- Field House Interior Stairwell Brick Jambs (Type J windows) – Interior brick window jamb materials at the southern stairwell landings from the second floor through seventh floors.

With the exception of the filing of the deed notice and the implementation of long term monitoring and maintenance activities, the PCB remediation activities associated with the Approval have been completed.

Table 2-1
Summary of Verification Bulk Sample Results
Grayson and Field Houses
UMass Amherst

Window Type	Material	Building	Floor	Verification Bulk Samples[1]							
				Direct Contact				Adjacent Materials			
				Distance to Joint (inches)	Sample Date	Sample ID	Total PCBs (ppm)	Distance to Joint (inches)	Sample Date	Sample ID	Total PCBs (ppm)
Type N-02 West Elevation Storefront Windows	Exterior Concrete Foundation	Field	1st	0.0-0.5	5/30/2013	GH-VBC-182	< 0.098	NR	NR	NR	NR
		Grayson	1st	0.0-0.5	6/27/2013	GH-VBC-193	**0.16**	NR	NR	NR	NR
				0.0-0.5	6/27/2013	GH-VBC-195	**0.24**	NR	NR	NR	NR
	Exterior Vertical Slate	Field	1st	0.0-0.5	5/30/2013	GH-VBS-184	< 0.099	NR	NR	NR	NR
		Grayson	1st	0.0-0.5	6/27/2013	GH-VBS-197	< 0.099	NR	NR	NR	NR
	Stucco Ceiling	Grayson	1st	NR	NR	NR	NR	5	8/23/2011	GH-CBC-075	**0.15**
				NR	NR	NR	NR	5	5/14/2013	GH-VBS-175	**0.1**
				NR	NR	NR	NR	5	5/14/2013	GH-VBS-174	< 0.099
		Field	1st	NR	NR	NR	NR	5	5/14/2013	GH-VBS-173	< 0.096
				NR	NR	NR	NR	5	5/14/2013	GH-VBS-172	**0.11**
				NR	NR	NR	NR	5	5/14/2013	GH-VBS-171	< 0.097
Type N-02 East Elevation Storefront Windows	Interior CMU Block	Field	1st	0.0-0.5	5/17/2013	GH-VBC-178	< 0.10	NR	NR	NR	NR
Type D Elevator Hall Window	Interior CMU Block	Grayson	3rd	0.0-0.5	7/24/2012	GH-VBC-123	**0.16**	NR	NR	NR	NR
			4th	0.0-0.5	6/27/2013	GH-VBC-199	< 0.096	NR	NR	NR	NR
			6th	0.0-0.5	7/24/2012	GH-VBC-125	**1.8**	15	7/24/2012	GH-VBC-126	0.7
		Field	2nd	0.0-0.5	7/24/2012	GH-VBC-121	**0.19**	NR	NR	NR	NR
			5th	0.0-0.5	6/19/2013	GH-VBC-189	< 0.10	NR	NR	NR	NR
			7th	0.0-0.5	7/24/2012	GH-VBC-119	**0.24**	NR	NR	NR	NR
	Exterior Concrete Sill Expansion Joint	Grayson	2nd	0.0-0.5	NR	NR	NR	3	7/31/2012	GH-VBC-153	**3.2** [2]
			6th	0.0-0.5	NR	NR	NR	3	6/27/2013	GH-VBC-201	**1.41** [2]
		Field	6th	0.0-0.5	NR	NR	NR	3	6/21/2013	GH-VBC-191	**8.3** [2]
			2nd	0.0-0.5	NR	NR	NR	3	7/31/2012	GH-VBC-154	**1.8** [2] **J**
Types G,H, I Narrow Stairwell Windows	Exterior Brick	Grayson West Only	2nd	0.0 - 0.5	7/2/2013	GH-VBC-208	< 0.10	NR	NR	NR	NR
			5th	0.0 - 0.5	7/2/2013	GH-VBC-207	< 0.098	NR	NR	NR	NR
			6th	0.0 - 0.5	7/2/2013	GH-VBC-206	**1.6**	3	7/16/2013	GH-VBB-209	< 0.095
Type J Stairwell Windows	Interior Concrete Sill	North	1st/2nd	0.0-0.5	7/27/2012	GH-VBC-129	**0.31**	NR	NR	NR	NR
			4th/5th	0.0-0.5	7/27/2012	GH-VBC-133	**1.8**	2	7/27/2012	GH-VBC-132	0.14
		Center	5th/6th	0.0-0.5	7/27/2012	GH-VBC-138	**0.18**	NR	NR	NR	NR
			3rd/4th	0.0-0.5	7/27/2012	GH-VBC-141	**0.43**	NR	NR	NR	NR
		South	2nd/3rd	0.0-0.5	7/27/2012	GH-VBC-145	**0.16**	NR	NR	NR	NR
			1st/2nd	0.0-0.5	7/27/2012	GH-VBC-148	**0.27**	NR	NR	NR	NR
	Interior Brick	North	1st/2nd	0.0-0.5	7/27/2012	GH-VBB-128	< 0.10	NR	NR	NR	NR
			4th/5th	0.0-0.5	7/27/2012	GH-VBB-134	< 0.10	NR	NR	NR	NR
		Center	5th/6th	0.0-0.5	7/27/2012	GH-VBB-136	**0.15**	NR	NR	NR	NR
			3rd/4th	0.0-0.5	7/27/2012	GH-VBB-143	**0.15**	NR	NR	NR	NR
		South	2nd/3rd	0.0-0.5	7/27/2012	GH-VBC-147	**2.2**	2	7/27/2012	GH-VBC-146	0.18
			1st/2nd	0.0-0.5	7/27/2012	GH-VBC-150	**0.44**	NR	NR	NR	NR

Notes:
Verification samples collected in accordance with EPA Region 1 Standard Operating Procedure for Sampling Porous Surfaces for PCBs dated May 2011.
Samples were submitted to ConTest Analytical Laboratory for PCB analysis via USEPA method 8082 with Soxhlet Extraction (3540C).
Bold results indicate total PCBs reported at concentrations above the minimum laboratory reporting limit.
Shaded results indicate total PCBs reported at concentrations above the high or low use occupancy criteria, as applicable.
l.f. = linear feet
NR = Verification sample Not Required/Not Applicable.
J = Analytical results qualified as estimated based on results of data validation. See Appendix D for additional information.
(1) Verification samples of adjacent materials collected from those areas at which corresponding direct contact sample results indicated that PCBs were present at concentrations > 1 ppm as described in the PCB Remediation Plan.
(2) Low occupancy use criteria of ≤ 25 ppm applied to these materials.

Table 2-2
Summary of Verification Wipe Sample Results
Grayson and Field Houses
UMass Amherst

Type	Material	Building	Floor	Verification Wipe Samples[1]					
				Direct Contact			Adjacent Materials		
				Sample Date	Sample ID	Total PCBs (µg/100cm^2)	Sample Date	Sample ID	Total PCBs (µg/100cm^2)
Type D Elevator Hall Window	Interior CMU Block	Grayson	6th	7/31/2012	GH-VWC-152	< 0.20	8/21/2012	GH-VWC-170	< 0.20
	Exterior Concrete Sill Expansion Joint	Grayson	2nd	8/1/2012	GH-VWC-168	< 0.20	NR	NR	NR
			6th	7/18/2013	GH-VWC-212	< 0.20	NR	NR	NR
		Field	6th	7/18/2013	GH-VWC-211	< 0.20	NR	NR	NR
			2nd	8/1/2012	GH-VWC-169	< 0.20	NR	NR	NR
Types G,H, I Narrow Stairwell Windows	Exterior Brick	Grayson West Only	6th	7/19/2013	GH-VWB-213	< 0.20	NR	NR	NR
Type J Stairwell Windows	Interior Concrete Sill	North	4th/5th	7/31/2012	GH-VWC-164	< 0.20	NR	NR	NR
	Interior Brick	South	2nd/3rd	7/31/2012	GH-VWB-157	< 0.20	NR	NR	NR

Notes:
Verification wipe samples collected in accordance with the standard wipe test method as specified in 40 CFR 761.123.
Samples submitted to ConTest Analytical Laboratory for PCB analysis via USEPA method 8082 with Soxhlet Extraction (3540C).
(1) Verification wipe samples collected from those areas at which corresponding bulk sample results indicated that PCBs were present at concentrations > 1 ppm as described in the PCB Remediation Plan.

Table 2-3
Summary of Post-Abatement Air Sample Results
Grayson House, Amherst, Massachusetts

Location	Air Sample ID	Sample Date	PCB Concentration (ng/cartridge)	Flow Rate (L/Minute)	Duration (minutes)	Corrected Sample Volume (m^3)	Total PCB Concentration (ng/m^3)	Total PCB Concentration ($\mu g/m^3$)
Grayson - 6th Floor	GH-G6E-IAS-300	10/15/2013	< 5	2.63	240	0.628	< 8.0	< 0.008
Field - 2nd Floor	GH-F2E-IAS-301	10/15/2013	4	2.63	241	0.630	6.7	0.007
Background	GH-OUT-IAS-302	10/15/2013	14	2.64	241	0.631	22.2	0.022

Notes:
1. Air samples collected in accordance with USEPA Compendium Method TO-10A and submitted for laboratory analysis of PCBs homologs.
2. The flow rate displayed is the average flow rate as measured at the beginning and end of the sampling period; target flow of 2.60 L/minute.
3. Sample volume is corrected to standard temperature and pressure in accordance with Section 13.1.7 of Method TO-10A.
4. Average weather conditions during the October 15, 2013 sampling period were 22.4°C and 768.6 mmHg (indoor).
5. Total PCB concentration is the total PCB homologs reported by the lab (ng/cartridge) per corrected sample volume (m^3/cartridge).
6. "<" indicates that samples were reported below the laboratory's minimum detection limit.

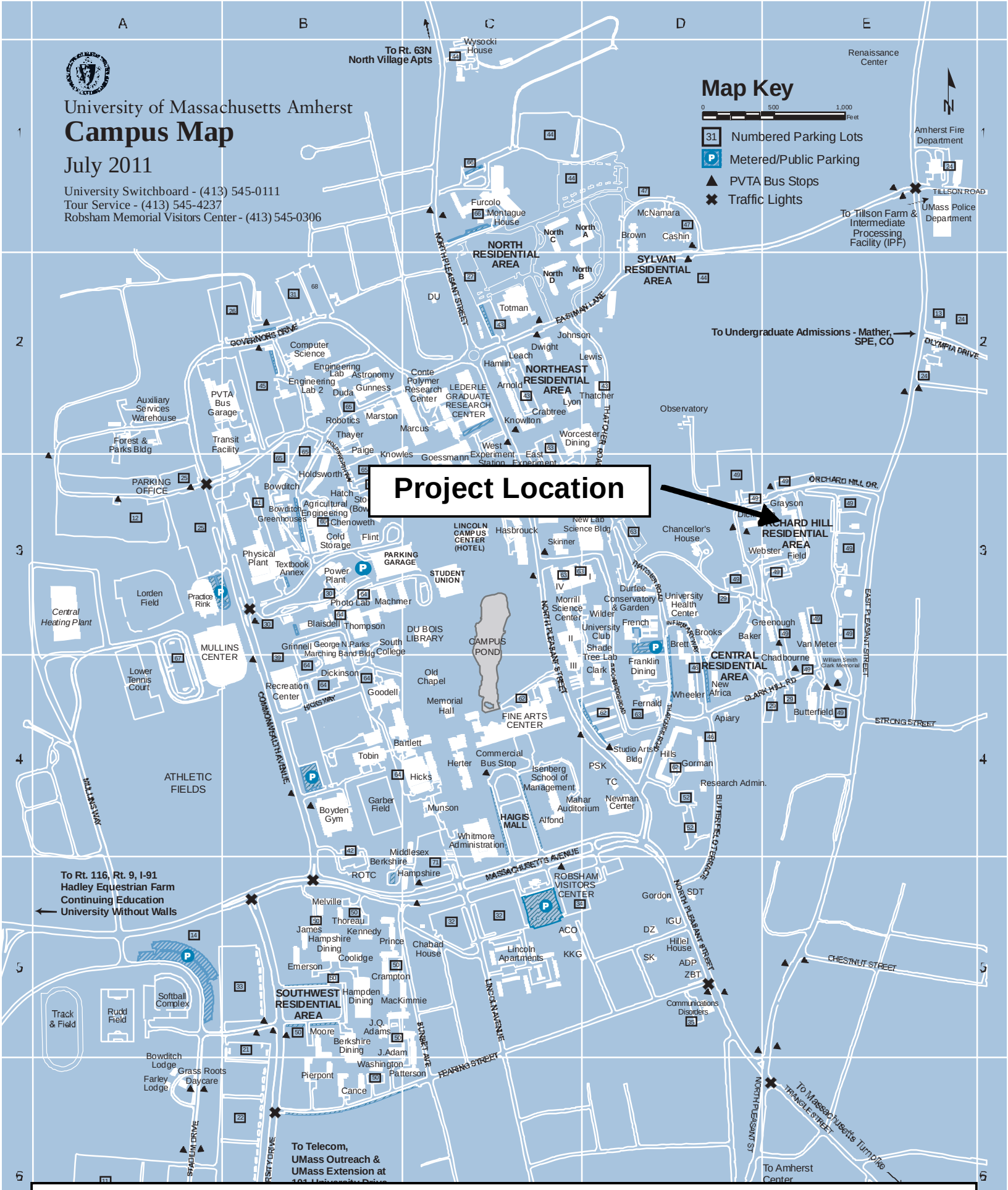


Figure 1-1 Site Location Map

APPENDIX A: EPA APPROVAL

RECEIVED AT
W:C MAY 3, 2012

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

APR 30 2012

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

Re: PCB Decontamination and Disposal Approval under 40 CFR § 761.61(c) and § 761.79(h)
Orchard Hill Complex/ Grayson House and Field House
University of Massachusetts, Amherst, Massachusetts

Dear Mr. Robinson:

This is in response to the University of Massachusetts (UMass) Notification[1] for approval of a proposed plan to address PCB contamination at the Grayson House and Field House student dormitories (the Sites) located within the Orchard Hill Residential area on the UMass Campus, at 141 Orchard Hill Drive in Amherst, Massachusetts. The Sites contain PCB-contaminated materials that exceed the allowable PCB levels under 40 CFR § 761.20(a) and § 761.62. Specifically, PCBs with greater than or equal to (≥) 50 parts per million (ppm) has been identified in certain caulk and glazing at the Sites.

UMass has requested an approval under 40 CFR § 761.61(c) and § 761.79(h) that includes the following activities:

- Remove PCB caulk and glazing with greater than or equal to (≥) 50 parts per million (ppm) and dispose in a TSCA approved or hazardous waste landfill;

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[1] The notification was prepared by Woodard & Curran on behalf of the UMass to satisfy the requirements under 40 CFR § 761.61(c) and § 761.79(h). Information was submitted dated January 2012 (PCB Remediation Plan); January 30, 2012 (Remediation Plan Modification); February 6, 2012 (Response to Comments); April 24, 2012 (clarification on stairwell verification sampling); and April 27, 2012 (Woodard & Curran telephone discussion with EPA on encapsulation and Webster House verification sampling data). These submittals shall be referred to as the "Notification".

- Remove *non-porous surfaces* (e.g., metal window and door frames) in direct contact with PCB caulk and/or PCB glazing, and certain *porous surfaces* (i.e., stucco overhang ceiling) to a minimum distance of 5 inches from the PCB caulk, and dispose as a ≥ 50 ppm PCB waste in a TSCA approved or hazardous waste landfill;

- Remove *PCB remediation waste* with greater than (>) 1 ppm but less than (<) 50 ppm PCBs (e.g., metal frame components not in direct contact with PCB caulk or PCB glazing) and dispose of in a state permitted landfill under § 761.61(a)(5)(i)(B)(*2*)(*ii*); and,

- Encapsulate PCB-contaminated *porous surfaces* (i.e., concrete, brick, CMU, and slate) with two coats of liquid coating (epoxy and/or acrylic-based) and sheet metal cladding (in certain select areas).

In an April 27, 2012 telephone call with EPA, Woodard and Curran clarified that the proposed encapsulation of materials (e.g., brick, concrete, CMU, slate) formerly in direct contact with the PCB caulk and to the distances specified in the Notification, would be implemented without regard to the verification sample results due to the overall project schedule. However, bulk samples collected at the encapsulation distances would only be analyzed if the samples in direct contact with the PCB caulk were > 1 ppm.

In consideration of the data collected at the Site, EPA's review of the Webster House verification sampling data, and the above proposed encapsulation, EPA has determined that the proposed verification sampling frequencies following removal of the PCB caulk, but prior to encapsulation, are reasonable to confirm the PCB concentrations in the building substrates, with exception of the expansion joints and the brick located adjacent to the Stairwell Type J windows. EPA is requiring a higher verification sampling frequency for these substrates (see Attachment 1, Condition 12). EPA has determined that the alternative verification sampling frequency will not present an unreasonable risk to public health or the environment and may approve the sampling under § 761.61(c).

UMass has determined that certain glazing sealants and caulk, which have PCB concentrations at less than (<) 50 ppm are *Excluded PCB Products* as defined under § 761.3. Under the PCB regulations, *Excluded PCB Products* are authorized for use and thus there is no requirement for removal of these building materials or for decontamination of surfaces that are in contact with these building materials. However, as indicated in the Notification, these materials have been determined to be asbestos containing materials (ACM) and as such, they will be removed and disposed of as an ACM/PCB waste.

Based on the EPA's review, the information provided in the Notification meets the requirements under § 761.62(a) and § 761.79(h) for abatement of PCB caulk and glazing, and § 761.61(c) for encapsulation of the *porous surfaces*. EPA finds that the proposed 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. As such, EPA may approve the encapsulation under § 761.61(c).

UMass may proceed with its project in accordance with 40 CFR § 761.61(c); § 761.62(a); § 761.79(h); its Notification; and, this Approval, subject to the conditions of Attachment 1. 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.

Please note that UMass will be required to record a notation on the deed as required under § 761.61(a)(8) since PCBs at greater than (>) 1 ppm will remain on the Site.

This Approval does not provide for cleanup and disposal of PCB-contaminated soils since sampling is necessary to determine if PCBs are > 1 ppm in soils. Upon completion of the investigation of soils at the Sites, UMass may request a modification to this Approval to incorporate cleanup of PCB-contaminated soils or UMass may submit a separate cleanup and disposal notification under 40 CFR § 761.61 (see Attachment 1, Condition 1).

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,

Nancy Barnak for

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

cc Jeffrey Hamel, Woodard & Curran
MassDEP – Western Region
File

Attachment 1 – PCB Approval Conditions

ATTACHMENT 1:

PCB DECONTAMINATION AND DISPOSAL APPROVAL CONDITIONS
GRAYSON & FIELD HOUSES (the Sites)
UNIVERSITY OF MASSACHUSETTS
141 ORCHARD HILL DRIVE
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 Sites and identified in the Notification.

   a. This Approval does not address the cleanup of PCB-contaminated soils as the nature and extent of the contamination have not been defined. Upon completion of the investigation, the University of Massachusetts (UMass) may request a modification to this Approval to incorporate cleanup of the soils under this Approval (see Condition 19) or UMass may submit a separate cleanup plan in accordance with 40 CFR § 761.61.

2. UMass shall conduct on-site activities in accordance with the conditions of this Approval and with the Notification.

3. 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.

4. The terms and abbreviations used herein shall have the meanings as defined in 40 CFR § 761.3 unless otherwise defined within this Approval.

5. UMass must comply with all applicable federal, state and local regulations in the storage, handling, and disposal of all PCB wastes, including PCBs, PCB Items and decontamination wastes generated under this Approval. In the event of a new spill during response actions, UMass shall contact EPA within 24 hours for direction on PCB cleanup and sampling requirements.

6. 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.

7. This Approval does not constitute a determination by EPA that the transporters or disposal facilities selected by UMass are authorized to conduct the activities set forth in the Notification. UMass is responsible for ensuring that its selected transporters and disposal facilities are authorized to conduct these activities in accordance with all applicable federal, state and local statutes and regulations.

8. 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

9. 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.

10. UMass shall submit the following information for EPA review and/or approval:

    a. a certification signed by its selected abatement/demolition contractor, stating that the contractor(s) has read and understands the Notification, and agrees to abide by the conditions specified in this Approval;

    b. a contractor work plan, prepared and submitted by the selected demolition or abatement contractor(s) describing the containment and air monitoring that will be employed during abatement activities. This work plan should also include information on how and where wastes will be stored and disposed of, and on how field equipment will be decontaminated; and,

    c. a certification signed by the selected analytical laboratory, stating that the laboratory has read and understands the extraction and analytical method requirements and quality assurance requirements specified in the Notification and in this Approval.

DECONTAMINATION AND DISPOSAL CONDITIONS

11. To the maximum extent practical, engineering controls, such as barriers, and removal techniques, such as the use of HEPA ventilated tools, shall be utilized during removal processes. In addition, to the maximum extent possible, disposable equipment and materials, including PPE, will be used to reduce the amount of decontamination necessary.

12. The decontamination standard for *porous surfaces* (e.g., concrete, brick, stucco) shall be less than or equal to (≤) 1 part per million (ppm) PCBs.

    a. All post-cleanup verification sampling for *porous surfaces* shall be performed on a bulk basis (i.e., mg/kg) and reported on a dry weight analysis. Verification sampling for *porous surfaces* shall be conducted in accordance with the EPA Region 1 *Standard Operating Procedure For Sampling Porous Surfaces for Polychlorinated Biphenyls (PCBs) Revision 4, May 5, 2011*, at a maximum depth interval of 0.5 inches, and in accordance with the frequency specified in the Notification, except as follows:

        i) Stairwell J-Type Windows: A minimum of 2 brick samples shall be collected from each stairwell (minimum total of 6 samples).

        ii) Expansion Joints North and South Walls: A minimum of 1 concrete sample shall be collected from each building side where PCB caulk is removed (minimum total of 4 samples).

    b. Chemical extraction for PCBs shall be conducted using Methods 3500B/3540C of SW-846; and, chemical analysis for PCBs shall be conducted using Method 8082 of SW-846, unless another extraction/analytical method(s) is validated according to Subpart Q.

13. Following encapsulation of PCB-contaminated *porous surfaces.* post-encapsulation sampling shall be conducted to determine the effectiveness of the encapsulation.

    a. Wipe sampling of encapsulated surfaces shall be performed on a surface area basis by the standard wipe test as specified in 40 CFR § 761.123 (i.e. μg/100 cm^2). Chemical extraction for PCBs shall be conducted using Method 3500B/3540C of SW-846; and, chemical analysis for PCBs shall be conducted using Method 8082 of SW-846, unless another extraction or analytical method(s) is validated according to Subpart Q.

    b. In the event that any wipe sample PCB concentration is greater than (>) 1 μg/100 cm^2, UMass shall contact EPA for further discussion and direction on alternatives.

    c. UMass will be required to include the encapsulated areas in the deed restriction and in the long-term monitoring and maintenance implementation plan (MMIP) (Conditions 16 and 17, respectively).

14. Initial post-abatement indoor air sampling for PCBs shall be conducted in the elevator lobbies to determine the impact of the abatement activities.

    a. Indoor air sampling shall be conducted in accordance with EPA Method TO-4A or TO-10A. Sufficient sample volumes shall be collected to provide a minimum laboratory reporting limit of less than (<) 0.05 $\mu g/m^3$. At a minimum, PCB analysis shall include PCB homologues and/or PCB congeners.

    b. In the event that PCB concentrations in the air samples are > 0.30 $\mu g/m^3$, UMass shall contact EPA for further discussion and direction on alternatives, which may include additional indoor cleaning and/or development of a site-specific risk exposure assessment.

15. PCB waste (at any concentration) generated as a result of the activities described in the Notification, excluding any decontaminated materials, shall be marked in accordance with CFR 40 CFR § 761.40; stored in a manner consistent with 40 CFR § 761.65; and, disposed of in accordance with 40 CFR § 761.61 or § 761.62, unless otherwise specified below.

    a. Decontamination wastes and residues shall be disposed of in accordance with 40 CFR § 761.79(g)(6).

    b. Moveable equipment, tools, and sampling equipment shall be decontaminated in accordance with either 40 CFR § 761.79(b)(3)(i)(A), § 761.79(b)(3)(ii)(A), or § 761.79(c)(2).

    c. PCB-contaminated water generated during decontamination shall be decontaminated in accordance with 40 CFR § 761.79(b)(1) or disposed of under § 761.60.

DEED RESTRICTION AND USE CONDITIONS

16. Within sixty (60) days of completing the activities described in the Notification and in the 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 seven (7) days of receipt of EPA's approval of the draft deed restriction, UMass shall record the deed restriction. A copy of this Approval shall be attached to the deed restriction.

INSPECTION, MODIFICATION AND REVOCATION CONDITIONS

17. Within forty-five (45) days of completion of the work authorized under this Approval, UMass shall submit for EPA's review and approval, a detailed monitoring and maintenance implementation plan (MMIP) for the surface barriers and for indoor air. 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 teachers, 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 barriers 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 barriers.

    e. Activities required under the MMIP shall be conducted until such time that EPA determines, in writing, that such activities are no longer necessary.

18. 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.

19. 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.

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.

20. Approval for these activities may be revoked, modified or otherwise altered: if EPA finds a violation of the conditions of this Approval or of 40 CFR Part 761, including EPA's PCB Spill Cleanup Policy, or other applicable rules and regulations; if EPA finds that these activities present an unreasonable risk to public health or the environment; if EPA finds that there is migration of PCBs from the Site; or if EPA finds that changes are necessary to comply with new rules, standards, or guidance for such approvals. UMass may apply for appropriate modifications in the event new rules, standards, or guidance come into effect.

21. 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

22. 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 decontamination and disposal 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.

23. As required under Condition 17 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.

24. UMass shall submit a final report to the EPA within 120 days of completion of the activities authorized under 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 also include a copy of the recorded deed restriction and a certification signed by a UMass official verifying that the authorized activities have been implemented in accordance with this Approval and the Notification.

25. 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

26. 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

APPENDIX B: DUST MONITORING RESULTS

Appendix B
Dust Monitoring Readings

Grayson/Field House Remediation - UMass Amherst

Date	Identifier	Location	Reading (in milligrams per cubic meter)	Comment
18-Jul-12	Background	Background	0.083	Elevator Lobby Window Removal.
	1	East	0.067	
	2	Elevator Lobby	0.075	
	3	West	0.079	
19-Jul-12	Background	Background	0.113	Elevator Lobby Window Removal.
	1	West side of lobby	0.080	
	2	Center of lobby	0.060	
	3	East side of lobby	0.188	
20-Jul-12	1	North building entrance	0.138	Elevator Lobby Window Removal. Elevated reading on east of building due to equipment use and masons working at the northeast corner of the building
	2	West side of building	0.009	
	3	South side of building	0.006	
	4	East side of building	0.607	
	5	Interior first floor east lobby	0.012	
	6	Interior first floor west lobby	0.01	
25-Jul-12	Background	Background	0.098	South Stairwell Window Removal
	1	Interior hallway	0.111	
	2	Room 226	0.016	
	3	Room 225	0.107	
26-Jul-12	Background	Background	- -	Center Stairwell Window Removal. No background reading recorded.
	1	Stairwell entrance	0.098	
	2	2nd floor stairwell entrance	0.033	
	3	7th floor stairwell entrance	0.14	
5/15/2013	Background Int	Room 105	0.034	Removal of Windows and Residual Caulking
	1 Int	Elevator Lobby	0.028	
	2 Int	Center of Common Room	0.009	
	3 Int	South Stairwell Interior	0.024	
	Background Ext	SE Corner of Building	0.003	
	1 Ext	East Elevation Center	0.003	
	2 Ext	East Elevation Center/South	0.004	
	3 Ext	East Elevation SE Corner	0.013	
5/17/2013	Background Int	Room 105	0.024	Removal of Windows and Residual Caulking on East Elevation
	1 Int	Central Stairwell East Side	0.013	
	2 Int	South Stairwell Interior	0.019	
	3 Int	SE Corner of Common Area	0.013	
	Background Ext	SE Corner of Building	0.005	
	1 Ext	East Elevation Center	0.01	
	2 Ext	East Elevation Center/South	0.011	
	3 Ext	East Elevation SE Corner	0.01	
5/24/2013	Background Int	Room 105	0.045	Window Removal and Masonry Removal on West Storefront Windows
	1 Int	Field House Elevator Lobby	0.024	
	2 Int	South End of Common Room	0.019	
	3 Int	North End of Common Room	0.138	
	Background Ext	Center of Courtyard	0.009	
	1 Ext	West of Elevtor Lobby Area	0.002	
	2 Ext	West of Containment	0.014	
	3 Ext	Central Stairwell South of Work Area	0.01	

Action Limit = 0.10 mg/m^3 above background

APPENDIX C: VERIFICATION SAMPLE LOCATIONS

1 GRAYSON WEST ELEVATION B

SCALE: 3/16" = 1'-0"

LEGEND

- SC — SPALLING CONCRETE
- CC — CRACKED CONCRETE
- ER — EXPOSED REBAR
- XX — WINDOW TAG
- CONCRETE REPAIR AREA
- F-XXX — FIELD DORM ROOM NUMBERS
- G-XXX — GRAYSON DORM ROOM NUMBERS
- LIGHT SENSOR THROUGH MASONRY PANEL AND BACKUP WALL
- FLASHING
- * — PROVIDE TEMPERED SAFETY GLASS

NEW WORK NOTES:

N-01 INSTALL NEW RIBBON WINDOW SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-02 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-03 INSTALL NEW PATIO DOOR AND WINDOW SYSTEM AT FIRST FLOOR APARTMENTS. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-04 INSTALL NEW PATIO DOOR /WINDOW SYSTEM AT QUAD/LOUNGE ROOMS AND APARTMENTS WITH BALCONY ACCESS ON FLOORS 2 TO 7. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-05 INSTALL NEW VERTICAL STRIP WINDOW SYSTEM AT STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-06 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-07 INSTALL NEW WINDOW SYSTEM AT FLOORS 2 TO 7 OF STAIR TOWERS. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-08 LOCATION OF EXISTING STRUCTURAL EXPANSION JOINT IN BUILDING.

N-09 INSTALL NEW AWNING WINDOW SYSTEM IN APARTMENT. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-10 INSTALL NEW WINDOW SYSTEM AT STAIR/ELEVATOR LOBBY ON FLOORS 2 TO 7. PROVIDE EXPANSION JOINT IN WINDOW SYSTEM. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-11 INSTALL NEW FACE BRICK PANELS BETWEEN WINDOWS IN DORM ROOMS. REINFORCE EXISTING 4" CMU BACKUP. INSTALL NEW COMBINATION VAPOR BARRIER/AIR BARRIER ON FACE OF EXISTING 4" CMU. INSTALL NEW 2" OF RIGID INSULATION IN CAVITY. INSTALL NEW MORTAR ENTRAPMENT MAT BETWEEN INSULATION AND BRICK. INSTALL NEW MASONRY TIES BETWEEN BACKUP 4" CMU AND FACE BRICK. INSTALL NEW FLASHING AT BRICK WORK. INSTALL NEW WEEPHOLES IN BRICK AT TOP AND BOTTOM OF CAVITY @ 24" ON CENTER MAXIMUM.

N-12 INSTALL NEW WINDOW SYSTEMS IN DORM ROOMS AND BATHROOMS ON FLOORS 2 TO 7. SEE WINDOW TYPES ON SHEETS A3-01 FOR ADDITIONAL INFORMATION.

N-13 SEE SHEETS A1-11, A1-12, A1-13, AND A1-14 FOR BALCONY/PORCH CONCRETE REPAIR AND RAILING REPAIRS.

N-14 INSTALL NEW DRYER VENT THROUGH WALL.

LEGEND

GH-VBC-193 — FORMER DIRECT CONTACT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER

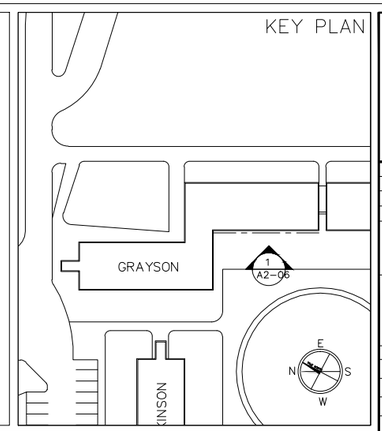
GH-VBS-174 — ADJACENT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER

AREA OF ≥ 50 ppm PCB REMEDIATION ACTIVITIES AS DESCRIBED IN THE NOTIFICATION. ALL OTHER WINDOW/DOOR CAULKING REMOVED FOR DISPOSAL AS ACM AND < 50 ppm PCBs (EXCLUDED PCB PRODUCT)

NOTES:

1. ORIGINAL DESIGN DRAWINGS BY CBI CONSULTING, INC. MODIFIED WITH THE ADDITION OF VERIFICATION SAMPLES FOR PCB REMEDIATION ACTIVITIES. ALL OTHER INFORMATION INCLUDED AS ORIGINALLY PRESENTED IN THE DRAFT DESIGN DRAWINGS.
2. SAMPLE LOCATIONS APPROXIMATED BASED OFF FIELD MEASUREMENTS.
3. WHERE APPLICABLE, INTERIOR LOCATIONS DEPICTED ON EXTERIOR DRAWINGS TO PRESENT APPROXIMATE SAMPLE LOCATIONS.

KEY PLAN



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cbi@cbiconsultinginc.com
www.cbiconsultinginc.com
CBI PROJECT NO. – 11157

REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

UMASS

UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
GRAYSON WEST ELEVATION B

	BY	DATE	PROJECT NO. 11-000935	CONTRACT NO. UMA 05-10A-06
DRN.	JAC	---	SCALE 3/16"=1'-0"	SHEET 44 OF 54
APP'D	ML	---		
CKD.			DRAWING NUMBER	
APP'D			D-A-330-11-000935- A2-06	

\\ANDOVER\Projects\224824 UMass Amherst - Grayson House PCBs\wip\Drawings\Completion Report - Appendix C\A2-06.dwg Dec 10, 2013 - 2:29 pm PFILLMORE

1 FIELD WEST ELEVATION A
SCALE: 3/16" = 1'-0"

LEGEND

- SC — SPALLING CONCRETE
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- XX — WINDOW TAG
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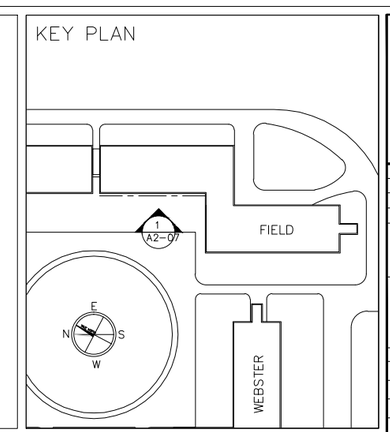

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FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
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FIELD WEST ELEVATION A

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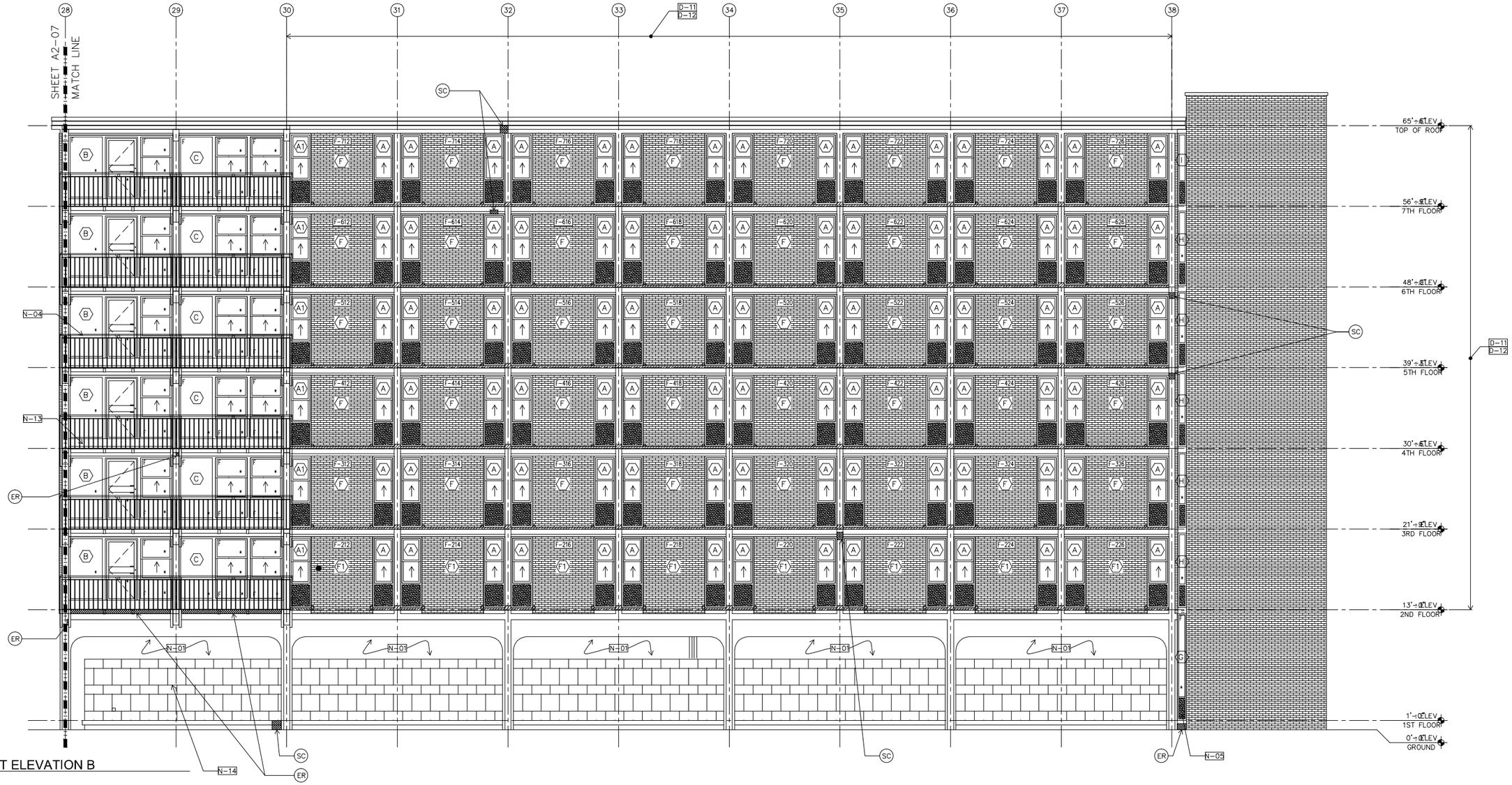

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N-03 INSTALL NEW PATIO DOOR AND WINDOW SYSTEM AT FIRST FLOOR APARTMENTS. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-04 INSTALL NEW PATIO DOOR/WINDOW SYSTEM AT QUAD/LOUNGE ROOMS AND APARTMENTS WITH BALCONY ACCESS ON FLOORS 2 TO 7. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-05 INSTALL NEW VERTICAL STRIP WINDOW SYSTEM AT STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-06 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-07 INSTALL NEW WINDOW SYSTEM AT FLOORS 2 TO 7 OF STAIR TOWERS. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-08 LOCATION OF EXISTING STRUCTURAL EXPANSION JOINT IN BUILDING.

N-09 INSTALL NEW AWNING WINDOW SYSTEM IN APARTMENT. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-10 INSTALL NEW WINDOW SYSTEM AT STAIR/ELEVATOR LOBBY ON FLOORS 2 TO 7. PROVIDE EXPANSION JOINT IN WINDOW SYSTEM. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-11 INSTALL NEW FACE BRICK PANELS BETWEEN WINDOWS IN DORM ROOMS. REINFORCE EXISTING 4" CMU BACKUP. INSTALL NEW COMBINATION VAPOR BARRIER/AIR BARRIER ON FACE OF EXISTING 4" CMU. INSTALL NEW 2" OF RIGID INSULATION IN CAVITY. INSTALL NEW MORTAR ENTRAPMENT MAT BETWEEN INSULATION AND BRICK. INSTALL NEW MASONRY TIES BETWEEN BACKUP 4" CMU AND FACE BRICK. INSTALL NEW FLASHING AT BRICK WORK. INSTALL NEW WEEPHOLES IN BRICK AT TOP AND BOTTOM OF CAVITY @ 24" ON CENTER MAXIMUM.

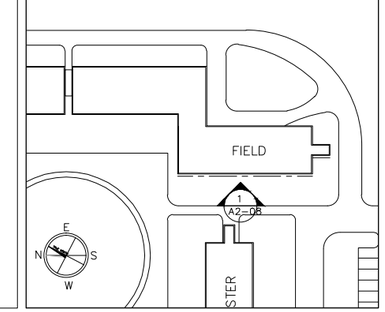
N-12 INSTALL NEW WINDOW SYSTEMS IN DORM ROOMS AND BATHROOMS ON FLOORS 2 TO 7. SEE WINDOW TYPES ON SHEETS A3-01 FOR ADDITIONAL INFORMATION.

N-13 SEE SHEETS A1-11, A1-12, A1-13, AND A1-14 FOR BALCONY/PORCH CONCRETE REPAIR AND RAILING REPAIRS.

N-14 INSTALL NEW DRYER VENT THROUGH WALL.

NO ≥ 50 ppm PCB REMEDIATION ACTIVITY ON THIS ELEVATION.

KEY PLAN



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CBI PROJECT NO. – 11157

REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

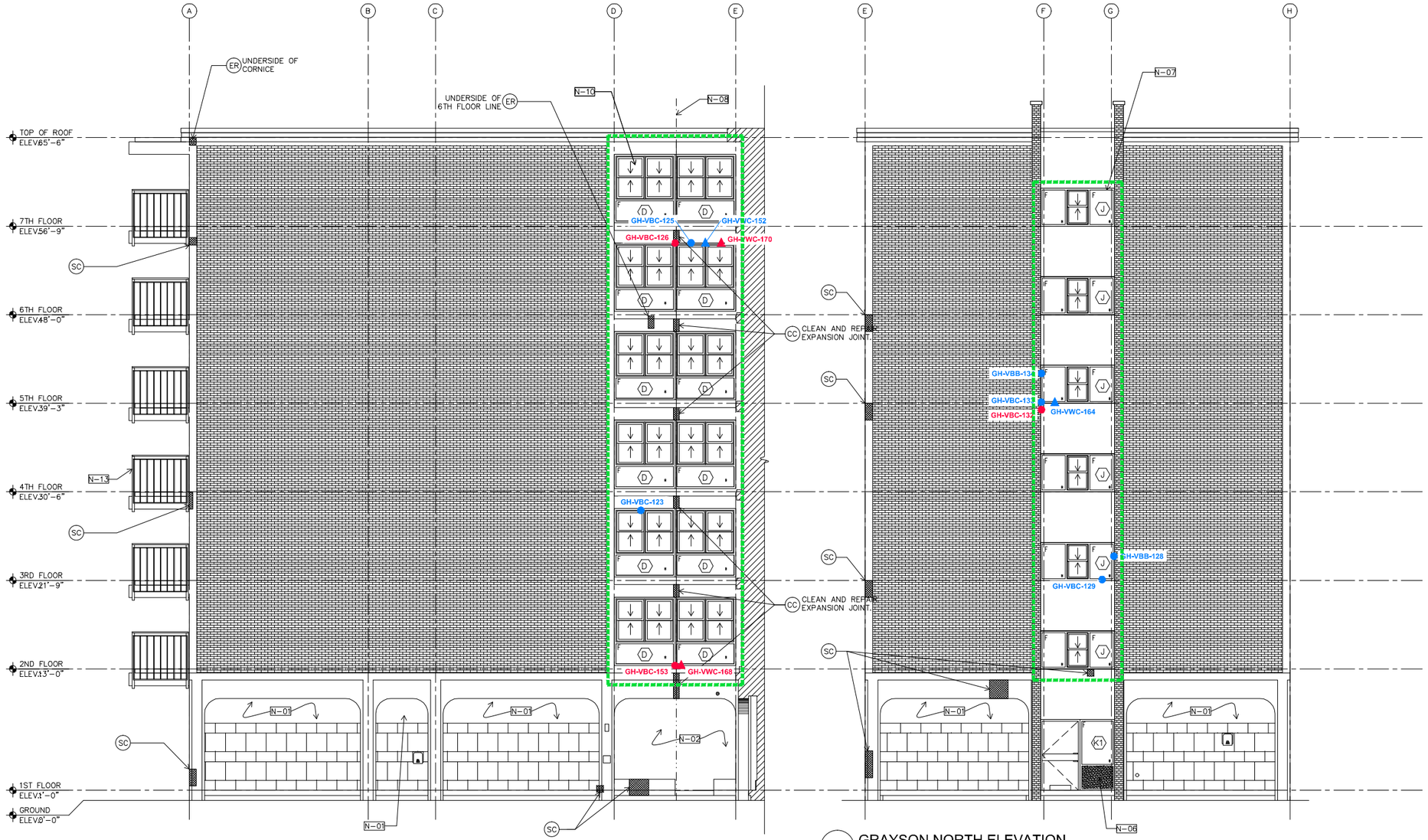
UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
FIELD WEST ELEVATION B

	BY	DATE
DRN.	JAC	---
APP'D	ML	---
CKD.		
APP'D		

PROJECT NO. 11-000935
CONTRACT NO. UMA 05-10A-06
SCALE 3/16"=1'-0"
SHEET 46 OF 54
DRAWING NUMBER D-A-330-11-000935- A2-08

\\ANDOVER\Projects\224824 UMass Amherst - Grayson House PCBs\wip\Drawings\Completion Report - Appendix C\A2-08.dwg Dec 10, 2013 - 2:24 pm PFILLMORE



1 GRAYSON NORTH ELEVATION
SCALE: 3/16" = 1'-0"

2 GRAYSON NORTH ELEVATION
SCALE: 3/16" = 1'-0"

LEGEND

SC	SPALLING CONCRETE
CC	CRACKED CONCRETE
ER	EXPOSED REBAR
XX	WINDOW TAG
	CONCRETE REPAIR AREA
F-XXX	FIELD DORM ROOM NUMBERS
G-XXX	GRAYSON DORM ROOM NUMBERS
	LIGHT SENSOR THROUGH MASONRY PANEL AND BACKUP WALL
	FLASHING
*	PROVIDE TEMPERED SAFETY GLASS

NEW WORK NOTES:

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N-03 INSTALL NEW PATIO DOOR AND WINDOW SYSTEM AT FIRST FLOOR APARTMENTS. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-04 INSTALL NEW PATIO DOOR/WINDOW SYSTEM AT QUAD/LOUNGE ROOMS AND APARTMENTS WITH BALCONY ACCESS ON FLOORS 2 TO 7. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-05 INSTALL NEW VERTICAL STRIP WINDOW SYSTEM AT STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-06 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-07 INSTALL NEW WINDOW SYSTEM AT FLOORS 2 TO 7 OF STAIR TOWERS. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-08 LOCATION OF EXISTING STRUCTURAL EXPANSION JOINT IN BUILDING.

N-09 INSTALL NEW AWNING WINDOW SYSTEM IN APARTMENT. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

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N-13 SEE SHEETS A1-11, A1-12, A1-13, AND A1-14 FOR BALCONY/PORCH CONCRETE REPAIR AND RAILING REPAIRS.

N-14 INSTALL NEW DRYER VENT THROUGH WALL.

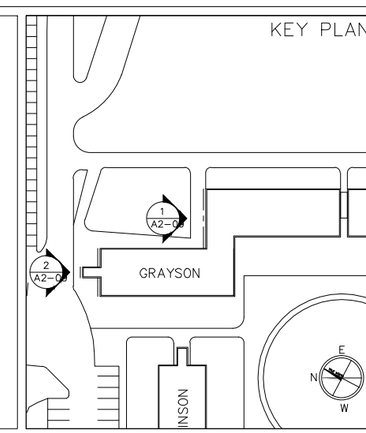
LEGEND

GH-VBC-189 ●	FORMER DIRECT CONTACT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER
GH-VBC-191 ●	ADJACENT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER
GH-VWC-152 ▲	FORMER DIRECT CONTACT MATERIAL VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER
GH-VWC-211 ▲	ADJACENT MATERIAL VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER
	AREA OF ≥ 50 ppm PCB REMEDIATION ACTIVITIES AS DESCRIBED IN THE NOTIFICATION. ALL OTHER WINDOW/DOOR CAULKING REMOVED FOR DISPOSAL AS ACM AND < 50 ppm PCBs (EXCLUDED PCB PRODUCT)

NOTES:

1. ORIGINAL DESIGN DRAWINGS BY CBI CONSULTING, INC. MODIFIED WITH THE ADDITION OF VERIFICATION SAMPLES FOR PCB REMEDIATION ACTIVITIES. ALL OTHER INFORMATION INCLUDED AS ORIGINALLY PRESENTED IN THE DRAFT DESIGN DRAWINGS.
2. SAMPLE LOCATIONS APPROXIMATED BASED OFF FIELD MEASUREMENTS.
3. WHERE APPLICABLE, INTERIOR LOCATIONS DEPICTED ON EXTERIOR DRAWINGS TO PRESENT APPROXIMATE SAMPLE LOCATIONS.

