# PCB REMEDIATION COMPLETION REPORT

## Concrete Deck

## Tobin Hall

**University of Massachusetts**

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# 1. INTRODUCTION

This Polychlorinated Biphenyl (PCB) Remediation Completion Report has been prepared by Woodard & Curran (W&C) on behalf of the University of Massachusetts Amherst to comply with the requirements set forth in the U.S. Environmental Protection Agency's (EPA) February 28, 2012 PCB Risk-Based Decontamination and Disposal Approval under 40 CFR 761.61(c) and 761.79(h) (the Approval) for the subject work. This Approval is provided in Appendix A to this Report.

This Report documents PCB remediation activities conducted at the Tobin Hall plaza located at 135 Hicks Way on the UMass campus in Amherst, Massachusetts. The PCB remediation activities were conducted in accordance with the Notification[1] and EPA's February 28, 2012 Approval.

## 1.1 SITE DESCRIPTION

As part of the overall Commonwealth Honors College Residential Complex construction project being conducted on the University of Massachusetts Amherst campus, the concrete decking along the west side of Tobin Hall was scheduled to be removed. The project site consisted of an approximately 150 foot long by 46 foot wide concrete deck and associated retaining walls and building walls on the west side of Tobin Hall. The concrete decking was approximately six inches thick and comprised of concrete aggregate slabs separated by concrete bands. Two elevated concrete planting beds were located in the central portion of the decking. Concrete retaining walls were located along the north, south, and west sides of the decking as well as on the far north and south ends of the east side. The remainder of the east side of the decking was bordered by the Tobin Hall building.

***View of Tobin Decking facing north: The concrete retaining wall on the west and north sides of the pad are visible in the photo. The northern planting bed is visible in upper right hand corner.***

[1] Information was prepared by W&C on behalf of UMass to satisfy the requirements under 40 CFR 761.61 (c) and 761.79(h). Information was submitted July 20, 2011 (PCB Remediation Plan), August 5, 2011 (Remediation update), and February 21, 2012 (sample results).

Surrounding ground surfaces are slightly sloped away from the project area and at the time of the remedial activities were generally uncovered (grass or dirt) due to construction activities associated with the overall construction project. The location of the site is presented on Figure 1-1.

## 1.2 SITE BACKGROUND / CONCEPTUAL SITE MODEL

In preparation for the removal of the concrete deck, an inspection and inventory of caulking was conducted. Caulking was identified along approximately 1,325 linear feet (l.f.) of some concrete to concrete expansion joints of the decking, between the concrete decking and concrete retaining walls, between the concrete decking and concrete planting beds, and between the concrete decking and the concrete walls of Tobin Hall. Analytical results indicated that caulking materials contained PCBs at concentrations greater than 50 parts per million (ppm). Adjacent materials were sampled to determine whether PCBs had migrated from the caulking into these adjacent materials. Results from this sampling were used to develop a remedial approach that included the segregation of materials for off-site disposal. Details of the remedial approach and plans were included in the July 20, 2011 PCB Remediation Plan submittal.

## 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.

- Initial Site Inspection and Caulking Sample Collection – June 21, 2011;
- Material Characterization Sampling –July 8,2011;
- PCB Remediation Plan Submitted to EPA – July 20, 2011;
- PCB Remediation Activities Commenced – July 22, 2011;
- Status Update – Tobin Hall PCB Remediation Analytical Results Submitted to EPA – August 5, 2011;
- Completion of Removal Activities – August 16, 2011;
- Completion of Remediation Activities (waste removed for off-site disposal) – August 29, 2011;
- Responses to EPA's February 20, 2012 comments on the work completed and submittals; submitted to EPA – February 21, 2012; and
- PCB Risk-Based Decontamination and Disposal Approval issued by EPA – February 28, 2012.

## 1.4 PROJECT TEAM

The remediation project team consisted of the following parties:

- University of Massachusetts - Owner
- Dimeo Construction Company– General Contractor/Site Construction Manager
- Triumvirate Environmental Inc – PCB Remediation Contractor (material removal and segregation, soil excavation, off-site disposal, and overall PCB remediation activities)
- Woodard & Curran – PCB Remediation Consultant
- Con-Test Analytical Laboratory– Laboratory for sample analyses

# 2. REMEDY IMPLEMENTATION

This section describes the PCB cleanup and disposal activities conducted at the Site, consistent with the requirements of 40 CFR 761.61 (c) and 761.79(h). Remediation activities began in July 2011 and concluded in August 2011.

The remedial approach consisted of the following:

- Removal and off-site disposal of ≥ 50 ppm PCB containing caulking;
- Segregation with removal and off-site disposal of concrete decking, retaining walls, and planting bed materials formerly in direct contact with and to set distances away from the caulking as ≥ 50 ppm PCB waste;
- Excavation and off-site disposal of soils to a depth of 6 to 12 inches below select portions of the decking, as ≥ 50 ppm PCB waste; and
- Encapsulation of building materials scheduled to remain in place containing PCBs at concentrations above the high occupancy clean up level of 1 ppm.

A summary of activities performed including site preparations and controls, PCB impacted material removals, inspections and verification sample collection, and material disposal is presented in the following sections. A certification signed by UMass indicating that the authorized activities were implemented in accordance with the Approval and Notification is provided in Appendix B.

## 2.1 SITE PREPARATION AND CONTROLS

Prior to initiating remediation activities, site preparations and controls were implemented as described in the PCB Remediation Plan. These preparations included the development of a Health & Safety Plan, DigSafe marking and notification, and securing perimeter fences around the proposed work areas.

The area of the Tobin Hall plaza concrete decking was demarcated with white spray paint to permit the segregation of PCB impacted material based on analytical results from the initial site characterization samples. All site personnel were informed of the proper handling practices of non-impacted and impacted materials that were identified on the site.

Temporary chain link fence was erected and signage was installed prior to beginning work to identify the work area, provide site security, and ensure safe passage to Tobin Hall for pedestrians. The two surface drains located on the Tobin Hall plaza were covered with filter fabric that was inspected and cleaned or replaced daily by Triumvirate staff. Site personnel periodically closed off pedestrian access to allow for heavy equipment crossings as necessary. All pedestrian walkways were visually inspected for dust and debris periodically throughout the day.

**Poly Sheeting on the Work Area Boundary**

A waste storage area was established directly to the north of the project work area. Lined covered roll-off containers were staged in the area and labeled in accordance with 40 CFR 761.65. Roll-offs were kept covered except during times of active loading.

Dust control measures were implemented during concrete and soil excavation activities. Water suppression was the primary means of dust control used on the site. Triumvirate staff also placed polyethylene sheeting on ground surfaces around active work areas and on to the chain-link fence along the work area boundary to capture dust and debris and to provide additional protection to pedestrians during all concrete cutting activities. At the end of each workday, materials, dust, and debris were removed and placed in the waste storage containers.

Air monitoring was conducted during saw cutting and active removal of PCB materials. A direct-reading particulate meter (TSI Dust Trak Respirable Particulate Meter) was used to monitor a background location and four stations surrounding the support work zone. A project action level of 0.1 $mg/m^3$ above background was established (workers were instructed to cease work if project related activities resulted in dust readings above the project action level to evaluate potential causes and corrective actions). The exact locations of the dust monitoring stations varied based on the specific removal activities; however, the monitoring locations did include a minimum of one location within nearby pedestrian access routes. Results of the air monitoring indicated that dust concentrations from PCB related removal activities generally did not exceed the project action limit; however, on three occasions intermittent dust readings were recorded above the action limit. In each case, the readings were attributed to construction activities associated with other aspects of the adjacent, larger Commonwealth Honors College construction project and not related to the removal of the decking. A copy of the dust monitoring logs is provided in Appendix C.

## 2.2 SAMPLING AND ANALYTICAL METHODS

Characterization and verification samples collected in support of the remediation activities described herein were collected in accordance with generally accepted procedures for environmental sampling. Concrete samples were collected consistent with the EPA Region 1 Standard Operating Procedure for Sampling Porous Surfaces for PCBs (May 2011). Soil samples were collected from three inch depth intervals following soil excavation using standard environmental sampling procedures. 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. Electronic versions of the laboratory analytical packages are provided in Appendix D.

## 2.3 REMEDIATION ACTIVITIES

A summary of the completed remediation activities is presented in the following sections.

### 2.3.1 Caulking Removal

Caulking throughout the deck/project area was removed by Triumvirate personnel utilizing manual processes (utility knives, paint scrapers, or putty knives) prior to saw cutting for concrete removal. Caulking was removed from the joints and placed into polyethylene bags. When full, or at the end of each work day, all bags were transported to the waste storage containers.

### 2.3.2 Concrete Decking

Concrete decking materials were segregated for off-site disposal as either ≥ 50 ppm PCB waste or as general demolition debris. Based on the configuration of the caulked joints, twelve portions of the decking (approximately 20 foot by 20 foot sections) were identified for potential off-site disposal as general construction debris. To support the

segregation, 48 characterization samples were collected from decking materials within these twelve sections at a distance of one foot from the caulked joints. Samples were collected at a frequency of one sample per 20 l.f. of caulked joint, which represented four samples per 20 ft by 20 ft section of concrete. Analytical results indicated that PCBs were either non-detect (40 samples with reporting limits of 0.10 ppm or less) or < 1 ppm (eight samples with an average PCB concentration of 0.39 ppm).

The location of the twelve areas and the characterization samples collected are depicted on Figure 2-1. Analytical results are presented on Table 2-1.

Berkshire Concrete Cutting was contracted to saw cut the concrete decking to permit the segregation of certain sections of the concrete decking to be disposed of as ≥ 50 ppm PCB waste. Saw-cuts were made through the concrete decking at a horizontal distance of twelve inches from each caulking joint (i.e., at a point demonstrated through characterization sampling to confirm PCBs at concentrations < 1 ppm). Water was used to control dust during saw cutting operations. Visual inspection and dust monitoring were conducted at the work area boundary to confirm that the dust suppression was adequate.

**Mark Out of Concrete Decking**

Following saw-cutting, concrete decking identified as containing PCBs > 1 ppm was removed by Triuimvirate Environmental personnel utilizing a rubber tracked mini-excavator. Removed concrete decking was transferred to roll-offs by Triumvirate personnel using a rubber-tired skid steer. The concrete decking was stored on-site in lined, marked, and covered roll-off containers for disposal as ≥ 50 ppm PCB wastes (total of 53 cubic yards [$yd^3$]) as described in Section 2.4.

Two catch basins were located within the limits of the concrete decking. Prior to the initial saw cutting, siltation controls were installed to prevent concrete dust and debris from entering the basins (as noted above). Following removal of the concrete decking, the catch basins and associated discharge piping to a depth of approximately one foot below the base of the concrete decking were removed and placed with the PCB waste materials for off-site disposal. Investigation into the discharge location of the catch basins indicated that they drained into a stormwater catch basin associated with the campus wide system to the west of the work area. No sediments were observed in this catch basin.

The remaining concrete decking (those portions designated as general demolition debris) was left in place until all PCB remediation activities had been completed.

### 2.3.3 Underlying Soils

Soils to a depth of six inches underlying the concrete materials designated for disposal as PCB waste were removed for off-site disposal as ≥ 50 ppm PCB waste. The excavation of the soil was conducted during the removal of the contaminated concrete decking using the mini-excavator and shovels. Excavated soils were transferred to the roll-offs with the concrete materials and managed as the same waste stream.

Following excavation, verification soil samples were collected from the base of the excavation. Samples were collected at an initial sample frequency of one sample per 10 l.f. of excavation over approximately the first third of the excavation areas. Based on the results of verification samples collected at this frequency (a total of 32 samples collected with PCBs reported as non-detect or < 1 ppm in 31 of the samples collected), verification samples were collected at a frequency of one sample per 20 l.f. of excavation over the remaining excavation areas. The excavation

areas and the locations of the verification soil samples are depicted on Figure 2-2. Verification sample results are presented on Table 2-2. A summary of the verification sample results is as follows:

- 54 samples reported PCBs as non-detect (35 samples) or ≤ 1 ppm (19 samples with an average PCB concentration of 0.35 ppm [including the two additional verification samples collected at off-set locations]); and
- 2 samples reported PCBs at concentrations > 1 ppm (total PCBs of 1.6 and 2.89 ppm).

Results of the verification samples were compared to the high occupancy clean up criteria of ≤ 1 ppm as follows:

- Total PCBs ≤ 1 ppm – no additional excavation required; and
- Total PCBs > 1 ppm – additional six inches of soil excavated to the next ≤ 1 ppm sample point in either direction. Additional verification samples collected from off-set locations and compared to the cleanup criteria. The areas for additional soil removal are shown on Figure 2-2.

Soils were transported to the roll-off containers using a rubber-tired skid steer. All excavated soils were stored on-site in lined, marked, and covered roll-off containers for disposal as ≥ 50 ppm PCB wastes as described in Section 2.4. Approximately 56 $yd^3$ of soil were removed for off-site disposal.

### 2.3.4 Concrete Retaining Walls and Planting Beds

Concrete from retaining walls and planting beds was segregated for disposal as either ≥ 50 ppm PCB waste or general demolition debris. To support the segregation, concrete samples were collected at a sample frequency of one sample location per 20 l.f. of caulked joint (there was approximately 280 l.f. of caulked joints along the concrete retaining walls and 112 l.f. of caulked joints on the two planting beds). At each sample location, samples were collected at a specified distance above and below the caulked joint as follows:

- Above the Joint – A total of 20 samples were collected at a distance of one inch (three samples) or three inches (17 samples) above the caulked joint. Analytical results indicated that PCBs were non-detect in all of the samples collected.
- Below the Joint – A total of 20 samples were collected at a distance of three inches below the caulked joint. Analytical results indicated that PCBs were as follows:
    - 18 samples reported PCBs ≤ 1 ppm (total PCB concentrations ranged from 0.14 to 0.99 ppm with an average concentration of approximately 0.42 ppm – one sample was non-detect); and
    - Two samples reported PCBs at a concentration > 1 ppm (total PCB concentrations of 1.31 and 1.78 ppm).

  Additional samples were collected at a distance of six inches below the caulked joint at both locations with reported concentrations > 1 ppm. Analytical results indicated that PCBs were present at concentrations of 0.13 and 0.19 ppm in these samples.

Based on these results, concrete to a distance of three inches above and three inches below the caulked joints and to a depth of three inches behind the joints were removed for off-site disposal as ≥ 50 ppm PCB waste. The distance below the joint was extended to six inches for materials surrounding the two samples reported to contain PCBs > 1 ppm to the next ≤ 1 ppm sample point in either direction (i.e., along 40 l.f. of the western retaining wall and 40 l.f. of the northern planting bed wall).

The sample locations and areas of removal are depicted on Figure 2-3. Sample results are presented on Table 2-3.

The removal of the concrete was conducted as follows:

- Berkshire Concrete Cutting made an initial horizontal cut through each retaining wall, three inches above the concrete decking caulking joint, along the entire perimeter, to permit the removal of the un-impacted sections of the retaining wall (i.e., materials more than three inches above the caulked joints) for disposal as general demolition debris.
- TEI used demolition saws to make a full-depth vertical plunge cut into the retaining wall three inches laterally from the vertical face of the retaining wall (i.e., three inches behind the caulked joint) to the required depth below the caulked joint. Hand tools (sledge hammers, chipping hammers and chisels) were used to remove the scored concrete down to the desired distance below the caulking joint (i.e., either three or six inches).

Concrete was removed using a rubber tracked mini-excavator by TEI personnel and stored on-site in lined, marked, and covered roll-off containers for disposal as ≥ 50 ppm PCB waste (total of approximately 2.2 $yd^3$) as described in Section 2.4.

Following removal of the concrete, verification samples were collected from the materials at the extent of removal directly behind the former caulked joint at a frequency of one sample per 20 l.f. of retaining wall. Analytical results of the verification samples indicated that PCBs were non-detect in all 20 of the samples collected. Verification sample results are presented on Table 2-4. Based on these results, no additional concrete removal for waste segregation was conducted.

### 2.3.5 Concrete Walls of Tobin Hall

Concrete over approximately 80 l.f. of the building wall containing PCBs at concentrations > 1 ppm was managed in place through the application of a liquid coating to encapsulate the concrete surfaces. The in-place management was selected as the remedial alternative due to the significant structural and aesthetic impacts that removal of the concrete materials would have on the building and the impacts to the overall project scope and schedule that would result if removal of these materials were required.

The extent of PCB impacts > 1 ppm was identified through the collection of samples at select distances above and below the caulked joints. A summary of the results is as follows:

- Above the Joint – Two samples were collected at a distance of three inches above the caulked joint. Analytical results indicated that PCBs were non-detect in both samples; and
- Below the Joint – Two samples were collected at a distance of three inches below the caulked joints. Analytical results indicated that PCBs were present at concentrations of 0.41 and 2.37 ppm. Based on these results, one additional sample was collected at a distance of six inches below the caulked joint directly below the sample identified as containing PCBs > 1 ppm. Analytical results from this sample indicated that PCBs were present at a concentration of 0.25 ppm at a distance of six inches below the caulked joint.

The sample locations and areas of in-place management are depicted on Figure 2-3. A summary of the sample results is presented on Table 2-3.

Two coats of Sikagard 670W clear, acrylic, protective coating were applied to a distance of six inches above and six inches below the caulked joint (due to the overall project schedule, the liquid coating was applied to the specified distances above and below the caulked joints prior to receipt of the analytical results) using rollers in accordance with

manufacturer's specifications (see photo to the right). Following application of the coating, two verification wipe samples were collected for a sample frequency of approximately one sample per 40 l.f. of encapsulated surface. Analytical results indicated that PCBs were not present at concentrations above the encapsulation standard of 1 µg/100cm$^3$ (total PCBs were reported as non-detect with a minimum laboratory reporting limit of < 0.20 µg/100cm$^3$). A summary of verification wipe sample results is presented on Table 2-4.

Following receipt of the verification sampling results, a temporary pedestrian access ramp was constructed along the building wall to the south of the Tobin Hall west side stairs (southern portion of the work area). The access ramp was constructed of asphalt with the top of the ramp above the extent of the clear coat application.

## 2.4 WASTE STORAGE, DISPOSAL, AND EQUIPMENT DECONTAMINATION

Waste storage and disposal activities were completed in accordance with the procedures described in the PCB Remediation Plan. All soils, concrete, and other PCB wastes generated in association with removal activities (i.e. polyethylene sheeting, PPE, disposable tools and equipment) were placed in secure, lined, covered, and marked 20-yard roll-off waste containers that were kept within fence perimeters while on-site. The PCB wastes were managed in accordance with 40 CFR 761.65 and marked in accordance with 40 CFR 761.40.

Following use, non-disposal equipment and tools were decontaminated using a double wipe with methanol soaked rags following gross removal of any dust or debris. Decontamination materials were placed in the roll-off containers for disposal as ≥ 50 ppm PCB waste. When each container was considered full, it was transported to a container storage area on campus approved by UMass Environmental Health and Safety until the completion of remediation activities.

A total of 13 waste containers were shipped off-site as ≥ 50 ppm PCB wastes (218 tons of material) to 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.

## 2.5 RESTORATION

Following PCB remediation, the remaining portions of the decking were removed by Dimeo Construction as part of the overall site preparation activities associated with the Commonwealth Honors College Residential Complex construction project. Site restoration is being conducted as part of a large scale construction project currently underway. The temporary pedestrian access ramp will be removed once the former decking area has been restored to a useable condition as part of the overall construction process assumed to be approximately 18 months from the completion of remediation activities.

## 2.6 DATA USABILITY ASSESSMENT

This data quality and data usability assessment has been conducted to review the 176 primary 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 (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 is presented below:

- All samples were extracted by USEPA Method 3540C (Soxhlet Extraction) and analyzed for PCBs by USEPA Method 8082.
- 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 performed.
- Field duplicate samples were collected at a frequency of one duplicate sample per twenty primary samples during the sampling events. A total of nine duplicate samples were collected to analyze the precision of the sample results. Relative percent differences (RPDs) between the primary and associated duplicate samples were within acceptance criteria (< 50%) in six of the nine samples. Results of the primary samples associated with these three duplicate samples were qualified J and/or UJ based on this evaluation.
- Accuracy of the analytical data was assessed by reviewing recoveries for MS, MSD, surrogates, LCS and LCSD. Recoveries were identified outside acceptable limits for surrogate results on two samples; however, no qualifications were applied to the data due to the results being non-detect in the sample or due to results from only one column outside acceptance criteria. Results from the MS/MSD met acceptance criteria were outside the acceptance criteria for five samples. Analytical results for sample TH-VBC-1200 were qualified as UJ based on these results. No other qualifications were made to data as a result of the MS/MSD, surrogates, or LCS/LCSD sample results.
- RPDs between the column results for all detected PCBs met the acceptance criteria (≤ 25%) with the exception of five samples. Analytical results from these five samples were qualified J based on these results.
- All samples were received at the lab within the acceptable temperature range (<6 degree Celsius) except four sample delivery groups. No data qualification was required for the samples, in sample delivery groups 11G0745, 11G0858, 11H030, or 11H0565, as samples were submitted to the laboratory immediately following collection. Based on the stability of PCBs in the environment, the data was still considered usable for the intended purposes.
- Consistent procedures and laboratory analysis of the data were achieved. Sample containers were packed on ice and were accompanied by complete chain of custody forms from the time of sample collection until laboratory delivery. All samples were extracted and analyzed within the allowable holding time for the method. No analytes were detected in the laboratory method blank analyses, indicating that there were no interferences introduced at the laboratory during sample analysis. Field equipment blank samples were non-detect for all samples and, as such, no qualifications were applied to the data.

- 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.

Based on this review, the data adequately represents the materials tested, and the samples collected are considered usable for the purposes of characterizing PCB-affected media and verifying remediation efforts in accordance with 40 CFR Part 761.

# 3. DEED RESTRICTION

Pursuant to Condition 7 of EPA's February 28, 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 actions taken, a description of the use restrictions, and the long-term monitoring and maintenance requirements.

# 4. MONITORING AND MAINTENANCE OF ENCAPSULATED SURFACES

A Monitoring and Maintenance Implementation Plan (MMIP) has been prepared to evaluate the effectiveness of the liquid coating on the building wall materials containing PCBs at concentrations above the high occupancy use criteria. 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 any person 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.

# 5. SUMMARY AND CONCLUSIONS

The PCB remediation activities described in this Report have been performed in accordance with the Notification and the conditions of EPA's February 28, 2012 Approval.

In summary, the work included the following activities:

- Removal and off-site disposal of PCB waste:
    - A total of 218 tons of bulk PCB waste (caulking, concrete decking, concrete retaining walls, concrete planting beds, and soils) and associated disposable materials and equipment (poly sheeting, PPE, decontamination materials, etc.) contained in 13 roll-off containers was removed for off-site disposal as ≥ 50 ppm PCB wastes at Environmental Quality's Wayne Disposal Landfill in Belleville, Michigan.
- All final post-removal verification samples did not detect PCBs at concentrations in excess of the unrestricted use cleanup level of 1 ppm.
- At the building joint, where removal activities could not be performed, residual PCB concentrations > 1 ppm were detected in an 80 foot long 1 foot wide area of the Tobin Hall building façade. This area was subsequently encapsulated with two coats of a liquid coating. Post encapsulation wipe samples did not detect PCBs over 1 µg/100cm$^2$.
- A deed notice will be recorded identifying the encapsulated areas, and a long term monitoring and maintenance program will be implemented to assess and verify the effectiveness of the coatings / barriers over time.

With the exception of the monitoring and maintenance activities described in the MMIP and the recordation of the Deed Restriction, no further work is warranted to meet the conditions of the Approval.

# Table 2-1
# Summary of Concrete Decking Characterization Sample Results

## Tobin Hall Decking Remediation Project
## UMass-Amherst

| Sample ID | Distance from Joint (inches) | Sample Frequency | Sample Date | Total PCBs (ppm) |
|---|---|---|---|---|
| TH-CBC-013 | 12 | 1 per 20 l.f. | 7/13/2011 | 0.41 |
| TH-CBC-014 | 12 | 1 per 20 l.f. | 7/13/2011 | <0.10 |
| TH-CBC-015 | 12 | 1 per 20 l.f. | 7/13/2011 | <0.10 |
| TH-VBC-016 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-017 | 12 | 1 per 20 l.f. | 7/15/2011 | 0.25 |
| TH-VBC-018 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.091 |
| TH-VBC-021 | 12 | 1 per 20 l.f. | 7/15/2011 | <0.091 |
| TH-VBC-022 | 12 | 1 per 20 l.f. | 7/15/2011 | <0.095 |
| TH-VBC-023 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.087 |
| TH-VBC-024 | 12 | 1 per 20 l.f. | 7/15/2011 | 0.14 |
| TH-VBC-025 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.091 |
| TH-VBC-026 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |
| TH-VBC-027 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.087 |
| TH-VBC-028 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.087 |
| TH-VBC-029 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-030 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-031 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |
| TH-VBC-032 | 12 | 1 per 20 l.f. | 7/15/2011 | 0.14 |
| TH-VBC-033 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.087 |
| TH-VBC-034 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-035 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.091 |
| TH-VBC-036 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |
| TH-VBC-037 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-038 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.091 |
| TH-VBC-041 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |
| TH-VBC-042 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |
| TH-VBC-043 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |
| TH-VBC-044 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.091 |
| TH-VBC-045 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.091 |
| TH-VBC-046 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.087 |
| TH-VBC-047 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |
| TH-VBC-048 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.091 |
| TH-VBC-049 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.091 |
| TH-VBC-050 | 12 | 1 per 20 l.f. | 7/15/2011 | 0.85 |

# Table 2-1
# Summary of Concrete Decking Characterization Sample Results

## Tobin Hall Decking Remediation Project
## UMass-Amherst

| Sample ID | Distance from Joint (inches) | Sample Frequency | Sample Date | Total PCBs (ppm) |
|---|---|---|---|---|
| TH-VBC-051 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.087 |
| TH-VBC-052 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-053 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-054 | 12 | 1 per 20 l.f. | 7/15/2011 | 0.51 |
| TH-VBC-055 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-056 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-057 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-058 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |
| TH-VBC-061 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |
| TH-VBC-062 | 12 | 1 per 20 l.f. | 7/15/2011 | 0.229 |
| TH-VBC-063 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.091 |
| TH-VBC-064 | 12 | 1 per 20 l.f. | 7/15/2011 | 0.63 |
| TH-VBC-065 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.10 |
| TH-VBC-066 | 12 | 1 per 20 l.f. | 7/15/2011 | < 0.095 |

Notes:
Samples collected in accordance with USEPA Region 1 Standard Operating Procedure for Sampling Porous Surfaces for Polychlorinated Biphenyls (May 2011) from a depth of 0 to 0.5 inches.
Total PCBs reported as Aroclor 1254 or Aroclor 1248. No other Aroclors reported above the minimum laboratory reporting limit.

# Table 2-2
# Summary of Soil Verification Sample Results

## Tobin Hall Decking Remediation Project
## UMass-Amherst

| Sample ID | Depth Below Decking (inches) | Sample Frequency | Sample Date | Total PCBs (ppm) |
|---|---|---|---|---|
| TH-VBS-88 | 6-9 | 1 per 10 l.f. | 7/26/2011 | <0.099 |
| TH-VBS-89 | 6-9 | 1 per 10 l.f. | 7/26/2011 | <0.10 |
| TH-VBS-90 | 6-9 | 1 per 10 l.f. | 7/26/2011 | <0.10 |
| TH-VBS-91 | 6-9 | 1 per 10 l.f. | 7/26/2011 | <0.11 |
| TH-VBS-92 | 6-9 | 1 per 10 l.f. | 7/26/2011 | <0.11 |
| TH-VBS-93 | 6-9 | 1 per 10 l.f. | 7/26/2011 | 0.65 |
| TH-VBS-94 | 6-9 | 1 per 10 l.f. | 7/26/2011 | <0.20 |
| TH-VBS-95 | 6-9 | 1 per 10 l.f. | 7/26/2011 | <0.11 |
| TH-VBS-96 | 6-9 | 1 per 10 l.f. | 7/26/2011 | <0.10 |
| TH-VBS-97 | 6-9 | 1 per 10 l.f. | 7/26/2011 | 0.35 |
| TH-VBS-99 | 6-9 | 1 per 10 l.f. | 7/27/2011 | 0.13 |
| TH-VBS-100 | 6-9 | 1 per 10 l.f. | 7/27/2011 | <0.10 |
| TH-VBS-101 | 6-9 | 1 per 10 l.f. | 7/27/2011 | <0.10 |
| TH-VBS-102 | 6-9 | 1 per 10 l.f. | 7/27/2011 | <0.10 |
| TH-VBS-103 | 6-9 | 1 per 10 l.f. | 7/27/2011 | 0.41 |
| TH-VBS-104 | 6-9 | 1 per 10 l.f. | 7/27/2011 | <0.11 |
| TH-VBS-105 | 6-9 | 1 per 10 l.f. | 7/28/2011 | <0.10 |
| TH-VBS-106 | 6-9 | 1 per 10 l.f. | 7/28/2011 | <0.11 |
| TH-VBS-107 | 6-9 | 1 per 10 l.f. | 7/28/2011 | 0.44 |
| TH-VBS-108 | 6-9 | 1 per 10 l.f. | 7/28/2011 | <0.10 |
| TH-VBS-110 | 6-9 | 1 per 10 l.f. | 7/28/2011 | 0.14 |
| TH-VBS-111 | 6-9 | 1 per 10 l.f. | 7/28/2011 | <0.10 |
| TH-VBS-112 | 6-9 | 1 per 10 l.f. | 7/28/2011 | 0.22 |
| TH-VBS-113 | 6-9 | 1 per 10 l.f. | 7/28/2011 | 0.57 |
| TH-VBS-114 | 6-9 | 1 per 10 l.f. | 7/28/2011 | <0.10 |
| TH-VBS-115 | 6-9 | 1 per 10 l.f. | 7/28/2011 | 0.33 |
| TH-VBS-116 | 6-9 | 1 per 10 l.f. | 7/28/2011 | 0.19 |
| TH-VBS-117 | 6-9 | 1 per 10 l.f. | 7/28/2011 | <0.10 |
| TH-VBS-118 | 6-9 | 1 per 10 l.f. | 7/28/2011 | **1.6** |
| TH-VBS-157 | 12-15 | Off-set from -118 | 8/2/2011 | 0.28 |
| TH-VBS-121 | 6-9 | 1 per 10 l.f. | 7/29/2011 | <0.10 |
| TH-VBS-123 | 6-9 | 1 per 20 l.f. | 7/29/2011 | <0.10 |
| TH-VBS-124 | 6-9 | 1 per 20 l.f. | 7/29/2011 | 0.24J |
| TH-VBS-125 | 6-9 | 1 per 20 l.f. | 7/29/2011 | <0.10 |
| TH-VBS-126 | 6-9 | 1 per 20 l.f. | 7/29/2011 | <0.10 |
| TH-VBS-127 | 6-9 | 1 per 20 l.f. | 7/29/2011 | <0.11 |
| TH-VBS-139 | 6-9 | 1 per 20 l.f. | 7/29/2011 | <0.10 |
| TH-VBS-140 | 6-9 | 1 per 20 l.f. | 7/29/2011 | 0.51 |
| TH-VBS-141 | 6-9 | 1 per 20 l.f. | 7/29/2011 | <0.10 |

# Table 2-2
# Summary of Soil Verification Sample Results

## Tobin Hall Decking Remediation Project
## UMass-Amherst

| Sample ID | Depth Below Decking (inches) | Sample Frequency | Sample Date | Total PCBs (ppm) |
|---|---|---|---|---|
| TH-VBS-150 | 6-9 | 1 per 20 l.f. | 8/2/2011 | 0.14 |
| TH-VBS-151 | 6-9 | 1 per 20 l.f. | 8/2/2011 | **2.89** |
| TH-VBS-172 | 12/15 | Off-set from -151 | 8/5/2011 | 0.86 |
| TH-VBS-152 | 6-9 | 1 per 20 l.f. | 8/2/2011 | <0.10 |
| TH-VBS-153 | 6-9 | 1 per 20 l.f. | 8/2/2011 | <0.10 |
| TH-VBS-155 | 6-9 | 1 per 20 l.f. | 8/2/2011 | <0.10 |
| TH-VBS-156 | 6-9 | 1 per 20 l.f. | 8/2/2011 | <0.10 |
| TH-VBS-187 | 6-9 | 1 per 20 l.f. | 8/11/2011 | 0.13 |
| TH-VBS-188 | 6-9 | 1 per 20 l.f. | 8/11/2011 | <0.10 |
| TH-VBS-189 | 6-9 | 1 per 20 l.f. | 8/11/2011 | <0.10 |
| TH-VBS-190 | 6-9 | 1 per 20 l.f. | 8/11/2011 | <0.10 |
| TH-VBS-191 | 6-9 | 1 per 20 l.f. | 8/12/2011 | 0.17 |
| TH-VBS-192 | 6-9 | 1 per 20 l.f. | 8/12/2011 | 0.67 |
| TH-VBS-194 | 6-9 | 1 per 20 l.f. | 8/15/2011 | <0.11 |
| TH-VBS-195 | 6-9 | 1 per 20 l.f. | 8/15/2011 | 0.17 |
| TH-VBS-197 | 6-9 | 1 per 20 l.f. | 8/15/2011 | <0.12 |
| TH-VBS-200 | 6-9 | 1 per 20 l.f. | 8/15/2011 | <0.12 |

Notes:
Samples collected from a depth of 0 to 3 inches below bottom of excavation following the excavation of 6 inches of soil from beneath the decking.
Total PCBs reported as Aroclor 1254 or Aroclor 1248. No other Aroclors reported above the minimum laboratory reporting limit.
Bold and shaded results indicate total PCBs reported at concentrations above the clean up level of 1 ppm.

## Table 2-3
## Summary of Retaining Wall, Planting Bed, and Building Wall Characterization Sample Results

## Tobin Hall Decking Remediation Project
## UMass-Amherst

| Sample ID | Distance From Joint (inches) | Sample Frequency | Sample Date | Total PCBs (ppm) |
|---|---|---|---|---|
| **Samples - Above the Joint** | | | | |
| TH-CBC-007 | 1 | 1 per 20 l.f. | 7/8/2011 | < 0.10 |
| TH-CBC-008 | 1 | 1 per 20 l.f. | 7/8/2011 | < 0.091 |
| TH-CBC-009 | 1 | 1 per 20 l.f. | 7/8/2001 | < 0.095 |
| TH-CBC-067 | 3 | 1 per 20 l.f. | 7/25/2011 | <0.10 |
| TH-CBC-068 | 3 | 1 per 20 l.f. | 7/25/2011 | <0.091 |
| TH-CBC-069 | 3 | 1 per 20 l.f. | 7/25/2011 | <0.091 |
| TH-CBC-070 | 3 | 1 per 20 l.f. | 7/25/2011 | <0.091 |
| TH-CBC-071 | 3 | 1 per 20 l.f. | 7/25/2011 | <0.087 |
| TH-CBC-072 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.095 |
| TH-CBC-073 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.10 |
| TH-CBC-074 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.087 |
| TH-CBC-075 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.10 |
| TH-CBC-076 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.091 |
| TH-CBC-077 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.091 |
| TH-CBC-078* | 3 | 1 per 20 l.f. | 7/26/2011 | <0.10 |
| TH-CBC-081* | 3 | 1 per 20 l.f. | 7/26/2011 | <0.087 |
| TH-CBC-082 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.10 |
| TH-CBC-083 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.091 |
| TH-CBC-084 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.091 |
| TH-CBC-085 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.095 |
| TH-CBC-086 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.095 |
| TH-CBC-087 | 3 | 1 per 20 l.f. | 7/26/2011 | <0.10 |
| **Samples - Below the Joint** | | | | |
| TH-VBC-119 | 3 | 1 per 20 l.f. | 7/28/2011 | 0.2 |
| TH-VBC-120* | 3 | 1 per 20 l.f. | 7/28/2011 | 0.41 UJ |
| TH-CBC-128 | 3 | 1 per 20 l.f. | 7/29/2011 | 0.98 |
| TH-CBC-129 | 3 | 1 per 20 l.f. | 7/29/2011 | 0.23 |
| TH-CBC-130 | 3 | 1 per 20 l.f. | 7/29/2011 | <0.10 |
| TH-CBC-131 | 3 | 1 per 20 l.f. | 7/29/2011 | 0.16 |
| TH-CBC-132 | 3 | 1 per 20 l.f. | 7/29/2011 | 0.21 |
| TH-CBC-133 | 3 | 1 per 20 l.f. | 7/29/2011 | 0.33 |
| TH-CBC-134 | 3 | 1 per 20 l.f. | 7/29/2011 | **1.78J** |
| TH-CBC-158 | 6 | Below -134 | 8/3/2011 | 0.19J/UJ |
| TH-CBC-135 | 3 | 1 per 20 l.f. | 7/29/2011 | 0.63 |
| TH-CBC-136 | 3 | 1 per 20 l.f. | 7/29/2011 | 0.21 |
| TH-CBC-137 | 3 | 1 per 20 l.f. | 7/29/2011 | 0.39 |
| TH-CBC-142 | 3 | 1 per 20 l.f. | 8/1/2011 | 0.93 |
| TH-CBC-143 | 3 | 1 per 20 l.f. | 8/1/2011 | 0.23 |
| TH-CBC-144 | 3 | 1 per 20 l.f. | 8/1/2011 | 0.14 |
| TH-CBC-145 | 3 | 1 per 20 l.f. | 8/1/2011 | **1.31** |
| TH-CBC-173 | 6 | Below -145 | 8/8/2011 | 0.13 |
| TH-CBC-154* | 3 | 1 per 20 l.f. | 8/2/2011 | **2.37J** |

## Table 2-3
## Summary of Retaining Wall, Planting Bed, and Building Wall Characterization Sample Results

## Tobin Hall Decking Remediation Project
## UMass-Amherst

| Sample ID | Distance From Joint (inches) | Sample Frequency | Sample Date | Total PCBs (ppm) |
|---|---|---|---|---|
| TH-CBC-169* | 6 | Below -154 | 8/5/2011 | 0.25 |
| TH-CBC-147 | 3 | 1 per 20 l.f. | 8/2/2011 | 0.43J |
| TH-CBC-176 | 3 | 1 per 20 l.f. | 8/8/2011 | 0.99 |
| TH-CBC-177 | 3 | 1 per 20 l.f. | 8/8/2011 | 0.46 |
| TH-CBC-178 | 3 | 1 per 20 l.f. | 8/8/2011 | 0.36J/UJ |
| TH-CBC-193 | 3 | 1 per 20 l.f. | 8/12/2011 | 0.21 |

Notes:
Samples collected in accordance with USEPA Region 1 Standard Operating Procedure for Sampling Porous Surfaces for Polychlorinated Biphenyls (May 2011) from a depth of 0 to 0.5 inches.
Total PCBs reported as Aroclor 1254 or Aroclor 1248. No other Aroclors reported above the minimum laboratory reporting limit.
Bold and Shaded results indicate total PCBs reported at concentrations above the clean up level of 1 ppm.
* = Samples collected from Tobin Hall Building wall scheduled to remain in place.
J, U, and J/UJ = Samples qualified as estimated based on external data validation. Additional details provided in Appendix D.

## Table 2-4
## Summary of Retaining Wall, Planting Bed, and Building Wall Verification Sample Results

## Tobin Hall Decking Remediation Project
## UMass-Amherst

| Sample ID | Sample Frequency | Sample Date | Total PCBs[(1)] |
|---|---|---|---|
| **Bulk Verification Samples** | | | |
| TH-VBC-146 | 1 per 20 l.f. | 8/1/2011 | <0.095 |
| TH-VBC-161 | 1 per 20 l.f. | 8/3/2011 | <0.095 |
| TH-VBC-162 | 1 per 20 l.f. | 8/3/2011 | <0.087 |
| TH-VBC-163 | 1 per 20 l.f. | 8/3/2011 | <0.087 |
| TH-VBC-165 | 1 per 20 l.f. | 8/4/2011 | <0.095 |
| TH-VBC-166 | 1 per 20 l.f. | 8/4/2011 | <0.091 |
| TH-VBC-167 | 1 per 20 l.f. | 8/4/2011 | <0.095 |
| TH-VBC-168 | 1 per 20 l.f. | 8/4/2011 | <0.091 |
| TH-VBC-170 | 1 per 20 l.f. | 8/5/2011 | <0.091 |
| TH-VBC-171 | 1 per 20 l.f. | 8/5/2011 | <0.091 |
| TH-VBC-174 | 1 per 20 l.f. | 8/8/2011 | <0.095 |
| TH-VBC-175 | 1 per 20 l.f. | 8/8/2011 | <0.095 |
| TH-VBC-181 | 1 per 20 l.f. | 8/9/2011 | <0.10 |
| TH-VBC-182 | 1 per 20 l.f. | 8/9/2011 | <0.087 |
| TH-VBC-183 | 1 per 20 l.f. | 8/9/2011 | <0.10 |
| TH-VBC-184 | 1 per 20 l.f. | 8/9/2011 | <0.091 |
| TH-VBC-185 | 1 per 20 l.f. | 8/11/2011 | <0.10 |
| TH-VBC-196 | 1 per 20 l.f. | 8/15/2011 | <0.12 |
| TH-VBC-198 | 1 per 20 l.f. | 8/15/2011 | <0.12 |
| TH-VBC-199 | 1 per 20 l.f. | 8/15/2011 | <0.12 |
| **Verification Wipe Samples** | | | |
| TH-VWS-164 | 1 per 40 l.f. | 8/4/2011 | <0.20 |
| TH-VWS-186 | 1 per 40 l.f. | 8/11/2011 | <0.20 |

Notes:
(1) Total PCBs reported in parts per million (ppm) for bulk concrete verification samples and in µg/100cm$^2$ for verification wipe samples.
Bulk samples collected in accordance with USEPA Region 1 Standard Operation Procedure for Sampling Porous Surfaces for Polychlorinated Biphenyls (revised May 2011) from a depth of 0 to 0.5 inches.
Verification concrete samples collected from remaining face of concrete retaining wall following removal of concrete to a depth of 3 inches into the wall and a lateral distance of 3 inches above and 3 or 6 inches below the caulked joint.
Verification wipe samples collected in accordance with standard wipe test procedures described in 40 CFR 761.123 from encapsulated portions of Tobin Hall wall scheduled to remain in place following application of two coats of Sikagard 670W clear acrylic liquid coating.
Total PCBs reported as Aroclor 1254 or Aroclor 1248. No other Aroclors reported above the minimum laboratory reporting limit.