KEY PLAN



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CBI PROJECT NO. – 11157

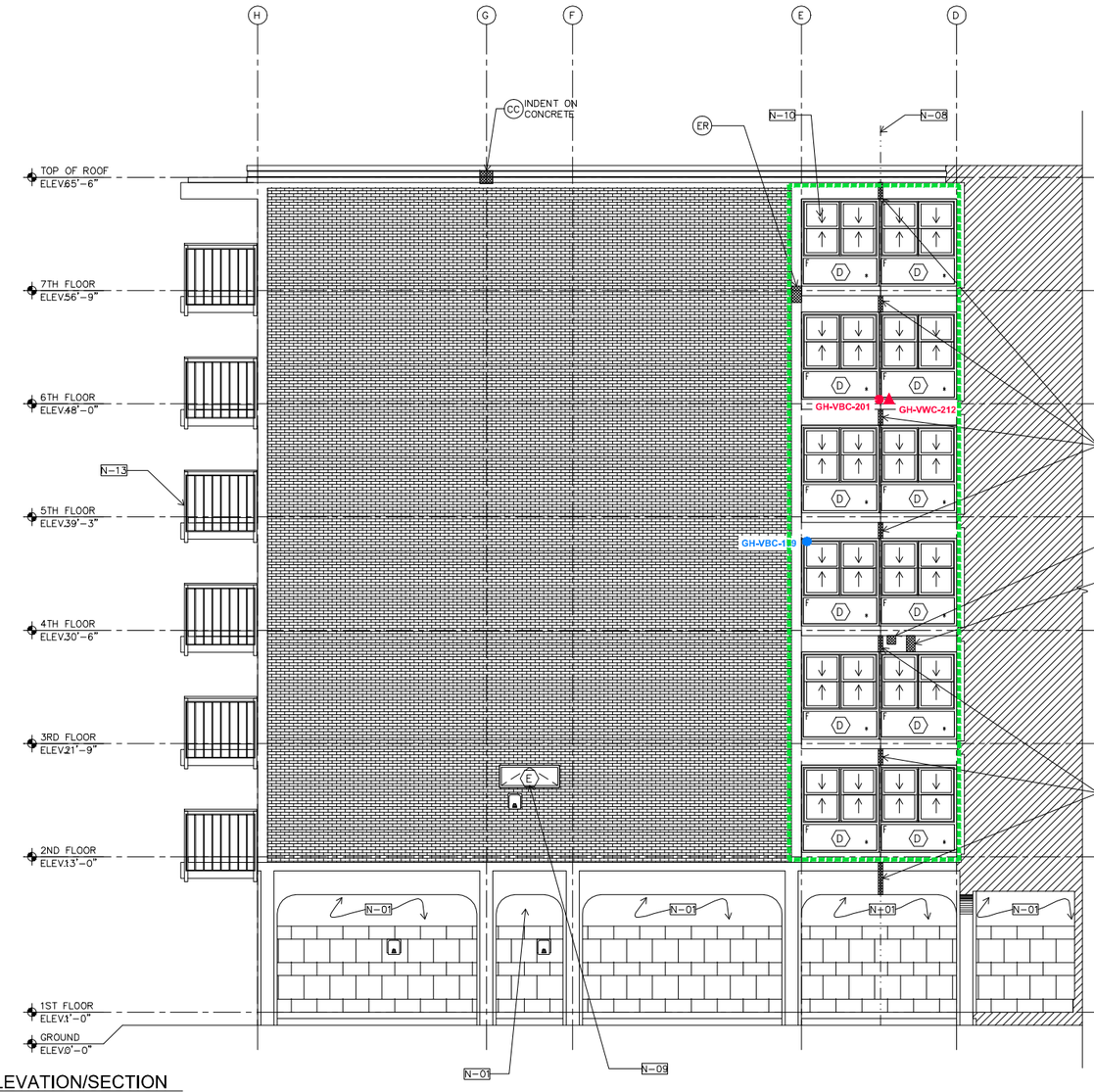
REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

UMASS
UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

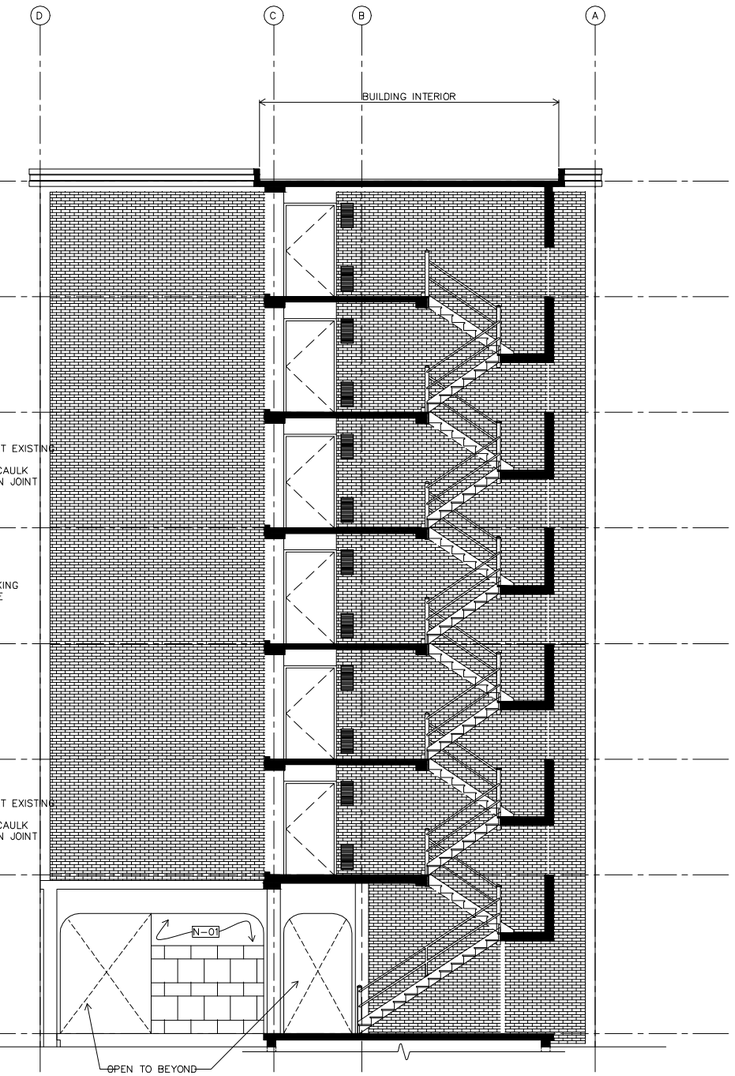
GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
GRAYSON NORTH ELEVATION

	BY	DATE	PROJECT NO. 11-000935	CONTRACT NO. UMA 05-10A-06
DRN.	JAC	---	SCALE 3/16"=1'-0"	SHEET 47 OF 54
APP'D	ML	---		
CKD.			DRAWING NUMBER	
APP'D			D-A-330-11-000935-A2-09	

\\ANDOVER\Projects\224824 UMass Amherst - Grayson House PCBs\win\Drawings\Completion Report - Appendix C\A2-09.dwg Dec 10, 2013 - 2:25 pm PFILLMORE



1 GRAYSON SOUTH ELEVATION/SECTION
SCALE: 3/16" = 1'-0"



2 GRAYSON SOUTH ELEVATION/SECTION
SCALE: 3/16" = 1'-0"

LEGEND

SC	SPALLING CONCRETE
CC	CRACKED CONCRETE
ER	EXPOSED REBAR
XX	WINDOW TAG
	CONCRETE REPAIR AREA
F-XXX	FIELD DORM ROOM NUMBERS
G-XXX	GRAYSON DORM ROOM NUMBERS
	LIGHT SENSOR THROUGH MASONRY PANEL AND BACKUP WALL
	FLASHING
*	PROVIDE TEMPERED SAFETY GLASS

NEW WORK NOTES:

N-01 INSTALL NEW RIBBON WINDOW SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-02 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-03 INSTALL NEW PATIO DOOR AND WINDOW SYSTEM AT FIRST FLOOR APARTMENTS. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

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N-05 INSTALL NEW VERTICAL STRIP WINDOW SYSTEM AT STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-06 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-07 INSTALL NEW WINDOW SYSTEM AT FLOORS 2 TO 7 OF STAIR TOWERS. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-08 LOCATION OF EXISTING STRUCTURAL EXPANSION JOINT IN BUILDING.

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N-13 SEE SHEETS A1-11, A1-12, A1-13, AND A1-14 FOR BALCONY/PORCH CONCRETE REPAIR AND RAILING REPAIRS.

N-14 INSTALL NEW DRYER VENT THROUGH WALL.

LEGEND

GH-VBC-199 ●	FORMER DIRECT CONTACT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER
GH-VBC-201 ●	ADJACENT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER
GH-VWC-212 ▲	ADJACENT MATERIAL VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER
	AREA OF ≥ 50 ppm PCB REMEDIATION ACTIVITIES AS DESCRIBED IN THE NOTIFICATION. ALL OTHER WINDOW/DOOR CAULKING REMOVED FOR DISPOSAL AS ACM AND < 50 ppm PCBs (EXCLUDED PCB PRODUCT)

NOTES:

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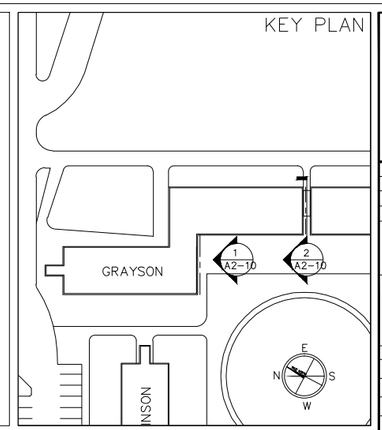
2. SAMPLE LOCATIONS APPROXIMATED BASED OFF FIELD MEASUREMENTS.
3. WHERE APPLICABLE, INTERIOR LOCATIONS DEPICTED ON EXTERIOR DRAWINGS TO PRESENT APPROXIMATE SAMPLE LOCATIONS.

KEY PLAN



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CBI PROJECT NO. – 11157

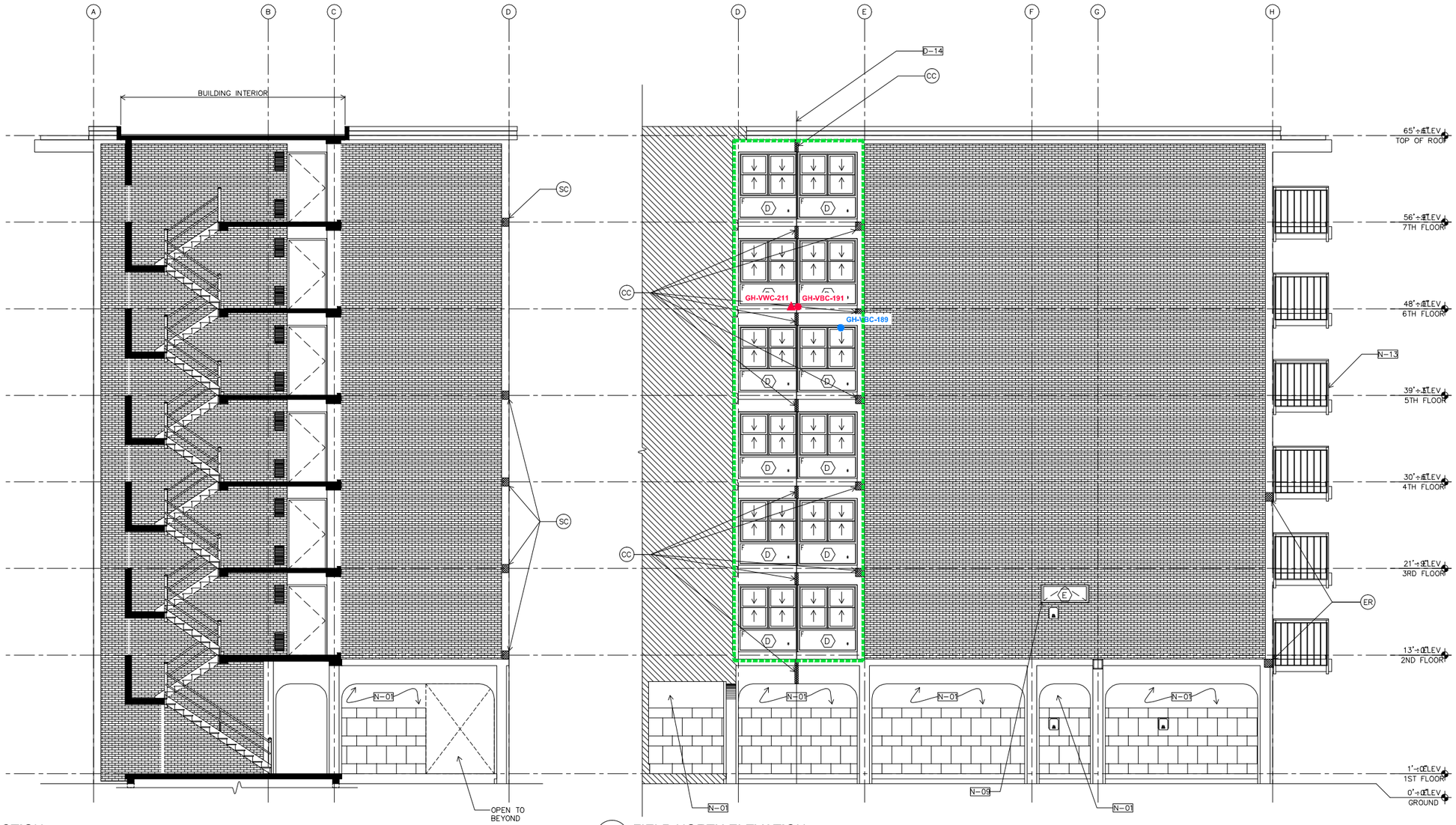
REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

UMASS
UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
GRAYSON SOUTH ELEVATION

	BY	DATE	PROJECT NO. 11-000935	CONTRACT NO. UMA 05-10A-06
DRN.	JAC	---	SCALE 3/16"=1'-0"	SHEET 48 OF 54
APP'D	ML	---		
CKD.			DRAWING NUMBER	
APP'D			D-A-330-11-000935- A2-10	

\\ANDOVER\Projects\224824 UMass Amherst – Grayson House PCBs\wip\Drawings\Completion Report – Appendix C\A2-10.dwg Dec 10, 2013 – 2:31 pm PFILLMORE



1 FIELD NORTH ELEVATION/SECTION
SCALE: 3/16" = 1'-0"

2 FIELD NORTH ELEVATION
SCALE: 3/16" = 1'-0"

LEGEND

- SC — SPALLING CONCRETE
- CC — CRACKED CONCRETE
- ER — EXPOSED REBAR
- XX — WINDOW TAG
- CONCRETE REPAIR AREA
- F-XXX — FIELD DORM ROOM NUMBERS
- G-XXX — GRAYSON DORM ROOM NUMBERS
- LIGHT SENSOR THROUGH MASONRY PANEL AND BACKUP WALL
- FLASHING
- * — PROVIDE TEMPERED SAFETY GLASS

NEW WORK NOTES:

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N-05 INSTALL NEW VERTICAL STRIP WINDOW SYSTEM AT STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

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LEGEND

- GH-VBC-189 — FORMER DIRECT CONTACT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER
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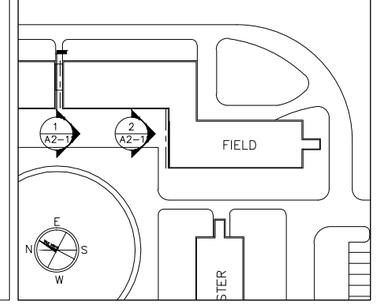
KEY PLAN



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REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

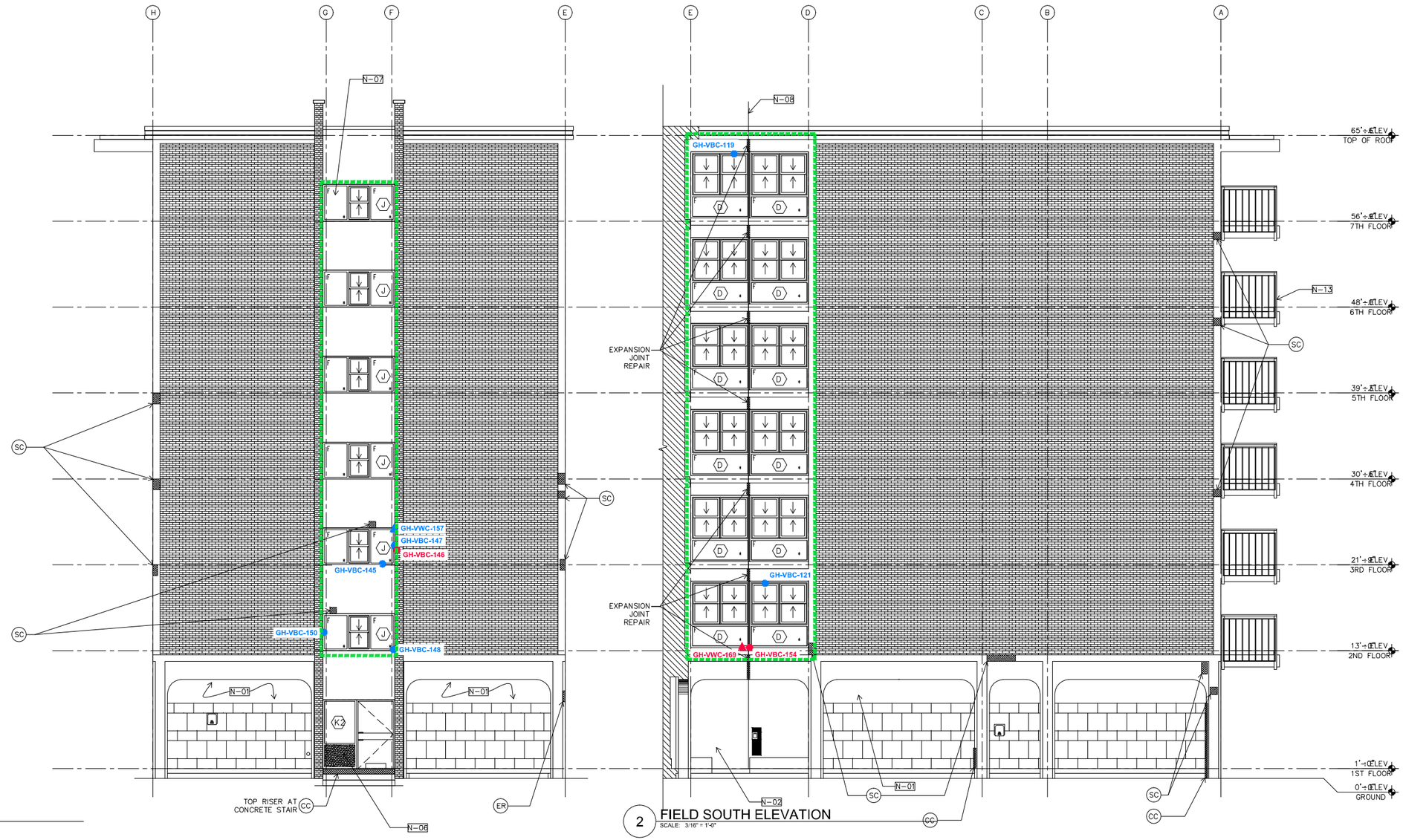
UMASS

UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
FIELD NORTH ELEVATION

	BY	DATE	PROJECT NO. 11-000935	CONTRACT NO. UMA 05-10A-06
DRN.	JAC	---	SCALE 3/16"=1'-0"	SHEET 49 OF 54
APP'D	ML	---		
CKD.			DRAWING NUMBER	
APP'D			D-A-330-11-000935-A2-11	

\\ANDOVER\Projects\224824 UMass Amherst - Grayson House PCBs\vip\Drawings\Completion Report - Appendix C\A2-11.dwg Dec 10, 2013 - 2:33 pm PFILLMORE



1 FIELD SOUTH ELEVATION
SCALE: 3/16" = 1'-0"

2 FIELD SOUTH ELEVATION
SCALE: 3/16" = 1'-0"

LEGEND

- SC — SPALLING CONCRETE
- CC — CRACKED CONCRETE
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N-13 SEE SHEETS A1-11, A1-12, A1-13, AND A1-14 FOR BALCONY/PORCH CONCRETE REPAIR AND RAILING REPAIRS.

N-14 INSTALL NEW DRYER VENT THROUGH WALL.

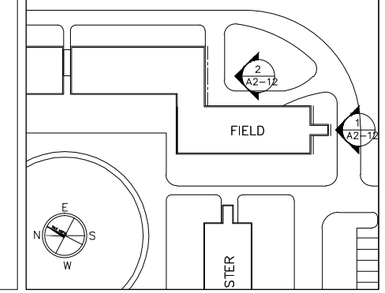
LEGEND

- GH-VBC-189 — FORMER DIRECT CONTACT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER
- GH-VBC-191 — ADJACENT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER
- GH-VWC-152 — FORMER DIRECT CONTACT MATERIAL VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER
- GH-VWC-211 — ADJACENT MATERIAL VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER
- AREA OF ≥ 50 ppm PCB REMEDIATION ACTIVITIES AS DESCRIBED IN THE NOTIFICATION. ALL OTHER WINDOW/DOOR CAULKING REMOVED FOR DISPOSAL AS ACM AND < 50 ppm PCBs (EXCLUDED PCB PRODUCT)

NOTES:

1. ORIGINAL DESIGN DRAWINGS BY CBI CONSULTING, INC. MODIFIED WITH THE ADDITION OF VERIFICATION SAMPLES FOR PCB REMEDIATION ACTIVITIES. ALL OTHER INFORMATION INCLUDED AS ORIGINALLY PRESENTED IN THE DRAFT DESIGN DRAWINGS.
2. SAMPLE LOCATIONS APPROXIMATED BASED OFF FIELD MEASUREMENTS.
3. WHERE APPLICABLE, INTERIOR LOCATIONS DEPICTED ON EXTERIOR DRAWINGS TO PRESENT APPROXIMATE SAMPLE LOCATIONS.

KEY PLAN



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CBI PROJECT NO. – 11157

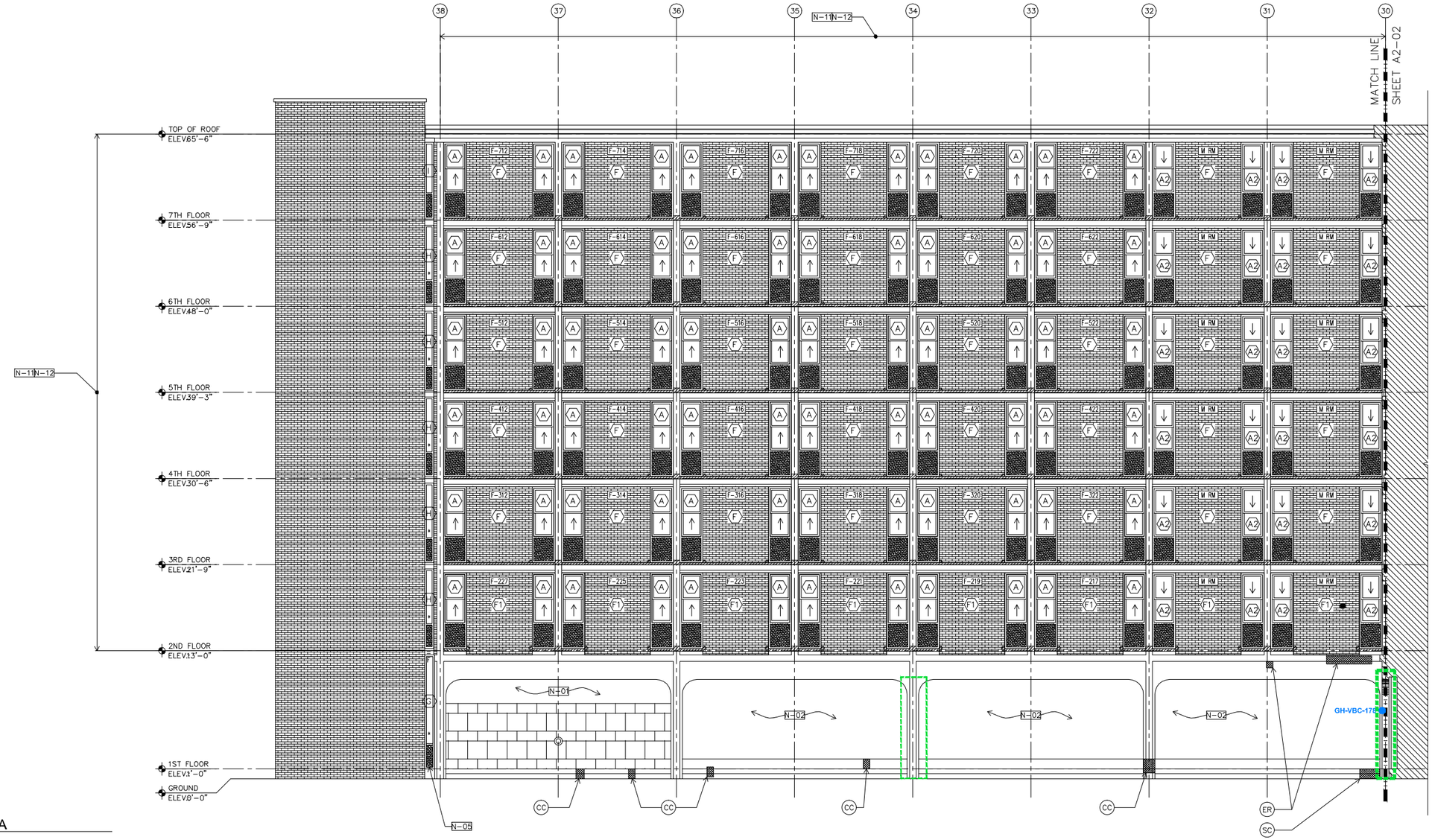
REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

UMASS
UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
FIELD SOUTH ELEVATION

	BY	DATE		
DRN.	JAC	---	PROJECT NO. 11-000935	CONTRACT NO. UMA 05-10A-06
APP'D	ML	---	SCALE 3/16"=1'-0"	SHEET 50 OF 54
CKD.			DRAWING NUMBER	
APP'D			D-A-330-11-000935-A2-12	

\\ANDOVER\Projects\224824 UMass Amherst - Grayson House PCBs\wip\Drawings\Completion Report - Appendix C\A2-12.dwg Dec 10, 2013 - 2:35 pm PFILLMORE



1 FIELD EAST ELEVATION A

SCALE: 3/16" = 1'-0"

LEGEND

- SC — SPALLING CONCRETE
- CC — CRACKED CONCRETE
- ER — EXPOSED REBAR
- XX — WINDOW TAG
- CONCRETE REPAIR AREA
- F-XXX — FIELD DORM ROOM NUMBERS
- G-XXX — GRAYSON DORM ROOM NUMBERS
- LIGHT SENSOR THROUGH MASONRY PANEL AND BACKUP WALL
- FLASHING
- * — PROVIDE TEMPERED SAFETY GLASS

NEW WORK NOTES:

N-01 INSTALL NEW RIBBON WINDOW SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-02 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-03 INSTALL NEW PATIO DOOR AND WINDOW SYSTEM AT FIRST FLOOR APARTMENTS. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-04 INSTALL NEW PATIO DOOR /WINDOW SYSTEM AT QUAD/LOUNGE ROOMS AND APARTMENTS WITH BALCONY ACCESS ON FLOORS 2 TO 7. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-05 INSTALL NEW VERTICAL STRIP WINDOW SYSTEM AT STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-06 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-07 INSTALL NEW WINDOW SYSTEM AT FLOORS 2 TO 7 OF STAIR TOWERS. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-08 LOCATION OF EXISTING STRUCTURAL EXPANSION JOINT IN BUILDING.

N-09 INSTALL NEW AWNING WINDOW SYSTEM IN APARTMENT. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-10 INSTALL NEW WINDOW SYSTEM AT STAIR/ELEVATOR LOBBY ON FLOORS 2 TO 7. PROVIDE EXPANSION JOINT IN WINDOW SYSTEM. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-11 INSTALL NEW FACE BRICK PANELS BETWEEN WINDOWS IN DORM ROOMS. REINFORCE EXISTING 4" CMU BACKUP. INSTALL NEW COMBINATION VAPOR BARRIER/AIR BARRIER ON FACE OF EXISTING 4" CMU. INSTALL NEW 2" OF RIGID INSULATION IN CAVITY. INSTALL NEW MORTAR ENTRAPMENT MAT BETWEEN INSULATION AND BRICK. INSTALL NEW MASONRY TIES BETWEEN BACKUP 4" CMU AND FACE BRICK. INSTALL NEW FLASHING AT BRICK WORK. INSTALL NEW WEEPHOLES IN BRICK AT TOP AND BOTTOM OF CAVITY @ 24" ON CENTER MAXIMUM.

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N-14 INSTALL NEW DRYER VENT THROUGH WALL.

LEGEND

GH-VBC-178 ● FORMER DIRECT CONTACT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER

AREA OF ≥ 50 ppm PCB REMEDIATION ACTIVITIES AS DESCRIBED IN THE NOTIFICATION. ALL OTHER WINDOW/DOOR CAULKING REMOVED FOR DISPOSAL AS ACM AND < 50 ppm PCBs (EXCLUDED PCB PRODUCT)

NOTES:

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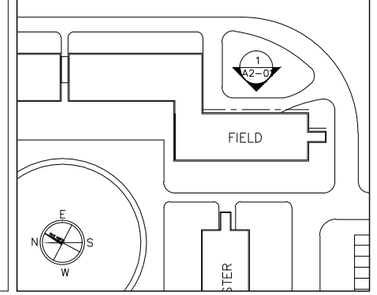
KEY PLAN



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CBI PROJECT NO. – 11157

REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

UMASS

UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
FIELD EAST ELEVATION A

	BY	DATE	PROJECT NO. 11-000935	CONTRACT NO. UMA 05-10A-06
DRN.	JAC	---	SCALE 3/16"=1'-0"	SHEET 39 OF 54
APP'D	ML	---		
CKD.			DRAWING NUMBER	
APP'D			D-A-330-11-000935-A2-01	

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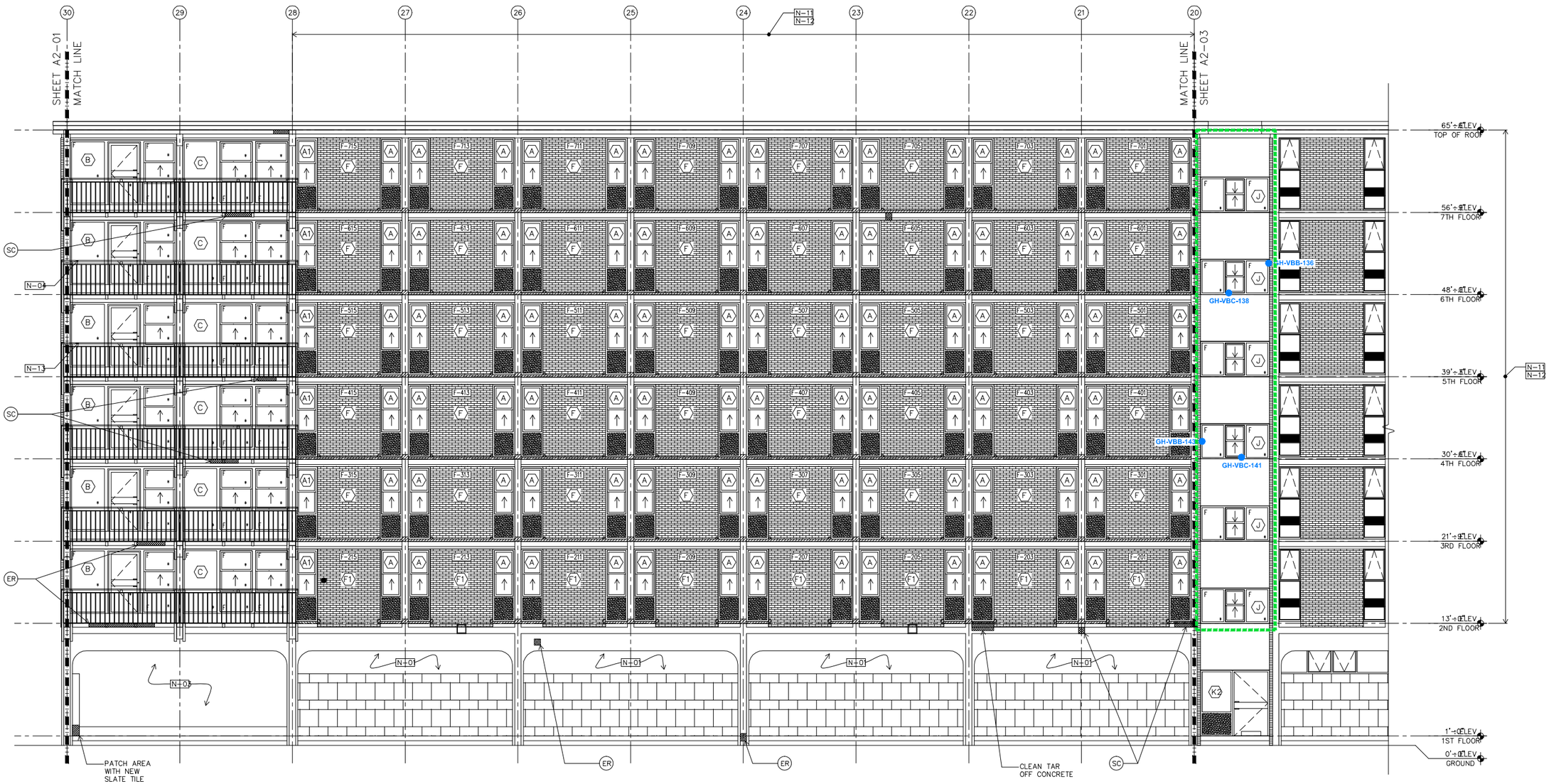

1 FIELD EAST ELEVATION B
SCALE: 3/16" = 1'-0"

LEGEND

- SC — SPALLING CONCRETE
- CC — CRACKED CONCRETE
- ER — EXPOSED REBAR
- XX — WINDOW TAG
- CONCRETE REPAIR AREA
- F-XXX — FIELD DORM ROOM NUMBERS
- G-XXX — GRAYSON DORM ROOM NUMBERS
- LIGHT SENSOR THROUGH MASONRY PANEL AND BACKUP WALL
- FLASHING
- * — PROVIDE TEMPERED SAFETY GLASS

NEW WORK NOTES:

N-01 INSTALL NEW RIBBON WINDOW SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-02 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-03 INSTALL NEW PATIO DOOR AND WINDOW SYSTEM AT FIRST FLOOR APARTMENTS. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-04 INSTALL NEW PATIO DOOR/WINDOW SYSTEM AT QUAD/LOUNGE ROOMS AND APARTMENTS WITH BALCONY ACCESS ON FLOORS 2 TO 7. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-05 INSTALL NEW VERTICAL STRIP WINDOW SYSTEM AT STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-06 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-07 INSTALL NEW WINDOW SYSTEM AT FLOORS 2 TO 7 OF STAIR TOWERS. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-08 LOCATION OF EXISTING STRUCTURAL EXPANSION JOINT IN BUILDING.

N-09 INSTALL NEW AWNING WINDOW SYSTEM IN APARTMENT. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

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N-13 SEE SHEETS A1-11, A1-12, A1-13, AND A1-14 FOR BALCONY/PORCH CONCRETE REPAIR AND RAILING REPAIRS.

N-14 INSTALL NEW DRYER VENT THROUGH WALL.

LEGEND

GH-VBC-138 ● FORMER DIRECT CONTACT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER

AREA OF ≥ 50 ppm PCB REMEDIATION ACTIVITIES AS DESCRIBED IN THE NOTIFICATION. ALL OTHER WINDOW/DOOR CAULKING REMOVED FOR DISPOSAL AS ACM AND < 50 ppm PCBs (EXCLUDED PCB PRODUCT)

NOTES:

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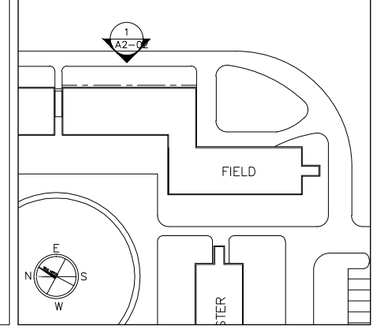
KEY PLAN



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CBI PROJECT NO. – 11157

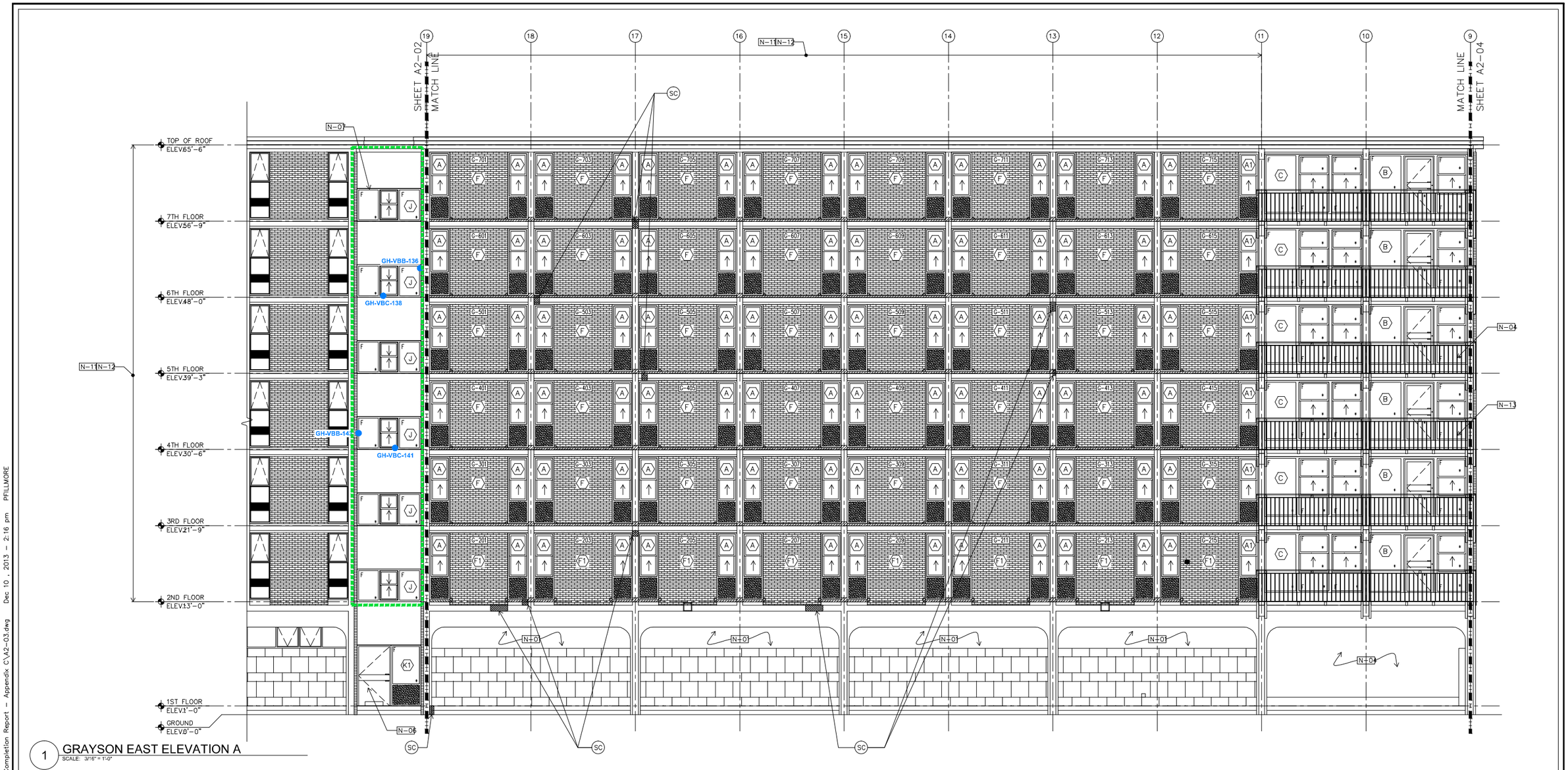
REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
FIELD EAST ELEVATION B

	BY	DATE	PROJECT NO. 11-000935	CONTRACT NO. UMA 05-10A-06
DRN.	JAC	---	SCALE 3/16"=1'-0"	SHEET 40 OF 54
APP'D	ML	---		
CKD.			DRAWING NUMBER	
APP'D			D-A-330-11-000935- A2-02	

\\ANDOVER\Projects\224824 UMass Amherst - Grayson House PCBs\wip\Drawings\Completion Report - Appendix C\A2-02.dwg Dec 10, 2013 - 2:17 pm PFILLMORE



1 GRAYSON EAST ELEVATION A
SCALE: 3/16" = 1'-0"

LEGEND

- SC — SPALLING CONCRETE
- CC — CRACKED CONCRETE
- ER — EXPOSED REBAR
- XX — WINDOW TAG
- CONCRETE REPAIR AREA
- F-XXX — FIELD DORM ROOM NUMBERS
- G-XXX — GRAYSON DORM ROOM NUMBERS
- LIGHT SENSOR THROUGH MASONRY PANEL AND BACKUP WALL
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NEW WORK NOTES:

N-01 INSTALL NEW RIBBON WINDOW SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-02 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

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N-05 INSTALL NEW VERTICAL STRIP WINDOW SYSTEM AT STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-06 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-07 INSTALL NEW WINDOW SYSTEM AT FLOORS 2 TO 7 OF STAIR TOWERS. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-08 LOCATION OF EXISTING STRUCTURAL EXPANSION JOINT IN BUILDING.

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N-13 SEE SHEETS A1-11, A1-12, A1-13, AND A1-14 FOR BALCONY/PORCH CONCRETE REPAIR AND RAILING REPAIRS.

N-14 INSTALL NEW DRYER VENT THROUGH WALL.

LEGEND

GH-VBC-138 ● FORMER DIRECT CONTACT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER

AREA OF ≥ 50 ppm PCB REMEDIATION ACTIVITIES AS DESCRIBED IN THE NOTIFICATION. ALL OTHER WINDOW/DOOR CAULKING REMOVED FOR DISPOSAL AS ACM AND < 50 ppm PCBs (EXCLUDED PCB PRODUCT)

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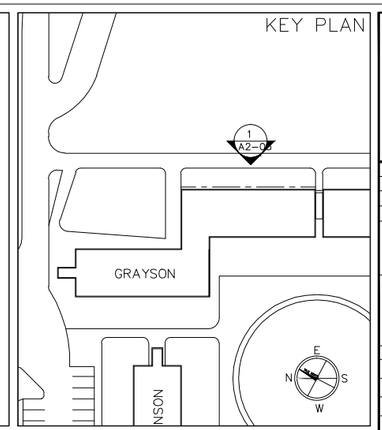

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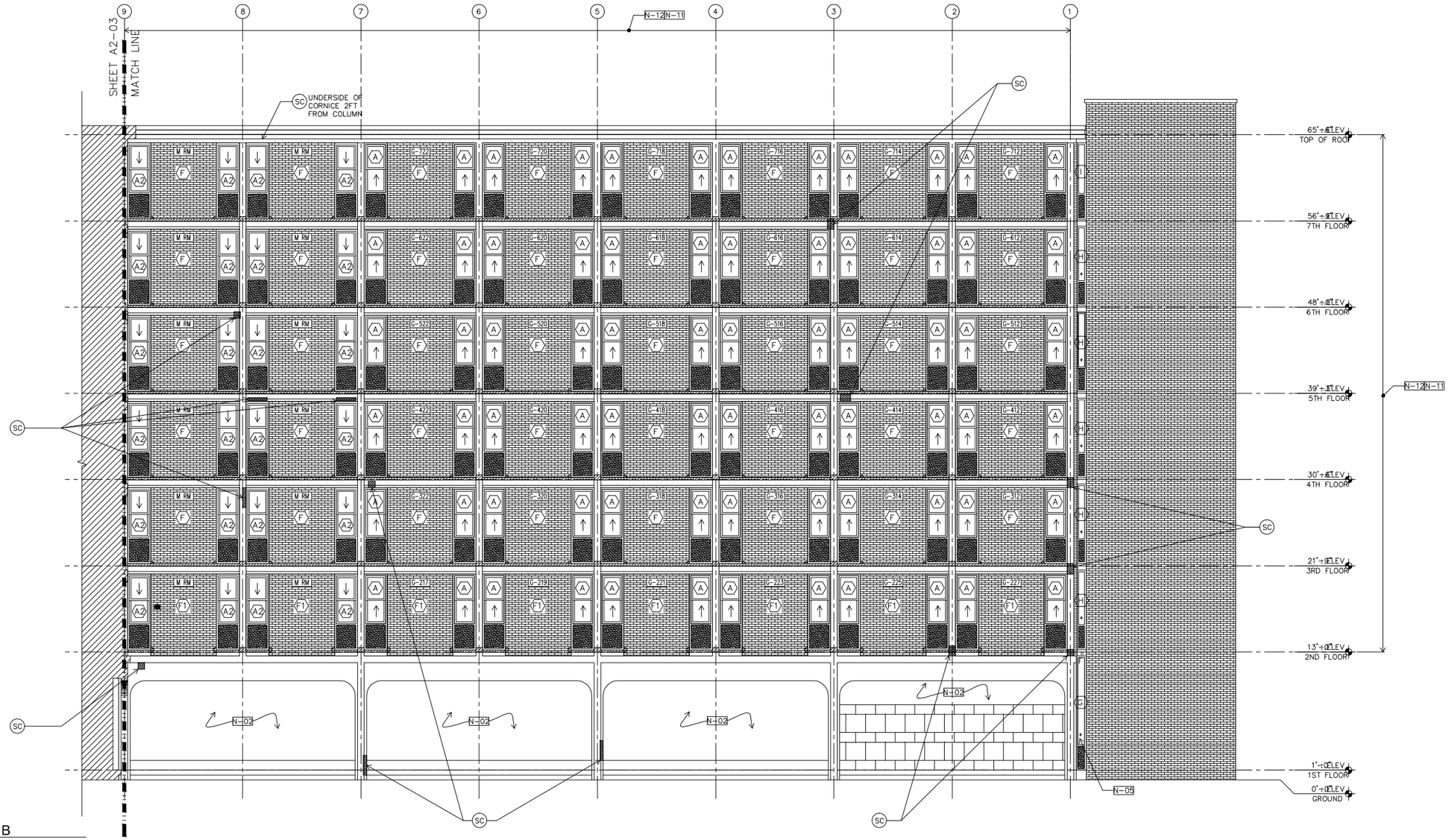
REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

UMASS
UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
GRAYSON EAST ELEVATION B

	BY	DATE	PROJECT NO. 11-000935	CONTRACT NO. UMA 05-10A-06
DRN.	JAC	---	SCALE 3/16"=1'-0"	SHEET 41 OF 54
APP'D	ML	---		
CKD.			DRAWING NUMBER D-A-330-11-000935-A2-03	
APP'D				

\\ANDOVER\Projects\224824 UMass Amherst - Grayson House PCBs\wip\Drawings\Completion Report - Appendix C\A2-03.dwg Dec 10, 2013 - 2:16 pm PFILLMORE



1 GRAYSON EAST ELEVATION B
SCALE: 3/16" = 1'-0"

LEGEND

- SC — SPALLING CONCRETE
- CC — CRACKED CONCRETE
- ER — EXPOSED REBAR
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- F-XXX — FIELD DORM ROOM NUMBERS
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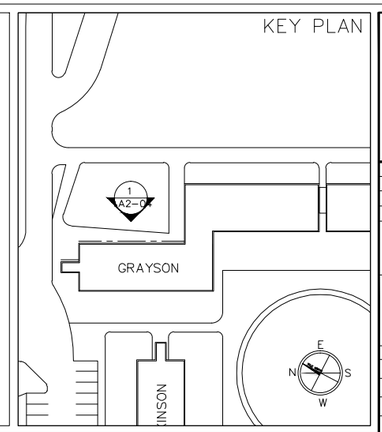
N-14 INSTALL NEW DRYER VENT THROUGH WALL.

NO > 50 ppm PCB REMEDIATION ACTIVITY ON THIS ELEVATION.

KEY PLAN



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CBI PROJECT NO. – 11157

REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
GRAYSON EAST ELEVATION A

	BY	DATE	PROJECT NO.	CONTRACT NO.
DRN.	JAC	---	11-000935	UMA 05-10A-06
APP'D	ML	---	SCALE 3/16"=1'-0"	SHEET 42 OF 54
CKD.			DRAWING NUMBER	
APP'D			D-A-330-11-000935- A2-04	

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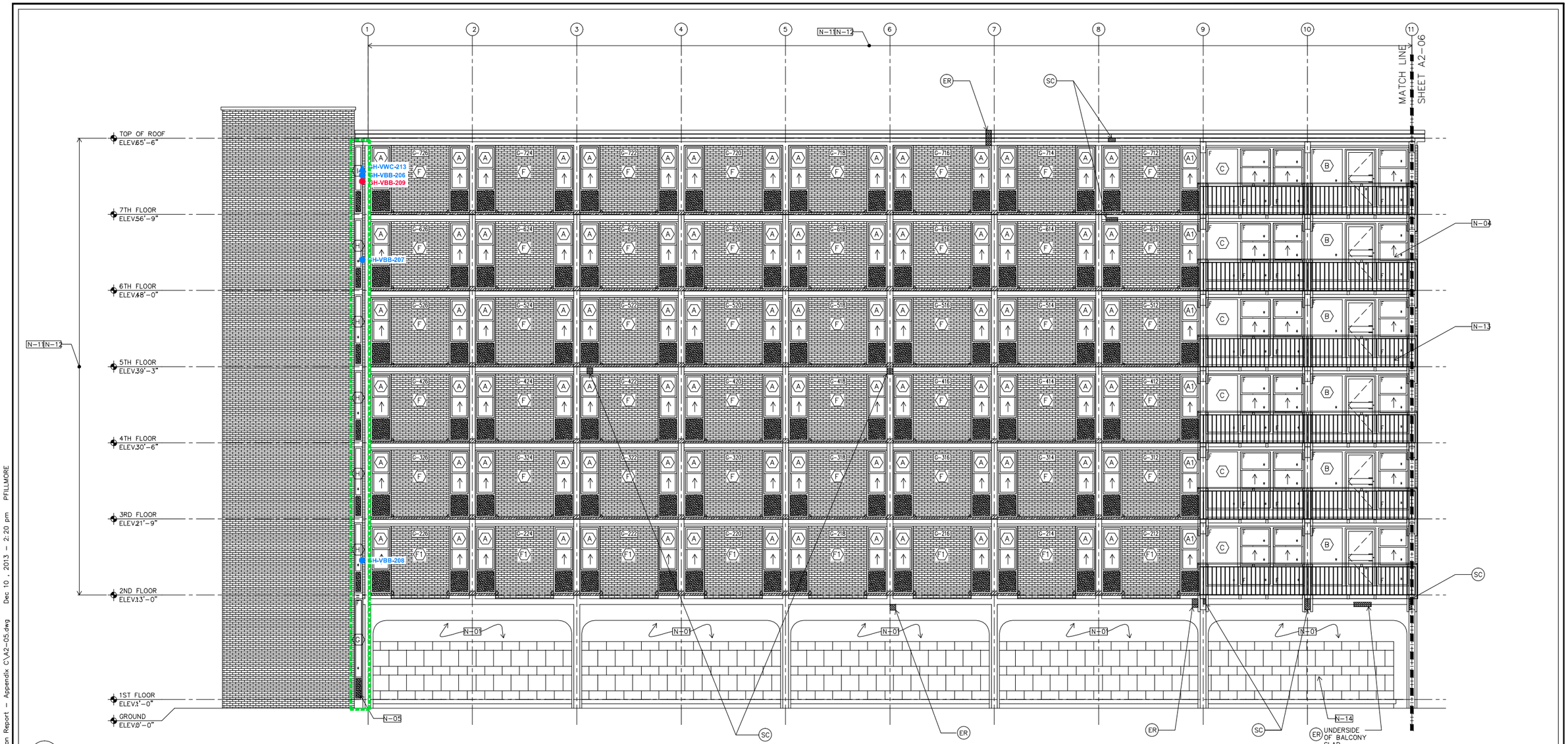

1 GRAYSON WEST ELEVATION A
SCALE: 3/16" = 1'-0"

LEGEND

- SC — SPALLING CONCRETE
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- LIGHT SENSOR THROUGH MASONRY PANEL AND BACKUP WALL
- FLASHING
- * — PROVIDE TEMPERED SAFETY GLASS

NEW WORK NOTES:

N-01 INSTALL NEW RIBBON WINDOW SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-02 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-03 INSTALL NEW PATIO DOOR AND WINDOW SYSTEM AT FIRST FLOOR APARTMENTS. SEE ELEVATIONS ON SHEETS A2-13 AND A2-14.

N-04 INSTALL NEW PATIO DOOR/WINDOW SYSTEM AT QUAD/LOUNGE ROOMS AND APARTMENTS WITH BALCONY ACCESS ON FLOORS 2 TO 7. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-05 INSTALL NEW VERTICAL STRIP WINDOW SYSTEM AT STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-06 INSTALL NEW STOREFRONT AND ENTRANCE DOOR SYSTEM AT FIRST FLOOR STAIRWELLS. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-07 INSTALL NEW WINDOW SYSTEM AT FLOORS 2 TO 7 OF STAIR TOWERS. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-08 LOCATION OF EXISTING STRUCTURAL EXPANSION JOINT IN BUILDING.

N-09 INSTALL NEW AWNING WINDOW SYSTEM IN APARTMENT. SEE WINDOW TYPES ON SHEET A3-01FOR ADDITIONAL INFORMATION.

N-10 INSTALL NEW WINDOW SYSTEM AT STAIR/ELEVATOR LOBBY ON FLOORS 2 TO 7. PROVIDE EXPANSION JOINT IN WINDOW SYSTEM. SEE WINDOW TYPES ON SHEET A3-01 FOR ADDITIONAL INFORMATION.

N-11 INSTALL NEW FACE BRICK PANELS BETWEEN WINDOWS IN DORM ROOMS. REINFORCE EXISTING 4" CMU BACKUP. INSTALL NEW COMBINATION VAPOR BARRIER/AIR BARRIER ON FACE OF EXISTING 4" CMU. INSTALL NEW 2" OF RIGID INSULATION IN CAVITY. INSTALL NEW MORTAR ENTRAPMENT MAT BETWEEN INSULATION AND BRICK. INSTALL NEW MASONRY TIES BETWEEN BACKUP 4" CMU AND FACE BRICK. INSTALL NEW FLASHING AT BRICK WORK. INSTALL NEW WEEPHOLES IN BRICK AT TOP AND BOTTOM OF CAVITY @ 24" ON CENTER MAXIMUM.

N-12 INSTALL NEW WINDOW SYSTEMS IN DORM ROOMS AND BATHROOMS ON FLOORS 2 TO 7. SEE WINDOW TYPES ON SHEETS A3-01 FOR ADDITIONAL INFORMATION.

N-13 SEE SHEETS A1-11, A1-12, A1-13, AND A1-14 FOR BALCONY/PORCH CONCRETE REPAIR AND RAILING REPAIRS.

N-14 INSTALL NEW DRYER VENT THROUGH WALL.

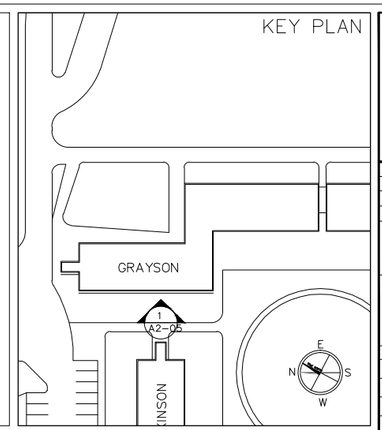
LEGEND

- GH-VBB-206 ● FORMER DIRECT CONTACT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER
- GH-VBB-209 ● ADJACENT MATERIAL VERIFICATION SAMPLE LOCATION AND IDENTIFIER
- GH-VWC-213 ▲ FORMER DIRECT CONTACT MATERIAL VERIFICATION WIPE SAMPLE LOCATION AND IDENTIFIER
- AREA OF ≥ 50 ppm PCB REMEDIATION ACTIVITIES AS DESCRIBED IN THE NOTIFICATION. ALL OTHER WINDOW/DOOR CAULKING REMOVED FOR DISPOSAL AS ACM AND < 50 ppm PCBs (EXCLUDED PCB PRODUCT)

NOTES:

1. ORIGINAL DESIGN DRAWINGS BY CBI CONSULTING, INC. MODIFIED WITH THE ADDITION OF VERIFICATION SAMPLES FOR PCB REMEDIATION ACTIVITIES. ALL OTHER INFORMATION INCLUDED AS ORIGINALLY PRESENTED IN THE DRAFT DESIGN DRAWINGS.
2. SAMPLE LOCATIONS APPROXIMATED BASED OFF FIELD MEASUREMENTS.
3. WHERE APPLICABLE, INTERIOR LOCATIONS DEPICTED ON EXTERIOR DRAWINGS TO PRESENT APPROXIMATE SAMPLE LOCATIONS.

KEY PLAN



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CBI PROJECT NO. – 11157

REV. NO.	DESCRIPTION	BY	APP'D	DATE
	SCHEMATIC DESIGN			10/19/11

UMASS
UNIVERSITY OF MASSACHUSETTS
FACILITIES PLANNING DIVISION

GRAYSON & FIELD HOUSE
WINDOW REPLACEMENT & ACCESSIBILITY MODIFICATIONS
GRAYSON WEST ELEVATION A

	BY	DATE	PROJECT NO. 11-000935	CONTRACT NO. UMA 05-10A-06
DRN.	JAC	---	SCALE 3/16"=1'-0"	SHEET 43 OF 54
APP'D	ML	---		
CKD.			DRAWING NUMBER D-A-330-11-000935-A2-05	
APP'D				

\\ANDOVER\Projects\224824 UMass Amherst - Grayson House PCBs\wip\Drawings\Completion Report - Appendix C\A2-05.dwg Dec 10, 2013 - 2:20 pm PFILLMORE

APPENDIX D: ANALYTICAL LABORATORY REPORTS AND DATA VALIDATION SUMMARIES

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

October 3, 2012

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

Project Location: UMA Grayson Field
Client Job Number:
Project Number: 224867
Laboratory Work Order Number: 12G0792

Enclosed are results of analyses for samples received by the laboratory on July 24, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 10/3/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224867

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12G0792

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

PROJECT LOCATION: UMA Grayson Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBC-119	12G0792-01	Product/Solid	7th - South	SW-846 8082A	
GH-VBC-121	12G0792-02	Product/Solid	2nd - South	SW-846 8082A	
GH-VBC-123	12G0792-03	Product/Solid	3rd - North	SW-846 8082A	
GH-VBC-125	12G0792-04	Product/Solid	6th - North	SW-846 8082A	
GH-VBCD-127	12G0792-05	Product/Solid	Duplicate	SW-846 8082A	

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CASE NARRATIVE SUMMARY

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

REVISED REPORT - 10/03/2012 - Sample descriptions revised for 12G0792-03 & -04.

SW-846 8082A

Qualifications:

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

Analyte & Samples(s) Qualified:

Aroclor-1016 [2C]

B055713-MS1, B055713-MSD1

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Aroclor-1016, Aroclor-1260

B055713-BS1, B055713-BSD1, B055713-MS1, B055713-MSD1

Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column. All sample results are reported from the column within control criteria.

Analyte & Samples(s) Qualified:

Aroclor-1254 [2C]

12G0792-01[GH-VBC-119], 12G0792-02[GH-VBC-121], 12G0792-03[GH-VBC-123], 12G0792-05[GH-VBCD-127]

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

con-test® ANALYTICAL LABORATORY

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

Project Location: UMA Grayson Field | Sample Description: 7th - South | Work Order: 12G0792

Date Received: 7/24/2012

Field Sample #: GH-VBC-119 | Sampled: 7/24/2012 14:05

Sample ID: 12G0792-01

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	0.10	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:34	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:34	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:34	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:34	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:34	MJC
Aroclor-1254 [2]	0.24	0.10	mg/Kg	1	V-24	SW-846 8082A	7/24/12	7/25/12 17:34	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:34	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:34	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:34	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	96.3	30-150		7/25/12 17:34
Decachlorobiphenyl [2]	112	30-150		7/25/12 17:34
Tetrachloro-m-xylene [1]	73.6	30-150		7/25/12 17:34
Tetrachloro-m-xylene [2]	85.2	30-150		7/25/12 17:34

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

Project Location: UMA Grayson Field | Sample Description: 2nd - South | Work Order: 12G0792

Date Received: 7/24/2012

Field Sample #: GH-VBC-121 | Sampled: 7/24/2012 15:10

Sample ID: 12G0792-02

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	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:47	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:47	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:47	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:47	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:47	MJC
Aroclor-1254 [2]	0.19	0.095	mg/Kg	1	V-24	SW-846 8082A	7/24/12	7/25/12 17:47	MJC
Aroclor-1260 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:47	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:47	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:47	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	85.8	30-150		7/25/12 17:47
Decachlorobiphenyl [2]	98.3	30-150		7/25/12 17:47
Tetrachloro-m-xylene [1]	65.5	30-150		7/25/12 17:47
Tetrachloro-m-xylene [2]	76.2	30-150		7/25/12 17:47

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

Project Location: UMA Grayson Field | Sample Description: 3rd - North | Work Order: 12G0792

Date Received: 7/24/2012

Field Sample #: GH-VBC-123 | Sampled: 7/24/2012 16:05

Sample ID: 12G0792-03

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	7/24/12	7/25/12 17:59	MJC
Aroclor-1221 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:59	MJC
Aroclor-1232 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:59	MJC
Aroclor-1242 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:59	MJC
Aroclor-1248 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:59	MJC
Aroclor-1254 [1]	0.16	0.087	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:59	MJC
Aroclor-1260 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:59	MJC
Aroclor-1262 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:59	MJC
Aroclor-1268 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 17:59	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	127	30-150		7/25/12 17:59
Decachlorobiphenyl [2]	146	30-150		7/25/12 17:59
Tetrachloro-m-xylene [1]	87.1	30-150		7/25/12 17:59
Tetrachloro-m-xylene [2]	104	30-150		7/25/12 17:59

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Project Location: UMA Grayson Field | Sample Description: 6th - North | Work Order: 12G0792

Date Received: 7/24/2012

Field Sample #: GH-VBC-125 | Sampled: 7/24/2012 16:50

Sample ID: 12G0792-04

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	0.43	mg/Kg	5		SW-846 8082A	7/24/12	7/26/12 11:34	MJC
Aroclor-1221 [1]	ND	0.43	mg/Kg	5		SW-846 8082A	7/24/12	7/26/12 11:34	MJC
Aroclor-1232 [1]	ND	0.43	mg/Kg	5		SW-846 8082A	7/24/12	7/26/12 11:34	MJC
Aroclor-1242 [1]	ND	0.43	mg/Kg	5		SW-846 8082A	7/24/12	7/26/12 11:34	MJC
Aroclor-1248 [1]	ND	0.43	mg/Kg	5		SW-846 8082A	7/24/12	7/26/12 11:34	MJC
Aroclor-1254 [1]	1.8	0.43	mg/Kg	5		SW-846 8082A	7/24/12	7/26/12 11:34	MJC
Aroclor-1260 [1]	ND	0.43	mg/Kg	5		SW-846 8082A	7/24/12	7/26/12 11:34	MJC
Aroclor-1262 [1]	ND	0.43	mg/Kg	5		SW-846 8082A	7/24/12	7/26/12 11:34	MJC
Aroclor-1268 [1]	ND	0.43	mg/Kg	5		SW-846 8082A	7/24/12	7/26/12 11:34	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	109	30-150		7/26/12 11:34
Decachlorobiphenyl [2]	114	30-150		7/26/12 11:34
Tetrachloro-m-xylene [1]	99.7	30-150		7/26/12 11:34
Tetrachloro-m-xylene [2]	102	30-150		7/26/12 11:34

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Project Location: UMA Grayson Field | Sample Description: Duplicate | Work Order: 12G0792

Date Received: 7/24/2012

Field Sample #: GH-VBCD-127 | Sampled: 7/24/2012 15:10

Sample ID: 12G0792-05

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	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 18:24	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 18:24	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 18:24	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 18:24	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 18:24	MJC
Aroclor-1254 [1]	0.25	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 18:24	MJC
Aroclor-1260 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 18:24	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 18:24	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/24/12	7/25/12 18:24	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	115	30-150		7/25/12 18:24
Decachlorobiphenyl [2]	132	30-150		7/25/12 18:24
Tetrachloro-m-xylene [1]	86.5	30-150		7/25/12 18:24
Tetrachloro-m-xylene [2]	100	30-150		7/25/12 18:24

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
12G0792-01 [GH-VBC-119]	B055713	2.00	10.0	07/24/12
12G0792-02 [GH-VBC-121]	B055713	2.10	10.0	07/24/12
12G0792-03 [GH-VBC-123]	B055713	2.30	10.0	07/24/12
12G0792-04 [GH-VBC-125]	B055713	2.30	10.0	07/24/12
12G0792-05 [GH-VBCD-127]	B055713	2.10	10.0	07/24/12

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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 B055713 - SW-846 3540C										
Blank (B055713-BLK1)				Prepared: 07/24/12 Analyzed: 07/25/12						
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	*0.952*		mg/Kg	1.00		95.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.09*		mg/Kg	1.00		109	30-150			
Surrogate: Tetrachloro-m-xylene	*0.721*		mg/Kg	1.00		72.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.847*		mg/Kg	1.00		84.7	30-150			
LCS (B055713-BS1)				Prepared: 07/24/12 Analyzed: 07/25/12						
Aroclor-1016	0.17	0.10	mg/Kg	0.250		69.3	40-140			V-05
Aroclor-1016 [2C]	0.23	0.10	mg/Kg	0.250		91.8	40-140			
Aroclor-1260	0.19	0.10	mg/Kg	0.250		74.1	40-140			V-05
Aroclor-1260 [2C]	0.21	0.10	mg/Kg	0.250		85.0	40-140			
Surrogate: Decachlorobiphenyl	*0.919*		mg/Kg	1.00		91.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.06*		mg/Kg	1.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	*0.698*		mg/Kg	1.00		69.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.818*		mg/Kg	1.00		81.8	30-150			
LCS Dup (B055713-BSD1)				Prepared: 07/24/12 Analyzed: 07/25/12						
Aroclor-1016	0.19	0.10	mg/Kg	0.250		77.6	40-140	11.2	30	V-05
Aroclor-1016 [2C]	0.26	0.10	mg/Kg	0.250		103	40-140	11.5	30	
Aroclor-1260	0.19	0.10	mg/Kg	0.250		76.8	40-140	3.53	30	V-05
Aroclor-1260 [2C]	0.26	0.10	mg/Kg	0.250		104	40-140	20.5	30	
Surrogate: Decachlorobiphenyl	*1.03*		mg/Kg	1.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.20*		mg/Kg	1.00		120	30-150			
Surrogate: Tetrachloro-m-xylene	*0.788*		mg/Kg	1.00		78.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.916*		mg/Kg	1.00		91.6	30-150			

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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 B055713 - SW-846 3540C											
Matrix Spike (B055713-MS1)		**Source: 12G0792-01**		Prepared: 07/24/12 Analyzed: 07/25/12							
Aroclor-1016	0.27	0.10	mg/Kg	0.250	0.0	110		40-140			V-05
Aroclor-1016 [2C]	0.46	0.10	mg/Kg	0.250	0.0	**184**	*	40-140			MS-21
Aroclor-1260	0.22	0.10	mg/Kg	0.250	0.0	88.0		40-140			V-05
Aroclor-1260 [2C]	0.26	0.10	mg/Kg	0.250	0.0	103		40-140			
Surrogate: Decachlorobiphenyl	*1.13*		mg/Kg	1.00		113		30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.30*		mg/Kg	1.00		130		30-150			
Surrogate: Tetrachloro-m-xylene	*0.841*		mg/Kg	1.00		84.1		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.962*		mg/Kg	1.00		96.2		30-150			
Matrix Spike Dup (B055713-MSD1)		**Source: 12G0792-01**		Prepared: 07/24/12 Analyzed: 07/25/12							
Aroclor-1016	0.27	0.10	mg/Kg	0.250	0.0	110		40-140	0.137	50	V-05
Aroclor-1016 [2C]	0.47	0.10	mg/Kg	0.250	0.0	**188**	*	40-140	1.95	50	MS-21
Aroclor-1260	0.22	0.10	mg/Kg	0.250	0.0	88.0		40-140	0.00909	50	V-05
Aroclor-1260 [2C]	0.26	0.10	mg/Kg	0.250	0.0	104		40-140	0.364	50	
Surrogate: Decachlorobiphenyl	*1.14*		mg/Kg	1.00		114		30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.30*		mg/Kg	1.00		130		30-150			
Surrogate: Tetrachloro-m-xylene	*0.851*		mg/Kg	1.00		85.1		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.977*		mg/Kg	1.00		97.7		30-150			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
MS-21	Matrix spike and/or spike duplicate recovery bias high due to contribution of other Aroclors present in the source sample.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
V-24	Continuing calibration verification was outside of control limits on the confirmation column, but within control limits on the primary column. All sample results are reported from the column within control criteria.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
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 Publilc 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

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www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

12G0792

Company Name: Woodard & Curran
Address: 35 N.E. Bus Ctr Drive Suite 180
Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA Grayson / Field
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
O FAX ✓ EMAIL O WEBSITE
Fax # jhamel@woodardcurran.com
Email: gfranklin@ " " " "
Format: ✓ PDF ✓ EXCEL O GIS
O OTHER
O "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
O yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082 PCBs/3540C	# of Containers	** Preservation	***Container Code	Dissolved Metals (Field Filtered / Lab to Filter)
01	GH-VBC-119	7/24/12	1405			SC	Unk		1	I	G	7th - South
02	GH-VBC-121	↓	1510			S-C	↓		1	I	G	2nd - South
03	GH-VBC-123	↓	1605			S-C	↓		1	I	G	3rd - North
04	GH-VBC-125	↓	1650			S-C	↓		1	I	G	6th - North
05	GH-VBCD-127	↓	1510			S-C	Unk		1	I	G	DUPLICATE
			7/24/12									

Comments: ① EPA 8082 PCB's via 3540C Ext ② RL ≤ 1mg/kg
③ Direct Contact Concrete @ Type D windows ④ 48 Hr ~~TAT~~!

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

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa 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_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____
S-C - Solid / Concrete

Relinquished by: (signature)	Date/Time:
K Rinard (1900)	7/24/12
Received by: (signature) 22.6°C	Date/Time: 19:00 7/24/12
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1mg/kg

Is your project MCP or RCP?
O MCP Form Required
O RCP Form Required
O MA State DW Form Required PWSID # _____

AIHA LAP, LLC ACCREDITED LABORATORY
ACCREDITED IN ACCORDANCE WITH nelac
NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† 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

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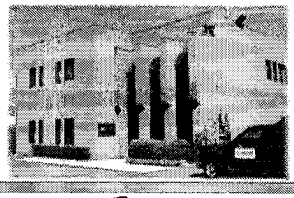

Sample Receipt Checklist

CLIENT NAME: Woodard + Curran **RECEIVED BY:** SLD **DATE:** 7/24/12

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 22.6

5) **Are there Dissolved samples for the lab to filter?** Yes No
   Who was notified _____ Date _____ Time _____
6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes No
   Who was notified _____ Date _____ Time _____
7) **Location where samples are stored:** 19

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

8) **Do all samples have the proper Acid pH:** Yes No N/A _____
9) **Do all samples have the proper Base pH:** Yes No N/A _____
10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No N/A

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	5
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

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

Time and Date Frozen:

12G0792-01 GH-VBC-119

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.24	0.195285	20.5
Surrogates			
Decachlorobiphenyl	0.963	1.11875	15
Tetrachloro-m-xylene	0.736	0.852085	14.6

12G0792-02 GH-VBC-121

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.19	0.1746905	8.4
Surrogates			
Decachlorobiphenyl	0.817	0.9363	13.6
Tetrachloro-m-xylene	0.624	0.725981	15.1

12G0792-03 GH-VBC-123

Analyte	Results		%RPD
Aroclor-1254	0.16	0.1714261	6.9
Surrogates			
Decachlorobiphenyl	1.11	1.265844	13.1
Tetrachloro-m-xylene	0.757	0.9073	18.1

12G0792-04 GH-VBC-125

Analyte	Results		%RPD
Aroclor-1254	1.8	1.593283	12.2
Surrogates			
Decachlorobiphenyl	0.952	0.988413	3.75
Tetrachloro-m-xylene	0.867	0.8895652	2.57

12G0792-05 GH-VBCD-127

Analyte	Results		%RPD
Aroclor-1254	0.25	0.2798857	11.3
Surrogates			
Decachlorobiphenyl	1.10	1.258362	13.4
Tetrachloro-m-xylene	0.824	0.9537238	14.6

B055713-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	0.721	0.84722	16.1
Decachlorobiphenyl	0.952	1.092565	13.8

B055713-BS1 LCS

Analyte	Results		%RPD
Aroclor-1016	0.17	0.229495	29.8
Aroclor-1260	0.19	0.212605	11.2
Surrogates			
Decachlorobiphenyl	0.919	1.0568	13.9
Tetrachloro-m-xylene	0.698	0.81793	15.8

B055713-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.19	0.261045	31.5
Aroclor-1016	0.19	0.2575	30.2
Surrogates			
Decachlorobiphenyl	1.03	1.19961	15.2
Tetrachloro-m-xylene	0.788	0.91589	15

B055713-MS1 Matrix Spike

Analyte	Results		%RPD
Aroclor-1260	0.22	0.2581	15.9
Aroclor-1016	0.27	0.460075	52.1
Surrogates			

Decachlorobiphenyl	1.13	1.29589	13.7
Tetrachloro-m-xylene	0.841	0.96199	13.4

B055713-MSD1 Matrix Spike Dup

Analyte	Results		%RPD
Aroclor-1016	0.27	0.469115	53.9
Aroclor-1260	0.22	0.25904	16.3
Surrogates			
Tetrachloro-m-xylene	0.851	0.97665	13.7
Decachlorobiphenyl	1.14	1.30377	13.4

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August 2, 2012

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

Project Location: UMA Grayson Field
Client Job Number:
Project Number: 224867
Laboratory Work Order Number: 12G0797

Enclosed are results of analyses for samples received by the laboratory on July 24, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 8/2/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224867

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12G0797

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

PROJECT LOCATION: UMA Grayson Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBC-126	12G0797-04	Concrete		SW-846 8082A	

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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.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY

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

Project Location: UMA Grayson Field | Sample Description: | Work Order: 12G0797

Date Received: 7/24/2012

Field Sample #: GH-VBC-126 | Sampled: 7/24/2012 17:05

Sample ID: 12G0797-04

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	7/27/12	7/30/12 17:37	MJC
Aroclor-1221 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/27/12	7/30/12 17:37	MJC
Aroclor-1232 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/27/12	7/30/12 17:37	MJC
Aroclor-1242 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/27/12	7/30/12 17:37	MJC
Aroclor-1248 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/27/12	7/30/12 17:37	MJC
Aroclor-1254 [1]	0.70	0.087	mg/Kg	1		SW-846 8082A	7/27/12	7/30/12 17:37	MJC
Aroclor-1260 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/27/12	7/30/12 17:37	MJC
Aroclor-1262 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/27/12	7/30/12 17:37	MJC
Aroclor-1268 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/27/12	7/30/12 17:37	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	87.7	30-150		7/30/12 17:37
Decachlorobiphenyl [2]	90.8	30-150		7/30/12 17:37
Tetrachloro-m-xylene [1]	81.0	30-150		7/30/12 17:37
Tetrachloro-m-xylene [2]	80.7	30-150		7/30/12 17:37

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
12G0797-04 [GH-VBC-126]	B055985	2.30	10.0	07/27/12

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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 B055985 - SW-846 3540C										
Blank (B055985-BLK1)				Prepared: 07/27/12 Analyzed: 07/30/12						
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	*0.865*		mg/Kg	1.00		86.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.899*		mg/Kg	1.00		89.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.951*		mg/Kg	1.00		95.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.960*		mg/Kg	1.00		96.0	30-150			
LCS (B055985-BS1)				Prepared: 07/27/12 Analyzed: 07/30/12						
Aroclor-1016	0.25	0.10	mg/Kg	0.250		102	40-140			
Aroclor-1016 [2C]	0.25	0.10	mg/Kg	0.250		101	40-140			
Aroclor-1260	0.20	0.10	mg/Kg	0.250		81.3	40-140			
Aroclor-1260 [2C]	0.23	0.10	mg/Kg	0.250		92.8	40-140			
Surrogate: Decachlorobiphenyl	*0.749*		mg/Kg	1.00		74.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.782*		mg/Kg	1.00		78.2	30-150			
Surrogate: Tetrachloro-m-xylene	*0.943*		mg/Kg	1.00		94.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.951*		mg/Kg	1.00		95.1	30-150			
LCS Dup (B055985-BSD1)				Prepared: 07/27/12 Analyzed: 07/30/12						
Aroclor-1016	0.26	0.10	mg/Kg	0.250		106	40-140	4.08	30	
Aroclor-1016 [2C]	0.27	0.10	mg/Kg	0.250		108	40-140	6.52	30	
Aroclor-1260	0.24	0.10	mg/Kg	0.250		94.0	40-140	14.5	30	
Aroclor-1260 [2C]	0.27	0.10	mg/Kg	0.250		107	40-140	13.9	30	
Surrogate: Decachlorobiphenyl	*0.948*		mg/Kg	1.00		94.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.981*		mg/Kg	1.00		98.1	30-150			
Surrogate: Tetrachloro-m-xylene	*1.01*		mg/Kg	1.00		101	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.01*		mg/Kg	1.00		101	30-150			

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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.

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
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 Publilc 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

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CHAIN OF CUSTODY RECORD

1260797

39 Spruce Street
East longmeadow, MA 01028

Company Name: Woodard & Curran
Address: 35 N.E. Bus Ctr Drive Suite 180, Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA Grayson/Field
Sampled By: Kim Rinard
Project Proposal Provided? (for billing purposes) ○ yes ________ proposal date

Telephone:
Project #: 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ✓EMAIL ○WEBSITE
Fax #: jhamel@woodardcurran.com
Email: gfranklin@ " " "
Format: ✓PDF ✓EXCEL ○GIS ○ OTHER ________ ○ "Enhanced Data Package"

# of Containers	1
** Preservation	I
***Container Code	G

ANALYSIS REQUESTED: HOLD - EPA 8082/3540C; *pending analysis and results from Direct Contact Samples

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	HOLD - EPA 8082/3540C	Notes
01	GH-VBC-120	7/24/12	1420					✓	7th South
02	GH-VBC-122	↓	1520					✓	2nd South
03	GH-VBC-124	↓	1615					✓	3rd - North
③④ 04	GH-VBC-126	↓	1705					✓	6th - North
	~~GH-VBCD-127~~ KAN 7/24/12								
③④ Activate	per attached email. MEK 7/27/2012								

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

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

*Matrix Code: GW= groundwater, WW= wastewater, DW= drinking water, A = air, S = soil/solid, SL = sludge, O = other ________

Comments: ① EPA 8082 PCBs via 3540C Ext ② RL ≤ 1mg/kg ③ Concrete Ceiling @ 15-16" ④ HOLD - DO NOT EXTRACT/ANALYZE

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

Relinquished by: (signature) [signature] (K Rinard)	Date/Time: 7/24/12 1900
Received by: (signature) [signature] 22.6°C	Date/Time: 7/24/12 1900
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other
RUSH † HOLD
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1mg/kg

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # ________

NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

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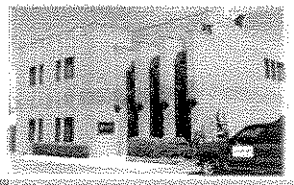

Sample Receipt Checklist

CLIENT NAME: Woodward + Curran RECEIVED BY: SO DATE: 7/24/12

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 22.6

5) Are there Dissolved samples for the lab to filter? Yes No
   Who was notified _____ Date _____ Time _____
6) Are there any RUSH or SHORT HOLDING TIME samples? Yes No
   Who was notified _____ Date _____ Time _____
7) Location where samples are stored: 19

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

8) Do all samples have the proper Acid pH: Yes No N/A _____
9) Do all samples have the proper Base pH: Yes No N/A _____
10) Was the PC notified of any discrepancies with the CoC vs the samples: Yes No N/A

Containers received at Con-Test

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

Laboratory Comments:

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

Time and Date Frozen:

Meghan Kelley

From: Kim Rinard [krinard@woodardcurran.com]
Sent: Friday, July 27, 2012 11:45 AM
To: Meghan Kelley
Cc: George Franklin
Subject: UMass Grayson Sample - GH-VBC-126

Good morning Meghan

Please release sample GH-VBC-126 for PCB analysis by soxhlet extraction.
I will have to confirm with George what the TAT should be. Five day TAT should be OK. I will speak with George around lunch time and let you know if this needs to be changed. These samples should have been received at the lab with the samples from SDG 12G0792 but they were placed on a separate chain of custody.

We will have a bunch of bulks coming in tonight, some will be on a 48hr TAT.

Thanks!

Kim Rinard
Scientist

Woodard & Curran
35 New England Business Center Suite 180 Andover, Massachusetts 01810

Office: (978)557-8150 x3647
Office: (866)702-6371
Fax: (978)557-7948
Cell: (413)531-4455

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July 31, 2012

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

Project Location: UMass - Amherst, MA Grayson/Field
Client Job Number:
Project Number: 224867
Laboratory Work Order Number: 12G0863

Enclosed are results of analyses for samples received by the laboratory on July 25, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 7/31/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224867

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12G0863

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

PROJECT LOCATION: UMass - Amherst, MA Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBQ-127	12G0863-01	Water		SW-846 8082A	

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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.

Daren J. Damboragian
Laboratory Manager

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

Project Location: UMass - Amherst, MA Grayson/F Sample Description: Work Order: 12G0863

Date Received: 7/25/2012

Field Sample #: GH-VBQ-127 Sampled: 7/25/2012 10:10

Sample ID: 12G0863-01

Sample Matrix: 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	7/30/12	7/31/12 13:18	PJG
Aroclor-1221 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/30/12	7/31/12 13:18	PJG
Aroclor-1232 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/30/12	7/31/12 13:18	PJG
Aroclor-1242 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/30/12	7/31/12 13:18	PJG
Aroclor-1248 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/30/12	7/31/12 13:18	PJG
Aroclor-1254 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/30/12	7/31/12 13:18	PJG
Aroclor-1260 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/30/12	7/31/12 13:18	PJG
Aroclor-1262 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/30/12	7/31/12 13:18	PJG
Aroclor-1268 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/30/12	7/31/12 13:18	PJG

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	82.7	30-150		7/31/12 13:18
Decachlorobiphenyl [2]	81.5	30-150		7/31/12 13:18
Tetrachloro-m-xylene [1]	71.5	30-150		7/31/12 13:18
Tetrachloro-m-xylene [2]	73.4	30-150		7/31/12 13:18

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
12G0863-01 [GH-VBQ-127]	B056006	1000	10.0	07/30/12

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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 B056006 - SW-846 3510C										
Blank (B056006-BLK1)				Prepared: 07/30/12 Analyzed: 07/31/12						
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	*1.82*		µg/L	2.00		90.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.80*		µg/L	2.00		89.8	30-150			
Surrogate: Tetrachloro-m-xylene	*1.38*		µg/L	2.00		69.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.43*		µg/L	2.00		71.7	30-150			
LCS (B056006-BS1)				Prepared: 07/30/12 Analyzed: 07/31/12						
Aroclor-1016	0.47	0.20	µg/L	0.500		93.4	40-140			
Aroclor-1016 [2C]	0.49	0.20	µg/L	0.500		97.8	40-140			
Aroclor-1260	0.44	0.20	µg/L	0.500		88.4	40-140			
Aroclor-1260 [2C]	0.45	0.20	µg/L	0.500		89.1	40-140			
Surrogate: Decachlorobiphenyl	*2.04*		µg/L	2.00		102	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.02*		µg/L	2.00		101	30-150			
Surrogate: Tetrachloro-m-xylene	*1.60*		µg/L	2.00		79.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.65*		µg/L	2.00		82.6	30-150			
LCS Dup (B056006-BSD1)				Prepared: 07/30/12 Analyzed: 07/31/12						
Aroclor-1016	0.52	0.20	µg/L	0.500		105	40-140	11.6	20	
Aroclor-1016 [2C]	0.53	0.20	µg/L	0.500		105	40-140	7.39	20	
Aroclor-1260	0.45	0.20	µg/L	0.500		90.6	40-140	2.45	20	
Aroclor-1260 [2C]	0.46	0.20	µg/L	0.500		92.1	40-140	3.34	20	
Surrogate: Decachlorobiphenyl	*1.96*		µg/L	2.00		97.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.94*		µg/L	2.00		97.2	30-150			
Surrogate: Tetrachloro-m-xylene	*1.49*		µg/L	2.00		74.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.54*		µg/L	2.00		76.8	30-150			

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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.

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Water	
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
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 Publilc 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

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Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

1260863

Page 1 of 1

Company Name: Woodard & Curran
Address: 35 N.E. Bus Ctr Drive Suite 180
Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA Grayson / Field
Sampled By: Kim Rinard

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # jhamel@woodardcurran.com
Email: gfranklin " " " "
Format: ☑ PDF ☑ EXCEL ○ GIS
○ OTHER _____
○ "Enhanced Data Package"

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082 (Aqueous) PCBs											# of Containers	** Preservation	***Container Code
								1											1	NA	G
01	GH-VBQ-127	7/25/12	1010			W	VnK	✓													

7/25/12

Kim

Comments: ① EPA 8082 PCBs Aqueous Matrix ② RL & STANDARD AQ MATRIX ③ Standard TAT - No Rush thanks

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

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Relinquished by: (signature)	Date/Time:
K Rinard (K Rinard)	7/25/12 2045
Received by: (signature) 22.6°C	Date/Time: 7/25 2045
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☑ 7-Day (STD)
☐ 10-Day (5 day)
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # _____

ACCREDITED IN ACCORDANCE WITH nelac
ACCREDITED LABORATORY AIHA Environmental Lead & Industrial Hygiene
NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

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East Longmeadow, MA. 01028
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F: 413-525-6405
www.contestlabs.com

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Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** HB **DATE:** 7/25/12

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 22.6

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

Who was notified _____ Date _____ Time _____

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

Who was notified _____ Date _____ Time _____

7) Location where samples are stored: 19

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

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

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

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

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	
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 _____	

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

August 1, 2012

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

Project Location: UMass - Amherst, MA
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 12G0979

Enclosed are results of analyses for samples received by the laboratory on July 30, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 8/1/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12G0979

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

PROJECT LOCATION: UMass - Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBB-128	12G0979-01	Brick		SW-846 8082A	
GH-VBC-129	12G0979-02	Concrete		SW-846 8082A	
GH-VBC-145	12G0979-03	Concrete		SW-846 8082A	
GH-VBC-147	12G0979-04	Concrete		SW-846 8082A	
GH-VBC-141	12G0979-05	Concrete		SW-846 8082A	
GH-VBB-143	12G0979-06	Concrete		SW-846 8082A	
GH-VBC-133	12G0979-07	Concrete		SW-846 8082A	
GH-VBB-134	12G0979-08	Brick		SW-846 8082A	
GH-VBB-136	12G0979-09	Brick		SW-846 8082A	
GH-VBC-138	12G0979-10	Brick		SW-846 8082A	
GH-VBC-148	12G0979-11	Brick		SW-846 8082A	
GH-VBC-150	12G0979-12	Brick		SW-846 8082A	

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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.

Michael A. Erickson
Laboratory Director

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

Project Location: UMass - Amherst, MA
Sample Description:
Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBB-128
Sampled: 7/30/2012 16:00

Sample ID: 12G0979-01

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 16:54	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 16:54	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 16:54	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 16:54	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 16:54	MJC
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 16:54	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 16:54	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 16:54	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 16:54	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	89.3	30-150		7/31/12 16:54
Decachlorobiphenyl [2]	90.9	30-150		7/31/12 16:54
Tetrachloro-m-xylene [1]	84.0	30-150		7/31/12 16:54
Tetrachloro-m-xylene [2]	76.0	30-150		7/31/12 16:54

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Project Location: UMass - Amherst, MA | Sample Description: | Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBC-129 | Sampled: 7/29/2012 16:40

Sample ID: 12G0979-02

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	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:07	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:07	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:07	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:07	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:07	MJC
Aroclor-1254 [1]	0.31	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:07	MJC
Aroclor-1260 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:07	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:07	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:07	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	104	30-150		7/31/12 17:07
Decachlorobiphenyl [2]	107	30-150		7/31/12 17:07
Tetrachloro-m-xylene [1]	98.2	30-150		7/31/12 17:07
Tetrachloro-m-xylene [2]	89.2	30-150		7/31/12 17:07

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Project Location: UMass - Amherst, MA | Sample Description: | Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBC-145 | Sampled: 7/29/2012 21:45

Sample ID: 12G0979-03

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	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:19	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:19	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:19	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:19	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:19	MJC
Aroclor-1254 [1]	0.16	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:19	MJC
Aroclor-1260 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:19	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:19	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:19	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	97.5	30-150		7/31/12 17:19
Decachlorobiphenyl [2]	99.5	30-150		7/31/12 17:19
Tetrachloro-m-xylene [1]	89.9	30-150		7/31/12 17:19
Tetrachloro-m-xylene [2]	81.9	30-150		7/31/12 17:19

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Project Location: UMass - Amherst, MA | Sample Description: | Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBC-147 | Sampled: 7/29/2012 22:00

Sample ID: 12G0979-04

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	0.45	mg/Kg	5		SW-846 8082A	7/30/12	8/1/12 8:50	MJC
Aroclor-1221 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	7/30/12	8/1/12 8:50	MJC
Aroclor-1232 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	7/30/12	8/1/12 8:50	MJC
Aroclor-1242 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	7/30/12	8/1/12 8:50	MJC
Aroclor-1248 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	7/30/12	8/1/12 8:50	MJC
Aroclor-1254 [1]	2.2	0.45	mg/Kg	5		SW-846 8082A	7/30/12	8/1/12 8:50	MJC
Aroclor-1260 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	7/30/12	8/1/12 8:50	MJC
Aroclor-1262 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	7/30/12	8/1/12 8:50	MJC
Aroclor-1268 [1]	ND	0.45	mg/Kg	5		SW-846 8082A	7/30/12	8/1/12 8:50	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	94.0	30-150		8/1/12 8:50
Decachlorobiphenyl [2]	96.8	30-150		8/1/12 8:50
Tetrachloro-m-xylene [1]	88.7	30-150		8/1/12 8:50
Tetrachloro-m-xylene [2]	80.9	30-150		8/1/12 8:50

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Project Location: UMass - Amherst, MA
Sample Description:
Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBC-141
Sampled: 7/29/2012 20:25

Sample ID: 12G0979-05

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	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:44	MJC
Aroclor-1221 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:44	MJC
Aroclor-1232 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:44	MJC
Aroclor-1242 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:44	MJC
Aroclor-1248 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:44	MJC
Aroclor-1254 [1]	0.43	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:44	MJC
Aroclor-1260 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:44	MJC
Aroclor-1262 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:44	MJC
Aroclor-1268 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 17:44	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	106	30-150		7/31/12 17:44
Decachlorobiphenyl [2]	109	30-150		7/31/12 17:44
Tetrachloro-m-xylene [1]	99.9	30-150		7/31/12 17:44
Tetrachloro-m-xylene [2]	90.9	30-150		7/31/12 17:44

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Project Location: UMass - Amherst, MA | Sample Description: | Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBB-143 | Sampled: 7/29/2012 20:45

Sample ID: 12G0979-06

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	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:33	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:33	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:33	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:33	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:33	MJC
Aroclor-1254 [1]	0.15	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:33	MJC
Aroclor-1260 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:33	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:33	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:33	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	99.4	30-150		7/31/12 18:33
Decachlorobiphenyl [2]	101	30-150		7/31/12 18:33
Tetrachloro-m-xylene [1]	93.6	30-150		7/31/12 18:33
Tetrachloro-m-xylene [2]	84.3	30-150		7/31/12 18:33

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Project Location: UMass - Amherst, MA | Sample Description: | Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBC-133 | Sampled: 7/29/2012 17:45

Sample ID: 12G0979-07

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	0.50	mg/Kg	5		SW-846 8082A	7/30/12	7/31/12 18:45	MJC
Aroclor-1221 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	7/30/12	7/31/12 18:45	MJC
Aroclor-1232 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	7/30/12	7/31/12 18:45	MJC
Aroclor-1242 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	7/30/12	7/31/12 18:45	MJC
Aroclor-1248 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	7/30/12	7/31/12 18:45	MJC
Aroclor-1254 [1]	1.8	0.50	mg/Kg	5		SW-846 8082A	7/30/12	7/31/12 18:45	MJC
Aroclor-1260 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	7/30/12	7/31/12 18:45	MJC
Aroclor-1262 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	7/30/12	7/31/12 18:45	MJC
Aroclor-1268 [1]	ND	0.50	mg/Kg	5		SW-846 8082A	7/30/12	7/31/12 18:45	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	94.2	30-150		7/31/12 18:45
Decachlorobiphenyl [2]	97.6	30-150		7/31/12 18:45
Tetrachloro-m-xylene [1]	96.0	30-150		7/31/12 18:45
Tetrachloro-m-xylene [2]	85.6	30-150		7/31/12 18:45

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Project Location: UMass - Amherst, MA | Sample Description: | Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBB-134 | Sampled: 7/29/2012 18:55

Sample ID: 12G0979-08

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:58	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:58	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:58	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:58	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:58	MJC
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:58	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:58	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:58	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 18:58	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	105	30-150		7/31/12 18:58
Decachlorobiphenyl [2]	109	30-150		7/31/12 18:58
Tetrachloro-m-xylene [1]	98.8	30-150		7/31/12 18:58
Tetrachloro-m-xylene [2]	89.1	30-150		7/31/12 18:58

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Project Location: UMass - Amherst, MA
Sample Description:
Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBB-136
Sampled: 7/29/2012 19:35

Sample ID: 12G0979-09

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:10	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:10	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:10	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:10	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:10	MJC
Aroclor-1254 [1]	0.15	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:10	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:10	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:10	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:10	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	101	30-150		7/31/12 19:10
Decachlorobiphenyl [2]	104	30-150		7/31/12 19:10
Tetrachloro-m-xylene [1]	97.2	30-150		7/31/12 19:10
Tetrachloro-m-xylene [2]	87.7	30-150		7/31/12 19:10

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Project Location: UMass - Amherst, MA | Sample Description: | Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBC-138 | Sampled: 7/29/2012 20:00

Sample ID: 12G0979-10

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:23	MJC
Aroclor-1221 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:23	MJC
Aroclor-1232 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:23	MJC
Aroclor-1242 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:23	MJC
Aroclor-1248 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:23	MJC
Aroclor-1254 [1]	0.18	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:23	MJC
Aroclor-1260 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:23	MJC
Aroclor-1262 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:23	MJC
Aroclor-1268 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:23	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	104	30-150		7/31/12 19:23
Decachlorobiphenyl [2]	107	30-150		7/31/12 19:23
Tetrachloro-m-xylene [1]	100	30-150		7/31/12 19:23
Tetrachloro-m-xylene [2]	90.7	30-150		7/31/12 19:23

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

Project Location: UMass - Amherst, MA
Sample Description:
Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBC-148
Sampled: 7/29/2012 22:35