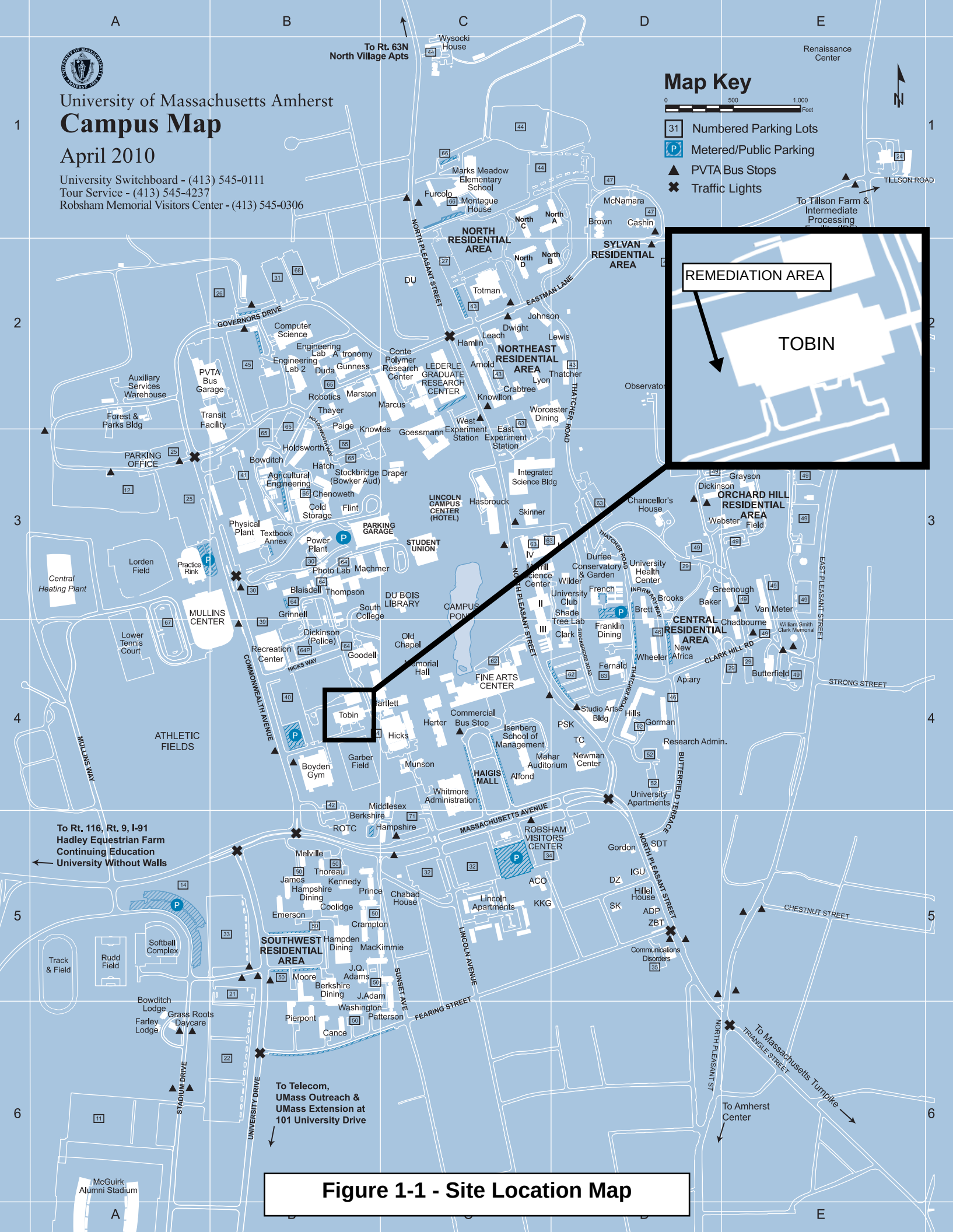
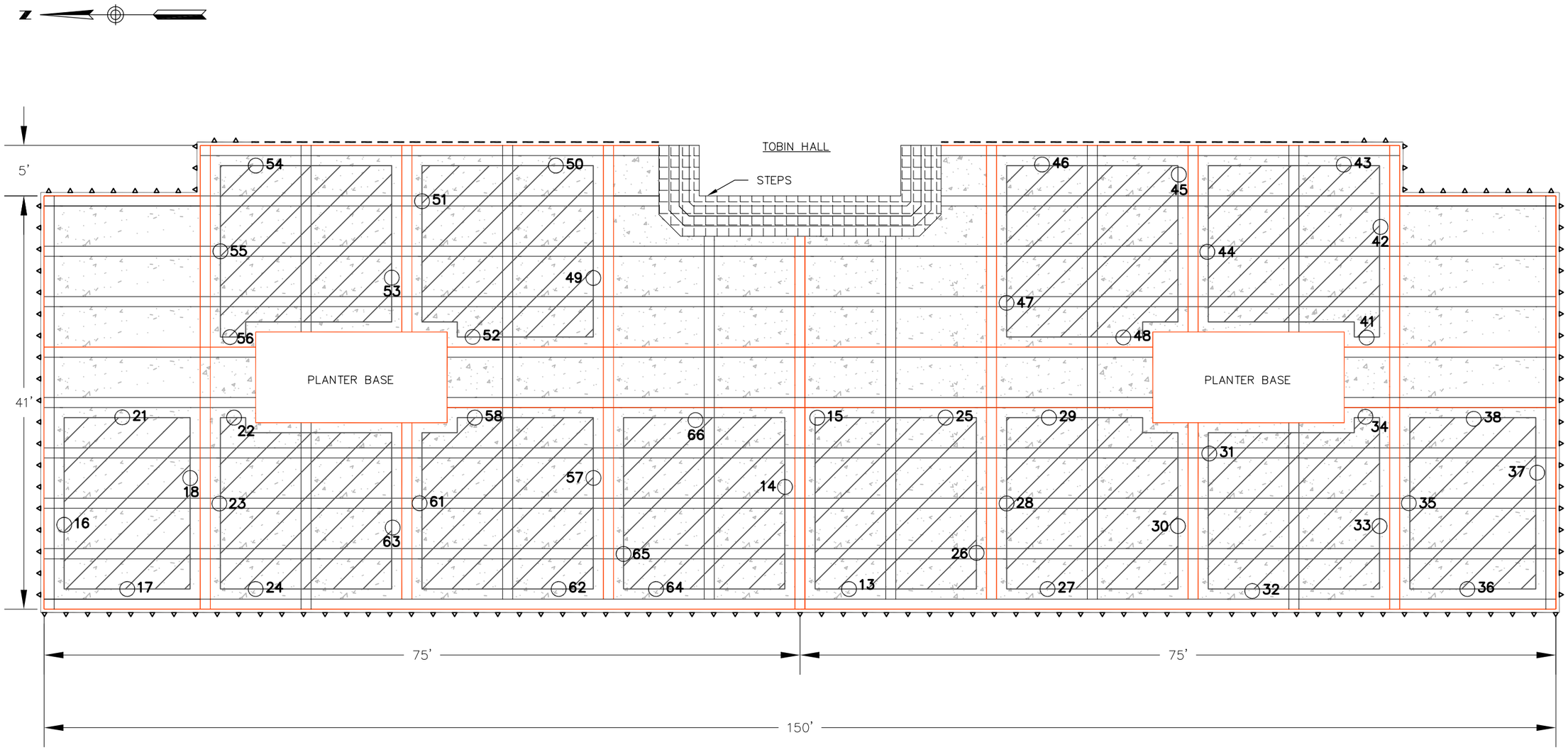



**Figure 1-1 - Site Location Map**




LEGEND

- CAULKED CONCRETE TO CONCRETE EXPANSION JOINT
- CONCRETE AGGREGATE DECKING
- CONCRETE DECKING TO BE SEGREGATED FOR OFF-SITE DISPOSAL AS GENERAL DEMOLITION DEBRIS
- CONCRETE RETAINING WALL TO BE REMOVED
- AREA OF TOBIN HALL CONCRETE ENCAPSULATION
- 13 CONCRETE CHARACTERIZATION SAMPLE LOCATION AND IDENTIFIER

NOTE:

SAMPLE FREQUENCY IS 1 PER 20 LINEAR FOOT OF CUT LINE/CAULKING OR 4 SAMPLES PER ~20'x20' "CUT BOX".

16' 12' 8' 4' 0 12' 24'

BAR SCALE
3/32" = 1'-0"
CHECK GRAPHIC SCALE BEFORE USING

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COMMITMENT & INTEGRITY DRIVE RESULTS

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# CONCRETE DECKING SITE PLAN AND CHARACTERIZATION SAMPLE LOCATIONS

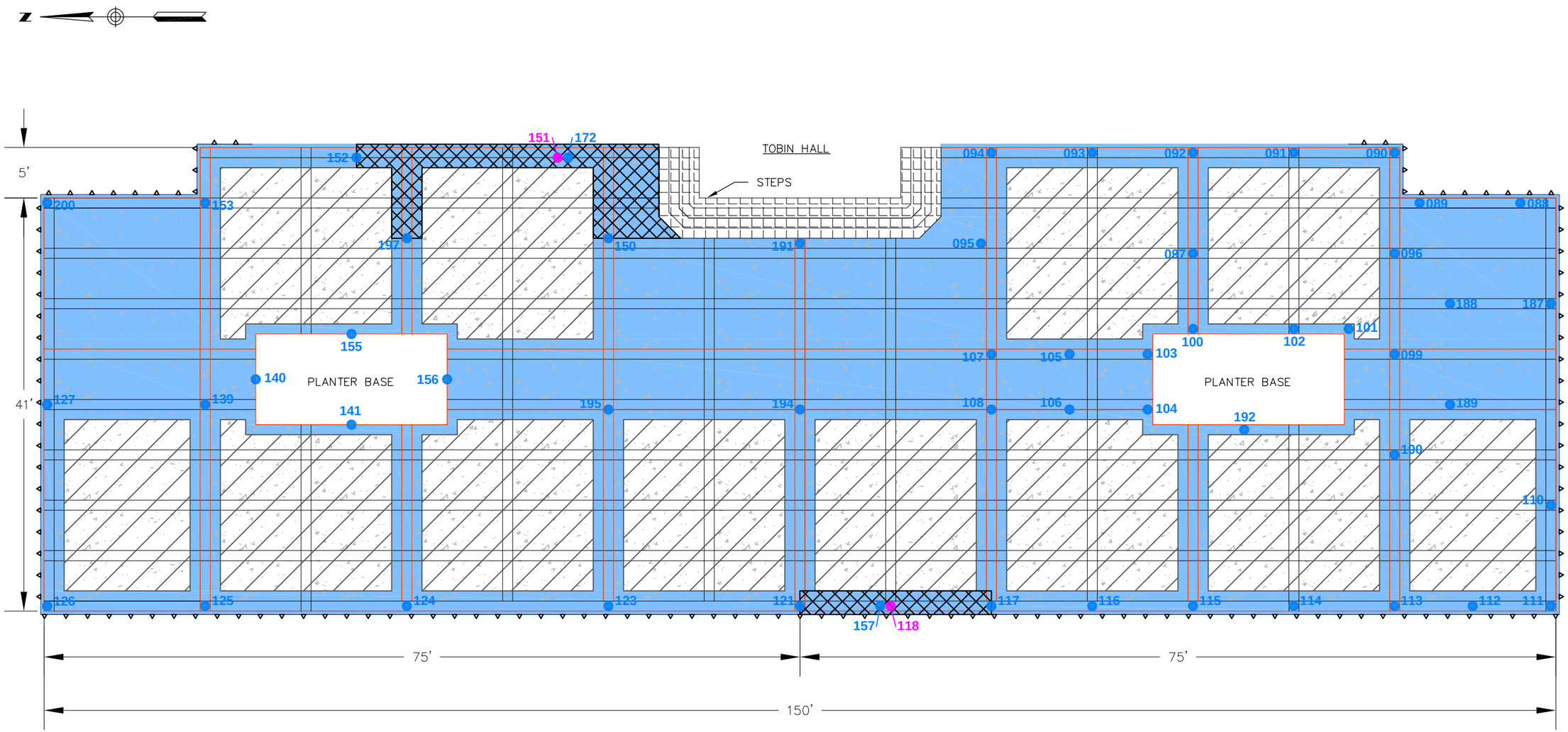
DESIGNED BY:
DRAWN BY:
CHECKED BY: GJF
224733-FIGURE 2-1.DWG

UNIVERSITY OF MASSACHUSETTS
AMHERST, MASSACHUSETTS

TOBIN HALL PCB REMEDIATION
COMPLETION REPORT

JOB NO: 224733
DATE: MARCH 2012
SCALE: AS NOTED

**FIGURE 2-1**




LEGEND

- CAULKED CONCRETE TO CONCRETE EXPANSION JOINT
- AREA OF SOIL EXCAVATION (0–6 INCHES BELOW DECKING)
- AREA OF ADDITIONAL SOIL EXCAVATION (6–12 INCHES BELOW DECKING)
- CONCRETE DECKING TO BE SEGREGATED FOR OFF–SITE DISPOSAL AS GENERAL DEMOLITION DEBRIS
- 157 VERIFICATION SOIL SAMPLE LOCATION AND IDENTIFIER (TOTAL PCBs ≤1.0 PPM)
- 118 VERIFICATION SOIL SAMPLE LOCATION AND IDENTIFIER (TOTAL PCBs >1.0 PPM)
- CONCRETE RETAINING WALL

NOTES:

1. SAMPLES COLLECTED AT AN INITIAL FREQUENCY OF 1 PER 10 LINEAR FEET OF EXCAVATION AND A FINAL FREQUENCY OF 1 PER 20 LINEAR FEET OF EXCAVATION.
2. SAMPLES COLLECTED FROM 0–3 INCHES BELOW BASE OF EXCAVATION FOLLOWING REMOVAL OF 6 INCHES OF SOIL.

16' 12' 8' 4' 0 12' 24'

BAR SCALE
3/32" = 1'–0"
CHECK GRAPHIC SCALE BEFORE USING

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COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

# SOIL EXCAVATION AREAS AND VERIFICATION SAMPLE LOCATIONS

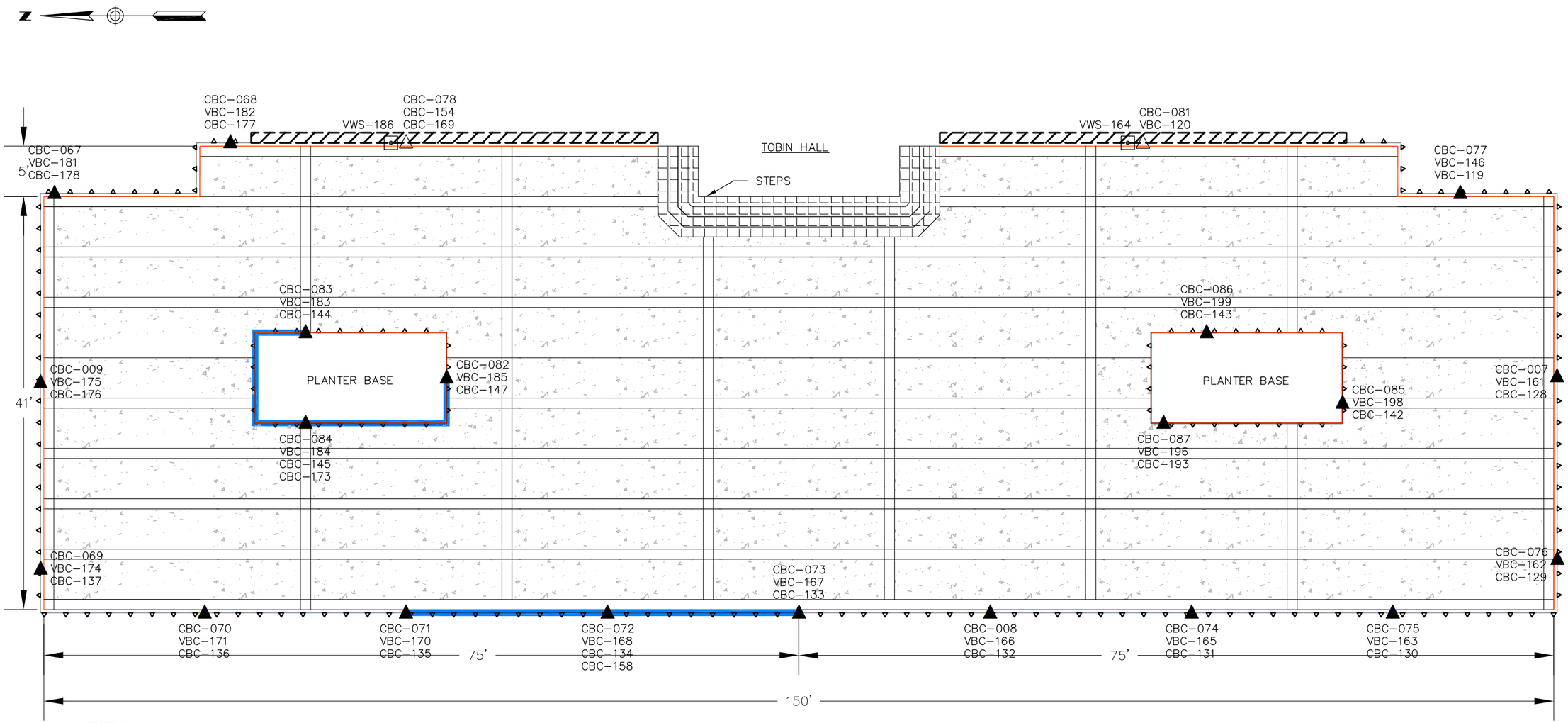
DESIGNED BY:
DRAWN BY:
CHECKED BY: GJF
224733–FIGURE 2–2.DWG

UNIVERSITY OF MASSACHUSETTS
AMHERST, MASSACHUSETTS

TOBIN HALL PCB REMEDIATION
COMPLETION REPORT

JOB NO: 224733
DATE: MARCH 2012
SCALE: AS NOTED

**FIGURE 2-2**




LEGEND

- CAULKED CONCRETE TO CONCRETE EXPANSION JOINT
- FORMER CONCRETE AGGREGATE DECKING
- CONCRETE REMOVAL AREA TO A DISTANCE OF 3" ABOVE AND BELOW CAULKED JOINT AND TO A DEPTH OF 3" BEHIND THE CAULKED JOINT.
- AREA OF TOBIN HALL CONCRETE ENCAPSULATION TO A DISTANCE OF 6" ABOVE AND 6" BELOW CAULKED JOINT
- CONCRETE REMOVAL AREA TO A DISTANCE OF 3" ABOVE AND 6" BELOW THE CAULKED JOINT AND TO A DEPTH OF 3" BEHIND THE CAULKED JOINT.
- CBC-009 ▲ CONCRETE RETAINING WALL AND PLANTER BASE SAMPLE LOCATION AND IDENTIFIER
- CBC-078 △ CONCRETE BUILDING WALL SAMPLE LOCATION AND IDENTIFIER
- VWS-186 ⊡ CONCRETE BUILDING WALL WIPE SAMPLE LOCATION AND IDENTIFIER

NOTES:

1. CHARACTERIZATION SAMPLES COLLECTED AT EACH SAMPLE LOCATION AT A DISTANCE OF 1" OR 3" ABOVE AND/OR BELOW CAULKED JOINTS (SAMPLES COLLECTED AT A DISTANCE OF 6" BELOW IN TWO LOCATIONS BASED ON RESULTS OF SAMPLES COLLECTED 3" BELOW THE CAULKED JOINT).
2. VERIFICATION SAMPLES COLLECTED AT EACH SAMPLE LOCATION FOLLOWING CONCRETE REMOVAL AT A DEPTH OF 3" BEHIND THE FORMER CAULKED JOINT.
3. CHARACTERIZATION SAMPLES COLLECTED ABOVE THE CAULKED JOINT LISTED FIRST FOLLOWED BY VERIFICATION SAMPLES COLLECTED BEHIND THE FORMER CAULKED JOINT AND THEN CHARACTERIZATION SAMPLING COLLECTED BELOW THE CAULKED JOINT.
4. VERIFICATION WIPE SAMPLES COLLECTED FOLLOWING APPLICATION OF TWO COATS OF CLEAR ACRYLIC COATING.

16' 12' 8' 4' 0 12' 24'

BAR SCALE
3/32" = 1'-0"
CHECK GRAPHIC SCALE BEFORE USING

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CONCRETE RETAINING WALL, PLANTING BEDS, AND BUILDING WALL SAMPLE LOCATIONS

DESIGNED BY: EVR
DRAWN BY:
CHECKED BY: CJF
224733-FIGURE 2-3.DWG

UNIVERSITY OF MASSACHUSETTS
AMHERST, MASSACHUSETTS

TOBIN HALL PCB REMEDIATION
COMPLETION REPORT

JOB NO: 224733
DATE: MARCH 2012
SCALE: AS NOTED

FIGURE 2-3

# APPENDIX A: EPA APPROVAL

Rec'd at W:C
March 1, 2012

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

**CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

FEB 2 8 2012

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

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

Dear Mr. Robinson:

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

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

- Removal and disposal of caulk as a greater than or equal to (≥) 50 parts per million (ppm) PCB waste in a TSCA approved or RCRA hazardous waste landfill;

- Removal of PCB contaminated *porous surfaces* (i.e., concrete decking) within a 12-inch cut line of the caulk joint with disposal as a ≥ 50 ppm waste in a TSCA approved or RCRA 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(a) and (c) and § 761.79(h). Information was submitted dated July 20, 2011 (PCB Remediation Approach Outline); August 5, 2011 (Status Update- Tobin Hall PCB Remediation Analytical results); and, February 21, 2012 (email PCB sampling results). These submittals shall be referred to as the "Notification".

- Removal of a minimum of six (6) inches of soil from within the 24 inch wide trenches below the concrete decking caulk joints with disposal as a ≥ 50 ppm PCB waste in a TSCA approved or RCRA hazardous waste landfill;

- Removal of PCB-contaminated *porous surfaces* (i.e., concrete retaining wall and planting beds) located within a 3-inch or 6-inch cut line with disposal as a ≥ 50 PCB ppm waste in a TSCA approved or RCRA hazardous waste landfill; and,

- Encapsulation of PCB-contaminated *porous surfaces* (i.e., Tobin Hall concrete wall) located within six (6) inches above and below the caulk joint with two coats of an acrylic coating.

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

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

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

Questions and correspondence regarding this Approval should be directed to:

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

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

Sincerely,

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

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

Attachment 1 – PCB Approval Conditions

**ATTACHMENT 1:**

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

## GENERAL CONDITIONS

1. This Approval is granted under the authority of Section 6(e) of the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2605(e), and the PCB regulations at 40 CFR Part 761, and applies solely to the *PCB bulk product waste* and the *PCB remediation waste* located at the Site and identified in the Notification.

2. In the event that the cleanup plan described in the Notification differs from the conditions specified in this Approval, the conditions of this Approval shall govern.

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

4. The University of Massachusetts (UMASS) is responsible for the actions of all officers, employees, agents, contractors, subcontractors, and others who are involved in activities conducted under this Approval. If at any time UMASS has or receives information indicating that UMASS or any other person has failed, or may have failed, to comply with any provision of this Approval, it must report the information to EPA in writing within 24 hours of having or receiving the information.

5. This Approval does not: 1) waive or compromise EPA's enforcement and regulatory authority; 2) release UMASS from compliance with any applicable requirements of federal, state or local law; or 3) release UMASS from liability for, or otherwise resolve any violations of federal, state or local law.

## NOTIFICATION AND CERTIFICATION CONDITIONS

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

## DEED RESTRICTION AND USE CONDITIONS

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

## INSPECTION, MODIFICATION AND REVOCATION CONDITIONS

8. Within fifteen (15) days of receipt of this Approval, UMASS shall submit for EPA's review and approval, a detailed monitoring and maintenance implementation plan (MMIP) for the surface coatings. UMASS shall incorporate any changes to the MMIP required by EPA.

    a. The MMIP shall include: a description of the activities that will be conducted, including inspection criteria, frequency, and routine maintenance activities; sampling protocols, sampling frequency, and analytical criteria; and, reporting requirements, as applicable.

    b. The MMIP shall include a communications component which details how the maintenance and monitoring results will be communicated to the Site users, including parents, students, other on-site workers, and interested stakeholders.

    c. The MMIP also shall include a worker training component for maintenance workers or for any person that will be conducting work that could impact the coatings encapsulating the PCB-contaminated surfaces.

    d. UMASS shall submit the results of these long-term monitoring and maintenance activities to EPA. Based on its review of the results, EPA may determine that modification to the MMIP is necessary in order to monitor and/or evaluate the long-term effectiveness of the coatings.

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

9. UMASS shall allow any authorized representative of the Administrator of the EPA to inspect the Site and to inspect records and take samples as may be necessary to determine compliance with the PCB regulations and this Approval. Any refusal by UMASS to allow such an inspection (as authorized by Section 11 of TSCA) shall be grounds for revocation of this Approval.

10. Any modification(s) in the plan, specifications, or information submitted by UMASS, contained in the Notification, and forming the basis upon which this Approval has been issued, must receive prior written approval from the EPA. UMASS shall inform the EPA of any modification, in writing, at least ten (10) days prior to such change. No action may be taken to implement any such modification unless the EPA has approved of the modification, in writing. The EPA may request additional information in order to determine whether to approve the modification.

11. If such modification involves a change in the use of the Site which results in exposures not considered in the Notification, the EPA may revoke, suspend, and/or modify this Approval upon finding that this risk-based disposal action may pose an unreasonable risk of injury to health or the environment due to the change in use. EPA may take similar action if the EPA does not receive requested information needed from UMASS to make a determination regarding potential risk.

12. Any misrepresentation or omission of any material fact in the Notification or in any records or reports may result in the EPA's revocation, suspension and/or modification of the Approval, in addition to any other legal or equitable relief or remedy the EPA may choose to pursue.

## RECORDKEEPING AND REPORTING CONDITIONS

13. UMASS shall prepare and maintain all records and documents required by 40 CFR Part 761, including but not limited to the records required under Subparts J and K. A written record of the cleanup and disposal activities and the analytical sampling shall be established and maintained by UMASS in one centralized location, until such time as EPA approves in writing a request for an alternative disposition of such records. All records shall be made available for inspection to authorized representatives of EPA.

14. As required under Condition 8 of this Approval, UMASS shall submit the results of the long-term monitoring and maintenance activities to EPA as specified in the final MMIP to be approved by EPA.

15. UMASS shall submit a final report to the EPA within thirty (30) days of receipt of this Approval. At a minimum, this final report shall include: a short narrative of the project activities; characterization and confirmation sampling analytical results; copies of the accompanying analytical chains of custody; field and laboratory quality control/quality assurance checks; an estimate of the quantity of PCB waste disposed of and the size of the PCB cleanup area(s); copies of manifests and bills of lading; and copies of certificates of disposal or similar certifications issued by the disposer. The report shall include a certification signed by a UMASS official verifying that the authorized activities have been implemented in accordance with this Approval and the Notification.

16. Required submittals shall be mailed to:

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

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

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**END OF ATTACHMENT 1**

# APPENDIX B: COMPLETION CERTIFICATION

# Certification

On behalf of the University of Massachusetts, the undersigned certifies that pursuant to Condition 15 of EPA's February 28, 2012 PCB Risk-Based Decontamination and Disposal Approval, the authorized activities have been implemented in accordance with the Approval and Notification.

Authorized Signature FOR Donald A. Robinson

3/9/12
Date

Donald A. Robinson
Name of Authorized Representative (Print)

Director, EH&S
Title

# APPENDIX C: DUST MONITORING LOGS

## Air Monitoring for the week: 7/25/11-7/29/11

**Date: 7/25/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 900 | Background Tobin Access Road | 0.039 | Cloudy | |
| | North | 0.018 | | |
| | South | 0.044 | | |
| | East | 0.02 | | |
| | West | 0.053 | | |
| 1100 | Background Tobin Access Road | 0.061 | Cloudy | |
| | North | 0.019 | | |
| | South | 0.013 | | |
| | East | 0.018 | | |
| | West | 0.018 | | |
| 1300 | Background Tobin Access Road | 0.022 | Cloudy | |
| | North | 0.023 | | |
| | South | 0.023 | | |
| | East | 0.022 | | |
| | West | 0.022 | | |

**Date: 7/26/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 830 | Background Tobin Access Road | 0.065 | | |
| | North | 0.063 | | |
| | South | 0.071 | | |
| | East | 0.065 | | |
| | West | 0.068 | | |
| 1415 | Background Tobin Access Road | 0.018 | | |
| | North | 0.05 | | |
| | South | 0.063 | | |
| | East | 0.034 | | |
| | West | 0.035 | | |

**Date: 7/27/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 830 | Background Tobin Access Road | 0.023 | | |
| | North | 0.024 | | |
| | South | 0.023 | | |
| | East | 0.045 | | |
| | West | 0.018 | | |
| 1035 | Background Tobin Access Road | 0.015 | | |
| | North | 0.015 | | |
| | South | 0.017 | | |
| | East | 0.023 | | |
| | West | 0.018 | | |
| 1250 | Background Tobin Access Road | 0.012 | | |
| | North | 0.013 | | |
| | South | 0.033 | | |
| | East | 0.014 | | |
| | West | 0.017 | | |
| 1450 | Background Tobin Access Road | 0.011 | | |
| | North | 0.044 | | |
| | South | 0.407 | | * visible dust due to wind/ activities offsite |
| | East | 0.011 | | |
| | West | 0.021 | | |

**Date: 7/28/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 840 | Background Tobin Access Road | 0.033 | | |
| | North | 0.027 | | |
| | South | 0.058 | | |
| | East | 0.025 | | |
| | West | 0.061 | | |
| 1050 | Background Tobin Access Road | 0.02 | | |
| | North | 0.021 | | |
| | South | 0.046 | | |
| | East | 0.019 | | |
| | West | 0.029 | | |
| 1400 | Background Tobin Access Road | 0.018 | | |
| | North | 0.016 | | |
| | South | 0.026 | | |
| | East | 0.014 | | |
| | West | 0.024 | | |

**Date: 7/29/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 830 | Background Tobin Access Road | 0.004 | | |
| | North | 0.001 | | |
| | South | 0.002 | | |
| | East | 0.001 | | |
| | West | 0.001 | | |
| 1040 | Background Tobin Access Road | 0.001 | | |
| | North | 0.002 | | |
| | South | 0.002 | | |
| | East | 0.001 | | |
| | West | 0.001 | | |
| 1350 | Background Tobin Access Road | 0.001 | | |
| | North | 0.002 | | |
| | South | 0.001 | | |
| | East | 0.001 | | |
| | West | 0.001 | | |

## Air Monitoring for the week: 8/1/11-8/5/11

**Date: 8/1/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 1100 | Background Tobin Access Road | 0.043 | Cloudy | wind conditions from offsite w/ saw cutting onsite |
| | North | 0.042 | | |
| | South | 0.165 | | |
| | East | 0.075 | | |
| | West | 0.076 | | |
| 1208 | Background Tobin Access Road | 0.04 | Rainy | |
| | North | 0.02 | | |
| | South | 0.024 | | |
| | East | 0.034 | | |
| | West | 0.072 | | |
| 1446 | Background Tobin Access Road | 0.026 | Rainy | |
| | North | 0.033 | | |
| | South | 0.037 | | |
| | East | 0.013 | | |
| | West | 0.017 | | |

**Date: 8/2/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 830 | Background Tobin Access Road | 0.028 | Sunny | |
| | North | 0.047 | | |
| | South | 0.062 | | |
| | East | 0.014 | | |
| | West | 0.031 | | |
| 1015 | Background Tobin Access Road | 0.052 | Sunny | |
| | North | 0.077 | | |
| | South | 0.028 | | |
| | East | 0.082 | | |
| | West | 0.021 | | |
| 1400 | Background Tobin Access Road | 0.12 | Sunny | |
| | North | 0.099 | | |
| | South | 0.116 | | |
| | East | 0.084 | | |
| | West | 0.094 | | |

**Date: 8/3/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 845 | Background Tobin Access Road | 0.012 | | |
| | North | 0.016 | | |
| | South | 0.063 | | |
| | East | 0.05 | | |
| | West | 0.077 | | |
| 1030 | Background Tobin Access Road | 0.101 | | |
| | North | 0.084 | | |
| | South | 0.022 | | |
| | East | 0.051 | | |
| | West | 0.078 | | |
| 1400 | Background Tobin Access Road | 0.034 | | |
| | North | 0.081 | | |
| | South | 0.024 | | |
| | East | 0.066 | | |
| | West | 0.121 | | |

**Date: 8/4/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 730 | Background Tobin Access Road | 0.004 | | |
| | North | 0.021 | | |
| | South | 0.007 | | |
| | East | 0.001 | | |
| | West | 0.003 | | |
| 930 | Background Tobin Access Road | 0.129 | | |
| | North | 0.114 | | |
| | South | 0.082 | | |
| | East | 0.051 | | |
| | West | 0.094 | | |
| 1115 | Background Tobin Access Road | 0.071 | | |
| | North | 0.084 | | |
| | South | 0.088 | | |
| | East | 0.028 | | |
| | West | 0.099 | | |
| 1400 | Background Tobin Access Road | 0.049 | | |
| | North | 0.081 | | |
| | South | 0.026 | | |
| | East | 0.041 | | |
| | West | 0.094 | | |

**Date: 8/5/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 830 | Background Tobin Access Road | 0.022 | | |
| | North | 0.014 | | |
| | South | 0.029 | | |
| | East | 0.011 | | |
| | West | 0.048 | | |
| 1030 | Background Tobin Access Road | 0.084 | | |
| | North | 0.082 | | |
| | South | 0.091 | | |
| | East | 0.096 | | |
| | West | 0.091 | | |
| 1330 | Background Tobin Access Road | 0.042 | | |
| | North | 0.076 | | |
| | South | 0.022 | | |
| | East | 0.04 | | |
| | West | 0.081 | | |

## Air Monitoring for the week: 8/8/11-8/12/11

**Date: 8/8/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 800 | Background Tobin Access Road | 0.024 | Cloudy | |
| | North | 0.006 | | |
| | South | 0.009 | | |
| | East | 0.011 | | |
| | West | 0.029 | | |
| 1000 | Background Tobin Access Road | 0.011 | Cloudy | |
| | North | 0.029 | | |
| | South | 0.014 | | |
| | East | 0.012 | | |
| | West | 0.032 | | |
| 1400 | Background Tobin Access Road | 0.071 | Sunny | |
| | North | 0.077 | | |
| | South | 0.044 | | |
| | East | 0.026 | | |
| | West | 0.092 | | |

**Date: 8/9/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 800 | Background Tobin Access Road | 0.072 | Sunny | |
| | North | 0.060 | | |
| | South | 0.084 | | |
| | East | 0.142 | | |
| | West | 0.065 | | |
| 1000 | Background Tobin Access Road | 0.069 | Cloudy | |
| | North | 0.094 | | |
| | South | 0.062 | | |
| | East | 0.120 | | |
| | West | 0.144 | | |
| 1400 | Background Tobin Access Road | 0.102 | Cloudy | Very windy w/ dust from offsite, site adjacent handles this by using frequent water spraying trucks (united rental) |
| | North | 0.246 | | |
| | South | 0.089 | | |
| | East | 0.172 | | |
| | West | 0.157 | | |

**Date: 8/10/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 800 | Background Tobin Access Road | 0.006 | Sunny | |
| | North | 0.001 | | |
| | South | 0.004 | | |
| | East | 0.002 | | |
| | West | 0.009 | | |

**Date: 8/11/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 900 | Background Tobin Access Road | 0.021 | Sunny | |
| | North | 0.032 | | |
| | South | 0.049 | | |
| | East | 0.014 | | |
| | West | 0.028 | | |
| 1100 | Background Tobin Access Road | 0.051 | Sunny | |
| | North | 0.082 | | |
| | South | 0.029 | | |
| | East | 0.048 | | |
| | West | 0.071 | | |
| 1300 | Background Tobin Access Road | 0.061 | Sunny | |
| | North | 0.092 | | |
| | South | 0.072 | | |
| | East | 0.071 | | |
| | West | 0.095 | | |

**Date: 8/12/11**

| Time | Location | Reading ($mg/m^3$) | Met. Conditions | Activity |
|---|---|---|---|---|
| 800 | Background Tobin Access Road | 0.021 | Sunny | |
| | North | 0.031 | | |
| | South | 0.029 | | |
| | East | 0.028 | | |
| | West | 0.014 | | |
| 1000 | Background Tobin Access Road | 0.041 | Sunny | |
| | North | 0.062 | | |
| | South | 0.03 | | |
| | East | 0.049 | | |
| | West | 0.071 | | |
| 1400 | Background Tobin Access Road | 0.072 | Cloudy | |
| | North | 0.073 | | |
| | South | 0.077 | | |
| | East | 0.068 | | |
| | West | 0.072 | | |

# APPENDIX D: ANALYTICAL LABORATORY REPORTS AND DATA VALIDATION SUMMARY

# TOBIN HALL - PROJECT SUMMARY

**ConTest Analytical Laboratory Job Numbers: 11F0378, 11G0186, 11G0300, 11G0410, 11G0684, 11G0734, 11G0745, 11G0781, 11G0852, 11G0858, 11G0886, 11G0889, 11H0031, 11H0070, 11H0133, 11H0177, 11H0235, 11H0280, 11H0350, 11H0380, 11H0464, 11H0525, 11H0553, & 11H0565**

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 2.4, 2.8, 2.9, 3.3, 3.5, 4.4, 4.6, 4.7, 4.8, 4.9, 5.0, 5.3, 5.8, 15.6, 20.0, and 29.4 degrees Celsius and at ambient temperature. Since the samples in sample delivery groups (SDGs) 11G0745 (received at 15.6 degrees Celsius), 11G0858 (received at 29.4 degrees Celsius), 11H0380 (received at ambient temperature), and 11H0565 (received at 20.0 degrees Celsius) arrived at the laboratory direct from sampling, no qualifications will be applied.

**PCBs:**

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

All PCB surrogates met acceptance criteria (30-150%) or were diluted out with the following exceptions:

| LAB ID | SAMPLE ID | TCX/TCX | DCB/DCB | QUALIFIER |
|---|---|---|---|---|
| 11G0745-07 | TH-VBS-94 | 175/197 | 171/177 | None, sample ND |
| 11H0235-03 | TH-VBC-171 | 29.2/OK | OK/OK | None, only 1 out |

TCX = tetrachloro-m-xylene DCB = decachlorobiphenyl

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

The PCB field blank samples TH-VBCQ-020 (11G0410-05), TH-VBCQ-040 (11G0410-25), TH-VBCQ-060 (11G0410-45), TH-CBCQ-80 (11G0734-09), TH-VBSQ-98 (11G0781-01), TH-CBCQ-160 (11H0133-03), and TH-CBCQ-180 (11H0280-08) were ND for all target analytes. No qualifications will be applied.

The PCB matrix spike/matrix spike duplicate (MS/MSD) performed on samples TH-CBC-007 (11G0186-04), TH-VBC-016 (11G0410-01), TH-VBC-036 (11G0410-21), TH-VBC-063 (11G0410-48), TH-CBC-72 (11G0734-01), TH-VBS-88 (11G0745-01), TH-VBS-99 (11G0781-02), TH-VBS-111 (11G0852-07), TH-VBC-1200 (11G0858-02), TH-VBS-140 (11G0889-09), TH-CBC-142 (11H0031-01), TH-CBC-158 (11H0133-01), TH-CBC-169 (11H0235-01), TH-VBC-181 (11H0350-01), TH-VBS-192 (11H0525-02), and TH-VBS-194 (11H0553-01) 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 |
|---|---|---|---|---|
| 11G0858-02 | TH-VBC-1200 | OK/OK/OK/OK | 20.2/31.6/21.6/31.3 | UJ, PCB-1260 |
| 11G0889-09 | TH-VBS-140 | 216/379/402/760* | OK/OK/OK/OK | None, PCB-1248 & PCB-1254 interference, PCB-1016 ND |
| 11H0031-01 | TH-CBC-142 | 245/306/249/291 | OK/167/OK/169 | None, PCB-1248 & PCB-1254 interference, PCB-1016 & PCB-1260 ND |
| 11H0133-01 | TH-CBC-158 | 183/219/155/162 | OK/OK/OK/OK | None, PCB-1248 interference, PCB-1016 ND |
| 11H0525-02 | TH-VBS-192 | 199/203/255/226 | OK/OK/OK/OK | None, PCB-1248 & PCB-1254 interference, PCB-1016 ND |

* The MS/MSD RPDs also failed criteria.

## TOBIN HALL - PROJECT SUMMARY

**ConTest Analytical Laboratory Job Numbers: 11F0378, 11G0186, 11G0300, 11G0410, 11G0684, 11G0734, 11G0745, 11G0781, 11G0852, 11G0858, 11G0886, 11G0889, 11H0031, 11H0070, 11H0133, 11H0177, 11H0235, 11H0280, 11H0350, 11H0380, 11H0464, 11H0525, 11H0553, & 11H0565**

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

PCB field duplicate samples TH-VBC-018 (11G0410-03)/TH-VBCD-019 (11G0410-04), TH-VBC-038 (11G0410-23)/TH-VBCD-039 (11G0410-24), TH-VBC-058 (11G0410-43)/TH-VBCD-059 (11G0410-44), TH-CBC-78 (11G0734-07)/TH-CBCD-79 (11G0734-08), TH-VBS-108 (11G0852-04)/TH-VBSD-109 (11G0852-05), TH-CBC-137 (11G0886-10)/TH-CBCD-138 (11G0886-11), TH-VBS-121 (11G0889-01)/TH-VBSD-122 (11G0889-02), TH-CBC-158 (11H0133-01)/TH-CBCD-159 (11H0133-02), and TH-CBC-178 (11H0280-06)/TH-CBCD-179 (11H0280-07) met acceptance criteria with the following exceptions. PCB-1254 was detected at greater than or equal to two times the reporting limit in sample TH-CBC-137 (11G0886-10), but was not detected in its field duplicate TH-CBCD-138 (11G0886-11). The detected and non-detected PCB-1254 results in samples TH-CBC-137 (11G0886-10) and TH-CBCD-138 (11G0886-11) will be estimated (J/UJ) due to poor field duplicate precision. PCB-1248 was detected at greater than or equal to two times the reporting limit in sample TH-CBC-158 (11H0133-01), but was not detected in its field duplicate TH-CBCD-159 (11H0133-02). The detected and non-detected PCB-1248 results in samples TH-CBC-158 (11H0133-01) and TH-CBCD-159 (11H0133-02) will be estimated (J/UJ) due to poor field duplicate precision. PCB-1254 was detected at greater than or equal to two times the reporting limit in sample TH-CBC-178 (11H0280-06), but was not detected in its field duplicate TH-CBCD-179 (11H0280-07). The detected and non-detected PCB-1254 results in samples TH-CBC-178 (11H0280-06) and TH-CBCD-179 (11H0280-07) will be estimated (J/UJ) due to poor field duplicate precision.

The relative percent difference (RPD) between the column results for all detected PCBs met acceptance criteria (≤25%) with the following exceptions:

| LAB ID | SAMPLE ID | PCB | RPD | QUALIFIER |
|---|---|---|---|---|
| 11G0886-07 | TH-CBC-134 | 1254 | 27.2 | J |
| 11G0889-04 | TH-VBS-124 | 1248 | 30.1 | J |
| 11H0070-07 | TH-CBC-154 | 1248 | 35.4 | J |
| | | 1254 | 25.3 | J |
| 11H0070-10 | TH-CBC-147 | 1248 | 26.3 | J |
| 11H0133-01 | TH-CBC-158 | 1248 | 30.4 | J |

Many 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: 9/13/2011

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

June 27, 2011

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

Project Location: Commonwealth College (Amherst, MA)
Client Job Number:
Project Number: 224166
Laboratory Work Order Number: 11F0738

Enclosed are results of analyses for samples received by the laboratory on June 21, 2011. 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: 6/27/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224166

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11F0738

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

PROJECT LOCATION: Commonwealth College (Amherst, MA)

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| CHC-CK-001 | 11F0738-01 | Concrete | | SW-846 8082A | |
| CHC-CK-002 | 11F0738-02 | Concrete | | SW-846 8082A | |
| CHC-CK-003 | 11F0738-03 | 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:**

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

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

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

11F0738-01[CHC-CK-001], 11F0738-02[CHC-CK-002], 11F0738-03[CHC-CK-003]

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 individuuals 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: Commonwealth College (Amherst | Sample Description: | Work Order: 11F0738

Date Received: 6/21/2011

**Field Sample #: CHC-CK-001** | Sampled: 6/21/2011 14:00

**Sample ID: 11F0738-01**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 34 | mg/Kg | 200 | | SW-846 8082A | 6/21/11 | 6/25/11 0:52 | JMB |
| Aroclor-1221 [1] | ND | 34 | mg/Kg | 200 | | SW-846 8082A | 6/21/11 | 6/25/11 0:52 | JMB |
| Aroclor-1232 [1] | ND | 34 | mg/Kg | 200 | | SW-846 8082A | 6/21/11 | 6/25/11 0:52 | JMB |
| Aroclor-1242 [1] | ND | 34 | mg/Kg | 200 | | SW-846 8082A | 6/21/11 | 6/25/11 0:52 | JMB |
| Aroclor-1248 [1] | ND | 34 | mg/Kg | 200 | | SW-846 8082A | 6/21/11 | 6/25/11 0:52 | JMB |
| Aroclor-1254 [2] | 640 | 34 | mg/Kg | 200 | | SW-846 8082A | 6/21/11 | 6/25/11 0:52 | JMB |
| Aroclor-1260 [1] | ND | 34 | mg/Kg | 200 | | SW-846 8082A | 6/21/11 | 6/25/11 0:52 | JMB |
| Aroclor-1262 [1] | ND | 34 | mg/Kg | 200 | | SW-846 8082A | 6/21/11 | 6/25/11 0:52 | JMB |
| Aroclor-1268 [1] | ND | 34 | mg/Kg | 200 | | SW-846 8082A | 6/21/11 | 6/25/11 0:52 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| **Decachlorobiphenyl [1]** | * | 30-150 | S-01 | 6/25/11 0:52 |
| **Decachlorobiphenyl [2]** | * | 30-150 | S-01 | 6/25/11 0:52 |
| **Tetrachloro-m-xylene [1]** | * | 30-150 | S-01 | 6/25/11 0:52 |
| **Tetrachloro-m-xylene [2]** | * | 30-150 | S-01 | 6/25/11 0:52 |

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Project Location: Commonwealth College (Amherst | Sample Description: | Work Order: 11F0738

Date Received: 6/21/2011

**Field Sample #: CHC-CK-002** | Sampled: 6/21/2011 14:10

**Sample ID: 11F0738-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 20 | mg/Kg | 100 | | SW-846 8082A | 6/21/11 | 6/25/11 1:06 | JMB |
| Aroclor-1221 [1] | ND | 20 | mg/Kg | 100 | | SW-846 8082A | 6/21/11 | 6/25/11 1:06 | JMB |
| Aroclor-1232 [1] | ND | 20 | mg/Kg | 100 | | SW-846 8082A | 6/21/11 | 6/25/11 1:06 | JMB |
| Aroclor-1242 [1] | ND | 20 | mg/Kg | 100 | | SW-846 8082A | 6/21/11 | 6/25/11 1:06 | JMB |
| Aroclor-1248 [1] | ND | 20 | mg/Kg | 100 | | SW-846 8082A | 6/21/11 | 6/25/11 1:06 | JMB |
| Aroclor-1254 [1] | 210 | 20 | mg/Kg | 100 | | SW-846 8082A | 6/21/11 | 6/25/11 1:06 | JMB |
| Aroclor-1260 [1] | ND | 20 | mg/Kg | 100 | | SW-846 8082A | 6/21/11 | 6/25/11 1:06 | JMB |
| Aroclor-1262 [1] | ND | 20 | mg/Kg | 100 | | SW-846 8082A | 6/21/11 | 6/25/11 1:06 | JMB |
| Aroclor-1268 [1] | ND | 20 | mg/Kg | 100 | | SW-846 8082A | 6/21/11 | 6/25/11 1:06 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| **Decachlorobiphenyl [1]** | * | 30-150 | S-01 | 6/25/11 1:06 |
| **Decachlorobiphenyl [2]** | * | 30-150 | S-01 | 6/25/11 1:06 |
| **Tetrachloro-m-xylene [1]** | * | 30-150 | S-01 | 6/25/11 1:06 |
| **Tetrachloro-m-xylene [2]** | * | 30-150 | S-01 | 6/25/11 1:06 |

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

Project Location: Commonwealth College (Amherst
Sample Description:
Work Order: 11F0738

Date Received: 6/21/2011

**Field Sample #: CHC-CK-003**
Sampled: 6/21/2011 14:15

**Sample ID: 11F0738-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 79 | mg/Kg | 400 | | SW-846 8082A | 6/21/11 | 6/25/11 1:21 | JMB |
| Aroclor-1221 [1] | ND | 79 | mg/Kg | 400 | | SW-846 8082A | 6/21/11 | 6/25/11 1:21 | JMB |
| Aroclor-1232 [1] | ND | 79 | mg/Kg | 400 | | SW-846 8082A | 6/21/11 | 6/25/11 1:21 | JMB |
| Aroclor-1242 [1] | ND | 79 | mg/Kg | 400 | | SW-846 8082A | 6/21/11 | 6/25/11 1:21 | JMB |
| Aroclor-1248 [1] | ND | 79 | mg/Kg | 400 | | SW-846 8082A | 6/21/11 | 6/25/11 1:21 | JMB |
| Aroclor-1254 [1] | 760 | 79 | mg/Kg | 400 | | SW-846 8082A | 6/21/11 | 6/25/11 1:21 | JMB |
| Aroclor-1260 [1] | ND | 79 | mg/Kg | 400 | | SW-846 8082A | 6/21/11 | 6/25/11 1:21 | JMB |
| Aroclor-1262 [1] | ND | 79 | mg/Kg | 400 | | SW-846 8082A | 6/21/11 | 6/25/11 1:21 | JMB |
| Aroclor-1268 [1] | ND | 79 | mg/Kg | 400 | | SW-846 8082A | 6/21/11 | 6/25/11 1:21 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| **Decachlorobiphenyl [1]** | * | 30-150 | S-01 | 6/25/11 1:21 |
| **Decachlorobiphenyl [2]** | * | 30-150 | S-01 | 6/25/11 1:21 |
| **Tetrachloro-m-xylene [1]** | * | 30-150 | S-01 | 6/25/11 1:21 |
| **Tetrachloro-m-xylene [2]** | * | 30-150 | S-01 | 6/25/11 1:21 |

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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 |
|---|---|---|---|---|
| 11F0738-01 [CHC-CK-001] | B032451 | 0.593 | 10.0 | 06/21/11 |
| 11F0738-02 [CHC-CK-002] | B032451 | 0.501 | 10.0 | 06/21/11 |
| 11F0738-03 [CHC-CK-003] | B032451 | 0.506 | 10.0 | 06/21/11 |

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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 B032451 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B032451-BLK1)** | | | | Prepared: 06/21/11 Analyzed: 06/24/11 | | | | | | |
| Aroclor-1016 | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1221 | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1232 | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1242 | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1248 | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1254 | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1260 | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1262 | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1268 | ND | 0.20 | mg/Kg | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.20 | mg/Kg | | | | | | | |
| Surrogate: Decachlorobiphenyl | *3.14* | | mg/Kg | 4.00 | | 78.5 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *4.29* | | mg/Kg | 4.00 | | 107 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *3.66* | | mg/Kg | 4.00 | | 91.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *3.61* | | mg/Kg | 4.00 | | 90.3 | 30-150 | | | |
| **LCS (B032451-BS1)** | | | | Prepared: 06/21/11 Analyzed: 06/24/11 | | | | | | |
| Aroclor-1016 | 4.6 | 0.20 | mg/Kg | 4.00 | | 114 | 40-140 | | | |
| Aroclor-1016 [2C] | 4.3 | 0.20 | mg/Kg | 4.00 | | 107 | 40-140 | | | |
| Aroclor-1260 | 4.5 | 0.20 | mg/Kg | 4.00 | | 113 | 40-140 | | | |
| Aroclor-1260 [2C] | 4.3 | 0.20 | mg/Kg | 4.00 | | 108 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *4.22* | | mg/Kg | 4.00 | | 106 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *5.85* | | mg/Kg | 4.00 | | 146 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *5.08* | | mg/Kg | 4.00 | | 127 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *5.05* | | mg/Kg | 4.00 | | 126 | 30-150 | | | |
| **LCS Dup (B032451-BSD1)** | | | | Prepared: 06/21/11 Analyzed: 06/24/11 | | | | | | |
| Aroclor-1016 | 3.5 | 0.20 | mg/Kg | 4.00 | | 87.4 | 40-140 | 26.6 | 30 | |
| Aroclor-1016 [2C] | 3.8 | 0.20 | mg/Kg | 4.00 | | 94.3 | 40-140 | 13.0 | 30 | |
| Aroclor-1260 | 4.1 | 0.20 | mg/Kg | 4.00 | | 103 | 40-140 | 9.05 | 30 | |
| Aroclor-1260 [2C] | 3.6 | 0.20 | mg/Kg | 4.00 | | 90.5 | 40-140 | 17.7 | 30 | |
| Surrogate: Decachlorobiphenyl | *3.15* | | mg/Kg | 4.00 | | 78.8 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *4.34* | | mg/Kg | 4.00 | | 109 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *3.73* | | mg/Kg | 4.00 | | 93.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *3.66* | | mg/Kg | 4.00 | | 91.6 | 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. |
| S-01 | The surrogate recovery for this sample is not available due to sample dilution below the surrogate reporting limit required from high analyte concentration and/or matrix interferences. |

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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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2011 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2011 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2011 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
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Email: info@contestlabs.com
www.contestlabs.com

# CHAIN OF CUSTODY RECORD

11K0378

39 SPRUCE ST, 2ND FLOOR
EAST LONGMEADOW, MA 01028

Page 1 of

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: JEFF HAMEL
Project Location: COMMONWEALTH COLLEGE (AMHERST, MA)
Sampled By: J. REAM

Telephone: (978) 557-8150
Project #
Client PO #

**DATA DELIVERY (check one):**
☐ FAX ☑ EMAIL ☐ WEBSITE CLIENT
Fax #: jhamel@woodardcurran.com
Email:
Format: ☑ EXCEL ☑ PDF ☐ GIS KEY
☐ OTHER

Proposal Provided? (For Billing purposes) ☐ yes _____ proposal date
State Form Required? ☐ yes ☐ no

| Field ID | Sample Description | Lab # | Date Sampled: Start Date/Time | Stop Date/Time | Composite | Grab | *Matrix Code | Conc. Code | PCB's (Soxhlet) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | CHC-CK-001 | | 6/21/11 | 1400 | | ✓ | O | L | X | | | | | | | | | | | |
| 02 | CHC-CK-002 | | ↓ | 1410 | | ✓ | O | L | X | | | | | | | | | | | |
| 03 | CHC-CK-003 | | ↓ | 1415 | | ✓ | O | L | X | | | | | | | | | | | |

ANALYSIS REQUESTED

1
I
A

# of containers
**Preservation
~Cont.Code

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

**Client Comments:**

Laboratory Comments: PCB's by USEPA 8082 via 3540c
R.L. ≤1.0 mg/kg

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] | Date/Time: 6/21/11 1420 |
| Received by: (signature) [signature] | Date/Time: 6/21 1420 |
| Relinquished by: (signature) [signature] | Date/Time: 6/21 1540 |
| Received by: (signature) [signature] 5.0°C | Date/Time: 6/21/11 15:40 |

**Turnaround ****
☐ 7-Day
☐ 10-Day
☑ Other 5 DAY NO CHARGE

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

**Detection Limit Requirements**
Regulations?
Data Enhancement Project/RCP? ☐ Y ☐ N
Special Requirements or DL's:

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

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

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:** CAB **DATE:** 6/21/11

**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 5.0°C Temperature °C by Temp gun _____

**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: _____

## 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) | 3 | 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:
Sample appears to be caulking. listed as concrete on chain.