Sample ID: 12G0979-11

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:35	MJC
Aroclor-1221 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:35	MJC
Aroclor-1232 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:35	MJC
Aroclor-1242 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:35	MJC
Aroclor-1248 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:35	MJC
Aroclor-1254 [1]	0.27	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:35	MJC
Aroclor-1260 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:35	MJC
Aroclor-1262 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:35	MJC
Aroclor-1268 [1]	ND	0.091	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:35	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	105	30-150		7/31/12 19:35
Decachlorobiphenyl [2]	108	30-150		7/31/12 19:35
Tetrachloro-m-xylene [1]	102	30-150		7/31/12 19:35
Tetrachloro-m-xylene [2]	91.8	30-150		7/31/12 19:35

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

Project Location: UMass - Amherst, MA | Sample Description: | Work Order: 12G0979

Date Received: 7/30/2012

Field Sample #: GH-VBC-150 | Sampled: 7/29/2012 22:40

Sample ID: 12G0979-12

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:47	MJC
Aroclor-1221 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:47	MJC
Aroclor-1232 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:47	MJC
Aroclor-1242 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:47	MJC
Aroclor-1248 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:47	MJC
Aroclor-1254 [1]	0.44	0.087	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:47	MJC
Aroclor-1260 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:47	MJC
Aroclor-1262 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:47	MJC
Aroclor-1268 [1]	ND	0.087	mg/Kg	1		SW-846 8082A	7/30/12	7/31/12 19:47	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	104	30-150		7/31/12 19:47
Decachlorobiphenyl [2]	107	30-150		7/31/12 19:47
Tetrachloro-m-xylene [1]	98.7	30-150		7/31/12 19:47
Tetrachloro-m-xylene [2]	88.6	30-150		7/31/12 19:47

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
12G0979-01 [GH-VBB-128]	B056065	2.00	10.0	07/30/12
12G0979-02 [GH-VBC-129]	B056065	2.10	10.0	07/30/12
12G0979-03 [GH-VBC-145]	B056065	2.10	10.0	07/30/12
12G0979-04 [GH-VBC-147]	B056065	2.20	10.0	07/30/12
12G0979-05 [GH-VBC-141]	B056065	2.20	10.0	07/30/12
12G0979-06 [GH-VBB-143]	B056065	2.10	10.0	07/30/12
12G0979-07 [GH-VBC-133]	B056065	2.00	10.0	07/30/12
12G0979-08 [GH-VBB-134]	B056065	2.00	10.0	07/30/12
12G0979-09 [GH-VBB-136]	B056065	2.00	10.0	07/30/12
12G0979-10 [GH-VBC-138]	B056065	2.20	10.0	07/30/12
12G0979-11 [GH-VBC-148]	B056065	2.20	10.0	07/30/12
12G0979-12 [GH-VBC-150]	B056065	2.30	10.0	07/30/12

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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 B056065 - SW-846 3540C										
Blank (B056065-BLK1)				Prepared: 07/30/12 Analyzed: 07/31/12						
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	*0.885*		mg/Kg	1.00		88.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.910*		mg/Kg	1.00		91.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.868*		mg/Kg	1.00		86.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.773*		mg/Kg	1.00		77.3	30-150			
LCS (B056065-BS1)				Prepared: 07/30/12 Analyzed: 07/31/12						
Aroclor-1016	0.25	0.10	mg/Kg	0.250		98.3	40-140			
Aroclor-1016 [2C]	0.22	0.10	mg/Kg	0.250		87.6	40-140			
Aroclor-1260	0.23	0.10	mg/Kg	0.250		90.9	40-140			
Aroclor-1260 [2C]	0.22	0.10	mg/Kg	0.250		89.7	40-140			
Surrogate: Decachlorobiphenyl	*0.904*		mg/Kg	1.00		90.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.927*		mg/Kg	1.00		92.7	30-150			
Surrogate: Tetrachloro-m-xylene	*0.890*		mg/Kg	1.00		89.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.802*		mg/Kg	1.00		80.2	30-150			
LCS Dup (B056065-BSD1)				Prepared: 07/30/12 Analyzed: 07/31/12						
Aroclor-1016	0.27	0.10	mg/Kg	0.250		106	40-140	7.97	30	
Aroclor-1016 [2C]	0.24	0.10	mg/Kg	0.250		95.3	40-140	8.40	30	
Aroclor-1260	0.25	0.10	mg/Kg	0.250		99.5	40-140	9.11	30	
Aroclor-1260 [2C]	0.24	0.10	mg/Kg	0.250		95.5	40-140	6.29	30	
Surrogate: Decachlorobiphenyl	*0.980*		mg/Kg	1.00		98.0	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.999*		mg/Kg	1.00		99.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.953*		mg/Kg	1.00		95.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.858*		mg/Kg	1.00		85.8	30-150			

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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 B056065 - SW-846 3540C										
Matrix Spike (B056065-MS1)		**Source: 12G0979-01**		Prepared: 07/30/12 Analyzed: 07/31/12						
Aroclor-1016	0.23	0.10	mg/Kg	0.250	0.0	93.2	40-140			
Aroclor-1016 [2C]	0.22	0.10	mg/Kg	0.250	0.0	86.1	40-140			
Aroclor-1260	0.20	0.10	mg/Kg	0.250	0.0	81.6	40-140			
Aroclor-1260 [2C]	0.18	0.10	mg/Kg	0.250	0.0	73.5	40-140			
Surrogate: Decachlorobiphenyl	*0.852*		mg/Kg	1.00		85.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.890*		mg/Kg	1.00		89.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.802*		mg/Kg	1.00		80.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.737*		mg/Kg	1.00		73.7	30-150			
Matrix Spike Dup (B056065-MSD1)		**Source: 12G0979-01**		Prepared: 07/30/12 Analyzed: 07/31/12						
Aroclor-1016	0.26	0.10	mg/Kg	0.250	0.0	104	40-140	10.9	50	
Aroclor-1016 [2C]	0.23	0.10	mg/Kg	0.250	0.0	92.0	40-140	6.62	50	
Aroclor-1260	0.24	0.10	mg/Kg	0.250	0.0	97.3	40-140	17.6	50	
Aroclor-1260 [2C]	0.25	0.10	mg/Kg	0.250	0.0	100	40-140	30.5	50	
Surrogate: Decachlorobiphenyl	*1.00*		mg/Kg	1.00		100	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.03*		mg/Kg	1.00		103	30-150			
Surrogate: Tetrachloro-m-xylene	*0.923*		mg/Kg	1.00		92.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.832*		mg/Kg	1.00		83.2	30-150			

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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.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
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 Publilc 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

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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

1260979

Company Name: Woodard & Curran
Address: 35 N.E. Bus Ctr Drive Suite 130
Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA Grayson / Field
Sampled By: Kim Rinard

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # jhamel@woodardcurran.com
Email: gfranklin@ " " " "
Format: ☑ PDF ☑ EXCEL ○ GIS
○ OTHER _____
○ "Enhanced Data Package"

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	~~48Hr~~ 8082/3540C	5 day KAC	ANALYSIS REQUESTED
01	GH-VBB-128		1650							1st/2nd - North - Brick
02	GH-VBC-129		1640							1st/2nd - North - Concrete
03	GH-VBC-145		2145							2nd/3rd - South - Concrete Sill
04	GH-VBC-147		2200							2nd/3rd - South - Concrete Vent
05	GH-VBC-141		2025							3rd/4th - Center
06	GH-VBB-143		2045							3rd/4th - Center
07	GH-VBC-133		1745							4th/5th - North - Concrete
08	GH-VBB-134		1855							4th/5th - North - Brick
09	GH-VBB-136		1935							5th/6th - Center - Brick
10	GH-VBC-138		2000							5th/6th - Center - Concrete

# of Containers: 1 / I / G

** Preservation

***Container Code

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____
B = Brick
C = Concrete

Comments: ① EPA 8082 PCBs via 3540C Soxhlet ② RL ≤ 1mg/kg ③ Direct Contact Samples ④ ~~RUSH 48Hr TAT Please~~ KAC 5-DAY thanks

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

Relinquished by: (signature)	Date/Time: 7/30/12 1345
Received by: (signature) 7/30	Date/Time: 1350
Relinquished by: (signature) 7/30	Date/Time: 1450
Received by: (signature) Kerry McGee 3.8C	Date/Time: 7-30-12 14:50

Turnaround ††
☐ 7-Day
☐ 10-Day
☑ Other STD 5 BUSDAYS

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1mg/kg

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 2 of

12G0979

Company Name: Woodard & Curran
Address: 35 N.E. Bus Ctr Drive Suite 180
Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA - Grayson/Field
Sampled By: Kim Rinard

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # jhamel@woodardcurran.com
Email: gfranklin@ " " " "
Format: ☑ PDF ☑ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	5 day 8082/3540C										
11	GH-VBC-148	7/27/12	2235						Direct Contact					1st/2nd South (Sill)				
12	GH-VBC-150	↓	2240						Direct Contact					1st/2nd South (Vent)				
	KAR																	
	7/30/12																	

# 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=summa 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_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments: ① EPA 8082 PCBs via 3540C Soxhlet ② RL ≤ 1mg/kg ③ Direct Contact Samples ④ 5 Business Day TAT. Thanks!

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

Relinquished by: (signature)	Date/Time:
KAR	7/30/12 1345
Received by: (signature)	Date/Time:
[signature]	7/30 1350
Relinquished by: (signature)	Date/Time:
[signature]	7/30 1450
Received by: (signature)	Date/Time:
Kenny McGee 3.8C	7-30-12 14:50

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1mg/kg

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # _____

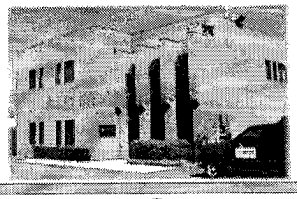
ACCREDITED IN ACCORDANCE WITH nelac
ACCREDITED LABORATORY AIHA Environmental Lead & Industrial Hygiene
NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

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

con-test® ANALYTICAL LABORATORY



Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** KKM **DATE:** 7-30-12

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 3.8C
5) **Are there Dissolved samples for the lab to filter?** Yes (No)
   Who was notified _____ Date _____ Time _____
6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes (No)
   Who was notified _____ Date _____ Time _____
7) **Location where samples are stored:** 19

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

8) **Do all samples have the proper Acid pH:** Yes No (N/A) _____
9) **Do all samples have the proper Base pH:** Yes No (N/A) _____
10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No (N/A)

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	12
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

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

Time and Date Frozen:

12G0979-01 GH-VBB-128

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	0.840	0.759755	10
Decachlorobiphenyl	0.893	0.908735	1.75

12G0979-02 GH-VBC-129

Analyte	Results		%RPD
Aroclor-1254	0.31	0.2999191	3.31
Surrogates			
Decachlorobiphenyl	0.994	1.014586	2.05
Tetrachloro-m-xylene	0.935	0.8498334	9.54

12G0979-03 GH-VBC-145

Analyte	Results		%RPD
Aroclor-1254	0.16	0.1431667	11.1
Surrogates			
Decachlorobiphenyl	0.929	0.9473334	1.95
Tetrachloro-m-xylene	0.856	0.7797524	9.32

12G0979-04 GH-VBC-147

Analyte	Results		%RPD
Aroclor-1254	2.2	2.024295	8.32
Surrogates			
Decachlorobiphenyl	0.854	0.8796591	2.96
Tetrachloro-m-xylene	0.806	0.7353636	9.17

12G0979-05 GH-VBC-141

Analyte	Results		%RPD
Aroclor-1254	0.43	0.3676227	15.6
Surrogates			
Decachlorobiphenyl	0.961	0.9904046	3.01
Tetrachloro-m-xylene	0.908	0.8266909	9.37

12G0979-06 GH-VBB-143

Analyte	Results		%RPD
Aroclor-1254	0.15	0.1360714	9.74
Surrogates			
Decachlorobiphenyl	0.947	0.9662382	2.01
Tetrachloro-m-xylene	0.892	0.8033238	10.5

12G0979-07 GH-VBC-133

Analyte	Results		%RPD
Aroclor-1254	1.8	1.5829	12.8
Surrogates			
Decachlorobiphenyl	0.942	0.97615	3.56
Tetrachloro-m-xylene	0.960	0.856125	11.4

12G0979-08 GH-VBB-134

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	1.05	1.08937	3.68
Tetrachloro-m-xylene	0.988	0.89086	10.3

12G0979-09 GH-VBB-136

Analyte	Results		%RPD
Aroclor-1254	0.15	0.141485	5.84
Surrogates			
Tetrachloro-m-xylene	0.972	0.877175	10.3
Decachlorobiphenyl	1.01	1.04198	3.12

12G0979-10 GH-VBC-138

Analyte		Results	%RPD
Aroclor-1254	0.18	0.1566273	13.9
Surrogates			
Decachlorobiphenyl	0.945	0.9767182	3.3
Tetrachloro-m-xylene	0.911	0.8249227	9.92

12G0979-11 GH-VBC-148

Analyte		Results	%RPD
Aroclor-1254	0.27	0.2442909	10
Surrogates			
Decachlorobiphenyl	0.954	0.9822136	2.91
Tetrachloro-m-xylene	0.925	0.8341909	10.3

12G0979-12 GH-VBC-150

Analyte		Results	%RPD
Aroclor-1254	0.44	0.4273	2.93
Surrogates			
Decachlorobiphenyl	0.900	0.9343087	3.74
Tetrachloro-m-xylene	0.858	0.7702609	10.8

B056065-BLK1 Blank

Analyte		Results	%RPD
Surrogates			
Decachlorobiphenyl	0.885	0.910265	2.81
Tetrachloro-m-xylene	0.868	0.772735	11.6

B056065-BS1 LCS

Analyte		Results	%RPD
Aroclor-1260	0.23	0.224145	2.58
Aroclor-1016	0.25	0.21895	13.2
Surrogates			
Decachlorobiphenyl	0.904	0.926795	2.49
Tetrachloro-m-xylene	0.890	0.80219	10.4

B056065-BSD1 LCS Dup

Analyte		Results	%RPD
Aroclor-1260	0.25	0.23871	4.62
Aroclor-1016	0.27	0.23814	12.5
Surrogates			
Decachlorobiphenyl	0.980	0.999055	1.93
Tetrachloro-m-xylene	0.953	0.85768	10.5

B056065-MS1 Matrix Spike

Analyte		Results	%RPD
Aroclor-1016	0.23	0.215195	6.65
Aroclor-1260	0.20	0.18385	8.41
Surrogates			
Decachlorobiphenyl	0.852	0.889735	4.33
Tetrachloro-m-xylene	0.802	0.737465	8.38

B056065-MSD1 Matrix Spike Dup

Analyte		Results	%RPD
Aroclor-1016	0.26	0.22994	12.3
Aroclor-1260	0.24	0.24991	4.05
Surrogates			
Tetrachloro-m-xylene	0.923	0.83227	10.3
Decachlorobiphenyl	1.00	1.03113	3.07

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August 14, 2012

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

Project Location: UMA Grayson/Field
Client Job Number:
Project Number: 224867
Laboratory Work Order Number: 12G0981

Enclosed are results of analyses for samples received by the laboratory on July 30, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 8/14/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224867

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12G0981

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

PROJECT LOCATION: UMA Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBC-146	12G0981-04	Concrete		SW-846 8082A	
GH-VBC-132	12G0981-07	Brick		SW-846 8082A	

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CASE NARRATIVE SUMMARY

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

SW-846 8082A

Qualifications:

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

Aroclor-1016 [2C]

B056571-MSD1

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

Analyte & Samples(s) Qualified:

Aroclor-1254 [2C]

12G0981-04[GH-VBC-146]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Michael A. Erickson
Laboratory Director

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

Project Location: UMA Grayson/Field
Sample Description:
Work Order: 12G0981

Date Received: 7/30/2012

Field Sample #: GH-VBC-146
Sampled: 7/29/2012 21:55

Sample ID: 12G0981-04

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	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 13:55	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 13:55	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 13:55	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 13:55	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 13:55	MJC
Aroclor-1254 [2]	0.18	0.095	mg/Kg	1	O-03	SW-846 8082A	8/7/12	8/9/12 13:55	MJC
Aroclor-1260 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 13:55	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 13:55	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 13:55	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	93.7	30-150		8/9/12 13:55
Decachlorobiphenyl [2]	90.0	30-150		8/9/12 13:55
Tetrachloro-m-xylene [1]	97.0	30-150		8/9/12 13:55
Tetrachloro-m-xylene [2]	95.5	30-150		8/9/12 13:55

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Project Location: UMA Grayson/Field
Sample Description:
Work Order: 12G0981

Date Received: 7/30/2012

Field Sample #: GH-VBC-132
Sampled: 7/29/2012 17:30

Sample ID: 12G0981-07

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 14:08	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 14:08	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 14:08	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 14:08	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 14:08	MJC
Aroclor-1254 [2]	0.14	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 14:08	MJC
Aroclor-1260 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 14:08	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 14:08	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	8/7/12	8/9/12 14:08	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	97.7	30-150		8/9/12 14:08
Decachlorobiphenyl [2]	94.4	30-150		8/9/12 14:08
Tetrachloro-m-xylene [1]	99.1	30-150		8/9/12 14:08
Tetrachloro-m-xylene [2]	97.3	30-150		8/9/12 14:08

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
12G0981-04 [GH-VBC-146]	B056571	2.10	10.0	08/07/12
12G0981-07 [GH-VBC-132]	B056571	2.10	10.0	08/07/12

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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 B056571 - SW-846 3540C										
Blank (B056571-BLK1)				Prepared: 08/07/12 Analyzed: 08/09/12						
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	*0.875*		mg/Kg	1.00		87.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.859*		mg/Kg	1.00		85.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.966*		mg/Kg	1.00		96.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.967*		mg/Kg	1.00		96.7	30-150			
LCS (B056571-BS1)				Prepared: 08/07/12 Analyzed: 08/09/12						
Aroclor-1016	0.27	0.10	mg/Kg	0.250		108	40-140			
Aroclor-1016 [2C]	0.27	0.10	mg/Kg	0.250		110	40-140			
Aroclor-1260	0.25	0.10	mg/Kg	0.250		102	40-140			
Aroclor-1260 [2C]	0.28	0.10	mg/Kg	0.250		111	40-140			
Surrogate: Decachlorobiphenyl	*1.04*		mg/Kg	1.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.02*		mg/Kg	1.00		102	30-150			
Surrogate: Tetrachloro-m-xylene	*1.11*		mg/Kg	1.00		111	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.09*		mg/Kg	1.00		109	30-150			
LCS Dup (B056571-BSD1)				Prepared: 08/07/12 Analyzed: 08/09/12						
Aroclor-1016	0.29	0.10	mg/Kg	0.250		118	40-140	8.12	30	
Aroclor-1016 [2C]	0.29	0.10	mg/Kg	0.250		116	40-140	5.57	30	
Aroclor-1260	0.29	0.10	mg/Kg	0.250		115	40-140	12.3	30	
Aroclor-1260 [2C]	0.29	0.10	mg/Kg	0.250		118	40-140	6.14	30	
Surrogate: Decachlorobiphenyl	*1.07*		mg/Kg	1.00		107	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.04*		mg/Kg	1.00		104	30-150			
Surrogate: Tetrachloro-m-xylene	*1.18*		mg/Kg	1.00		118	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.17*		mg/Kg	1.00		117	30-150			

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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 B056571 - SW-846 3540C											
Matrix Spike (B056571-MS1)		**Source: 12G0981-04**		Prepared: 08/07/12 Analyzed: 08/09/12							
Aroclor-1016	0.25	0.10	mg/Kg	0.250	0.0	102		40-140			
Aroclor-1016 [2C]	0.35	0.10	mg/Kg	0.250	0.0	138		40-140			
Aroclor-1260	0.26	0.10	mg/Kg	0.250	0.0	102		40-140			
Aroclor-1260 [2C]	0.30	0.10	mg/Kg	0.250	0.0	119		40-140			
Surrogate: Decachlorobiphenyl	*0.898*		mg/Kg	1.00		89.8		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.880*		mg/Kg	1.00		88.0		30-150			
Surrogate: Tetrachloro-m-xylene	*0.983*		mg/Kg	1.00		98.3		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.965*		mg/Kg	1.00		96.5		30-150			
Matrix Spike Dup (B056571-MSD1)		**Source: 12G0981-04**		Prepared: 08/07/12 Analyzed: 08/09/12							
Aroclor-1016	0.26	0.10	mg/Kg	0.250	0.0	106		40-140	3.71	50	
Aroclor-1016 [2C]	0.35	0.10	mg/Kg	0.250	0.0	**142**	*	40-140	2.56	50	MS-22
Aroclor-1260	0.26	0.10	mg/Kg	0.250	0.0	102		40-140	0.221	50	
Aroclor-1260 [2C]	0.30	0.10	mg/Kg	0.250	0.0	119		40-140	0.681	50	
Surrogate: Decachlorobiphenyl	*0.935*		mg/Kg	1.00		93.5		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.896*		mg/Kg	1.00		89.6		30-150			
Surrogate: Tetrachloro-m-xylene	*1.09*		mg/Kg	1.00		109		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.07*		mg/Kg	1.00		107		30-150			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
MS-22	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
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 Publilc 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
39 Spruce Street
East longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

12G0981

Company Name: Woodard & Curran
Address: 35 N.E. Business Drive Suite 180
Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA Grayson / Field
Sampled By: Kim Rinard

Telephone:
Project #: 224824
Client PO#:

DATA DELIVERY (check all that apply)
O FAX ☑ EMAIL O WEBSITE
~~Fax~~ # jhamel@woodardcurran.com
Email: gfranklin@ " " " "
Format: ☑ PDF ☑ EXCEL O GIS
O OTHER
O "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
O yes _____ proposal date

ANALYSIS REQUESTED: HOLD - EPA 8082/3540C

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	# of Containers	** Preservation	***Container Code	ANALYSIS REQUESTED
01	GH-VBC-130	1700						1		G	1st/2nd - North - Concrete
02	GH-VBB-131	1710						1		G	1st/2nd - North - Brick
03	GH-VBC-144	2140						1		G	2nd/3rd - South - Concrete Sill
04	GH-VBC-146	2155						1		G	2nd/3rd - South - Concrete (Vent)
05	GH-VBC-140	2020						1		G	3rd/4th - Center
06	GH-VBB-142	2035						1		G	3rd/4th - Center
07	GH-VBC-132	1730						1		G	4th/5th - North - Concrete
08	GH-VBB-135	1905						1		G	4th/5th - North - Brick
09	GH-VBB-137	1925						1		G	5th/6th - Center - Brick
10	GH-VBE-139	1945						1		G	5th/6th - Center - Concrete

Comments: (1) EPA 8082 PCB's via 3540C Soxhlet (2) RL ≤ 1mg/kg (3) Adj Material Samples (4) Lab to HOLD - Do not EXTRACT.

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

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa 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_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____
B = Brick
C = Concrete

Dissolved Metal
O Field Filtered
O Lab to Filter

Relinquished by: (signature)	Date/Time: 7/30/12 1345
Received by: (signature)	Date/Time: 7/30 1350
Relinquished by: (signature)	Date/Time: 7/30 1450
Received by: (signature) Ken/Matee 3.8C	Date/Time: 7-30-12 1450

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts: _____
Connecticut: _____
Other: RL ≤ 1mg/kg

Is your project MCP or RCP ?
O MCP Analytical Certification Form Required
O RCP Analysis Certification Form Required
O MA State DW Form Required PWSID # _____

ACCREDITED IN ACCORDANCE WITH nelac
ACCREDITED LABORATORY AIHA Environmental Lead & Industrial Hygiene See AIHA website for details
NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

12G0981

Company Name: Woodard + Curran
Address: 35 N.E. Bus Ctr Drive Suite 180
Andover, MA
Attention: J Fithamel, G. Frankling K Rinard
Project Location: UMA Grayson/Field
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
~~Fax~~ #: jhamel@woodardcurran.com
Email: gfrankling " " " "
Format: ☑ PDF ☑ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	HOLD - EPA8082/3540C	ANALYSIS REQUESTED
11	GH-UBC-149	7/27/12	2230						1st/2nd - south - Adj Concrete - Sill
12	GH-UBC-151	↓	2245						1st/2nd - south - Adj Concrete Vent

7/30/12

# of Containers: 1
** Preservation: I
***Container Code: G

Dissolved Metal
○ 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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments: ① EPA 8082 PCB's VIA 3540C Soxhlet ② RL ≤ 1mg/kg ③ ~~Direct~~ Adjacent Material ④ Lab to HOLD - Do not Extract

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

Relinquished by: (signature)	Date/Time:
[signature]	7/30/12 1345
Received by: (signature) [signature]	7/30 1350
Relinquished by: (signature) [signature]	7/30 1450
Received by: (signature) [signature] 3.8C	7-30-12 1450

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1mg/kg

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # _____

ACCREDITED IN ACCORDANCE WITH nelac
ACCREDITED LABORATORY AIHA Environmental Lead & Industrial Hygiene

NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

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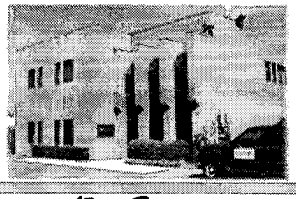

Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** KKM **DATE:** 7-30-12

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 3.8C

5) **Are there Dissolved samples for the lab to filter?** **Yes** **No**
   Who was notified _____ Date _____ Time _____
6) **Are there any RUSH or SHORT HOLDING TIME samples?** **Yes** **No**
   Who was notified _____ Date _____ Time _____
7) **Location where samples are stored:** 19

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

8) **Do all samples have the proper Acid pH:** **Yes** **No** **N/A** _____
9) **Do all samples have the proper Base pH:** **Yes** **No** **N/A** _____
10) **Was the PC notified of any discrepancies with the CoC vs the samples:** **Yes** **No** **N/A**

Containers received at Con-Test

	# of containers		# of containers
1 Liter Amber		8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	12
1 Liter Plastic		Air Cassette	
500 mL Plastic		Hg/Hopcalite Tube	
250 mL plastic		Plastic Bag / Ziploc	
40 mL Vial - type listed below		PM 2.5 / PM 10	
Colisure / bacteria bottle		PUF Cartridge	
Dissolved Oxygen bottle		SOC Kit	
Encore		TO-17 Tubes	
Flashpoint bottle		Non-ConTest Container	
Perchlorate Kit		Other glass jar	
Other		Other	

Laboratory Comments:

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

Time and Date Frozen:

Meghan Kelley

From: Kim Rinard [krinard@woodardcurran.com]
Sent: Monday, August 06, 2012 10:46 PM
To: Meghan Kelley
Cc: George Franklin
Subject: UMass Grayson/Field - Hold Samples to be Released (7/27/12)

Hi Meghan

Hope you had a good weekend!!

Could you please release the following solid samples for EPA 8082 PCB analysis via 3540C soxhlet extraction.

GH-VBC-132 7/27/12

GH-VBC-146 7/27/12

Both samples should've been received by the lab with the batch of samples on ConTest job #12G0979, delivered on 7/27/12.

These may be run on a five day TAT- no rush required.

Thanks!
Kim Rinard
Scientist

Woodard & Curran
35 New England Business Center Suite 180 Andover, Massachusetts 01810

Office: (978)557-8150 x3647
Office: (866)702-6371
Fax: (978)557-7948
Cell: (413)531-4455

12G0981-04 GH-VBC-146

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.18	0.1631143	9.84
Surrogates			
Decachlorobiphenyl	0.893	0.8566762	4.15
Tetrachloro-m-xylene	0.924	0.9096953	1.56

12G0981-07 GH-VBC-132

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.14	0.1305905	6.95
Surrogates			
Decachlorobiphenyl	0.931	0.898881	3.51
Tetrachloro-m-xylene	0.943	0.9262715	1.79

B056571-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	0.875	0.85854	1.9
Tetrachloro-m-xylene	0.966	0.966745	0.0771

B056571-BS1 LCS

Analyte	Results		%RPD
Aroclor-1016	0.27	0.27429	1.58
Aroclor-1260	0.25	0.27676	10.2
Surrogates			
Tetrachloro-m-xylene	1.11	1.094275	1.43
Decachlorobiphenyl	1.04	1.015075	2.43

B056571-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.29	0.2943	1.47
Aroclor-1016	0.29	0.290015	0.00517
Surrogates			
Decachlorobiphenyl	1.07	1.04357	2.5
Tetrachloro-m-xylene	1.18	1.16576	1.21

B056571-MS1 Matrix Spike

Analyte	Results		%RPD
Aroclor-1016	0.25	0.345545	32.1
Aroclor-1260	0.26	0.296345	13.1
Surrogates			
Decachlorobiphenyl	0.898	0.879805	2.05
Tetrachloro-m-xylene	0.983	0.965115	1.84

B056571-MSD1 Matrix Spike Dup

Analyte	Results		%RPD
Aroclor-1016	0.26	0.354515	30.8
Aroclor-1260	0.26	0.29837	13.7
Surrogates			
Tetrachloro-m-xylene	1.09	1.07118	1.74
Decachlorobiphenyl	0.935	0.89643	4.21

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August 7, 2012

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

Project Location: Uma Grayson/Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 12G1026

Enclosed are results of analyses for samples received by the laboratory on July 31, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 8/7/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12G1026

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

PROJECT LOCATION: Uma Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VWC-152	12G1026-01	Wipe		SW-846 8082A	

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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.

Michael A. Erickson
Laboratory Director

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

Project Location: Uma Grayson/Field
Sample Description:
Work Order: 12G1026

Date Received: 7/31/2012

Field Sample #: GH-VWC-152
Sampled: 7/31/2012 11:05

Sample ID: 12G1026-01

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	7/31/12	8/2/12 11:54	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/31/12	8/2/12 11:54	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/31/12	8/2/12 11:54	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/31/12	8/2/12 11:54	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/31/12	8/2/12 11:54	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/31/12	8/2/12 11:54	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/31/12	8/2/12 11:54	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/31/12	8/2/12 11:54	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/31/12	8/2/12 11:54	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	85.9	30-150		8/2/12 11:54
Decachlorobiphenyl [2]	85.0	30-150		8/2/12 11:54
Tetrachloro-m-xylene [1]	102	30-150		8/2/12 11:54
Tetrachloro-m-xylene [2]	99.2	30-150		8/2/12 11:54

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
12G1026-01 [GH-VWC-152]	B056140	1.00	10.0	07/31/12

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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 B056140 - SW-846 3540C										
Blank (B056140-BLK1)				Prepared: 07/31/12 Analyzed: 08/02/12						
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	*1.83*		µg/Wipe	2.00		91.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.81*		µg/Wipe	2.00		90.7	30-150			
Surrogate: Tetrachloro-m-xylene	*1.87*		µg/Wipe	2.00		93.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.84*		µg/Wipe	2.00		92.0	30-150			
LCS (B056140-BS1)				Prepared: 07/31/12 Analyzed: 08/02/12						
Aroclor-1016	0.46	0.20	µg/Wipe	0.500		92.4	40-140			
Aroclor-1016 [2C]	0.49	0.20	µg/Wipe	0.500		98.7	40-140			
Aroclor-1260	0.44	0.20	µg/Wipe	0.500		88.7	40-140			
Aroclor-1260 [2C]	0.51	0.20	µg/Wipe	0.500		102	40-140			
Surrogate: Decachlorobiphenyl	*1.82*		µg/Wipe	2.00		90.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.79*		µg/Wipe	2.00		89.7	30-150			
Surrogate: Tetrachloro-m-xylene	*1.88*		µg/Wipe	2.00		94.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.86*		µg/Wipe	2.00		93.1	30-150			
LCS Dup (B056140-BSD1)				Prepared: 07/31/12 Analyzed: 08/02/12						
Aroclor-1016	0.43	0.20	µg/Wipe	0.500		86.7	40-140	6.39	30	
Aroclor-1016 [2C]	0.46	0.20	µg/Wipe	0.500		92.8	40-140	6.15	30	
Aroclor-1260	0.43	0.20	µg/Wipe	0.500		86.3	40-140	2.80	30	
Aroclor-1260 [2C]	0.50	0.20	µg/Wipe	0.500		99.5	40-140	2.73	30	
Surrogate: Decachlorobiphenyl	*1.73*		µg/Wipe	2.00		86.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.69*		µg/Wipe	2.00		84.6	30-150			
Surrogate: Tetrachloro-m-xylene	*1.67*		µg/Wipe	2.00		83.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.65*		µg/Wipe	2.00		82.5	30-150			

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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.

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

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 Publilc 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

12G1026-01 GH-VWC-152

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	2.04	1.98304	2.83
Decachlorobiphenyl	1.72	1.70011	1.16

B056140-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.87	1.83931	1.65
Decachlorobiphenyl	1.83	1.81375	0.892

B056140-BS1 LCS

Analyte	Results		%RPD
Aroclor-1260	0.44	0.51123	15
Aroclor-1016	0.46	0.4934	7.01
Surrogates			
Tetrachloro-m-xylene	1.88	1.86158	0.985
Decachlorobiphenyl	1.82	1.79346	1.47

B056140-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.43	0.49746	14.5
Aroclor-1016	0.43	0.46398	7.6
Surrogates			
Tetrachloro-m-xylene	1.67	1.64984	1.21
Decachlorobiphenyl	1.73	1.69286	2.17

CHAIN OF CUSTODY RECORD

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Page 1 of 1

12G1026

Company Name: Woodard + Curran
Address: 35 N.E. Business Drive Suite 180
Andover MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA Grayson / Field
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # jhamel@woodardcurran.com
Email: gfranklin@ " " "
Format: ☑ PDF ☑ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082/3540C										# of Containers	** Preservation	***Container Code
																		1	HEXANE	G
01	GH-VWC-152	7/31/12	1105			wi	U	✓												

7/31/12

Comments: ① EPA 8082 PCB's /3540C Soxhlet ② 5 DAY STD
③ RL ≤ 1ug/wipe

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

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____
WI = WIPE

Relinquished by: (signature) Kim Rinard	Date/Time: 7/31/12 1625	
Received by: (signature)	Date/Time: 7/31 1625	
Relinquished by: (signature)	Date/Time: 7/31 1730	
Received by: (signature)	Date/Time: 7/31 1730	

Turnaround ††
☐ 7-Day
☐ 10-Day
☑ Other 5 DAY
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1ug/wipe

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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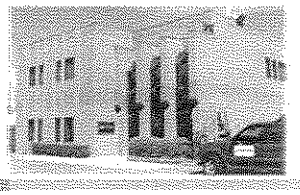
Sample Receipt Checklist



CLIENT NAME: Woodard + Curran RECEIVED BY: JSM DATE: 7-31-12

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 5.9

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	1
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 _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Doc# 277
Rev. 3 May 2012

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

August 3, 2012

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

Project Location: UMass - Amherst, MA
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 12G1033

Enclosed are results of analyses for samples received by the laboratory on July 31, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 8/3/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12G1033

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

PROJECT LOCATION: UMass - Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBC-153	12G1033-01	Concrete		SW-846 8082A	
GH-VBC-154	12G1033-02	Concrete		SW-846 8082A	
GH-VBCD-155	12G1033-03	Concrete		SW-846 8082A	

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CASE NARRATIVE SUMMARY

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

SW-846 8082A

Qualifications:

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

Analyte & Samples(s) Qualified:

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

B056240-MS1, B056240-MSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Michael A. Erickson
Laboratory Director

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

Project Location: UMass - Amherst, MA | Sample Description: | Work Order: 12G1033

Date Received: 7/31/2012

Field Sample #: GH-VBC-153 | Sampled: 7/31/2012 18:40

Sample ID: 12G1033-01

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	0.48	mg/Kg	5		SW-846 8082A	7/31/12	8/2/12 15:22	MJC
Aroclor-1221 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	7/31/12	8/2/12 15:22	MJC
Aroclor-1232 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	7/31/12	8/2/12 15:22	MJC
Aroclor-1242 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	7/31/12	8/2/12 15:22	MJC
Aroclor-1248 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	7/31/12	8/2/12 15:22	MJC
Aroclor-1254 [2]	3.2	0.48	mg/Kg	5		SW-846 8082A	7/31/12	8/2/12 15:22	MJC
Aroclor-1260 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	7/31/12	8/2/12 15:22	MJC
Aroclor-1262 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	7/31/12	8/2/12 15:22	MJC
Aroclor-1268 [1]	ND	0.48	mg/Kg	5		SW-846 8082A	7/31/12	8/2/12 15:22	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	96.0	30-150		8/2/12 15:22
Decachlorobiphenyl [2]	94.9	30-150		8/2/12 15:22
Tetrachloro-m-xylene [1]	95.4	30-150		8/2/12 15:22
Tetrachloro-m-xylene [2]	98.5	30-150		8/2/12 15:22

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Project Location: UMass - Amherst, MA
Sample Description:
Work Order: 12G1033

Date Received: 7/31/2012

Field Sample #: GH-VBC-154
Sampled: 7/31/2012 18:55

Sample ID: 12G1033-02

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	0.18	mg/Kg	2		SW-846 8082A	8/1/12	8/3/12 10:48	MJC
Aroclor-1221 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	8/1/12	8/3/12 10:48	MJC
Aroclor-1232 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	8/1/12	8/3/12 10:48	MJC
Aroclor-1242 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	8/1/12	8/3/12 10:48	MJC
Aroclor-1248 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	8/1/12	8/3/12 10:48	MJC
Aroclor-1254 [1]	1.8	0.18	mg/Kg	2		SW-846 8082A	8/1/12	8/3/12 10:48	MJC
Aroclor-1260 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	8/1/12	8/3/12 10:48	MJC
Aroclor-1262 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	8/1/12	8/3/12 10:48	MJC
Aroclor-1268 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	8/1/12	8/3/12 10:48	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	112	30-150		8/3/12 10:48
Decachlorobiphenyl [2]	108	30-150		8/3/12 10:48
Tetrachloro-m-xylene [1]	84.3	30-150		8/3/12 10:48
Tetrachloro-m-xylene [2]	85.7	30-150		8/3/12 10:48

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Project Location: UMass - Amherst, MA
Sample Description:
Work Order: 12G1033

Date Received: 7/31/2012

Field Sample #: GH-VBCD-155
Sampled: 7/31/2012 18:55

Sample ID: 12G1033-03

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	0.18	mg/Kg	2		SW-846 8082A	7/31/12	8/2/12 15:35	MJC
Aroclor-1221 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	7/31/12	8/2/12 15:35	MJC
Aroclor-1232 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	7/31/12	8/2/12 15:35	MJC
Aroclor-1242 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	7/31/12	8/2/12 15:35	MJC
Aroclor-1248 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	7/31/12	8/2/12 15:35	MJC
Aroclor-1254 [2]	1.4	0.18	mg/Kg	2		SW-846 8082A	7/31/12	8/2/12 15:35	MJC
Aroclor-1260 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	7/31/12	8/2/12 15:35	MJC
Aroclor-1262 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	7/31/12	8/2/12 15:35	MJC
Aroclor-1268 [1]	ND	0.18	mg/Kg	2		SW-846 8082A	7/31/12	8/2/12 15:35	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	88.7	30-150		8/2/12 15:35
Decachlorobiphenyl [2]	87.7	30-150		8/2/12 15:35
Tetrachloro-m-xylene [1]	97.3	30-150		8/2/12 15:35
Tetrachloro-m-xylene [2]	97.6	30-150		8/2/12 15:35

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
12G1033-01 [GH-VBC-153]	B056152	2.10	10.0	07/31/12
12G1033-03 [GH-VBCD-155]	B056152	2.20	10.0	07/31/12

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
12G1033-02RE1 [GH-VBC-154]	B056240	2.20	10.0	08/01/12

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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 B056152 - SW-846 3540C										
Blank (B056152-BLK1)				Prepared: 07/31/12 Analyzed: 08/02/12						
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	*0.940*		mg/Kg	1.00		94.0	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.926*		mg/Kg	1.00		92.6	30-150			
Surrogate: Tetrachloro-m-xylene	*1.02*		mg/Kg	1.00		102	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.998*		mg/Kg	1.00		99.8	30-150			
LCS (B056152-BS1)				Prepared: 07/31/12 Analyzed: 08/02/12						
Aroclor-1016	0.24	0.10	mg/Kg	0.250		96.0	40-140			
Aroclor-1016 [2C]	0.25	0.10	mg/Kg	0.250		99.7	40-140			
Aroclor-1260	0.23	0.10	mg/Kg	0.250		91.6	40-140			
Aroclor-1260 [2C]	0.25	0.10	mg/Kg	0.250		102	40-140			
Surrogate: Decachlorobiphenyl	*0.927*		mg/Kg	1.00		92.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.913*		mg/Kg	1.00		91.3	30-150			
Surrogate: Tetrachloro-m-xylene	*0.979*		mg/Kg	1.00		97.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.964*		mg/Kg	1.00		96.4	30-150			
LCS Dup (B056152-BSD1)				Prepared: 07/31/12 Analyzed: 08/02/12						
Aroclor-1016	0.25	0.10	mg/Kg	0.250		101	40-140	5.12	30	
Aroclor-1016 [2C]	0.26	0.10	mg/Kg	0.250		105	40-140	5.58	30	
Aroclor-1260	0.24	0.10	mg/Kg	0.250		97.6	40-140	6.39	30	
Aroclor-1260 [2C]	0.27	0.10	mg/Kg	0.250		107	40-140	5.49	30	
Surrogate: Decachlorobiphenyl	*0.967*		mg/Kg	1.00		96.7	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.951*		mg/Kg	1.00		95.1	30-150			
Surrogate: Tetrachloro-m-xylene	*1.02*		mg/Kg	1.00		102	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.998*		mg/Kg	1.00		99.8	30-150			

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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 B056240 - SW-846 3540C										
Blank (B056240-BLK1)				Prepared: 08/01/12 Analyzed: 08/02/12						
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	*0.971*		mg/Kg	1.00		97.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.968*		mg/Kg	1.00		96.8	30-150			
Surrogate: Tetrachloro-m-xylene	*0.995*		mg/Kg	1.00		99.5	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.973*		mg/Kg	1.00		97.3	30-150			
LCS (B056240-BS1)				Prepared: 08/01/12 Analyzed: 08/02/12						
Aroclor-1016	0.26	0.10	mg/Kg	0.250		103	40-140			
Aroclor-1016 [2C]	0.27	0.10	mg/Kg	0.250		109	40-140			
Aroclor-1260	0.26	0.10	mg/Kg	0.250		104	40-140			
Aroclor-1260 [2C]	0.30	0.10	mg/Kg	0.250		121	40-140			
Surrogate: Decachlorobiphenyl	*1.07*		mg/Kg	1.00		107	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.07*		mg/Kg	1.00		107	30-150			
Surrogate: Tetrachloro-m-xylene	*0.979*		mg/Kg	1.00		97.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.957*		mg/Kg	1.00		95.7	30-150			
LCS Dup (B056240-BSD1)				Prepared: 08/01/12 Analyzed: 08/02/12						
Aroclor-1016	0.27	0.10	mg/Kg	0.250		109	40-140	5.04	30	
Aroclor-1016 [2C]	0.28	0.10	mg/Kg	0.250		111	40-140	1.77	30	
Aroclor-1260	0.25	0.10	mg/Kg	0.250		101	40-140	2.56	30	
Aroclor-1260 [2C]	0.29	0.10	mg/Kg	0.250		117	40-140	3.45	30	
Surrogate: Decachlorobiphenyl	*1.00*		mg/Kg	1.00		100	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.00*		mg/Kg	1.00		100	30-150			
Surrogate: Tetrachloro-m-xylene	*1.02*		mg/Kg	1.00		102	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.999*		mg/Kg	1.00		99.9	30-150			

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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 B056240 - SW-846 3540C											
Matrix Spike (B056240-MS1)		**Source: 12G1033-02RE1**		Prepared: 08/01/12 Analyzed: 08/02/12							
Aroclor-1016	0.28	0.10	mg/Kg	0.250	0.0	113		40-140			
Aroclor-1016 [2C]	0.42	0.10	mg/Kg	0.250	0.0	**169**	*	40-140			MS-21
Aroclor-1260	0.94	0.10	mg/Kg	0.250	0.0	**374**	*	40-140			MS-21
Aroclor-1260 [2C]	1.0	0.10	mg/Kg	0.250	0.0	**414**	*	40-140			MS-21
Surrogate: Decachlorobiphenyl	*1.07*		mg/Kg	1.00		107		30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.06*		mg/Kg	1.00		106		30-150			
Surrogate: Tetrachloro-m-xylene	*0.992*		mg/Kg	1.00		99.2		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.963*		mg/Kg	1.00		96.3		30-150			
Matrix Spike Dup (B056240-MSD1)		**Source: 12G1033-02RE1**		Prepared: 08/01/12 Analyzed: 08/02/12							
Aroclor-1016	0.26	0.10	mg/Kg	0.250	0.0	106		40-140	6.44	50	
Aroclor-1016 [2C]	0.37	0.10	mg/Kg	0.250	0.0	**149**	*	40-140	12.9	50	MS-21
Aroclor-1260	0.79	0.10	mg/Kg	0.250	0.0	**318**	*	40-140	16.3	50	MS-21
Aroclor-1260 [2C]	0.87	0.10	mg/Kg	0.250	0.0	**348**	*	40-140	17.1	50	MS-21
Surrogate: Decachlorobiphenyl	*1.02*		mg/Kg	1.00		102		30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.01*		mg/Kg	1.00		101		30-150			
Surrogate: Tetrachloro-m-xylene	*0.921*		mg/Kg	1.00		92.1		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.897*		mg/Kg	1.00		89.7		30-150			

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FLAG/QUALIFIER SUMMARY

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

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
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 Publilc 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

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CHAIN OF CUSTODY RECORD

39 Spruce Street
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Page 1 of 1

12G1033

Company Name: Woodard + Curran
Address: 35 N.E. Bus Ctr Drive Suite 180
Andover, MA
Attention: J Hamel, G. Franklin, K Rinard
Project Location: UMA Grayson / Field
Sampled By: Kim Rinard

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ○ EMAIL ○ WEBSITE
Fax #
Email:
Format: ○ PDF ○ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082/3540C Soxhlet										
								1										# of Containers
								NA										** Preservation
								G										***Container Code
01	GH-VBC-153	7/31/12	1840			C		✓										
02	GH-VBC-154	↓	1855			↓		✓										
03	GH-VBCD-155	↓	1855			↓		✓										

7/31/12
KRW

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____
C = CONCRETE

Comments: ① EPA 8082 PCB's via 3540C Soxhlet ② RL ≤ 1mg/kg
③ RUSH - 48 Hr TAT

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

Relinquished by: (signature)	Date/Time:
KRinard (K Rinard)	7/31/12 2015
Received by: (signature)	Date/Time:
Kerry McGee 225C	7-31-12 20:15
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
RL ≤ 1mg/kg
Other:

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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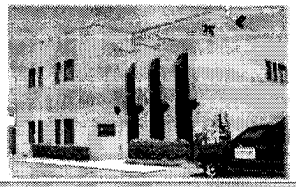

Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** KKM **DATE:** 7-31-12

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 22.5C

5) **Are there Dissolved samples for the lab to filter?** **Yes** **No**
   Who was notified _____ Date _____ Time _____
6) **Are there any RUSH or SHORT HOLDING TIME samples?** **Yes** **No**
   Who was notified _____ Date _____ Time _____
7) **Location where samples are stored:** 19

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

8) **Do all samples have the proper Acid pH:** **Yes** **No** **N/A** _____
9) **Do all samples have the proper Base pH:** **Yes** **No** **N/A** _____
10) **Was the PC notified of any discrepancies with the CoC vs the samples:** **Yes** **No** **N/A**

Containers received at Con-Test

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

Laboratory Comments:

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

Time and Date Frozen:

12G1021-16 05-5-RB-12.5-L

Analyte	Results		%RPD
Aroclor-1254	0.88	0.872475	0.859
Surrogates			
Decachlorobiphenyl	0.828	0.822825	0.627
Tetrachloro-m-xylene	0.962	0.943065	1.99

12G1021-19 05-3-MO-12-R

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.30	0.29003	3.38
Surrogates			
Decachlorobiphenyl	0.796	0.79283	0.399
Tetrachloro-m-xylene	0.913	0.902635	1.14

12G1033-01 GH-VBC-153

Analyte	Results		%RPD
Aroclor-1254 [2C]	3.2	3.022786	5.7
Surrogates			
Decachlorobiphenyl	0.915	0.9040953	1.2
Tetrachloro-m-xylene	0.909	0.9381667	3.16

12G1033-02RE1 GH-VBC-154

Analyte	Results		%RPD
Aroclor-1254	1.8	1.3643	27.5
Surrogates			
Decachlorobiphenyl	1.01	0.9844454	2.56
Tetrachloro-m-xylene	0.766	0.7791273	1.7

12G1033-03 GH-VBCD-155

Analyte	Results		%RPD
Aroclor-1254 [2C]	1.4	1.223245	13.5
Surrogates			
Decachlorobiphenyl	0.807	0.7970546	1.24
Tetrachloro-m-xylene	0.884	0.8874181	0.386

B056152-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.02	0.99799	2.18
Decachlorobiphenyl	0.940	0.926185	1.48

B056152-BS1 LCS

Analyte	Results		%RPD
Aroclor-1016	0.24	0.24914	3.74
Aroclor-1260	0.23	0.253965	9.9
Surrogates			
Decachlorobiphenyl	0.927	0.9131	1.51
Tetrachloro-m-xylene	0.979	0.963835	1.56

B056152-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1016	0.25	0.26343	5.23
Aroclor-1260	0.24	0.268305	11.1
Surrogates			
Decachlorobiphenyl	0.967	0.950755	1.69
Tetrachloro-m-xylene	1.02	0.998295	2.15

B056152-MS2 Matrix Spike

Analyte	Results		%RPD
Aroclor-1016	0.26	0.40957	44.7
Aroclor-1260	0.40	0.4565	13.2
Surrogates			

Tetrachloro-m-xylene	0.945	0.9242	2.23
Decachlorobiphenyl	0.928	0.920925	0.765

B056152-MS3 Matrix Spike

Analyte		Results	%RPD
Aroclor-1260	0.38	0.42498	11.2
Aroclor-1016	0.27	0.392755	37
Surrogates			
Decachlorobiphenyl	1.14	1.17744	3.23
Tetrachloro-m-xylene	1.04	1.017575	2.18

B056152-MSD2 Matrix Spike Dup

Analyte		Results	%RPD
Aroclor-1016	0.24	0.438465	58.5
Aroclor-1260	0.46	0.524625	13.1
Surrogates			
Tetrachloro-m-xylene	0.907	0.89315	1.54
Decachlorobiphenyl	0.848	0.87152	2.74

B056152-MSD3 Matrix Spike Dup

Analyte		Results	%RPD
Aroclor-1016	0.27	0.409695	41.1
Aroclor-1260	0.40	0.44088	9.72
Surrogates			
Tetrachloro-m-xylene	1.01	0.96977	4.06
Decachlorobiphenyl	1.04	1.048475	0.812

B056240-BLK1 Blank

Analyte		Results	%RPD
Surrogates			
Decachlorobiphenyl	0.971	0.96821	0.288
Tetrachloro-m-xylene	0.995	0.973475	2.19

B056240-BS1 LCS

Analyte		Results	%RPD
Aroclor-1016	0.26	0.27143	4.3
Aroclor-1260	0.26	0.303235	15.4
Surrogates			
Tetrachloro-m-xylene	0.979	0.957375	2.23
Decachlorobiphenyl	1.07	1.06503	0.466

B056240-BSD1 LCS Dup

Analyte		Results	%RPD
Aroclor-1016	0.27	0.27627	2.3
Aroclor-1260	0.25	0.292945	15.8
Surrogates			
Decachlorobiphenyl	1.00	0.99977	0.023
Tetrachloro-m-xylene	1.02	0.999185	2.06

B056240-MS1 Matrix Spike

Analyte		Results	%RPD
Aroclor-1016	0.28	0.42326	40.7
Aroclor-1260	0.94	1.034485	9.57
Surrogates			
Decachlorobiphenyl	1.07	1.05718	1.21
Tetrachloro-m-xylene	0.992	0.962785	2.99

B056240-MSD1 Matrix Spike Dup

Analyte		Results	%RPD
Aroclor-1016	0.26	0.371965	35.4
Aroclor-1260	0.79	0.8712	9.78
Surrogates			
Tetrachloro-m-xylene	0.921	0.896805	2.66
Decachlorobiphenyl	1.02	1.012275	0.76

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August 7, 2012

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

Project Location: UMass - Amherst, MA
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 12G1034

Enclosed are results of analyses for samples received by the laboratory on July 31, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 8/7/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12G1034

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

PROJECT LOCATION: UMass - Amherst, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VWC-157	12G1034-02	Wipe	South - 2/3 - Vent	SW-846 8082A	
GH-VWC-164	12G1034-09	Wipe	North - 4/5 - Sill	SW-846 8082A	

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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.