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

**Time and Date Frozen:**

**Do all samples have the proper Acid pH:** Yes No N/A _____

**Do all samples have the proper Base pH:** Yes No N/A _____

Doc# 277
Rev. 1 May 2011

**11F0738-01** CHC-CK-001

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 640 | 617.1366 | 3.64 |

**11F0738-02** CHC-CK-002

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 | 210 | 184.7864 | 12.8 |

**11F0738-03** CHC-CK-003

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 | 760 | 688.4902 | 9.87 |

**B032451-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 3.66 | 3.6104 | 1.36 |
| Decachlorobiphenyl | 3.14 | 4.2902 | 31 |

**B032451-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 4.5 | 4.32074 | 4.06 |
| Aroclor-1016 | 4.6 | 4.29744 | 6.8 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 5.08 | 5.05362 | 0.521 |
| Decachlorobiphenyl | 4.22 | 5.85382 | 32.4 |

**B032451-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 4.1 | 3.61818 | 12.5 |
| Aroclor-1016 | 3.5 | 3.77172 | 7.47 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 3.73 | 3.66412 | 1.78 |
| Decachlorobiphenyl | 3.15 | 4.34128 | 31.8 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11F0738 |
| Project Location: Commonwealth College (Amherst, MA) | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11F0738-01 thru 11F0738-03

Matrices: Product/Solid

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC CAM II A ( ) | 7470/7471 Hg CAM IIIB ( ) | MassDEP VPH CAM IV A ( ) | 8081 Pesticides CAM V B ( ) | 7196 Hex Cr CAM VI B ( ) | MassDEP APH CAM IX A ( ) |
| 8270 SVOC CAM II B ( ) | 7010 Metals CAM III C ( ) | MassDEP EPH CAM IV A ( ) | 8151 Herbicides CAM V C ( ) | 8330 Explosives CAM VIII A ( ) | TO-15 VOC CAM IX B ( ) |
| 6010 Metals CAM III A ( ) | 6020 Metals CAM III D ( ) | 8082 PCB CAM V A (X) | 9014 Total Cyanide/PAC CAM VI A ( ) | 6860 Perchlorate CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☐ Yes | ☑ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: M Erickson Position: Laboratory Director

Printed Name: Michael A. Erickson Date: 06/27/11

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

July 12, 2011

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

Project Location: Umass- Tobin Hall  Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0186

Enclosed are results of analyses for samples received by the laboratory on July 8, 2011. 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: 7/12/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0186

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

PROJECT LOCATION: Umass- Tobin Hall Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-CBC-007 | 11G0186-04 | Concrete | | SW-846 8082A | |
| TH-CBC-008 | 11G0186-05 | Concrete | | SW-846 8082A | |
| TH-CBC-009 | 11G0186-06 | Concrete | | SW-846 8082A | |
| TH-VBC-010 | 11G0186-07 | Concrete | | SW-846 8082A | |
| TH-VBC-011 | 11G0186-08 | Concrete | | SW-846 8082A | |
| TH-VBC-012 | 11G0186-09 | Concrete | | 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 individuuals 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- Tobin Hall Amherst, MA Sample Description: Work Order: 11G0186

Date Received: 7/8/2011

**Field Sample #: TH-CBC-007** Sampled: 7/8/2011 13:00

**Sample ID: 11G0186-04**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/8/11 | 7/11/11 14:38 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:38 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:38 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:38 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:38 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:38 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:38 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:38 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:38 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 97.7 | 30-150 | | 7/11/11 14:38 |
| Decachlorobiphenyl [2] | 89.9 | 30-150 | | 7/11/11 14:38 |
| Tetrachloro-m-xylene [1] | 95.3 | 30-150 | | 7/11/11 14:38 |
| Tetrachloro-m-xylene [2] | 100 | 30-150 | | 7/11/11 14:38 |

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Project Location: Umass- Tobin Hall Amherst, MA Sample Description: Work Order: 11G0186

Date Received: 7/8/2011

**Field Sample #: TH-CBC-008** Sampled: 7/8/2011 13:10

**Sample ID: 11G0186-05**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/8/11 | 7/11/11 14:50 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:50 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:50 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:50 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:50 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:50 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:50 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:50 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 14:50 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 101 | 30-150 | | 7/11/11 14:50 |
| Decachlorobiphenyl [2] | 93.8 | 30-150 | | 7/11/11 14:50 |
| Tetrachloro-m-xylene [1] | 102 | 30-150 | | 7/11/11 14:50 |
| Tetrachloro-m-xylene [2] | 107 | 30-150 | | 7/11/11 14:50 |

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Project Location: Umass- Tobin Hall Amherst, MA Sample Description: Work Order: 11G0186

Date Received: 7/8/2011

**Field Sample #: TH-CBC-009** Sampled: 7/8/2011 13:15

**Sample ID: 11G0186-06**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/8/11 | 7/11/11 15:03 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:03 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:03 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:03 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:03 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:03 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:03 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:03 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:03 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 103 | 30-150 | | 7/11/11 15:03 |
| Decachlorobiphenyl [2] | 94.9 | 30-150 | | 7/11/11 15:03 |
| Tetrachloro-m-xylene [1] | 99.9 | 30-150 | | 7/11/11 15:03 |
| Tetrachloro-m-xylene [2] | 104 | 30-150 | | 7/11/11 15:03 |

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Project Location: Umass- Tobin Hall Amherst, MA Sample Description: Work Order: 11G0186

Date Received: 7/8/2011

**Field Sample #: TH-VBC-010** Sampled: 7/8/2011 14:50

**Sample ID: 11G0186-07**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/8/11 | 7/11/11 15:15 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:15 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:15 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:15 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:15 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:15 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:15 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:15 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:15 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.8 | 30-150 | | 7/11/11 15:15 |
| Decachlorobiphenyl [2] | 87.2 | 30-150 | | 7/11/11 15:15 |
| Tetrachloro-m-xylene [1] | 91.6 | 30-150 | | 7/11/11 15:15 |
| Tetrachloro-m-xylene [2] | 96.6 | 30-150 | | 7/11/11 15:15 |

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Project Location: Umass- Tobin Hall Amherst, MA Sample Description: Work Order: 11G0186

Date Received: 7/8/2011

**Field Sample #: TH-VBC-011** Sampled: 7/8/2011 14:40

**Sample ID: 11G0186-08**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/8/11 | 7/11/11 15:27 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:27 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:27 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:27 | JMB |
| Aroclor-1248 [2] | 0.32 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:27 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:27 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:27 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:27 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:27 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 101 | 30-150 | | 7/11/11 15:27 |
| Decachlorobiphenyl [2] | 92.6 | 30-150 | | 7/11/11 15:27 |
| Tetrachloro-m-xylene [1] | 96.0 | 30-150 | | 7/11/11 15:27 |
| Tetrachloro-m-xylene [2] | 101 | 30-150 | | 7/11/11 15:27 |

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Project Location: Umass- Tobin Hall Amherst, MA Sample Description: Work Order: 11G0186

Date Received: 7/8/2011

**Field Sample #: TH-VBC-012** Sampled: 7/8/2011 14:30

**Sample ID: 11G0186-09**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/8/11 | 7/11/11 15:39 | JMB |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:39 | JMB |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:39 | JMB |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:39 | JMB |
| Aroclor-1248 [1] | 0.11 | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:39 | JMB |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:39 | JMB |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:39 | JMB |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:39 | JMB |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/8/11 | 7/11/11 15:39 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 93.4 | 30-150 | | 7/11/11 15:39 |
| Decachlorobiphenyl [2] | 87.1 | 30-150 | | 7/11/11 15:39 |
| Tetrachloro-m-xylene [1] | 95.5 | 30-150 | | 7/11/11 15:39 |
| Tetrachloro-m-xylene [2] | 100 | 30-150 | | 7/11/11 15:39 |

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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 |
|---|---|---|---|---|
| 11G0186-04 [TH-CBC-007] | B033374 | 2.00 | 10.0 | 07/08/11 |
| 11G0186-05 [TH-CBC-008] | B033374 | 2.20 | 10.0 | 07/08/11 |
| 11G0186-06 [TH-CBC-009] | B033374 | 2.10 | 10.0 | 07/08/11 |
| 11G0186-07 [TH-VBC-010] | B033374 | 2.10 | 10.0 | 07/08/11 |
| 11G0186-08 [TH-VBC-011] | B033374 | 2.20 | 10.0 | 07/08/11 |
| 11G0186-09 [TH-VBC-012] | B033374 | 2.30 | 10.0 | 07/08/11 |

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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 B033374 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B033374-BLK1)** | | | | Prepared: 07/08/11 Analyzed: 07/11/11 | | | | | | |
| 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 | *1.03* | | mg/Kg | 1.00 | | 103 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.995* | | mg/Kg | 1.00 | | 99.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.09* | | mg/Kg | 1.00 | | 109 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.05* | | mg/Kg | 1.00 | | 105 | 30-150 | | | |
| **LCS (B033374-BS1)** | | | | Prepared: 07/08/11 Analyzed: 07/11/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg | 0.250 | | 96.1 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 116 | 40-140 | | | |
| Aroclor-1260 | 0.26 | 0.10 | mg/Kg | 0.250 | | 102 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 102 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *1.00* | | mg/Kg | 1.00 | | 100 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.971* | | mg/Kg | 1.00 | | 97.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.04* | | mg/Kg | 1.00 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.01* | | mg/Kg | 1.00 | | 101 | 30-150 | | | |
| **LCS Dup (B033374-BSD1)** | | | | Prepared: 07/08/11 Analyzed: 07/11/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg | 0.250 | | 96.3 | 40-140 | 0.187 | 30 | |
| Aroclor-1016 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 116 | 40-140 | 0.0881 | 30 | |
| Aroclor-1260 | 0.26 | 0.10 | mg/Kg | 0.250 | | 102 | 40-140 | 0.0391 | 30 | |
| Aroclor-1260 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 109 | 40-140 | 6.60 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.987* | | mg/Kg | 1.00 | | 98.7 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.954* | | mg/Kg | 1.00 | | 95.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.04* | | mg/Kg | 1.00 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.01* | | mg/Kg | 1.00 | | 101 | 30-150 | | | |

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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 B033374 - SW-846 3540C** | | | | | | | | | | |
| **Matrix Spike (B033374-MS1)** | | **Source: 11G0186-04** | | Prepared: 07/08/11 Analyzed: 07/11/11 | | | | | | |
| Aroclor-1016 | 0.26 | 0.10 | mg/Kg | 0.250 | 0.0 | 104 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | 0.0 | 113 | 40-140 | | | |
| Aroclor-1260 | 0.26 | 0.10 | mg/Kg | 0.250 | 0.0 | 105 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | 0.0 | 117 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *1.02* | | mg/Kg | 1.00 | | 102 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.983* | | mg/Kg | 1.00 | | 98.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.01* | | mg/Kg | 1.00 | | 101 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.986* | | mg/Kg | 1.00 | | 98.6 | 30-150 | | | |
| **Matrix Spike Dup (B033374-MSD1)** | | **Source: 11G0186-04** | | Prepared: 07/08/11 Analyzed: 07/11/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.087 | mg/Kg | 0.217 | 0.0 | 100 | 40-140 | 17.2 | 50 | |
| Aroclor-1016 [2C] | 0.26 | 0.087 | mg/Kg | 0.217 | 0.0 | 117 | 40-140 | 9.86 | 50 | |
| Aroclor-1260 | 0.22 | 0.087 | mg/Kg | 0.217 | 0.0 | 102 | 40-140 | 17.2 | 50 | |
| Aroclor-1260 [2C] | 0.25 | 0.087 | mg/Kg | 0.217 | 0.0 | 114 | 40-140 | 16.4 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.847* | | mg/Kg | 0.870 | | 97.4 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.816* | | mg/Kg | 0.870 | | 93.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.887* | | mg/Kg | 0.870 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.858* | | mg/Kg | 0.870 | | 98.6 | 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2011 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

con-test® ANALYTICAL LABORATORY
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Email: info@contestlabs.com
www.contestlabs.com

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028





11G0186

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS - TOBIN HALL AMHERST, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # gfranklin@
Email: jhamel@woodardcurran.com
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 | PCB's (Soxhlet) | HOLD!! |
|---|---|---|---|---|---|---|---|---|---|
| -01 | TH-CBC-004 | 7/8/11 | 1225 | | ✓ | O | L | | X |
| -02 | TH-CBC-005 | | 1235 | | ✓ | O | L | | X |
| -03 | TH-CBC-006 | | 1245 | | ✓ | O | L | | X |
| -04 | TH-CBC-007 | | 1300 | | ✓ | O | L | X | |
| -05 | TH-CBC-008 | | 1310 | | ✓ | O | L | X | |
| -06 | TH-CBC-009 | | 1315 | | ✓ | O | L | X | |
| -07 | TH-VBC-010 | | 1450 | | ✓ | O | L | X | |
| -08 | TH-VBC-011 | | 1440 | | ✓ | O | L | X | |
| -09 | TH-VBC-012 | | 1430 | | ✓ | O | L | X | |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # of Containers | | | | | | | | | | | | | | | | | | | 1 |
| ** Preservation | | | | | | | | | | | | | | | | | | | I |
| ***Container Code | | | | | | | | | | | | | | | | | | | A |

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 Concrete

Comments: PCB's by USEPA by 8082 by Method 3540c
R.L. ≤1.0 mg/kg

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] | 7/8/11 1600 |
| Received by: (signature) 5.0°C | Date/Time: 7/8/11 1602 |
| 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:

**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

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East Longmeadow, MA. 01028
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# Sample Receipt Checklist

**CLIENT NAME:** Woodwards + Curran **RECEIVED BY:** [illegible] **DATE:** 7/8/11

**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 5.0°C Temperature °C by Temp gun _____

**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 C.C. Date 7/8/11 Time 16:02

**7) Location where samples are stored:** 19

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

## Containers received at Con-Test

| | # of containers | | | # of containers |
|---|---|---|---|---|
| 1 Liter Amber | | | 8 oz amber/clear jar | 9 |
| 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 _____

# Bisulfate _____ # DI Water _____

# Thiosulfate _____ Unpreserved _____

**Time and Date Frozen:**

**Do all samples have the proper Acid pH:** Yes No N/A _____

**Do all samples have the proper Base pH:** Yes No N/A _____

Doc# 277

Rev. 1 May 2011

**11G0186-04** TH-CBC-007

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.953 | 1.00444 | 5.26 |
| Decachlorobiphenyl | 0.977 | 0.89878 | 8.34 |

**11G0186-05** TH-CBC-008

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.919 | 0.8524545 | 7.51 |
| Tetrachloro-m-xylene | 0.927 | 0.9710818 | 4.64 |

**11G0186-06** TH-CBC-009

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.979 | 0.9033714 | 8.04 |
| Tetrachloro-m-xylene | 0.952 | 0.9947667 | 4.39 |

**11G0186-07** TH-VBC-010

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.872 | 0.9204382 | 5.4 |
| Decachlorobiphenyl | 0.903 | 0.8306619 | 8.35 |

**11G0186-08** TH-VBC-011

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 [2C] | 0.32 | 0.3115455 | 2.68 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.872 | 0.9171182 | 5.04 |
| Decachlorobiphenyl | 0.918 | 0.8413909 | 8.71 |

**11G0186-09** TH-VBC-012

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.11 | 0.106887 | 2.87 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.812 | 0.7576392 | 6.93 |
| Tetrachloro-m-xylene | 0.830 | 0.8731043 | 5.06 |

**B033374-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.03 | 0.99516 | 3.44 |
| Tetrachloro-m-xylene | 1.09 | 1.04995 | 3.74 |

**B033374-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.26 | 0.256105 | 1.51 |
| Aroclor-1016 | 0.24 | 0.289675 | 18.8 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.00 | 0.971245 | 2.92 |
| Tetrachloro-m-xylene | 1.04 | 1.010135 | 2.91 |

**B033374-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.24 | 0.28942 | 18.7 |
| Aroclor-1260 | 0.26 | 0.27359 | 5.09 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.04 | 1.01138 | 2.79 |
| Decachlorobiphenyl | 0.987 | 0.954375 | 3.36 |

**B033374-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.26 | 0.28171 | 8.02 |
| Aroclor-1260 | 0.26 | 0.29252 | 11.8 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.01 | 0.985605 | 2.44 |
| Decachlorobiphenyl | 1.02 | 0.982805 | 3.71 |

**B033374-MSD1** Matrix Spike Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.22 | 0.2552478 | 14.8 |
| Aroclor-1260 | 0.22 | 0.2482131 | 12.1 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.887 | 0.8575174 | 3.38 |
| Decachlorobiphenyl | 0.847 | 0.8160565 | 3.72 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0186 |
| Project Location: Umass- Tobin Hall Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0186-04 thru 11G0186-09

Matrices: Product/Solid

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC CAM II A ( ) | 7470/7471 Hg CAM IIIB ( ) | MassDEP VPH CAM IV A ( ) | 8081 Pesticides CAM V B ( ) | 7196 Hex Cr CAM VI B ( ) | MassDEP APH CAM IX A ( ) |
| 8270 SVOC CAM II B ( ) | 7010 Metals CAM III C ( ) | MassDEP EPH CAM IV A ( ) | 8151 Herbicides CAM V C ( ) | 8330 Explosives CAM VIII A ( ) | TO-15 VOC CAM IX B ( ) |
| 6010 Metals CAM III A ( ) | 6020 Metals CAM III D ( ) | 8082 PCB CAM V A (X) | 9014 Total Cyanide/PAC CAM VI A ( ) | 6860 Perchlorate CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | |
|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 07/12/11

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

July 15, 2011

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

Project Location: Amherst, MA UMASS Tobin Hall
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0300

Enclosed are results of analyses for samples received by the laboratory on July 13, 2011. 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: 7/15/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0300

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

PROJECT LOCATION: Amherst, MA UMASS Tobin Hall

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-CBC-013 | 11G0300-01 | Concrete | | SW-846 8082A | |
| TH-CBC-014 | 11G0300-02 | Concrete | | SW-846 8082A | |
| TH-CBC-015 | 11G0300-03 | 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.

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 individuuals 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: Amherst, MA UMASS Tobin Hal  Sample Description:  Work Order: 11G0300

Date Received: 7/13/2011

**Field Sample #: TH-CBC-013**  Sampled: 7/13/2011 12:15

**Sample ID: 11G0300-01**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/13/11 | 7/15/11 3:29 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:29 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:29 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:29 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:29 | JMB |
| Aroclor-1254 [2] | 0.41 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:29 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:29 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:29 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:29 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.7 | 30-150 | | 7/15/11 3:29 |
| Decachlorobiphenyl [2] | 89.4 | 30-150 | | 7/15/11 3:29 |
| Tetrachloro-m-xylene [1] | 89.4 | 30-150 | | 7/15/11 3:29 |
| Tetrachloro-m-xylene [2] | 87.9 | 30-150 | | 7/15/11 3:29 |

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Project Location: Amherst, MA UMASS Tobin Hal  Sample Description:  Work Order: 11G0300

Date Received: 7/13/2011

**Field Sample #: TH-CBC-014**  Sampled: 7/13/2011 12:30

**Sample ID: 11G0300-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/13/11 | 7/15/11 3:42 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:42 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:42 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:42 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:42 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:42 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:42 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:42 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:42 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 112 | 30-150 | | 7/15/11 3:42 |
| Decachlorobiphenyl [2] | 106 | 30-150 | | 7/15/11 3:42 |
| Tetrachloro-m-xylene [1] | 109 | 30-150 | | 7/15/11 3:42 |
| Tetrachloro-m-xylene [2] | 109 | 30-150 | | 7/15/11 3:42 |

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Project Location: Amherst, MA UMASS Tobin Hal  Sample Description:  Work Order: 11G0300

Date Received: 7/13/2011

**Field Sample #: TH-CBC-015**  Sampled: 7/13/2011 12:40

**Sample ID: 11G0300-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/13/11 | 7/15/11 3:54 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:54 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:54 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:54 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:54 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:54 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:54 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:54 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/13/11 | 7/15/11 3:54 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 91.8 | 30-150 | | 7/15/11 3:54 |
| Decachlorobiphenyl [2] | 88.7 | 30-150 | | 7/15/11 3:54 |
| Tetrachloro-m-xylene [1] | 85.6 | 30-150 | | 7/15/11 3:54 |
| Tetrachloro-m-xylene [2] | 86.1 | 30-150 | | 7/15/11 3:54 |

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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 |
|---|---|---|---|---|
| 11G0300-01 [TH-CBC-013] | B033557 | 2.00 | 10.0 | 07/13/11 |
| 11G0300-02 [TH-CBC-014] | B033557 | 2.00 | 10.0 | 07/13/11 |
| 11G0300-03 [TH-CBC-015] | B033557 | 2.00 | 10.0 | 07/13/11 |

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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 B033557 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B033557-BLK1)** | | | | Prepared: 07/13/11 Analyzed: 07/15/11 | | | | | | |
| 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 | *0.932* | | mg/Kg | 1.00 | | 93.2 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.903* | | mg/Kg | 1.00 | | 90.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.974* | | mg/Kg | 1.00 | | 97.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.965* | | mg/Kg | 1.00 | | 96.5 | 30-150 | | | |
| **LCS (B033557-BS1)** | | | | Prepared: 07/13/11 Analyzed: 07/15/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg | 0.250 | | 98.8 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.31 | 0.10 | mg/Kg | 0.250 | | 122 | 40-140 | | | |
| Aroclor-1260 | 0.24 | 0.10 | mg/Kg | 0.250 | | 97.4 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 109 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.969* | | mg/Kg | 1.00 | | 96.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.936* | | mg/Kg | 1.00 | | 93.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.974* | | mg/Kg | 1.00 | | 97.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.967* | | mg/Kg | 1.00 | | 96.7 | 30-150 | | | |
| **LCS Dup (B033557-BSD1)** | | | | Prepared: 07/13/11 Analyzed: 07/15/11 | | | | | | |
| Aroclor-1016 | 0.29 | 0.10 | mg/Kg | 0.250 | | 117 | 40-140 | 16.7 | 30 | |
| Aroclor-1016 [2C] | 0.33 | 0.10 | mg/Kg | 0.250 | | 133 | 40-140 | 8.28 | 30 | |
| Aroclor-1260 | 0.26 | 0.10 | mg/Kg | 0.250 | | 103 | 40-140 | 5.60 | 30 | |
| Aroclor-1260 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 113 | 40-140 | 3.86 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.976* | | mg/Kg | 1.00 | | 97.6 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.947* | | mg/Kg | 1.00 | | 94.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.02* | | mg/Kg | 1.00 | | 102 | 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.

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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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2011 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

con-test ANALYTICAL LABORATORY
Phone: 413-525-2332
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Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

# CHAIN OF CUSTODY RECORD

Page 1 of 1

11G0300

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180 ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: AMHERST, MA UMASS-TOBIN HALL
Sampled By: J. REAM

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

Telephone: 1(978)557-8150
Project # 224733
Client PO#

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

| | |
|---|---|
| # of Containers | 1 |
| ** Preservation | I |
| ***Container Code | A |

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 | PCB'S (Soxhlet) |
|---|---|---|---|---|---|---|---|---|
| -01 | TH-CBC-013 | 7/13/11 | 1215 | | ✓ | O | L | X |
| -02 | TH-CBC-014 | ↓ | 1230 | | ✓ | O | L | X |
| -03 | TH-CBC-015 | ↓ | 1240 | | ✓ | O | L | X |

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 CONCRETE

Comments: PCB's by USEPA 8082 via Method 3540c (Soxhlet)
R.L. ≤ 1.0 mg/kg

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

| Signature | Date/Time |
|---|---|
| Relinquished by: (signature) [signature] | Date/Time: 7/13/11 |
| Received by: (signature) Paula Blakeboro | Date/Time: 1330 7/13/11 |
| 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:

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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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:** PB/CSB **DATE:** 7/12/11

**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 4.6 °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: _____

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | | 8 oz amber/clear jar | 3 |
| 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 _____

# Bisulfate _____ # DI Water _____

# Thiosulfate _____ Unpreserved _____

**Time and Date Frozen:**

**Do all samples have the proper Acid pH: Yes No N/A** _____

**Do all samples have the proper Base pH: Yes No N/A** _____

Doc# 277

Rev. 1 May

**11G0300-01** TH-CBC-013

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.41 | 0.384435 | 6.44 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.947 | 0.89385 | 5.77 |
| Tetrachloro-m-xylene | 0.894 | 0.879075 | 1.68 |

**11G0300-02** TH-CBC-014

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.12 | 1.06481 | 5.05 |
| Tetrachloro-m-xylene | 1.09 | 1.09044 | 0.0404 |

**11G0300-03** TH-CBC-015

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.918 | 0.88743 | 3.39 |
| Tetrachloro-m-xylene | 0.856 | 0.8607 | 0.548 |

**B033557-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.974 | 0.965345 | 0.893 |
| Decachlorobiphenyl | 0.932 | 0.90292 | 3.17 |

**B033557-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.24 | 0.271265 | 12.2 |
| Aroclor-1016 | 0.25 | 0.306015 | 20.1 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.969 | 0.935985 | 3.47 |
| Tetrachloro-m-xylene | 0.974 | 0.966905 | 0.731 |

**B033557-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.29 | 0.33246 | 13.6 |
| Aroclor-1260 | 0.26 | 0.28194 | 8.1 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.02 | 1.01068 | 0.918 |
| Decachlorobiphenyl | 0.976 | 0.94658 | 3.06 |

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July 19, 2011

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

Project Location: Amherst, MA (UMASS - Tobin Hall)
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0410

Enclosed are results of analyses for samples received by the laboratory on July 15, 2011. 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: 7/19/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0410

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

PROJECT LOCATION: Amherst, MA (UMASS - Tobin Hall)

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBC-016 | 11G0410-01 | Product/Solid | | SW-846 8082A | |
| TH-VBC-017 | 11G0410-02 | Product/Solid | | SW-846 8082A | |
| TH-VBC-018 | 11G0410-03 | Product/Solid | | SW-846 8082A | |
| TH-VBCD-019 | 11G0410-04 | Product/Solid | | SW-846 8082A | |
| TH-VBCQ-020 | 11G0410-05 | Water | | SW-846 8082A | |
| TH-VBC-021 | 11G0410-06 | Product/Solid | | SW-846 8082A | |
| TH-VBC-022 | 11G0410-07 | Product/Solid | | SW-846 8082A | |
| TH-VBC-023 | 11G0410-08 | Product/Solid | | SW-846 8082A | |
| TH-VBC-024 | 11G0410-09 | Product/Solid | | SW-846 8082A | |
| TH-VBC-025 | 11G0410-10 | Product/Solid | | SW-846 8082A | |
| TH-VBC-026 | 11G0410-11 | Product/Solid | | SW-846 8082A | |
| TH-VBC-027 | 11G0410-12 | Product/Solid | | SW-846 8082A | |
| TH-VBC-028 | 11G0410-13 | Product/Solid | | SW-846 8082A | |
| TH-VBC-029 | 11G0410-14 | Product/Solid | | SW-846 8082A | |
| TH-VBC-030 | 11G0410-15 | Product/Solid | | SW-846 8082A | |
| TH-VBC-031 | 11G0410-16 | Product/Solid | | SW-846 8082A | |
| TH-VBC-032 | 11G0410-17 | Product/Solid | | SW-846 8082A | |
| TH-VBC-033 | 11G0410-18 | Product/Solid | | SW-846 8082A | |
| TH-VBC-034 | 11G0410-19 | Product/Solid | | SW-846 8082A | |
| TH-VBC-035 | 11G0410-20 | Product/Solid | | SW-846 8082A | |
| TH-VBC-036 | 11G0410-21 | Product/Solid | | SW-846 8082A | |
| TH-VBC-037 | 11G0410-22 | Product/Solid | | SW-846 8082A | |
| TH-VBC-038 | 11G0410-23 | Product/Solid | | SW-846 8082A | |
| TH-VBCD-039 | 11G0410-24 | Product/Solid | | SW-846 8082A | |
| TH-VBCQ-040 | 11G0410-25 | Water | | SW-846 8082A | |
| TH-VBC-041 | 11G0410-26 | Product/Solid | | SW-846 8082A | |
| TH-VBC-042 | 11G0410-27 | Product/Solid | | SW-846 8082A | |
| TH-VBC-043 | 11G0410-28 | Product/Solid | | SW-846 8082A | |
| TH-VBC-044 | 11G0410-29 | Product/Solid | | SW-846 8082A | |
| TH-VBC-045 | 11G0410-30 | Product/Solid | | SW-846 8082A | |
| TH-VBC-046 | 11G0410-31 | Product/Solid | | SW-846 8082A | |
| TH-VBC-047 | 11G0410-32 | Product/Solid | | SW-846 8082A | |
| TH-VBC-048 | 11G0410-33 | Product/Solid | | SW-846 8082A | |
| TH-VBC-049 | 11G0410-34 | Product/Solid | | SW-846 8082A | |
| TH-VBC-050 | 11G0410-35 | Product/Solid | | SW-846 8082A | |
| TH-VBC-051 | 11G0410-36 | Product/Solid | | SW-846 8082A | |
| TH-VBC-052 | 11G0410-37 | Product/Solid | | SW-846 8082A | |
| TH-VBC-053 | 11G0410-38 | Product/Solid | | SW-846 8082A | |
| TH-VBC-054 | 11G0410-39 | Product/Solid | | SW-846 8082A | |
| TH-VBC-055 | 11G0410-40 | Product/Solid | | SW-846 8082A | |
| TH-VBC-056 | 11G0410-41 | Product/Solid | | SW-846 8082A | |

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

REPORT DATE: 7/19/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0410

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

PROJECT LOCATION: Amherst, MA (UMASS - Tobin Hall)

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBC-057 | 11G0410-42 | Product/Solid | | SW-846 8082A | |
| TH-VBC-058 | 11G0410-43 | Product/Solid | | SW-846 8082A | |
| TH-VBCD-059 | 11G0410-44 | Product/Solid | | SW-846 8082A | |
| TH-VBCQ-060 | 11G0410-45 | Water | | SW-846 8082A | |
| TH-VBC-061 | 11G0410-46 | Product/Solid | | SW-846 8082A | |
| TH-VBC-062 | 11G0410-47 | Product/Solid | | SW-846 8082A | |
| TH-VBC-063 | 11G0410-48 | Product/Solid | | SW-846 8082A | |
| TH-VBC-064 | 11G0410-49 | Product/Solid | | SW-846 8082A | |
| TH-VBC-065 | 11G0410-50 | Product/Solid | | SW-846 8082A | |
| TH-VBC-066 | 11G0410-51 | 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 individuuals 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: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-016**  Sampled: 7/15/2011 08:30

**Sample ID: 11G0410-01**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 16:54 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:54 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:54 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:54 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:54 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:54 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:54 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:54 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:54 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 87.6 | 30-150 | | 7/18/11 16:54 |
| Decachlorobiphenyl [2] | 82.5 | 30-150 | | 7/18/11 16:54 |
| Tetrachloro-m-xylene [1] | 87.5 | 30-150 | | 7/18/11 16:54 |
| Tetrachloro-m-xylene [2] | 92.7 | 30-150 | | 7/18/11 16:54 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-017**  Sampled: 7/15/2011 09:10

**Sample ID: 11G0410-02**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 17:08 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:08 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:08 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:08 | PJG |
| Aroclor-1248 [2] | 0.13 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:08 | PJG |
| Aroclor-1254 [1] | 0.12 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:08 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:08 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:08 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:08 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 86.8 | 30-150 | | 7/18/11 17:08 |
| Decachlorobiphenyl [2] | 81.9 | 30-150 | | 7/18/11 17:08 |
| Tetrachloro-m-xylene [1] | 88.3 | 30-150 | | 7/18/11 17:08 |
| Tetrachloro-m-xylene [2] | 92.7 | 30-150 | | 7/18/11 17:08 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-018**  Sampled: 7/15/2011 09:15

**Sample ID: 11G0410-03**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 17:22 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:22 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:22 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:22 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:22 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:22 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:22 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:22 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:22 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 101 | 30-150 | | 7/18/11 17:22 |
| Decachlorobiphenyl [2] | 95.9 | 30-150 | | 7/18/11 17:22 |
| Tetrachloro-m-xylene [1] | 106 | 30-150 | | 7/18/11 17:22 |
| Tetrachloro-m-xylene [2] | 112 | 30-150 | | 7/18/11 17:22 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBCD-019**  Sampled: 7/15/2011 09:15

**Sample ID: 11G0410-04**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 17:36 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:36 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:36 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:36 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:36 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:36 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:36 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:36 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:36 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 86.4 | 30-150 | | 7/18/11 17:36 |
| Decachlorobiphenyl [2] | 81.7 | 30-150 | | 7/18/11 17:36 |
| Tetrachloro-m-xylene [1] | 93.5 | 30-150 | | 7/18/11 17:36 |
| Tetrachloro-m-xylene [2] | 98.9 | 30-150 | | 7/18/11 17:36 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBCQ-020**  Sampled: 7/15/2011 09:20

**Sample ID: 11G0410-05**

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 | 7/15/11 | 7/18/11 20:00 | PJG |
| Aroclor-1221 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:00 | PJG |
| Aroclor-1232 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:00 | PJG |
| Aroclor-1242 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:00 | PJG |
| Aroclor-1248 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:00 | PJG |
| Aroclor-1254 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:00 | PJG |
| Aroclor-1260 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:00 | PJG |
| Aroclor-1262 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:00 | PJG |
| Aroclor-1268 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:00 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 47.7 | 30-150 | | 7/18/11 20:00 |
| Decachlorobiphenyl [2] | 47.5 | 30-150 | | 7/18/11 20:00 |
| Tetrachloro-m-xylene [1] | 73.5 | 30-150 | | 7/18/11 20:00 |
| Tetrachloro-m-xylene [2] | 73.7 | 30-150 | | 7/18/11 20:00 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-021**  Sampled: 7/15/2011 09:25

**Sample ID: 11G0410-06**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 17:50 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:50 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:50 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:50 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:50 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:50 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:50 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:50 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:50 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.0 | 30-150 | | 7/18/11 17:50 |
| Decachlorobiphenyl [2] | 87.9 | 30-150 | | 7/18/11 17:50 |
| Tetrachloro-m-xylene [1] | 101 | 30-150 | | 7/18/11 17:50 |
| Tetrachloro-m-xylene [2] | 107 | 30-150 | | 7/18/11 17:50 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-022**  Sampled: 7/15/2011 09:37

**Sample ID: 11G0410-07**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 18:04 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:04 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:04 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:04 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:04 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:04 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:04 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:04 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:04 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 80.4 | 30-150 | | 7/18/11 18:04 |
| Decachlorobiphenyl [2] | 75.4 | 30-150 | | 7/18/11 18:04 |
| Tetrachloro-m-xylene [1] | 83.6 | 30-150 | | 7/18/11 18:04 |
| Tetrachloro-m-xylene [2] | 87.5 | 30-150 | | 7/18/11 18:04 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-023**  Sampled: 7/15/2011 09:38

**Sample ID: 11G0410-08**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 18:18 | PJG |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:18 | PJG |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:18 | PJG |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:18 | PJG |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:18 | PJG |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:18 | PJG |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:18 | PJG |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:18 | PJG |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:18 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 85.0 | 30-150 | | 7/18/11 18:18 |
| Decachlorobiphenyl [2] | 79.8 | 30-150 | | 7/18/11 18:18 |
| Tetrachloro-m-xylene [1] | 84.3 | 30-150 | | 7/18/11 18:18 |
| Tetrachloro-m-xylene [2] | 89.8 | 30-150 | | 7/18/11 18:18 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-024**  Sampled: 7/15/2011 09:40

**Sample ID: 11G0410-09**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 18:33 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:33 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:33 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:33 | PJG |
| Aroclor-1248 [1] | 0.14 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:33 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:33 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:33 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:33 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:33 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 107 | 30-150 | | 7/18/11 18:33 |
| Decachlorobiphenyl [2] | 98.5 | 30-150 | | 7/18/11 18:33 |
| Tetrachloro-m-xylene [1] | 104 | 30-150 | | 7/18/11 18:33 |
| Tetrachloro-m-xylene [2] | 105 | 30-150 | | 7/18/11 18:33 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-025**  Sampled: 7/15/2011 09:55

**Sample ID: 11G0410-10**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 19:29 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:29 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:29 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:29 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:29 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:29 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:29 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:29 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:29 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 93.5 | 30-150 | | 7/18/11 19:29 |
| Decachlorobiphenyl [2] | 87.0 | 30-150 | | 7/18/11 19:29 |
| Tetrachloro-m-xylene [1] | 93.1 | 30-150 | | 7/18/11 19:29 |
| Tetrachloro-m-xylene [2] | 98.7 | 30-150 | | 7/18/11 19:29 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-026**  Sampled: 7/15/2011 10:05

**Sample ID: 11G0410-11**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 19:43 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:43 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:43 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:43 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:43 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:43 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:43 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:43 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:43 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.7 | 30-150 | | 7/18/11 19:43 |
| Decachlorobiphenyl [2] | 88.3 | 30-150 | | 7/18/11 19:43 |
| Tetrachloro-m-xylene [1] | 94.4 | 30-150 | | 7/18/11 19:43 |
| Tetrachloro-m-xylene [2] | 99.7 | 30-150 | | 7/18/11 19:43 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-027**  Sampled: 7/15/2011 10:10

**Sample ID: 11G0410-12**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 19:57 | PJG |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:57 | PJG |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:57 | PJG |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:57 | PJG |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:57 | PJG |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:57 | PJG |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:57 | PJG |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:57 | PJG |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:57 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 109 | 30-150 | | 7/18/11 19:57 |
| Decachlorobiphenyl [2] | 102 | 30-150 | | 7/18/11 19:57 |
| Tetrachloro-m-xylene [1] | 115 | 30-150 | | 7/18/11 19:57 |
| Tetrachloro-m-xylene [2] | 121 | 30-150 | | 7/18/11 19:57 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-028**  Sampled: 7/15/2011 10:20

**Sample ID: 11G0410-13**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 20:11 | PJG |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:11 | PJG |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:11 | PJG |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:11 | PJG |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:11 | PJG |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:11 | PJG |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:11 | PJG |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:11 | PJG |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:11 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 82.1 | 30-150 | | 7/18/11 20:11 |
| Decachlorobiphenyl [2] | 76.1 | 30-150 | | 7/18/11 20:11 |
| Tetrachloro-m-xylene [1] | 80.9 | 30-150 | | 7/18/11 20:11 |
| Tetrachloro-m-xylene [2] | 85.1 | 30-150 | | 7/18/11 20:11 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-029**  Sampled: 7/15/2011 10:22

**Sample ID: 11G0410-14**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 20:25 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:25 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:25 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:25 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:25 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:25 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:25 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:25 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:25 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.1 | 30-150 | | 7/18/11 20:25 |
| Decachlorobiphenyl [2] | 88.9 | 30-150 | | 7/18/11 20:25 |
| Tetrachloro-m-xylene [1] | 89.3 | 30-150 | | 7/18/11 20:25 |
| Tetrachloro-m-xylene [2] | 94.2 | 30-150 | | 7/18/11 20:25 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-030**  Sampled: 7/15/2011 10:25

**Sample ID: 11G0410-15**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 20:39 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:39 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:39 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:39 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:39 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:39 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:39 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:39 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:39 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 91.6 | 30-150 | | 7/18/11 20:39 |
| Decachlorobiphenyl [2] | 84.9 | 30-150 | | 7/18/11 20:39 |
| Tetrachloro-m-xylene [1] | 95.3 | 30-150 | | 7/18/11 20:39 |
| Tetrachloro-m-xylene [2] | 100 | 30-150 | | 7/18/11 20:39 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-031**  Sampled: 7/15/2011 10:30

**Sample ID: 11G0410-16**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 20:53 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:53 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:53 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:53 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:53 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:53 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:53 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:53 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:53 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 87.8 | 30-150 | | 7/18/11 20:53 |
| Decachlorobiphenyl [2] | 81.3 | 30-150 | | 7/18/11 20:53 |
| Tetrachloro-m-xylene [1] | 87.5 | 30-150 | | 7/18/11 20:53 |
| Tetrachloro-m-xylene [2] | 91.7 | 30-150 | | 7/18/11 20:53 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-032**  Sampled: 7/15/2011 10:40

**Sample ID: 11G0410-17**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 21:07 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:07 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:07 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:07 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:07 | PJG |
| Aroclor-1254 [2] | 0.14 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:07 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:07 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:07 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:07 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 98.5 | 30-150 | | 7/18/11 21:07 |
| Decachlorobiphenyl [2] | 90.8 | 30-150 | | 7/18/11 21:07 |
| Tetrachloro-m-xylene [1] | 102 | 30-150 | | 7/18/11 21:07 |
| Tetrachloro-m-xylene [2] | 106 | 30-150 | | 7/18/11 21:07 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-033**  Sampled: 7/15/2011 10:55

**Sample ID: 11G0410-18**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 21:21 | PJG |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:21 | PJG |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:21 | PJG |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:21 | PJG |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:21 | PJG |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:21 | PJG |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:21 | PJG |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:21 | PJG |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:21 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 93.9 | 30-150 | | 7/18/11 21:21 |
| Decachlorobiphenyl [2] | 87.5 | 30-150 | | 7/18/11 21:21 |
| Tetrachloro-m-xylene [1] | 95.5 | 30-150 | | 7/18/11 21:21 |
| Tetrachloro-m-xylene [2] | 99.2 | 30-150 | | 7/18/11 21:21 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-034**  Sampled: 7/15/2011 11:00

**Sample ID: 11G0410-19**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 21:35 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:35 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:35 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:35 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:35 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:35 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:35 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:35 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:35 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 92.8 | 30-150 | | 7/18/11 21:35 |
| Decachlorobiphenyl [2] | 86.3 | 30-150 | | 7/18/11 21:35 |
| Tetrachloro-m-xylene [1] | 87.3 | 30-150 | | 7/18/11 21:35 |
| Tetrachloro-m-xylene [2] | 92.4 | 30-150 | | 7/18/11 21:35 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-035**  Sampled: 7/15/2011 11:10

**Sample ID: 11G0410-20**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 21:49 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:49 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:49 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:49 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:49 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:49 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:49 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:49 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 21:49 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 90.4 | 30-150 | | 7/18/11 21:49 |
| Decachlorobiphenyl [2] | 83.9 | 30-150 | | 7/18/11 21:49 |
| Tetrachloro-m-xylene [1] | 88.4 | 30-150 | | 7/18/11 21:49 |
| Tetrachloro-m-xylene [2] | 94.2 | 30-150 | | 7/18/11 21:49 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-036**  Sampled: 7/15/2011 11:15

**Sample ID: 11G0410-21**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 15:40 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:40 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:40 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:40 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:40 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:40 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:40 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:40 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:40 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 81.2 | 30-150 | | 7/18/11 15:40 |
| Decachlorobiphenyl [2] | 80.9 | 30-150 | | 7/18/11 15:40 |
| Tetrachloro-m-xylene [1] | 89.6 | 30-150 | | 7/18/11 15:40 |
| Tetrachloro-m-xylene [2] | 96.9 | 30-150 | | 7/18/11 15:40 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-037**  Sampled: 7/15/2011 11:20

**Sample ID: 11G0410-22**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 15:53 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:53 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:53 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:53 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:53 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:53 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:53 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:53 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 15:53 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 79.2 | 30-150 | | 7/18/11 15:53 |
| Decachlorobiphenyl [2] | 79.2 | 30-150 | | 7/18/11 15:53 |
| Tetrachloro-m-xylene [1] | 98.1 | 30-150 | | 7/18/11 15:53 |
| Tetrachloro-m-xylene [2] | 107 | 30-150 | | 7/18/11 15:53 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-038**  Sampled: 7/15/2011 11:25

**Sample ID: 11G0410-23**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 16:06 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:06 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:06 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:06 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:06 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:06 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:06 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:06 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:06 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 78.0 | 30-150 | | 7/18/11 16:06 |
| Decachlorobiphenyl [2] | 78.2 | 30-150 | | 7/18/11 16:06 |
| Tetrachloro-m-xylene [1] | 94.7 | 30-150 | | 7/18/11 16:06 |
| Tetrachloro-m-xylene [2] | 104 | 30-150 | | 7/18/11 16:06 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBCD-039**  Sampled: 7/15/2011 11:25

**Sample ID: 11G0410-24**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 16:19 | PJG |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:19 | PJG |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:19 | PJG |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:19 | PJG |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:19 | PJG |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:19 | PJG |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:19 | PJG |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:19 | PJG |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:19 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 81.4 | 30-150 | | 7/18/11 16:19 |
| Decachlorobiphenyl [2] | 81.3 | 30-150 | | 7/18/11 16:19 |
| Tetrachloro-m-xylene [1] | 98.2 | 30-150 | | 7/18/11 16:19 |
| Tetrachloro-m-xylene [2] | 106 | 30-150 | | 7/18/11 16:19 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBCQ-040**  Sampled: 7/15/2011 11:26

**Sample ID: 11G0410-25**

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 | 7/19/11 | 7/19/11 14:27 | PJG |
| Aroclor-1221 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:27 | PJG |
| Aroclor-1232 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:27 | PJG |
| Aroclor-1242 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:27 | PJG |
| Aroclor-1248 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:27 | PJG |
| Aroclor-1254 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:27 | PJG |
| Aroclor-1260 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:27 | PJG |
| Aroclor-1262 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:27 | PJG |
| Aroclor-1268 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:27 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 90.6 | 30-150 | | 7/19/11 14:27 |
| Decachlorobiphenyl [2] | 69.8 | 30-150 | | 7/19/11 14:27 |
| Tetrachloro-m-xylene [1] | 87.7 | 30-150 | | 7/19/11 14:27 |
| Tetrachloro-m-xylene [2] | 67.0 | 30-150 | | 7/19/11 14:27 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-041**  Sampled: 7/15/2011 11:30

**Sample ID: 11G0410-26**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 16:32 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:32 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:32 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:32 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:32 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:32 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:32 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:32 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:32 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 88.8 | 30-150 | | 7/18/11 16:32 |
| Decachlorobiphenyl [2] | 87.9 | 30-150 | | 7/18/11 16:32 |
| Tetrachloro-m-xylene [1] | 95.5 | 30-150 | | 7/18/11 16:32 |
| Tetrachloro-m-xylene [2] | 102 | 30-150 | | 7/18/11 16:32 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-042**  Sampled: 7/15/2011 11:35

**Sample ID: 11G0410-27**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 16:45 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:45 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:45 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:45 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:45 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:45 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:45 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:45 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:45 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 75.1 | 30-150 | | 7/18/11 16:45 |
| Decachlorobiphenyl [2] | 75.7 | 30-150 | | 7/18/11 16:45 |
| Tetrachloro-m-xylene [1] | 92.6 | 30-150 | | 7/18/11 16:45 |
| Tetrachloro-m-xylene [2] | 102 | 30-150 | | 7/18/11 16:45 |

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

Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-043**  Sampled: 7/15/2011 11:40

**Sample ID: 11G0410-28**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 16:58 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:58 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:58 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:58 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:58 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:58 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:58 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:58 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 16:58 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 82.1 | 30-150 | | 7/18/11 16:58 |
| Decachlorobiphenyl [2] | 82.1 | 30-150 | | 7/18/11 16:58 |
| Tetrachloro-m-xylene [1] | 97.1 | 30-150 | | 7/18/11 16:58 |
| Tetrachloro-m-xylene [2] | 104 | 30-150 | | 7/18/11 16:58 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-044**  Sampled: 7/15/2011 11:47

**Sample ID: 11G0410-29**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 17:11 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:11 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:11 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:11 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:11 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:11 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:11 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:11 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:11 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 83.5 | 30-150 | | 7/18/11 17:11 |
| Decachlorobiphenyl [2] | 83.2 | 30-150 | | 7/18/11 17:11 |
| Tetrachloro-m-xylene [1] | 93.6 | 30-150 | | 7/18/11 17:11 |
| Tetrachloro-m-xylene [2] | 102 | 30-150 | | 7/18/11 17:11 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-045**  Sampled: 7/15/2011 11:53

**Sample ID: 11G0410-30**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 17:24 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:24 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:24 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:24 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:24 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:24 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:24 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:24 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 17:24 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.9 | 30-150 | | 7/18/11 17:24 |
| Decachlorobiphenyl [2] | 94.3 | 30-150 | | 7/18/11 17:24 |
| Tetrachloro-m-xylene [1] | 94.5 | 30-150 | | 7/18/11 17:24 |
| Tetrachloro-m-xylene [2] | 101 | 30-150 | | 7/18/11 17:24 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-046**  Sampled: 7/15/2011 11:59

**Sample ID: 11G0410-31**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 18:17 | PJG |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:17 | PJG |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:17 | PJG |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:17 | PJG |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:17 | PJG |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:17 | PJG |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:17 | PJG |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:17 | PJG |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:17 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 87.4 | 30-150 | | 7/18/11 18:17 |
| Decachlorobiphenyl [2] | 88.8 | 30-150 | | 7/18/11 18:17 |
| Tetrachloro-m-xylene [1] | 92.9 | 30-150 | | 7/18/11 18:17 |
| Tetrachloro-m-xylene [2] | 101 | 30-150 | | 7/18/11 18:17 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-047**  Sampled: 7/15/2011 12:05

**Sample ID: 11G0410-32**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 18:30 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:30 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:30 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:30 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:30 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:30 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:30 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:30 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:30 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 90.7 | 30-150 | | 7/18/11 18:30 |
| Decachlorobiphenyl [2] | 91.9 | 30-150 | | 7/18/11 18:30 |
| Tetrachloro-m-xylene [1] | 91.0 | 30-150 | | 7/18/11 18:30 |
| Tetrachloro-m-xylene [2] | 100 | 30-150 | | 7/18/11 18:30 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-048**  Sampled: 7/15/2011 12:10

**Sample ID: 11G0410-33**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 18:43 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:43 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:43 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:43 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:43 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:43 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:43 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:43 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:43 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 76.8 | 30-150 | | 7/18/11 18:43 |
| Decachlorobiphenyl [2] | 78.8 | 30-150 | | 7/18/11 18:43 |
| Tetrachloro-m-xylene [1] | 94.8 | 30-150 | | 7/18/11 18:43 |
| Tetrachloro-m-xylene [2] | 105 | 30-150 | | 7/18/11 18:43 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-049**  Sampled: 7/15/2011 12:15

**Sample ID: 11G0410-34**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 18:56 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:56 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:56 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:56 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:56 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:56 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:56 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:56 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 18:56 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 69.3 | 30-150 | | 7/18/11 18:56 |
| Decachlorobiphenyl [2] | 71.6 | 30-150 | | 7/18/11 18:56 |
| Tetrachloro-m-xylene [1] | 89.3 | 30-150 | | 7/18/11 18:56 |
| Tetrachloro-m-xylene [2] | 98.3 | 30-150 | | 7/18/11 18:56 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-050**  Sampled: 7/15/2011 12:20

**Sample ID: 11G0410-35**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 19:09 | PJG |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:09 | PJG |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:09 | PJG |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:09 | PJG |
| Aroclor-1248 [1] | 0.31 | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:09 | PJG |
| Aroclor-1254 [1] | 0.54 | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:09 | PJG |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:09 | PJG |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:09 | PJG |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:09 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 77.4 | 30-150 | | 7/18/11 19:09 |
| Decachlorobiphenyl [2] | 79.7 | 30-150 | | 7/18/11 19:09 |
| Tetrachloro-m-xylene [1] | 92.9 | 30-150 | | 7/18/11 19:09 |
| Tetrachloro-m-xylene [2] | 102 | 30-150 | | 7/18/11 19:09 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-051**  Sampled: 7/15/2011 12:25

**Sample ID: 11G0410-36**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 19:22 | PJG |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:22 | PJG |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:22 | PJG |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:22 | PJG |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:22 | PJG |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:22 | PJG |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:22 | PJG |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:22 | PJG |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:22 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 79.5 | 30-150 | | 7/18/11 19:22 |
| Decachlorobiphenyl [2] | 81.5 | 30-150 | | 7/18/11 19:22 |
| Tetrachloro-m-xylene [1] | 98.7 | 30-150 | | 7/18/11 19:22 |
| Tetrachloro-m-xylene [2] | 108 | 30-150 | | 7/18/11 19:22 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-052**  Sampled: 7/15/2011 12:30

**Sample ID: 11G0410-37**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 19:35 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:35 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:35 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:35 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:35 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:35 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:35 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:35 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:35 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 86.3 | 30-150 | | 7/18/11 19:35 |
| Decachlorobiphenyl [2] | 88.3 | 30-150 | | 7/18/11 19:35 |
| Tetrachloro-m-xylene [1] | 99.4 | 30-150 | | 7/18/11 19:35 |
| Tetrachloro-m-xylene [2] | 110 | 30-150 | | 7/18/11 19:35 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-053**  Sampled: 7/15/2011 12:35

**Sample ID: 11G0410-38**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 19:48 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:48 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:48 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:48 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:48 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:48 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:48 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:48 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 19:48 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 80.9 | 30-150 | | 7/18/11 19:48 |
| Decachlorobiphenyl [2] | 82.7 | 30-150 | | 7/18/11 19:48 |
| Tetrachloro-m-xylene [1] | 92.5 | 30-150 | | 7/18/11 19:48 |
| Tetrachloro-m-xylene [2] | 104 | 30-150 | | 7/18/11 19:48 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-054**  Sampled: 7/15/2011 12:40

**Sample ID: 11G0410-39**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 20:01 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:01 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:01 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:01 | PJG |
| Aroclor-1248 [1] | 0.21 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:01 | PJG |
| Aroclor-1254 [1] | 0.30 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:01 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:01 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:01 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:01 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 81.4 | 30-150 | | 7/18/11 20:01 |
| Decachlorobiphenyl [2] | 82.9 | 30-150 | | 7/18/11 20:01 |
| Tetrachloro-m-xylene [1] | 94.6 | 30-150 | | 7/18/11 20:01 |
| Tetrachloro-m-xylene [2] | 105 | 30-150 | | 7/18/11 20:01 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-055**  Sampled: 7/15/2011 12:45

**Sample ID: 11G0410-40**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/15/11 | 7/18/11 20:15 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:15 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:15 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:15 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:15 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:15 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:15 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:15 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/15/11 | 7/18/11 20:15 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 75.7 | 30-150 | | 7/18/11 20:15 |
| Decachlorobiphenyl [2] | 77.1 | 30-150 | | 7/18/11 20:15 |
| Tetrachloro-m-xylene [1] | 96.5 | 30-150 | | 7/18/11 20:15 |
| Tetrachloro-m-xylene [2] | 107 | 30-150 | | 7/18/11 20:15 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-056**  Sampled: 7/15/2011 12:50

**Sample ID: 11G0410-41**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 12:06 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:06 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:06 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:06 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:06 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:06 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:06 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:06 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:06 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 59.4 | 30-150 | | 7/18/11 12:06 |
| Decachlorobiphenyl [2] | 58.3 | 30-150 | | 7/18/11 12:06 |
| Tetrachloro-m-xylene [1] | 59.3 | 30-150 | | 7/18/11 12:06 |
| Tetrachloro-m-xylene [2] | 59.9 | 30-150 | | 7/18/11 12:06 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-057**  Sampled: 7/15/2011 12:55

**Sample ID: 11G0410-42**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 12:19 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:19 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:19 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:19 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:19 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:19 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:19 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:19 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:19 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 97.3 | 30-150 | | 7/18/11 12:19 |
| Decachlorobiphenyl [2] | 95.3 | 30-150 | | 7/18/11 12:19 |
| Tetrachloro-m-xylene [1] | 95.2 | 30-150 | | 7/18/11 12:19 |
| Tetrachloro-m-xylene [2] | 95.3 | 30-150 | | 7/18/11 12:19 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-058**  Sampled: 7/15/2011 13:00

**Sample ID: 11G0410-43**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 12:34 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:34 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:34 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:34 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:34 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:34 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:34 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:34 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:34 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 44.2 | 30-150 | | 7/18/11 12:34 |
| Decachlorobiphenyl [2] | 44.4 | 30-150 | | 7/18/11 12:34 |
| Tetrachloro-m-xylene [1] | 43.2 | 30-150 | | 7/18/11 12:34 |
| Tetrachloro-m-xylene [2] | 44.1 | 30-150 | | 7/18/11 12:34 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBCD-059**  Sampled: 7/15/2011 13:00

**Sample ID: 11G0410-44**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 12:47 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:47 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:47 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:47 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:47 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:47 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:47 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:47 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:47 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 72.8 | 30-150 | | 7/18/11 12:47 |
| Decachlorobiphenyl [2] | 71.5 | 30-150 | | 7/18/11 12:47 |
| Tetrachloro-m-xylene [1] | 77.1 | 30-150 | | 7/18/11 12:47 |
| Tetrachloro-m-xylene [2] | 77.0 | 30-150 | | 7/18/11 12:47 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBCQ-060**  Sampled: 7/15/2011 13:02

**Sample ID: 11G0410-45**

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 | 7/19/11 | 7/19/11 14:41 | PJG |
| Aroclor-1221 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:41 | PJG |
| Aroclor-1232 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:41 | PJG |
| Aroclor-1242 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:41 | PJG |
| Aroclor-1248 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:41 | PJG |
| Aroclor-1254 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:41 | PJG |
| Aroclor-1260 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:41 | PJG |
| Aroclor-1262 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:41 | PJG |
| Aroclor-1268 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/19/11 | 7/19/11 14:41 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 90.2 | 30-150 | | 7/19/11 14:41 |
| Decachlorobiphenyl [2] | 69.5 | 30-150 | | 7/19/11 14:41 |
| Tetrachloro-m-xylene [1] | 82.8 | 30-150 | | 7/19/11 14:41 |
| Tetrachloro-m-xylene [2] | 63.2 | 30-150 | | 7/19/11 14:41 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-061**  Sampled: 7/15/2011 13:05

**Sample ID: 11G0410-46**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 12:59 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:59 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:59 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:59 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:59 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:59 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:59 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:59 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 12:59 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 89.5 | 30-150 | | 7/18/11 12:59 |
| Decachlorobiphenyl [2] | 87.6 | 30-150 | | 7/18/11 12:59 |
| Tetrachloro-m-xylene [1] | 89.8 | 30-150 | | 7/18/11 12:59 |
| Tetrachloro-m-xylene [2] | 89.6 | 30-150 | | 7/18/11 12:59 |

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

Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-062**  Sampled: 7/15/2011 13:10

**Sample ID: 11G0410-47**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 13:12 | PJG |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:12 | PJG |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:12 | PJG |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:12 | PJG |
| Aroclor-1248 [1] | 0.13 | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:12 | PJG |
| Aroclor-1254 [1] | 0.099 | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:12 | PJG |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:12 | PJG |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:12 | PJG |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:12 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 48.6 | 30-150 | | 7/18/11 13:12 |
| Decachlorobiphenyl [2] | 47.8 | 30-150 | | 7/18/11 13:12 |
| Tetrachloro-m-xylene [1] | 49.6 | 30-150 | | 7/18/11 13:12 |
| Tetrachloro-m-xylene [2] | 50.4 | 30-150 | | 7/18/11 13:12 |

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

Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-063**  Sampled: 7/15/2011 13:15

**Sample ID: 11G0410-48**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 13:25 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:25 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:25 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:25 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:25 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:25 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:25 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:25 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:25 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 82.6 | 30-150 | | 7/18/11 13:25 |
| Decachlorobiphenyl [2] | 80.8 | 30-150 | | 7/18/11 13:25 |
| Tetrachloro-m-xylene [1] | 87.9 | 30-150 | | 7/18/11 13:25 |
| Tetrachloro-m-xylene [2] | 87.4 | 30-150 | | 7/18/11 13:25 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-064**  Sampled: 7/15/2011 13:20

**Sample ID: 11G0410-49**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 13:38 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:38 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:38 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:38 | PJG |
| Aroclor-1248 [2] | 0.32 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:38 | PJG |
| Aroclor-1254 [2] | 0.31 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:38 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:38 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:38 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:38 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 99.7 | 30-150 | | 7/18/11 13:38 |
| Decachlorobiphenyl [2] | 95.9 | 30-150 | | 7/18/11 13:38 |
| Tetrachloro-m-xylene [1] | 95.9 | 30-150 | | 7/18/11 13:38 |
| Tetrachloro-m-xylene [2] | 95.7 | 30-150 | | 7/18/11 13:38 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-065**  Sampled: 7/15/2011 13:25

**Sample ID: 11G0410-50**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 13:50 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:50 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:50 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:50 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:50 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:50 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:50 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:50 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 13:50 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 64.3 | 30-150 | | 7/18/11 13:50 |
| Decachlorobiphenyl [2] | 63.3 | 30-150 | | 7/18/11 13:50 |
| Tetrachloro-m-xylene [1] | 66.2 | 30-150 | | 7/18/11 13:50 |
| Tetrachloro-m-xylene [2] | 67.6 | 30-150 | | 7/18/11 13:50 |

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Project Location: Amherst, MA (UMASS - Tobin H  Sample Description:  Work Order: 11G0410

Date Received: 7/15/2011

**Field Sample #: TH-VBC-066**  Sampled: 7/15/2011 13:30

**Sample ID: 11G0410-51**

Sample Matrix: Product/Solid

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/16/11 | 7/18/11 14:03 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 14:03 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 14:03 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 14:03 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 14:03 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 14:03 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 14:03 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 14:03 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/16/11 | 7/18/11 14:03 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 106 | 30-150 | | 7/18/11 14:03 |
| Decachlorobiphenyl [2] | 103 | 30-150 | | 7/18/11 14:03 |
| Tetrachloro-m-xylene [1] | 108 | 30-150 | | 7/18/11 14:03 |
| Tetrachloro-m-xylene [2] | 108 | 30-150 | | 7/18/11 14:03 |

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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 |
|---|---|---|---|---|
| 11G0410-01 [TH-VBC-016] | B033772 | 2.00 | 10.0 | 07/15/11 |
| 11G0410-02 [TH-VBC-017] | B033772 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-03 [TH-VBC-018] | B033772 | 2.20 | 10.0 | 07/15/11 |
| 11G0410-04 [TH-VBCD-019] | B033772 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-06 [TH-VBC-021] | B033772 | 2.20 | 10.0 | 07/15/11 |
| 11G0410-07 [TH-VBC-022] | B033772 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-08 [TH-VBC-023] | B033772 | 2.30 | 10.0 | 07/15/11 |
| 11G0410-09 [TH-VBC-024] | B033772 | 2.20 | 10.0 | 07/15/11 |
| 11G0410-10 [TH-VBC-025] | B033772 | 2.20 | 10.0 | 07/15/11 |
| 11G0410-11 [TH-VBC-026] | B033772 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-12 [TH-VBC-027] | B033772 | 2.30 | 10.0 | 07/15/11 |
| 11G0410-13 [TH-VBC-028] | B033772 | 2.30 | 10.0 | 07/15/11 |
| 11G0410-14 [TH-VBC-029] | B033772 | 2.00 | 10.0 | 07/15/11 |
| 11G0410-15 [TH-VBC-030] | B033772 | 2.00 | 10.0 | 07/15/11 |
| 11G0410-16 [TH-VBC-031] | B033772 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-17 [TH-VBC-032] | B033772 | 2.00 | 10.0 | 07/15/11 |
| 11G0410-18 [TH-VBC-033] | B033772 | 2.30 | 10.0 | 07/15/11 |
| 11G0410-19 [TH-VBC-034] | B033772 | 2.00 | 10.0 | 07/15/11 |
| 11G0410-20 [TH-VBC-035] | B033772 | 2.20 | 10.0 | 07/15/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0410-21 [TH-VBC-036] | B033774 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-22 [TH-VBC-037] | B033774 | 2.00 | 10.0 | 07/15/11 |
| 11G0410-23 [TH-VBC-038] | B033774 | 2.20 | 10.0 | 07/15/11 |
| 11G0410-24 [TH-VBCD-039] | B033774 | 2.30 | 10.0 | 07/15/11 |
| 11G0410-26 [TH-VBC-041] | B033774 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-27 [TH-VBC-042] | B033774 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-28 [TH-VBC-043] | B033774 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-29 [TH-VBC-044] | B033774 | 2.20 | 10.0 | 07/15/11 |
| 11G0410-30 [TH-VBC-045] | B033774 | 2.20 | 10.0 | 07/15/11 |
| 11G0410-31 [TH-VBC-046] | B033774 | 2.30 | 10.0 | 07/15/11 |
| 11G0410-32 [TH-VBC-047] | B033774 | 2.10 | 10.0 | 07/15/11 |
| 11G0410-33 [TH-VBC-048] | B033774 | 2.20 | 10.0 | 07/15/11 |
| 11G0410-34 [TH-VBC-049] | B033774 | 2.20 | 10.0 | 07/15/11 |
| 11G0410-35 [TH-VBC-050] | B033774 | 2.30 | 10.0 | 07/15/11 |
| 11G0410-36 [TH-VBC-051] | B033774 | 2.30 | 10.0 | 07/15/11 |
| 11G0410-37 [TH-VBC-052] | B033774 | 2.00 | 10.0 | 07/15/11 |
| 11G0410-38 [TH-VBC-053] | B033774 | 2.00 | 10.0 | 07/15/11 |
| 11G0410-39 [TH-VBC-054] | B033774 | 2.00 | 10.0 | 07/15/11 |
| 11G0410-40 [TH-VBC-055] | B033774 | 2.00 | 10.0 | 07/15/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0410-41 [TH-VBC-056] | B033777 | 2.00 | 10.0 | 07/16/11 |
| 11G0410-42 [TH-VBC-057] | B033777 | 2.00 | 10.0 | 07/16/11 |
| 11G0410-43 [TH-VBC-058] | B033777 | 2.10 | 10.0 | 07/16/11 |
| 11G0410-44 [TH-VBCD-059] | B033777 | 2.10 | 10.0 | 07/16/11 |
| 11G0410-46 [TH-VBC-061] | B033777 | 2.10 | 10.0 | 07/16/11 |
| 11G0410-47 [TH-VBC-062] | B033777 | 2.30 | 10.0 | 07/16/11 |
| 11G0410-48 [TH-VBC-063] | B033777 | 2.20 | 10.0 | 07/16/11 |

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 |
|---|---|---|---|---|
| 11G0410-49 [TH-VBC-064] | B033777 | 2.10 | 10.0 | 07/16/11 |
| 11G0410-50 [TH-VBC-065] | B033777 | 2.00 | 10.0 | 07/16/11 |
| 11G0410-51 [TH-VBC-066] | B033777 | 2.10 | 10.0 | 07/16/11 |

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

| Lab Number [Field ID] | Batch | Initial [mL] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0410-05 [TH-VBCQ-020] | B033715 | 1000 | 10.0 | 07/15/11 |

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

| Lab Number [Field ID] | Batch | Initial [mL] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0410-25RE1 [TH-VBCQ-040] | B033882 | 1000 | 10.0 | 07/19/11 |
| 11G0410-45RE1 [TH-VBCQ-060] | B033882 | 1000 | 10.0 | 07/19/11 |

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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 B033715 - SW-846 3510C** | | | | | | | | | | |
| **Blank (B033715-BLK1)** | | | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| 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 | *2.00* | | µg/L | 2.00 | | 100 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.95* | | µg/L | 2.00 | | 97.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.99* | | µg/L | 2.00 | | 99.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.95* | | µg/L | 2.00 | | 97.5 | 30-150 | | | |
| **LCS (B033715-BS1)** | | | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.56 | 0.20 | µg/L | 0.500 | | 111 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.57 | 0.20 | µg/L | 0.500 | | 114 | 40-140 | | | |
| Aroclor-1260 | 0.52 | 0.20 | µg/L | 0.500 | | 105 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.56 | 0.20 | µg/L | 0.500 | | 113 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *2.04* | | µg/L | 2.00 | | 102 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.99* | | µg/L | 2.00 | | 99.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.99* | | µg/L | 2.00 | | 99.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.95* | | µg/L | 2.00 | | 97.7 | 30-150 | | | |
| **LCS Dup (B033715-BSD1)** | | | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.57 | 0.20 | µg/L | 0.500 | | 115 | 40-140 | 3.10 | 20 | |
| Aroclor-1016 [2C] | 0.59 | 0.20 | µg/L | 0.500 | | 117 | 40-140 | 3.08 | 20 | |
| Aroclor-1260 | 0.54 | 0.20 | µg/L | 0.500 | | 108 | 40-140 | 3.28 | 20 | |
| Aroclor-1260 [2C] | 0.58 | 0.20 | µg/L | 0.500 | | 117 | 40-140 | 3.29 | 20 | |
| Surrogate: Decachlorobiphenyl | *2.05* | | µg/L | 2.00 | | 103 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.99* | | µg/L | 2.00 | | 99.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *2.02* | | µg/L | 2.00 | | 101 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.99* | | µg/L | 2.00 | | 99.7 | 30-150 | | | |

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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 B033772 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B033772-BLK1)** | | | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| 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 | *0.948* | | mg/Kg | 1.00 | | 94.8 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.895* | | mg/Kg | 1.00 | | 89.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.916* | | mg/Kg | 1.00 | | 91.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.982* | | mg/Kg | 1.00 | | 98.2 | 30-150 | | | |
| **LCS (B033772-BS1)** | | | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg | 0.250 | | 99.3 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 114 | 40-140 | | | |
| Aroclor-1260 | 0.25 | 0.10 | mg/Kg | 0.250 | | 101 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 104 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.937* | | mg/Kg | 1.00 | | 93.7 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.887* | | mg/Kg | 1.00 | | 88.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.872* | | mg/Kg | 1.00 | | 87.2 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.938* | | mg/Kg | 1.00 | | 93.8 | 30-150 | | | |
| **LCS Dup (B033772-BSD1)** | | | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg | 0.250 | | 98.8 | 40-140 | 0.464 | 30 | |
| Aroclor-1016 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 111 | 40-140 | 2.59 | 30 | |
| Aroclor-1260 | 0.24 | 0.10 | mg/Kg | 0.250 | | 96.6 | 40-140 | 4.08 | 30 | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 99.9 | 40-140 | 3.76 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.889* | | mg/Kg | 1.00 | | 88.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.836* | | mg/Kg | 1.00 | | 83.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.876* | | mg/Kg | 1.00 | | 87.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.955* | | mg/Kg | 1.00 | | 95.5 | 30-150 | | | |

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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 B033772 - SW-846 3540C** | | | | | | | | | | |
| **Matrix Spike (B033772-MS1)** | | **Source: 11G0410-01** | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.23 | 0.087 | mg/Kg | 0.217 | 0.0 | 108 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.27 | 0.087 | mg/Kg | 0.217 | 0.0 | 122 | 40-140 | | | |
| Aroclor-1260 | 0.22 | 0.087 | mg/Kg | 0.217 | 0.0 | 102 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.23 | 0.087 | mg/Kg | 0.217 | 0.0 | 104 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.827* | | mg/Kg | 0.870 | | 95.2 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.766* | | mg/Kg | 0.870 | | 88.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.792* | | mg/Kg | 0.870 | | 91.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.848* | | mg/Kg | 0.870 | | 97.5 | 30-150 | | | |
| **Matrix Spike Dup (B033772-MSD1)** | | **Source: 11G0410-01** | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.29 | 0.095 | mg/Kg | 0.238 | 0.0 | 123 | 40-140 | 22.2 | 50 | |
| Aroclor-1016 [2C] | 0.33 | 0.095 | mg/Kg | 0.238 | 0.0 | 138 | 40-140 | 21.5 | 50 | |
| Aroclor-1260 | 0.26 | 0.095 | mg/Kg | 0.238 | 0.0 | 109 | 40-140 | 15.1 | 50 | |
| Aroclor-1260 [2C] | 0.27 | 0.095 | mg/Kg | 0.238 | 0.0 | 114 | 40-140 | 18.8 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.941* | | mg/Kg | 0.952 | | 98.8 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.886* | | mg/Kg | 0.952 | | 93.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.901* | | mg/Kg | 0.952 | | 94.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.954* | | mg/Kg | 0.952 | | 100 | 30-150 | | | |
| **Batch B033774 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B033774-BLK1)** | | | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| 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] | *0.988* | | mg/Kg | 1.00 | | 98.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.18* | | mg/Kg | 1.00 | | 118 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.24* | | mg/Kg | 1.00 | | 124 | 30-150 | | | |

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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 B033774 - SW-846 3540C** | | | | | | | | | | |
| **LCS (B033774-BS1)** | | | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.30 | 0.10 | mg/Kg | 0.250 | | 119 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.35 | 0.10 | mg/Kg | 0.250 | | 140 | 40-140 | | | |
| Aroclor-1260 | 0.30 | 0.10 | mg/Kg | 0.250 | | 120 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.32 | 0.10 | mg/Kg | 0.250 | | 130 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *1.02* | | mg/Kg | 1.00 | | 102 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.00* | | mg/Kg | 1.00 | | 100 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.33* | | mg/Kg | 1.00 | | 133 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.39* | | mg/Kg | 1.00 | | 139 | 30-150 | | | |
| **LCS Dup (B033774-BSD1)** | | | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.30 | 0.10 | mg/Kg | 0.250 | | 120 | 40-140 | 0.498 | 30 | |
| Aroclor-1016 [2C] | 0.35 | 0.10 | mg/Kg | 0.250 | | 139 | 40-140 | 0.232 | 30 | |
| Aroclor-1260 | 0.31 | 0.10 | mg/Kg | 0.250 | | 124 | 40-140 | 3.52 | 30 | |
| Aroclor-1260 [2C] | 0.34 | 0.10 | mg/Kg | 0.250 | | 136 | 40-140 | 4.76 | 30 | |
| Surrogate: Decachlorobiphenyl | *1.06* | | mg/Kg | 1.00 | | 106 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.05* | | mg/Kg | 1.00 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.28* | | mg/Kg | 1.00 | | 128 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.35* | | mg/Kg | 1.00 | | 135 | 30-150 | | | |
| **Matrix Spike (B033774-MS1)** | | **Source: 11G0410-21** | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.087 | mg/Kg | 0.217 | 0.0 | 112 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.26 | 0.087 | mg/Kg | 0.217 | 0.0 | 121 | 40-140 | | | |
| Aroclor-1260 | 0.21 | 0.087 | mg/Kg | 0.217 | 0.0 | 97.3 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.24 | 0.087 | mg/Kg | 0.217 | 0.0 | 110 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.615* | | mg/Kg | 0.870 | | 70.8 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.627* | | mg/Kg | 0.870 | | 72.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.892* | | mg/Kg | 0.870 | | 103 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.970* | | mg/Kg | 0.870 | | 112 | 30-150 | | | |
| **Matrix Spike Dup (B033774-MSD1)** | | **Source: 11G0410-21** | | Prepared: 07/15/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.26 | 0.091 | mg/Kg | 0.227 | 0.0 | 114 | 40-140 | 6.77 | 50 | |
| Aroclor-1016 [2C] | 0.27 | 0.091 | mg/Kg | 0.227 | 0.0 | 119 | 40-140 | 2.78 | 50 | |
| Aroclor-1260 | 0.23 | 0.091 | mg/Kg | 0.227 | 0.0 | 103 | 40-140 | 10.5 | 50 | |
| Aroclor-1260 [2C] | 0.26 | 0.091 | mg/Kg | 0.227 | 0.0 | 114 | 40-140 | 7.34 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.686* | | mg/Kg | 0.909 | | 75.5 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.692* | | mg/Kg | 0.909 | | 76.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.897* | | mg/Kg | 0.909 | | 98.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.00* | | mg/Kg | 0.909 | | 110 | 30-150 | | | |
| **Batch B033777 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B033777-BLK1)** | | | | Prepared: 07/16/11 Analyzed: 07/18/11 | | | | | | |
| 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 | | | | | | | |

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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 B033777 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B033777-BLK1)** | | | | Prepared: 07/16/11 Analyzed: 07/18/11 | | | | | | |
| 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 | *0.942* | | mg/Kg | 1.00 | | 94.2 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.920* | | mg/Kg | 1.00 | | 92.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.940* | | mg/Kg | 1.00 | | 94.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.936* | | mg/Kg | 1.00 | | 93.6 | 30-150 | | | |
| **LCS (B033777-BS1)** | | | | Prepared: 07/16/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg | 0.250 | | 96.3 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 107 | 40-140 | | | |
| Aroclor-1260 | 0.24 | 0.10 | mg/Kg | 0.250 | | 96.5 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 104 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.849* | | mg/Kg | 1.00 | | 84.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.832* | | mg/Kg | 1.00 | | 83.2 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.834* | | mg/Kg | 1.00 | | 83.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.830* | | mg/Kg | 1.00 | | 83.0 | 30-150 | | | |
| **LCS Dup (B033777-BSD1)** | | | | Prepared: 07/16/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg | 0.250 | | 97.2 | 40-140 | 0.864 | 30 | |
| Aroclor-1016 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 108 | 40-140 | 1.07 | 30 | |
| Aroclor-1260 | 0.23 | 0.10 | mg/Kg | 0.250 | | 93.8 | 40-140 | 2.81 | 30 | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 100 | 40-140 | 3.44 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.895* | | mg/Kg | 1.00 | | 89.5 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.878* | | mg/Kg | 1.00 | | 87.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.911* | | mg/Kg | 1.00 | | 91.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.908* | | mg/Kg | 1.00 | | 90.8 | 30-150 | | | |
| **Matrix Spike (B033777-MS1)** | | **Source: 11G0410-48** | | Prepared: 07/16/11 Analyzed: 07/19/11 | | | | | | |
| Aroclor-1016 | 0.17 | 0.091 | mg/Kg | 0.227 | 0.0 | 75.8 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.22 | 0.091 | mg/Kg | 0.227 | 0.0 | 95.0 | 40-140 | | | |
| Aroclor-1260 | 0.20 | 0.091 | mg/Kg | 0.227 | 0.0 | 87.6 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.21 | 0.091 | mg/Kg | 0.227 | 0.0 | 92.7 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.801* | | mg/Kg | 0.909 | | 88.1 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.786* | | mg/Kg | 0.909 | | 86.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.782* | | mg/Kg | 0.909 | | 86.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.773* | | mg/Kg | 0.909 | | 85.0 | 30-150 | | | |
| **Matrix Spike Dup (B033777-MSD1)** | | **Source: 11G0410-48** | | Prepared: 07/16/11 Analyzed: 07/18/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.10 | mg/Kg | 0.250 | 0.0 | 86.9 | 40-140 | 23.1 | 50 | |
| Aroclor-1016 [2C] | 0.24 | 0.10 | mg/Kg | 0.250 | 0.0 | 94.1 | 40-140 | 8.66 | 50 | |
| Aroclor-1260 | 0.21 | 0.10 | mg/Kg | 0.250 | 0.0 | 84.5 | 40-140 | 5.93 | 50 | |
| Aroclor-1260 [2C] | 0.23 | 0.10 | mg/Kg | 0.250 | 0.0 | 91.7 | 40-140 | 8.47 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.861* | | mg/Kg | 1.00 | | 86.1 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.843* | | mg/Kg | 1.00 | | 84.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.850* | | mg/Kg | 1.00 | | 85.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.842* | | mg/Kg | 1.00 | | 84.2 | 30-150 | | | |

con-test® ANALYTICAL LABORATORY

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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 B033882 - SW-846 3510C** | | | | | | | | | | |
| **Blank (B033882-BLK1)** | | | | Prepared & Analyzed: 07/19/11 | | | | | | |
| 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 | *2.33* | | µg/L | 2.00 | | 117 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.86* | | µg/L | 2.00 | | 93.2 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *2.12* | | µg/L | 2.00 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.61* | | µg/L | 2.00 | | 80.6 | 30-150 | | | |
| **LCS (B033882-BS1)** | | | | Prepared & Analyzed: 07/19/11 | | | | | | |
| Aroclor-1016 | 0.57 | 0.20 | µg/L | 0.500 | | 114 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.59 | 0.20 | µg/L | 0.500 | | 118 | 40-140 | | | |
| Aroclor-1260 | 0.64 | 0.20 | µg/L | 0.500 | | 127 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.57 | 0.20 | µg/L | 0.500 | | 114 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *2.61* | | µg/L | 2.00 | | 131 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *2.07* | | µg/L | 2.00 | | 103 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *2.46* | | µg/L | 2.00 | | 123 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.92* | | µg/L | 2.00 | | 96.0 | 30-150 | | | |
| **LCS Dup (B033882-BSD1)** | | | | Prepared & Analyzed: 07/19/11 | | | | | | |
| Aroclor-1016 | 0.52 | 0.20 | µg/L | 0.500 | | 104 | 40-140 | 9.09 | 20 | |
| Aroclor-1016 [2C] | 0.57 | 0.20 | µg/L | 0.500 | | 114 | 40-140 | 3.28 | 20 | |
| Aroclor-1260 | 0.58 | 0.20 | µg/L | 0.500 | | 115 | 40-140 | 10.0 | 20 | |
| Aroclor-1260 [2C] | 0.56 | 0.20 | µg/L | 0.500 | | 112 | 40-140 | 1.10 | 20 | |
| Surrogate: Decachlorobiphenyl | *2.63* | | µg/L | 2.00 | | 132 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *2.08* | | µg/L | 2.00 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *2.49* | | µg/L | 2.00 | | 124 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.95* | | µg/L | 2.00 | | 97.5 | 30-150 | | | |

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

**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 |
| ***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 |

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

| Code | Description | Number | Expires |
|---|---|---|---|
| AIHA | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

# CHAIN OF CUSTODY RECORD

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39 Spruce Street
East longmeadow, MA 01028

Page 1 of 6

11G0410

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS GR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: AMHERST, MA (UMASS - TOBIN HALL)
Sampled By: S. Keenan, B. Gregory

Telephone: 1(978)557-8150
Project #: 224733
Client PO#:

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

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

ANALYSIS REQUESTED: PCB's (Soxhlet Extraction)

| 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 | PCB's (Soxhlet Extraction) | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | TH-VBC-016 | 7/15/11 | 0830 | | ✓ | O | L | X | | | |
| 02 | TH-VBC-017 | | 0910 | | ✓ | O | L | X | | | |
| 03 | TH-VBC-018 | | 0915 | | ✓ | O | L | X | | | |
| 04 | TH-VBCD-019 | | 0915 | | ✓ | O | L | X | | | |
| 05 | TH-VBCQ-020 | | 0920 | | ✓ | O | L | X | | | |
| 06 | TH-VBC-021 | | 0925 | | ✓ | O | L | X | | | |
| 07 | TH-VBC-022 | | 0937 | | ✓ | O | L | X | | | |
| 08 | TH-VBC-023 | | 0938 | | ✓ | O | L | X | | | |
| 09 | TH-VBC-024 | | 0940 | | ✓ | O | L | X | | | |
| 10 | TH-VBC-025 | | 0955 | | ✓ | O | L | X | | | |

Comments: PCB's by USEPA 8082 via Method 3540C (Soxhlet)
R.L. ≤1.0 mg/kg.

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 Concrete

| Relinquished by: (signature) | Date/Time: 7/15/11 |
|---|---|
| Received by: (signature) | Date/Time: 14:45 7/15/11 |
| 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:

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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# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028



11G0410

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: AMHERST, MA (UMASS TOBIN HALL)
Sampled By: S. Keenan, B. GREGORY

Telephone: 1(978) 557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
O FAX ✓ EMAIL O WEBSITE
Fax # gfranklin@woodardcurran.com
Email: jhamel@
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 | PCB's (Soxhlet Extraction) | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | TH-VBC-026 | 7/15/11 | 1005 | | ✓ | O | L | X | | | |
| 12 | TH-VBC-027 | | 1010 | | ✓ | O | L | X | | | |
| 13 | TH-VBC-028 | | 1020 | | ✓ | O | L | X | | | |
| 14 | TH-VBC-029 | | 1022 | | ✓ | O | L | X | | | |
| 15 | TH-VBC-030 | | 1025 | | ✓ | O | L | X | | | |
| 16 | TH-VBC-031 | | 1030 | | ✓ | O | L | X | | | |
| 17 | TH-VBC-032 | | 1040 | | ✓ | O | L | X | | | |
| 18 | TH-VBC-033 | | 1055 | | ✓ | O | L | X | | | |
| 19 | TH-VBC-034 | | 1100 | | ✓ | O | L | X | | | |
| 20 | TH-VBC-035 | | 1110 | | ✓ | O | L | X | | | |

Comments: PCB's by USEPA 8082 via method 3540c (Soxhlet)
R.L. ≤ 1.0 mg/kg.