Michael A. Erickson
Laboratory Director

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

Project Location: UMass - Amherst, MA Sample Description: South - 2/3 - Vent Work Order: 12G1034

Date Received: 7/31/2012

Field Sample #: GH-VWC-157 Sampled: 7/31/2012 16:45

Sample ID: 12G1034-02

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	8/1/12	8/2/12 17:56	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 17:56	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 17:56	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 17:56	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 17:56	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 17:56	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 17:56	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 17:56	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 17:56	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	98.6	30-150		8/2/12 17:56
Decachlorobiphenyl [2]	99.1	30-150		8/2/12 17:56
Tetrachloro-m-xylene [1]	83.9	30-150		8/2/12 17:56
Tetrachloro-m-xylene [2]	85.3	30-150		8/2/12 17:56

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Project Location: UMass - Amherst, MA Sample Description: North - 4/5 - Sill Work Order: 12G1034

Date Received: 7/31/2012

Field Sample #: GH-VWC-164 Sampled: 7/31/2012 17:55

Sample ID: 12G1034-09

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	8/1/12	8/2/12 18:09	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 18:09	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 18:09	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 18:09	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 18:09	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 18:09	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 18:09	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 18:09	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/1/12	8/2/12 18:09	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	97.5	30-150		8/2/12 18:09
Decachlorobiphenyl [2]	99.6	30-150		8/2/12 18:09
Tetrachloro-m-xylene [1]	85.7	30-150		8/2/12 18:09
Tetrachloro-m-xylene [2]	86.5	30-150		8/2/12 18:09

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
12G1034-02 [GH-VWC-157]	B056235	1.00	10.0	08/01/12
12G1034-09 [GH-VWC-164]	B056235	1.00	10.0	08/01/12

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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 B056235 - SW-846 3540C										
Blank (B056235-BLK1)				Prepared: 08/01/12 Analyzed: 08/02/12						
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	*2.06*		µg/Wipe	2.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.01*		µg/Wipe	2.00		101	30-150			
Surrogate: Tetrachloro-m-xylene	*1.68*		µg/Wipe	2.00		84.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.71*		µg/Wipe	2.00		85.4	30-150			
LCS (B056235-BS1)				Prepared: 08/01/12 Analyzed: 08/02/12						
Aroclor-1016	0.51	0.20	µg/Wipe	0.500		102	40-140			
Aroclor-1016 [2C]	0.49	0.20	µg/Wipe	0.500		98.9	40-140			
Aroclor-1260	0.49	0.20	µg/Wipe	0.500		98.0	40-140			
Aroclor-1260 [2C]	0.50	0.20	µg/Wipe	0.500		101	40-140			
Surrogate: Decachlorobiphenyl	*2.01*		µg/Wipe	2.00		101	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.96*		µg/Wipe	2.00		98.2	30-150			
Surrogate: Tetrachloro-m-xylene	*1.71*		µg/Wipe	2.00		85.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.74*		µg/Wipe	2.00		87.0	30-150			
LCS Dup (B056235-BSD1)				Prepared: 08/01/12 Analyzed: 08/02/12						
Aroclor-1016	0.51	0.20	µg/Wipe	0.500		103	40-140	0.633	30	
Aroclor-1016 [2C]	0.50	0.20	µg/Wipe	0.500		101	40-140	2.08	30	
Aroclor-1260	0.50	0.20	µg/Wipe	0.500		101	40-140	2.63	30	
Aroclor-1260 [2C]	0.56	0.20	µg/Wipe	0.500		113	40-140	11.0	30	
Surrogate: Decachlorobiphenyl	*2.05*		µg/Wipe	2.00		102	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.00*		µg/Wipe	2.00		100	30-150			
Surrogate: Tetrachloro-m-xylene	*1.74*		µg/Wipe	2.00		87.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.77*		µg/Wipe	2.00		88.4	30-150			

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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.

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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 Publilc 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

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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 2

1261034

Company Name: Woodard + Curran
Address: 35 N.E. Bus Ctr Drive Suite 180
Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA Grayson/Field
Sampled By: Kim Rinard

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # jhamel@woodardcurran.com
Email: gfranklin@ " " " "
Format: ☑ PDF ☑ EXCEL ○ GIS
○ OTHER _____
○ "Enhanced Data Package"

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082/3540C (HOLD)	8082 Soxhlet *	Analysis Requested
01	GH-VWC-156	7/31/12	1640			WI	U	✓		South-2/3-Sill
02	GH-VWC-157	↓	1645			↓	U	✓	X	South-2/3-Vert
03	GH-VWC-158	↓	1655			↓	U	✓		South-1/2-Vert
04	GH-VWC-159		1700			↓	U	✓		South-1/2-Sill
05	GH-VWC-160	7/31/12	1710			WI	U	✓		Center-3/4-Sill
06	GH-VWB-161	↓	1715			↓	U	✓		Center-3/4-Vert
07	GH-VWB-162	↓	1725			↓	U	✓		Center-5/6-Vert
08	GH-VWC-163	↓	1730			↓	U	✓		Center-5/6 Sill
09	GH-VWC-164		1755			↓	U	✓	X	North-4/5-Sill
10	GH-VWC-165	7/31/12	1800			WI	U	✓		North-4/5-Vert

HEXANE
G

# of Containers
** Preservation
***Container Code

ANALYSIS REQUESTED

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments: ① HOLD - DO NOT EXTRACT/ANALYZE
* Activate 02+09 Kent-Mail
② RL ≤ 1 ug/wipe ③ EPA 8082 PCBS via 3540C Soxhlet

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

Relinquished by: (signature)	Date/Time:
KRinard (K Rinard)	7/31/12 2030
Received by: (signature)	Date/Time:
Kemy McGee 226C	7-31-12 20:30
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☑ Other HOLD

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1 ug/wipe

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

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www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Company Name: Woodard + Curran
Address: 35 N.E. Bus Ct Drive Suite 180 Andover
Attention: see page 1
Project Location: ↓
Sampled By: ↓

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # see page 1
Email: ↓
Format: ☑ PDF ☑ EXCEL ○ GIS
○ OTHER _____
○ "Enhanced Data Package"

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082/3540C Soxhlet	ANALYSIS REQUESTED
11	GH-VWC-166	7/31/12	1810			WI	U	✓	North - 1/2 - Vert
12	GH-VWC-167	↓	1815			↓	U	✓	North - 1/2 - Sill

7/31/12

(Kar)

(*) 14 days to extract
(*) 40 days to analyze

# of Containers	1										
** Preservation	HEXANE										
***Container Code	G										

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other _____

Comments: (1) HOLD - DO NOT EXTRACT/ANALYZE
(2) RL ≤ 1ug/wipe (3) EPA 8082 PCB's via 3540C Soxhlet

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

Relinquished by: (signature)	Date/Time:
[signature] (K Rinard)	7/31/12 2030
Received by: (signature)	Date/Time:
Kemy Wiree 22.6C	7-31-12 20:30
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☑ Other HOLD

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1ug/wipe

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # _____

nelac AIHA
NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

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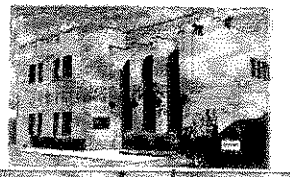
Sample Receipt Checklist



CLIENT NAME: Woodard & Curran RECEIVED BY: JB DATE: 7/31/12

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 22.6 ave
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	12
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 _____	

Lisa Worthington

From: Kim Rinard <krinard@woodardcurran.com>
Sent: Wednesday, August 01, 2012 1:54 PM
To: pblakeborough@contestlabs.com; lisa.worthington@contestlabs.com
Subject: FW: UMA Grayson/Field Wipes - Submitted 7/31/12

Good afternoon ladies

Please see the email below regarding some samples that will need to be activated.

Please call me if you have questions.

Thanks!
Kim Rinard
Scientist

Woodard & Curran
35 New England Business Center Suite 180 Andover, Massachusetts 01810

Office: (978)557-8150 x3647
Office: (866)702-6371
Fax: (978)557-7948
Cell: (413)531-4455
-----Original Message-----
From: Kim Rinard
Sent: Wednesday, August 01, 2012 1:46 PM
To: 'Meghan Kelley'
Cc: Jeff Hamel; George Franklin
Subject: UMA Grayson/Field Wipes - Submitted 7/31/12

Good afternoon Meghan

I have just reviewed the analytical results we just received for the brick/concrete samples submitted Monday 7/30/12.

Please release the following wipes for PCB analysis by 3540c Soxhlet:

GH-VWB-157 7/31/12 1645
GH-VWC-164 7/31/12 1755

I have to check with Jeff on the TAT for these however it should be 5 days.

Thanks!
Kim Rinard
Scientist

Woodard & Curran
35 New England Business Center Suite 180 Andover, Massachusetts 01810

Office: (978)557-8150 x3647

12G1034-02 GH-VWC-157

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.68	1.70572	1.52
Decachlorobiphenyl	1.97	1.9814	0.577

12G1034-09 GH-VWC-164

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.71	1.72957	1.14
Decachlorobiphenyl	1.95	1.99179	2.12

B056235-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.68	1.70855	1.69
Decachlorobiphenyl	2.06	2.01242	2.34

B056235-BS1 LCS

Analyte	Results		%RPD
Aroclor-1260	0.49	0.50481	2.98
Aroclor-1016	0.51	0.49447	3.09
Surrogates			
Tetrachloro-m-xylene	1.71	1.73946	1.71
Decachlorobiphenyl	2.01	1.96427	2.3

B056235-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.50	0.56367	12
Aroclor-1016	0.51	0.50484	1.02
Surrogates			
Tetrachloro-m-xylene	1.74	1.76874	1.64
Decachlorobiphenyl	2.05	2.00304	2.32

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August 14, 2012

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

Project Location: UMA Grayson/Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 12H0144

Enclosed are results of analyses for samples received by the laboratory on August 3, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 8/14/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12H0144

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

PROJECT LOCATION: UMA Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VWC-168	12H0144-01	Wipe		SW-846 8082A	
GH-VWC-169	12H0144-02	Wipe		SW-846 8082A	

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CASE NARRATIVE SUMMARY

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

REVISED REPORT 8/14/12-revised the client sample ID for samples 1 and 2 per client request.

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Michael A. Erickson
Laboratory Director

con-test® ANALYTICAL LABORATORY

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

Project Location: UMA Grayson/Field | Sample Description: | Work Order: 12H0144

Date Received: 8/3/2012

Field Sample #: GH-VWC-168 | Sampled: 8/1/2012 13:55

Sample ID: 12H0144-01

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	8/6/12	8/7/12 15:59	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 15:59	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 15:59	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 15:59	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 15:59	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 15:59	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 15:59	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 15:59	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 15:59	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	65.2	30-150		8/7/12 15:59
Decachlorobiphenyl [2]	79.4	30-150		8/7/12 15:59
Tetrachloro-m-xylene [1]	63.5	30-150		8/7/12 15:59
Tetrachloro-m-xylene [2]	71.1	30-150		8/7/12 15:59

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

Project Location: UMA Grayson/Field
Sample Description:
Work Order: 12H0144

Date Received: 8/3/2012

Field Sample #: GH-VWC-169
Sampled: 8/1/2012 14:05

Sample ID: 12H0144-02

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	8/6/12	8/7/12 16:11	JMB
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 16:11	JMB
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 16:11	JMB
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 16:11	JMB
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 16:11	JMB
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 16:11	JMB
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 16:11	JMB
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 16:11	JMB
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/6/12	8/7/12 16:11	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	70.0	30-150		8/7/12 16:11
Decachlorobiphenyl [2]	85.5	30-150		8/7/12 16:11
Tetrachloro-m-xylene [1]	66.8	30-150		8/7/12 16:11
Tetrachloro-m-xylene [2]	74.8	30-150		8/7/12 16:11

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
12H0144-01 [GH-VWC-168]	B056480	1.00	10.0	08/06/12
12H0144-02 [GH-VWC-169]	B056480	1.00	10.0	08/06/12

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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 B056480 - SW-846 3540C										
Blank (B056480-BLK1)				Prepared: 08/06/12 Analyzed: 08/07/12						
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	*1.51*		µg/Wipe	2.00		75.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.82*		µg/Wipe	2.00		91.2	30-150			
Surrogate: Tetrachloro-m-xylene	*1.44*		µg/Wipe	2.00		72.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.60*		µg/Wipe	2.00		80.1	30-150			
LCS (B056480-BS1)				Prepared: 08/06/12 Analyzed: 08/07/12						
Aroclor-1016	0.42	0.20	µg/Wipe	0.500		83.4	40-140			
Aroclor-1016 [2C]	0.47	0.20	µg/Wipe	0.500		93.8	40-140			
Aroclor-1260	0.45	0.20	µg/Wipe	0.500		89.1	40-140			
Aroclor-1260 [2C]	0.43	0.20	µg/Wipe	0.500		86.4	40-140			
Surrogate: Decachlorobiphenyl	*1.51*		µg/Wipe	2.00		75.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.84*		µg/Wipe	2.00		92.0	30-150			
Surrogate: Tetrachloro-m-xylene	*1.45*		µg/Wipe	2.00		72.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.61*		µg/Wipe	2.00		80.6	30-150			
LCS Dup (B056480-BSD1)				Prepared: 08/06/12 Analyzed: 08/07/12						
Aroclor-1016	0.43	0.20	µg/Wipe	0.500		85.4	40-140	2.39	30	
Aroclor-1016 [2C]	0.48	0.20	µg/Wipe	0.500		96.1	40-140	2.43	30	
Aroclor-1260	0.46	0.20	µg/Wipe	0.500		91.2	40-140	2.27	30	
Aroclor-1260 [2C]	0.44	0.20	µg/Wipe	0.500		87.9	40-140	1.74	30	
Surrogate: Decachlorobiphenyl	*1.52*		µg/Wipe	2.00		76.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.83*		µg/Wipe	2.00		91.6	30-150			
Surrogate: Tetrachloro-m-xylene	*1.44*		µg/Wipe	2.00		72.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.60*		µg/Wipe	2.00		80.1	30-150			

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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.

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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 Publilc 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

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East longmeadow, MA 01028

Page 1 of 1

Rev 04.05.12

S.D. ~~12G~~ 12H0144

Company Name: WOODARD + CURRAN
Address: 35 N.E. Bus Ctr Drive Andover, MA
Attention: J Hamel, G. Franklin, K Rinard
Project Location: UMA Grayson / Field
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax# jhamel@woodardcurran.com
Email: gfranklin@ " " " "
Format: ☑ PDF ☑ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082/3540C Soxhlet											
01	GH-VWC-~~156~~ 168	8/1/12	1355			WI	U	✓											
02	GH-VWC-~~159~~ 169 8/14/12	↓	1405			WI	U	✓											

8/3/12

ANALYSIS REQUESTED

# of Containers	1										
** Preservation	I	HEXANE									
***Container Code	G										

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____
WI = WIPE

Comments: ① EPA 8082 PCB's via 3540C Soxhlet ② RL ≤ 1ug/wipe ③ 5 DAY (Business DAYS) ④ Type D window expansion joint / Sika

Please use the following codes to let Con-Test know if a specific sample may be high in concentration in Matrix/Conc. Code Box:
62 H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time:
[signature] (K Rinard) (5.5°C) 8/3/12	1820
Received by: (signature) [signature] 5.5 8/3/12	1820
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☑ Other 5 DAY
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1ug/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

†† 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

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East Longmeadow, MA. 01028
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F: 413-525-6405
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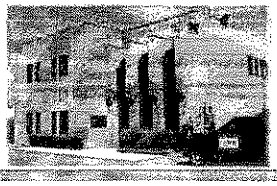

Sample Receipt Checklist

CLIENT NAME: Woodard + Curran RECEIVED BY: JSM DATE: 6-3-12

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 5.5

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	2
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	

12H0144-01 GH-VWC-168

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.27	1.42253	11.3
Decachlorobiphenyl	1.30	1.58859	20

12H0144-02 GH-VWC-169

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.34	1.49688	11.1
Decachlorobiphenyl	1.40	1.71093	20

B056480-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.44	1.60158	10.6
Decachlorobiphenyl	1.51	1.82451	18.9

B056480-BS1 LCS

Analyte	Results		%RPD
Aroclor-1260	0.45	0.43199	4.08
Aroclor-1016	0.42	0.46902	11
Surrogates			
Tetrachloro-m-xylene	1.45	1.61182	10.6
Decachlorobiphenyl	1.51	1.84077	19.7

B056480-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.46	0.43957	4.54
Aroclor-1016	0.43	0.48058	11.1
Surrogates			
Tetrachloro-m-xylene	1.44	1.60127	10.6
Decachlorobiphenyl	1.52	1.83118	18.6

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August 28, 2012

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

Project Location: UMass Field+Grayson
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 12H0713

Enclosed are results of analyses for samples received by the laboratory on August 21, 2012. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 8/28/2012

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 12H0713

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

PROJECT LOCATION: UMass Field+Grayson

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VWC-170	12H0713-01	Wipe		SW-846 8082A	

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

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.

Michael A. Erickson
Laboratory Director

con-test® ANALYTICAL LABORATORY

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

Project Location: UMass Field+Grayson | Sample Description: | Work Order: 12H0713

Date Received: 8/21/2012

Field Sample #: GH-VWC-170 | Sampled: 8/21/2012 09:40

Sample ID: 12H0713-01

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	8/24/12	8/27/12 19:40	PJG
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/24/12	8/27/12 19:40	PJG
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/24/12	8/27/12 19:40	PJG
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/24/12	8/27/12 19:40	PJG
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/24/12	8/27/12 19:40	PJG
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/24/12	8/27/12 19:40	PJG
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/24/12	8/27/12 19:40	PJG
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/24/12	8/27/12 19:40	PJG
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	8/24/12	8/27/12 19:40	PJG

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	99.3	30-150		8/27/12 19:40
Decachlorobiphenyl [2]	105	30-150		8/27/12 19:40
Tetrachloro-m-xylene [1]	97.1	30-150		8/27/12 19:40
Tetrachloro-m-xylene [2]	98.5	30-150		8/27/12 19:40

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
12H0713-01 [GH-VWC-170]	B057643	1.00	10.0	08/24/12

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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 B057643 - SW-846 3540C										
Blank (B057643-BLK1)				Prepared: 08/24/12 Analyzed: 08/27/12						
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	*1.95*		µg/Wipe	2.00		97.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.00*		µg/Wipe	2.00		100	30-150			
Surrogate: Tetrachloro-m-xylene	*1.87*		µg/Wipe	2.00		93.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.86*		µg/Wipe	2.00		93.0	30-150			
LCS (B057643-BS1)				Prepared: 08/24/12 Analyzed: 08/27/12						
Aroclor-1016	0.55	0.20	µg/Wipe	0.500		110	40-140			
Aroclor-1016 [2C]	0.54	0.20	µg/Wipe	0.500		109	40-140			
Aroclor-1260	0.54	0.20	µg/Wipe	0.500		108	40-140			
Aroclor-1260 [2C]	0.57	0.20	µg/Wipe	0.500		113	40-140			
Surrogate: Decachlorobiphenyl	*2.10*		µg/Wipe	2.00		105	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.17*		µg/Wipe	2.00		109	30-150			
Surrogate: Tetrachloro-m-xylene	*1.91*		µg/Wipe	2.00		95.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.91*		µg/Wipe	2.00		95.5	30-150			
LCS Dup (B057643-BSD1)				Prepared: 08/24/12 Analyzed: 08/27/12						
Aroclor-1016	0.55	0.20	µg/Wipe	0.500		111	40-140	0.628	30	
Aroclor-1016 [2C]	0.54	0.20	µg/Wipe	0.500		109	40-140	0.340	30	
Aroclor-1260	0.55	0.20	µg/Wipe	0.500		110	40-140	2.12	30	
Aroclor-1260 [2C]	0.57	0.20	µg/Wipe	0.500		114	40-140	0.224	30	
Surrogate: Decachlorobiphenyl	*2.11*		µg/Wipe	2.00		106	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.17*		µg/Wipe	2.00		109	30-150			
Surrogate: Tetrachloro-m-xylene	*1.92*		µg/Wipe	2.00		96.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.93*		µg/Wipe	2.00		96.4	30-150			

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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.

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Certified Analyses included in this Report

Analyte	Certifications

No certified Analyses included in this Report

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MA	Massachusetts DEP	M-MA100	06/30/2013
CT	Connecticut Department of Publilc 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

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CHAIN OF CUSTODY RECORD

12H0713
Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: Woodard + Curran
Address: 35. N. E. Bus Ctr Drive Suite 180
Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA Field + Grayson
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ✓ EMAIL ○ WEBSITE
~~Fax~~ #: jhamel@woodardcurran.com
Email: gfrankline " " " "
Format: ✓ PDF ✓ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED: EPA 8082/3540C PCBs

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code
01	GH-VWC-170	8/21/12	0940			W1	U

8/21/12 KM

# of Containers: 1
** Preservation: I/2
***Container Code:

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other
W1 = WIPE

Comments: ① EPA 8082 PCB's VIA 3540C Soxhlet ② RL ≤ 1ug/wipe
6th floor, adj material / sika 550W green / Grayson House

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

Relinquished by: (signature)	Date/Time:
[signature] (K Rinard) 0.6°C	8/21/12 2100
Received by: (signature) [signature] 0.6°C	8-21 12 2100
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☑ Other 5 DAY
RUSH†
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1ug/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

†† 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

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Sample Receipt Checklist

CLIENT NAME: Woodard + Curran RECEIVED BY: JSM DATE: 8·21·12

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 0.6
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	1
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 _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

12H0713-01 GH-VWC-170

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.94	1.97025	1.55
Decachlorobiphenyl	1.99	2.1022	5.48

B057643-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.87	1.85955	0.56
Decachlorobiphenyl	1.95	1.99965	2.51

B057643-BS1 LCS

Analyte	Results		%RPD
Aroclor-1260	0.54	0.56639	4.77
Aroclor-1016	0.55	0.54451	1
Surrogates			
Tetrachloro-m-xylene	1.91	1.91096	0.0502
Decachlorobiphenyl	2.10	2.17193	3.37

B057643-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.55	0.56766	3.16
Aroclor-1016	0.55	0.54266	1.34
Surrogates			
Tetrachloro-m-xylene	1.92	1.92898	0.467
Decachlorobiphenyl	2.11	2.1728	2.93

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May 16, 2013

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

Project Location: UMA Grayson/Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13E0477

Enclosed are results of analyses for samples received by the laboratory on May 14, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 5/16/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13E0477

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

PROJECT LOCATION: UMA Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBS-171	13E0477-01	Product/Solid		SW-846 8082A	
GH-VBS-172	13E0477-02	Product/Solid		SW-846 8082A	
GH-VBS-173	13E0477-03	Product/Solid		SW-846 8082A	
GH-VBS-174	13E0477-04	Product/Solid		SW-846 8082A	
GH-VBS-175	13E0477-05	Product/Solid		SW-846 8082A	
GH-VBSQ-176	13E0477-06	Aqueous liquid		SW-846 8082A	
GH-VBSD-177	13E0477-07	Product/Solid		SW-846 8082A	

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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.

Daren J. Damboragian
Laboratory Manager

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

Project Location: UMA Grayson/Field
Sample Description:
Work Order: 13E0477

Date Received: 5/14/2013

Field Sample #: GH-VBS-171
Sampled: 5/14/2013 10:50

Sample ID: 13E0477-01

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	0.097	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:33	MJC
Aroclor-1221 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:33	MJC
Aroclor-1232 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:33	MJC
Aroclor-1242 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:33	MJC
Aroclor-1248 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:33	MJC
Aroclor-1254 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:33	MJC
Aroclor-1260 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:33	MJC
Aroclor-1262 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:33	MJC
Aroclor-1268 [1]	ND	0.097	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:33	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	78.2	30-150		5/16/13 11:33
Decachlorobiphenyl [2]	87.9	30-150		5/16/13 11:33
Tetrachloro-m-xylene [1]	89.6	30-150		5/16/13 11:33
Tetrachloro-m-xylene [2]	91.7	30-150		5/16/13 11:33

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Project Location: UMA Grayson/Field | Sample Description: | Work Order: 13E0477

Date Received: 5/14/2013

Field Sample #: GH-VBS-172 | Sampled: 5/14/2013 10:25

Sample ID: 13E0477-02

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	5/14/13	5/16/13 11:46	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:46	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:46	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:46	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:46	MJC
Aroclor-1254 [2]	0.11	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:46	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:46	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:46	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:46	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	80.0	30-150		5/16/13 11:46
Decachlorobiphenyl [2]	88.2	30-150		5/16/13 11:46
Tetrachloro-m-xylene [1]	91.0	30-150		5/16/13 11:46
Tetrachloro-m-xylene [2]	93.7	30-150		5/16/13 11:46

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Project Location: UMA Grayson/Field | Sample Description: | Work Order: 13E0477

Date Received: 5/14/2013

Field Sample #: GH-VBS-173 | Sampled: 5/14/2013 10:10

Sample ID: 13E0477-03

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	0.096	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:59	MJC
Aroclor-1221 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:59	MJC
Aroclor-1232 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:59	MJC
Aroclor-1242 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:59	MJC
Aroclor-1248 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:59	MJC
Aroclor-1254 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:59	MJC
Aroclor-1260 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:59	MJC
Aroclor-1262 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:59	MJC
Aroclor-1268 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 11:59	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	80.5	30-150		5/16/13 11:59
Decachlorobiphenyl [2]	87.9	30-150		5/16/13 11:59
Tetrachloro-m-xylene [1]	92.3	30-150		5/16/13 11:59
Tetrachloro-m-xylene [2]	96.2	30-150		5/16/13 11:59

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Project Location: UMA Grayson/Field | Sample Description: | Work Order: 13E0477

Date Received: 5/14/2013

Field Sample #: GH-VBS-174 | Sampled: 5/14/2013 10:00

Sample ID: 13E0477-04

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	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:12	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:12	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:12	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:12	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:12	MJC
Aroclor-1254 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:12	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:12	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:12	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:12	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	84.5	30-150		5/16/13 12:12
Decachlorobiphenyl [2]	93.6	30-150		5/16/13 12:12
Tetrachloro-m-xylene [1]	93.5	30-150		5/16/13 12:12
Tetrachloro-m-xylene [2]	96.3	30-150		5/16/13 12:12

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Project Location: UMA Grayson/Field | Sample Description: | Work Order: 13E0477

Date Received: 5/14/2013

Field Sample #: GH-VBS-175 | Sampled: 5/14/2013 09:45

Sample ID: 13E0477-05

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	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:25	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:25	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:25	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:25	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:25	MJC
Aroclor-1254 [2]	0.10	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:25	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:25	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:25	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:25	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	80.5	30-150		5/16/13 12:25
Decachlorobiphenyl [2]	88.7	30-150		5/16/13 12:25
Tetrachloro-m-xylene [1]	94.6	30-150		5/16/13 12:25
Tetrachloro-m-xylene [2]	97.5	30-150		5/16/13 12:25

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Project Location: UMA Grayson/Field
Sample Description:
Work Order: 13E0477

Date Received: 5/14/2013

Field Sample #: GH-VBSQ-176
Sampled: 5/14/2013 15:55

Sample ID: 13E0477-06

Sample Matrix: Aqueous liquid

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	5/14/13	5/16/13 10:10	MJC
Aroclor-1221 [1]	ND	0.20	µg/L	1		SW-846 8082A	5/14/13	5/16/13 10:10	MJC
Aroclor-1232 [1]	ND	0.20	µg/L	1		SW-846 8082A	5/14/13	5/16/13 10:10	MJC
Aroclor-1242 [1]	ND	0.20	µg/L	1		SW-846 8082A	5/14/13	5/16/13 10:10	MJC
Aroclor-1248 [1]	ND	0.20	µg/L	1		SW-846 8082A	5/14/13	5/16/13 10:10	MJC
Aroclor-1254 [1]	ND	0.20	µg/L	1		SW-846 8082A	5/14/13	5/16/13 10:10	MJC
Aroclor-1260 [1]	ND	0.20	µg/L	1		SW-846 8082A	5/14/13	5/16/13 10:10	MJC
Aroclor-1262 [1]	ND	0.20	µg/L	1		SW-846 8082A	5/14/13	5/16/13 10:10	MJC
Aroclor-1268 [1]	ND	0.20	µg/L	1		SW-846 8082A	5/14/13	5/16/13 10:10	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	68.4	30-150		5/16/13 10:10
Decachlorobiphenyl [2]	66.7	30-150		5/16/13 10:10
Tetrachloro-m-xylene [1]	84.8	30-150		5/16/13 10:10
Tetrachloro-m-xylene [2]	84.5	30-150		5/16/13 10:10

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Project Location: UMA Grayson/Field
Sample Description:
Work Order: 13E0477

Date Received: 5/14/2013

Field Sample #: GH-VBSD-177
Sampled: 5/14/2013 10:10

Sample ID: 13E0477-07

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	5/14/13	5/16/13 12:38	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:38	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:38	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:38	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:38	MJC
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:38	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:38	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:38	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/14/13	5/16/13 12:38	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	80.5	30-150		5/16/13 12:38
Decachlorobiphenyl [2]	88.8	30-150		5/16/13 12:38
Tetrachloro-m-xylene [1]	91.3	30-150		5/16/13 12:38
Tetrachloro-m-xylene [2]	93.7	30-150		5/16/13 12:38

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13E0477-01 [GH-VBS-171]	B073018	2.07	10.0	05/14/13
13E0477-02 [GH-VBS-172]	B073018	2.01	10.0	05/14/13
13E0477-03 [GH-VBS-173]	B073018	2.08	10.0	05/14/13
13E0477-04 [GH-VBS-174]	B073018	2.03	10.0	05/14/13
13E0477-05 [GH-VBS-175]	B073018	2.02	10.0	05/14/13
13E0477-07 [GH-VBSD-177]	B073018	2.01	10.0	05/14/13

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
13E0477-06 [GH-VBSQ-176]	B073032	1000	10.0	05/14/13

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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 B073032 - SW-846 3510C										
Blank (B073032-BLK1)				Prepared: 05/14/13 Analyzed: 05/16/13						
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	*1.70*		µg/L	2.00		85.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.71*		µg/L	2.00		85.3	30-150			
Surrogate: Tetrachloro-m-xylene	*1.82*		µg/L	2.00		90.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.81*		µg/L	2.00		90.3	30-150			
LCS (B073032-BS1)				Prepared: 05/14/13 Analyzed: 05/16/13						
Aroclor-1016	0.50	0.20	µg/L	0.500		99.0	40-140			
Aroclor-1016 [2C]	0.51	0.20	µg/L	0.500		102	40-140			
Aroclor-1260	0.48	0.20	µg/L	0.500		95.7	40-140			
Aroclor-1260 [2C]	0.50	0.20	µg/L	0.500		99.9	40-140			
Surrogate: Decachlorobiphenyl	*1.66*		µg/L	2.00		82.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.66*		µg/L	2.00		83.2	30-150			
Surrogate: Tetrachloro-m-xylene	*1.78*		µg/L	2.00		89.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.77*		µg/L	2.00		88.6	30-150			
LCS Dup (B073032-BSD1)				Prepared: 05/14/13 Analyzed: 05/16/13						
Aroclor-1016	0.45	0.20	µg/L	0.500		90.2	40-140	9.29	20	
Aroclor-1016 [2C]	0.47	0.20	µg/L	0.500		94.4	40-140	8.00	20	
Aroclor-1260	0.45	0.20	µg/L	0.500		90.2	40-140	5.95	20	
Aroclor-1260 [2C]	0.46	0.20	µg/L	0.500		92.5	40-140	7.72	20	
Surrogate: Decachlorobiphenyl	*1.55*		µg/L	2.00		77.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.55*		µg/L	2.00		77.3	30-150			
Surrogate: Tetrachloro-m-xylene	*1.56*		µg/L	2.00		78.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.55*		µg/L	2.00		77.4	30-150			

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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 B073018 - SW-846 3540C										
Blank (B073018-BLK1)				Prepared: 05/14/13 Analyzed: 05/15/13						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.910*		mg/Kg	1.00		91.0	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.960*		mg/Kg	1.00		96.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.866*		mg/Kg	1.00		86.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.998*		mg/Kg	1.00		99.8	30-150			
LCS (B073018-BS1)				Prepared: 05/14/13 Analyzed: 05/15/13						
Aroclor-1016	0.22	0.10	mg/Kg	0.250		88.3	40-140			
Aroclor-1016 [2C]	0.25	0.10	mg/Kg	0.250		99.4	40-140			
Aroclor-1260	0.21	0.10	mg/Kg	0.250		85.8	40-140			
Aroclor-1260 [2C]	0.24	0.10	mg/Kg	0.250		95.1	40-140			
Surrogate: Decachlorobiphenyl	*0.931*		mg/Kg	1.00		93.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.992*		mg/Kg	1.00		99.2	30-150			
Surrogate: Tetrachloro-m-xylene	*0.900*		mg/Kg	1.00		90.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.02*		mg/Kg	1.00		102	30-150			
LCS Dup (B073018-BSD1)				Prepared: 05/14/13 Analyzed: 05/15/13						
Aroclor-1016	0.26	0.10	mg/Kg	0.250		105	40-140	17.2	30	
Aroclor-1016 [2C]	0.31	0.10	mg/Kg	0.250		123	40-140	21.3	30	
Aroclor-1260	0.26	0.10	mg/Kg	0.250		106	40-140	20.7	30	
Aroclor-1260 [2C]	0.28	0.10	mg/Kg	0.250		114	40-140	17.8	30	
Surrogate: Decachlorobiphenyl	*1.10*		mg/Kg	1.00		110	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.16*		mg/Kg	1.00		116	30-150			
Surrogate: Tetrachloro-m-xylene	*1.06*		mg/Kg	1.00		106	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.24*		mg/Kg	1.00		124	30-150			

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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.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1221	CT,NH,NY,ME,NC,VA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1232	CT,NH,NY,ME,NC,VA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1242	CT,NH,NY,ME,NC,VA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1248	CT,NH,NY,ME,NC,VA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1254	CT,NH,NY,ME,NC,VA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1260	CT,NH,NY,ME,NC,VA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA
SW-846 8082A in Water	
Aroclor-1016	CT,NH,NY,NC,ME,VA
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1221	CT,NH,NY,NC,ME,VA
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1232	CT,NH,NY,NC,ME,VA
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1242	CT,NH,NY,NC,ME,VA
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1248	CT,NH,NY,NC,ME,VA
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1254	CT,NH,NY,NC,ME,VA
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1260	CT,NH,NY,NC,ME,VA
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1262	NC
Aroclor-1262 [2C]	NC
Aroclor-1268	NC
Aroclor-1268 [2C]	NC

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

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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

13E0477

Company Name: Woodard & Curran
Address: 40 Shattuck Rd Suite 110
Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMA Grayson/Field
Sampled By: Kim Rinard

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082/3540C Soxhlet	EPA 8082 Aqueous									
								1	1									# of Containers
								I	I									** Preservation
								G	G									***Container Code
01	GH-VBS-171	5/14/13	1050			S	U	x										
02	GH-VBS-172		1025					x										
03	GH-VBS-~~174~~ 173		1010					x										
04	GH-VBS-174		1000					x										
05	GH-VBS-175		0945			S	U	x										
06	GH-VBSD-176	5/14/13	1555			Aq	U		x									
~~08~~ 07	GH-~~VSD~~ VBSD-177	5/14/13	10:10					x										
	KAR																	
		~~08~~ Analyze per Kim R																
	5/14/13					MEK 5/15/2013												

ANALYSIS REQUESTED

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments: (1) EPA 8082 via 3540C (Soxhlet Ext) (2) RL 1mg/kg
(3) Soffit ceiling @ 5" from joint

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

Relinquished by: (signature)	Date/Time:
[signature]	5/14/13 1600
Received by: (signature) [signature]	Date/Time: 1600 5-14-13
Relinquished by: (signature) [signature]	Date/Time: 1830 5-14-13
Received by: (signature) [signature] 4.4.6	Date/Time: 5/14/13 18:30

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other ____
RUSH †
☐ †24-Hr ☒ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL 1mg/kg

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # _____

NELAC & AIHA Certified
WBE/DBE Certified

†† TURNAROUND TIME (business days) 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.

PLEASE BE CAREFUL NOT TO CONTAMINATE THIS DOCUMENT

Page 17 of 20 13E0477_1 Contest_Final 05 16 13 1611 05/16/13 16:11:49

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

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Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: KKM DATE: 5/14/13

1) Was the chain(s) of custody relinquished and signed? (Yes) No No CoC Included
2) Does the chain agree with the samples? Yes (No)
   If not, explain: *
3) Are all the samples in good condition? (Yes) No
   If not, explain:
4) How were the samples received:
   On Ice ☑ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☑
   Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A
   Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.4
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	1	8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	
250 mL Amber (8oz amber)		2 oz amber/clear jar	6
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: * rec'd sample GH-VBSD-177 (time of 10:10) not on CoC

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

Time and Date Frozen:

Doc# 277
Rev. 3 May 2012

13E0477-01 GH-VBS-171

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	0.865	0.8855411	2.35
Decachlorobiphenyl	0.755	0.8490049	11.7

13E0477-02 GH-VBS-172

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.11	8.660697E-02	23.8
Surrogates			
Decachlorobiphenyl	0.796	0.8780498	9.8
Tetrachloro-m-xylene	0.906	0.9326866	2.9

13E0477-03 GH-VBS-173

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	0.774	0.845601	8.84
Tetrachloro-m-xylene	0.888	0.9246155	4.04

13E0477-04 GH-VBS-174

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	0.922	0.9485714	2.84
Decachlorobiphenyl	0.832	0.9223448	10.3

13E0477-05 GH-VBS-175

Analyte	Results		%RPD
Aroclor-1254 [2C]	0.10	8.807426E-02	12.7
Surrogates			
Tetrachloro-m-xylene	0.937	0.9652723	2.97
Decachlorobiphenyl	0.797	0.8782327	9.7

13E0477-06 GH-VBSQ-176

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	1.37	1.33358	2.69
Tetrachloro-m-xylene	1.70	1.6895	0.62

13E0477-07 GH-VBSD-177

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	0.801	0.8839204	9.84
Tetrachloro-m-xylene	0.909	0.9321294	2.51

B073018-BLK1 Blank

Analyte	Results		%RPD
Surrogates			

Decachlorobiphenyl	0.910	0.959865	5.33
Tetrachloro-m-xylene	0.866	0.99795	14.2

B073018-BS1 LCS

Analyte		Results	%RPD
Aroclor-1260	0.21	0.2377	12.4
Aroclor-1016	0.22	0.24843	12.1
Surrogates			
Decachlorobiphenyl	0.931	0.99244	6.39
Tetrachloro-m-xylene	0.900	1.020575	12.6

B073018-BSD1 LCS Dup

Analyte		Results	%RPD
Aroclor-1016	0.26	0.307785	16.8
Aroclor-1260	0.26	0.28421	8.9
Surrogates			
Decachlorobiphenyl	1.10	1.16449	5.7
Tetrachloro-m-xylene	1.06	1.236945	15.4

B073032-BLK1 Blank

Analyte		Results	%RPD
Surrogates			
Decachlorobiphenyl	1.70	1.70674	0.396
Tetrachloro-m-xylene	1.82	1.8059	0.778

B073032-BS1 LCS

Analyte		Results	%RPD
Aroclor-1260	0.48	0.49942	3.97
Aroclor-1016	0.50	0.51117	2.21
Surrogates			
Decachlorobiphenyl	1.66	1.66465	0.28
Tetrachloro-m-xylene	1.78	1.77157	0.475

B073032-BSD1 LCS Dup

Analyte		Results	%RPD
Aroclor-1016	0.45	0.47187	4.74
Aroclor-1260	0.45	0.46231	2.7
Surrogates			
Tetrachloro-m-xylene	1.56	1.54757	0.8
Decachlorobiphenyl	1.55	1.54675	0.21

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May 28, 2013

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

Project Location: UMass Grayson/Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13E0681

Enclosed are results of analyses for samples received by the laboratory on May 20, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 5/28/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13E0681

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

PROJECT LOCATION: UMass Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBC-178	13E0681-01	Concrete	Concrete CMV @ East S/F Windows	SW-846 8082A	

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

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.

Daren J. Damboragian
Laboratory Manager

con-test® ANALYTICAL LABORATORY

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

Project Location: UMass Grayson/Field | Sample Description: Concrete CMV @ East S/F Windows | Work Order: 13E0681

Date Received: 5/20/2013

Field Sample #: GH-VBC-178 | Sampled: 5/17/2013 14:20

Sample ID: 13E0681-01

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	0.10	mg/Kg	1		SW-846 8082A	5/21/13	5/25/13 15:22	JMB
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/21/13	5/25/13 15:22	JMB
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/21/13	5/25/13 15:22	JMB
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/21/13	5/25/13 15:22	JMB
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/21/13	5/25/13 15:22	JMB
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/21/13	5/25/13 15:22	JMB
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/21/13	5/25/13 15:22	JMB
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/21/13	5/25/13 15:22	JMB
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	5/21/13	5/25/13 15:22	JMB

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	87.0	30-150		5/25/13 15:22
Decachlorobiphenyl [2]	85.0	30-150		5/25/13 15:22
Tetrachloro-m-xylene [1]	77.7	30-150		5/25/13 15:22
Tetrachloro-m-xylene [2]	72.2	30-150		5/25/13 15:22

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13E0681-01 [GH-VBC-178]	B073441	2.00	10.0	05/21/13

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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 B073441 - SW-846 3540C										
Blank (B073441-BLK1)				Prepared: 05/21/13 Analyzed: 05/23/13						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.925*		mg/Kg	1.00		92.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.875*		mg/Kg	1.00		87.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.894*		mg/Kg	1.00		89.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.855*		mg/Kg	1.00		85.5	30-150			
LCS (B073441-BS1)				Prepared: 05/21/13 Analyzed: 05/23/13						
Aroclor-1016	0.27	0.10	mg/Kg	0.250		107	40-140			
Aroclor-1016 [2C]	0.25	0.10	mg/Kg	0.250		101	40-140			
Aroclor-1260	0.26	0.10	mg/Kg	0.250		103	40-140			
Aroclor-1260 [2C]	0.24	0.10	mg/Kg	0.250		96.0	40-140			
Surrogate: Decachlorobiphenyl	*1.04*		mg/Kg	1.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.990*		mg/Kg	1.00		99.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.991*		mg/Kg	1.00		99.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.960*		mg/Kg	1.00		96.0	30-150			
LCS Dup (B073441-BSD1)				Prepared: 05/21/13 Analyzed: 05/23/13						
Aroclor-1016	0.22	0.10	mg/Kg	0.250		89.5	40-140	18.0	30	
Aroclor-1016 [2C]	0.20	0.10	mg/Kg	0.250		79.9	40-140	23.1	30	
Aroclor-1260	0.26	0.10	mg/Kg	0.250		103	40-140	0.0484	30	
Aroclor-1260 [2C]	0.24	0.10	mg/Kg	0.250		97.2	40-140	1.25	30	
Surrogate: Decachlorobiphenyl	*1.03*		mg/Kg	1.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.972*		mg/Kg	1.00		97.2	30-150			
Surrogate: Tetrachloro-m-xylene	*0.940*		mg/Kg	1.00		94.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.911*		mg/Kg	1.00		91.1	30-150			

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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 B073441 - SW-846 3540C										
Matrix Spike (B073441-MS1)		**Source: 13E0681-01**		Prepared: 05/21/13 Analyzed: 05/25/13						
Aroclor-1016	0.32	0.10	mg/Kg	0.250	0.0	130	40-140			
Aroclor-1016 [2C]	0.34	0.10	mg/Kg	0.250	0.0	138	40-140			
Aroclor-1260	0.28	0.10	mg/Kg	0.250	0.0	113	40-140			
Aroclor-1260 [2C]	0.35	0.10	mg/Kg	0.250	0.0	139	40-140			
Surrogate: Decachlorobiphenyl	*0.981*		mg/Kg	1.00		98.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.965*		mg/Kg	1.00		96.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.916*		mg/Kg	1.00		91.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.903*		mg/Kg	1.00		90.3	30-150			
Matrix Spike Dup (B073441-MSD1)		**Source: 13E0681-01**		Prepared: 05/21/13 Analyzed: 05/25/13						
Aroclor-1016	0.29	0.099	mg/Kg	0.248	0.0	116	40-140	12.3	50	
Aroclor-1016 [2C]	0.33	0.099	mg/Kg	0.248	0.0	132	40-140	5.10	50	
Aroclor-1260	0.30	0.099	mg/Kg	0.248	0.0	119	40-140	4.05	50	
Aroclor-1260 [2C]	0.33	0.099	mg/Kg	0.248	0.0	132	40-140	6.30	50	
Surrogate: Decachlorobiphenyl	*1.05*		mg/Kg	0.990		106	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.03*		mg/Kg	0.990		104	30-150			
Surrogate: Tetrachloro-m-xylene	*0.969*		mg/Kg	0.990		97.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.945*		mg/Kg	0.990		95.5	30-150			

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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.