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

*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 Concrete

| Relinquished by: (signature) | Date/Time: |
|---|---|
| JESSE ADBY | 7/15/11 |
| Received by: (signature) Paul | Date/Time: 1545 7/15/11 |
| 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: _____

**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 # _____

nelac AIHA
NELAC & AIHA Certified
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# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028





11G0410

Company Name: WOODARD + CURRAN
Address: 35 NE. BUSINESS CTR, SUITE 180 ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: AMHERST, MA (UMASS-TOBIN HALL)
Sampled By: S. Keenan, B. GREGORY

Telephone: 1(978)557-8150
Project #: 224733
Client PO#:

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

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

ANALYSIS REQUESTED: PCB's (Soxhlet Extraction)

| 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 | PCB's (Soxhlet Extraction) | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | TH-VBC-036 | 7/15/11 | 1115 | | ✓ | O | L | X | | | |
| 22 | TH-VBC-037 | | 1120 | | ✓ | O | L | X | | | |
| 23 | TH-VBC-038 | | 1125 | | ✓ | O | L | X | | | |
| 24 | TH-VBCD-039 | | 1125 | | ✓ | O | L | X | | | |
| 25 | TH-VBCQ-040 | | 1126 | | ✓ | O | L | X | | | |
| 26 | TH-VBC-041 | | 1130 | | ✓ | O | L | X | | | |
| 27 | TH-VBC-042 | | 1135 | | ✓ | O | L | X | | | |
| 28 | TH-VBC-043 | | 1140 | | ✓ | O | L | X | | | |
| 29 | TH-VBC-044 | | 1147 | | ✓ | O | L | X | | | |
| 30 | TH-VBC-045 | | 1153 | | ✓ | O | L | X | | | |

Comments: PCB's by USEPA 8082 via method 3540c (Soxhlet)
R.L. ≤ 1.0 mg/kg

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○ Field Filtered
○ Lab to Filter

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A=amber glass
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| Relinquished by: (signature) | Date/Time: |
|---|---|
| [signature] | 7/15/11 |
| Received by: (signature) [signature] | Date/Time: 1545 7/15/11 |
| 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:

Is your project MCP or RCP ?
○ MCP Analytical Certification Form Required
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nelac AIHA NELAC & AIHA Certified
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Page 4 of 6

11G0410

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

ANALYSIS REQUESTED

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | 1 | I | A |
| 31 | TH-VBC-046 | 7/15/11 | 1159 | | ✓ | O | L | X | | | | | | | | | | | | | |
| 32 | TH-VBC-047 | | 1205 | | ✓ | O | L | X | | | | | | | | | | | | | |
| 33 | TH-VBC-048 | | 1210 | | ✓ | O | L | X | | | | | | | | | | | | | |
| 34 | TH-VBC-049 | | 1215 | | ✓ | O | L | X | | | | | | | | | | | | | |
| 35 | TH-VBC-050 | | 1220 | | ✓ | O | L | X | | | | | | | | | | | | | |
| 36 | TH-VBC-051 | | 1225 | | ✓ | O | L | X | | | | | | | | | | | | | |
| 37 | TH-VBC-052 | | 1230 | | ✓ | O | L | X | | | | | | | | | | | | | |
| 38 | TH-VBC-053 | | 1235 | | ✓ | O | L | X | | | | | | | | | | | | | |
| 39 | TH-VBC-054 | | 1240 | | ✓ | O | L | X | | | | | | | | | | | | | |
| 40 | TH-VBC-055 | | 1245 | | ✓ | O | L | X | | | | | | | | | | | | | |

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R.L. ≤1.0 mg/kg

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A = air
S = soil/solid
SL = sludge
O = other CONCRETE

| Relinquished by: (signature) | Date/Time: 7/15/11 |
|---|---|
| Received by: (signature) Paula | Date/Time: 7/15/11 1545 |
| 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

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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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con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028





11G0410

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR., SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: AMHERST, MA (UMASS - TOBIN HALL)
Sampled By: S. Keenan, B. GREGORY

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # gfranklin
Email: jhamel@woodardcurran.com
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 | PCB's (Soxhlet) |
|---|---|---|---|---|---|---|---|---|
| 41 | TH-VBC-056 | 7/15/11 | 1250 | | X | O | L | ✓ |
| 42 | TH-VBC-057 | ↓ | 1255 | | X | O | L | ✓ |
| 43 | TH-VBC-058 | | 1300 | | X | O | L | ✓ |
| 44 | TH-VBCD-059 | | 1300 | | X | O | L | ✓ |
| 45 | TH-VBCQ-060 | | 1302 | | X | O | L | ✓ |
| 46 | TH-VBC-061 | | 1305 | | X | O | L | ✓ |
| 47 | TH-VBC-062 | | 1310 | | X | O | L | ✓ |
| 48 | TH-VBC-063 | | 1315 | | X | O | L | ✓ |
| 49 | TH-VBC-064 | | 1320 | | X | O | L | ✓ |
| 50 | TH-VBC-065 | ↓ | 1325 | | X | O | L | ✓ |

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | | | | | | | | | | | | | | | | # of Containers |
| I | | | | | | | | | | | | | | | | | | | | | | | ** Preservation |
| A | | | | | | | | | | | | | | | | | | | | | | | ***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: PCB's by USEPA 8082 via method 3540c (Soxhlet)
R.L. ≤1.0 mg/kg

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] | 7/15/11 |
| Received by: (signature) Paula [signature] | Date/Time: 1545 7/15/11 |
| 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:

**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

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11G0410

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Telephone: 1 (978) 557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
O FAX ☑ EMAIL O WEBSITE
Fax # gfranklin
Email: jhamel@woodardcurran.com
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 | PCB's (Soxhlet) | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 51 | TH-VBC-066 | 7/15/11 | 1330 | | X | O | L | ✓ | | | |

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 CONCRETE

Comments: PCB's by USEPA 8082 via 3540c (Soxhlet)
R.L. ≤ 1.0 mg/kg

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: 7/15/11 |
|---|---|
| Received by: (signature) Paula Blakeley | Date/Time: 1545 7/15/11 |
| 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:

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

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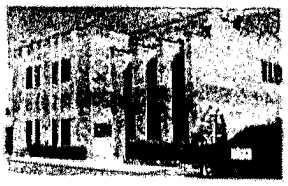

# Sample Receipt Checklist

CLIENT NAME: Woodard + Curran RECEIVED BY: SD DATE: 7/15/11

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 2.9

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:

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | 6 | 8 oz amber/clear jar | 24 |
| 500 mL Amber | | 4 oz amber/clear jar | |
| 250 mL Amber (8oz amber) | 24 | 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:

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

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

Doc# 277

Rev. 1 May 2011

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0410 |
| Project Location: Amherst, MA (UMASS - Tobin Hall) | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0410-01 thru 11G0410-51

Matrices: Product/Solid Water

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes | ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: M Erickson Position: Laboratory Director

Printed Name: Michael A. Erickson Date: 07/19/11

**11G0410-01** TH-VBC-016

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.875 | 0.92684 | 5.75 |
| Decachlorobiphenyl | 0.876 | 0.825245 | 5.97 |

**11G0410-02** TH-VBC-017

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 [2C] | 0.13 | 0.1236238 | 5.03 |
| Aroclor-1254 | 0.12 | 0.1151143 | 4.16 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.826 | 0.7801381 | 5.71 |
| Tetrachloro-m-xylene | 0.841 | 0.8831048 | 4.88 |

**11G0410-03** TH-VBC-018

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.920 | 0.8717227 | 5.39 |
| Tetrachloro-m-xylene | 0.963 | 1.013755 | 5.14 |

**11G0410-04** TH-VBCD-019

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.890 | 0.9423429 | 5.71 |
| Decachlorobiphenyl | 0.823 | 0.7782429 | 5.59 |

**11G0410-06** TH-VBC-021

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.855 | 0.7987363 | 6.8 |
| Tetrachloro-m-xylene | 0.919 | 0.9684227 | 5.24 |

**11G0410-07** TH-VBC-022

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.765 | 0.7183239 | 6.29 |
| Tetrachloro-m-xylene | 0.796 | 0.8330762 | 4.55 |

**11G0410-08** TH-VBC-023

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.739 | 0.6939609 | 6.29 |
| Tetrachloro-m-xylene | 0.733 | 0.7808826 | 6.33 |

**11G0410-09** TH-VBC-024

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.14 | 0.1286727 | 8.43 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.972 | 0.8954682 | 8.2 |
| Tetrachloro-m-xylene | 0.948 | 0.9550364 | 0.739 |

**11G0410-10** TH-VBC-025

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.850 | 0.7908318 | 7.21 |
| Tetrachloro-m-xylene | 0.846 | 0.8974136 | 5.9 |

**11G0410-11** TH-VBC-026

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.902 | 0.8410953 | 6.99 |
| Tetrachloro-m-xylene | 0.899 | 0.9493286 | 5.45 |

**11G0410-12** TH-VBC-027

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.951 | 0.8851565 | 7.17 |
| Tetrachloro-m-xylene | 0.998 | 1.053535 | 5.41 |

**11G0410-13** TH-VBC-028

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.714 | 0.6613218 | 7.66 |
| Tetrachloro-m-xylene | 0.703 | 0.7397565 | 5.1 |

**11G0410-14** TH-VBC-029

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.941 | 0.8889 | 5.69 |
| Tetrachloro-m-xylene | 0.893 | 0.94245 | 5.39 |

**11G0410-15** TH-VBC-030

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.916 | 0.84891 | 7.6 |
| Tetrachloro-m-xylene | 0.953 | 1.00041 | 4.85 |

**11G0410-16** TH-VBC-031

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.833 | 0.8730524 | 4.7 |
| Decachlorobiphenyl | 0.836 | 0.7739953 | 7.7 |

**11G0410-17** TH-VBC-032

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.14 | 0.12671 | 9.97 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.985 | 0.908115 | 8.12 |
| Tetrachloro-m-xylene | 1.02 | 1.057905 | 3.65 |

**11G0410-18** TH-VBC-033

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.817 | 0.760574 | 7.15 |
| Tetrachloro-m-xylene | 0.830 | 0.8624479 | 3.83 |

**11G0410-19** TH-VBC-034

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.873 | 0.924035 | 5.68 |
| Decachlorobiphenyl | 0.928 | 0.863475 | 7.2 |

**11G0410-20** TH-VBC-035

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.803 | 0.8561318 | 6.4 |
| Decachlorobiphenyl | 0.822 | 0.7627045 | 7.48 |

**11G0410-21** TH-VBC-036

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.773 | 0.7706429 | 0.305 |
| Tetrachloro-m-xylene | 0.853 | 0.922662 | 7.85 |

**11G0410-22** TH-VBC-037

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.792 | 0.791925 | 0.00947 |
| Tetrachloro-m-xylene | 0.981 | 1.07263 | 8.92 |

**11G0410-23** TH-VBC-038

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.709 | 0.7110454 | 0.288 |
| Tetrachloro-m-xylene | 0.861 | 0.9415909 | 8.94 |

**11G0410-24** TH-VBCD-039

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.854 | 0.9213913 | 7.59 |
| Decachlorobiphenyl | 0.708 | 0.7071261 | 0.124 |

**11G0410-26** TH-VBC-041

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.846 | 0.8371858 | 1.05 |
| Tetrachloro-m-xylene | 0.909 | 0.9750572 | 7.01 |

**11G0410-27** TH-VBC-042

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.716 | 0.7214191 | 0.754 |
| Tetrachloro-m-xylene | 0.882 | 0.9681477 | 9.31 |

**11G0410-28** TH-VBC-043

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.782 | 0.7814334 | 0.0725 |
| Tetrachloro-m-xylene | 0.925 | 0.9907048 | 6.86 |

**11G0410-29** TH-VBC-044

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.759 | 0.7561681 | 0.374 |
| Tetrachloro-m-xylene | 0.851 | 0.9303772 | 8.91 |

**11G0410-30** TH-VBC-045

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.859 | 0.9195545 | 6.81 |
| Decachlorobiphenyl | 0.863 | 0.8570454 | 0.692 |

**11G0410-31** TH-VBC-046

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.808 | 0.8781044 | 8.32 |
| Decachlorobiphenyl | 0.760 | 0.772513 | 1.63 |

**11G0410-32** TH-VBC-047

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.864 | 0.8756096 | 1.33 |
| Tetrachloro-m-xylene | 0.867 | 0.9558667 | 9.75 |

**11G0410-33** TH-VBC-048

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |

| | | | |
|---|---|---|---|
| Decachlorobiphenyl | 0.698 | 0.716159 | 2.57 |
| Tetrachloro-m-xylene | 0.861 | 0.9574818 | 10.6 |

**11G0410-34** TH-VBC-049

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.630 | 0.6513636 | 3.33 |
| Tetrachloro-m-xylene | 0.812 | 0.8936273 | 9.57 |

**11G0410-35** TH-VBC-050

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 | 0.54 | 0.5683392 | 5.11 |
| Aroclor-1248 | 0.31 | 0.3474261 | 11.4 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.673 | 0.6931174 | 2.95 |
| Tetrachloro-m-xylene | 0.808 | 0.8905435 | 9.72 |

**11G0410-36** TH-VBC-051

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.691 | 0.7087826 | 2.54 |
| Tetrachloro-m-xylene | 0.858 | 0.9414652 | 9.28 |

**11G0410-37** TH-VBC-052

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.863 | 0.883115 | 2.3 |
| Tetrachloro-m-xylene | 0.994 | 1.10211 | 10.3 |

**11G0410-38** TH-VBC-053

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.809 | 0.82671 | 2.17 |
| Tetrachloro-m-xylene | 0.925 | 1.03681 | 11.4 |

**11G0410-39** TH-VBC-054

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.21 | 0.26705 | 23.9 |
| Aroclor-1254 | 0.30 | 0.3161 | 5.23 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.814 | 0.82891 | 1.82 |
| Tetrachloro-m-xylene | 0.946 | 1.05408 | 10.8 |

**11G0410-40** TH-VBC-055

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.757 | 0.771215 | 1.86 |
| Tetrachloro-m-xylene | 0.965 | 1.071035 | 10.4 |

**11G0410-41** TH-VBC-056

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.594 | 0.58289 | 1.89 |
| Tetrachloro-m-xylene | 0.593 | 0.598555 | 0.932 |

**11G0410-42** TH-VBC-057

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.973 | 0.953135 | 2.06 |
| Tetrachloro-m-xylene | 0.952 | 0.952905 | 0.095 |

**11G0410-43** TH-VBC-058

| Analyte | Results | | %RPD |
|---|---|---|---|

| Surrogates | | | |
|---|---|---|---|
| Decachlorobiphenyl | 0.421 | 0.422881 | 0.446 |
| Tetrachloro-m-xylene | 0.412 | 0.4202096 | 1.97 |

**11G0410-44** TH-VBCD-059

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.693 | 0.6807191 | 1.79 |
| Tetrachloro-m-xylene | 0.734 | 0.7335715 | 0.0584 |

**11G0410-46** TH-VBC-061

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.855 | 0.8531144 | 0.221 |
| Decachlorobiphenyl | 0.853 | 0.8343715 | 2.21 |

**11G0410-47** TH-VBC-062

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.13 | 0.1290478 | 0.735 |
| Aroclor-1254 | 0.099 | 9.336087E-02 | 5.86 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.423 | 0.4152217 | 1.86 |
| Tetrachloro-m-xylene | 0.432 | 0.4382652 | 1.44 |

**11G0410-48** TH-VBC-063

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.751 | 0.7342091 | 2.26 |
| Tetrachloro-m-xylene | 0.799 | 0.7949864 | 0.504 |

**11G0410-49** TH-VBC-064

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1248 [2C] | 0.32 | 0.3029048 | 5.49 |
| Aroclor-1254 [2C] | 0.31 | 0.258581 | 18.1 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.950 | 0.9132048 | 3.95 |
| Tetrachloro-m-xylene | 0.913 | 0.9113476 | 0.181 |

**11G0410-50** TH-VBC-065

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.643 | 0.63313 | 1.55 |
| Tetrachloro-m-xylene | 0.662 | 0.675785 | 2.06 |

**11G0410-51** TH-VBC-066

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.01 | 0.9788525 | 3.13 |
| Tetrachloro-m-xylene | 1.03 | 1.027548 | 0.238 |

**B033772-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.948 | 0.894855 | 5.77 |
| Tetrachloro-m-xylene | 0.916 | 0.981635 | 6.92 |

**B033772-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.25 | 0.28488 | 13 |
| Aroclor-1260 | 0.25 | 0.259325 | 3.66 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.872 | 0.938155 | 7.31 |
| Decachlorobiphenyl | 0.937 | 0.887305 | 5.45 |

**B033772-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.25 | 0.2776 | 10.5 |
| Aroclor-1260 | 0.24 | 0.24975 | 3.98 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.889 | 0.83571 | 6.18 |
| Tetrachloro-m-xylene | 0.876 | 0.954685 | 8.6 |

**B033772-MS1** Matrix Spike

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.22 | 0.2258261 | 2.61 |
| Aroclor-1016 | 0.23 | 0.2652522 | 14.2 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.792 | 0.8481 | 6.84 |
| Decachlorobiphenyl | 0.827 | 0.7657261 | 7.69 |

**B033772-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.26 | 0.2726143 | 4.74 |
| Aroclor-1016 | 0.29 | 0.3292143 | 12.7 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.941 | 0.8860477 | 6.02 |
| Tetrachloro-m-xylene | 0.901 | 0.9542952 | 5.75 |

**B033774-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.01 | 0.987755 | 2.23 |
| Tetrachloro-m-xylene | 1.18 | 1.240985 | 5.04 |

**B033774-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.30 | 0.32376 | 7.62 |
| Aroclor-1016 | 0.30 | 0.349415 | 15.2 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.02 | 1.0014 | 1.84 |
| Tetrachloro-m-xylene | 1.33 | 1.387515 | 4.23 |

**B033774-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.31 | 0.33956 | 9.1 |
| Aroclor-1016 | 0.30 | 0.348605 | 15 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.06 | 1.04656 | 1.28 |
| Tetrachloro-m-xylene | 1.28 | 1.35121 | 5.41 |

**B033774-MS1** Matrix Spike

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.24 | 0.2622826 | 8.87 |
| Aroclor-1260 | 0.21 | 0.2401043 | 13.4 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.615 | 0.6272957 | 1.98 |
| Tetrachloro-m-xylene | 0.892 | 0.9697696 | 8.35 |

**B033774-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.26 | 0.2696636 | 3.65 |
| Aroclor-1260 | 0.23 | 0.2584091 | 11.6 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.897 | 1.002682 | 11.1 |
| Decachlorobiphenyl | 0.686 | 0.6917455 | 0.834 |

**B033777-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|

| Surrogates | | | |
|---|---|---|---|
| Decachlorobiphenyl | 0.942 | 0.920455 | 2.31 |
| Tetrachloro-m-xylene | 0.940 | 0.9362 | 0.405 |

**B033777-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.24 | 0.26792 | 11 |
| Aroclor-1260 | 0.24 | 0.259585 | 7.84 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.849 | 0.832005 | 2.02 |
| Tetrachloro-m-xylene | 0.834 | 0.830455 | 0.426 |

**B033777-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.23 | 0.250795 | 8.65 |
| Aroclor-1016 | 0.24 | 0.270795 | 12.1 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.895 | 0.877865 | 1.93 |
| Tetrachloro-m-xylene | 0.911 | 0.90837 | 0.289 |

**B033777-MS1** Matrix Spike

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.17 | 0.2158 | 23.7 |
| Aroclor-1260 | 0.20 | 0.21065 | 5.19 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.801 | 0.7861773 | 1.87 |
| Tetrachloro-m-xylene | 0.782 | 0.7731727 | 1.14 |

**B033777-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.22 | 0.23533 | 6.73 |
| Aroclor-1260 | 0.21 | 0.22929 | 8.78 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.850 | 0.842105 | 0.933 |
| Decachlorobiphenyl | 0.861 | 0.843425 | 2.06 |

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July 27, 2011

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

Project Location: UMASS Amherst, Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0684

Enclosed are results of analyses for samples received by the laboratory on July 25, 2011. 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
35 New England Business Center
Andover, MA 01810
ATTN: George Franklin

REPORT DATE: 7/27/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0684

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, Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBC-67 | 11G0684-01 | Concrete | | SW-846 8082A | |
| TH-VBC-68 | 11G0684-02 | Concrete | | SW-846 8082A | |
| TH-VBC-69 | 11G0684-03 | Concrete | | SW-846 8082A | |
| TH-VBC-70 | 11G0684-04 | Concrete | | SW-846 8082A | |
| TH-VBC-71 | 11G0684-05 | 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.

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 individuuals 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, Amherst, MA  Sample Description:  Work Order: 11G0684

Date Received: 7/25/2011

**Field Sample #: TH-VBC-67**  Sampled: 7/25/2011 12:58

**Sample ID: 11G0684-01**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/25/11 | 7/26/11 16:33 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:33 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:33 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:33 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:33 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:33 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:33 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:33 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:33 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 95.4 | 30-150 | | 7/26/11 16:33 |
| Decachlorobiphenyl [2] | 90.4 | 30-150 | | 7/26/11 16:33 |
| Tetrachloro-m-xylene [1] | 97.0 | 30-150 | | 7/26/11 16:33 |
| Tetrachloro-m-xylene [2] | 93.6 | 30-150 | | 7/26/11 16:33 |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0684

Date Received: 7/25/2011

**Field Sample #: TH-VBC-68**  Sampled: 7/25/2011 13:18

**Sample ID: 11G0684-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/25/11 | 7/26/11 16:46 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:46 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:46 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:46 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:46 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:46 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:46 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:46 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:46 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 93.5 | 30-150 | | 7/26/11 16:46 |
| Decachlorobiphenyl [2] | 89.1 | 30-150 | | 7/26/11 16:46 |
| Tetrachloro-m-xylene [1] | 91.3 | 30-150 | | 7/26/11 16:46 |
| Tetrachloro-m-xylene [2] | 89.5 | 30-150 | | 7/26/11 16:46 |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0684

Date Received: 7/25/2011

**Field Sample #: TH-VBC-69**  Sampled: 7/25/2011 13:24

**Sample ID: 11G0684-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/25/11 | 7/26/11 16:59 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:59 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:59 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:59 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:59 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:59 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:59 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:59 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 16:59 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 98.0 | 30-150 | | 7/26/11 16:59 |
| Decachlorobiphenyl [2] | 94.7 | 30-150 | | 7/26/11 16:59 |
| Tetrachloro-m-xylene [1] | 102 | 30-150 | | 7/26/11 16:59 |
| Tetrachloro-m-xylene [2] | 99.1 | 30-150 | | 7/26/11 16:59 |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0684

Date Received: 7/25/2011

**Field Sample #: TH-VBC-70**  Sampled: 7/25/2011 13:38

**Sample ID: 11G0684-04**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/25/11 | 7/26/11 17:11 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:11 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:11 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:11 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:11 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:11 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:11 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:11 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:11 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.4 | 30-150 | | 7/26/11 17:11 |
| Decachlorobiphenyl [2] | 89.6 | 30-150 | | 7/26/11 17:11 |
| Tetrachloro-m-xylene [1] | 95.9 | 30-150 | | 7/26/11 17:11 |
| Tetrachloro-m-xylene [2] | 92.5 | 30-150 | | 7/26/11 17:11 |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0684

Date Received: 7/25/2011

**Field Sample #: TH-VBC-71**  Sampled: 7/25/2011 13:44

**Sample ID: 11G0684-05**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/25/11 | 7/26/11 17:24 | JMB |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:24 | JMB |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:24 | JMB |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:24 | JMB |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:24 | JMB |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:24 | JMB |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:24 | JMB |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:24 | JMB |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/25/11 | 7/26/11 17:24 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 95.4 | 30-150 | | 7/26/11 17:24 |
| Decachlorobiphenyl [2] | 90.8 | 30-150 | | 7/26/11 17:24 |
| Tetrachloro-m-xylene [1] | 96.8 | 30-150 | | 7/26/11 17:24 |
| Tetrachloro-m-xylene [2] | 94.5 | 30-150 | | 7/26/11 17:24 |

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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 |
|---|---|---|---|---|
| 11G0684-01 [TH-VBC-67] | B034231 | 2.00 | 10.0 | 07/25/11 |
| 11G0684-02 [TH-VBC-68] | B034231 | 2.20 | 10.0 | 07/25/11 |
| 11G0684-03 [TH-VBC-69] | B034231 | 2.20 | 10.0 | 07/25/11 |
| 11G0684-04 [TH-VBC-70] | B034231 | 2.20 | 10.0 | 07/25/11 |
| 11G0684-05 [TH-VBC-71] | B034231 | 2.30 | 10.0 | 07/25/11 |

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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 B034231 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034231-BLK1)** | | | | Prepared: 07/25/11 Analyzed: 07/26/11 | | | | | | |
| 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 | *0.974* | | mg/Kg | 1.00 | | 97.4 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.927* | | mg/Kg | 1.00 | | 92.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.01* | | mg/Kg | 1.00 | | 101 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.979* | | mg/Kg | 1.00 | | 97.9 | 30-150 | | | |
| **LCS (B034231-BS1)** | | | | Prepared: 07/25/11 Analyzed: 07/26/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg | 0.250 | | 98.4 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 112 | 40-140 | | | |
| Aroclor-1260 | 0.26 | 0.10 | mg/Kg | 0.250 | | 103 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 112 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.990* | | mg/Kg | 1.00 | | 99.0 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.946* | | mg/Kg | 1.00 | | 94.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.05* | | mg/Kg | 1.00 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.02* | | mg/Kg | 1.00 | | 102 | 30-150 | | | |
| **LCS Dup (B034231-BSD1)** | | | | Prepared: 07/25/11 Analyzed: 07/26/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg | 0.250 | | 96.7 | 40-140 | 1.76 | 30 | |
| Aroclor-1016 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 104 | 40-140 | 7.44 | 30 | |
| Aroclor-1260 | 0.24 | 0.10 | mg/Kg | 0.250 | | 97.3 | 40-140 | 5.94 | 30 | |
| Aroclor-1260 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 118 | 40-140 | 5.18 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.926* | | mg/Kg | 1.00 | | 92.6 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.879* | | mg/Kg | 1.00 | | 87.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.943* | | mg/Kg | 1.00 | | 94.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.914* | | mg/Kg | 1.00 | | 91.4 | 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 |
|---|---|
| ***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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of ___

11G0684

Company Name: Woodard & Curran
Address: 35 New England Business Center Suite 180, Andover MA 01810
Attention: George Franklin
Project Location: UMass Amherst, Amherst MA
Sampled By: Jesse Ream, Rhonda Forrester

Telephone: (978) 557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email: gfranklin@woodardcurran.com
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 | PCBs (Soxhlet) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | TH-VBC-67 | 12:58 | 7-25-11 | | X | S | A | X | | | | | | | | | | |
| -2 | TH-VBC-68 | 13:18 | ↓ | | X | S | A | X | | | | | | | | | | |
| -3 | TH-VBC-69 | 13:24 | ↓ | | X | S | A | X | | | | | | | | | | |
| -4 | TH-VBC-70 | 13:38 | ↓ | | X | S | A | X | | | | | | | | | | |
| -5 | TH-VBC-71 | 13:44 | ↓ | | X | S | A | X | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

# of Containers: 1
** Preservation: None
***Container Code: A

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: PCB's by USEPA 8082 via 3540c (Soxhlet)
RL ≤1.0mg/kg

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: |
|---|---|
| Rhonda M. Forrester | 7-25-11 14:10 |
| Received by: (signature) | Date/Time: |
| [signature] | 7/25 14:10 |
| Relinquished by: (signature) | Date/Time: |
| [signature] | 7/25 15:05 |
| Received by: (signature) | Date/Time: |
| [signature] 3.5°C | 7/25/11 15:05 |

**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 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**

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East Longmeadow, MA. 01028
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# Sample Receipt Checklist

**CLIENT NAME:** Woodardt Cumen **RECEIVED BY:** CAB **DATE:** 7/25/11

**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 3.5°C Temperature °C by Temp gun _____

**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:** 18

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

## 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) | 5 | 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:**

**Do all samples have the proper Acid pH:** Yes No N/A _____

**Do all samples have the proper Base pH:** Yes No N/A _____

Doc# 277

Rev. 1 May 2011

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0684 |
| Project Location: UMASS Amherst, Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0684-01 thru 11G0684-05

Matrices: Product/Solid

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☑ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes | ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 07/27/11

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

July 28, 2011

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

Project Location: Umass Amherst, Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0734

Enclosed are results of analyses for samples received by the laboratory on July 26, 2011. 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: 7/28/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0734

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, Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-CBC-72 | 11G0734-01 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-73 | 11G0734-02 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-74 | 11G0734-03 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-75 | 11G0734-04 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-76 | 11G0734-05 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-77 | 11G0734-06 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-78 | 11G0734-07 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBCD-79 | 11G0734-08 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBCQ-80 | 11G0734-09 | Equipment Blank Water | | SW-846 8082A | |
| TH-CBC-81 | 11G0734-10 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-82 | 11G0734-11 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-83 | 11G0734-12 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-84 | 11G0734-13 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-85 | 11G0734-14 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-86 | 11G0734-15 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-87 | 11G0734-16 | Concrete | | SM 2540G | |
| | | | | 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 - 07/28/2011 - Samples -01 through -09, -10 through -16 matrix revised to concrete 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 individuuals 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: Umass Amherst, Amherst, MA | Sample Description: | Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-72** | Sampled: 7/26/2011 07:10

**Sample ID: 11G0734-01**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 18:43 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:43 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:43 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:43 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:43 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:43 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:43 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:43 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:43 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 89.1 | 30-150 | | 7/27/11 18:43 |
| Decachlorobiphenyl [2] | 102 | 30-150 | | 7/27/11 18:43 |
| Tetrachloro-m-xylene [1] | 84.3 | 30-150 | | 7/27/11 18:43 |
| Tetrachloro-m-xylene [2] | 82.4 | 30-150 | | 7/27/11 18:43 |

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Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-72**
Sampled: 7/26/2011 07:10

**Sample ID: 11G0734-01**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.6 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: Umass Amherst, Amherst, MA | Sample Description: | Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-73** | Sampled: 7/26/2011 07:15

**Sample ID: 11G0734-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 18:57 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:57 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:57 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:57 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:57 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:57 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:57 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:57 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 18:57 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 98.5 | 30-150 | | 7/27/11 18:57 |
| Decachlorobiphenyl [2] | 113 | 30-150 | | 7/27/11 18:57 |
| Tetrachloro-m-xylene [1] | 93.1 | 30-150 | | 7/27/11 18:57 |
| Tetrachloro-m-xylene [2] | 89.5 | 30-150 | | 7/27/11 18:57 |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-73**
Sampled: 7/26/2011 07:15

**Sample ID: 11G0734-02**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.0 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: Umass Amherst, Amherst, MA | Sample Description: | Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-74** | Sampled: 7/26/2011 07:20

**Sample ID: 11G0734-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 19:11 | JMB |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:11 | JMB |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:11 | JMB |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:11 | JMB |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:11 | JMB |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:11 | JMB |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:11 | JMB |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:11 | JMB |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:11 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 96.8 | 30-150 | | 7/27/11 19:11 |
| Decachlorobiphenyl [2] | 112 | 30-150 | | 7/27/11 19:11 |
| Tetrachloro-m-xylene [1] | 93.4 | 30-150 | | 7/27/11 19:11 |
| Tetrachloro-m-xylene [2] | 90.0 | 30-150 | | 7/27/11 19:11 |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-74**
Sampled: 7/26/2011 07:20

**Sample ID: 11G0734-03**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.2 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: Umass Amherst, Amherst, MA  Sample Description:  Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-75**  Sampled: 7/26/2011 07:25

**Sample ID: 11G0734-04**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 19:25 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:25 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:25 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:25 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:25 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:25 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:25 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:25 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:25 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 81.1 | 30-150 | | 7/27/11 19:25 |
| Decachlorobiphenyl [2] | 93.3 | 30-150 | | 7/27/11 19:25 |
| Tetrachloro-m-xylene [1] | 77.6 | 30-150 | | 7/27/11 19:25 |
| Tetrachloro-m-xylene [2] | 74.4 | 30-150 | | 7/27/11 19:25 |

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Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-75**
Sampled: 7/26/2011 07:25

**Sample ID: 11G0734-04**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.3 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: Umass Amherst, Amherst, MA | Sample Description: | Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-76** | Sampled: 7/26/2011 07:30

**Sample ID: 11G0734-05**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 19:39 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:39 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:39 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:39 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:39 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:39 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:39 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:39 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:39 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 92.6 | 30-150 | | 7/27/11 19:39 |
| Decachlorobiphenyl [2] | 107 | 30-150 | | 7/27/11 19:39 |
| Tetrachloro-m-xylene [1] | 90.7 | 30-150 | | 7/27/11 19:39 |
| Tetrachloro-m-xylene [2] | 88.6 | 30-150 | | 7/27/11 19:39 |

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Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-76**
Sampled: 7/26/2011 07:30

**Sample ID: 11G0734-05**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.3 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: Umass Amherst, Amherst, MA | Sample Description: | Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-77** | Sampled: 7/26/2011 07:35

**Sample ID: 11G0734-06**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 19:53 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:53 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:53 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:53 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:53 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:53 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:53 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:53 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 19:53 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 80.3 | 30-150 | | 7/27/11 19:53 |
| Decachlorobiphenyl [2] | 92.3 | 30-150 | | 7/27/11 19:53 |
| Tetrachloro-m-xylene [1] | 81.0 | 30-150 | | 7/27/11 19:53 |
| Tetrachloro-m-xylene [2] | 79.6 | 30-150 | | 7/27/11 19:53 |

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Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-77**
Sampled: 7/26/2011 07:35

**Sample ID: 11G0734-06**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.5 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: Umass Amherst, Amherst, MA  Sample Description:  Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-78**  Sampled: 7/26/2011 08:15

**Sample ID: 11G0734-07**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 20:07 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 20:07 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 20:07 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 20:07 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 20:07 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 20:07 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 20:07 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 20:07 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 20:07 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 91.8 | 30-150 | | 7/27/11 20:07 |
| Decachlorobiphenyl [2] | 106 | 30-150 | | 7/27/11 20:07 |
| Tetrachloro-m-xylene [1] | 91.2 | 30-150 | | 7/27/11 20:07 |
| Tetrachloro-m-xylene [2] | 89.5 | 30-150 | | 7/27/11 20:07 |

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Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-78**
Sampled: 7/26/2011 08:15

**Sample ID: 11G0734-07**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 99.1 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: Umass Amherst, Amherst, MA | Sample Description: | Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBCD-79** | Sampled: 7/26/2011 08:15

**Sample ID: 11G0734-08**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 21:04 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:04 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:04 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:04 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:04 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:04 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:04 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:04 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:04 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 105 | 30-150 | | 7/27/11 21:04 |
| Decachlorobiphenyl [2] | 120 | 30-150 | | 7/27/11 21:04 |
| Tetrachloro-m-xylene [1] | 95.4 | 30-150 | | 7/27/11 21:04 |
| Tetrachloro-m-xylene [2] | 92.2 | 30-150 | | 7/27/11 21:04 |

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Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBCD-79**
Sampled: 7/26/2011 08:15

**Sample ID: 11G0734-08**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 99.0 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBCQ-80**
Sampled: 7/26/2011 08:17

**Sample ID: 11G0734-09**

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 | 7/27/11 | 7/27/11 21:01 | JMB |
| Aroclor-1221 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/27/11 | 7/27/11 21:01 | JMB |
| Aroclor-1232 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/27/11 | 7/27/11 21:01 | JMB |
| Aroclor-1242 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/27/11 | 7/27/11 21:01 | JMB |
| Aroclor-1248 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/27/11 | 7/27/11 21:01 | JMB |
| Aroclor-1254 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/27/11 | 7/27/11 21:01 | JMB |
| Aroclor-1260 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/27/11 | 7/27/11 21:01 | JMB |
| Aroclor-1262 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/27/11 | 7/27/11 21:01 | JMB |
| Aroclor-1268 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/27/11 | 7/27/11 21:01 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 40.3 | 30-150 | | 7/27/11 21:01 |
| Decachlorobiphenyl [2] | 39.9 | 30-150 | | 7/27/11 21:01 |
| Tetrachloro-m-xylene [1] | 86.0 | 30-150 | | 7/27/11 21:01 |
| Tetrachloro-m-xylene [2] | 83.6 | 30-150 | | 7/27/11 21:01 |

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

Project Location: Umass Amherst, Amherst, MA | Sample Description: | Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-81** | Sampled: 7/26/2011 08:20

**Sample ID: 11G0734-10**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 21:18 | JMB |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:18 | JMB |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:18 | JMB |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:18 | JMB |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:18 | JMB |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:18 | JMB |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:18 | JMB |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:18 | JMB |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:18 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 85.3 | 30-150 | | 7/27/11 21:18 |
| Decachlorobiphenyl [2] | 97.3 | 30-150 | | 7/27/11 21:18 |
| Tetrachloro-m-xylene [1] | 80.6 | 30-150 | | 7/27/11 21:18 |
| Tetrachloro-m-xylene [2] | 78.0 | 30-150 | | 7/27/11 21:18 |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-81**
Sampled: 7/26/2011 08:20

**Sample ID: 11G0734-10**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 98.2 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: Umass Amherst, Amherst, MA | Sample Description: | Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-82** | Sampled: 7/26/2011 08:28

**Sample ID: 11G0734-11**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 21:32 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:32 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:32 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:32 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:32 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:32 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:32 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:32 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:32 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 107 | 30-150 | | 7/27/11 21:32 |
| Decachlorobiphenyl [2] | 123 | 30-150 | | 7/27/11 21:32 |
| Tetrachloro-m-xylene [1] | 96.3 | 30-150 | | 7/27/11 21:32 |
| Tetrachloro-m-xylene [2] | 91.5 | 30-150 | | 7/27/11 21:32 |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-82**
Sampled: 7/26/2011 08:28

**Sample ID: 11G0734-11**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.0 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: Umass Amherst, Amherst, MA | Sample Description: | Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-83** | Sampled: 7/26/2011 08:32

**Sample ID: 11G0734-12**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 21:46 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:46 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:46 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:46 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:46 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:46 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:46 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:46 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 21:46 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 98.5 | 30-150 | | 7/27/11 21:46 |
| Decachlorobiphenyl [2] | 112 | 30-150 | | 7/27/11 21:46 |
| Tetrachloro-m-xylene [1] | 87.1 | 30-150 | | 7/27/11 21:46 |
| Tetrachloro-m-xylene [2] | 83.3 | 30-150 | | 7/27/11 21:46 |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-83**
Sampled: 7/26/2011 08:32

**Sample ID: 11G0734-12**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.6 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-84**
Sampled: 7/26/2011 08:36

**Sample ID: 11G0734-13**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 22:00 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:00 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:00 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:00 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:00 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:00 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:00 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:00 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:00 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 85.0 | 30-150 | | 7/27/11 22:00 |
| Decachlorobiphenyl [2] | 96.6 | 30-150 | | 7/27/11 22:00 |
| Tetrachloro-m-xylene [1] | 78.2 | 30-150 | | 7/27/11 22:00 |
| Tetrachloro-m-xylene [2] | 74.7 | 30-150 | | 7/27/11 22:00 |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-84**
Sampled: 7/26/2011 08:36

**Sample ID: 11G0734-13**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.4 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-85**
Sampled: 7/26/2011 09:20

**Sample ID: 11G0734-14**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 22:14 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:14 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:14 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:14 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:14 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:14 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:14 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:14 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:14 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 106 | 30-150 | | 7/27/11 22:14 |
| Decachlorobiphenyl [2] | 121 | 30-150 | | 7/27/11 22:14 |
| Tetrachloro-m-xylene [1] | 98.7 | 30-150 | | 7/27/11 22:14 |
| Tetrachloro-m-xylene [2] | 94.6 | 30-150 | | 7/27/11 22:14 |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-85**
Sampled: 7/26/2011 09:20

**Sample ID: 11G0734-14**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.9 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-86**
Sampled: 7/26/2011 09:15

**Sample ID: 11G0734-15**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 22:27 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:27 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:27 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:27 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:27 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:27 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:27 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:27 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:27 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 89.1 | 30-150 | | 7/27/11 22:27 |
| Decachlorobiphenyl [2] | 102 | 30-150 | | 7/27/11 22:27 |
| Tetrachloro-m-xylene [1] | 84.4 | 30-150 | | 7/27/11 22:27 |
| Tetrachloro-m-xylene [2] | 81.5 | 30-150 | | 7/27/11 22:27 |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-86**
Sampled: 7/26/2011 09:15

**Sample ID: 11G0734-15**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.7 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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

Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-87**
Sampled: 7/26/2011 09:00

**Sample ID: 11G0734-16**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/26/11 | 7/27/11 22:41 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:41 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:41 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:41 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:41 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:41 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:41 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:41 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/26/11 | 7/27/11 22:41 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 106 | 30-150 | | 7/27/11 22:41 |
| Decachlorobiphenyl [2] | 120 | 30-150 | | 7/27/11 22:41 |
| Tetrachloro-m-xylene [1] | 97.2 | 30-150 | | 7/27/11 22:41 |
| Tetrachloro-m-xylene [2] | 92.7 | 30-150 | | 7/27/11 22:41 |

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Project Location: Umass Amherst, Amherst, MA
Sample Description:
Work Order: 11G0734

Date Received: 7/26/2011

**Field Sample #: TH-CBC-87**
Sampled: 7/26/2011 09:00

**Sample ID: 11G0734-16**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.3 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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

## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11G0734-01 [TH-CBC-72] | B034325 | 07/27/11 |
| 11G0734-02 [TH-CBC-73] | B034325 | 07/27/11 |
| 11G0734-03 [TH-CBC-74] | B034325 | 07/27/11 |
| 11G0734-04 [TH-CBC-75] | B034325 | 07/27/11 |
| 11G0734-05 [TH-CBC-76] | B034325 | 07/27/11 |
| 11G0734-06 [TH-CBC-77] | B034325 | 07/27/11 |
| 11G0734-07 [TH-CBC-78] | B034325 | 07/27/11 |
| 11G0734-08 [TH-CBCD-79] | B034325 | 07/27/11 |
| 11G0734-10 [TH-CBC-81] | B034325 | 07/27/11 |
| 11G0734-11 [TH-CBC-82] | B034325 | 07/27/11 |
| 11G0734-12 [TH-CBC-83] | B034325 | 07/27/11 |
| 11G0734-13 [TH-CBC-84] | B034325 | 07/27/11 |
| 11G0734-14 [TH-CBC-85] | B034325 | 07/27/11 |
| 11G0734-15 [TH-CBC-86] | B034325 | 07/27/11 |
| 11G0734-16 [TH-CBC-87] | B034325 | 07/27/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0734-01 [TH-CBC-72] | B034308 | 2.10 | 10.0 | 07/26/11 |
| 11G0734-02 [TH-CBC-73] | B034308 | 2.00 | 10.0 | 07/26/11 |
| 11G0734-03 [TH-CBC-74] | B034308 | 2.30 | 10.0 | 07/26/11 |
| 11G0734-04 [TH-CBC-75] | B034308 | 2.00 | 10.0 | 07/26/11 |
| 11G0734-05 [TH-CBC-76] | B034308 | 2.20 | 10.0 | 07/26/11 |
| 11G0734-06 [TH-CBC-77] | B034308 | 2.20 | 10.0 | 07/26/11 |
| 11G0734-07 [TH-CBC-78] | B034308 | 2.00 | 10.0 | 07/26/11 |
| 11G0734-08 [TH-CBCD-79] | B034308 | 2.00 | 10.0 | 07/26/11 |
| 11G0734-10 [TH-CBC-81] | B034308 | 2.30 | 10.0 | 07/26/11 |
| 11G0734-11 [TH-CBC-82] | B034308 | 2.00 | 10.0 | 07/26/11 |
| 11G0734-12 [TH-CBC-83] | B034308 | 2.20 | 10.0 | 07/26/11 |
| 11G0734-13 [TH-CBC-84] | B034308 | 2.20 | 10.0 | 07/26/11 |
| 11G0734-14 [TH-CBC-85] | B034308 | 2.10 | 10.0 | 07/26/11 |
| 11G0734-15 [TH-CBC-86] | B034308 | 2.10 | 10.0 | 07/26/11 |
| 11G0734-16 [TH-CBC-87] | B034308 | 2.00 | 10.0 | 07/26/11 |

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

| Lab Number [Field ID] | Batch | Initial [mL] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0734-09 [TH-CBCQ-80] | B034317 | 1000 | 10.0 | 07/27/11 |

con-test® ANALYTICAL LABORATORY

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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 B034308 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034308-BLK1)** | | | | Prepared: 07/26/11 Analyzed: 07/27/11 | | | | | | |
| 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 | *1.03* | | mg/Kg | 1.00 | | 103 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.18* | | mg/Kg | 1.00 | | 118 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.968* | | mg/Kg | 1.00 | | 96.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.940* | | mg/Kg | 1.00 | | 94.0 | 30-150 | | | |
| **LCS (B034308-BS1)** | | | | Prepared: 07/26/11 Analyzed: 07/27/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg | 0.250 | | 97.0 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 105 | 40-140 | | | |
| Aroclor-1260 | 0.23 | 0.10 | mg/Kg | 0.250 | | 92.4 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 101 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.816* | | mg/Kg | 1.00 | | 81.6 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.929* | | mg/Kg | 1.00 | | 92.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.996* | | mg/Kg | 1.00 | | 99.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.959* | | mg/Kg | 1.00 | | 95.9 | 30-150 | | | |
| **LCS Dup (B034308-BSD1)** | | | | Prepared: 07/26/11 Analyzed: 07/27/11 | | | | | | |
| Aroclor-1016 | 0.27 | 0.10 | mg/Kg | 0.250 | | 107 | 40-140 | 10.1 | 30 | |
| Aroclor-1016 [2C] | 0.30 | 0.10 | mg/Kg | 0.250 | | 119 | 40-140 | 12.7 | 30 | |
| Aroclor-1260 | 0.26 | 0.10 | mg/Kg | 0.250 | | 104 | 40-140 | 11.8 | 30 | |
| Aroclor-1260 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 114 | 40-140 | 12.2 | 30 | |
| Surrogate: Decachlorobiphenyl | *1.05* | | mg/Kg | 1.00 | | 105 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.19* | | mg/Kg | 1.00 | | 119 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.938* | | mg/Kg | 1.00 | | 93.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.901* | | mg/Kg | 1.00 | | 90.1 | 30-150 | | | |

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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 B034308 - SW-846 3540C** | | | | | | | | | | |
| **Matrix Spike (B034308-MS1)** | | **Source: 11G0734-01** | | Prepared: 07/26/11 Analyzed: 07/27/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.087 | mg/Kg | 0.217 | 0.0 | 101 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.24 | 0.087 | mg/Kg | 0.217 | 0.0 | 113 | 40-140 | | | |
| Aroclor-1260 | 0.21 | 0.087 | mg/Kg | 0.217 | 0.0 | 98.0 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.24 | 0.087 | mg/Kg | 0.217 | 0.0 | 112 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.928* | | mg/Kg | 0.870 | | 107 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.06* | | mg/Kg | 0.870 | | 122 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.873* | | mg/Kg | 0.870 | | 100 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.839* | | mg/Kg | 0.870 | | 96.4 | 30-150 | | | |
| **Matrix Spike Dup (B034308-MSD1)** | | **Source: 11G0734-01** | | Prepared: 07/26/11 Analyzed: 07/27/11 | | | | | | |
| Aroclor-1016 | 0.26 | 0.10 | mg/Kg | 0.250 | 0.0 | 103 | 40-140 | 16.0 | 50 | |
| Aroclor-1016 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | 0.0 | 105 | 40-140 | 6.61 | 50 | |
| Aroclor-1260 | 0.24 | 0.10 | mg/Kg | 0.250 | 0.0 | 96.2 | 40-140 | 12.2 | 50 | |
| Aroclor-1260 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | 0.0 | 111 | 40-140 | 12.6 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.988* | | mg/Kg | 1.00 | | 98.8 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.13* | | mg/Kg | 1.00 | | 113 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.00* | | mg/Kg | 1.00 | | 100 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.960* | | mg/Kg | 1.00 | | 96.0 | 30-150 | | | |
| **Batch B034317 - SW-846 3510C** | | | | | | | | | | |
| **Blank (B034317-BLK1)** | | | | Prepared & Analyzed: 07/27/11 | | | | | | |
| 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 | *1.95* | | µg/L | 2.00 | | 97.3 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.86* | | µg/L | 2.00 | | 92.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.92* | | µg/L | 2.00 | | 96.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.91* | | µg/L | 2.00 | | 95.6 | 30-150 | | | |

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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 B034317 - SW-846 3510C** | | | | | | | | | | |
| **LCS (B034317-BS1)** | | | | Prepared & Analyzed: 07/27/11 | | | | | | |
| Aroclor-1016 | 0.40 | 0.20 | µg/L | 0.500 | | 80.8 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.49 | 0.20 | µg/L | 0.500 | | 98.9 | 40-140 | | | |
| Aroclor-1260 | 0.49 | 0.20 | µg/L | 0.500 | | 98.8 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.56 | 0.20 | µg/L | 0.500 | | 113 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *2.18* | | µg/L | 2.00 | | 109 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *2.08* | | µg/L | 2.00 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *2.06* | | µg/L | 2.00 | | 103 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *2.06* | | µg/L | 2.00 | | 103 | 30-150 | | | |
| **LCS Dup (B034317-BSD1)** | | | | Prepared & Analyzed: 07/27/11 | | | | | | |
| Aroclor-1016 | 0.43 | 0.20 | µg/L | 0.500 | | 86.0 | 40-140 | 6.34 | 20 | |
| Aroclor-1016 [2C] | 0.47 | 0.20 | µg/L | 0.500 | | 93.7 | 40-140 | 5.43 | 20 | |
| Aroclor-1260 | 0.46 | 0.20 | µg/L | 0.500 | | 91.7 | 40-140 | 7.45 | 20 | |
| Aroclor-1260 [2C] | 0.53 | 0.20 | µg/L | 0.500 | | 105 | 40-140 | 6.86 | 20 | |
| Surrogate: Decachlorobiphenyl | *2.04* | | µg/L | 2.00 | | 102 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.98* | | µg/L | 2.00 | | 98.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.99* | | µg/L | 2.00 | | 99.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *2.02* | | µg/L | 2.00 | | 101 | 30-150 | | | |

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**QUALITY CONTROL**

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B034325 - % Solids** | | | | | | | | | | |
| **Duplicate (B034325-DUP3)** | | **Source: 11G0734-14** | | Prepared: 07/27/11 Analyzed: 07/28/11 | | | | | | |
| % Solids | 97.8 | | % Wt | | 97.9 | | | 0.102 | 20 | |

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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 |
| ***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 |

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

| Code | Description | Number | Expires |
|---|---|---|---|
| AIHA | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

# CHAIN OF CUSTODY RECORD

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
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39 Spruce Street
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Page 1 of 2

1IG0734

Company Name: Woodard & Curran
Address: 35 New England Business Center Suite 180, Andover MA 01810
Attention: George Franklin
Project Location: UMass Amherst, Amherst MA
Sampled By: Jesse Ream, Rhonda Forrester

Telephone: (978) 557-8150
Project #: 224733
Client PO#:

**DATA DELIVERY** (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #:
Email: gfranklin@woodardcurran.com
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 | PCBs (Soxhlet) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # of Containers | | | | | | | | 1 | | | | | | | | | | |
| ** Preservation | | | | | | | | none | | | | | | | | | | |
| ***Container Code | | | | | | | | A | | | | | | | | | | |
| -01 | TH-CBC-72 | 07-26-11 | 7:10 | | X | S | A | X | | | | | | | | | | |
| -02 | TH-CBC-73 | | 7:15 | | X | S | | X | | | | | | | | | | |
| -03 | TH-CBC-74 | | 7:20 | | X | S | | X | | | | | | | | | | |
| -04 | TH-CBC-75 | | 7:25 | | X | S | | X | | | | | | | | | | |
| -05 | TH-CBC-76 | | 7:30 | | X | S | | X | | | | | | | | | | |
| -06 | TH-CBC-77 | | 7:35 | | X | S | | X | | | | | | | | | | |
| -07 | TH-CBC-78 | | 8:15 | | X | S | | X | | | | | | | | | | |
| -08 | TH-CBCD-79 | | 8:15 | | X | S | | X | | | | | | | | | | |
| -09 | TH-CBCQ-80 | | 0817 | | X | S | A | X | | | | | | | | | | |
| -10 | TH-CBC-81 | | 8:20 | | X | S | A | X | | | | | | | | | | |

Comments: PCBs by USEPA 8082 via 3540C (Soxhlet)
R.L. ≤ 1.0 mg/kg

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: |
|---|---|
| Jesse Ream | 7/26/11 16:54 |
| Received by: (signature) | Date/Time: |
| 3-8°C | 7/26/11 16:54 |
| 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:*

**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
**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

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

Page 2 of 2

11G0734

Company Name: Woodard & Curran
Address: 35 New England Business Center Suite 180, Andover MA 01810
Attention: George Franklin
Project Location: UMass Amherst, Amherst MA
Sampled By: Jesse Ream, Rhonda Forrester

Telephone: (978) 557-8150
Project #: 224733
Client PO#:

DATA DELIVERY (check all that apply)
O FAX ✓ EMAIL O WEBSITE
Fax # gfrankling
Email: jhamel@woodardcurran.com
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 | PCBs (Soxhlet) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # of Containers | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ** Preservation | | | | | | | | none | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ***Container Code | | | | | | | | A | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -11 | TH-CBC-82 | 7-26 | 8:28 | | X | S | A | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -12 | TH-CBC-83 | ↓ | 8:32 | | X | S | ↓ | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -13 | TH-CBC-84 | ↓ | 8:36 | | X | S | ↓ | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -14 | TH-CBC-85 | ↓ | 9:20 | | X | S | ↓ | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -15 | TH-CBC-86 | ↓ | 9:15 | | X | S | ↓ | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| -16 | TH-CBC-87 | ↓ | 9:00 | | X | S | ↓ | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Comments: PCB's by USEPA 8082 via 3540c (Soxhlet)
R.L. ≤ 1.0 mg/kg

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_____

Dissolved Metals
O Field Filtered
O Lab to Filter

| Relinquished by: (signature) | Date/Time: |
|---|---|
| Jesse Ream | 7/26/11 1657 |
| Received by: (signature) | Date/Time: |
| [illegible] | 7/26/11 1657 |
| 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:

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 # _____

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# Sample Receipt Checklist

**CLIENT NAME:** Nordwa + Custen **RECEIVED BY:** CM **DATE:** 7/26/11

**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) 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 CEC Date 7/26/11 Time 16:37

**7) Location where samples are stored:** 19

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

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | 2 unp. | 8 oz amber/clear jar | 1 |
| 500 mL Amber | | 4 oz amber/clear jar | |
| 250 mL Amber (8oz amber) | 14 | 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:**

**Do all samples have the proper Acid pH:** Yes No N/A _____

**Do all samples have the proper Base pH:** Yes No N/A _____

Doc# 277

Rev. 1 May 2011

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0734 |
| Project Location: Umass Amherst, Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0734-01 thru 11G0734-16

Matrices: Soil Water

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | |
|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 07/28/11

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

July 28, 2011

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

Project Location: UMASS Amherst, Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0745

Enclosed are results of analyses for samples received by the laboratory on July 26, 2011. 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: 7/28/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0745

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, Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBS-88 | 11G0745-01 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-89 | 11G0745-02 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-90 | 11G0745-03 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-91 | 11G0745-04 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-92 | 11G0745-05 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-93 | 11G0745-06 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-94 | 11G0745-07 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-95 | 11G0745-08 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-96 | 11G0745-09 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-97 | 11G0745-10 | Soil | | SM 2540G | |
| | | | | 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:**

Surrogate recovery is outside of control limits on both columns.
Data validation is not affected since all results are "not detected" and bias is on the high side.

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

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

11G0745-07[TH-VBS-94]

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 individuuals 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, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-88**  Sampled: 7/26/2011 16:02

**Sample ID: 11G0745-01**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.099 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 0:47 | JMB |
| Aroclor-1221 [1] | ND | 0.099 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 0:47 | JMB |
| Aroclor-1232 [1] | ND | 0.099 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 0:47 | JMB |
| Aroclor-1242 [1] | ND | 0.099 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 0:47 | JMB |
| Aroclor-1248 [1] | ND | 0.099 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 0:47 | JMB |
| Aroclor-1254 [1] | ND | 0.099 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 0:47 | JMB |
| Aroclor-1260 [1] | ND | 0.099 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 0:47 | JMB |
| Aroclor-1262 [1] | ND | 0.099 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 0:47 | JMB |
| Aroclor-1268 [1] | ND | 0.099 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 0:47 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 110 | 30-150 | | 7/28/11 0:47 |
| Decachlorobiphenyl [2] | 123 | 30-150 | | 7/28/11 0:47 |
| Tetrachloro-m-xylene [1] | 101 | 30-150 | | 7/28/11 0:47 |
| Tetrachloro-m-xylene [2] | 96.1 | 30-150 | | 7/28/11 0:47 |

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Project Location: UMASS Amherst, Amherst, MA
Sample Description:
Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-88**
Sampled: 7/26/2011 16:02

**Sample ID: 11G0745-01**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.7 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-89**  Sampled: 7/26/2011 16:03

**Sample ID: 11G0745-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:01 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:01 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:01 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:01 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:01 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:01 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:01 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:01 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:01 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 113 | 30-150 | | 7/28/11 1:01 |
| Decachlorobiphenyl [2] | 127 | 30-150 | | 7/28/11 1:01 |
| Tetrachloro-m-xylene [1] | 101 | 30-150 | | 7/28/11 1:01 |
| Tetrachloro-m-xylene [2] | 97.5 | 30-150 | | 7/28/11 1:01 |

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Project Location: UMASS Amherst, Amherst, MA
Sample Description:
Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-89**
Sampled: 7/26/2011 16:03

**Sample ID: 11G0745-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.6 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-90**  Sampled: 7/26/2011 16:04

**Sample ID: 11G0745-03**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:15 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:15 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:15 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:15 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:15 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:15 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:15 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:15 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:15 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 108 | 30-150 | | 7/28/11 1:15 |
| Decachlorobiphenyl [2] | 121 | 30-150 | | 7/28/11 1:15 |
| Tetrachloro-m-xylene [1] | 103 | 30-150 | | 7/28/11 1:15 |
| Tetrachloro-m-xylene [2] | 99.3 | 30-150 | | 7/28/11 1:15 |

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Project Location: UMASS Amherst, Amherst, MA
Sample Description:
Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-90**
Sampled: 7/26/2011 16:04

**Sample ID: 11G0745-03**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.8 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-91**  Sampled: 7/26/2011 16:04

**Sample ID: 11G0745-04**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:29 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:29 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:29 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:29 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:29 | JMB |
| Aroclor-1254 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:29 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:29 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:29 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:29 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 84.5 | 30-150 | | 7/28/11 1:29 |
| Decachlorobiphenyl [2] | 95.0 | 30-150 | | 7/28/11 1:29 |
| Tetrachloro-m-xylene [1] | 98.5 | 30-150 | | 7/28/11 1:29 |
| Tetrachloro-m-xylene [2] | 95.0 | 30-150 | | 7/28/11 1:29 |

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

Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-91**  Sampled: 7/26/2011 16:04

**Sample ID: 11G0745-04**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 90.7 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-92**  Sampled: 7/26/2011 16:05

**Sample ID: 11G0745-05**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:43 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:43 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:43 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:43 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:43 | JMB |
| Aroclor-1254 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:43 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:43 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:43 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 1:43 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 98.2 | 30-150 | | 7/28/11 1:43 |
| Decachlorobiphenyl [2] | 110 | 30-150 | | 7/28/11 1:43 |
| Tetrachloro-m-xylene [1] | 97.8 | 30-150 | | 7/28/11 1:43 |
| Tetrachloro-m-xylene [2] | 95.2 | 30-150 | | 7/28/11 1:43 |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-92**  Sampled: 7/26/2011 16:05

**Sample ID: 11G0745-05**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 89.9 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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

Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-93**  Sampled: 7/26/2011 16:05

**Sample ID: 11G0745-06**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 13:44 | JMB |
| Aroclor-1221 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 13:44 | JMB |
| Aroclor-1232 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 13:44 | JMB |
| Aroclor-1242 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 13:44 | JMB |
| Aroclor-1248 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 13:44 | JMB |
| Aroclor-1254 [2] | 0.65 | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 13:44 | JMB |
| Aroclor-1260 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 13:44 | JMB |
| Aroclor-1262 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 13:44 | JMB |
| Aroclor-1268 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 13:44 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 143 | 30-150 | | 7/28/11 13:44 |
| Decachlorobiphenyl [2] | 141 | 30-150 | | 7/28/11 13:44 |
| Tetrachloro-m-xylene [1] | 148 | 30-150 | | 7/28/11 13:44 |
| Tetrachloro-m-xylene [2] | 149 | 30-150 | | 7/28/11 13:44 |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-93**  Sampled: 7/26/2011 16:05

**Sample ID: 11G0745-06**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 83.4 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-94**  Sampled: 7/26/2011 16:06

**Sample ID: 11G0745-07**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:11 | JMB |
| Aroclor-1221 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:11 | JMB |
| Aroclor-1232 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:11 | JMB |
| Aroclor-1242 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:11 | JMB |
| Aroclor-1248 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:11 | JMB |
| Aroclor-1254 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:11 | JMB |
| Aroclor-1260 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:11 | JMB |
| Aroclor-1262 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:11 | JMB |
| Aroclor-1268 [1] | ND | 0.20 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:11 | JMB |

| Surrogates | % Recovery | | Recovery Limits | Flag | |
|---|---|---|---|---|---|
| **Decachlorobiphenyl [1]** | **175** | * | 30-150 | S-13 | 7/28/11 2:11 |
| **Decachlorobiphenyl [2]** | **197** | * | 30-150 | S-13 | 7/28/11 2:11 |
| **Tetrachloro-m-xylene [1]** | **171** | * | 30-150 | S-13 | 7/28/11 2:11 |
| **Tetrachloro-m-xylene [2]** | **177** | * | 30-150 | S-13 | 7/28/11 2:11 |

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

Project Location: UMASS Amherst, Amherst, MA
Sample Description:
Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-94**
Sampled: 7/26/2011 16:06

**Sample ID: 11G0745-07**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 84.6 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-95**  Sampled: 7/26/2011 16:07

**Sample ID: 11G0745-08**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:25 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:25 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:25 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:25 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:25 | JMB |
| Aroclor-1254 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:25 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:25 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:25 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:25 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 96.5 | 30-150 | | 7/28/11 2:25 |
| Decachlorobiphenyl [2] | 109 | 30-150 | | 7/28/11 2:25 |
| Tetrachloro-m-xylene [1] | 97.8 | 30-150 | | 7/28/11 2:25 |
| Tetrachloro-m-xylene [2] | 98.6 | 30-150 | | 7/28/11 2:25 |

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

Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-95**  Sampled: 7/26/2011 16:07

**Sample ID: 11G0745-08**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 91.0 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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

Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-96**  Sampled: 7/26/2011 16:08

**Sample ID: 11G0745-09**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:39 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:39 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:39 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:39 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:39 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:39 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:39 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:39 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:39 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 103 | 30-150 | | 7/28/11 2:39 |
| Decachlorobiphenyl [2] | 116 | 30-150 | | 7/28/11 2:39 |
| Tetrachloro-m-xylene [1] | 97.9 | 30-150 | | 7/28/11 2:39 |
| Tetrachloro-m-xylene [2] | 97.8 | 30-150 | | 7/28/11 2:39 |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-96**  Sampled: 7/26/2011 16:08

**Sample ID: 11G0745-09**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.6 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-97**  Sampled: 7/26/2011 16:09

**Sample ID: 11G0745-10**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:53 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:53 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:53 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:53 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:53 | JMB |
| Aroclor-1254 [2] | 0.35 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:53 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:53 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:53 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/26/11 | 7/28/11 2:53 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 104 | 30-150 | | 7/28/11 2:53 |
| Decachlorobiphenyl [2] | 117 | 30-150 | | 7/28/11 2:53 |
| Tetrachloro-m-xylene [1] | 99.6 | 30-150 | | 7/28/11 2:53 |
| Tetrachloro-m-xylene [2] | 98.6 | 30-150 | | 7/28/11 2:53 |

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Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11G0745

Date Received: 7/26/2011

**Field Sample #: TH-VBS-97**  Sampled: 7/26/2011 16:09

**Sample ID: 11G0745-10**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.5 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:35 | PJS |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11G0745-01 [TH-VBS-88] | B034325 | 07/27/11 |
| 11G0745-02 [TH-VBS-89] | B034325 | 07/27/11 |
| 11G0745-03 [TH-VBS-90] | B034325 | 07/27/11 |
| 11G0745-04 [TH-VBS-91] | B034325 | 07/27/11 |
| 11G0745-05 [TH-VBS-92] | B034325 | 07/27/11 |
| 11G0745-06 [TH-VBS-93] | B034325 | 07/27/11 |
| 11G0745-07 [TH-VBS-94] | B034325 | 07/27/11 |
| 11G0745-08 [TH-VBS-95] | B034325 | 07/27/11 |
| 11G0745-09 [TH-VBS-96] | B034325 | 07/27/11 |
| 11G0745-10 [TH-VBS-97] | B034325 | 07/27/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0745-01 [TH-VBS-88] | B034310 | 10.3 | 50.0 | 07/26/11 |
| 11G0745-02 [TH-VBS-89] | B034310 | 10.0 | 50.0 | 07/26/11 |
| 11G0745-03 [TH-VBS-90] | B034310 | 10.3 | 50.0 | 07/26/11 |
| 11G0745-04 [TH-VBS-91] | B034310 | 10.2 | 50.0 | 07/26/11 |
| 11G0745-05 [TH-VBS-92] | B034310 | 10.1 | 50.0 | 07/26/11 |
| 11G0745-06 [TH-VBS-93] | B034310 | 6.00 | 50.0 | 07/26/11 |
| 11G0745-07 [TH-VBS-94] | B034310 | 6.00 | 50.0 | 07/26/11 |
| 11G0745-08 [TH-VBS-95] | B034310 | 10.0 | 50.0 | 07/26/11 |
| 11G0745-09 [TH-VBS-96] | B034310 | 10.0 | 50.0 | 07/26/11 |
| 11G0745-10 [TH-VBS-97] | B034310 | 10.0 | 50.0 | 07/26/11 |

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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 B034310 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034310-BLK1)** | | | | Prepared: 07/26/11 Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.212* | | mg/Kg wet | 0.200 | | 106 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.239* | | mg/Kg wet | 0.200 | | 120 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.193* | | mg/Kg wet | 0.200 | | 96.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.186* | | mg/Kg wet | 0.200 | | 93.2 | 30-150 | | | |
| **LCS (B034310-BS1)** | | | | Prepared: 07/26/11 Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 104 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 108 | 40-140 | | | |
| Aroclor-1260 | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 102 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 112 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.223* | | mg/Kg wet | 0.200 | | 111 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.251* | | mg/Kg wet | 0.200 | | 125 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.198* | | mg/Kg wet | 0.200 | | 98.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.190* | | mg/Kg wet | 0.200 | | 95.1 | 30-150 | | | |
| **LCS Dup (B034310-BSD1)** | | | | Prepared: 07/26/11 Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 103 | 40-140 | 1.10 | 30 | |
| Aroclor-1016 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 108 | 40-140 | 0.114 | 30 | |
| Aroclor-1260 | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 97.7 | 40-140 | 4.22 | 30 | |
| Aroclor-1260 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 108 | 40-140 | 4.16 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.208* | | mg/Kg wet | 0.200 | | 104 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.234* | | mg/Kg wet | 0.200 | | 117 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.191* | | mg/Kg wet | 0.200 | | 95.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.182* | | mg/Kg wet | 0.200 | | 91.0 | 30-150 | | | |

con-test® ANALYTICAL LABORATORY

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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 B034310 - SW-846 3540C** | | | | | | | | | | |
| **Matrix Spike (B034310-MS1)** | | **Source: 11G0745-01** | | Prepared: 07/26/11 Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | 0.20 | 0.10 | mg/Kg dry | 0.205 | 0.0 | 99.5 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.22 | 0.10 | mg/Kg dry | 0.205 | 0.0 | 105 | 40-140 | | | |
| Aroclor-1260 | 0.20 | 0.10 | mg/Kg dry | 0.205 | 0.0 | 98.4 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.22 | 0.10 | mg/Kg dry | 0.205 | 0.0 | 108 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.218* | | mg/Kg dry | 0.205 | | 107 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.244* | | mg/Kg dry | 0.205 | | 119 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.198* | | mg/Kg dry | 0.205 | | 96.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.196* | | mg/Kg dry | 0.205 | | 95.7 | 30-150 | | | |
| **Matrix Spike Dup (B034310-MSD1)** | | **Source: 11G0745-01** | | Prepared: 07/26/11 Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.099 | mg/Kg dry | 0.199 | 0.0 | 110 | 40-140 | 6.94 | 50 | |
| Aroclor-1016 [2C] | 0.23 | 0.099 | mg/Kg dry | 0.199 | 0.0 | 115 | 40-140 | 5.44 | 50 | |
| Aroclor-1260 | 0.21 | 0.099 | mg/Kg dry | 0.199 | 0.0 | 105 | 40-140 | 3.13 | 50 | |
| Aroclor-1260 [2C] | 0.23 | 0.099 | mg/Kg dry | 0.199 | 0.0 | 116 | 40-140 | 4.15 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.224* | | mg/Kg dry | 0.199 | | 113 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.251* | | mg/Kg dry | 0.199 | | 126 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.210* | | mg/Kg dry | 0.199 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.207* | | mg/Kg dry | 0.199 | | 104 | 30-150 | | | |

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**QUALITY CONTROL**

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B034325 - % Solids** | | | | | | | | | | |
| **Duplicate (B034325-DUP4)** | | **Source: 11G0745-08** | | Prepared: 07/27/11 Analyzed: 07/28/11 | | | | | | |
| % Solids | 88.7 | | % Wt | | 91.0 | | | 2.56 | 20 | |

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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. |
| S-13 | Surrogate recovery is outside of control limits on both columns.<br>Data validation is not affected since all results are "not detected" and bias is on the high side. |

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## CERTIFICATIONS

**Certified Analyses included in this Report**

| Analyte | Certifications |
|---|---|
| ***SW-846 8082A in Soil*** | |
| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

# CHAIN OF CUSTODY RECORD

11G0745

con-test® ANALYTICAL LABORATORY
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www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

Company Name: Woodard & Curran
Address: 35 New England Business Center Suite 180, Andover, MA 01810
Attention: George Franklin
Project Location: UMass Amherst, Amherst MA
Sampled By: Rhonda Forrester

Telephone: (978) 557-8150
Project #: 224733
Client PO#:

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

Project Proposal Provided? (for billing purposes)
O 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 | PCBs (Soxhlet) | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 1 | none | G |
| -1 | TH-VBS-88 | 7/26/11 | 4:02 pm | | X | S | G | X | | | |
| -2 | TH-VBS-89 | | 4:03 pm | | | S | G | X | | | |
| -3 | TH-VBS-90 | | 4:04 pm | | | S | G | X | | | |
| -4 | TH-VBS-91 | | 4:04 pm | | | S | G | X | | | |
| -5 | TH-VBS-92 | | 4:05 pm | | | S | G | X | | | |
| -6 | TH-VBS-93 | | 4:05 pm | | | S | G | X | | | |
| -7 | TH-VBS-94 | | 4:06 pm | | | S | G | X | | | |
| -8 | TH-VBS-95 | | 4:07 pm | | | S | G | X | | | |
| -9 | TH-VBS-96 | | 4:08 pm | | | S | G | X | | | |
| -10 | TH-VBS-97 | | 4:09 pm | | | S | G | X | | | |

ANALYSIS REQUESTED

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: PCBs by USEPA 8082 via 3540c (Soxhlet)
RL ≤ 1.0 mg/kg

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: |
|---|---|
| Rhonda M. Forrester | 7/26/11 18:45 |
| Received by: (signature) | Date/Time: |
| 15.6° | 7/26/11 18:45 |
| 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:

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
AIHA Accredited Laboratory

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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East Longmeadow, MA. 01028
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www.contestlabs.com

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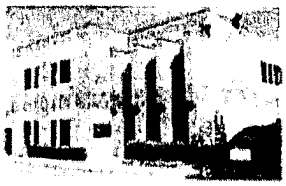

# Sample Receipt Checklist

CLIENT NAME: Woodward + Curran RECEIVED BY: [illegible] DATE: 7/26/11

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 15.6°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 N/A Date 7/26/11 Time 18:45

7) Location where samples are stored: 19

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

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | | 8 oz amber/clear jar | 10 |
| 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 _____
# Bisulfate _____ # DI Water _____
# Thiosulfate _____ Unpreserved _____

Time and Date Frozen:

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

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

Doc# 277

Rev. 1 May 2011

**11G0745-01** TH-VBS-88

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.200 | 0.1910793 | 4.56 |
| Decachlorobiphenyl | 0.218 | 0.2449195 | 11.6 |

**11G0745-02** TH-VBS-89

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.232 | 0.26104 | 11.8 |
| Tetrachloro-m-xylene | 0.208 | 0.1997951 | 4.02 |

**11G0745-03** TH-VBS-90

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.218 | 0.2455459 | 11.9 |
| Tetrachloro-m-xylene | 0.208 | 0.2013043 | 3.27 |

**11G0745-04** TH-VBS-91

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.183 | 0.2053527 | 11.5 |
| Tetrachloro-m-xylene | 0.213 | 0.2053311 | 3.67 |

**11G0745-05** TH-VBS-92

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.215 | 0.2097215 | 2.49 |
| Decachlorobiphenyl | 0.216 | 0.2432681 | 11.9 |

**11G0745-06** TH-VBS-93

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.65 | 0.6237111 | 4.13 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.590 | 0.5955436 | 0.935 |
| Decachlorobiphenyl | 0.571 | 0.5653877 | 0.988 |

**11G0745-07** TH-VBS-94

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.688 | 0.7764776 | 12.1 |
| Tetrachloro-m-xylene | 0.674 | 0.6958432 | 3.19 |

**11G0745-08** TH-VBS-95

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.212 | 0.2386923 | 11.8 |
| Tetrachloro-m-xylene | 0.215 | 0.2166868 | 0.781 |

**11G0745-09** TH-VBS-96

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.213 | 0.2398292 | 11.8 |
| Tetrachloro-m-xylene | 0.203 | 0.2024896 | 0.252 |

**11G0745-10** TH-VBS-97

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.35 | 0.3323598 | 5.17 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.220 | 0.247291 | 11.7 |
| Tetrachloro-m-xylene | 0.211 | 0.2086508 | 1.12 |

**B034310-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.212 | 0.239315 | 12.1 |
| Tetrachloro-m-xylene | 0.193 | 0.186325 | 3.52 |

**B034310-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.21 | 0.21549 | 2.58 |
| Aroclor-1260 | 0.20 | 0.22456 | 11.6 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.223 | 0.250915 | 11.8 |
| Tetrachloro-m-xylene | 0.198 | 0.190125 | 4.06 |

**B034310-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.20 | 0.2154 | 7.41 |
| Aroclor-1016 | 0.21 | 0.215245 | 2.47 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.208 | 0.234235 | 11.9 |
| Tetrachloro-m-xylene | 0.191 | 0.18197 | 4.84 |

**B034310-MS1** Matrix Spike

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.20 | 0.2158802 | 7.64 |
| Aroclor-1260 | 0.20 | 0.2220061 | 10.4 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.218 | 0.2444371 | 11.4 |
| Tetrachloro-m-xylene | 0.198 | 0.1959826 | 1.02 |

**B034310-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.22 | 0.2279566 | 3.55 |
| Aroclor-1260 | 0.21 | 0.2314048 | 9.7 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.210 | 0.2074112 | 1.24 |
| Decachlorobiphenyl | 0.224 | 0.251026 | 11.4 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0745 |
| Project Location: UMASS Amherst, Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0745-01 thru 11G0745-10

Matrices: Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☐ Yes | ☑ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 07/28/11

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

July 29, 2011

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

Project Location: Umass- Tobin, Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0781

Enclosed are results of analyses for samples received by the laboratory on July 27, 2011. 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: 7/29/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0781

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

PROJECT LOCATION: Umass- Tobin, Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBSQ-98 | 11G0781-01 | Equipment Blank Water | | SW-846 8082A | |
| TH-VBS-99 | 11G0781-02 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-100 | 11G0781-03 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-101 | 11G0781-04 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-102 | 11G0781-05 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-103 | 11G0781-06 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-104 | 11G0781-07 | Soil | | SM 2540G | |
| | | | | 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 individuuals 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- Tobin, Amherst, MA | Sample Description: | Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBSQ-98** | Sampled: 7/27/2011 00:00

**Sample ID: 11G0781-01**

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 | 7/28/11 | 7/29/11 11:12 | JMB |
| Aroclor-1221 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/28/11 | 7/29/11 11:12 | JMB |
| Aroclor-1232 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/28/11 | 7/29/11 11:12 | JMB |
| Aroclor-1242 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/28/11 | 7/29/11 11:12 | JMB |
| Aroclor-1248 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/28/11 | 7/29/11 11:12 | JMB |
| Aroclor-1254 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/28/11 | 7/29/11 11:12 | JMB |
| Aroclor-1260 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/28/11 | 7/29/11 11:12 | JMB |
| Aroclor-1262 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/28/11 | 7/29/11 11:12 | JMB |
| Aroclor-1268 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 7/28/11 | 7/29/11 11:12 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 69.6 | 30-150 | | 7/29/11 11:12 |
| Decachlorobiphenyl [2] | 75.7 | 30-150 | | 7/29/11 11:12 |
| Tetrachloro-m-xylene [1] | 70.3 | 30-150 | | 7/29/11 11:12 |
| Tetrachloro-m-xylene [2] | 70.1 | 30-150 | | 7/29/11 11:12 |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-99**
Sampled: 7/27/2011 14:35

**Sample ID: 11G0781-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:12 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:12 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:12 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:12 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:12 | JMB |
| Aroclor-1254 [2] | 0.13 | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:12 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:12 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:12 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:12 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 96.3 | 30-150 | | 7/29/11 0:12 |
| Decachlorobiphenyl [2] | 104 | 30-150 | | 7/29/11 0:12 |
| Tetrachloro-m-xylene [1] | 102 | 30-150 | | 7/29/11 0:12 |
| Tetrachloro-m-xylene [2] | 103 | 30-150 | | 7/29/11 0:12 |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-99**
Sampled: 7/27/2011 14:35

**Sample ID: 11G0781-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.1 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:32 | PJS |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-100**
Sampled: 7/27/2011 14:20

**Sample ID: 11G0781-03**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:26 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:26 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:26 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:26 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:26 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:26 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:26 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:26 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:26 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 103 | 30-150 | | 7/29/11 0:26 |
| Decachlorobiphenyl [2] | 110 | 30-150 | | 7/29/11 0:26 |
| Tetrachloro-m-xylene [1] | 97.1 | 30-150 | | 7/29/11 0:26 |
| Tetrachloro-m-xylene [2] | 97.9 | 30-150 | | 7/29/11 0:26 |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-100**
Sampled: 7/27/2011 14:20

**Sample ID: 11G0781-03**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.1 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:32 | PJS |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-101**
Sampled: 7/27/2011 14:30

**Sample ID: 11G0781-04**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:40 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:40 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:40 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:40 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:40 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:40 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:40 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:40 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:40 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 111 | 30-150 | | 7/29/11 0:40 |
| Decachlorobiphenyl [2] | 119 | 30-150 | | 7/29/11 0:40 |
| Tetrachloro-m-xylene [1] | 98.9 | 30-150 | | 7/29/11 0:40 |
| Tetrachloro-m-xylene [2] | 99.6 | 30-150 | | 7/29/11 0:40 |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-101**
Sampled: 7/27/2011 14:30

**Sample ID: 11G0781-04**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.6 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:32 | PJS |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-102**
Sampled: 7/27/2011 14:40

**Sample ID: 11G0781-05**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:54 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:54 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:54 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:54 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:54 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:54 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:54 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:54 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 0:54 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 109 | 30-150 | | 7/29/11 0:54 |
| Decachlorobiphenyl [2] | 117 | 30-150 | | 7/29/11 0:54 |
| Tetrachloro-m-xylene [1] | 102 | 30-150 | | 7/29/11 0:54 |
| Tetrachloro-m-xylene [2] | 103 | 30-150 | | 7/29/11 0:54 |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-102**
Sampled: 7/27/2011 14:40

**Sample ID: 11G0781-05**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.0 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:32 | PJS |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-103**
Sampled: 7/27/2011 14:25

**Sample ID: 11G0781-06**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:08 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:08 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:08 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:08 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:08 | JMB |
| Aroclor-1254 [2] | 0.41 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:08 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:08 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:08 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:08 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 105 | 30-150 | | 7/29/11 1:08 |
| Decachlorobiphenyl [2] | 113 | 30-150 | | 7/29/11 1:08 |
| Tetrachloro-m-xylene [1] | 100 | 30-150 | | 7/29/11 1:08 |
| Tetrachloro-m-xylene [2] | 101 | 30-150 | | 7/29/11 1:08 |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-103**
Sampled: 7/27/2011 14:25

**Sample ID: 11G0781-06**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.4 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:32 | PJS |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-104**
Sampled: 7/27/2011 14:45

**Sample ID: 11G0781-07**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:22 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:22 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:22 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:22 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:22 | JMB |
| Aroclor-1254 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:22 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:22 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:22 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/27/11 | 7/29/11 1:22 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 104 | 30-150 | | 7/29/11 1:22 |
| Decachlorobiphenyl [2] | 113 | 30-150 | | 7/29/11 1:22 |
| Tetrachloro-m-xylene [1] | 96.5 | 30-150 | | 7/29/11 1:22 |
| Tetrachloro-m-xylene [2] | 97.1 | 30-150 | | 7/29/11 1:22 |

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Project Location: Umass- Tobin, Amherst, MA
Sample Description:
Work Order: 11G0781

Date Received: 7/27/2011

**Field Sample #: TH-VBS-104**
Sampled: 7/27/2011 14:45

**Sample ID: 11G0781-07**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 91.6 | | % Wt | 1 | | SM 2540G | 7/27/11 | 7/28/11 8:32 | PJS |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11G0781-02 [TH-VBS-99] | B034379 | 07/27/11 |
| 11G0781-03 [TH-VBS-100] | B034379 | 07/27/11 |
| 11G0781-04 [TH-VBS-101] | B034379 | 07/27/11 |
| 11G0781-05 [TH-VBS-102] | B034379 | 07/27/11 |
| 11G0781-06 [TH-VBS-103] | B034379 | 07/27/11 |
| 11G0781-07 [TH-VBS-104] | B034379 | 07/27/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0781-02 [TH-VBS-99] | B034383 | 10.1 | 50.0 | 07/27/11 |
| 11G0781-03 [TH-VBS-100] | B034383 | 10.1 | 50.0 | 07/27/11 |
| 11G0781-04 [TH-VBS-101] | B034383 | 10.0 | 50.0 | 07/27/11 |
| 11G0781-05 [TH-VBS-102] | B034383 | 10.1 | 50.0 | 07/27/11 |
| 11G0781-06 [TH-VBS-103] | B034383 | 10.0 | 50.0 | 07/27/11 |
| 11G0781-07 [TH-VBS-104] | B034383 | 10.2 | 50.0 | 07/27/11 |

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

| Lab Number [Field ID] | Batch | Initial [mL] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0781-01RE1 [TH-VBSQ-98] | B034392 | 1000 | 10.0 | 07/28/11 |

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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 B034383 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034383-BLK1)** | | | | Prepared: 07/27/11 Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.207* | | mg/Kg wet | 0.200 | | 103 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.218* | | mg/Kg wet | 0.200 | | 109 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.194* | | mg/Kg wet | 0.200 | | 96.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.200* | | mg/Kg wet | 0.200 | | 99.8 | 30-150 | | | |
| **LCS (B034383-BS1)** | | | | Prepared: 07/27/11 Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 97.8 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 106 | 40-140 | | | |
| Aroclor-1260 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 97.0 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 108 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.213* | | mg/Kg wet | 0.200 | | 106 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.229* | | mg/Kg wet | 0.200 | | 114 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.196* | | mg/Kg wet | 0.200 | | 98.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.201* | | mg/Kg wet | 0.200 | | 100 | 30-150 | | | |
| **LCS Dup (B034383-BSD1)** | | | | Prepared: 07/27/11 Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 103 | 40-140 | 5.00 | 30 | |
| Aroclor-1016 [2C] | 0.23 | 0.10 | mg/Kg wet | 0.200 | | 113 | 40-140 | 6.54 | 30 | |
| Aroclor-1260 | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 102 | 40-140 | 5.19 | 30 | |
| Aroclor-1260 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 111 | 40-140 | 2.99 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.214* | | mg/Kg wet | 0.200 | | 107 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.230* | | mg/Kg wet | 0.200 | | 115 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.207* | | mg/Kg wet | 0.200 | | 103 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.209* | | mg/Kg wet | 0.200 | | 105 | 30-150 | | | |

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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 B034383 - SW-846 3540C** | | | | | | | | | | |
| **Matrix Spike (B034383-MS1)** | | **Source: 11G0781-02** | | Prepared: 07/27/11 Analyzed: 07/29/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg dry | 0.202 | 0.0 | 122 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.26 | 0.10 | mg/Kg dry | 0.202 | 0.0 | 129 | 40-140 | | | |
| Aroclor-1260 | 0.25 | 0.10 | mg/Kg dry | 0.202 | 0.0 | 123 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.28 | 0.10 | mg/Kg dry | 0.202 | 0.0 | 139 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.223* | | mg/Kg dry | 0.202 | | 111 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.243* | | mg/Kg dry | 0.202 | | 120 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.210* | | mg/Kg dry | 0.202 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.214* | | mg/Kg dry | 0.202 | | 106 | 30-150 | | | |
| **Matrix Spike Dup (B034383-MSD1)** | | **Source: 11G0781-02** | | Prepared: 07/27/11 Analyzed: 07/29/11 | | | | | | |
| Aroclor-1016 | 0.23 | 0.10 | mg/Kg dry | 0.206 | 0.0 | 112 | 40-140 | 6.10 | 50 | |
| Aroclor-1016 [2C] | 0.27 | 0.10 | mg/Kg dry | 0.206 | 0.0 | 129 | 40-140 | 1.84 | 50 | |
| Aroclor-1260 | 0.25 | 0.10 | mg/Kg dry | 0.206 | 0.0 | 121 | 40-140 | 0.213 | 50 | |
| Aroclor-1260 [2C] | 0.27 | 0.10 | mg/Kg dry | 0.206 | 0.0 | 132 | 40-140 | 3.11 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.229* | | mg/Kg dry | 0.206 | | 111 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.249* | | mg/Kg dry | 0.206 | | 121 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.219* | | mg/Kg dry | 0.206 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.219* | | mg/Kg dry | 0.206 | | 106 | 30-150 | | | |
| **Batch B034392 - SW-846 3510C** | | | | | | | | | | |
| **Blank (B034392-BLK1)** | | | | Prepared & Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1221 | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1232 | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1242 | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1248 | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1254 | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1260 | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1262 | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1268 | ND | 0.20 | µg/L | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.20 | µg/L | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.934* | | µg/L | 2.00 | | 46.7 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.05* | | µg/L | 2.00 | | 52.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.46* | | µg/L | 2.00 | | 72.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.41* | | µg/L | 2.00 | | 70.3 | 30-150 | | | |

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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 B034392 - SW-846 3510C** | | | | | | | | | | |
| **LCS (B034392-BS1)** | | | | Prepared & Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | 0.43 | 0.20 | µg/L | 0.500 | | 85.1 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.45 | 0.20 | µg/L | 0.500 | | 90.3 | 40-140 | | | |
| Aroclor-1260 | 0.41 | 0.20 | µg/L | 0.500 | | 82.3 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.44 | 0.20 | µg/L | 0.500 | | 88.4 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *1.21* | | µg/L | 2.00 | | 60.7 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.36* | | µg/L | 2.00 | | 68.2 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.57* | | µg/L | 2.00 | | 78.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.55* | | µg/L | 2.00 | | 77.7 | 30-150 | | | |
| **LCS Dup (B034392-BSD1)** | | | | Prepared & Analyzed: 07/28/11 | | | | | | |
| Aroclor-1016 | 0.45 | 0.20 | µg/L | 0.500 | | 89.4 | 40-140 | 4.92 | 20 | |
| Aroclor-1016 [2C] | 0.47 | 0.20 | µg/L | 0.500 | | 93.0 | 40-140 | 3.01 | 20 | |
| Aroclor-1260 | 0.41 | 0.20 | µg/L | 0.500 | | 83.0 | 40-140 | 0.815 | 20 | |
| Aroclor-1260 [2C] | 0.45 | 0.20 | µg/L | 0.500 | | 89.4 | 40-140 | 1.08 | 20 | |
| Surrogate: Decachlorobiphenyl | *1.11* | | µg/L | 2.00 | | 55.6 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.25* | | µg/L | 2.00 | | 62.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.57* | | µg/L | 2.00 | | 78.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.56* | | µg/L | 2.00 | | 77.8 | 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.

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**CERTIFICATIONS**

**Certified Analyses included in this Report**

| Analyte | Certifications |
|---|---|
| ***SW-846 8082A in Soil*** | |
| 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 |
| ***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 |

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

| Code | Description | Number | Expires |
|---|---|---|---|
| AIHA | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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www.contestlabs.com

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028



11G-0781

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS- TOBIN AMHERST, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

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

Project Proposal Provided? (for billing purposes)
O 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 (I) | ** Preservation (I) | ***Container Code (A) | PCB's (Soxhlet) | ANALYSIS REQUESTED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -01 | TH-VBSQ-98 | 7/27/11 | | | ✓ | DW | L | | | | X | 2 containers for equip blank |
| -02 | TH-VBS-99 | ↓ | 14:35 | | ✓ | S | L | | | | X | |
| -03 | TH-VBS-100 | ↓ | 14:20 | | ✓ | S | L | | | | X | |
| -04 | TH-VBS-101 | ↓ | 14:30 | | ✓ | S | L | | | | X | |
| -05 | TH-VBS-102 | ↓ | 14:40 | | ✓ | S | L | | | | X | |
| -06 | TH-VBS-103 | ↓ | 14:25 | | ✓ | S | L | | | | X | |
| -07 | TH-VBS-104 | ↓ | 14:45 | | ✓ | S | L | | | | X | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Comments: PCB's by USEPA 8082 via 3540c (Soxhlet)
R.L. ≤1.0 mg/kg

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 Metal*
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___

| Relinquished by: (signature) | Date/Time: |
|---|---|
| Rhonda M. Forester | 7/27/11 14:55 |
| Received by: (signature) Victor Ferrentino | 7/27/11 14:55 |
| Relinquished by: (signature) Victor Ferrentino | 7/27/11 16:20 |
| Received by: (signature) 2.9°C | 7/27/11 16:20 |

**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 ?**
O MCP Analytical Certification Form Required
O RCP Analysis Certification Form Required
O MA State DW Form Required PWSID # ___

nelac AIHA ACCREDITED LABORATORY
**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
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con-test® ANALYTICAL LABORATORY

# Sample Receipt Checklist

**CLIENT NAME:** Woodward + Curran **RECEIVED BY:** [illegible] **DATE:** 7/27/11

**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 2.9°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 CEC Date 7/27/11 Time 1629

**7) Location where samples are stored:** 19

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

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | 2 unp. | 8 oz amber/clear jar | 6 |
| 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 _____

# Bisulfate _____ # DI Water _____

# Thiosulfate _____ Unpreserved _____

**Time and Date Frozen:**

**Do all samples have the proper Acid pH:** Yes No N/A _____

**Do all samples have the proper Base pH:** Yes No N/A _____

Doc# 277

Rev. 1 May 2011

**11G0781-01** TH-VBSQ-98

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.60 | 1.56166 | 2.43 |
| Decachlorobiphenyl | 0.499 | 0.55806 | 11.2 |

**11G0781-01RE1** TH-VBSQ-98

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.39 | 1.51376 | 8.52 |
| Tetrachloro-m-xylene | 1.41 | 1.4021 | 0.562 |

**11G0781-02** TH-VBS-99

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.13 | 0.1111363 | 15.6 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.198 | 0.2137831 | 7.67 |
| Tetrachloro-m-xylene | 0.210 | 0.2128816 | 1.36 |

**11G0781-03** TH-VBS-100

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.214 | 0.2299351 | 7.18 |
| Tetrachloro-m-xylene | 0.202 | 0.2038917 | 0.932 |

**11G0781-04** TH-VBS-101

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.203 | 0.2040984 | 0.54 |
| Decachlorobiphenyl | 0.227 | 0.2441137 | 7.27 |

**11G0781-05** TH-VBS-102

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.224 | 0.241218 | 7.4 |
| Tetrachloro-m-xylene | 0.210 | 0.2117626 | 0.836 |

**11G0781-06** TH-VBS-103

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.41 | 0.3632257 | 12.1 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.223 | 0.2402225 | 7.44 |
| Tetrachloro-m-xylene | 0.212 | 0.2135487 | 0.728 |

**11G0781-07** TH-VBS-104

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.224 | 0.2416517 | 7.58 |
| Tetrachloro-m-xylene | 0.207 | 0.2079052 | 0.436 |

**B034383-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.207 | 0.217815 | 5.09 |
| Tetrachloro-m-xylene | 0.194 | 0.199565 | 2.83 |

**B034383-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.20 | 0.211355 | 5.52 |
| Aroclor-1260 | 0.19 | 0.21616 | 12.9 |
| Surrogates | | | |

| | | | |
|---|---|---|---|
| Decachlorobiphenyl | 0.213 | 0.228555 | 7.05 |
| Tetrachloro-m-xylene | 0.196 | 0.200505 | 2.27 |

**B034383-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.21 | 0.22565 | 7.18 |
| Aroclor-1260 | 0.20 | 0.222725 | 10.8 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.214 | 0.2303 | 7.34 |
| Tetrachloro-m-xylene | 0.207 | 0.209215 | 1.06 |

**B034383-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.25 | 0.2605195 | 4.12 |
| Aroclor-1260 | 0.25 | 0.2815332 | 11.9 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.223 | 0.242673 | 8.45 |
| Tetrachloro-m-xylene | 0.210 | 0.2135569 | 1.68 |

**B034383-MSD1** Matrix Spike Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.25 | 0.272916 | 8.76 |
| Aroclor-1016 | 0.23 | 0.2653641 | 14.3 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.229 | 0.2493947 | 8.53 |
| Tetrachloro-m-xylene | 0.219 | 0.219429 | 0.196 |

**B034392-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.934 | 1.05466 | 12.1 |
| Tetrachloro-m-xylene | 1.46 | 1.40518 | 3.83 |

**B034392-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.43 | 0.45135 | 4.84 |
| Aroclor-1260 | 0.41 | 0.44199 | 7.51 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.21 | 1.36482 | 12 |
| Tetrachloro-m-xylene | 1.57 | 1.55475 | 0.976 |

**B034392-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.45 | 0.46515 | 3.31 |
| Aroclor-1260 | 0.41 | 0.44681 | 8.59 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.57 | 1.5556 | 0.921 |
| Decachlorobiphenyl | 1.11 | 1.25221 | 12 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0781 |
| Project Location: Umass- Tobin, Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0781-01 thru 11G0781-07

Matrices: Soil Water

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes | ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 07/29/11

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

August 1, 2011

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

Project Location: Umass- Tobin Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0852

Enclosed are results of analyses for samples received by the laboratory on July 28, 2011. 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: 8/1/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0852

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

PROJECT LOCATION: Umass- Tobin Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBS-105 | 11G0852-01 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-106 | 11G0852-02 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-107 | 11G0852-03 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-108 | 11G0852-04 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBSD-109 | 11G0852-05 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-110 | 11G0852-06 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-111 | 11G0852-07 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-112 | 11G0852-08 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-113 | 11G0852-09 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-114 | 11G0852-10 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-115 | 11G0852-11 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-116 | 11G0852-12 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-117 | 11G0852-13 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-118 | 11G0852-14 | Soil | | SM 2540G | |
| | | | | 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:**

Surrogate recovery is outside of control limits. Data validation is not affected since all results are less than the reporting limit and bias is on the high side.