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CERTIFICATIONS

Certified Analyses included in this Report

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

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

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

con-test® ANALYTICAL LABORATORY
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Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

13E0681

Company Name: Woodard & Curran
Address: 40 Shattuck Rd Suite 110 Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMASS Grayson / Field
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082/3540C Soxhlet										
01	GH-VBC-178	5/17/13	1420			C	U	X										
	~~GH-VBC-179~~	↓	~~1545~~			~~C~~	~~U~~	~~X~~										
	KAR 5/20/13																	

# 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=summa can
T=tedlar bag
O=Other

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

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

Comments: ① EPA 8082 PCB's via 3540C soxhlet ② RL ≤ 1mg/kg ③ 5 DAY TAT ④ Concrete CMU @ East S/F windows (*) ACTIVE

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

Relinquished by: (signature)	Date/Time:
KAR	5/20/13 2000
Received by: (signature)	Date/Time:
[signature] 4.1	5/20/13 2000
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

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 #

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

†† 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

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

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Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** WK **DATE:** 5/28/13

1) **Was the chain(s) of custody relinquished and signed?** **Yes** **No** **No CoC Included**
2) **Does the chain agree with the samples?** **Yes** **No**
   If not, explain:
3) **Are all the samples in good condition?** **Yes** **No**
   If not, explain:
4) **How were the samples received:**
   On Ice [X] Direct from Sampling [ ] Ambient [ ] In Cooler(s) [X]
   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 4.1
5) **Are there Dissolved samples for the lab to filter?** **Yes** **No**
   Who was notified _____ Date _____ Time _____
6) **Are there any RUSH or SHORT HOLDING TIME samples?** **Yes** **No**
   Who was notified _____ Date _____ Time _____
7) **Location where samples are stored:** 19

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

8) **Do all samples have the proper Acid pH:** **Yes** **No** **N/A** _____
9) **Do all samples have the proper Base pH:** **Yes** **No** **N/A** _____
10) **Was the PC notified of any discrepancies with the CoC vs the samples:** **Yes** **No** **N/A**

Containers received at Con-Test

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

Laboratory Comments:

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

Time and Date Frozen:

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June 6, 2013

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

Project Location: UMass Grayson Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13E1083

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

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 6/6/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13E1083

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

PROJECT LOCATION: UMass Grayson Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBS-184	13E1083-01	Product/Solid		SW-846 8082A	
GH-VBC-182	13E1083-02	Product/Solid		SW-846 8082A	

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CASE NARRATIVE SUMMARY

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

SW-846 8082A

Qualifications:

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

Analyte & Samples(s) Qualified:

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

B074080-BS1, B074080-BSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Michael A. Erickson
Laboratory Director

con-test® ANALYTICAL LABORATORY

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

Project Location: UMass Grayson Field | Sample Description: | Work Order: 13E1083

Date Received: 5/31/2013

Field Sample #: GH-VBS-184 | Sampled: 5/30/2013 11:45

Sample ID: 13E1083-01

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	0.099	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:37	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:37	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:37	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:37	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:37	MJC
Aroclor-1254 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:37	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:37	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:37	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:37	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	96.0	30-150		6/3/13 16:37
Decachlorobiphenyl [2]	97.9	30-150		6/3/13 16:37
Tetrachloro-m-xylene [1]	88.0	30-150		6/3/13 16:37
Tetrachloro-m-xylene [2]	100	30-150		6/3/13 16:37

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Project Location: UMass Grayson Field | Sample Description: | Work Order: 13E1083

Date Received: 5/31/2013

Field Sample #: GH-VBC-182 | Sampled: 5/30/2013 11:15

Sample ID: 13E1083-02

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	0.098	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:50	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:50	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:50	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:50	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:50	MJC
Aroclor-1254 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:50	MJC
Aroclor-1260 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:50	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:50	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	5/31/13	6/3/13 16:50	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	106	30-150		6/3/13 16:50
Decachlorobiphenyl [2]	108	30-150		6/3/13 16:50
Tetrachloro-m-xylene [1]	93.0	30-150		6/3/13 16:50
Tetrachloro-m-xylene [2]	108	30-150		6/3/13 16:50

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

Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13E1083-01 [GH-VBS-184]	B074080	2.03	10.0	05/31/13
13E1083-02 [GH-VBC-182]	B074080	2.05	10.0	05/31/13

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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 B074080 - SW-846 3540C										
Blank (B074080-BLK1)				Prepared: 05/31/13 Analyzed: 06/03/13						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*1.01*		mg/Kg	1.00		101	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.06*		mg/Kg	1.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	*0.961*		mg/Kg	1.00		96.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.11*		mg/Kg	1.00		111	30-150			
LCS (B074080-BS1)				Prepared: 05/31/13 Analyzed: 06/03/13						
Aroclor-1016	0.25	0.10	mg/Kg	0.250		101	40-140			
Aroclor-1016 [2C]	0.30	0.10	mg/Kg	0.250		121	40-140			V-06
Aroclor-1260	0.26	0.10	mg/Kg	0.250		104	40-140			
Aroclor-1260 [2C]	0.30	0.10	mg/Kg	0.250		118	40-140			V-06
Surrogate: Decachlorobiphenyl	*1.04*		mg/Kg	1.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.12*		mg/Kg	1.00		112	30-150			
Surrogate: Tetrachloro-m-xylene	*0.967*		mg/Kg	1.00		96.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.13*		mg/Kg	1.00		113	30-150			
LCS Dup (B074080-BSD1)				Prepared: 05/31/13 Analyzed: 06/03/13						
Aroclor-1016	0.23	0.10	mg/Kg	0.250		93.3	40-140	7.79	30	
Aroclor-1016 [2C]	0.29	0.10	mg/Kg	0.250		115	40-140	5.33	30	V-06
Aroclor-1260	0.24	0.10	mg/Kg	0.250		94.8	40-140	8.78	30	
Aroclor-1260 [2C]	0.28	0.10	mg/Kg	0.250		111	40-140	6.52	30	V-06
Surrogate: Decachlorobiphenyl	*0.942*		mg/Kg	1.00		94.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.01*		mg/Kg	1.00		101	30-150			
Surrogate: Tetrachloro-m-xylene	*0.873*		mg/Kg	1.00		87.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.02*		mg/Kg	1.00		102	30-150			

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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.
V-06	Continuing calibration did not meet method specifications and was biased on the high side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the high side.

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CERTIFICATIONS

Certified Analyses included in this Report

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

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

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

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

CHAIN OF CUSTODY RECORD

13E1083
Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: Woodard & Curran
Address: 40 Shattuck Rd Suite 110 Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMASS Grayson / Field
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA8082 PCB/3540C Soxhlet										
01	GH-VBS-184	~~5/31/13~~	1145			U	↔ S	X										
02	GH-VBC-182	↓ 5/30/13	1115			U	↔ C	X										
	5/31/13																	
	KAR																	

# 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=summa can
T=tedlar bag
O=Other

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other
S=Slate
C=Concrete

Comments: ① EPA 8082 PCB's 3540C Soxhlet ② RL ≤ 1mg/kg ③ West elev 1st flr s/F Direct Contact ④ Active 5 DAY TAT!

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

Relinquished by: (signature)	Date/Time:
[signature] KA Rinard	5/31/13 1835
Received by: (signature) [signature] 5.8c	5/31/13 1835
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY STD
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

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 #

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

†† 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

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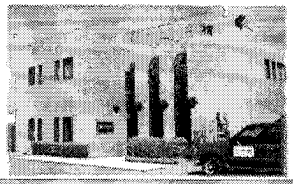

Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** RLF/JHP **DATE:** 5/31/13

1) **Was the chain(s) of custody relinquished and signed?** (Yes) No No CoC Included
2) **Does the chain agree with the samples?** (Yes) No
   If not, explain:
3) **Are all the samples in good condition?** (Yes) No
   If not, explain:
4) **How were the samples received:**
   On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒
   Were the samples received in Temperature Compliance of (2-6°C)? (Yes) No N/A
   Temperature °C by Temp blank _____ Temperature °C by Temp gun 5.8°
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	2
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 _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Doc# 277
Rev. 3 May 2012

13E1058-01 Low-Con-PCB-22-2in

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	0.747	0.8593168	14
Decachlorobiphenyl	0.872	0.9432228	7.85

13E1083-01 GH-VBS-184

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	0.946	0.9646306	1.95
Tetrachloro-m-xylene	0.867	0.9863695	12.9

13E1083-02 GH-VBC-182

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	1.03	1.057278	2.61
Tetrachloro-m-xylene	0.907	1.050298	14.6

B074080-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	1.01	1.06231	5.05
Tetrachloro-m-xylene	0.961	1.11482	14.8

B074080-BS1 LCS

Analyte	Results		%RPD
Aroclor-1016	0.25	0.302985	19.2
Aroclor-1260	0.26	0.29506	12.6
Surrogates			
Tetrachloro-m-xylene	0.967	1.128965	15.5
Decachlorobiphenyl	1.04	1.11894	7.31

B074080-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.24	0.27642	14.1
Aroclor-1016	0.23	0.287245	22.1
Surrogates			
Decachlorobiphenyl	0.942	1.00903	6.87
Tetrachloro-m-xylene	0.873	1.024765	16

B074080-MS1 Matrix Spike

Analyte	Results		%RPD
Aroclor-1016	0.25	0.2752624	9.62
Aroclor-1260	0.25	0.2959901	16.8
Surrogates			
Decachlorobiphenyl	1.10	1.225812	10.8
Tetrachloro-m-xylene	0.970	1.108218	13.3

B074080-MSD1 Matrix Spike Dup

Analyte	Results		%RPD
Aroclor-1016	0.24	0.2794951	15.2
Aroclor-1260	0.25	0.2874109	13.9
Surrogates			
Tetrachloro-m-xylene	0.971	1.113624	13.7
Decachlorobiphenyl	1.09	1.174688	7.48

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June 27, 2013

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

Project Location: Umass Grayson/Field House
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13F0700

Enclosed are results of analyses for samples received by the laboratory on June 20, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 6/27/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13F0700

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

PROJECT LOCATION: Umass Grayson/Field House

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBC-189	13F0700-01	Product/Solid		SW-846 8082A	
GH-VBCQ-191	13F0700-02	Equipment Blank Water		SW-846 8082A	
GH-VBCD-192	13F0700-03	Product/Solid		SW-846 8082A	

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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.

Daren J. Damboragian
Laboratory Manager

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

Project Location: Umass Grayson/Field House
Sample Description:
Work Order: 13F0700

Date Received: 6/20/2013

Field Sample #: GH-VBC-189
Sampled: 6/20/2013 18:30

Sample ID: 13F0700-01

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	0.10	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:07	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:07	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:07	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:07	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:07	MJC
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:07	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:07	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:07	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:07	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	94.7	30-150		6/24/13 17:07
Decachlorobiphenyl [2]	93.7	30-150		6/24/13 17:07
Tetrachloro-m-xylene [1]	92.5	30-150		6/24/13 17:07
Tetrachloro-m-xylene [2]	95.3	30-150		6/24/13 17:07

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Project Location: Umass Grayson/Field House | Sample Description: | Work Order: 13F0700

Date Received: 6/20/2013

Field Sample #: GH-VBCQ-191 | Sampled: 6/19/2013 19:00

Sample ID: 13F0700-02

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	6/22/13	6/24/13 16:18	MJC
Aroclor-1221 [1]	ND	0.20	µg/L	1		SW-846 8082A	6/22/13	6/24/13 16:18	MJC
Aroclor-1232 [1]	ND	0.20	µg/L	1		SW-846 8082A	6/22/13	6/24/13 16:18	MJC
Aroclor-1242 [1]	ND	0.20	µg/L	1		SW-846 8082A	6/22/13	6/24/13 16:18	MJC
Aroclor-1248 [1]	ND	0.20	µg/L	1		SW-846 8082A	6/22/13	6/24/13 16:18	MJC
Aroclor-1254 [1]	ND	0.20	µg/L	1		SW-846 8082A	6/22/13	6/24/13 16:18	MJC
Aroclor-1260 [1]	ND	0.20	µg/L	1		SW-846 8082A	6/22/13	6/24/13 16:18	MJC
Aroclor-1262 [1]	ND	0.20	µg/L	1		SW-846 8082A	6/22/13	6/24/13 16:18	MJC
Aroclor-1268 [1]	ND	0.20	µg/L	1		SW-846 8082A	6/22/13	6/24/13 16:18	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	38.6	30-150		6/24/13 16:18
Decachlorobiphenyl [2]	41.9	30-150		6/24/13 16:18
Tetrachloro-m-xylene [1]	83.2	30-150		6/24/13 16:18
Tetrachloro-m-xylene [2]	91.0	30-150		6/24/13 16:18

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

Project Location: Umass Grayson/Field House
Sample Description:
Work Order: 13F0700

Date Received: 6/20/2013

Field Sample #: GH-VBCD-192
Sampled: 6/20/2013 18:30

Sample ID: 13F0700-03

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	0.096	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:20	MJC
Aroclor-1221 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:20	MJC
Aroclor-1232 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:20	MJC
Aroclor-1242 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:20	MJC
Aroclor-1248 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:20	MJC
Aroclor-1254 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:20	MJC
Aroclor-1260 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:20	MJC
Aroclor-1262 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:20	MJC
Aroclor-1268 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	6/20/13	6/24/13 17:20	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	95.8	30-150		6/24/13 17:20
Decachlorobiphenyl [2]	95.6	30-150		6/24/13 17:20
Tetrachloro-m-xylene [1]	95.0	30-150		6/24/13 17:20
Tetrachloro-m-xylene [2]	98.3	30-150		6/24/13 17:20

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13F0700-01 [GH-VBC-189]	B075321	2.01	10.0	06/20/13
13F0700-03 [GH-VBCD-192]	B075321	2.08	10.0	06/20/13

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
13F0700-02 [GH-VBCQ-191]	B075449	1000	10.0	06/22/13

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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 B075449 - SW-846 3510C										
Blank (B075449-BLK1)				Prepared: 06/22/13 Analyzed: 06/24/13						
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	*1.05*		µg/L	2.00		52.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.13*		µg/L	2.00		56.4	30-150			
Surrogate: Tetrachloro-m-xylene	*1.52*		µg/L	2.00		76.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.64*		µg/L	2.00		82.1	30-150			
LCS (B075449-BS1)				Prepared: 06/22/13 Analyzed: 06/24/13						
Aroclor-1016	0.42	0.20	µg/L	0.500		84.9	40-140			
Aroclor-1016 [2C]	0.46	0.20	µg/L	0.500		91.2	40-140			
Aroclor-1260	0.42	0.20	µg/L	0.500		83.1	40-140			
Aroclor-1260 [2C]	0.44	0.20	µg/L	0.500		87.1	40-140			
Surrogate: Decachlorobiphenyl	*0.889*		µg/L	2.00		44.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.949*		µg/L	2.00		47.4	30-150			
Surrogate: Tetrachloro-m-xylene	*1.51*		µg/L	2.00		75.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.65*		µg/L	2.00		82.7	30-150			
LCS Dup (B075449-BSD1)				Prepared: 06/22/13 Analyzed: 06/24/13						
Aroclor-1016	0.44	0.20	µg/L	0.500		88.9	40-140	4.55	20	
Aroclor-1016 [2C]	0.47	0.20	µg/L	0.500		94.8	40-140	3.94	20	
Aroclor-1260	0.42	0.20	µg/L	0.500		85.0	40-140	2.24	20	
Aroclor-1260 [2C]	0.45	0.20	µg/L	0.500		89.7	40-140	2.96	20	
Surrogate: Decachlorobiphenyl	*0.941*		µg/L	2.00		47.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.01*		µg/L	2.00		50.3	30-150			
Surrogate: Tetrachloro-m-xylene	*1.54*		µg/L	2.00		76.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.69*		µg/L	2.00		84.3	30-150			

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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 B075321 - SW-846 3540C										
Blank (B075321-BLK1)				Prepared: 06/20/13 Analyzed: 06/21/13						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.802*		mg/Kg	1.00		80.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.874*		mg/Kg	1.00		87.4	30-150			
Surrogate: Tetrachloro-m-xylene	*0.913*		mg/Kg	1.00		91.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.900*		mg/Kg	1.00		90.0	30-150			
LCS (B075321-BS1)				Prepared: 06/20/13 Analyzed: 06/21/13						
Aroclor-1016	0.26	0.10	mg/Kg	0.250		103	40-140			
Aroclor-1016 [2C]	0.26	0.10	mg/Kg	0.250		106	40-140			
Aroclor-1260	0.25	0.10	mg/Kg	0.250		98.2	40-140			
Aroclor-1260 [2C]	0.25	0.10	mg/Kg	0.250		99.0	40-140			
Surrogate: Decachlorobiphenyl	*0.914*		mg/Kg	1.00		91.4	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.882*		mg/Kg	1.00		88.2	30-150			
Surrogate: Tetrachloro-m-xylene	*0.889*		mg/Kg	1.00		88.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.874*		mg/Kg	1.00		87.4	30-150			
LCS Dup (B075321-BSD1)				Prepared: 06/20/13 Analyzed: 06/21/13						
Aroclor-1016	0.22	0.10	mg/Kg	0.250		88.1	40-140	15.3	30	
Aroclor-1016 [2C]	0.24	0.10	mg/Kg	0.250		97.2	40-140	8.48	30	
Aroclor-1260	0.23	0.10	mg/Kg	0.250		90.7	40-140	7.93	30	
Aroclor-1260 [2C]	0.23	0.10	mg/Kg	0.250		90.5	40-140	8.89	30	
Surrogate: Decachlorobiphenyl	*0.763*		mg/Kg	1.00		76.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.830*		mg/Kg	1.00		83.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.847*		mg/Kg	1.00		84.7	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.837*		mg/Kg	1.00		83.7	30-150			

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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 B075321 - SW-846 3540C										
Matrix Spike (B075321-MS1)		**Source: 13F0700-01**		Prepared: 06/20/13 Analyzed: 06/24/13						
Aroclor-1016	0.26	0.099	mg/Kg	0.246	0.0	106	40-140			
Aroclor-1016 [2C]	0.31	0.099	mg/Kg	0.246	0.0	126	40-140			
Aroclor-1260	0.23	0.099	mg/Kg	0.246	0.0	94.6	40-140			
Aroclor-1260 [2C]	0.20	0.099	mg/Kg	0.246	0.0	80.6	40-140			
Surrogate: Decachlorobiphenyl	*0.968*		mg/Kg	0.985		98.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.964*		mg/Kg	0.985		97.8	30-150			
Surrogate: Tetrachloro-m-xylene	*0.937*		mg/Kg	0.985		95.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.967*		mg/Kg	0.985		98.2	30-150			
Matrix Spike Dup (B075321-MSD1)		**Source: 13F0700-01**		Prepared: 06/20/13 Analyzed: 06/24/13						
Aroclor-1016	0.26	0.099	mg/Kg	0.248	0.0	105	40-140	0.0667	50	
Aroclor-1016 [2C]	0.29	0.099	mg/Kg	0.248	0.0	118	40-140	6.20	50	
Aroclor-1260	0.23	0.099	mg/Kg	0.248	0.0	92.8	40-140	1.48	50	
Aroclor-1260 [2C]	0.21	0.099	mg/Kg	0.248	0.0	84.4	40-140	5.16	50	
Surrogate: Decachlorobiphenyl	*0.999*		mg/Kg	0.990		101	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.987*		mg/Kg	0.990		99.7	30-150			
Surrogate: Tetrachloro-m-xylene	*0.970*		mg/Kg	0.990		98.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.00*		mg/Kg	0.990		101	30-150			

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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.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1221	CT,NH,NY,ME,NC,VA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1232	CT,NH,NY,ME,NC,VA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1242	CT,NH,NY,ME,NC,VA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1248	CT,NH,NY,ME,NC,VA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1254	CT,NH,NY,ME,NC,VA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1260	CT,NH,NY,ME,NC,VA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA
SW-846 8082A in Water	
Aroclor-1016	CT,NH,NY,NC,ME,VA
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1221	CT,NH,NY,NC,ME,VA
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1232	CT,NH,NY,NC,ME,VA
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1242	CT,NH,NY,NC,ME,VA
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1248	CT,NH,NY,NC,ME,VA
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1254	CT,NH,NY,NC,ME,VA
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1260	CT,NH,NY,NC,ME,VA
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1262	NC
Aroclor-1262 [2C]	NC
Aroclor-1268	NC
Aroclor-1268 [2C]	NC

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

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www.contestlabs.com

CHAIN OF CUSTODY RECORD

13F0700

Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: Woodards & Curran
Address: 40 Shattuck Rd Suite 110 Andover, MA
Attention: UMASS Grayson/Field House
Project Location: J Hurmel, G Franklin, K Rinard
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082 PCB/3540c Soxhlet	EPA 8082 Aqueous	# of Containers	** Preservation	***Container Code
	~~GH-WW~~									1	I	G
-01	GH-VBC-189	6/19/13	1830			C	U	X		1	I	G
-02	GH-VBCQ-191	6/19/13	1900			Aq	L		X	1	I	G
-03	GH-VBCD-192	6/19/13	1830			C	U	X		1	I	G

6/19/13 MW

-191, -192 Added to chain by KAR 6/19/13

Comments: ① EPA 8082 via 3540c Soxhlet Ext ② RL ≤ 1mg/kg
③ 5 DAY TAT ④ Type D - Direct Contact - Field North

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

Relinquished by: (signature)	Date/Time:
KAR KRinard - Secure storage	6/19/13 1900
Received by: (signature)	Date/Time:
[illegible]	6/20/13 8:00
Relinquished by: (signature)	Date/Time:
[illegible]	
Received by: (signature)	Date/Time:
[illegible] 1440	6/20/13

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

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 # _____

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

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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Dissolved Metals
○ Field Filtered
○ Lab to Filter

†† 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

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East Longmeadow, MA. 01028
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F: 413-525-6405
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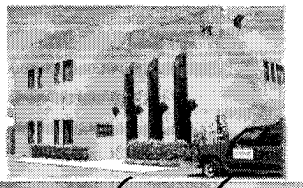

Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** WK **DATE:** 6/20/13

1) **Was the chain(s) of custody relinquished and signed?** **Yes** **No** **No CoC Included**
2) **Does the chain agree with the samples?** **Yes** **No**
   If not, explain:
3) **Are all the samples in good condition?** **Yes** **No**
   If not, explain:
4) **How were the samples received:**
   On Ice ☒ Direct from Sampling ☐ Ambient ☐ In Cooler(s) ☒
   Were the samples received in Temperature Compliance of (2-6°C)? **Yes** **No** **N/A**
   Temperature °C by Temp blank _____ Temperature °C by Temp gun 2.8
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	1	8 oz amber/clear jar	
500 mL Amber		4 oz amber/clear jar	2
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 _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

Doc# 277
Rev. 3 May 2012

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June 25, 2013

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

Project Location: UMass Grayson Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13F0752

Enclosed are results of analyses for samples received by the laboratory on June 21, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 6/25/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13F0752

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

PROJECT LOCATION: UMass Grayson Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBC-191	13F0752-01	Product/Solid		SW-846 8082A	

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

CASE NARRATIVE SUMMARY

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

SW-846 8082A

Qualifications:

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

Analyte & Samples(s) Qualified:

Aroclor-1254, Aroclor-1254 [2C]
13F0752-01[GH-VBC-191]

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Michael A. Erickson
Laboratory Director

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

Project Location: UMass Grayson Field
Sample Description:
Work Order: 13F0752

Date Received: 6/21/2013

Field Sample #: GH-VBC-191
Sampled: 6/21/2013 13:45

Sample ID: 13F0752-01

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	0.96	mg/Kg	10		SW-846 8082A	6/21/13	6/25/13 8:15	MJC
Aroclor-1221 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	6/21/13	6/25/13 8:15	MJC
Aroclor-1232 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	6/21/13	6/25/13 8:15	MJC
Aroclor-1242 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	6/21/13	6/25/13 8:15	MJC
Aroclor-1248 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	6/21/13	6/25/13 8:15	MJC
Aroclor-1254 [2]	7.2	0.96	mg/Kg	10	O-03	SW-846 8082A	6/21/13	6/25/13 8:15	MJC
Aroclor-1260 [2]	1.1	0.96	mg/Kg	10		SW-846 8082A	6/21/13	6/25/13 8:15	MJC
Aroclor-1262 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	6/21/13	6/25/13 8:15	MJC
Aroclor-1268 [1]	ND	0.96	mg/Kg	10		SW-846 8082A	6/21/13	6/25/13 8:15	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	128	30-150		6/25/13 8:15
Decachlorobiphenyl [2]	129	30-150		6/25/13 8:15
Tetrachloro-m-xylene [1]	128	30-150		6/25/13 8:15
Tetrachloro-m-xylene [2]	126	30-150		6/25/13 8:15

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13F0752-01 [GH-VBC-191]	B075421	2.09	10.0	06/21/13

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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 B075421 - SW-846 3540C										
Blank (B075421-BLK1)				Prepared: 06/21/13 Analyzed: 06/24/13						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.986*		mg/Kg	1.00		98.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.07*		mg/Kg	1.00		107	30-150			
Surrogate: Tetrachloro-m-xylene	*0.919*		mg/Kg	1.00		91.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.00*		mg/Kg	1.00		100	30-150			
LCS (B075421-BS1)				Prepared: 06/21/13 Analyzed: 06/24/13						
Aroclor-1016	0.25	0.10	mg/Kg	0.250		100	40-140			
Aroclor-1016 [2C]	0.27	0.10	mg/Kg	0.250		108	40-140			
Aroclor-1260	0.26	0.10	mg/Kg	0.250		104	40-140			
Aroclor-1260 [2C]	0.27	0.10	mg/Kg	0.250		107	40-140			
Surrogate: Decachlorobiphenyl	*1.04*		mg/Kg	1.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.10*		mg/Kg	1.00		110	30-150			
Surrogate: Tetrachloro-m-xylene	*0.939*		mg/Kg	1.00		93.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.01*		mg/Kg	1.00		101	30-150			
LCS Dup (B075421-BSD1)				Prepared: 06/21/13 Analyzed: 06/24/13						
Aroclor-1016	0.27	0.10	mg/Kg	0.250		109	40-140	8.04	30	
Aroclor-1016 [2C]	0.29	0.10	mg/Kg	0.250		115	40-140	6.49	30	
Aroclor-1260	0.26	0.10	mg/Kg	0.250		105	40-140	1.04	30	
Aroclor-1260 [2C]	0.28	0.10	mg/Kg	0.250		112	40-140	5.07	30	
Surrogate: Decachlorobiphenyl	*1.03*		mg/Kg	1.00		103	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.14*		mg/Kg	1.00		114	30-150			
Surrogate: Tetrachloro-m-xylene	*0.933*		mg/Kg	1.00		93.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.04*		mg/Kg	1.00		104	30-150			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
O-03	Sample contains two incompletely resolved aroclors. Aroclor with the closest matching pattern is reported.

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CERTIFICATIONS

Certified Analyses included in this Report

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

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

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

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East longmeadow, MA 01028

CHAIN OF CUSTODY RECORD

13F0752

Rev 04.05.12

Company Name: Woodard & Curran
Address: 40 Shattuck Rd Suite 110 Andover MA
Attention: G Franklin, J Hamel, K Rinard
Project Location: Umass Grayson/Field
Sampled By: Greg Reynolds

Telephone: ?
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	# of Containers	** Preservation	***Container Code	ANALYSIS REQUESTED: 8082/3540C Soxhlet
-01	GH-VBC-191	6/21/13	1345		X	C	U	1		G	X

Comments:
① Field north facade 6th floor 3" from conc expansion joint
② EPA 8082/3540C Soxhlet ③ RL ≤ 1 mg/kg ④ 48hr!

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

	Date/Time
Relinquished by: (signature)	6/21/13
Received by: (signature) 22.6°C	6/21/13 15:50
Relinquished by: (signature)	
Received by: (signature)	

Turnaround ††
☐ 7-Day
☐ 10-Day
☐ Other ____
RUSH †
☐ †24-Hr ☒ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other:

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

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

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

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

***Matrix Code:**
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

†† 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

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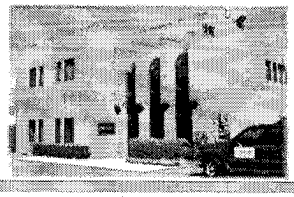

Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** RLF/SLD **DATE:** 6/21/13

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

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 22.6°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	1
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 _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

13F0726-02 284-4

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	0.880	0.9923768	12
Decachlorobiphenyl	0.867	1.012657	15.5

13F0752-01 GH-VBC-191

Analyte	Results		%RPD
Aroclor-1254 [2C]	7.2	6.668374	7.67
Aroclor-1260 [2C]	1.1	0.9639235	13.2
Surrogates			
Decachlorobiphenyl	1.22	1.230239	0.836
Tetrachloro-m-xylene	1.22	1.202488	1.45

B075421-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	0.986	1.06618	7.81
Tetrachloro-m-xylene	0.919	1.00344	8.78

B075421-BS1 LCS

Analyte	Results		%RPD
Aroclor-1016	0.25	0.26951	7.51
Aroclor-1260	0.26	0.266335	2.41
Surrogates			
Tetrachloro-m-xylene	0.939	1.0063	6.92
Decachlorobiphenyl	1.04	1.09896	5.51

B075421-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.26	0.2802	7.48
Aroclor-1016	0.27	0.28759	6.31
Surrogates			
Decachlorobiphenyl	1.03	1.13786	9.95
Tetrachloro-m-xylene	0.933	1.03792	10.6

B075421-MS1 Matrix Spike

Analyte	Results		%RPD
Aroclor-1016	0.22	0.2565297	15.3
Aroclor-1260	0.21	0.2384802	12.7
Surrogates			
Decachlorobiphenyl	0.850	0.9853465	14.7
Tetrachloro-m-xylene	0.918	0.9957624	8.13

B075421-MSD1 Matrix Spike Dup

Analyte	Results		%RPD
Aroclor-1016	0.25	0.2683558	7.08
Aroclor-1260	0.19	0.2178654	13.7
Surrogates			
Tetrachloro-m-xylene	0.920	1.035173	11.8
Decachlorobiphenyl	0.794	0.9434904	17.2

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July 5, 2013

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

Project Location: Umass Grayson/Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13F1036

Enclosed are results of analyses for samples received by the laboratory on June 28, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 7/5/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13F1036

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

PROJECT LOCATION: Umass Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBC-193	13F1036-01	Concrete		SW-846 8082A	
GH-VBC-195	13F1036-02	Concrete		SW-846 8082A	
GH-VBC-197	13F1036-03	Concrete		SW-846 8082A	
GH-VBC-199	13F1036-04	Concrete		SW-846 8082A	
GH-VBC-201	13F1036-05	Concrete		SW-846 8082A	

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CASE NARRATIVE SUMMARY

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

SW-846 8082A

Qualifications:

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

Aroclor-1260 [2C]

B076013-MS1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Michael A. Erickson
Laboratory Director

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

Project Location: Umass Grayson/Field | Sample Description: | Work Order: 13F1036

Date Received: 6/28/2013

Field Sample #: GH-VBC-193 | Sampled: 6/27/2013 10:20

Sample ID: 13F1036-01

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	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:28	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:28	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:28	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:28	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:28	MJC
Aroclor-1254 [1]	0.16	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:28	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:28	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:28	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:28	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	90.0	30-150		7/3/13 16:28
Decachlorobiphenyl [2]	97.5	30-150		7/3/13 16:28
Tetrachloro-m-xylene [1]	85.8	30-150		7/3/13 16:28
Tetrachloro-m-xylene [2]	92.5	30-150		7/3/13 16:28

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Project Location: Umass Grayson/Field
Sample Description:
Work Order: 13F1036

Date Received: 6/28/2013

Field Sample #: GH-VBC-195
Sampled: 6/27/2013 10:25

Sample ID: 13F1036-02

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	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:41	MJC
Aroclor-1221 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:41	MJC
Aroclor-1232 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:41	MJC
Aroclor-1242 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:41	MJC
Aroclor-1248 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:41	MJC
Aroclor-1254 [1]	0.24	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:41	MJC
Aroclor-1260 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:41	MJC
Aroclor-1262 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:41	MJC
Aroclor-1268 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:41	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	66.0	30-150		7/3/13 16:41
Decachlorobiphenyl [2]	72.1	30-150		7/3/13 16:41
Tetrachloro-m-xylene [1]	64.2	30-150		7/3/13 16:41
Tetrachloro-m-xylene [2]	69.7	30-150		7/3/13 16:41

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Project Location: Umass Grayson/Field | Sample Description: | Work Order: 13F1036

Date Received: 6/28/2013

Field Sample #: GH-VBC-197 | Sampled: 6/27/2013 10:45

Sample ID: 13F1036-03

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	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:54	MJC
Aroclor-1221 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:54	MJC
Aroclor-1232 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:54	MJC
Aroclor-1242 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:54	MJC
Aroclor-1248 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:54	MJC
Aroclor-1254 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:54	MJC
Aroclor-1260 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:54	MJC
Aroclor-1262 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:54	MJC
Aroclor-1268 [1]	ND	0.099	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 16:54	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	94.3	30-150		7/3/13 16:54
Decachlorobiphenyl [2]	103	30-150		7/3/13 16:54
Tetrachloro-m-xylene [1]	89.6	30-150		7/3/13 16:54
Tetrachloro-m-xylene [2]	96.3	30-150		7/3/13 16:54

con-test® ANALYTICAL LABORATORY

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

Project Location: Umass Grayson/Field | Sample Description: | Work Order: 13F1036

Date Received: 6/28/2013

Field Sample #: GH-VBC-199 | Sampled: 6/27/2013 15:30

Sample ID: 13F1036-04

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	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:07	MJC
Aroclor-1221 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:07	MJC
Aroclor-1232 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:07	MJC
Aroclor-1242 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:07	MJC
Aroclor-1248 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:07	MJC
Aroclor-1254 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:07	MJC
Aroclor-1260 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:07	MJC
Aroclor-1262 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:07	MJC
Aroclor-1268 [1]	ND	0.096	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:07	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	82.7	30-150		7/3/13 17:07
Decachlorobiphenyl [2]	89.7	30-150		7/3/13 17:07
Tetrachloro-m-xylene [1]	83.6	30-150		7/3/13 17:07
Tetrachloro-m-xylene [2]	90.0	30-150		7/3/13 17:07

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Umass Grayson/Field
Sample Description:
Work Order: 13F1036

Date Received: 6/28/2013

Field Sample #: GH-VBC-201
Sampled: 6/27/2013 16:15

Sample ID: 13F1036-05

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	0.10	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:20	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:20	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:20	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:20	MJC
Aroclor-1248 [2]	0.55	0.10	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:20	MJC
Aroclor-1254 [2]	0.86	0.10	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:20	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:20	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:20	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/1/13	7/3/13 17:20	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	88.3	30-150		7/3/13 17:20
Decachlorobiphenyl [2]	94.0	30-150		7/3/13 17:20
Tetrachloro-m-xylene [1]	88.8	30-150		7/3/13 17:20
Tetrachloro-m-xylene [2]	94.1	30-150		7/3/13 17:20

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13F1036-01 [GH-VBC-193]	B076013	2.02	10.0	07/01/13
13F1036-02 [GH-VBC-195]	B076013	2.08	10.0	07/01/13
13F1036-03 [GH-VBC-197]	B076013	2.03	10.0	07/01/13
13F1036-04 [GH-VBC-199]	B076013	2.09	10.0	07/01/13
13F1036-05 [GH-VBC-201]	B076013	2.01	10.0	07/01/13

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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 B076013 - SW-846 3540C										
Blank (B076013-BLK1)				Prepared: 07/01/13 Analyzed: 07/03/13						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*0.893*		mg/Kg	1.00		89.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.976*		mg/Kg	1.00		97.6	30-150			
Surrogate: Tetrachloro-m-xylene	*0.864*		mg/Kg	1.00		86.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.929*		mg/Kg	1.00		92.9	30-150			
LCS (B076013-BS1)				Prepared: 07/01/13 Analyzed: 07/03/13						
Aroclor-1016	0.23	0.10	mg/Kg	0.250		91.3	40-140			
Aroclor-1016 [2C]	0.24	0.10	mg/Kg	0.250		94.7	40-140			
Aroclor-1260	0.22	0.10	mg/Kg	0.250		89.6	40-140			
Aroclor-1260 [2C]	0.26	0.10	mg/Kg	0.250		104	40-140			
Surrogate: Decachlorobiphenyl	*0.982*		mg/Kg	1.00		98.2	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.06*		mg/Kg	1.00		106	30-150			
Surrogate: Tetrachloro-m-xylene	*0.962*		mg/Kg	1.00		96.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.03*		mg/Kg	1.00		103	30-150			
LCS Dup (B076013-BSD1)				Prepared: 07/01/13 Analyzed: 07/03/13						
Aroclor-1016	0.23	0.10	mg/Kg	0.250		91.8	40-140	0.526	30	
Aroclor-1016 [2C]	0.24	0.10	mg/Kg	0.250		95.1	40-140	0.419	30	
Aroclor-1260	0.23	0.10	mg/Kg	0.250		91.3	40-140	1.83	30	
Aroclor-1260 [2C]	0.26	0.10	mg/Kg	0.250		104	40-140	0.470	30	
Surrogate: Decachlorobiphenyl	*0.940*		mg/Kg	1.00		94.0	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.03*		mg/Kg	1.00		103	30-150			
Surrogate: Tetrachloro-m-xylene	*0.920*		mg/Kg	1.00		92.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.990*		mg/Kg	1.00		99.0	30-150			

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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 B076013 - SW-846 3540C											
Matrix Spike (B076013-MS1)		**Source: 13F1036-01**		Prepared: 07/01/13 Analyzed: 07/03/13							
Aroclor-1016	0.25	0.10	mg/Kg	0.249	0.0	101		40-140			
Aroclor-1016 [2C]	0.29	0.10	mg/Kg	0.249	0.0	116		40-140			
Aroclor-1260	0.34	0.10	mg/Kg	0.249	0.0	136		40-140			
Aroclor-1260 [2C]	0.39	0.10	mg/Kg	0.249	0.0	**157**	*	40-140			MS-22
Surrogate: Decachlorobiphenyl	*1.19*		mg/Kg	0.995		119		30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.28*		mg/Kg	0.995		129		30-150			
Surrogate: Tetrachloro-m-xylene	*1.06*		mg/Kg	0.995		107		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.12*		mg/Kg	0.995		113		30-150			
Matrix Spike Dup (B076013-MSD1)		**Source: 13F1036-01**		Prepared: 07/01/13 Analyzed: 07/03/13							
Aroclor-1016	0.23	0.099	mg/Kg	0.248	0.0	94.8		40-140	7.06	50	
Aroclor-1016 [2C]	0.23	0.099	mg/Kg	0.248	0.0	94.7		40-140	20.8	50	
Aroclor-1260	0.30	0.099	mg/Kg	0.248	0.0	122		40-140	11.0	50	
Aroclor-1260 [2C]	0.33	0.099	mg/Kg	0.248	0.0	135		40-140	15.2	50	
Surrogate: Decachlorobiphenyl	*0.881*		mg/Kg	0.990		89.0		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.942*		mg/Kg	0.990		95.1		30-150			
Surrogate: Tetrachloro-m-xylene	*0.796*		mg/Kg	0.990		80.4		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.855*		mg/Kg	0.990		86.4		30-150			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
MS-22	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

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CERTIFICATIONS

Certified Analyses included in this Report

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

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

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

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

Rev 04.05.12

Company Name: Woodard & Curran
Address: 40 Shattuck Rd Suite 110 Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMASS Grayson/Field
Sampled By: Kim Rinard

Telephone: 13F1036
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	5 DAY - EPA 8082/3540C										
01	GH-VBC-193 VAN	6/26/13	1020		(194)	C	U	X										
02	GH-VBC-195	6/27/13	1025		(196)	↓	↓	X										
03	GH-VBC-197	↓	1045		(198)	↓	↓	X										
04	GH-VBC-199	↓	1530		(200)	↓	↓	X										
05	GH-VBC-201	6/27/13	1615		N/A	C	U	X										
	5/28/13																	
	VAN																	

# 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=summa 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_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments: ① EPA 8082 PCB's via 3540C Soxhlet ② RL ≤ 1mg/kg ③ Direct Contact ④ ACTIVE - 5 day TAT.

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

Relinquished by: (signature)	Date/Time:
[signature]	6/28/13 1615
Received by: (signature) [signature]	Date/Time: 6-28-13 16:20
Relinquished by: (signature) [signature]	Date/Time: 6-28-13 17:30
Received by: (signature) Rebecca Faust 4.7°C	Date/Time: 6/28/13 17:30

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

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 # _____

AIHA LAP, LLC ACCREDITED LABORATORY
nelac

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

†† 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

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

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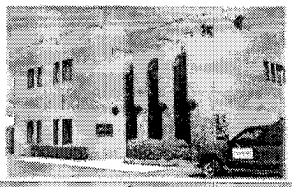

Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** RLF **DATE:** 6/28/13

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

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 4.7°C

5) **Are there Dissolved samples for the lab to filter?** Yes (No)
   Who was notified _____ Date _____ Time _____
6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes (No)
   Who was notified _____ 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	5
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 _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

13F1036-01 GH-VBC-193

Analyte		Results	%RPD
Aroclor-1254	0.16	0.1584901	0.948
Surrogates			
Decachlorobiphenyl	0.891	0.9655545	8.03
Tetrachloro-m-xylene	0.850	0.9158565	7.46

13F1036-02 GH-VBC-195

Analyte		Results	%RPD
Aroclor-1254	0.24	0.2266875	5.71
Surrogates			
Decachlorobiphenyl	0.635	0.6934375	8.8
Tetrachloro-m-xylene	0.617	0.6699616	8.23

13F1036-03 GH-VBC-197

Analyte		Results	%RPD
Surrogates			
Tetrachloro-m-xylene	0.883	0.9492365	7.23
Decachlorobiphenyl	0.930	1.016557	8.89

13F1036-04 GH-VBC-199

Analyte		Results	%RPD
Surrogates			
Decachlorobiphenyl	0.792	0.8583493	8.04
Tetrachloro-m-xylene	0.800	0.8615024	7.4

13F1036-05 GH-VBC-201

Analyte		Results	%RPD
Aroclor-1248 [2C]	0.55	0.4470796	20.6
Aroclor-1254 [2C]	0.86	0.8599851	0.00173
Surrogates			
Decachlorobiphenyl	0.879	0.9352737	6.2
Tetrachloro-m-xylene	0.884	0.9358856	5.7

B076013-BLK1 Blank

Analyte		Results	%RPD
Surrogates			
Decachlorobiphenyl	0.893	0.9763	8.91
Tetrachloro-m-xylene	0.864	0.929385	7.29

B076013-BS1 LCS

Analyte		Results	%RPD
Aroclor-1260	0.22	0.259855	16.6
Aroclor-1016	0.23	0.23677	2.9
Surrogates			
Decachlorobiphenyl	0.982	1.05843	7.49
Tetrachloro-m-xylene	0.962	1.031265	6.95

B076013-BSD1 LCS Dup

Analyte		Results	%RPD
Aroclor-1016	0.23	0.237765	3.32
Aroclor-1260	0.23	0.26108	12.7
Surrogates			
Tetrachloro-m-xylene	0.920	0.990185	7.35
Decachlorobiphenyl	0.940	1.028845	9.03

B076013-MS1 Matrix Spike

Analyte		Results	%RPD
Aroclor-1016	0.25	0.288796	14.4
Aroclor-1260	0.34	0.3896219	13.6
Surrogates			
Tetrachloro-m-xylene	1.06	1.124716	

Decachlorobiphenyl	1.19	1.279443	7.24

B076013-MSD1 Matrix Spike Dup

Analyte		Results	%RPD
Aroclor-1016	0.23	0.2342871	1.85
Aroclor-1260	0.30	0.3346881	10.9
Surrogates			
Tetrachloro-m-xylene	0.796	0.8554851	7.2
Decachlorobiphenyl	0.881	0.942	6.69

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July 11, 2013

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

Project Location: Umass Grayson/Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13G0140

Enclosed are results of analyses for samples received by the laboratory on July 3, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 7/11/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13G0140

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

PROJECT LOCATION: Umass Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBC-206	13G0140-01	Brick	6th (S)	SW-846 8082A	
GH-VBC-207	13G0140-02	Brick	5th (S)	SW-846 8082A	
GH-VBC-208	13G0140-03	Brick	2nd (S)	SW-846 8082A	

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CASE NARRATIVE SUMMARY

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

SW-846 8082A

Qualifications:

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

Analyte & Samples(s) Qualified:

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

B076229-MS1, B076229-MSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Michael A. Erickson
Laboratory Director

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Project Location: Umass Grayson/Field | Sample Description: 6th (S) | Work Order: 13G0140

Date Received: 7/3/2013

Field Sample #: GH-VBC-206 | Sampled: 7/2/2013 16:30

Sample ID: 13G0140-01

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	7/5/13	7/9/13 8:44	MJC
Aroclor-1221 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	7/5/13	7/9/13 8:44	MJC
Aroclor-1232 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	7/5/13	7/9/13 8:44	MJC
Aroclor-1242 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	7/5/13	7/9/13 8:44	MJC
Aroclor-1248 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	7/5/13	7/9/13 8:44	MJC
Aroclor-1254 [1]	1.6	0.20	mg/Kg	2		SW-846 8082A	7/5/13	7/9/13 8:44	MJC
Aroclor-1260 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	7/5/13	7/9/13 8:44	MJC
Aroclor-1262 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	7/5/13	7/9/13 8:44	MJC
Aroclor-1268 [1]	ND	0.20	mg/Kg	2		SW-846 8082A	7/5/13	7/9/13 8:44	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	107	30-150		7/9/13 8:44
Decachlorobiphenyl [2]	120	30-150		7/9/13 8:44
Tetrachloro-m-xylene [1]	102	30-150		7/9/13 8:44
Tetrachloro-m-xylene [2]	113	30-150		7/9/13 8:44

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Project Location: Umass Grayson/Field
Sample Description: 5th (S)
Work Order: 13G0140

Date Received: 7/3/2013

Field Sample #: GH-VBC-207
Sampled: 7/2/2013 16:50

Sample ID: 13G0140-02

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 17:55	MJC
Aroclor-1221 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 17:55	MJC
Aroclor-1232 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 17:55	MJC
Aroclor-1242 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 17:55	MJC
Aroclor-1248 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 17:55	MJC
Aroclor-1254 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 17:55	MJC
Aroclor-1260 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 17:55	MJC
Aroclor-1262 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 17:55	MJC
Aroclor-1268 [1]	ND	0.098	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 17:55	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	110	30-150		7/8/13 17:55
Decachlorobiphenyl [2]	117	30-150		7/8/13 17:55
Tetrachloro-m-xylene [1]	95.5	30-150		7/8/13 17:55
Tetrachloro-m-xylene [2]	103	30-150		7/8/13 17:55

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Project Location: Umass Grayson/Field | Sample Description: 2nd (S) | Work Order: 13G0140

Date Received: 7/3/2013

Field Sample #: GH-VBC-208 | Sampled: 7/2/2013 17:05

Sample ID: 13G0140-03

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 18:07	MJC
Aroclor-1221 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 18:07	MJC
Aroclor-1232 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 18:07	MJC
Aroclor-1242 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 18:07	MJC
Aroclor-1248 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 18:07	MJC
Aroclor-1254 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 18:07	MJC
Aroclor-1260 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 18:07	MJC
Aroclor-1262 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 18:07	MJC
Aroclor-1268 [1]	ND	0.10	mg/Kg	1		SW-846 8082A	7/5/13	7/8/13 18:07	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	80.0	30-150		7/8/13 18:07
Decachlorobiphenyl [2]	86.9	30-150		7/8/13 18:07
Tetrachloro-m-xylene [1]	69.6	30-150		7/8/13 18:07
Tetrachloro-m-xylene [2]	76.1	30-150		7/8/13 18:07

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13G0140-01 [GH-VBC-206]	B076229	2.01	10.0	07/05/13
13G0140-02 [GH-VBC-207]	B076229	2.04	10.0	07/05/13
13G0140-03 [GH-VBC-208]	B076229	2.01	10.0	07/05/13