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

**Decachlorobiphenyl, Decachlorobiphenyl [2C]**

B034478-BLK1

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 individuuals 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- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-105**
Sampled: 7/28/2011 11:50

**Sample ID: 11G0852-01**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:20 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:20 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:20 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:20 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:20 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:20 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:20 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:20 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:20 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 108 | 30-150 | | 7/30/11 12:20 |
| Decachlorobiphenyl [2] | 126 | 30-150 | | 7/30/11 12:20 |
| Tetrachloro-m-xylene [1] | 97.7 | 30-150 | | 7/30/11 12:20 |
| Tetrachloro-m-xylene [2] | 92.8 | 30-150 | | 7/30/11 12:20 |

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Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-105**
Sampled: 7/28/2011 11:50

**Sample ID: 11G0852-01**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.3 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-106**
Sampled: 7/28/2011 11:53

**Sample ID: 11G0852-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:34 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:34 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:34 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:34 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:34 | JMB |
| Aroclor-1254 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:34 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:34 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:34 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:34 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 112 | 30-150 | | 7/30/11 12:34 |
| Decachlorobiphenyl [2] | 130 | 30-150 | | 7/30/11 12:34 |
| Tetrachloro-m-xylene [1] | 97.5 | 30-150 | | 7/30/11 12:34 |
| Tetrachloro-m-xylene [2] | 91.0 | 30-150 | | 7/30/11 12:34 |

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Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-106**
Sampled: 7/28/2011 11:53

**Sample ID: 11G0852-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 91.5 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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Project Location: Umass- Tobin Amherst, MA | Sample Description: | Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-107** | Sampled: 7/28/2011 11:58

**Sample ID: 11G0852-03**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:48 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:48 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:48 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:48 | JMB |
| Aroclor-1248 [1] | 0.17 | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:48 | JMB |
| Aroclor-1254 [2] | 0.27 | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:48 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:48 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:48 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 12:48 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 97.9 | 30-150 | | 7/30/11 12:48 |
| Decachlorobiphenyl [2] | 114 | 30-150 | | 7/30/11 12:48 |
| Tetrachloro-m-xylene [1] | 100 | 30-150 | | 7/30/11 12:48 |
| Tetrachloro-m-xylene [2] | 93.7 | 30-150 | | 7/30/11 12:48 |

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Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-107**
Sampled: 7/28/2011 11:58

**Sample ID: 11G0852-03**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.2 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-108**
Sampled: 7/28/2011 12:02

**Sample ID: 11G0852-04**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:02 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:02 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:02 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:02 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:02 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:02 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:02 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:02 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:02 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 103 | 30-150 | | 7/30/11 13:02 |
| Decachlorobiphenyl [2] | 120 | 30-150 | | 7/30/11 13:02 |
| Tetrachloro-m-xylene [1] | 95.8 | 30-150 | | 7/30/11 13:02 |
| Tetrachloro-m-xylene [2] | 91.1 | 30-150 | | 7/30/11 13:02 |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-108**
Sampled: 7/28/2011 12:02

**Sample ID: 11G0852-04**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.3 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBSD-109**
Sampled: 7/28/2011 12:02

**Sample ID: 11G0852-05**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:17 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:17 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:17 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:17 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:17 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:17 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:17 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:17 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:17 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 113 | 30-150 | | 7/30/11 13:17 |
| Decachlorobiphenyl [2] | 131 | 30-150 | | 7/30/11 13:17 |
| Tetrachloro-m-xylene [1] | 97.8 | 30-150 | | 7/30/11 13:17 |
| Tetrachloro-m-xylene [2] | 91.8 | 30-150 | | 7/30/11 13:17 |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBSD-109**
Sampled: 7/28/2011 12:02

**Sample ID: 11G0852-05**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.0 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-110**
Sampled: 7/28/2011 13:50

**Sample ID: 11G0852-06**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:31 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:31 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:31 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:31 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:31 | JMB |
| Aroclor-1254 [2] | 0.14 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:31 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:31 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:31 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:31 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 115 | 30-150 | | 7/30/11 13:31 |
| Decachlorobiphenyl [2] | 134 | 30-150 | | 7/30/11 13:31 |
| Tetrachloro-m-xylene [1] | 102 | 30-150 | | 7/30/11 13:31 |
| Tetrachloro-m-xylene [2] | 98.3 | 30-150 | | 7/30/11 13:31 |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-110**
Sampled: 7/28/2011 13:50

**Sample ID: 11G0852-06**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.2 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-111**
Sampled: 7/28/2011 13:51

**Sample ID: 11G0852-07**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:45 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:45 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:45 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:45 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:45 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:45 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:45 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:45 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 13:45 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 109 | 30-150 | | 7/30/11 13:45 |
| Decachlorobiphenyl [2] | 126 | 30-150 | | 7/30/11 13:45 |
| Tetrachloro-m-xylene [1] | 96.9 | 30-150 | | 7/30/11 13:45 |
| Tetrachloro-m-xylene [2] | 93.5 | 30-150 | | 7/30/11 13:45 |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-111**
Sampled: 7/28/2011 13:51

**Sample ID: 11G0852-07**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.2 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-112**
Sampled: 7/28/2011 13:52

**Sample ID: 11G0852-08**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:41 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:41 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:41 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:41 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:41 | JMB |
| Aroclor-1254 [2] | 0.22 | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:41 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:41 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:41 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:41 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 86.0 | 30-150 | | 7/30/11 14:41 |
| Decachlorobiphenyl [2] | 99.8 | 30-150 | | 7/30/11 14:41 |
| Tetrachloro-m-xylene [1] | 103 | 30-150 | | 7/30/11 14:41 |
| Tetrachloro-m-xylene [2] | 98.6 | 30-150 | | 7/30/11 14:41 |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-112**
Sampled: 7/28/2011 13:52

**Sample ID: 11G0852-08**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.7 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-113**
Sampled: 7/28/2011 13:53

**Sample ID: 11G0852-09**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:55 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:55 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:55 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:55 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:55 | JMB |
| Aroclor-1254 [2] | 0.57 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:55 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:55 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:55 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 14:55 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 117 | 30-150 | | 7/30/11 14:55 |
| Decachlorobiphenyl [2] | 135 | 30-150 | | 7/30/11 14:55 |
| Tetrachloro-m-xylene [1] | 106 | 30-150 | | 7/30/11 14:55 |
| Tetrachloro-m-xylene [2] | 102 | 30-150 | | 7/30/11 14:55 |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-113**
Sampled: 7/28/2011 13:53

**Sample ID: 11G0852-09**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 92.1 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

con-test® ANALYTICAL LABORATORY

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

Project Location: Umass- Tobin Amherst, MA | Sample Description: | Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-114** | Sampled: 7/28/2011 13:54

**Sample ID: 11G0852-10**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:09 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:09 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:09 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:09 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:09 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:09 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:09 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:09 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:09 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 123 | 30-150 | | 7/30/11 15:09 |
| Decachlorobiphenyl [2] | 143 | 30-150 | | 7/30/11 15:09 |
| Tetrachloro-m-xylene [1] | 111 | 30-150 | | 7/30/11 15:09 |
| Tetrachloro-m-xylene [2] | 107 | 30-150 | | 7/30/11 15:09 |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-114**
Sampled: 7/28/2011 13:54

**Sample ID: 11G0852-10**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.1 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-115**
Sampled: 7/28/2011 13:55

**Sample ID: 11G0852-11**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:23 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:23 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:23 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:23 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:23 | JMB |
| Aroclor-1254 [2] | 0.33 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:23 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:23 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:23 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:23 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 110 | 30-150 | | 7/30/11 15:23 |
| Decachlorobiphenyl [2] | 128 | 30-150 | | 7/30/11 15:23 |
| Tetrachloro-m-xylene [1] | 98.3 | 30-150 | | 7/30/11 15:23 |
| Tetrachloro-m-xylene [2] | 95.8 | 30-150 | | 7/30/11 15:23 |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-115**
Sampled: 7/28/2011 13:55

**Sample ID: 11G0852-11**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.4 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-116**
Sampled: 7/28/2011 13:56

**Sample ID: 11G0852-12**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:37 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:37 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:37 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:37 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:37 | JMB |
| Aroclor-1254 [2] | 0.19 | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:37 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:37 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:37 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:37 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 108 | 30-150 | | 7/30/11 15:37 |
| Decachlorobiphenyl [2] | 125 | 30-150 | | 7/30/11 15:37 |
| Tetrachloro-m-xylene [1] | 94.8 | 30-150 | | 7/30/11 15:37 |
| Tetrachloro-m-xylene [2] | 90.3 | 30-150 | | 7/30/11 15:37 |

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Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-116**
Sampled: 7/28/2011 13:56

**Sample ID: 11G0852-12**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.2 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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

Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-117**
Sampled: 7/28/2011 13:57

**Sample ID: 11G0852-13**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:51 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:51 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:51 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:51 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:51 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:51 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:51 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:51 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 15:51 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 113 | 30-150 | | 7/30/11 15:51 |
| Decachlorobiphenyl [2] | 131 | 30-150 | | 7/30/11 15:51 |
| Tetrachloro-m-xylene [1] | 101 | 30-150 | | 7/30/11 15:51 |
| Tetrachloro-m-xylene [2] | 95.5 | 30-150 | | 7/30/11 15:51 |

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Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-117**
Sampled: 7/28/2011 13:57

**Sample ID: 11G0852-13**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 93.7 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-118**
Sampled: 7/28/2011 13:58

**Sample ID: 11G0852-14**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 16:05 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 16:05 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 16:05 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 16:05 | JMB |
| Aroclor-1248 [1] | 1.0 | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 16:05 | JMB |
| Aroclor-1254 [2] | 0.60 | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 16:05 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 16:05 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 16:05 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/28/11 | 7/30/11 16:05 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 102 | 30-150 | | 7/30/11 16:05 |
| Decachlorobiphenyl [2] | 118 | 30-150 | | 7/30/11 16:05 |
| Tetrachloro-m-xylene [1] | 101 | 30-150 | | 7/30/11 16:05 |
| Tetrachloro-m-xylene [2] | 97.7 | 30-150 | | 7/30/11 16:05 |

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Project Location: Umass- Tobin Amherst, MA
Sample Description:
Work Order: 11G0852

Date Received: 7/28/2011

**Field Sample #: TH-VBS-118**
Sampled: 7/28/2011 13:58

**Sample ID: 11G0852-14**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.3 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 8:52 | PJS |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11G0852-01 [TH-VBS-105] | B034482 | 07/28/11 |
| 11G0852-02 [TH-VBS-106] | B034482 | 07/28/11 |
| 11G0852-03 [TH-VBS-107] | B034482 | 07/28/11 |
| 11G0852-04 [TH-VBS-108] | B034482 | 07/28/11 |
| 11G0852-05 [TH-VBSD-109] | B034482 | 07/28/11 |
| 11G0852-06 [TH-VBS-110] | B034482 | 07/28/11 |
| 11G0852-07 [TH-VBS-111] | B034482 | 07/28/11 |
| 11G0852-08 [TH-VBS-112] | B034482 | 07/28/11 |
| 11G0852-09 [TH-VBS-113] | B034482 | 07/28/11 |
| 11G0852-10 [TH-VBS-114] | B034482 | 07/28/11 |
| 11G0852-11 [TH-VBS-115] | B034482 | 07/28/11 |
| 11G0852-12 [TH-VBS-116] | B034482 | 07/28/11 |
| 11G0852-13 [TH-VBS-117] | B034482 | 07/28/11 |
| 11G0852-14 [TH-VBS-118] | B034482 | 07/28/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0852-01 [TH-VBS-105] | B034478 | 10.2 | 50.0 | 07/28/11 |
| 11G0852-02 [TH-VBS-106] | B034478 | 10.1 | 50.0 | 07/28/11 |
| 11G0852-03 [TH-VBS-107] | B034478 | 10.1 | 50.0 | 07/28/11 |
| 11G0852-04 [TH-VBS-108] | B034478 | 10.0 | 50.0 | 07/28/11 |
| 11G0852-05 [TH-VBSD-109] | B034478 | 10.2 | 50.0 | 07/28/11 |
| 11G0852-06 [TH-VBS-110] | B034478 | 10.0 | 50.0 | 07/28/11 |
| 11G0852-07 [TH-VBS-111] | B034478 | 10.3 | 50.0 | 07/28/11 |
| 11G0852-08 [TH-VBS-112] | B034478 | 10.2 | 50.0 | 07/28/11 |
| 11G0852-09 [TH-VBS-113] | B034478 | 10.3 | 50.0 | 07/28/11 |
| 11G0852-10 [TH-VBS-114] | B034478 | 10.2 | 50.0 | 07/28/11 |
| 11G0852-11 [TH-VBS-115] | B034478 | 10.0 | 50.0 | 07/28/11 |
| 11G0852-12 [TH-VBS-116] | B034478 | 10.3 | 50.0 | 07/28/11 |
| 11G0852-13 [TH-VBS-117] | B034478 | 10.2 | 50.0 | 07/28/11 |
| 11G0852-14 [TH-VBS-118] | B034478 | 10.3 | 50.0 | 07/28/11 |

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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 B034478 - SW-846 3540C** | | | | | | | | | | | |
| **Blank (B034478-BLK1)** | | | | Prepared: 07/28/11 Analyzed: 07/30/11 | | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | | |
| **Surrogate: Decachlorobiphenyl** | *0.314* | | mg/Kg wet | 0.200 | | **157** | * | 30-150 | | | S-17 |
| **Surrogate: Decachlorobiphenyl [2C]** | *0.367* | | mg/Kg wet | 0.200 | | **183** | * | 30-150 | | | S-17 |
| Surrogate: Tetrachloro-m-xylene | *0.239* | | mg/Kg wet | 0.200 | | 120 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.228* | | mg/Kg wet | 0.200 | | 114 | | 30-150 | | | |
| **LCS (B034478-BS1)** | | | | Prepared: 07/28/11 Analyzed: 07/30/11 | | | | | | | |
| Aroclor-1016 | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 102 | | 40-140 | | | |
| Aroclor-1016 [2C] | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 106 | | 40-140 | | | |
| Aroclor-1260 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 97.1 | | 40-140 | | | |
| Aroclor-1260 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 110 | | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.218* | | mg/Kg wet | 0.200 | | 109 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.253* | | mg/Kg wet | 0.200 | | 126 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.192* | | mg/Kg wet | 0.200 | | 96.1 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.183* | | mg/Kg wet | 0.200 | | 91.7 | | 30-150 | | | |
| **LCS Dup (B034478-BSD1)** | | | | Prepared: 07/28/11 Analyzed: 07/30/11 | | | | | | | |
| Aroclor-1016 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 95.3 | | 40-140 | 6.90 | 30 | |
| Aroclor-1016 [2C] | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 101 | | 40-140 | 4.84 | 30 | |
| Aroclor-1260 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 93.2 | | 40-140 | 4.03 | 30 | |
| Aroclor-1260 [2C] | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 106 | | 40-140 | 4.16 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.203* | | mg/Kg wet | 0.200 | | 101 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.237* | | mg/Kg wet | 0.200 | | 118 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.181* | | mg/Kg wet | 0.200 | | 90.6 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.176* | | mg/Kg wet | 0.200 | | 87.9 | | 30-150 | | | |

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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 B034478 - SW-846 3540C** | | | | | | | | | | |
| **Matrix Spike (B034478-MS1)** | | **Source: 11G0852-07** | | Prepared: 07/28/11 Analyzed: 08/01/11 | | | | | | |
| Aroclor-1016 | 0.26 | 0.11 | mg/Kg dry | 0.212 | 0.0 | 124 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.27 | 0.11 | mg/Kg dry | 0.212 | 0.0 | 127 | 40-140 | | | |
| Aroclor-1260 | 0.28 | 0.11 | mg/Kg dry | 0.212 | 0.0 | 130 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.29 | 0.11 | mg/Kg dry | 0.212 | 0.0 | 136 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.274* | | mg/Kg dry | 0.212 | | 129 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.311* | | mg/Kg dry | 0.212 | | 146 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.271* | | mg/Kg dry | 0.212 | | 128 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.249* | | mg/Kg dry | 0.212 | | 117 | 30-150 | | | |
| **Matrix Spike Dup (B034478-MSD1)** | | **Source: 11G0852-07** | | Prepared: 07/28/11 Analyzed: 07/30/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.11 | mg/Kg dry | 0.210 | 0.0 | 103 | 40-140 | 19.1 | 50 | |
| Aroclor-1016 [2C] | 0.23 | 0.11 | mg/Kg dry | 0.210 | 0.0 | 111 | 40-140 | 14.4 | 50 | |
| Aroclor-1260 | 0.24 | 0.11 | mg/Kg dry | 0.210 | 0.0 | 112 | 40-140 | 15.4 | 50 | |
| Aroclor-1260 [2C] | 0.27 | 0.11 | mg/Kg dry | 0.210 | 0.0 | 127 | 40-140 | 7.95 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.228* | | mg/Kg dry | 0.210 | | 108 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.265* | | mg/Kg dry | 0.210 | | 126 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.201* | | mg/Kg dry | 0.210 | | 95.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.195* | | mg/Kg dry | 0.210 | | 92.9 | 30-150 | | | |

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**QUALITY CONTROL**

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B034482 - % Solids** | | | | | | | | | | |
| **Duplicate (B034482-DUP2)** | | **Source: 11G0852-01** | | Prepared: 07/28/11 | Analyzed: 07/29/11 | | | | | |
| % Solids | 95.5 | | % Wt | | 95.3 | | | 0.210 | 20 | |
| **Duplicate (B034482-DUP4)** | | **Source: 11G0852-11** | | Prepared: 07/28/11 | Analyzed: 07/29/11 | | | | | |
| % Solids | 94.1 | | % Wt | | 94.4 | | | 0.318 | 20 | |

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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. |
| S-17 | Surrogate recovery is outside of control limits. Data validation is not affected since all results are less than the reporting limit and bias is on the high side. |

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## CERTIFICATIONS

**Certified Analyses included in this Report**

| Analyte | Certifications |
|---|---|
| ***SW-846 8082A in Soil*** | |
| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of ___

11G0 852

Company Name: Woodard & Curran
Address: 35 New England Business Center Suite 180, Andover MA, 01810
Attention: George Franklin
Project Location: UMass - Tobin Amherst, MA
Sampled By: R. Forrester

Telephone: (978) 557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
~~FAX~~ EMAIL WEBSITE
Fax #
Email: ~~georg~~ gfranklin@woodardcurran.com
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 | PCB's (Soxhlet) | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | TH-VBS-105 | 7-28-11 | 11:50 | | ✓ | S | L | X | | | |
| -2 | TH-VBS-106 | | 11:53 | | ✓ | S | L | X | | | |
| -3 | TH-VBS-107 | | 11:58 | | ✓ | S | L | X | | | |
| -4 | TH-VBS-108 | | 12:02 | | ✓ | S | L | X | | | |
| -5 | TH-VBSD-109 | | 12:02 | | ✓ | S | L | X | | | |
| -6 | TH-VBS-110 | | 13:50 | | ✓ | S | L | X | | | |
| -7 | TH-VBS-111 | | 13:51 | | ✓ | S | L | X | | | |
| -8 | TH-VBS-112 | | 13:52 | | ✓ | S | L | X | | | |
| -9 | TH-VBS-113 | | 13:53 | | ✓ | S | L | X | | | |
| -10 | TH-VBS-114 | ↓ | 13:54 | | ✓ | S | L | X | | | |

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: PCB's by USEPA 8082 via 3540c (Soxhlet Extraction)
R.L. ≤1.0 mg/kg

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] | 7/28/11 |
| Received by: (signature) | Date/Time: 1420 7-28-11 |
| Relinquished by: (signature) | Date/Time: 1845 7-28-11 16:45 |
| Received by: (signature) 4-6°C | Date/Time: 7/28/11 16:45 |

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 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

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Email: info@contestlabs.com
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# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 2 of 2

11G0852

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERST, MA
Sampled By: R. FORRESTER, J. PEDAM

Telephone: 1(978)557-8150
Project #: 224733
Client PO#:

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

Project Proposal Provided? (for billing purposes)
O 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 | PCB's (Soxhlet Extr.) | | | | | | | | | | | | | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | I | I | | | | | | | | | | | | | | A |
| -11 | TH-VBS-115 | 7/28/11 | 1355 | | ✓ | S | L | X | | | | | | | | | | | | | | | |
| -12 | TH-VBS-116 | ↓ | 1356 | | ✓ | S | L | X | | | | | | | | | | | | | | | |
| -13 | TH-VBS-117 | | 1357 | | ✓ | S | L | X | | | | | | | | | | | | | | | |
| -14 | TH-VBS-118 | | 1358 | | ✓ | S | L | X | | | | | | | | | | | | | | | |

ANALYSIS REQUESTED

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: PCB's by USEPA 8082 via 3540C (Soxhlet Extraction)
R.L. ≤1.0mg/kg

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: 7/28/11 |
|---|---|
| Received by: (signature) | Date/Time: 1420 7-28-11 |
| Relinquished by: (signature) | Date/Time: ~~1846~~ 7-28-11 1645 |
| Received by: (signature) Y.Gee | Date/Time: 7/28/11 16:45 |

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:

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 ahlaboratory.org 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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East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
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# Sample Receipt Checklist

**CLIENT NAME:** Woodard & Curran **RECEIVED BY:** CB **DATE:** 7/28/11

**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 4-6°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: _____

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | | 8 oz amber/clear jar | 14 |
| 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 _____

# Bisulfate _____ # DI Water _____

# Thiosulfate _____ Unpreserved _____

**Time and Date Frozen:**

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

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

Doc# 277

Rev. 1 May

**11G0852-01** TH-VBS-105

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.201 | 0.190909 | 5.15 |
| Decachlorobiphenyl | 0.223 | 0.2587443 | 14.8 |

**11G0852-02** TH-VBS-106

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.242 | 0.2813558 | 15 |
| Tetrachloro-m-xylene | 0.211 | 0.1970026 | 6.86 |

**11G0852-03** TH-VBS-107

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.17 | 0.1571106 | 7.88 |
| Aroclor-1254 [2C] | 0.27 | 0.2413834 | 11.2 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.204 | 0.2368126 | 14.9 |
| Tetrachloro-m-xylene | 0.208 | 0.1949569 | 6.47 |

**11G0852-04** TH-VBS-108

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.212 | 0.2462127 | 14.9 |
| Tetrachloro-m-xylene | 0.197 | 0.1871994 | 5.1 |

**11G0852-05** TH-VBSD-109

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.228 | 0.2648929 | 15 |
| Tetrachloro-m-xylene | 0.198 | 0.1856024 | 6.46 |

**11G0852-06** TH-VBS-110

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.14 | 0.1295956 | 7.72 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.242 | 0.2811975 | 15 |
| Tetrachloro-m-xylene | 0.215 | 0.2064758 | 4.04 |

**11G0852-07** TH-VBS-111

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.224 | 0.2597087 | 14.8 |
| Tetrachloro-m-xylene | 0.200 | 0.1926855 | 3.73 |

**11G0852-08** TH-VBS-112

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.22 | 0.210453 | 4.44 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.178 | 0.2066381 | 14.9 |
| Tetrachloro-m-xylene | 0.212 | 0.2041897 | 3.75 |

**11G0852-09** TH-VBS-113

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.57 | 0.5175622 | 9.64 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.246 | 0.2855012 | 14.9 |
| Tetrachloro-m-xylene | 0.224 | 0.2151629 | 4.02 |

**11G0852-10** TH-VBS-114

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |

| | | | |
|---|---|---|---|
| Decachlorobiphenyl | 0.256 | 0.2969932 | 14.8 |
| Tetrachloro-m-xylene | 0.230 | 0.222698 | 3.23 |

**11G0852-11** TH-VBS-115

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.33 | 0.3034534 | 8.38 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.208 | 0.2029979 | 2.43 |
| Decachlorobiphenyl | 0.234 | 0.2709534 | 14.6 |

**11G0852-12** TH-VBS-116

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.19 | 0.1836859 | 3.38 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.221 | 0.2557977 | 14.6 |
| Tetrachloro-m-xylene | 0.193 | 0.1842723 | 4.63 |

**11G0852-13** TH-VBS-117

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.236 | 0.2733327 | 14.7 |
| Tetrachloro-m-xylene | 0.211 | 0.1998085 | 5.45 |

**11G0852-14** TH-VBS-118

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1248 | 1.0 | 0.9182273 | 8.53 |
| Aroclor-1254 [2C] | 0.60 | 0.5162824 | 15 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.209 | 0.2426721 | 14.9 |
| Tetrachloro-m-xylene | 0.208 | 0.2011963 | 3.33 |

**B034478-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.314 | 0.366635 | 15.5 |
| Tetrachloro-m-xylene | 0.239 | 0.22803 | 4.7 |

**B034478-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.19 | 0.22048 | 14.9 |
| Aroclor-1016 | 0.20 | 0.211475 | 5.58 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.218 | 0.252825 | 14.8 |
| Tetrachloro-m-xylene | 0.192 | 0.183375 | 4.6 |

**B034478-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.19 | 0.201485 | 5.87 |
| Aroclor-1260 | 0.19 | 0.21149 | 10.7 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.203 | 0.236525 | 15.3 |
| Tetrachloro-m-xylene | 0.181 | 0.175875 | 2.87 |

**B034478-MS1** Matrix Spike

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.26 | 0.2702282 | 3.86 |
| Aroclor-1260 | 0.28 | 0.2882272 | 2.9 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.274 | 0.3105414 | 12.5 |
| Tetrachloro-m-xylene | 0.271 | 0.2492251 | 8.37 |

**B034478-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.22 | 0.2338767 | 6.11 |

| | | | |
|---|---|---|---|
| Aroclor-1260 | 0.24 | 0.2661811 | 10.3 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.201 | 0.1952818 | 2.89 |
| Decachlorobiphenyl | 0.228 | 0.264678 | 14.9 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0852 |
| Project Location: Umass- Tobin Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0852-01 thru 11G0852-14

Matrices: Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☐ Yes | ☑ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: M Erickson Position: Laboratory Director

Printed Name: Michael A. Erickson Date: 08/01/11

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

August 2, 2011

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

Project Location: Umass Tobin Hall, Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0858

Enclosed are results of analyses for samples received by the laboratory on July 28, 2011. 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: 8/2/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0858

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

PROJECT LOCATION: Umass Tobin Hall, Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBC-119 | 11G0858-01 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBC-1200 | 11G0858-02 | Soil | | SM 2540G | |
| | | | | 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.

**Login**

**Qualifications:**

Samples were received directly from the field at ambient temperature.

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

11G0858-01[TH-VBC-119], 11G0858-02[TH-VBC-1200]

**SW-846 8082A**

**Qualifications:**

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

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

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

B034484-MS1, B034484-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 individuuals 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 Tobin Hall, Amherst, MA  Sample Description:  Work Order: 11G0858

Date Received: 7/28/2011

**Field Sample #: TH-VBC-119**  Sampled: 7/28/2011 16:10

**Sample ID: 11G0858-01**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/28/11 | 8/1/11 21:30 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:30 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:30 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:30 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:30 | JMB |
| Aroclor-1254 [2] | 0.20 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:30 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:30 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:30 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:30 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 130 | 30-150 | | 8/1/11 21:30 |
| Decachlorobiphenyl [2] | 124 | 30-150 | | 8/1/11 21:30 |
| Tetrachloro-m-xylene [1] | 133 | 30-150 | | 8/1/11 21:30 |
| Tetrachloro-m-xylene [2] | 129 | 30-150 | | 8/1/11 21:30 |

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

Project Location: Umass Tobin Hall, Amherst, MA  Sample Description:  Work Order: 11G0858

Date Received: 7/28/2011

**Field Sample #: TH-VBC-119**  Sampled: 7/28/2011 16:10

**Sample ID: 11G0858-01**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.5 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 16:28 | MXG |

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

Project Location: Umass Tobin Hall, Amherst, MA  Sample Description:  Work Order: 11G0858

Date Received: 7/28/2011

**Field Sample #: TH-VBC-1200**  Sampled: 7/28/2011 16:18

**Sample ID: 11G0858-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/28/11 | 8/1/11 21:43 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:43 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:43 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:43 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:43 | JMB |
| Aroclor-1254 [1] | 0.23 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:43 | JMB |
| Aroclor-1260 [1] | 0.18 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:43 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:43 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/28/11 | 8/1/11 21:43 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 78.2 | 30-150 | | 8/1/11 21:43 |
| Decachlorobiphenyl [2] | 76.0 | 30-150 | | 8/1/11 21:43 |
| Tetrachloro-m-xylene [1] | 75.0 | 30-150 | | 8/1/11 21:43 |
| Tetrachloro-m-xylene [2] | 74.3 | 30-150 | | 8/1/11 21:43 |

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

Project Location: Umass Tobin Hall, Amherst, MA  Sample Description:  Work Order: 11G0858

Date Received: 7/28/2011

**Field Sample #: TH-VBC-1200**  Sampled: 7/28/2011 16:18

**Sample ID: 11G0858-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 97.1 | | % Wt | 1 | | SM 2540G | 7/28/11 | 7/29/11 16:28 | MXG |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11G0858-01 [TH-VBC-119] | B034485 | 07/28/11 |
| 11G0858-02 [TH-VBC-1200] | B034485 | 07/28/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0858-01 [TH-VBC-119] | B034484 | 2.20 | 10.0 | 07/28/11 |
| 11G0858-02 [TH-VBC-1200] | B034484 | 2.10 | 10.0 | 07/28/11 |

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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 B034484 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034484-BLK1)** | | | | Prepared: 07/28/11 Analyzed: 08/01/11 | | | | | | |
| 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 | *0.993* | | mg/Kg | 1.00 | | 99.3 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.966* | | mg/Kg | 1.00 | | 96.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.942* | | mg/Kg | 1.00 | | 94.2 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.917* | | mg/Kg | 1.00 | | 91.7 | 30-150 | | | |
| **LCS (B034484-BS1)** | | | | Prepared: 07/28/11 Analyzed: 08/01/11 | | | | | | |
| Aroclor-1016 | 0.17 | 0.10 | mg/Kg | 0.250 | | 69.5 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.22 | 0.10 | mg/Kg | 0.250 | | 86.0 | 40-140 | | | |
| Aroclor-1260 | 0.17 | 0.10 | mg/Kg | 0.250 | | 68.5 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.22 | 0.10 | mg/Kg | 0.250 | | 87.2 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.674* | | mg/Kg | 1.00 | | 67.4 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.659* | | mg/Kg | 1.00 | | 65.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.687* | | mg/Kg | 1.00 | | 68.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.686* | | mg/Kg | 1.00 | | 68.6 | 30-150 | | | |
| **LCS Dup (B034484-BSD1)** | | | | Prepared: 07/28/11 Analyzed: 08/01/11 | | | | | | |
| Aroclor-1016 | 0.23 | 0.10 | mg/Kg | 0.250 | | 92.3 | 40-140 | 28.1 | 30 | |
| Aroclor-1016 [2C] | 0.24 | 0.10 | mg/Kg | 0.250 | | 95.3 | 40-140 | 10.3 | 30 | |
| Aroclor-1260 | 0.22 | 0.10 | mg/Kg | 0.250 | | 89.0 | 40-140 | 26.0 | 30 | |
| Aroclor-1260 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 110 | 40-140 | 23.0 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.919* | | mg/Kg | 1.00 | | 91.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.890* | | mg/Kg | 1.00 | | 89.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.948* | | mg/Kg | 1.00 | | 94.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.938* | | mg/Kg | 1.00 | | 93.8 | 30-150 | | | |

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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 B034484 - SW-846 3540C** | | | | | | | | | | | |
| **Matrix Spike (B034484-MS1)** | | **Source: 11G0858-02** | | Prepared: 07/28/11 Analyzed: 08/01/11 | | | | | | | |
| Aroclor-1016 | 0.13 | 0.091 | mg/Kg | 0.227 | 0.0 | 58.4 | | 40-140 | | | |
| Aroclor-1016 [2C] | 0.16 | 0.091 | mg/Kg | 0.227 | 0.0 | 69.2 | | 40-140 | | | |
| **Aroclor-1260** | 0.22 | 0.091 | mg/Kg | 0.227 | 0.18 | **20.2** | * | 40-140 | | | MS-07 |
| **Aroclor-1260 [2C]** | 0.24 | 0.091 | mg/Kg | 0.227 | 0.17 | **31.6** | * | 40-140 | | | MS-07 |
| Surrogate: Decachlorobiphenyl | *0.529* | | mg/Kg | 0.909 | | 58.2 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.522* | | mg/Kg | 0.909 | | 57.5 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.528* | | mg/Kg | 0.909 | | 58.1 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.523* | | mg/Kg | 0.909 | | 57.5 | | 30-150 | | | |
| **Matrix Spike Dup (B034484-MSD1)** | | **Source: 11G0858-02** | | Prepared: 07/28/11 Analyzed: 08/01/11 | | | | | | | |
| Aroclor-1016 | 0.14 | 0.10 | mg/Kg | 0.250 | 0.0 | 54.7 | | 40-140 | 2.86 | 50 | |
| Aroclor-1016 [2C] | 0.16 | 0.10 | mg/Kg | 0.250 | 0.0 | 63.4 | | 40-140 | 0.769 | 50 | |
| **Aroclor-1260** | 0.23 | 0.10 | mg/Kg | 0.250 | 0.18 | **21.6** | * | 40-140 | 3.53 | 50 | MS-07 |
| **Aroclor-1260 [2C]** | 0.25 | 0.10 | mg/Kg | 0.250 | 0.17 | **31.3** | * | 40-140 | 2.59 | 50 | MS-07 |
| Surrogate: Decachlorobiphenyl | *0.541* | | mg/Kg | 1.00 | | 54.1 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.531* | | mg/Kg | 1.00 | | 53.1 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.538* | | mg/Kg | 1.00 | | 53.8 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.535* | | mg/Kg | 1.00 | | 53.5 | | 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. |
| MS-07 | Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery. Possiblity of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated. |
| T-04 | Samples were received directly from the field at ambient temperature. |

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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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

11G0858

Company Name: Woodard & Curran
Address: 35 New England Business Center
Suite 180, Andover MA 01810
Attention: George Franklin
Project Location: UMass Tobin Hall, Amherst MA
Sampled By: R. Forrester

Telephone: (978) 557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #
Email: gfranklin@woodardcurran.com
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 | PCBs (Soxhlet) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -01 | TH-VBC-119 | 7-28-11 | 16:10 | | X | S | L | X | | | | | | | | | | |
| -02 | TH-VBC-1200 | ↓ | 16:18 | | X | S | L | X | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
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# of Containers
** Preservation
***Container Code

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=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: PCBs by USEPA 8082 via 3540c (~~Soxhlet Extraction~~) (Soxhlet Extraction) R.L. ≤ 1.0 mg/kg

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] | 7-28-11 18:41 |
| Received by: (signature) [signature] | Date/Time: 7/28/11 1841 |
| 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:

**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

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East Longmeadow, MA. 01028
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# Sample Receipt Checklist

**CLIENT NAME:** Woodward-Curran **RECEIVED BY:** CEC **DATE:** 7/28/11

**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 29.4

**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 CEC Date 7/28/11 Time 1841

**7) Location where samples are stored:** 19

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

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | | 8 oz amber/clear jar | 2 |
| 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 _____

# Bisulfate _____ # DI Water _____

# Thiosulfate _____ Unpreserved _____

**Time and Date Frozen:**

**Do all samples have the proper Acid pH:** Yes No N/A _____

**Do all samples have the proper Base pH:** Yes No N/A _____

Doc# 277

Rev. 1 May 2011

**11G0858-01** TH-VBC-119

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.20 | 0.1655682 | 18.8 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.18 | 1.127941 | 4.51 |
| Tetrachloro-m-xylene | 1.21 | 1.170154 | 3.35 |

**11G0858-02** TH-VBC-1200

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 | 0.23 | 0.2289333 | 0.465 |
| Aroclor-1260 | 0.18 | 0.1708429 | 5.22 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.744 | 0.7233762 | 2.81 |
| Tetrachloro-m-xylene | 0.714 | 0.7078143 | 0.87 |

**B034484-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.993 | 0.96618 | 2.74 |
| Tetrachloro-m-xylene | 0.942 | 0.91656 | 2.74 |

**B034484-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.17 | 0.215 | 23.4 |
| Aroclor-1260 | 0.17 | 0.217915 | 24.7 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.687 | 0.68643 | 0.083 |
| Decachlorobiphenyl | 0.674 | 0.659145 | 2.23 |

**B034484-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.22 | 0.27454 | 22.1 |
| Aroclor-1016 | 0.23 | 0.23832 | 3.55 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.919 | 0.890215 | 3.18 |
| Tetrachloro-m-xylene | 0.948 | 0.93838 | 1.02 |

**B034484-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.13 | 0.1571818 | 18.9 |
| Aroclor-1260 | 0.22 | 0.2426636 | 9.8 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.529 | 0.5224636 | 1.24 |
| Tetrachloro-m-xylene | 0.528 | 0.5226727 | 1.01 |

**B034484-MSD1** Matrix Spike Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.14 | 0.158395 | 12.3 |
| Aroclor-1260 | 0.23 | 0.249035 | 7.95 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.538 | 0.535055 | 0.549 |
| Decachlorobiphenyl | 0.541 | 0.53084 | 1.9 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0858 |
| Project Location: Umass Tobin Hall, Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0858-01 thru 11G0858-02

Matrices: Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☐ Yes | ☑ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 08/02/11

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

August 2, 2011

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

Project Location: Amherst, MA
Client Job Number:
Project Number: 224166
Laboratory Work Order Number: 11G0886

Enclosed are results of analyses for samples received by the laboratory on July 29, 2011. 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: 8/2/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224166

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0886

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

PROJECT LOCATION: Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-CBC-128 | 11G0886-01 | Concrete | | SW-846 8082A | |
| TH-CBC-129 | 11G0886-02 | Concrete | | SW-846 8082A | |
| TH-CBC-130 | 11G0886-03 | Concrete | | SW-846 8082A | |
| TH-CBC-131 | 11G0886-04 | Concrete | | SW-846 8082A | |
| TH-CBC-132 | 11G0886-05 | Concrete | | SW-846 8082A | |
| TH-CBC-133 | 11G0886-06 | Concrete | | SW-846 8082A | |
| TH-CBC-134 | 11G0886-07 | Concrete | | SW-846 8082A | |
| TH-CBC-135 | 11G0886-08 | Concrete | | SW-846 8082A | |
| TH-CBC-136 | 11G0886-09 | Concrete | | SW-846 8082A | |
| TH-CBC-137 | 11G0886-10 | Concrete | | SW-846 8082A | |
| TH-CBCD-138 | 11G0886-11 | 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 individuuals 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: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-128**
Sampled: 7/29/2011 12:48

**Sample ID: 11G0886-01**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 16:14 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:14 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:14 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:14 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:14 | JMB |
| Aroclor-1254 [2] | 0.98 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:14 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:14 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:14 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:14 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 73.4 | 30-150 | | 7/30/11 16:14 |
| Decachlorobiphenyl [2] | 86.5 | 30-150 | | 7/30/11 16:14 |
| Tetrachloro-m-xylene [1] | 94.3 | 30-150 | | 7/30/11 16:14 |
| Tetrachloro-m-xylene [2] | 113 | 30-150 | | 7/30/11 16:14 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-129**
Sampled: 7/29/2011 12:56

**Sample ID: 11G0886-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 16:27 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:27 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:27 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:27 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:27 | JMB |
| Aroclor-1254 [2] | 0.23 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:27 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:27 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:27 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:27 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 91.5 | 30-150 | | 7/30/11 16:27 |
| Decachlorobiphenyl [2] | 108 | 30-150 | | 7/30/11 16:27 |
| Tetrachloro-m-xylene [1] | 94.0 | 30-150 | | 7/30/11 16:27 |
| Tetrachloro-m-xylene [2] | 114 | 30-150 | | 7/30/11 16:27 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-130**
Sampled: 7/29/2011 13:04

**Sample ID: 11G0886-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 16:40 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:40 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:40 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:40 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:40 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:40 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:40 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:40 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:40 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 86.6 | 30-150 | | 7/30/11 16:40 |
| Decachlorobiphenyl [2] | 101 | 30-150 | | 7/30/11 16:40 |
| Tetrachloro-m-xylene [1] | 85.7 | 30-150 | | 7/30/11 16:40 |
| Tetrachloro-m-xylene [2] | 103 | 30-150 | | 7/30/11 16:40 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-131**
Sampled: 7/29/2011 13:15

**Sample ID: 11G0886-04**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 16:53 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:53 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:53 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:53 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:53 | JMB |
| Aroclor-1254 [2] | 0.16 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:53 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:53 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:53 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 16:53 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 67.3 | 30-150 | | 7/30/11 16:53 |
| Decachlorobiphenyl [2] | 77.9 | 30-150 | | 7/30/11 16:53 |
| Tetrachloro-m-xylene [1] | 91.8 | 30-150 | | 7/30/11 16:53 |
| Tetrachloro-m-xylene [2] | 110 | 30-150 | | 7/30/11 16:53 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-132**
Sampled: 7/29/2011 13:25

**Sample ID: 11G0886-05**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 18:37 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:37 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:37 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:37 | JMB |
| Aroclor-1248 [1] | 0.21 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:37 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:37 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:37 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:37 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:37 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 89.5 | 30-150 | | 7/30/11 18:37 |
| Decachlorobiphenyl [2] | 87.9 | 30-150 | | 7/30/11 18:37 |
| Tetrachloro-m-xylene [1] | 97.0 | 30-150 | | 7/30/11 18:37 |
| Tetrachloro-m-xylene [2] | 103 | 30-150 | | 7/30/11 18:37 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-133**
Sampled: 7/29/2011 13:53

**Sample ID: 11G0886-06**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 18:49 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:49 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:49 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:49 | JMB |
| Aroclor-1248 [1] | 0.33 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:49 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:49 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:49 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:49 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 18:49 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 79.0 | 30-150 | | 7/30/11 18:49 |
| Decachlorobiphenyl [2] | 76.4 | 30-150 | | 7/30/11 18:49 |
| Tetrachloro-m-xylene [1] | 79.8 | 30-150 | | 7/30/11 18:49 |
| Tetrachloro-m-xylene [2] | 86.2 | 30-150 | | 7/30/11 18:49 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-134**
Sampled: 7/29/2011 14:01

**Sample ID: 11G0886-07**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 19:02 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:02 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:02 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:02 | JMB |
| Aroclor-1248 [1] | 1.2 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:02 | JMB |
| Aroclor-1254 [2] | 0.58 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:02 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:02 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:02 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:02 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 82.2 | 30-150 | | 7/30/11 19:02 |
| Decachlorobiphenyl [2] | 80.0 | 30-150 | | 7/30/11 19:02 |
| Tetrachloro-m-xylene [1] | 81.1 | 30-150 | | 7/30/11 19:02 |
| Tetrachloro-m-xylene [2] | 86.9 | 30-150 | | 7/30/11 19:02 |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-135**
Sampled: 7/29/2011 14:11

**Sample ID: 11G0886-08**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 19:15 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:15 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:15 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:15 | JMB |
| Aroclor-1248 [1] | 0.45 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:15 | JMB |
| Aroclor-1254 [1] | 0.18 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:15 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:15 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:15 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:15 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 69.6 | 30-150 | | 7/30/11 19:15 |
| Decachlorobiphenyl [2] | 69.8 | 30-150 | | 7/30/11 19:15 |
| Tetrachloro-m-xylene [1] | 72.8 | 30-150 | | 7/30/11 19:15 |
| Tetrachloro-m-xylene [2] | 72.6 | 30-150 | | 7/30/11 19:15 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-136**
Sampled: 7/29/2011 14:14

**Sample ID: 11G0886-09**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 19:28 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:28 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:28 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:28 | JMB |
| Aroclor-1248 [1] | 0.21 | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:28 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:28 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:28 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:28 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:28 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 51.7 | 30-150 | | 7/30/11 19:28 |
| Decachlorobiphenyl [2] | 50.3 | 30-150 | | 7/30/11 19:28 |
| Tetrachloro-m-xylene [1] | 53.8 | 30-150 | | 7/30/11 19:28 |
| Tetrachloro-m-xylene [2] | 58.5 | 30-150 | | 7/30/11 19:28 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBC-137**
Sampled: 7/29/2011 14:16