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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 B076229 - SW-846 3540C										
Blank (B076229-BLK1)				Prepared: 07/05/13 Analyzed: 07/08/13						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*1.11*		mg/Kg	1.00		111	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.18*		mg/Kg	1.00		118	30-150			
Surrogate: Tetrachloro-m-xylene	*1.04*		mg/Kg	1.00		104	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.11*		mg/Kg	1.00		111	30-150			
LCS (B076229-BS1)				Prepared: 07/05/13 Analyzed: 07/08/13						
Aroclor-1016	0.22	0.10	mg/Kg	0.250		86.8	40-140			
Aroclor-1016 [2C]	0.22	0.10	mg/Kg	0.250		89.4	40-140			
Aroclor-1260	0.22	0.10	mg/Kg	0.250		89.7	40-140			
Aroclor-1260 [2C]	0.25	0.10	mg/Kg	0.250		100	40-140			
Surrogate: Decachlorobiphenyl	*1.04*		mg/Kg	1.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.11*		mg/Kg	1.00		111	30-150			
Surrogate: Tetrachloro-m-xylene	*0.963*		mg/Kg	1.00		96.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.05*		mg/Kg	1.00		105	30-150			
LCS Dup (B076229-BSD1)				Prepared: 07/05/13 Analyzed: 07/08/13						
Aroclor-1016	0.24	0.10	mg/Kg	0.250		97.7	40-140	11.8	30	
Aroclor-1016 [2C]	0.24	0.10	mg/Kg	0.250		97.0	40-140	8.16	30	
Aroclor-1260	0.24	0.10	mg/Kg	0.250		96.8	40-140	7.64	30	
Aroclor-1260 [2C]	0.27	0.10	mg/Kg	0.250		109	40-140	7.96	30	
Surrogate: Decachlorobiphenyl	*1.08*		mg/Kg	1.00		108	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.15*		mg/Kg	1.00		115	30-150			
Surrogate: Tetrachloro-m-xylene	*1.01*		mg/Kg	1.00		101	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.09*		mg/Kg	1.00		109	30-150			

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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 B076229 - SW-846 3540C											
Matrix Spike (B076229-MS1)		**Source: 13G0140-01**		Prepared: 07/05/13 Analyzed: 07/08/13							
Aroclor-1016	0.24	0.099	mg/Kg	0.248	0.0	97.5		40-140			
Aroclor-1016 [2C]	0.40	0.099	mg/Kg	0.248	0.0	**162**	*	40-140			MS-21
Aroclor-1260	0.62	0.099	mg/Kg	0.248	0.0	**252**	*	40-140			MS-21
Aroclor-1260 [2C]	1.0	0.099	mg/Kg	0.248	0.0	**418**	*	40-140			MS-21
Surrogate: Decachlorobiphenyl	*0.899*		mg/Kg	0.990		90.8		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.973*		mg/Kg	0.990		98.3		30-150			
Surrogate: Tetrachloro-m-xylene	*0.867*		mg/Kg	0.990		87.6		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.934*		mg/Kg	0.990		94.3		30-150			
Matrix Spike Dup (B076229-MSD1)		**Source: 13G0140-01**		Prepared: 07/05/13 Analyzed: 07/08/13							
Aroclor-1016	0.26	0.099	mg/Kg	0.246	0.0	106		40-140	7.93	50	
Aroclor-1016 [2C]	0.41	0.099	mg/Kg	0.246	0.0	**166**	*	40-140	2.12	50	MS-21
Aroclor-1260	0.60	0.099	mg/Kg	0.246	0.0	**245**	*	40-140	3.25	50	MS-21
Aroclor-1260 [2C]	0.82	0.099	mg/Kg	0.246	0.0	**335**	*	40-140	22.6	50	MS-21
Surrogate: Decachlorobiphenyl	*1.02*		mg/Kg	0.985		103		30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.08*		mg/Kg	0.985		110		30-150			
Surrogate: Tetrachloro-m-xylene	*0.930*		mg/Kg	0.985		94.4		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.990*		mg/Kg	0.985		101		30-150			

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FLAG/QUALIFIER SUMMARY

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

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CERTIFICATIONS

Certified Analyses included in this Report

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

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

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

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CHAIN OF CUSTODY RECORD

13G0140

Rev 04.05.12

39 Spruce Street
East longmeadow, MA 01028

Company Name: Woodard & Curran
Telephone:
Address: 40 Shattuck Rd Suite 110 Andover, MA
Project # 224824
Client PO#
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMASS Grayson / Field
Sampled By: Kim Rinard

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA8082/3540C										# of Containers / ** Preservation / ***Container Code
01	GH-VBC-206	7/3/13	1630	6th (S)		B	U	X										
02	GH-VBC-207	↓	1650	5th (S)		↓	↓	X										
03	GH-VBC-208	↓	1705	2nd (S)		↓	↓	X										

7/3/13 KRL

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

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

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

Comments: ① EPA 8082 PCBs via 3540C Soxhlet ② RL ≤ 1mg/kg
③ Direct Contact @ Narrow Stairwell - Grayson West

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

Relinquished by: (signature)	Date/Time:
[signature] 7/3/13	1340
Received by: (signature) [signature] 7/3/13	1340
Relinquished by: (signature) [signature] 7/3/13	1550
Received by: (signature) Rebecca Faust 3.1°C 7/3/13	1500

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

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 #

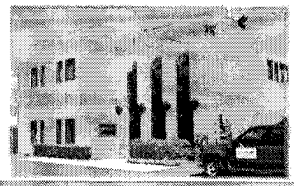
NELAC & AIHA-LAP, LLC Accredited
WBE/DBE Certified

†† 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

con-test® ANALYTICAL LABORATORY



Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** RLF **DATE:** ~~7/B~~ RLF 7/3/13

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

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 3.1°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	
250 mL Amber (8oz amber)		2 oz amber/clear jar	3
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: Sampling dates on COC incorrect SLB 7/2/13

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

Time and Date Frozen:

13G0140-01 GH-VBC-206

Analyte	Results		%RPD
Aroclor-1254	1.6	1.277234	22.4
Surrogates			
Decachlorobiphenyl	1.07	1.193711	10.9
Tetrachloro-m-xylene	1.01	1.125622	10.8

13G0140-02 GH-VBC-207

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	1.08	1.150985	6.36
Tetrachloro-m-xylene	0.936	1.005995	7.21

13G0140-03 GH-VBC-208

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	0.796	0.8650249	8.31
Tetrachloro-m-xylene	0.692	0.7571194	8.99

B076229-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Decachlorobiphenyl	1.11	1.17885	6.02
Tetrachloro-m-xylene	1.04	1.109335	6.45

B076229-BS1 LCS

Analyte	Results		%RPD
Aroclor-1016	0.22	0.223585	1.62
Aroclor-1260	0.22	0.25072	13.1
Surrogates			
Tetrachloro-m-xylene	0.963	1.052375	8.87
Decachlorobiphenyl	1.04	1.112085	6.7

B076229-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.24	0.271505	12.3
Aroclor-1016	0.24	0.242615	1.08
Surrogates			
Decachlorobiphenyl	1.08	1.14971	6.25
Tetrachloro-m-xylene	1.01	1.087815	7.42

B076229-MS1 Matrix Spike

Analyte	Results		%RPD
Aroclor-1016	0.24	0.4008614	50.2
Aroclor-1260	0.62	1.033955	50.1
Surrogates			
Decachlorobiphenyl	0.899	0.9733762	7.94
Tetrachloro-m-xylene	0.867	0.9338465	7.42

B076229-MSD1 Matrix Spike Dup

Analyte	Results		%RPD
Aroclor-1016	0.26	0.409468	44.7
Aroclor-1260	0.60	0.8239064	31.4
Surrogates			
Tetrachloro-m-xylene	0.930	0.9903498	6.29
Decachlorobiphenyl	1.02	1.081113	5.82

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July 22, 2013

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

Project Location: Grayson/Field House
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13G0635

Enclosed are results of analyses for samples received by the laboratory on July 16, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

REPORT DATE: 7/22/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13G0635

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

PROJECT LOCATION: Grayson/Field House

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VBB-209	13G0635-01	Brick		SW-846 8082A	
GH-VBBQ-210	13G0635-02	Water		SW-846 8082A	

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CASE NARRATIVE SUMMARY

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

SW-846 8082A

Qualifications:

Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

Analyte & Samples(s) Qualified:

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

B076893-MSD1

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.

Daren J. Damboragian
Laboratory Manager

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Project Location: Grayson/Field House | Sample Description: | Work Order: 13G0635

Date Received: 7/16/2013

Field Sample #: GH-VBB-209 | Sampled: 7/16/2013 11:00

Sample ID: 13G0635-01

Sample Matrix: Brick

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

Analyte	Results	RL	Units	Dilution	Flag	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/17/13	7/18/13 20:33	MJC
Aroclor-1221 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/17/13	7/18/13 20:33	MJC
Aroclor-1232 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/17/13	7/18/13 20:33	MJC
Aroclor-1242 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/17/13	7/18/13 20:33	MJC
Aroclor-1248 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/17/13	7/18/13 20:33	MJC
Aroclor-1254 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/17/13	7/18/13 20:33	MJC
Aroclor-1260 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/17/13	7/18/13 20:33	MJC
Aroclor-1262 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/17/13	7/18/13 20:33	MJC
Aroclor-1268 [1]	ND	0.095	mg/Kg	1		SW-846 8082A	7/17/13	7/18/13 20:33	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	105	30-150		7/18/13 20:33
Decachlorobiphenyl [2]	103	30-150		7/18/13 20:33
Tetrachloro-m-xylene [1]	99.1	30-150		7/18/13 20:33
Tetrachloro-m-xylene [2]	104	30-150		7/18/13 20:33

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Project Location: Grayson/Field House | Sample Description: | Work Order: 13G0635

Date Received: 7/16/2013

Field Sample #: GH-VBBQ-210 | Sampled: 7/16/2013 16:35

Sample ID: 13G0635-02

Sample Matrix: 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	7/17/13	7/17/13 14:52	MJC
Aroclor-1221 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/17/13	7/17/13 14:52	MJC
Aroclor-1232 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/17/13	7/17/13 14:52	MJC
Aroclor-1242 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/17/13	7/17/13 14:52	MJC
Aroclor-1248 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/17/13	7/17/13 14:52	MJC
Aroclor-1254 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/17/13	7/17/13 14:52	MJC
Aroclor-1260 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/17/13	7/17/13 14:52	MJC
Aroclor-1262 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/17/13	7/17/13 14:52	MJC
Aroclor-1268 [1]	ND	0.20	µg/L	1		SW-846 8082A	7/17/13	7/17/13 14:52	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	57.5	30-150		7/17/13 14:52
Decachlorobiphenyl [2]	55.7	30-150		7/17/13 14:52
Tetrachloro-m-xylene [1]	92.4	30-150		7/17/13 14:52
Tetrachloro-m-xylene [2]	95.5	30-150		7/17/13 14:52

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [g]	Final [mL]	Date
13G0635-01 [GH-VBB-209]	B076893	2.10	10.0	07/17/13

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

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
13G0635-02 [GH-VBBQ-210]	B076866	1000	10.0	07/17/13

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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 B076866 - SW-846 3510C										
Blank (B076866-BLK1)				Prepared & Analyzed: 07/17/13						
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	*2.13*		µg/L	2.00		106	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.09*		µg/L	2.00		105	30-150			
Surrogate: Tetrachloro-m-xylene	*2.18*		µg/L	2.00		109	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.28*		µg/L	2.00		114	30-150			
LCS (B076866-BS1)				Prepared & Analyzed: 07/17/13						
Aroclor-1016	0.76	0.20	µg/L	1.00		76.1	40-140			
Aroclor-1016 [2C]	0.69	0.20	µg/L	1.00		68.9	40-140			
Aroclor-1260	0.73	0.20	µg/L	1.00		72.5	40-140			
Aroclor-1260 [2C]	0.68	0.20	µg/L	1.00		68.4	40-140			
Surrogate: Decachlorobiphenyl	*2.84*		µg/L	4.00		70.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.87*		µg/L	4.00		71.7	30-150			
Surrogate: Tetrachloro-m-xylene	*2.78*		µg/L	4.00		69.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.98*		µg/L	4.00		74.6	30-150			
LCS Dup (B076866-BSD1)				Prepared & Analyzed: 07/17/13						
Aroclor-1016	0.80	0.20	µg/L	1.00		79.7	40-140	4.59	20	
Aroclor-1016 [2C]	0.71	0.20	µg/L	1.00		71.5	40-140	3.65	20	
Aroclor-1260	0.75	0.20	µg/L	1.00		75.5	40-140	4.04	20	
Aroclor-1260 [2C]	0.71	0.20	µg/L	1.00		70.6	40-140	3.21	20	
Surrogate: Decachlorobiphenyl	*2.78*		µg/L	4.00		69.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.81*		µg/L	4.00		70.2	30-150			
Surrogate: Tetrachloro-m-xylene	*2.75*		µg/L	4.00		68.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.93*		µg/L	4.00		73.4	30-150			

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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 B076893 - SW-846 3540C										
Blank (B076893-BLK1)				Prepared: 07/17/13 Analyzed: 07/18/13						
Aroclor-1016	ND	0.10	mg/Kg							
Aroclor-1016 [2C]	ND	0.10	mg/Kg							
Aroclor-1221	ND	0.10	mg/Kg							
Aroclor-1221 [2C]	ND	0.10	mg/Kg							
Aroclor-1232	ND	0.10	mg/Kg							
Aroclor-1232 [2C]	ND	0.10	mg/Kg							
Aroclor-1242	ND	0.10	mg/Kg							
Aroclor-1242 [2C]	ND	0.10	mg/Kg							
Aroclor-1248	ND	0.10	mg/Kg							
Aroclor-1248 [2C]	ND	0.10	mg/Kg							
Aroclor-1254	ND	0.10	mg/Kg							
Aroclor-1254 [2C]	ND	0.10	mg/Kg							
Aroclor-1260	ND	0.10	mg/Kg							
Aroclor-1260 [2C]	ND	0.10	mg/Kg							
Aroclor-1262	ND	0.10	mg/Kg							
Aroclor-1262 [2C]	ND	0.10	mg/Kg							
Aroclor-1268	ND	0.10	mg/Kg							
Aroclor-1268 [2C]	ND	0.10	mg/Kg							
Surrogate: Decachlorobiphenyl	*1.04*		mg/Kg	1.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.980*		mg/Kg	1.00		98.0	30-150			
Surrogate: Tetrachloro-m-xylene	*0.970*		mg/Kg	1.00		97.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.00*		mg/Kg	1.00		100	30-150			
LCS (B076893-BS1)				Prepared: 07/17/13 Analyzed: 07/18/13						
Aroclor-1016	0.31	0.10	mg/Kg	0.250		123	40-140			
Aroclor-1016 [2C]	0.33	0.10	mg/Kg	0.250		133	40-140			
Aroclor-1260	0.32	0.10	mg/Kg	0.250		127	40-140			
Aroclor-1260 [2C]	0.28	0.10	mg/Kg	0.250		112	40-140			
Surrogate: Decachlorobiphenyl	*1.19*		mg/Kg	1.00		119	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.15*		mg/Kg	1.00		115	30-150			
Surrogate: Tetrachloro-m-xylene	*1.16*		mg/Kg	1.00		116	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.27*		mg/Kg	1.00		127	30-150			
LCS Dup (B076893-BSD1)				Prepared: 07/17/13 Analyzed: 07/18/13						
Aroclor-1016	0.28	0.10	mg/Kg	0.250		111	40-140	9.76	30	
Aroclor-1016 [2C]	0.27	0.10	mg/Kg	0.250		108	40-140	20.8	30	
Aroclor-1260	0.26	0.10	mg/Kg	0.250		102	40-140	21.8	30	
Aroclor-1260 [2C]	0.25	0.10	mg/Kg	0.250		98.8	40-140	12.9	30	
Surrogate: Decachlorobiphenyl	*0.936*		mg/Kg	1.00		93.6	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.899*		mg/Kg	1.00		89.9	30-150			
Surrogate: Tetrachloro-m-xylene	*0.888*		mg/Kg	1.00		88.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.939*		mg/Kg	1.00		93.9	30-150			

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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 B076893 - SW-846 3540C											
Matrix Spike (B076893-MS1)		**Source: 13G0635-01**		Prepared: 07/17/13 Analyzed: 07/18/13							
Aroclor-1016	0.28	0.094	mg/Kg	0.236	0.0	119		40-140			
Aroclor-1016 [2C]	0.29	0.094	mg/Kg	0.236	0.0	122		40-140			
Aroclor-1260	0.30	0.094	mg/Kg	0.236	0.0	129		40-140			
Aroclor-1260 [2C]	0.32	0.094	mg/Kg	0.236	0.0	135		40-140			
Surrogate: Decachlorobiphenyl	*0.855*		mg/Kg	0.943		90.7		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.784*		mg/Kg	0.943		83.1		30-150			
Surrogate: Tetrachloro-m-xylene	*0.872*		mg/Kg	0.943		92.4		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.898*		mg/Kg	0.943		95.2		30-150			
Matrix Spike Dup (B076893-MSD1)		**Source: 13G0635-01**		Prepared: 07/17/13 Analyzed: 07/18/13							
Aroclor-1016	0.26	0.092	mg/Kg	0.230	0.0	114		40-140	6.77	50	
Aroclor-1016 [2C]	0.34	0.092	mg/Kg	0.230	0.0	**147**	*	40-140	16.3	50	MS-22
Aroclor-1260	0.35	0.092	mg/Kg	0.230	0.0	**151**	*	40-140	13.6	50	MS-22
Aroclor-1260 [2C]	0.33	0.092	mg/Kg	0.230	0.0	**145**	*	40-140	4.71	50	MS-22
Surrogate: Decachlorobiphenyl	*0.878*		mg/Kg	0.922		95.2		30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.871*		mg/Kg	0.922		94.5		30-150			
Surrogate: Tetrachloro-m-xylene	*0.871*		mg/Kg	0.922		94.5		30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.910*		mg/Kg	0.922		98.8		30-150			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
MS-22	Either matrix spike or MS duplicate is outside of control limits, but the other is within limits. RPD between the two MS/MSD results is within method specified criteria.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8082A in Product/Solid	
Aroclor-1016	CT,NH,NY,ME,NC,VA
Aroclor-1016 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1221	CT,NH,NY,ME,NC,VA
Aroclor-1221 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1232	CT,NH,NY,ME,NC,VA
Aroclor-1232 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1242	CT,NH,NY,ME,NC,VA
Aroclor-1242 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1248	CT,NH,NY,ME,NC,VA
Aroclor-1248 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1254	CT,NH,NY,ME,NC,VA
Aroclor-1254 [2C]	CT,NH,NY,ME,NC,VA
Aroclor-1260	CT,NH,NY,ME,NC,VA
Aroclor-1260 [2C]	CT,NH,NY,ME,NC,VA
SW-846 8082A in Water	
Aroclor-1016	CT,NH,NY,NC,ME,VA
Aroclor-1016 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1221	CT,NH,NY,NC,ME,VA
Aroclor-1221 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1232	CT,NH,NY,NC,ME,VA
Aroclor-1232 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1242	CT,NH,NY,NC,ME,VA
Aroclor-1242 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1248	CT,NH,NY,NC,ME,VA
Aroclor-1248 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1254	CT,NH,NY,NC,ME,VA
Aroclor-1254 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1260	CT,NH,NY,NC,ME,VA
Aroclor-1260 [2C]	CT,NH,NY,NC,ME,VA
Aroclor-1262	NC
Aroclor-1262 [2C]	NC
Aroclor-1268	NC
Aroclor-1268 [2C]	NC

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

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

CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

13G0635

Company Name: Woodard & Curran
Address: 40 Shattuck Rd, Suite 110 Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: Grayson / Field House
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
O FAX ☒ EMAIL O WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL O GIS
O OTHER
O "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
O yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA 8082 PCBs via 3540C	EPA 8082 PCBs Aroclors
01	GH-VBB-209	7/16/13	1100			B	U	X	
02	GH-VBBQ-210	↓	1635			Aq	U		X

KAR 7/16/13

# of Containers	1 1
** Preservation	I I
***Container Code	G G

Dissolved Metals
O Field Filtered
O Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=summa 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_____

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

Comments:
① EPA 8082 PCBs via 3540C Soxhlet ② RL ≤ 1mg/kg ③ 5 DAY TAT
④ KAR to notify M. Kelly re: RUSH TAT ⑤ Narrow Stanwell - Adj Mat - 6th

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

Relinquished by: (signature)	Date/Time:
KRinard	7/16/13 1650
Received by: (signature) 3.3°C	Date/Time: 7/16/13 1650
Relinquished by: (signature)	Date/Time:
Received by: (signature)	Date/Time:

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY TAT
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1mg/kg

Is your project MCP or RCP ?
O MCP Form Required
O RCP Form Required
O MA State DW Form Required PWSID # _____

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

†† 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

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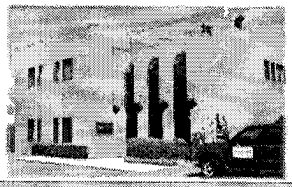

Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** JMH **DATE:** 7/16/13

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

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 3.3°

5) **Are there Dissolved samples for the lab to filter?** Yes (No)
   Who was notified _____ Date _____ Time _____
6) **Are there any RUSH or SHORT HOLDING TIME samples?** Yes (No)
   Who was notified _____ Date _____ Time _____
7) **Location where samples are stored:** 19

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

8) **Do all samples have the proper Acid pH:** Yes No (N/A) _____
9) **Do all samples have the proper Base pH:** Yes No (N/A) _____
10) **Was the PC notified of any discrepancies with the CoC vs the samples:** Yes No (N/A)

Containers received at Con-Test

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

Laboratory Comments:

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

Time and Date Frozen:

13G0635-01 GH-VBB-209

Analyte		Results	%RPD
Surrogates			
Tetrachloro-m-xylene	0.944	0.9888572	4.64
Decachlorobiphenyl	0.999	0.9833667	1.58

13G0635-02 GH-VBBQ-210

Analyte		Results	%RPD
Surrogates			
Decachlorobiphenyl	1.15	1.11318	3.25
Tetrachloro-m-xylene	1.85	1.91064	3.22

B076866-BLK1 Blank

Analyte		Results	%RPD
Surrogates			
Decachlorobiphenyl	2.13	2.0912	1.84
Tetrachloro-m-xylene	2.18	2.28421	4.67

B076866-BS1 LCS

Analyte		Results	%RPD
Aroclor-1260	0.73	0.68407	6.5
Aroclor-1016	0.76	0.6893	9.76
Surrogates			
Decachlorobiphenyl	2.84	2.86811	0.985
Tetrachloro-m-xylene	2.78	2.98262	7.03

B076866-BSD1 LCS Dup

Analyte		Results	%RPD
Aroclor-1016	0.80	0.71492	11.2
Aroclor-1260	0.75	0.70637	5.99
Surrogates			
Decachlorobiphenyl	2.78	2.8091	1.04
Tetrachloro-m-xylene	2.75	2.93413	6.48

B076893-BLK1 Blank

Analyte		Results	%RPD
Surrogates			
Tetrachloro-m-xylene	0.970	1.00185	3.23
Decachlorobiphenyl	1.04	0.97993	5.95

B076893-BS1 LCS

Analyte		Results	%RPD
Aroclor-1260	0.32	0.28101	13
Aroclor-1016	0.31	0.332095	6.88
Surrogates			
Decachlorobiphenyl	1.19	1.14895	3.51
Tetrachloro-m-xylene	1.16	1.274345	9.39

B076893-BSD1 LCS Dup

Analyte		Results	%RPD
Aroclor-1016	0.28	0.269505	3.82
Aroclor-1260	0.26	0.246885	5.17
Surrogates			
Tetrachloro-m-xylene	0.888	0.9389	5.57
Decachlorobiphenyl	0.936	0.89875	4.06

B076893-MS1 Matrix Spike

Analyte		Results	%RPD
Aroclor-1016	0.28	0.2879434	2.8
Aroclor-1260	0.30	0.3179906	5.82
Surrogates			
Tetrachloro-m-xylene	0.872	0.8985	2.99

Decachlorobiphenyl	0.855	0.7843727	8.62

B076893-MSD1 Matrix Spike Dup

Analyte	Results		%RPD
Aroclor-1016	0.26	0.3389124	26.4
Aroclor-1260	0.35	0.333341	4.88
Surrogates			
Tetrachloro-m-xylene	0.871	0.9103041	4.41
Decachlorobiphenyl	0.878	0.8708525	0.817

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July 25, 2013

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

Project Location: Umass - Grayson/Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13G0722

Enclosed are results of analyses for samples received by the laboratory on July 18, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

REPORT DATE: 7/25/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13G0722

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

PROJECT LOCATION: Umass - Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VWC-211	13G0722-01	Wipe		SW-846 8082A	
GH-VWC-212	13G0722-02	Wipe		SW-846 8082A	

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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.

Michael A. Erickson
Laboratory Director

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

Project Location: Umass - Grayson/Field | Sample Description: | Work Order: 13G0722

Date Received: 7/18/2013

Field Sample #: GH-VWC-211 | Sampled: 7/18/2013 10:40

Sample ID: 13G0722-01

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	7/18/13	7/19/13 19:14	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:14	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:14	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:14	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:14	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:14	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:14	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:14	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:14	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	105	30-150		7/19/13 19:14
Decachlorobiphenyl [2]	100	30-150		7/19/13 19:14
Tetrachloro-m-xylene [1]	98.1	30-150		7/19/13 19:14
Tetrachloro-m-xylene [2]	98.7	30-150		7/19/13 19:14

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Project Location: Umass - Grayson/Field | Sample Description: | Work Order: 13G0722

Date Received: 7/18/2013

Field Sample #: GH-VWC-212 | Sampled: 7/18/2013 10:50

Sample ID: 13G0722-02

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	7/18/13	7/19/13 19:27	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:27	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:27	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:27	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:27	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:27	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:27	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:27	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/18/13	7/19/13 19:27	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	100	30-150		7/19/13 19:27
Decachlorobiphenyl [2]	96.9	30-150		7/19/13 19:27
Tetrachloro-m-xylene [1]	90.9	30-150		7/19/13 19:27
Tetrachloro-m-xylene [2]	91.8	30-150		7/19/13 19:27

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
13G0722-01 [GH-VWC-211]	B076999	1.00	10.0	07/18/13
13G0722-02 [GH-VWC-212]	B076999	1.00	10.0	07/18/13

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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 B076999 - SW-846 3540C										
Blank (B076999-BLK1)				Prepared: 07/18/13 Analyzed: 07/19/13						
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	*2.27*		µg/Wipe	2.00		114	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.00*		µg/Wipe	2.00		99.9	30-150			
Surrogate: Tetrachloro-m-xylene	*2.09*		µg/Wipe	2.00		105	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.20*		µg/Wipe	2.00		110	30-150			
LCS (B076999-BS1)				Prepared: 07/18/13 Analyzed: 07/19/13						
Aroclor-1016	0.61	0.20	µg/Wipe	0.500		123	40-140			
Aroclor-1016 [2C]	0.54	0.20	µg/Wipe	0.500		108	40-140			
Aroclor-1260	0.56	0.20	µg/Wipe	0.500		112	40-140			
Aroclor-1260 [2C]	0.52	0.20	µg/Wipe	0.500		104	40-140			
Surrogate: Decachlorobiphenyl	*2.07*		µg/Wipe	2.00		104	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.96*		µg/Wipe	2.00		98.2	30-150			
Surrogate: Tetrachloro-m-xylene	*1.96*		µg/Wipe	2.00		98.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.08*		µg/Wipe	2.00		104	30-150			
LCS Dup (B076999-BSD1)				Prepared: 07/18/13 Analyzed: 07/19/13						
Aroclor-1016	0.62	0.20	µg/Wipe	0.500		123	40-140	0.109	30	
Aroclor-1016 [2C]	0.56	0.20	µg/Wipe	0.500		112	40-140	3.85	30	
Aroclor-1260	0.60	0.20	µg/Wipe	0.500		119	40-140	5.97	30	
Aroclor-1260 [2C]	0.56	0.20	µg/Wipe	0.500		113	40-140	7.85	30	
Surrogate: Decachlorobiphenyl	*2.13*		µg/Wipe	2.00		106	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.89*		µg/Wipe	2.00		94.4	30-150			
Surrogate: Tetrachloro-m-xylene	*1.95*		µg/Wipe	2.00		97.3	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*2.05*		µg/Wipe	2.00		103	30-150			

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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.

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

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

13G0722

Company Name: Woodard & Curran
Address: 40 Shattuck Rd Suite 110 Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMass - Grayson / Field
Sampled By: Kim Rinard

Telephone:
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email:
Format: ☒ PDF ☒ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA8082 PCB's / 3540C Soxh.	1	2/5	6
—	~~GH-VW~~ KRR 7/18/13										
01	GH-VWC-211	7/18/13	1040	F N 3		WI	U	X			
02	GH-VWC-212	↓	1050	G S 4		↓	↓	X			

7/18/13 KRR

Comments: ① EPA8082 PCB's via 3540C Soxhlet ② RL ≤ 1ug/wipe ③ 5 DAY TAT ④ Epoxy @ Exp Joints

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

Relinquished by: (signature)	Date/Time:
Kim Rinard 7/18/13	1210
Received by: (signature) 14-8c 7/18/13	1210
Relinquished by: (signature)	
Received by: (signature)	

Turnaround ††
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY
RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1ug/wipe

Is your project MCP or RCP ?
○ MCP Form Required
○ RCP Form Required
○ MA State DW Form Required PWSID # _____

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

Containers
** Preservation
***Container Code

Dissolved Metal
○ 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

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

*Matrix Code:
GW= groundwater
WW= wastewater
DW= drinking water
A = air
S = soil/solid
SL = sludge
O = other_____

†† 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

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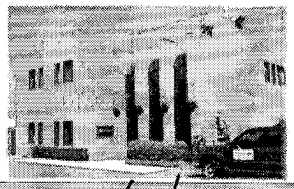

Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** CEC **DATE:** 7/18/13

1) **Was the chain(s) of custody relinquished and signed?** **Yes** **No** **No CoC Included**
2) **Does the chain agree with the samples?** **Yes** **No**
   If not, explain:
3) **Are all the samples in good condition?** **Yes** **No**
   If not, explain:
4) **How were the samples received:**
   On Ice ☑ (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 19.8°
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	2
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 _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

13G0722-01 GH-VWC-211

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.96	1.974	0.712
Decachlorobiphenyl	2.10	2.00515	4.62

13G0722-02 GH-VWC-212

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	1.82	1.83674	0.916
Decachlorobiphenyl	2.00	1.93717	3.19

B076999-BLK1 Blank

Analyte	Results		%RPD
Surrogates			
Tetrachloro-m-xylene	2.09	2.19868	5.07
Decachlorobiphenyl	2.27	1.99818	12.7

B076999-BS1 LCS

Analyte	Results		%RPD
Aroclor-1260	0.56	0.52183	7.06
Aroclor-1016	0.61	0.54099	12
Surrogates			
Tetrachloro-m-xylene	1.96	2.08204	6.04
Decachlorobiphenyl	2.07	1.96421	5.24

B076999-BSD1 LCS Dup

Analyte	Results		%RPD
Aroclor-1260	0.60	0.56445	6.11
Aroclor-1016	0.62	0.5622	9.78
Surrogates			
Tetrachloro-m-xylene	1.95	2.05444	5.22
Decachlorobiphenyl	2.13	1.88874	12

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July 26, 2013

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

Project Location: Umass Grayson/Field
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13G0803

Enclosed are results of analyses for samples received by the laboratory on July 19, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 7/26/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13G0803

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

PROJECT LOCATION: Umass Grayson/Field

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-VWB 213	13G0803-01	Wipe	Narrow Stairwell Window	SW-846 8082A	

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

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.

Daren J. Damboragian
Laboratory Manager

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

Project Location: Umass Grayson/Field | Sample Description: Narrow Stairwell Window | Work Order: 13G0803

Date Received: 7/19/2013

Field Sample #: GH-VWB 213 | Sampled: 7/19/2013 12:20

Sample ID: 13G0803-01

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	7/22/13	7/24/13 17:16	MJC
Aroclor-1221 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/13	7/24/13 17:16	MJC
Aroclor-1232 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/13	7/24/13 17:16	MJC
Aroclor-1242 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/13	7/24/13 17:16	MJC
Aroclor-1248 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/13	7/24/13 17:16	MJC
Aroclor-1254 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/13	7/24/13 17:16	MJC
Aroclor-1260 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/13	7/24/13 17:16	MJC
Aroclor-1262 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/13	7/24/13 17:16	MJC
Aroclor-1268 [1]	ND	0.20	µg/Wipe	1		SW-846 8082A	7/22/13	7/24/13 17:16	MJC

Surrogates	% Recovery	Recovery Limits	Flag	
Decachlorobiphenyl [1]	87.7	30-150		7/24/13 17:16
Decachlorobiphenyl [2]	92.7	30-150		7/24/13 17:16
Tetrachloro-m-xylene [1]	85.1	30-150		7/24/13 17:16
Tetrachloro-m-xylene [2]	87.6	30-150		7/24/13 17:16

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Sample Extraction Data

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

Lab Number [Field ID]	Batch	Initial [Wipe]	Final [mL]	Date
13G0803-01 [GH-VWB 213]	B077213	1.00	10.0	07/22/13

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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 B077213 - SW-846 3540C										
Blank (B077213-BLK1)				Prepared: 07/22/13 Analyzed: 07/24/13						
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	*1.98*		µg/Wipe	2.00		98.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.91*		µg/Wipe	2.00		95.4	30-150			
Surrogate: Tetrachloro-m-xylene	*1.37*		µg/Wipe	2.00		68.4	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.36*		µg/Wipe	2.00		68.2	30-150			
LCS (B077213-BS1)				Prepared: 07/22/13 Analyzed: 07/24/13						
Aroclor-1016	0.42	0.20	µg/Wipe	0.500		83.5	40-140			
Aroclor-1016 [2C]	0.40	0.20	µg/Wipe	0.500		80.3	40-140			
Aroclor-1260	0.44	0.20	µg/Wipe	0.500		88.0	40-140			
Aroclor-1260 [2C]	0.43	0.20	µg/Wipe	0.500		86.5	40-140			
Surrogate: Decachlorobiphenyl	*1.88*		µg/Wipe	2.00		94.1	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.82*		µg/Wipe	2.00		90.9	30-150			
Surrogate: Tetrachloro-m-xylene	*1.46*		µg/Wipe	2.00		73.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.46*		µg/Wipe	2.00		73.1	30-150			
LCS Dup (B077213-BSD1)				Prepared: 07/22/13 Analyzed: 07/24/13						
Aroclor-1016	0.51	0.20	µg/Wipe	0.500		101	40-140	19.0	30	
Aroclor-1016 [2C]	0.52	0.20	µg/Wipe	0.500		104	40-140	25.8	30	
Aroclor-1260	0.51	0.20	µg/Wipe	0.500		103	40-140	15.4	30	
Aroclor-1260 [2C]	0.51	0.20	µg/Wipe	0.500		102	40-140	16.0	30	
Surrogate: Decachlorobiphenyl	*2.14*		µg/Wipe	2.00		107	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.08*		µg/Wipe	2.00		104	30-150			
Surrogate: Tetrachloro-m-xylene	*1.86*		µg/Wipe	2.00		92.8	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.86*		µg/Wipe	2.00		93.1	30-150			

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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.

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

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CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Rev 04.05.12

Company Name: Woodard & Curran
Address: 40 Shattuck Rd Suite 110 Andover, MA
Attention: J Hamel, G Franklin, K Rinard
Project Location: UMASS Grayson / Field
Sampled By: Kim Rinard

Project Proposal Provided? (for billing purposes)
○ yes _____ proposal date

Telephone: 13G0803
Project # 224824
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ○ EMAIL ○ WEBSITE
Fax #
Email:
Format: ○ PDF ○ EXCEL ○ GIS
○ OTHER
○ "Enhanced Data Package"

ANALYSIS REQUESTED

Con-Test Lab ID (laboratory use only)	Client Sample ID / Description	Collection Beginning Date/Time	Collection Ending Date/Time	Composite	Grab	*Matrix Code	Conc Code	EPA8082/3540C Soxhlet										
01	GH-VWB ~~ZH~~ 213	7/19/13	1220	G/S/6		W1	U	X										
	7/19/13																	
	VAL																	

# of Containers: 1
** Preservation: I/2
***Container Code: G

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

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

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

Comments: ① EPA 8082 PCB's via 3540C Soxhlet ② RL ≤ 1ug/wipe ③ Narrow Stairwell Window ④ 5 DAY TAT

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

Relinquished by: (signature)	Date/Time:
[signature]	7/19/13 1245
Received by: (signature) Ed Cahale	Date/Time: 7/19/13 1300
Relinquished by: (signature) Ed Cahale	Date/Time: 7/19/13 1540
Received by: (signature) Rebecca Faust 5.9	Date/Time: 7/19/13 1540

Turnaround ††
☐ 7-Day 1300
☐ 10-Day
☒ Other 5 DAY

RUSH †
☐ †24-Hr ☐ †48-Hr
☐ †72-Hr ☐ †4-Day
† Require lab approval

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: RL ≤ 1ug/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

†† 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

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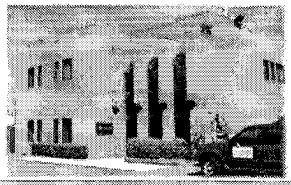

Sample Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** RLF **DATE:** 7/19/13

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

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

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

Temperature °C by Temp blank _____ Temperature °C by Temp gun 5.9°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	1
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 _____
Bisulfate _____ # DI Water _____
Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

October 25, 2013

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

Project Location: UMASS Grayson Field House
Client Job Number:
Project Number: 224824
Laboratory Work Order Number: 13J0576

Enclosed are results of analyses for samples received by the laboratory on October 15, 2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Meghan E. Kelley
Project Manager

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

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

REPORT DATE: 10/25/2013

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224824

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 13J0576

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

PROJECT LOCATION: UMASS Grayson Field House

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
GH-G6E-IAS-300	13J0576-01	Indoor air		TO-10A/EPA 680 Modified	
GH-F2E-IAS-301	13J0576-02	Indoor air		TO-10A/EPA 680 Modified	
GH-OUT-IAS-302	13J0576-03	Indoor air		TO-10A/EPA 680 Modified	

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CASE NARRATIVE SUMMARY

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

REVISED REPORT - 10/25/2013 - 13J0576-01 ID revised per clients request.

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

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ANALYTICAL RESULTS

Project Location: UMASS Grayson Field House
Date Received: 10/15/2013
Field Sample #: GH-G6E-IAS-300
Sample ID: 13J0576-01
Sample Matrix: Indoor air
Sampled: 10/15/2013 13:00

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 632.2

Work Order: 13J0576

TO-10A/EPA 680 Modified

Analyte	Total µg Results	Total µg RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		ND	0.0016	1	10/23/13 11:09	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.0016	1	10/23/13 11:09	CJM
Trichlorobiphenyls	ND	0.0010		ND	0.0016	1	10/23/13 11:09	CJM
Tetrachlorobiphenyls	ND	0.0020		ND	0.0032	1	10/23/13 11:09	CJM
Pentachlorobiphenyls	ND	0.0020		ND	0.0032	1	10/23/13 11:09	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0032	1	10/23/13 11:09	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/23/13 11:09	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/23/13 11:09	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/23/13 11:09	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/23/13 11:09	CJM
Total Polychlorinated biphenyls	0.0			0		1	10/23/13 11:09	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	50.4	50-125	10/23/13 11:09

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ANALYTICAL RESULTS

Project Location: UMASS Grayson Field House
Date Received: 10/15/2013
Field Sample #: GH-F2E-IAS-301
Sample ID: 13J0576-02
Sample Matrix: Indoor air
Sampled: 10/15/2013 13:06

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 634.6

Work Order: 13J0576

TO-10A/EPA 680 Modified

Analyte	Total µg Results	Total µg RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		ND	0.0016	1	10/23/13 11:39	CJM
Dichlorobiphenyls	0.0011	0.0010		0.0018	0.0016	1	10/23/13 11:39	CJM
Trichlorobiphenyls	ND	0.0010		ND	0.0016	1	10/23/13 11:39	CJM
Tetrachlorobiphenyls	0.0031	0.0020		0.0048	0.0032	1	10/23/13 11:39	CJM
Pentachlorobiphenyls	ND	0.0020		ND	0.0032	1	10/23/13 11:39	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0032	1	10/23/13 11:39	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/23/13 11:39	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/23/13 11:39	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/23/13 11:39	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/23/13 11:39	CJM
Total Polychlorinated biphenyls	0.0042			0.0066		1	10/23/13 11:39	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	59.8	50-125	10/23/13 11:39

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

ANALYTICAL RESULTS

Project Location: UMASS Grayson Field House
Date Received: 10/15/2013
Field Sample #: GH-OUT-IAS-302
Sample ID: 13J0576-03
Sample Matrix: Indoor air
Sampled: 10/15/2013 13:16

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 635.8

Work Order: 13J0576

TO-10A/EPA 680 Modified

Analyte	Total µg Results	Total µg RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		ND	0.0016	1	10/23/13 12:08	CJM
Dichlorobiphenyls	0.0035	0.0010		0.0054	0.0016	1	10/23/13 12:08	CJM
Trichlorobiphenyls	0.0033	0.0010		0.0052	0.0016	1	10/23/13 12:08	CJM
Tetrachlorobiphenyls	0.0041	0.0020		0.0065	0.0031	1	10/23/13 12:08	CJM
Pentachlorobiphenyls	0.0030	0.0020		0.0048	0.0031	1	10/23/13 12:08	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0031	1	10/23/13 12:08	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/23/13 12:08	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0047	1	10/23/13 12:08	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0079	1	10/23/13 12:08	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0079	1	10/23/13 12:08	CJM
Total Polychlorinated biphenyls	0.014			0.022		1	10/23/13 12:08	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	80.7	50-125	10/23/13 12:08

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Sample Extraction Data

Prep Method: SW-846 3540C-TO-10A/EPA 680 Modified

Lab Number [Field ID]	Batch	Initial [Cartridge	Final [mL]	Date
13J0576-01 [GH-G6E-IAS-300]	B083048	1.00	1.00	10/16/13
13J0576-02 [GH-F2E-IAS-301]	B083048	1.00	1.00	10/16/13
13J0576-03 [GH-OUT-IAS-302]	B083048	1.00	1.00	10/16/13

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QUALITY CONTROL

PCB Homologues by GC/MS with Soxhlet Extraction - Quality Control

Analyte	Total µg Results	Total µg RL	ug/m3 Results	ug/m3 RL	Spike Level Total µg	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B083048 - SW-846 3540C											
Blank (B083048-BLK1)					Prepared: 10/16/13 Analyzed: 10/22/13						
Monochlorobiphenyls	ND	0.0010									
Dichlorobiphenyls	ND	0.0010									
Trichlorobiphenyls	ND	0.0010									
Tetrachlorobiphenyls	ND	0.0020									
Pentachlorobiphenyls	ND	0.0020									
Hexachlorobiphenyls	ND	0.0020									
Heptachlorobiphenyls	ND	0.0030									
Octachlorobiphenyls	ND	0.0030									
Nonachlorobiphenyls	ND	0.0050									
Decachlorobiphenyl	ND	0.0050									
Total Polychlorinated biphenyls	0.0										
Surrogate: Tetrachloro-m-xylene	*0.155*				*0.200*		*77.3*	*50-125*			
LCS (B083048-BS1)					Prepared: 10/16/13 Analyzed: 10/21/13						
Monochlorobiphenyls	0.19	0.0010			0.200		93.1	40-140			
Dichlorobiphenyls	0.19	0.0010			0.200		97.4	40-140			
Trichlorobiphenyls	0.20	0.0010			0.200		98.9	40-140			
Tetrachlorobiphenyls	0.40	0.0020			0.400		100	40-140			
Pentachlorobiphenyls	0.40	0.0020			0.400		100	40-140			
Hexachlorobiphenyls	0.38	0.0020			0.400		95.0	40-140			
Heptachlorobiphenyls	0.58	0.0030			0.600		95.9	40-140			
Octachlorobiphenyls	0.56	0.0030			0.600		93.3	40-140			
Nonachlorobiphenyls	1.0	0.0050			1.00		100	40-140			
Decachlorobiphenyl	0.94	0.0050			1.00		93.8	40-140			
Surrogate: Tetrachloro-m-xylene	*0.184*				*0.200*		*92.0*	*50-125*			
LCS Dup (B083048-BSD1)					Prepared: 10/16/13 Analyzed: 10/22/13						
Monochlorobiphenyls	0.13	0.0010			0.200		63.7	40-140	37.5	50	
Dichlorobiphenyls	0.14	0.0010			0.200		71.5	40-140	30.7	50	
Trichlorobiphenyls	0.16	0.0010			0.200		77.7	40-140	24.0	50	
Tetrachlorobiphenyls	0.32	0.0020			0.400		79.8	40-140	22.8	50	
Pentachlorobiphenyls	0.34	0.0020			0.400		84.4	40-140	17.1	50	
Hexachlorobiphenyls	0.32	0.0020			0.400		80.6	40-140	16.4	50	
Heptachlorobiphenyls	0.51	0.0030			0.600		84.2	40-140	13.0	50	
Octachlorobiphenyls	0.52	0.0030			0.600		87.1	40-140	6.87	50	
Nonachlorobiphenyls	0.96	0.0050			1.00		95.6	40-140	4.85	50	
Decachlorobiphenyl	0.91	0.0050			1.00		91.0	40-140	3.07	50	
Surrogate: Tetrachloro-m-xylene	*0.134*				*0.200*		*66.8*	*50-125*			

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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.

No results have been blank subtracted unless specified in the case narrative section.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
TO-10A/EPA 680 Modified in Air	
Total Polychlorinated biphenyls	AIHA

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

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ANALYTICAL LABORATORY
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Email: info@contestlabs.com
www.contestlabs.com
39 SPRUCE ST
EAST LONGMEADOW, MA 01028

AIR SAMPLE CHAIN OF CUSTODY RECORD

13J0576

Company Name: Woodard & Curran
Address: 40 Shattuck Rd Suite 110 Andover MA
Attention: J Hamel, G Franklin, R Rinard
Project Location: UMASS Grayson Field House
Sampled By: Kim Rinard

Telephone:( )
Project # 224824
Client PO #

DATA DELIVERY (check one):
☐FAX ☒EMAIL ☐WEBSITE CLIENT
Fax # :
Email:
Format: ☒EXCEL ☒PDF ☐ GIS KEY ☐ OTHER

Proposal Provided? (For Billing purposes)
☐ yes _____ proposal date

Field ID	Sample Description	Media	Lab #	Date Sampled Start Date Time 10/14	Stop Date Time 10/14	Total Minutes Sampled	Flow Rate M^3/Min. or L / Min.	Volume Liters or M^3	Matrix Code*	ANALYSIS REQUESTED: US EPA 680A / 3540C Soxh.				" Hg Initial pressure	Final pressure	Lab Receipt pressure	Summa Canister ID	Flow Control ID
	GH-GGE-IAS-300	PUF	-01	0900	1300	240	2.634	632.2 ~~634.8~~	IA PUF	✓							N/A	N/A
	GH-FZE-IAS-301	PUF	-02	0905	1306	241	2.633	634.6	IA PUF	✓								
	GH-OUT-IAS-302	PUF	-03	0915	1316	241	2.638	635.8	IA PUF	✓								

10/14/13 KAR

Please fill out completely, sign, date and retain the yellow copy for your record.
Summa canisters and flow controllers must be returned within 14 days of receipt or rental fee will apply.
Summa canisters will be retained for a minimum of 14 days after sampling date prior to cleaning.

Laboratory Comments: ① RL ≤ 0.05 ug/m³ ② G/F Elevator Lobby IAS
③ 5 DAY TAT 2.0 10/15/13 1600

CLIENT COMMENTS:
④ Collected by TO-10A, Extract by 3540C Soxhlet
Analyze by 680A PCB's

Relinquished by: (signature)	Date/Time:
KAR - W&C Storage Refrigerator	10/14/13 1630
Received by: (signature)	Date/Time:
Relinquished by: (signature)	Date/Time:
	10/15/13 1115
Received by: (signature)	Date/Time:
10/15/13	11 15

Turnaround **
☐ 7-Day
☐ 10-Day
☒ Other 5 DAY
RUSH *
☐ *24-Hr ☐ *48-Hr
☐ *72-Hr ☐ *4-Day
*Approval Required

Special Requirements
Regulations:
Data Enhancement/RCP? ☐ Y ☐ N
Enhanced Data Package ☐ Y ☐ N
(Surchage Applies)
Required Detection Limits: ≤ 0.05 ug/m³
Other:

***Matrix Code:**
SG= SOIL GAS
IA= INDOOR AIR
AMB=AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = other

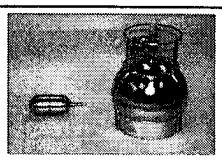
****Media Codes:**
S=summa can
TB=tedlar bag
P=PUF
T=tube
F= filter
C=cassette
O = Other

** 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.

AIHA, NELAC & WBE/DBE Certified

REC: 10/15/13 16:00

Page 11 of 13 13J0576_1 Contest_Final 10 25 13 1602 10/25/13 16:02:12



www.contestlabs.com

con-test® ANALYTICAL LABORATORY

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

AIR Only Receipt Checklist

CLIENT NAME: Woodard & Curran **RECEIVED BY:** CEC **DATE:** 10/15/13

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

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) Are there any samples "On Hold"? Yes (No) Stored where:

5) Are there any RUSH or SHORT HOLDING TIME samples? (Yes) No

Who was notified _____ Date _____ Time _____

6) Location where samples are stored: 19

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

7) Temperature °C by Temp blank 2.0° **Temperature °C by Temp gun** _____

Containers received at Con-Test

		# of Containers	Types (Size, Duration)
Summa Cans (TO-14/TO-15/APH)			
Tedlar Bags			
TO-17 Tubes			
Regulators			
Restrictors			
Hg/Hopcalite Tube (NIOSH 6009)			
(TO-4A/ TO-10A/TO-13) PUFs		3	
PCB Florisil Tubes (NIOSH 5503)			
Air cassette			
PM 2.5/PM 10			
TO-11A Cartridges			
Other			

Unused Summas/PUF Media:

Unused Regulators:

1) Was all media (used & unused) checked into the WASP?

2) Were all returned summa cans, Restrictors & Regulators and PUF's documented as returned in the Air Lab Inbound/Outbound Excel Spreadsheet?

Laboratory Comments:

Login Sample Receipt Checklist
(Rejection Criteria Listing - Using Sample Acceptance Policy)
Any False statement will be brought to the attention of Client

Question	Answer (True/False) T/F/NA	Comment
1) The cooler's custody seal, if present, is intact.	NA	
2) The cooler or samples do not appear to have been compromised or tampered with.	T	
3) Samples were received on ice.	T	
4) Cooler Temperature is acceptable.	T	
5) Cooler Temperature is recorded.	T	
6) COC is filled out in ink and legible.	T	
7) COC is filled out with all pertinent information.	T	
8) Field Sampler's name present on COC.	T	
9) There are no discrepancies between the sample IDs on the container and the COC.	T	
10) Samples are received within Holding Time.	T	
11) Sample containers have legible labels.	T	
12) Containers are not broken or leaking.	T	
13) Air Cassettes are not broken/open.	T	
14) Sample collection date/times are provided.	T	
15) Appropriate sample containers are used.	T	
16) Proper collection media used.	T	
17) No headspace sample bottles are completely filled.	NA	
18) There is sufficient volume for all requsted analyses, including any requested MS/MSDs.	NA	
19) Trip blanks provided if applicable.	NA	
20) VOA sample vials do not have head space or bubble is <6mm (1/4") in diameter.	NA	
21) Samples do not require splitting or compositing.	T	

Who notified of False statements? **Date/Time:**
Log-In Technician Initials: CEC **Date/Time:** 10/15/13

Doc #278 Rev. 3 August 2013

UMASS GRAYSON/FIELD - PROJECT SUMMARY

ConTest Analytical Laboratory Job Numbers: 12G0792, 12G0797, 12G0863, 12G0979, 12G0981, 12G1026, 12G1033, 12G1034, 12H0144, & 12H0713

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 0.6, 3.8, 5.4, 5.5, 22.5, and 22.6 degrees Celsius. Although many samples were not received within 2.0 to 6.0 degrees Celsius, they were received at the laboratory on the day of sample collection and 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.

PCB field blank sample GH-VBQ-127 (12G0863-01) was ND for all target analytes. No qualifications will be applied.

The PCB matrix spike/matrix spike duplicate (MS/MSD) performed on samples GH-VBC-119 (12G0792-01), GH-VBB-128 (12G0979-01), GH-VBC-146 (12G0981-04), and GH-VBC-154 (12G1033-02) met acceptance criteria (40%-140%) with the following exceptions:

LAB ID	SAMPLE ID	PCB-1016 (%) MS/MS/MSD/MSD	PCB-1260 (%) MS/MS/MSD/MSD	QUALIFIER
12G0792-01	GH-VBC-119	OK/184/OK/188	OK/OK/OK/OK	None, PCB-1016 ND
12G0981-04	GH-VBC-146	OK/OK/OK/142	OK/OK/OK/OK	None, PCB-1016 ND
12G1033-02	GH-VBC-154	OK/169/OK/149	374/414/318/348	None, PCB-1254 interference

The PCB laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) met acceptance criteria. No qualifications will be applied.

PCB field duplicate samples GH-VBC-121 (12G0792-02)/GH-VBCD-127 (12G0792-05) and GH-VBC-154 (12G1033-02)/GH-VBCD-155 (12G1033-03) met acceptance criteria. No qualifications will be applied.

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

LAB ID	SAMPLE ID	PCB	RPD	QUALIFIER
12G1033-02	GH-VBC-154	1254	27.5	J

According to the case narrative, for Aroclor 1254 in sample GH-VBC-146 (12G0981-04); "Sample contains two incompletely resolved Aroclors. Aroclor with the closest matching pattern is reported." No qualifications will be applied.

Some samples were analyzed at dilutions due to the high concentration of PCBs present in the samples and/or due to sample matrix. Elevated quantitation limits are reported in these samples as a result of the dilutions performed.

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

Gloria J. Switalski:
President

Date: 10/5/2012

Project # 224824

UMASS GRAYSON/FIELD - PROJECT SUMMARY

ConTest Analytical Laboratory Job Numbers: 13E0477, 13E0681, 13E1083, 13F0700, 13F0752, 13F1036, 13G0140, 13G0635, 13G0722 & 13G0803

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 2.8, 3.1, 3.3, 4.1, 4.4, 4.7, 5.8, 5.9, 19.8, and 22.6 degrees Celsius. Although some samples were not received within 2.0 to 6.0 degrees Celsius, they were received at the laboratory on the day of sample collection and 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.

PCB field blank samples, GH-VBSQ-176 (13E0477-06), GH-VBCQ-191 (13F0700-02), and GH-VBBQ-210 (13G0635-02), were ND for all target analytes. No qualifications will be applied.

The PCB matrix spike/matrix spike duplicate (MS/MSD) performed on samples GH-VBC-178 (13E0681-01), GH-VBC-189 (13F0700-01), GH-VBC-193 (13F1036-01), GH-VBC-206 (13G0140-01), and GH-VBB-209 (13G0635-01) met acceptance criteria (40%-140%) with the following exceptions:

LAB ID	SAMPLE ID	PCB-1016 (%) MS/MS/MSD/MSD	PCB-1260 (%) MS/MS/MSD/MSD	QUALIFIER
13F1036-01	GH-VBC-193	OK/OK/OK/OK	OK/157/OK/OK	None, PCB-1260 ND & only 1 out
13G0140-01	GH-VBC-206	OK/162/OK/166	252/418/245/335	None, PCB-1254 interference
13G0635-01	GH-VBB-209	OK/OK/OK/147	OK/OK/151/145	None, sample ND

The PCB laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) met acceptance criteria. No qualifications will be applied.

PCB field duplicate samples GH-VBS-173 (13E0477-03)/GH-VBSD-177 (13E0477-07) and GH-VBC-189 (13F0700-01)/GH-VBCD-192 (13F0700-03) met acceptance criteria. No qualifications will be applied.

The relative percent difference (RPD) between the column results for all detected PCBs met acceptance criteria. No qualifications will be applied.

According to the case narrative, for Aroclor 1254 in sample GH-VBC-191 (13F0752-01); "Sample contains two incompletely resolved Aroclors. Aroclor with the closest matching pattern is reported." No qualifications will be applied.

One sample was analyzed at dilution due to the high concentration of PCBs present in the samples and/or due to sample matrix. Elevated quantitation limits are reported in this sample as a result of the dilution performed.

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

Gloria J. Switalski:
President

Date: 9/26/2013

GRAYSON/FIELD POST ABATEMENT AIR MONITORING - PROJECT SUMMARY

Con-Test Analytical Laboratory Job Number: 13J0576

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 2.0 degrees Celsius. No qualifications will be applied.

PCBs:

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

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

The PCB homolog method blank was non-detect (ND) for all target analytes. No qualifications will be applied.

No PCB homolog field blank samples were submitted with this analytical package. No qualifications will be applied.

No PCB homolog matrix spike/matrix spike duplicate (MS/MSD) was performed on a sample from this analytical package since these were air samples. No qualifications will be applied.

The PCB homolog laboratory control sample/laboratory control sample duplicate (LCS/LCSD) met acceptance criteria. No qualifications will be applied.

No PCB homolog field duplicate samples were submitted with this analytical package. No qualifications will be applied.

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

Gloria J. Switalski:
President

Date: 10/28/2013

Project # 224824

APPENDIX E: WASTE DISPOSAL DOCUMENTS

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

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: MAD000844670
2. Page 1 of 1
3. Emergency Response Phone: 800-698-1865
4. Manifest Tracking Number: 010065837 JJK

5. Generator's Name and Mailing Address
University of Massachusetts
EHS - 117 Draper Hall - 40 Campus Center Way
Amherst MA 01003
Generator's Phone: 413 545-2682

Generator's Site Address (if different than mailing address)
Grayson House / Field House
Orchard Hill Drive
Amherst MA 01003

6. Transporter 1 Company Name: New England Disposal Technologies, Inc.
U.S. EPA ID Number: MAC300008059

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Wayne Disposal, Inc.
49350 N. I-94 Service Drive
Belleville MI 48111
Facility's Phone: 800 592-5489
U.S. EPA ID Number: MID048090633

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. RQ UN3432, Polychlorinated biphenyls, solid 9, PGII	001	CM	Est 14500	K	MA02	PCB1	
	2.							
	3.							
	4.							

14. Special Handling Instructions and Additional Information: 1)H120005WDI PCB Caulking/Window Casings ERG#171

Out of Service Date: 8/10/12

Job# 09-13564

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.
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/Offeror's Printed/Typed Name: DENNIS D. GRAYSON
Signature: [signature]
Month Day Year: 08/13/12

16. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit:
Transporter signature (for exports only):
Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Carl Henkel
Signature: [signature]
Month Day Year: 08/13/12
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. PCB 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: Tonya Mulvar
Signature: [signature]
Month Day Year: 08/14/12

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

TRANSPORTER'S COPY

Wayne Disposal, Inc.

49350 North I-94 Service Drive, Belleville, Michigan 48111

Receipt

NEW ENGLAND DISPOSAL TECH., INC.
83 GILMORE DRIVE
SUTTON, MA 01590

Receipt ID: 1220340
EQ Account #: 2576
Manifest / BOL: 010065837JJK
Transporter: NEDT
Date: 08/14/2012
Time In: 10:41 AM
Time Out: 11:46 AM

Line	Description Generator	Qty. Unit
1 - A	H120005WDI - PCB DEBRIS	30.000 YARD
	Hazardous Surcharge Cubic Yard-Bulk	30.000 YARD
	MAD000844670 UNIVERSITY OF MASSACHUSETTS	
	Gross: 50,620 **Tare:** 41,880 **Net:** 8,740	

NO SALVAGING ON PREMISES

CERTIFICATE OF DISPOSAL

FOR MANIFESTED PCB WASTE

This certificate is to verify the wastes identified as PCB S.I.J

and specified on Manifest # 010065837 JJK, Line Item 1 has been landfilled on

August 19, 2012 in accordance with all local, state and federal regulations by:

Wayne Disposal, Inc.

(EPA I.D. # MID048090633)

49350 N. I-94 Service Drive, Belleville, Michigan 48111
Telephone: 1-800-KWALITY (592-5489)
Fax: 1-800-KWALFAX (592-5329)

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 are acting under my direct instructions made the verification that this information is true accurate and complete.

Authorized Signature: Mark Wall

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. I-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

Form # REC-FM-030-BEL *The electronic version of this document is the controlled version. Each user is responsible for ensuring that any document being used is the current version.* 2/22/11

CERTIFICATE OF DISPOSAL

FOR MANIFESTED PCB WASTE

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 010233714JJK, Line Item 1 has been landfilled on

8/12, 2013 in accordance with all local, state and federal regulations by:

Wayne Disposal, Inc.

(EPA I.D. # MID048090633)

49350 N. I-94 Service Drive, Belleville, Michigan 48111
Telephone: 1-800-KWALITY (592-5489)
Fax: 1-800-KWALFAX (592-5329)

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 are acting under my direct instructions made the verification that this information is true accurate and complete.

Authorized Signature: _____

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

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: MAD000344670
2. Page 1 of 1
3. Emergency Response Phone: 860-563-5700
4. Manifest Tracking Number: 010233714 JJK

5. Generator's Name and Mailing Address: University of Massachusetts, EHS/117 Draper Hall, 10 Campus Center Way, Amherst MA 01003 — Att: Theresa Wolejko
Generator's Phone: 413 545-2692
Generator's Site Address (if different than mailing address): University of Massachusetts, Grayson Field Halls, 161-171 Orchard Hill, Amherst MA 01003

6. Transporter 1 Company Name: RED Technologies, LLC. — U.S. EPA ID Number: CTR000505958

7. Transporter 2 Company Name: Price Trucking Inc. — U.S. EPA ID Number: NYD046765574

8. Designated Facility Name and Site Address: Wayne Disposal, Inc. Site 2 Landfill, 49350 N I-94 Service Drive, Belleville MI 48111 — U.S. EPA ID Number: MID042090833
Facility's Phone: 800 5925483

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. RQ UN3432, Polychlorinated biphenyls, solid 9, PGII	.001	CM	2,727 ~~6,000~~	K ~~P~~	MA01 pcb1
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information: 1)(S) G131198WDI PCB Debris ERG#171

Weight in Section 11 is Estimated SSD: 7/15/13 RED#3074

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. 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/Offeror's Printed/Typed Name: Michael Grover — Signature: [signature] — Month 8 Day 7 Year 13

16. International Shipments: ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: MVW
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Mark Andrade Jr. — Signature: Mark Andrade Jr. — Month 08 Day 07 Year 13
Transporter 2 Printed/Typed Name: Monte Miles — Signature: Monte Miles — Month 08 Day 08 Year 13

18. Discrepancy
18a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
OK to correct sections 13 & 14 per Louise Cadavid@Redtech. - TC 8/12/13
18b. Alternate Facility (or Generator) — Manifest Reference Number: — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. pcb 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: David Tarnacki — Signature: [signature] — Month 8 Day 12 Year 13

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

APPENDIX F: MONITORING AND MAINTENANCE IMPLEMENTATION PLAN

MONITORING AND MAINTENANCE IMPLEMENTATION PLAN

University of Massachusetts

Grayson and Field Houses

Amherst, Massachusetts

224824

University of Massachusetts

January 2014

woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

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1. INTRODUCTION

This Monitoring and Maintenance Implementation Plan (MMIP) has been prepared by Woodard & Curran on behalf of the University of Massachusetts (UMass) pursuant to Condition 17 of the United States Environmental Protection Agency's (EPA) April 30, 2012 PCB Decontamination and Disposal Approval issued under 40 CFR 761.61(c) and 761.79(h) for the Grayson and Field Houses. This plan presents the monitoring and maintenance activities that will be conducted to assess the long-term effectiveness of the encapsulants applied, as an interim measure, to residual concentrations of polychlorinated biphenyls (PCBs) detected in interior and exterior masonry at certain areas of the Grayson and Field Houses in the Orchard Hill Residential Complex on the UMass Campus in Amherst, Massachusetts (see Figure 1-1).

1.1 BACKGROUND

The Grayson and Field Houses, originally constructed in 1964, are residential dormitories for undergraduate students constructed as a single structure with a stairway separating the two buildings. The buildings are seven stories high with student rooms on the second through seventh floors and common areas and meeting rooms on the first floors. A window and door replacement project was conducted in two phases during the summers of 2012 and 2013. As described in the Notification[1], ≥ 50 ppm PCB containing caulking was detected in some of the caulking around select windows and doors.

1.2 REMEDIATION SUMMARY

The PCB remediation activities performed at Grayson and Field Houses are described in detail in the PCB Remediation Completion Report, which is being submitted to EPA concurrently with this MMIP. In summary, the activities performed to remediate ≥ 50 ppm PCB containing caulking and adjacent building materials included the following activities:

- Removal and off-site disposal of ≥ 50 ppm PCB caulking, glazing sealants, and backing materials in direct contact with the caulking as ≥ 50 ppm PCB waste;
- Removal and off-site disposal of window and door frames and components (including glass) in direct contact with ≥ 50 ppm PCB caulking and glazing sealants as ≥ 50 ppm PCB waste;
- Removal and off-site disposal of a total of 7.4 tons of bulk PCB waste (caulking, window/door frames and components, poly sheeting, etc.) contained in two roll-off containers. The containers were transported for off-site disposal as ≥ 50 ppm PCB waste at Environmental Quality's Wayne Disposal Landfill in Belleville, Michigan;
- Encapsulation of building materials scheduled to remain in place containing PCBs at concentrations above applicable high or low occupancy clean up levels using a combination of liquid coatings and physical barriers (e.g., replacement window frames); and
- A deed notice will be recorded identifying the encapsulated areas and areas restricted to low occupancy usage.

[1] The Notification was prepared by Woodard & Curran on behalf of UMass to satisfy the requirements under 40 CFR 761.61(c) and 761.79(h). Information was submitted dated January 2012 (PCB Remediation Plan); January 30, 2012 (Remediation Plan Addendum/Clarification); February 6, 2012 (Response to Comments); April 24, 2012 (clarification on stairwell verification sampling); April 27, 2012 (Woodard & Curran telephone discussion with EPA on encapsulation and Webster House verification sampling data); and July 12, 2013 (PCB Remediation Plan Modification Request). These submittals are referred to as the "Notification".

1.3 PCB BULK PRODUCT WASTE REMOVALS AND VERIFICATION

Following the removal of the ≥ 50 ppm PCB caulking and associated components, bulk verification samples were collected from building materials formerly in direct contact with and away from the caulked joints that contained PCBs at concentrations ≥ 50 ppm to determine whether or not PCBs were present at concentrations above the applicable cleanup levels. Samples were collected from masonry surfaces at the frequencies described in the PCB Remediation Plan. The locations and analytical results of the verification sampling are summarized in Table 1-1.

As indicated on Table 1-1, analytical results indicated that PCBs were reported as either non-detect or ≤ 1 ppm in 23 of 27 samples collected from building materials formerly in direct contact with ≥ 50 ppm caulked joints. Total PCBs were reported at concentrations > 1 ppm in the following samples:

- Elevator Hall Windows – PCBs were reported at a concentration of 1.8 ppm in the sample collected from the sixth floor CMU block materials formerly in direct contact with the interior window caulking on the north side of the Grayson building;
- Narrow Stairwell Windows – PCBs were reported at a concentration of 1.6 ppm in the sample collected from the sixth floor brick window jamb materials formerly in direct contact with the exterior window caulking on the west side of the northern stairwell (Grayson House);
- Stairwell Windows – PCBs were reported at a concentration of 1.8 ppm in the sample collected from the concrete sill materials formerly in direct contact with interior window caulking on the stairwell landing between the fourth and fifth floors in the northern stairwell (Grayson House);
- Stairwell Windows – PCBs were reported at a concentration of 2.2 ppm in the sample collected from the brick window jamb materials formerly in direct contact with the interior window caulking on the stairwell landing between the second and third floors of the southern stairwell (Field House); and
- Exterior Concrete Spandrels – PCBs were assumed to be present in concrete materials formerly in direct contact with exterior expansion joint caulking along the concrete to concrete expansion joints on the north and south elevations (four locations located between the Elevator Hall Windows).

Based on the results above, corresponding samples collected from materials away from the joints were analyzed for PCBs. Analytical results indicated that PCBs were either non-detect (one sample at < 0.095 ppm) or present at concentrations < 1 ppm (0.14, 0.18, and 0.7 ppm) in the samples collected from interior locations. Analytical results from the four samples collected from the concrete spandrel beams indicated that PCBs were below the low occupancy use criteria of ≤ 25 ppm (at a distance of three inches from the joint) with reported concentrations of 1.41, 1.8, 3.2, and 8.3 ppm.

Bulk verification samples collected from building materials remaining in place adjacent to the first floor storefront windows (Type N-02) met cleanup levels in all samples as described in the PCB Remediation Completion Report. As such, no encapsulation was performed at these locations, and the monitoring or maintenance of these windows is not included in the scope of this MMIP.

1.4 ENCAPSULATION/BARRIER INSTALLATION AREAS AND BASELINE SAMPLING

Due to the overall project schedule, following removal of the windows and the collection of the building material verification samples, the epoxy coating was immediately applied to all former direct contact surfaces to allow for the installation of the replacement windows and the sheet metal cladding as quickly as possible (i.e., two coats of epoxy coating were installed on all building materials formerly in direct contact with the caulked joints and to the distances specified in the PCB remediation plan without consideration to the results of the bulk verification sampling). This approach has removed the source material (caulking) and is utilizing a physical barrier approach (encapsulation) to eliminate the direct contact exposure pathway and migration pathways of PCBs remaining in the building materials.

Based on the presence of PCBs in masonry materials as described in Section 1.2 above, building materials in select areas are being managed in-place in accordance with the approved Remediation Plan and this MMIP.

After the coatings were applied and allowed to cure, baseline surface wipe samples were collected from the epoxy-encapsulated surfaces within the joint at the same locations sampled during the bulk verification sample phase. Based on the overall project schedule, wipe samples were collected immediately following cure of the epoxy to allow for the installation of the windows to be conducted. If the bulk sample results were subsequently reported with PCBs below applicable cleanup levels, the epoxy surface wipe sample was not analyzed.

Epoxy surface wipe samples were analyzed to determine the effectiveness of the encapsulant at a total of eight locations: at four locations where PCBs were reported above applicable cleanup levels in the bulk samples as described in Section 1.2; and, at four exterior locations where PCBs were assumed to be present above applicable cleanup levels as described in Section 1.2.

One baseline wipe sample was collected from the Grayson House sixth floor elevator hall area following application of the Sikagard 550W to the interior CMU block beyond the window joint. The location of the wipe sample was selected using a random number generator to determine the location along the joint and then the distance from the joint at which the wipe was centered. In accordance with Section 3.3.3 of the Remediation Plan, following collection of the verification wipe samples, the sheet metal flashing was installed over the adjacent materials, as specified.

Results of the baseline wipe sampling are summarized on Table 1-2. As indicated on Table 1-2, total PCBs were reported as non-detect (< 0.20 ug/100cm^2) for PCBs in all 8 of the wipe samples collected from the epoxy coated surfaces and submitted for laboratory analysis. Analytical results from the interior CMU block wipe sample indicated that PCBs were non-detect (< 0.20 µg/100cm^2).

1.5 POST-ABATEMENT AIR MONITORING

Following the completion of PCB remediation activities, indoor air samples were collected from two elevator lobbies (one in Grayson House and one in Field House) to monitor PCB concentrations in indoor air in accordance with the approved Plan.

Analytical results from the indoor air sample collected from the sixth floor of the Grayson House were reported non-detect for total PCB Homologs, as PCBs were not detected above the laboratory's minimum reporting limit of 8 nanograms per cubic meter (ng/^{3}). Total PCBs were detected at a concentration of 6.7 ng/m^3 in the indoor air sample collected from the second floor of the Field House, below EPA's published guidance indoor air levels for schools (September 2009) of 450 ng/m^3 for adults and 600 ng/m^3 for children 15 to 19 years of age. The reported concentrations are also well below the threshold level of 300 ng/m^3 specified in the Approval. Of note, a PCB concentration of 22.2 ng/m^3 was detected in the ambient outdoor background sample. A summary of the results is presented in Table 1-3.

2. MONITORING AND MAINTENANCE IMPLEMENTATION PLAN

This MMIP has been developed to monitor the effectiveness of the remedy for the interior and exterior materials that contain PCBs at concentrations above the high occupancy use criteria of 1 ppm remaining in place beneath the encapsulating barriers. These areas are:

- Elevator Hall CMU Block Walls (Type D windows) – CMU block walls on the sixth floors of the Grayson and Field House have been encapsulated as follows:
    - CMU block materials formerly in direct contact with the caulked joint (i.e., header surfaces) are encapsulated using two coats of Sikagard 62 epoxy coating and the replacement window frames/sheet metal flashing;
    - CMU block materials above the upper horizontal joints to the first 90-degree angle (i.e., to the ceiling at a distance of approximately 15 inches) are encapsulated using two coats of Sikagard 550W elastomeric acrylic coating. (Note: Sikagard 550W was applied to the CMU block walls of all elevator lobbies as part of the renovation project).
- Grayson and Field House Concrete Spandrel Beams (exterior of building between Type D windows) – Concrete spandrel beam materials on the north and south elevations and located in line with the Elevator Hall Windows formerly in direct contact with the concrete expansion joint caulking and to a distance of three inches in either direction have been encapsulated using two coats of Sikagard 62 epoxy coating.
- Grayson House Exterior Narrow Stairwell Window Jambs (Type G, H, and I windows) – Brick materials on the jambs of the northern stairwell west elevation narrow stairwell windows on the sixth and seventh floors formerly in direct contact with the exterior perimeter window caulking and to the end of the window recess (the first 90-degree angle) have been encapsulated using two coats of Sikagard 62 epoxy coating and the replacement window frames/sheet metal flashing.
- Grayson House Interior Stairwell Concrete Sills (Type J windows) – Concrete window sill and header materials at the northern stairwell landings from the second through seventh floors formerly in direct contact with the interior perimeter window caulking and to the first 90-degree angle (approximately two inches) have been encapsulated using two coats of Sikagard 62 epoxy coating and the replacement window frames.
- Field House Interior Stairwell Brick Jambs (Type J windows) – Brick window jamb materials at the southern stairwell landings from the second floor through seventh floors formerly in direct contact with the interior perimeter window caulking and to a distance of two inches (i.e., the extent of the replacement window frames) have been encapsulated using two coats of Sikagard 62 epoxy coating and the replacement window frames.

The extent of these areas is depicted on the attached Figure 2-1.

2.1 INSPECTION AND SAMPLING

The following describes the inspections, sampling and reporting to be conducted for these areas:

- Visual inspections of the encapsulated surfaces will be conducted to look for signs of encapsulant deterioration and/or signs of weathering or disturbance of metal window frames and sheet metal barriers.
- Surface wipe samples of the encapsulated concrete spandrel materials on the exterior side of the Elevator Hall Windows (Type D) will be collected to evaluate the concentration of PCBs present at the surface. A total of two samples (one from each building) will be collected. The wipe samples will be collected from the

portion of the joints between the first and second floors due to access limitations at higher locations (a lift would be required) as follows:

  - The specific joint on each building (north or south elevation) will be randomly selected; and
  - The side of the joint (right or left) will be randomly selected.

- Surface wipe samples of the encapsulated interior CMU block walls on the sixth floor of the Grayson and Field Houses elevator hall areas not located beneath the Type D window frames will be collected to evaluate the concentration of PCBs present at the surface. One wipe sample will be collected as follows:
  - The elevator lobby (either Grayson or Field) will be randomly selected;
  - The location of the wipe sample on the joint will be selected by randomly selecting a number between 0 and 12 (representing the upper 12 foot long horizontal joint) with the zero point assigned to the left end of the joint and proceeding to the right (i.e., 12 would be assigned to the right end of the joint); and
  - The distance of the wipe sample from the window frame will then be selected by randomly selecting a number from zero to 15 (representing the distance from the window to the ceiling in inches).
- No surface wipe samples will be collected from encapsulated surfaces formerly in direct contact with caulking at the Type G, H, and I Narrow Stairwell Windows or the Type J Stairwell Windows, as all encapsulated surfaces at these window types are located under the replacement window frames or sheet metal cladding. Direct contact access to these surfaces is prohibited by a secondary barrier (i.e., new windows and/or metal cladding installed over the encapsulant).
- No indoor air samples will be conducted as part of the long term monitoring and maintenance activities, as suspected source materials have been removed and indoor air samples collected in October 2013, after remediation activities were completed at the Grayson and Field Houses, were reported non-detect < 8.0 ng/m^3) and 6.7 ng/^{3} for total PCB Homologs.

The initial long term monitoring and sampling activities at the Grayson and Field Houses will be conducted following approval of this Plan and likely to occur in the summer months to correspond with the campus-wide long term monitoring program currently implemented by UMass. A recommendation for subsequent rounds of monitoring will be based on these results and included in the report submittal.

2.2 ACTION LEVELS AND CORRECTIVE MEASURES

Based on a review of the products' technical specifications, it is not anticipated the coatings will require any routine maintenance activities. A combination of visual inspections and laboratory sample results will be used to verify the continued effectiveness of the applied barriers. In areas where damage or significant deterioration of the coatings, window frames, or sheet metal cladding is observed, the barrier will be repaired or replaced. Upon receipt of the laboratory results after each monitoring round, the data will be compared to the following action levels to determine whether additional monitoring or corrective measures are needed:

- If ≤ 1 µg/100 cm^2 – no additional action; long term maintenance and monitoring to continue in accordance with this plan;
- In areas where significant encapsulant deterioration is observed or PCBs are reported at concentrations ≥ 10 µg/100 cm^2, the following actions will be taken:
  - An additional coat of the encapsulating product will be applied and follow-up wipe samples will be collected. If analytical results indicate that PCBs are still present at concentrations ≥ 10 µg/100

cm^2 after the prescribed re-application, UMass will evaluate alternative solutions in conjunction with EPA.

- If > 1 and < 10 µg/100 cm^2 – continued monitoring will occur to establish patterns or trends in concentration. If increasing concentrations are determined, then additional coatings may be applied and/or alternative solutions will be discussed with EPA.

These levels are considered representative and protective for this project given that the occupancy and use of these areas are transitory in nature (e.g., elevator lobby and stairwells) or located on the exterior side of the upper levels of the building. All analytical results and corrective measures will be reported to EPA in the scheduled report.

3. TRAINING AND COMMUNICATIONS

It is not anticipated that any workers or building occupants will come into prolonged or routine contact with the encapsulated areas. The only activities that may encounter the encapsulants are planned maintenance activities. It is not anticipated that workers performing maintenance activities would require any special training or need to take extra precautions due to the presence of the coatings and sheet metal cladding; however, UMass will conduct general awareness training for facility and maintenance personnel to ensure they are aware of the importance of maintaining the encapsulant.

For any non-routine projects that involve work that could encounter the encapsulant (e.g., window replacement or repair projects [although, this is unlikely given that all windows were replaced as part of the project]), relevant and appropriate worker training requirements and procedures specific to the task will be developed and implemented. Current UMass procedures dictate that all work that impacts building materials must undergo an “all hazard review”. This review would indicate that portions of building materials at the Field and Grayson Houses have been flagged as a having residual PCB containing material under encapsulants/barriers. As such, any work that will disturb these materials will be conducted by appropriately trained workers following the necessary work procedures for containments (polyethylene sheeting, etc.) and disposal. These activities will be reported to EPA in the monitoring report. In addition, UMass has included, as a component of their annual “Right-To-Know” and Asbestos Training Program, a PCBs in materials awareness session, including the encapsulated areas on the campus.

4. REPORTING

The activities completed as part of this plan will be documented and submitted to EPA as part of the campus-wide long term monitoring report submitted annually by UMass. This report will document the following:

- Results of the visual inspections;
- Results of the sampling and analyses;
- Comparisons to action levels and recommendations for corrective measures;
- Any corrective measures implemented;
- Any non-routine major projects conducted at the building that encountered the encapsulated area, and the training and protective measures that were implemented;
- Any proposed modifications to the monitoring and maintenance program (e.g., based on the sampling results or discussions with EPA, the frequency of the program may be modified); and
- A statement on the continued effectiveness of the encapsulants and/or secondary barriers.

It is possible that results of long term monitoring may warrant or require modifications to this plan. In the event that a modification to the MMIP is necessary, such an amendment will be proposed to EPA for approval as part of the scheduled report submittal.

Table 1-1
Summary of Verification Bulk Sample Results
Grayson and Field Houses
UMass Amherst

Window Type	Material	Building	Floor	Verification Bulk Samples[1]							
				Direct Contact				Adjacent Materials			
				Distance to Joint (inches)	Sample Date	Sample ID	Total PCBs (ppm)	Distance to Joint (inches)	Sample Date	Sample ID	Total PCBs (ppm)
Type N-02 West Elevation Storefront Windows	Exterior Concrete Foundation	Field	1st	0.0-0.5	5/30/2013	GH-VBC-182	< 0.098	NR	NR	NR	NR
		Grayson	1st	0.0-0.5	6/27/2013	GH-VBC-193	**0.16**	NR	NR	NR	NR
				0.0-0.5	6/27/2013	GH-VBC-195	**0.24**	NR	NR	NR	NR
	Exterior Vertical Slate	Field	1st	0.0-0.5	5/30/2013	GH-VBS-184	< 0.099	NR	NR	NR	NR
		Grayson	1st	0.0-0.5	6/27/2013	GH-VBS-197	< 0.099	NR	NR	NR	NR
	Stucco Ceiling	Grayson	1st	NR	NR	NR	NR	5	8/23/2011	GH-CBC-075	**0.15**
				NR	NR	NR	NR	5	5/14/2013	GH-VBS-175	**0.1**
				NR	NR	NR	NR	5	5/14/2013	GH-VBS-174	< 0.099
		Field	1st	NR	NR	NR	NR	5	5/14/2013	GH-VBS-173	< 0.096
				NR	NR	NR	NR	5	5/14/2013	GH-VBS-172	**0.11**
				NR	NR	NR	NR	5	5/14/2013	GH-VBS-171	< 0.097
Type N-02 East Elevation Storefront Windows	Interior CMU Block	Field	1st	0.0-0.5	5/17/2013	GH-VBC-178	< 0.10	NR	NR	NR	NR
Type D Elevator Hall Window	Interior CMU Block	Grayson	3rd	0.0-0.5	7/24/2012	GH-VBC-123	**0.16**	NR	NR	NR	NR
			4th	0.0-0.5	6/27/2013	GH-VBC-199	< 0.096	NR	NR	NR	NR
			6th	0.0-0.5	7/24/2012	GH-VBC-125	**1.8**	15	7/24/2012	GH-VBC-126	0.7
		Field	2nd	0.0-0.5	7/24/2012	GH-VBC-121	**0.19**	NR	NR	NR	NR
			5th	0.0-0.5	6/19/2013	GH-VBC-189	< 0.10	NR	NR	NR	NR
			7th	0.0-0.5	7/24/2012	GH-VBC-119	**0.24**	NR	NR	NR	NR
	Exterior Concrete Sill Expansion Joint	Grayson	2nd	0.0-0.5	NR	NR	NR	3	7/31/2012	GH-VBC-153	**3.2** [2]
			6th	0.0-0.5	NR	NR	NR	3	6/27/2013	GH-VBC-201	**1.41** [2]
		Field	6th	0.0-0.5	NR	NR	NR	3	6/21/2013	GH-VBC-191	**8.3** [2]
			2nd	0.0-0.5	NR	NR	NR	3	7/31/2012	GH-VBC-154	**1.8** [2] **J**
Types G,H, I Narrow Stairwell Windows	Exterior Brick	Grayson West Only	2nd	0.0 - 0.5	7/2/2013	GH-VBC-208	< 0.10	NR	NR	NR	NR
			5th	0.0 - 0.5	7/2/2013	GH-VBC-207	< 0.098	NR	NR	NR	NR
			6th	0.0 - 0.5	7/2/2013	GH-VBC-206	**1.6**	3	7/16/2013	GH-VBB-209	< 0.095
Type J Stairwell Windows	Interior Concrete Sill	North	1st/2nd	0.0-0.5	7/27/2012	GH-VBC-129	**0.31**	NR	NR	NR	NR
			4th/5th	0.0-0.5	7/27/2012	GH-VBC-133	**1.8**	2	7/27/2012	GH-VBC-132	0.14
		Center	5th/6th	0.0-0.5	7/27/2012	GH-VBC-138	**0.18**	NR	NR	NR	NR
			3rd/4th	0.0-0.5	7/27/2012	GH-VBC-141	**0.43**	NR	NR	NR	NR
		South	2nd/3rd	0.0-0.5	7/27/2012	GH-VBC-145	**0.16**	NR	NR	NR	NR
			1st/2nd	0.0-0.5	7/27/2012	GH-VBC-148	**0.27**	NR	NR	NR	NR
	Interior Brick	North	1st/2nd	0.0-0.5	7/27/2012	GH-VBB-128	< 0.10	NR	NR	NR	NR
			4th/5th	0.0-0.5	7/27/2012	GH-VBB-134	< 0.10	NR	NR	NR	NR
		Center	5th/6th	0.0-0.5	7/27/2012	GH-VBB-136	**0.15**	NR	NR	NR	NR
			3rd/4th	0.0-0.5	7/27/2012	GH-VBB-143	**0.15**	NR	NR	NR	NR
		South	2nd/3rd	0.0-0.5	7/27/2012	GH-VBC-147	**2.2**	2	7/27/2012	GH-VBC-146	0.18
			1st/2nd	0.0-0.5	7/27/2012	GH-VBC-150	**0.44**	NR	NR	NR	NR

Notes:
Verification samples collected in accordance with EPA Region 1 Standard Operating Procedure for Sampling Porous Surfaces for PCBs dated May 2011.
Samples were submitted to ConTest Analytical Laboratory for PCB analysis via USEPA method 8082 with Soxhlet Extraction (3540C).
Bold results indicate total PCBs reported at concentrations above the minimum laboratory reporting limit.
Shaded results indicate total PCBs reported at concentrations above the high or low use occupancy criteria, as applicable.
l.f. = linear feet
NR = Verification sample Not Required/Not Applicable.
J = Analytical results qualified as estimated based on results of data validation. See Appendix D for additional information.
(1) Verification samples of adjacent materials collected from those areas at which corresponding direct contact sample results indicated that PCBs were present at concentrations > 1 ppm as described in the PCB Remediation Plan.
(2) Low occupancy use criteria of ≤ 25 ppm applied to these materials.

Table 1-2
Summary of Verification Wipe Sample Results
Grayson and Field Houses
UMass Amherst

Type	Material	Building	Floor	Verification Wipe Samples[1]					
				Direct Contact			Adjacent Materials		
				Sample Date	Sample ID	Total PCBs (µg/100cm^2)	Sample Date	Sample ID	Total PCBs (µg/100cm^2)
Type D Elevator Hall Window	Interior CMU Block	Grayson	6th	7/31/2012	GH-VWC-152	< 0.20	8/21/2012	GH-VWC-170	< 0.20
	Exterior Concrete Sill Expansion Joint	Grayson	2nd	8/1/2012	GH-VWC-168	< 0.20	NR	NR	NR
			6th	7/18/2013	GH-VWC-212	< 0.20	NR	NR	NR
		Field	6th	7/18/2013	GH-VWC-211	< 0.20	NR	NR	NR
			2nd	8/1/2012	GH-VWC-169	< 0.20	NR	NR	NR
Types G,H, I Narrow Stairwell Windows	Exterior Brick	Grayson West Only	6th	7/19/2013	GH-VWB-213	< 0.20	NR	NR	NR
Type J Stairwell Windows	Interior Concrete Sill	North	4th/5th	7/31/2012	GH-VWC-164	< 0.20	NR	NR	NR
	Interior Brick	South	2nd/3rd	7/31/2012	GH-VWB-157	< 0.20	NR	NR	NR

Notes:
Verification wipe samples collected in accordance with the standard wipe test method as specified in 40 CFR 761.123.
Samples submitted to ConTest Analytical Laboratory for PCB analysis via USEPA method 8082 with Soxhlet Extraction (3540C).
(1) Verification wipe samples collected from those areas at which corresponding bulk sample results indicated that PCBs were present at concentrations > 1 ppm as described in the PCB Remediation Plan.

Table 1-3
Summary of Post-Abatement Air Sample Results
Grayson and Field Houses, Amherst, Massachusetts

Location	Air Sample ID	Sample Date	PCB Concentration (ng/cartridge)	Flow Rate (L/Minute)	Duration (minutes)	Corrected Sample Volume (m^3)	Total PCB Concentration (ng/m^3)	Total PCB Concentration ($\mu g/m^3$)
Grayson - 6th Floor	GH-G6E-IAS-300	10/15/2013	< 5	2.63	240	0.628	< 8.0	< 0.008
Field - 2nd Floor	GH-F2E-IAS-301	10/15/2013	4	2.63	241	0.630	6.7	0.007
Background	GH-OUT-IAS-302	10/15/2013	14	2.64	241	0.631	22.2	0.022

Notes:
1. Air samples collected in accordance with USEPA Compendium Method TO-10A and submitted for laboratory analysis of PCBs homologs.
2. The flow rate displayed is the average flow rate as measured at the beginning and end of the sampling period; target flow of 2.60 L/minute.
3. Sample volume is corrected to standard temperature and pressure in accordance with Section 13.1.7 of Method TO-10A.
4. Average weather conditions during the October 15, 2013 sampling period were 22.4°C and 768.6 mmHg (indoor).
5. Total PCB concentration is the total PCB homologs reported by the lab (ng/cartridge) per corrected sample volume (m^3/cartridge).
6. "<" indicates that samples were reported below the laboratory's minimum detection limit.

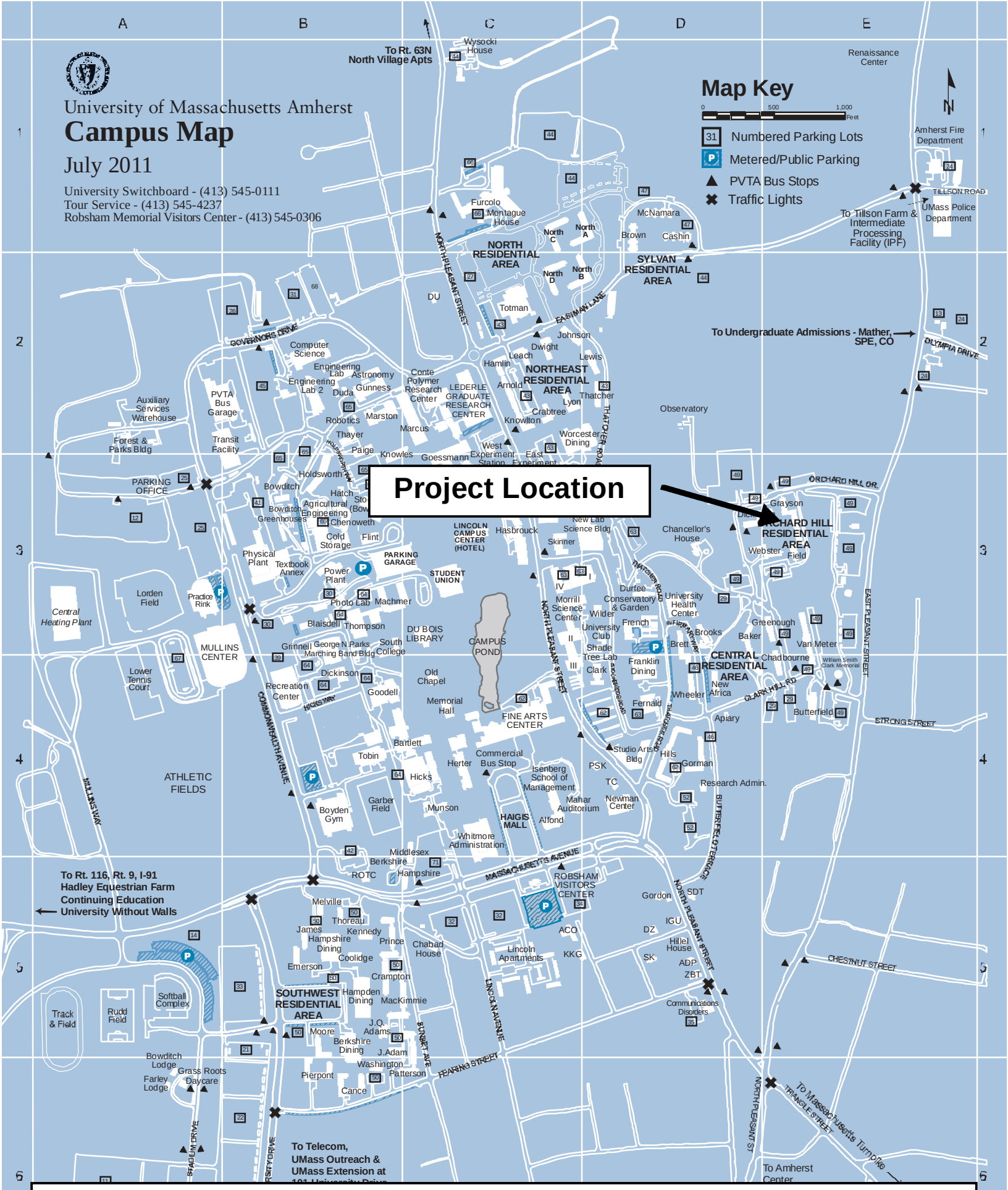
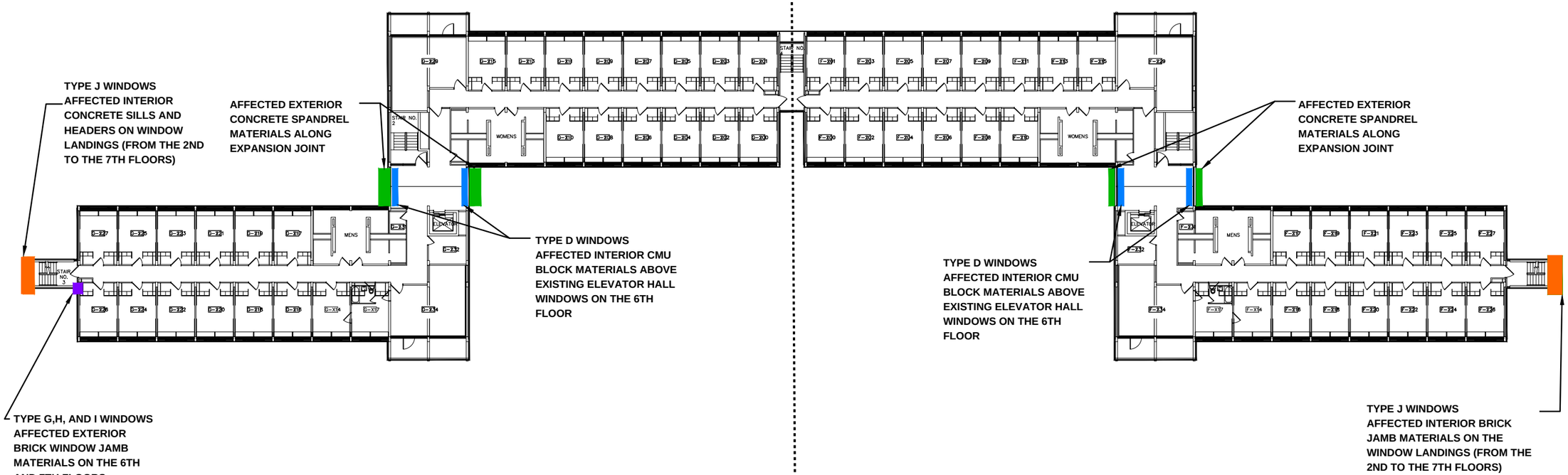


Figure 1-1 Site Location Map

ENCAPSULATED BUILDING SURFACES

Grayson House

Field House



Notes:
1. Original design drawings by CBI Consulting, Inc. modified to show encapsulated building surfaces.
2. This drawing depicts the typical building layout for the second through seventh floors of the Grayson and Field Houses.

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ENCAPSULATED BUILDING SURFACES

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CHECKED BY: GJF
224824-UMA-GRAYSON-U2-1*.dwg

UMASS GRAYSON & FIELD HOUSE
AMHERST, MASSACHUSETTS

LONG TERM MONITORING AND MAINTENANCE PLAN

JOB NO: 224824.00
DATE: NOVEMBER 2013
SCALE: NONE

FIGURE 2-1