**Sample ID: 11G0886-10**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 19:40 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:40 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:40 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:40 | JMB |
| Aroclor-1248 [2] | 0.12 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:40 | JMB |
| Aroclor-1254 [2] | 0.27 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:40 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:40 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:40 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:40 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 77.3 | 30-150 | | 7/30/11 19:40 |
| Decachlorobiphenyl [2] | 75.1 | 30-150 | | 7/30/11 19:40 |
| Tetrachloro-m-xylene [1] | 80.9 | 30-150 | | 7/30/11 19:40 |
| Tetrachloro-m-xylene [2] | 78.8 | 30-150 | | 7/30/11 19:40 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0886

Date Received: 7/29/2011

**Field Sample #: TH-CBCD-138**
Sampled: 7/29/2011 14:16

**Sample ID: 11G0886-11**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 7/29/11 | 7/30/11 19:53 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:53 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:53 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:53 | JMB |
| Aroclor-1248 [1] | 0.20 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:53 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:53 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:53 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:53 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 7/29/11 | 7/30/11 19:53 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 72.0 | 30-150 | | 7/30/11 19:53 |
| Decachlorobiphenyl [2] | 69.7 | 30-150 | | 7/30/11 19:53 |
| Tetrachloro-m-xylene [1] | 75.2 | 30-150 | | 7/30/11 19:53 |
| Tetrachloro-m-xylene [2] | 80.0 | 30-150 | | 7/30/11 19:53 |

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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 |
|---|---|---|---|---|
| 11G0886-05 [TH-CBC-132] | B034567 | 2.10 | 10.0 | 07/29/11 |
| 11G0886-06 [TH-CBC-133] | B034567 | 2.00 | 10.0 | 07/29/11 |
| 11G0886-07 [TH-CBC-134] | B034567 | 2.00 | 10.0 | 07/29/11 |
| 11G0886-08 [TH-CBC-135] | B034567 | 2.10 | 10.0 | 07/29/11 |
| 11G0886-09 [TH-CBC-136] | B034567 | 2.10 | 10.0 | 07/29/11 |
| 11G0886-10 [TH-CBC-137] | B034567 | 2.00 | 10.0 | 07/29/11 |
| 11G0886-11 [TH-CBCD-138] | B034567 | 2.00 | 10.0 | 07/29/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0886-01 [TH-CBC-128] | B034568 | 2.10 | 10.0 | 07/29/11 |
| 11G0886-02 [TH-CBC-129] | B034568 | 2.10 | 10.0 | 07/29/11 |
| 11G0886-03 [TH-CBC-130] | B034568 | 2.00 | 10.0 | 07/29/11 |
| 11G0886-04 [TH-CBC-131] | B034568 | 2.00 | 10.0 | 07/29/11 |

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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 B034567 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034567-BLK1)** | | | | Prepared: 07/29/11 Analyzed: 07/30/11 | | | | | | |
| 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 | *0.771* | | mg/Kg | 1.00 | | 77.1 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.752* | | mg/Kg | 1.00 | | 75.2 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.876* | | mg/Kg | 1.00 | | 87.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.847* | | mg/Kg | 1.00 | | 84.7 | 30-150 | | | |
| **LCS (B034567-BS1)** | | | | Prepared: 07/29/11 Analyzed: 07/30/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.10 | mg/Kg | 0.250 | | 86.6 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.23 | 0.10 | mg/Kg | 0.250 | | 93.5 | 40-140 | | | |
| Aroclor-1260 | 0.21 | 0.10 | mg/Kg | 0.250 | | 84.6 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 101 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.876* | | mg/Kg | 1.00 | | 87.6 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.860* | | mg/Kg | 1.00 | | 86.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.927* | | mg/Kg | 1.00 | | 92.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.904* | | mg/Kg | 1.00 | | 90.4 | 30-150 | | | |
| **LCS Dup (B034567-BSD1)** | | | | Prepared: 07/29/11 Analyzed: 07/30/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg | 0.250 | | 98.8 | 40-140 | 13.1 | 30 | |
| Aroclor-1016 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 101 | 40-140 | 8.19 | 30 | |
| Aroclor-1260 | 0.22 | 0.10 | mg/Kg | 0.250 | | 89.3 | 40-140 | 5.36 | 30 | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 99.4 | 40-140 | 1.33 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.864* | | mg/Kg | 1.00 | | 86.4 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.849* | | mg/Kg | 1.00 | | 84.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.921* | | mg/Kg | 1.00 | | 92.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.894* | | mg/Kg | 1.00 | | 89.4 | 30-150 | | | |

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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 B034568 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034568-BLK1)** | | | | Prepared: 07/29/11 Analyzed: 07/30/11 | | | | | | |
| 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 | *0.897* | | mg/Kg | 1.00 | | 89.7 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.05* | | mg/Kg | 1.00 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.903* | | mg/Kg | 1.00 | | 90.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.08* | | mg/Kg | 1.00 | | 108 | 30-150 | | | |
| **LCS (B034568-BS1)** | | | | Prepared: 07/29/11 Analyzed: 07/30/11 | | | | | | |
| Aroclor-1016 | 0.27 | 0.10 | mg/Kg | 0.250 | | 107 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 111 | 40-140 | | | |
| Aroclor-1260 | 0.21 | 0.10 | mg/Kg | 0.250 | | 85.6 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.24 | 0.10 | mg/Kg | 0.250 | | 96.6 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.683* | | mg/Kg | 1.00 | | 68.3 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.787* | | mg/Kg | 1.00 | | 78.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.943* | | mg/Kg | 1.00 | | 94.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.13* | | mg/Kg | 1.00 | | 113 | 30-150 | | | |
| **LCS Dup (B034568-BSD1)** | | | | Prepared: 07/29/11 Analyzed: 07/30/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg | 0.250 | | 99.8 | 40-140 | 7.09 | 30 | |
| Aroclor-1016 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 106 | 40-140 | 4.16 | 30 | |
| Aroclor-1260 | 0.22 | 0.10 | mg/Kg | 0.250 | | 89.3 | 40-140 | 4.30 | 30 | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 98.3 | 40-140 | 1.74 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.690* | | mg/Kg | 1.00 | | 69.0 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.789* | | mg/Kg | 1.00 | | 78.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.940* | | mg/Kg | 1.00 | | 94.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.14* | | mg/Kg | 1.00 | | 114 | 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 2

11G0886

Company Name: Woodard & Curran
Address: 35 NE Bus. Ctr Suite 180
Andover MA 01810
Attention: George Franklin
Project Location: Amherst MA
Sampled By: George Franklin

Telephone: 978 557 8150
Project #: 224733
Client PO#:

DATA DELIVERY (check all that apply)
O FAX ✓ EMAIL O WEBSITE
Fax #:
Email: gfranklin@woodardcurran.com
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 | PCBs (3540C/8082) | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -01 | TH-CBC-128 | 7/29/11 | 1248 | | X | SS | L | X | | | |
| -02 | TH-CBC-129 | 7/29/11 | 1256 | | X | S | L | X | | | |
| -03 | TH-CBC-130 | 7/29/11 | 1304 | | X | S | L | X | | | |
| -04 | TH-CBC-131 | 7/29/11 | 1315 | | X | S | L | X | | | |
| -05 | TH-CBC-132 | 7/29/11 | 1325 | | X | S | L | X | | | |
| -06 | TH-CBC-133 | 7/29/11 | 1353 | | X | S | L | X | | | |
| -07 | TH-CBC-134 | 7/29/11 | 1401 | | X | S | L | X | | | |
| -08 | TH-CBC-135 | 7/29/11 | 1411 | | X | S | L | X | | | |
| -09 | TH-CBC-136 | 7/29/11 | 1414 | | X | S | L | X | | | |
| -10 | TH-CBC-137 | 7/29/11 | 1416 | | X | S | L | X | | | |

Comments: PCBs via USEPA 8082 w/ Soxhlet Extraction (3540C)
RL ≤ 1.0 mg/kg

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
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 (Concrete)
SL = sludge
O = other_____

| Relinquished by: (signature) | Date/Time: 7/29/11 1445 |
|---|---|
| Received by: (signature) | Date/Time: 7/29/11 1445 |
| Relinquished by: (signature) | Date/Time: 7/29/11 1620 |
| Received by: (signature) 5.3°C | Date/Time: 7/29/11 16:20 |

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

Detection Limit Requirements
Massachusetts:
Connecticut:
Other: ≤ 1.0 mg/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 # _____

nelac AIHA ACCREDITED LABORATORY
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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Email: info@contestlabs.com
www.contestlabs.com

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028





11G0886

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERST, MA
Sampled By: J. REAM, G. FRANKLIN

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

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ✓ EMAIL ○ WEBSITE
Fax # gfranklin@woodardcurran.com
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 | PCB's (Soxhlet) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -11 | TH-CBCD-138 | 7/29/11 | 1416 | | ✓ | O | 1 | X | | | | | | | | | | |
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ANALYSIS REQUESTED

| # of Containers | 1 |
|---|---|
| ** Preservation | I |
| ***Container Code | A |

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: PCB's by USEPA 8082 via 3540c (Soxhlet)
R.L. ≤ 1.0 mg/kg

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] | 7/29/11 |
| Received by: (signature) | Date/Time: |
| [signature] | 7/29/11 1445 |
| Relinquished by: (signature) | Date/Time: |
| [signature] | 7/29/11 1620 |
| Received by: (signature) | Date/Time: |
| [signature] 5.32 | 7/29/11 16:20 |

**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 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:** GB **DATE:** 7/29/14

**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 5.3 °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: _____

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | | 8 oz amber/clear jar | 11 |
| 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 _____
# Bisulfate _____ # DI Water _____
# Thiosulfate _____ Unpreserved _____

**Time and Date Frozen:**

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

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

Doc# 277

Rev. 1 May

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0886 |
| Project Location: Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0886-01 thru 11G0886-11

Matrices: Product/Solid

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | |
|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 08/02/11

**11G0886-01** TH-CBC-128

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.98 | 0.7953 | 20.8 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.699 | 0.8239953 | 16.4 |
| Tetrachloro-m-xylene | 0.898 | 1.074591 | 17.9 |

**11G0886-02** TH-CBC-129

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.23 | 0.198781 | 14.6 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.871 | 1.029333 | 16.7 |
| Tetrachloro-m-xylene | 0.895 | 1.0886 | 19.5 |

**11G0886-03** TH-CBC-130

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.857 | 1.027755 | 18.1 |
| Decachlorobiphenyl | 0.866 | 1.01071 | 15.4 |

**11G0886-04** TH-CBC-131

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.16 | 0.133865 | 17.8 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.918 | 1.103825 | 18.4 |
| Decachlorobiphenyl | 0.673 | 0.77926 | 14.6 |

**11G0886-05** TH-CBC-132

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.21 | 0.1801857 | 15.3 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.853 | 0.8367096 | 1.93 |
| Tetrachloro-m-xylene | 0.924 | 0.9852381 | 6.41 |

**11G0886-06** TH-CBC-133

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.33 | 0.31966 | 3.18 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.798 | 0.86238 | 7.75 |
| Decachlorobiphenyl | 0.790 | 0.764335 | 3.3 |

**11G0886-07** TH-CBC-134

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.58 | 0.441295 | 27.2 |
| Aroclor-1248 | 1.2 | 1.008915 | 17.3 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.822 | 0.80015 | 2.69 |
| Tetrachloro-m-xylene [2C] | 0.869 | 0.8113 | 6.87 |

**11G0886-08** TH-CBC-135

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 | 0.18 | 0.2268 | 23 |
| Aroclor-1248 | 0.45 | 0.4659191 | 3.48 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.663 | 0.6645239 | 0.23 |
| Tetrachloro-m-xylene | 0.694 | 0.6918239 | 0.314 |

**11G0886-09** TH-CBC-136

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.21 | 0.2047952 | 2.51 |
| Surrogates | | | |

| | | | |
|---|---|---|---|
| Decachlorobiphenyl | 0.492 | 0.4786286 | 2.76 |
| Tetrachloro-m-xylene | 0.513 | 0.557581 | 8.33 |

**11G0886-10** TH-CBC-137

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 [2C] | 0.12 | 0.098445 | 19.7 |
| Aroclor-1254 [2C] | 0.27 | 0.25072 | 7.41 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.809 | 0.787595 | 2.68 |
| Decachlorobiphenyl | 0.773 | 0.75096 | 2.89 |

**11G0886-11** TH-CBCD-138

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.20 | 0.176395 | 12.5 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.720 | 0.69683 | 3.27 |
| Tetrachloro-m-xylene | 0.752 | 0.7996 | 6.14 |

**11G0888-05** WH-VBC-078

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.62 | 0.535565 | 14.6 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.852 | 0.83174 | 2.41 |
| Tetrachloro-m-xylene | 0.951 | 0.925285 | 2.74 |

**B034567-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.771 | 0.752445 | 2.44 |
| Tetrachloro-m-xylene | 0.876 | 0.846885 | 3.38 |

**B034567-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.22 | 0.23363 | 6.01 |
| Aroclor-1260 | 0.21 | 0.25182 | 18.1 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.927 | 0.904205 | 2.49 |
| Decachlorobiphenyl | 0.876 | 0.859645 | 1.88 |

**B034567-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.25 | 0.253585 | 1.42 |
| Aroclor-1260 | 0.22 | 0.2485 | 12.2 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.864 | 0.848985 | 1.75 |
| Tetrachloro-m-xylene | 0.921 | 0.894025 | 2.97 |

**B034567-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.45 | 0.557765 | 21.4 |
| Aroclor-1260 | 0.23 | 0.217575 | 5.55 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.819 | 0.80218 | 2.08 |
| Decachlorobiphenyl | 0.753 | 0.740065 | 1.73 |

**B034567-MSD1** Matrix Spike Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.43 | 0.538685 | 22.4 |
| Aroclor-1260 | 0.24 | 0.26174 | 8.67 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.834 | 0.811245 | 2.77 |
| Tetrachloro-m-xylene | 0.862 | 0.840035 | 2.58 |

**B034568-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.903 | 1.080925 | 17.9 |
| Decachlorobiphenyl | 0.897 | 1.04741 | 15.5 |

**B034568-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.27 | 0.277355 | 2.69 |
| Aroclor-1260 | 0.21 | 0.24144 | 13.9 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.943 | 1.127965 | 17.9 |
| Decachlorobiphenyl | 0.683 | 0.787215 | 14.2 |

**B034568-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.25 | 0.266055 | 6.22 |
| Aroclor-1260 | 0.22 | 0.245675 | 11 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.940 | 1.13763 | 19 |
| Decachlorobiphenyl | 0.690 | 0.78927 | 13.4 |

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

August 2, 2011

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

Project Location: Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11G0889

Enclosed are results of analyses for samples received by the laboratory on July 29, 2011. 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: 8/2/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11G0889

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

PROJECT LOCATION: Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBS-121 | 11G0889-01 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBSD-122 | 11G0889-02 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-123 | 11G0889-03 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-124 | 11G0889-04 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-125 | 11G0889-05 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-126 | 11G0889-06 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-127 | 11G0889-07 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-139 | 11G0889-08 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-140 | 11G0889-09 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-141 | 11G0889-10 | Soil | | SM 2540G | |
| | | | | 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, Aroclor-1016 [2C]**

B034561-MS1, B034561-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 individuuals 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: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-121**
Sampled: 7/29/2011 09:50

**Sample ID: 11G0889-01**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:46 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:46 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:46 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:46 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:46 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:46 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:46 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:46 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:46 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 103 | 30-150 | | 8/1/11 15:46 |
| Decachlorobiphenyl [2] | 85.3 | 30-150 | | 8/1/11 15:46 |
| Tetrachloro-m-xylene [1] | 95.1 | 30-150 | | 8/1/11 15:46 |
| Tetrachloro-m-xylene [2] | 95.6 | 30-150 | | 8/1/11 15:46 |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-121**
Sampled: 7/29/2011 09:50

**Sample ID: 11G0889-01**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.6 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBSD-122**
Sampled: 7/29/2011 09:50

**Sample ID: 11G0889-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:59 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:59 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:59 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:59 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:59 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:59 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:59 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:59 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 15:59 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 92.3 | 30-150 | | 8/1/11 15:59 |
| Decachlorobiphenyl [2] | 87.7 | 30-150 | | 8/1/11 15:59 |
| Tetrachloro-m-xylene [1] | 96.6 | 30-150 | | 8/1/11 15:59 |
| Tetrachloro-m-xylene [2] | 98.2 | 30-150 | | 8/1/11 15:59 |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBSD-122**
Sampled: 7/29/2011 09:50

**Sample ID: 11G0889-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 93.1 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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Project Location: Amherst, MA | Sample Description: | Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-123** | Sampled: 7/29/2011 09:53

**Sample ID: 11G0889-03**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:12 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:12 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:12 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:12 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:12 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:12 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:12 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:12 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:12 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 95.9 | 30-150 | | 8/1/11 16:12 |
| Decachlorobiphenyl [2] | 93.9 | 30-150 | | 8/1/11 16:12 |
| Tetrachloro-m-xylene [1] | 101 | 30-150 | | 8/1/11 16:12 |
| Tetrachloro-m-xylene [2] | 103 | 30-150 | | 8/1/11 16:12 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-123**
Sampled: 7/29/2011 09:53

**Sample ID: 11G0889-03**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.6 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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Project Location: Amherst, MA | Sample Description: | Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-124** | Sampled: 7/29/2011 10:21

**Sample ID: 11G0889-04**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:24 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:24 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:24 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:24 | JMB |
| Aroclor-1248 [1] | 0.24 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:24 | JMB |
| Aroclor-1254 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:24 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:24 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:24 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:24 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 98.0 | 30-150 | | 8/1/11 16:24 |
| Decachlorobiphenyl [2] | 96.2 | 30-150 | | 8/1/11 16:24 |
| Tetrachloro-m-xylene [1] | 100 | 30-150 | | 8/1/11 16:24 |
| Tetrachloro-m-xylene [2] | 111 | 30-150 | | 8/1/11 16:24 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-124**
Sampled: 7/29/2011 10:21

**Sample ID: 11G0889-04**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 92.2 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-125**
Sampled: 7/29/2011 10:15

**Sample ID: 11G0889-05**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:37 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:37 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:37 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:37 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:37 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:37 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:37 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:37 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:37 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 97.4 | 30-150 | | 8/1/11 16:37 |
| Decachlorobiphenyl [2] | 94.0 | 30-150 | | 8/1/11 16:37 |
| Tetrachloro-m-xylene [1] | 99.3 | 30-150 | | 8/1/11 16:37 |
| Tetrachloro-m-xylene [2] | 101 | 30-150 | | 8/1/11 16:37 |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-125**
Sampled: 7/29/2011 10:15

**Sample ID: 11G0889-05**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.4 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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Project Location: Amherst, MA | Sample Description: | Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-126** | Sampled: 7/29/2011 10:10

**Sample ID: 11G0889-06**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:50 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:50 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:50 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:50 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:50 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:50 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:50 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:50 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 16:50 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 91.7 | 30-150 | | 8/1/11 16:50 |
| Decachlorobiphenyl [2] | 89.7 | 30-150 | | 8/1/11 16:50 |
| Tetrachloro-m-xylene [1] | 95.7 | 30-150 | | 8/1/11 16:50 |
| Tetrachloro-m-xylene [2] | 98.0 | 30-150 | | 8/1/11 16:50 |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-126**
Sampled: 7/29/2011 10:10

**Sample ID: 11G0889-06**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.0 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-127**
Sampled: 7/29/2011 10:06

**Sample ID: 11G0889-07**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:03 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:03 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:03 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:03 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:03 | JMB |
| Aroclor-1254 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:03 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:03 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:03 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:03 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 87.7 | 30-150 | | 8/1/11 17:03 |
| Decachlorobiphenyl [2] | 85.0 | 30-150 | | 8/1/11 17:03 |
| Tetrachloro-m-xylene [1] | 92.4 | 30-150 | | 8/1/11 17:03 |
| Tetrachloro-m-xylene [2] | 94.6 | 30-150 | | 8/1/11 17:03 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-127**
Sampled: 7/29/2011 10:06

**Sample ID: 11G0889-07**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 92.5 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-139**
Sampled: 7/29/2011 14:15

**Sample ID: 11G0889-08**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:15 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:15 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:15 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:15 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:15 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:15 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:15 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:15 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:15 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 95.5 | 30-150 | | 8/1/11 17:15 |
| Decachlorobiphenyl [2] | 93.8 | 30-150 | | 8/1/11 17:15 |
| Tetrachloro-m-xylene [1] | 104 | 30-150 | | 8/1/11 17:15 |
| Tetrachloro-m-xylene [2] | 106 | 30-150 | | 8/1/11 17:15 |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-139**
Sampled: 7/29/2011 14:15

**Sample ID: 11G0889-08**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.7 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-140**
Sampled: 7/29/2011 14:18

**Sample ID: 11G0889-09**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:28 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:28 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:28 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:28 | JMB |
| Aroclor-1248 [1] | 0.34 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:28 | JMB |
| Aroclor-1254 [1] | 0.17 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:28 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:28 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:28 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:28 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 93.1 | 30-150 | | 8/1/11 17:28 |
| Decachlorobiphenyl [2] | 93.2 | 30-150 | | 8/1/11 17:28 |
| Tetrachloro-m-xylene [1] | 99.7 | 30-150 | | 8/1/11 17:28 |
| Tetrachloro-m-xylene [2] | 104 | 30-150 | | 8/1/11 17:28 |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-140**
Sampled: 7/29/2011 14:18

**Sample ID: 11G0889-09**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.3 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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

Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-141**
Sampled: 7/29/2011 14:21

**Sample ID: 11G0889-10**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:41 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:41 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:41 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:41 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:41 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:41 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:41 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:41 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 7/29/11 | 8/1/11 17:41 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 92.4 | 30-150 | | 8/1/11 17:41 |
| Decachlorobiphenyl [2] | 91.3 | 30-150 | | 8/1/11 17:41 |
| Tetrachloro-m-xylene [1] | 93.5 | 30-150 | | 8/1/11 17:41 |
| Tetrachloro-m-xylene [2] | 105 | 30-150 | | 8/1/11 17:41 |

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Project Location: Amherst, MA
Sample Description:
Work Order: 11G0889

Date Received: 7/29/2011

**Field Sample #: TH-VBS-141**
Sampled: 7/29/2011 14:21

**Sample ID: 11G0889-10**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.3 | | % Wt | 1 | | SM 2540G | 7/31/11 | 8/1/11 9:11 | VAF |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11G0889-01 [TH-VBS-121] | B034588 | 07/31/11 |
| 11G0889-02 [TH-VBSD-122] | B034588 | 07/31/11 |
| 11G0889-03 [TH-VBS-123] | B034588 | 07/31/11 |
| 11G0889-04 [TH-VBS-124] | B034588 | 07/31/11 |
| 11G0889-05 [TH-VBS-125] | B034588 | 07/31/11 |
| 11G0889-06 [TH-VBS-126] | B034588 | 07/31/11 |
| 11G0889-07 [TH-VBS-127] | B034588 | 07/31/11 |
| 11G0889-08 [TH-VBS-139] | B034588 | 07/31/11 |
| 11G0889-09 [TH-VBS-140] | B034588 | 07/31/11 |
| 11G0889-10 [TH-VBS-141] | B034588 | 07/31/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11G0889-01 [TH-VBS-121] | B034561 | 10.1 | 50.0 | 07/29/11 |
| 11G0889-02 [TH-VBSD-122] | B034561 | 10.3 | 50.0 | 07/29/11 |
| 11G0889-03 [TH-VBS-123] | B034561 | 10.2 | 50.0 | 07/29/11 |
| 11G0889-04 [TH-VBS-124] | B034561 | 10.3 | 50.0 | 07/29/11 |
| 11G0889-05 [TH-VBS-125] | B034561 | 10.2 | 50.0 | 07/29/11 |
| 11G0889-06 [TH-VBS-126] | B034561 | 10.1 | 50.0 | 07/29/11 |
| 11G0889-07 [TH-VBS-127] | B034561 | 10.0 | 50.0 | 07/29/11 |
| 11G0889-08 [TH-VBS-139] | B034561 | 10.0 | 50.0 | 07/29/11 |
| 11G0889-09 [TH-VBS-140] | B034561 | 10.0 | 50.0 | 07/29/11 |
| 11G0889-10 [TH-VBS-141] | B034561 | 10.3 | 50.0 | 07/29/11 |

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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 B034561 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034561-BLK1)** | | | | Prepared: 07/29/11 Analyzed: 08/01/11 | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.192* | | mg/Kg wet | 0.200 | | 96.1 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.194* | | mg/Kg wet | 0.200 | | 96.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.199* | | mg/Kg wet | 0.200 | | 99.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.204* | | mg/Kg wet | 0.200 | | 102 | 30-150 | | | |
| **LCS (B034561-BS1)** | | | | Prepared: 07/29/11 Analyzed: 08/01/11 | | | | | | |
| Aroclor-1016 | 0.23 | 0.10 | mg/Kg wet | 0.200 | | 116 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 111 | 40-140 | | | |
| Aroclor-1260 | 0.18 | 0.10 | mg/Kg wet | 0.200 | | 91.3 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 104 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.191* | | mg/Kg wet | 0.200 | | 95.4 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.192* | | mg/Kg wet | 0.200 | | 95.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.198* | | mg/Kg wet | 0.200 | | 99.2 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.207* | | mg/Kg wet | 0.200 | | 103 | 30-150 | | | |
| **LCS Dup (B034561-BSD1)** | | | | Prepared: 07/29/11 Analyzed: 08/01/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg wet | 0.200 | | 120 | 40-140 | 3.65 | 30 | |
| Aroclor-1016 [2C] | 0.24 | 0.10 | mg/Kg wet | 0.200 | | 119 | 40-140 | 7.62 | 30 | |
| Aroclor-1260 | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 99.5 | 40-140 | 8.64 | 30 | |
| Aroclor-1260 [2C] | 0.23 | 0.10 | mg/Kg wet | 0.200 | | 115 | 40-140 | 10.1 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.214* | | mg/Kg wet | 0.200 | | 107 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.198* | | mg/Kg wet | 0.200 | | 99.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.206* | | mg/Kg wet | 0.200 | | 103 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.213* | | mg/Kg wet | 0.200 | | 106 | 30-150 | | | |

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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 B034561 - SW-846 3540C** | | | | | | | | | | | | |
| **Matrix Spike (B034561-MS1)** | | **Source: 11G0889-09** | | Prepared: 07/29/11 Analyzed: 08/01/11 | | | | | | | | |
| **Aroclor-1016** | 0.46 | 0.11 | mg/Kg dry | 0.212 | 0.0 | **216** | * | 40-140 | | | | MS-21 |
| **Aroclor-1016 [2C]** | 0.80 | 0.11 | mg/Kg dry | 0.212 | 0.0 | **379** | * | 40-140 | | | | MS-21 |
| Aroclor-1260 | 0.22 | 0.11 | mg/Kg dry | 0.212 | 0.0 | 105 | | 40-140 | | | | |
| Aroclor-1260 [2C] | 0.23 | 0.11 | mg/Kg dry | 0.212 | 0.0 | 108 | | 40-140 | | | | |
| Surrogate: Decachlorobiphenyl | *0.204* | | mg/Kg dry | 0.212 | | 96.4 | | 30-150 | | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.192* | | mg/Kg dry | 0.212 | | 90.7 | | 30-150 | | | | |
| Surrogate: Tetrachloro-m-xylene | *0.205* | | mg/Kg dry | 0.212 | | 96.5 | | 30-150 | | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.212* | | mg/Kg dry | 0.212 | | 100 | | 30-150 | | | | |
| **Matrix Spike Dup (B034561-MSD1)** | | **Source: 11G0889-09** | | Prepared: 07/29/11 Analyzed: 08/01/11 | | | | | | | | |
| **Aroclor-1016** | 0.85 | 0.11 | mg/Kg dry | 0.212 | 0.0 | **402** | * | 40-140 | **60.2** | * | 50 | MS-21 |
| **Aroclor-1016 [2C]** | 1.6 | 0.11 | mg/Kg dry | 0.212 | 0.0 | **760** | * | 40-140 | **66.9** | * | 50 | MS-21 |
| Aroclor-1260 | 0.22 | 0.11 | mg/Kg dry | 0.212 | 0.0 | 106 | | 40-140 | 0.414 | | 50 | |
| Aroclor-1260 [2C] | 0.24 | 0.11 | mg/Kg dry | 0.212 | 0.0 | 113 | | 40-140 | 4.36 | | 50 | |
| Surrogate: Decachlorobiphenyl | *0.203* | | mg/Kg dry | 0.212 | | 95.9 | | 30-150 | | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.190* | | mg/Kg dry | 0.212 | | 89.4 | | 30-150 | | | | |
| Surrogate: Tetrachloro-m-xylene | *0.205* | | mg/Kg dry | 0.212 | | 96.6 | | 30-150 | | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.212* | | mg/Kg dry | 0.212 | | 100 | | 30-150 | | | | |

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**QUALITY CONTROL**

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B034588 - % Solids** | | | | | | | | | | |
| **Duplicate (B034588-DUP1)** | | **Source: 11G0889-01** | | Prepared: 07/31/11 | Analyzed: 08/01/11 | | | | | |
| % Solids | 94.2 | | % Wt | | 95.6 | | | 1.48 | 20 | |
| **Duplicate (B034588-DUP2)** | | **Source: 11G0889-08** | | Prepared: 07/31/11 | Analyzed: 08/01/11 | | | | | |
| % Solids | 96.3 | | % Wt | | 95.7 | | | 0.625 | 20 | |

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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 Soil*** | |
| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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# CHAIN OF CUSTODY RECORD

11G0889

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

Company Name: Woodard & Curran
Address: 35 NE Business Ctr Drive Suite 100 Amherst MA
Attention: George Franklin
Project Location: Amherst MA
Sampled By: George Franklin

Telephone: 978 557 8150
Project #: 224733
Client PO#:

**DATA DELIVERY** (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax #:
Email: gfranklin@woodardcurran.com, jhamel
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 | PCBs (8082) | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -01 | TH-VBS-121 | 7/29/11 | 0950 | | X | S | L | X | 1 | H | A |
| -02 | TH-VBSD-122 | 7/29/11 | 0950 | | X | S | L | X | 1 | H | A |
| -03 | TH-VBS-123 | 7/29/11 | 0953 | | X | S | L | X | 1 | H | A |
| -04 | TH-VBS-124 | 7/29/11 | 1021 | | X | S | L | X | 1 | H | A |
| -05 | TH-VBS-125 | 7/29/11 | 1015 | | X | S | L | X | 1 | H | A |
| -06 | TH-VBS-126 | 7/29/11 | 1010 | | X | S | L | X | 1 | H | A |
| -07 | TH-VBS-127 | 7/29/11 | 1006 | | X | S | L | X | 1 | H | A |
| -08 | TH-VBS-128 | 7/29/11 | 1415 | | X | S | L | X | 1 | H | A |
| -09 | TH-VBS-140 | 7/29/11 | 1418 | | X | S | L | X | 1 | H | A |
| -10 | TH-VBS-141 | 7/29/11 | 1420 | | X | S | L | X | 1 | H | A |

Comments: PCBs via USEPA 8082 w/ Soxhlet Extraction (3540C)
R.L. ≤ 1.0 mg/kg

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_____

Dissolved Metals
○ Field Filtered
○ Lab to Filter

| Relinquished by: (signature) | Date/Time: 7/29/11 |
|---|---|
| Received by: (signature) | Date/Time: 7/29/11 1445 |
| Relinquished by: (signature) | Date/Time: 7/29/11 1620 |
| Received by: (signature) | Date/Time: 7/29/11 16:20 |

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

**Detection Limit Requirements**
Massachusetts:
Connecticut:
Other: ≤ 1.0 mg/kg

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

nelac ACCREDITED LABORATORY 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.

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:** GB **DATE:** 7/29/11

**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°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:

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | | 8 oz amber/clear jar | 10 |
| 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 _____

# Bisulfate _____ # DI Water _____

# Thiosulfate _____ Unpreserved _____

**Time and Date Frozen:**

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

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

Doc# 277

Rev. 1 May

**11G0889-01** TH-VBS-121

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.197 | 0.1979991 | 0.506 |
| Decachlorobiphenyl | 0.213 | 0.1766591 | 18.7 |

**11G0889-02** TH-VBSD-122

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.193 | 0.1829278 | 5.36 |
| Tetrachloro-m-xylene | 0.202 | 0.2047178 | 1.34 |

**11G0889-03** TH-VBS-123

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.195 | 0.1906183 | 2.27 |
| Tetrachloro-m-xylene | 0.204 | 0.2093939 | 2.61 |

**11G0889-04** TH-VBS-124

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.24 | 0.177295 | 30.1 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.206 | 0.2025146 | 1.71 |
| Tetrachloro-m-xylene | 0.211 | 0.2343523 | 10.5 |

**11G0889-05** TH-VBS-125

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.200 | 0.193201 | 3.46 |
| Tetrachloro-m-xylene | 0.204 | 0.2084772 | 2.17 |

**11G0889-06** TH-VBS-126

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.197 | 0.2021658 | 2.59 |
| Decachlorobiphenyl | 0.189 | 0.1851073 | 2.08 |

**11G0889-07** TH-VBS-127

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.190 | 0.1837892 | 3.32 |
| Tetrachloro-m-xylene | 0.200 | 0.2045567 | 2.25 |

**11G0889-08** TH-VBS-139

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.200 | 0.1961076 | 1.97 |
| Tetrachloro-m-xylene | 0.217 | 0.2219279 | 2.25 |

**11G0889-09** TH-VBS-140

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.34 | 0.2964687 | 13.7 |
| Aroclor-1254 | 0.17 | 0.176193 | 3.58 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.211 | 0.2201856 | 4.26 |
| Decachlorobiphenyl | 0.197 | 0.1975769 | 0.292 |

**11G0889-10** TH-VBS-141

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.189 | 0.211097 | 11 |

| | | | |
|---|---|---|---|
| Decachlorobiphenyl | 0.186 | 0.1840022 | 1.08 |

**B034561-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.192 | 0.193885 | 0.977 |
| Tetrachloro-m-xylene | 0.199 | 0.20422 | 2.59 |

**B034561-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.23 | 0.22102 | 3.98 |
| Aroclor-1260 | 0.18 | 0.207875 | 14.4 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.191 | 0.19181 | 0.423 |
| Tetrachloro-m-xylene | 0.198 | 0.206595 | 4.25 |

**B034561-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.24 | 0.23852 | 0.619 |
| Aroclor-1260 | 0.20 | 0.230095 | 14 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.206 | 0.212795 | 3.25 |
| Decachlorobiphenyl | 0.214 | 0.198235 | 7.65 |

**B034561-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.46 | 0.8039555 | 54.4 |
| Aroclor-1260 | 0.22 | 0.2291887 | 4.09 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.204 | 0.1924496 | 5.83 |
| Tetrachloro-m-xylene | 0.205 | 0.2121474 | 3.43 |

**B034561-MSD1** Matrix Spike Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.85 | 1.612174 | 61.9 |
| Aroclor-1260 | 0.22 | 0.2393955 | 8.44 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.205 | 0.2123913 | 3.54 |
| Decachlorobiphenyl | 0.203 | 0.1895281 | 6.86 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11G0889 |
| Project Location: Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11G0889-01 thru 11G0889-10

Matrices: Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☐ Yes | ☑ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 08/02/11

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

August 3, 2011

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

Project Location: UMASS Amherst, Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0031

Enclosed are results of analyses for samples received by the laboratory on August 1, 2011. 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: 8/3/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0031

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, Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-CBC-142 | 11H0031-01 | Concrete | | SW-846 8082A | |
| TH-CBC-143 | 11H0031-02 | Concrete | | SW-846 8082A | |
| TH-CBC-144 | 11H0031-03 | Concrete | | SW-846 8082A | |
| TH-CBC-145 | 11H0031-04 | Concrete | | SW-846 8082A | |
| TH-VBC-146 | 11H0031-05 | 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:**

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

B034671-MS1, B034671-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 individuuals 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, Amherst, MA  Sample Description:  Work Order: 11H0031

Date Received: 8/1/2011

**Field Sample #: TH-CBC-142**  Sampled: 8/1/2011 10:40

**Sample ID: 11H0031-01**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/1/11 | 8/2/11 19:08 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:08 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:08 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:08 | JMB |
| Aroclor-1248 [2] | 0.55 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:08 | JMB |
| Aroclor-1254 [2] | 0.38 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:08 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:08 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:08 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:08 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 118 | 30-150 | | 8/2/11 19:08 |
| Decachlorobiphenyl [2] | 141 | 30-150 | | 8/2/11 19:08 |
| Tetrachloro-m-xylene [1] | 106 | 30-150 | | 8/2/11 19:08 |
| Tetrachloro-m-xylene [2] | 95.6 | 30-150 | | 8/2/11 19:08 |

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

Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11H0031

Date Received: 8/1/2011

**Field Sample #: TH-CBC-143**  Sampled: 8/1/2011 10:55

**Sample ID: 11H0031-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/1/11 | 8/2/11 19:22 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:22 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:22 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:22 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:22 | JMB |
| Aroclor-1254 [1] | 0.23 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:22 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:22 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:22 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:22 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 92.1 | 30-150 | | 8/2/11 19:22 |
| Decachlorobiphenyl [2] | 110 | 30-150 | | 8/2/11 19:22 |
| Tetrachloro-m-xylene [1] | 85.2 | 30-150 | | 8/2/11 19:22 |
| Tetrachloro-m-xylene [2] | 80.1 | 30-150 | | 8/2/11 19:22 |

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

Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11H0031

Date Received: 8/1/2011

**Field Sample #: TH-CBC-144**  Sampled: 8/1/2011 11:43

**Sample ID: 11H0031-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/1/11 | 8/2/11 19:36 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:36 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:36 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:36 | JMB |
| Aroclor-1248 [1] | 0.14 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:36 | JMB |
| Aroclor-1254 [2] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:36 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:36 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:36 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:36 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 85.3 | 30-150 | | 8/2/11 19:36 |
| Decachlorobiphenyl [2] | 102 | 30-150 | | 8/2/11 19:36 |
| Tetrachloro-m-xylene [1] | 78.4 | 30-150 | | 8/2/11 19:36 |
| Tetrachloro-m-xylene [2] | 72.6 | 30-150 | | 8/2/11 19:36 |

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

Project Location: UMASS Amherst, Amherst, MA  Sample Description:  Work Order: 11H0031

Date Received: 8/1/2011

**Field Sample #: TH-CBC-145**  Sampled: 8/1/2011 12:20

**Sample ID: 11H0031-04**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/1/11 | 8/2/11 19:50 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:50 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:50 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:50 | JMB |
| Aroclor-1248 [2] | 0.88 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:50 | JMB |
| Aroclor-1254 [2] | 0.43 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:50 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:50 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:50 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 19:50 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 126 | 30-150 | | 8/2/11 19:50 |
| Decachlorobiphenyl [2] | 150 | 30-150 | | 8/2/11 19:50 |
| Tetrachloro-m-xylene [1] | 113 | 30-150 | | 8/2/11 19:50 |
| Tetrachloro-m-xylene [2] | 105 | 30-150 | | 8/2/11 19:50 |

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

Project Location: UMASS Amherst, Amherst, MA Sample Description: Work Order: 11H0031

Date Received: 8/1/2011

**Field Sample #: TH-VBC-146** Sampled: 8/1/2011 14:10

**Sample ID: 11H0031-05**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/1/11 | 8/2/11 20:04 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 20:04 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 20:04 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 20:04 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 20:04 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 20:04 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 20:04 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 20:04 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/1/11 | 8/2/11 20:04 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 110 | 30-150 | | 8/2/11 20:04 |
| Decachlorobiphenyl [2] | 131 | 30-150 | | 8/2/11 20:04 |
| Tetrachloro-m-xylene [1] | 104 | 30-150 | | 8/2/11 20:04 |
| Tetrachloro-m-xylene [2] | 95.5 | 30-150 | | 8/2/11 20:04 |

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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 |
|---|---|---|---|---|
| 11H0031-01 [TH-CBC-142] | B034671 | 2.00 | 10.0 | 08/01/11 |
| 11H0031-02 [TH-CBC-143] | B034671 | 2.00 | 10.0 | 08/01/11 |
| 11H0031-03 [TH-CBC-144] | B034671 | 2.00 | 10.0 | 08/01/11 |
| 11H0031-04 [TH-CBC-145] | B034671 | 2.20 | 10.0 | 08/01/11 |
| 11H0031-05 [TH-VBC-146] | B034671 | 2.10 | 10.0 | 08/01/11 |

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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 B034671 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034671-BLK1)** | | | | Prepared: 08/01/11 Analyzed: 08/02/11 | | | | | | |
| 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] | *1.21* | | mg/Kg | 1.00 | | 121 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.892* | | mg/Kg | 1.00 | | 89.2 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.848* | | mg/Kg | 1.00 | | 84.8 | 30-150 | | | |
| **LCS (B034671-BS1)** | | | | Prepared: 08/01/11 Analyzed: 08/02/11 | | | | | | |
| Aroclor-1016 | 0.27 | 0.10 | mg/Kg | 0.250 | | 108 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 118 | 40-140 | | | |
| Aroclor-1260 | 0.23 | 0.10 | mg/Kg | 0.250 | | 92.2 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 104 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.829* | | mg/Kg | 1.00 | | 82.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.991* | | mg/Kg | 1.00 | | 99.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.945* | | mg/Kg | 1.00 | | 94.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.909* | | mg/Kg | 1.00 | | 90.9 | 30-150 | | | |
| **LCS Dup (B034671-BSD1)** | | | | Prepared: 08/01/11 Analyzed: 08/02/11 | | | | | | |
| Aroclor-1016 | 0.26 | 0.10 | mg/Kg | 0.250 | | 106 | 40-140 | 1.88 | 30 | |
| Aroclor-1016 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 114 | 40-140 | 3.42 | 30 | |
| Aroclor-1260 | 0.22 | 0.10 | mg/Kg | 0.250 | | 89.3 | 40-140 | 3.17 | 30 | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 100 | 40-140 | 3.98 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.760* | | mg/Kg | 1.00 | | 76.0 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.906* | | mg/Kg | 1.00 | | 90.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.904* | | mg/Kg | 1.00 | | 90.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.846* | | mg/Kg | 1.00 | | 84.6 | 30-150 | | | |

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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 B034671 - SW-846 3540C** | | | | | | | | | | | |
| **Matrix Spike (B034671-MS1)** | | **Source: 11H0031-01** | | Prepared: 08/01/11 Analyzed: 08/02/11 | | | | | | | |
| **Aroclor-1016** | 0.61 | 0.10 | mg/Kg | 0.250 | 0.0 | **245** | * | 40-140 | | | MS-21 |
| **Aroclor-1016 [2C]** | 0.77 | 0.10 | mg/Kg | 0.250 | 0.0 | **306** | * | 40-140 | | | MS-21 |
| Aroclor-1260 | 0.31 | 0.10 | mg/Kg | 0.250 | 0.0 | 124 | | 40-140 | | | |
| **Aroclor-1260 [2C]** | 0.42 | 0.10 | mg/Kg | 0.250 | 0.0 | **167** | * | 40-140 | | | MS-21 |
| Surrogate: Decachlorobiphenyl | *1.01* | | mg/Kg | 1.00 | | 101 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.20* | | mg/Kg | 1.00 | | 120 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.01* | | mg/Kg | 1.00 | | 101 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.943* | | mg/Kg | 1.00 | | 94.3 | | 30-150 | | | |
| **Matrix Spike Dup (B034671-MSD1)** | | **Source: 11H0031-01** | | Prepared: 08/01/11 Analyzed: 08/02/11 | | | | | | | |
| **Aroclor-1016** | 0.62 | 0.10 | mg/Kg | 0.250 | 0.0 | **249** | * | 40-140 | 1.34 | 50 | MS-21 |
| **Aroclor-1016 [2C]** | 0.73 | 0.10 | mg/Kg | 0.250 | 0.0 | **291** | * | 40-140 | 5.19 | 50 | MS-21 |
| Aroclor-1260 | 0.33 | 0.10 | mg/Kg | 0.250 | 0.0 | 131 | | 40-140 | 5.10 | 50 | |
| **Aroclor-1260 [2C]** | 0.42 | 0.10 | mg/Kg | 0.250 | 0.0 | **169** | * | 40-140 | 1.34 | 50 | MS-21 |
| Surrogate: Decachlorobiphenyl | *1.04* | | mg/Kg | 1.00 | | 104 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.24* | | mg/Kg | 1.00 | | 124 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.972* | | mg/Kg | 1.00 | | 97.2 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.907* | | mg/Kg | 1.00 | | 90.7 | | 30-150 | | | |

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

**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. |

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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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

# CHAIN OF CUSTODY RECORD

11H0031

39 Spruce Street
East longmeadow, MA 01028



Company Name: Woodard & Curran
Address: 35 New England Business Center Suite 180, Andover MA 01810
Attention: George Franklin
Project Location: UMass Amherst, Amherst MA
Sampled By: Rhonda Forrester

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

Telephone: (978) 557-8150
Project # 224733
Client PO#

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

# of Containers: 1
** Preservation: none
***Container Code: A

ANALYSIS REQUESTED: PCBs (Soxhlet)

Dissolved Metals
○ Field Filtered
○ Lab to Filter

| 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 | PCBs (Soxhlet) |
|---|---|---|---|---|---|---|---|---|
| -1 | TH-CBC-128 | 8-1-11 | 10:40 | | X | S | L | X |
| -2 | TH-CBC-129 | | 10:55 | | X | S | L | X |
| -3 | TH-CBC-130 | | 11:43 | | X | S | L | X |
| -4 | TH-CBC-131 | | 12:20 | | X | S | L | X |
| -5 | TH-VBC-133 | | 14:10 | | X | S | L | X |

⊗ IDs revised per COC attached. MEC 8/2/11

Comments:
PCBs by USEPA 8082 via 3540C (Soxhlet)
R.L. ≤ 1.0 mg/kg

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 ______

| Signature | Date/Time |
|---|---|
| Relinquished by: (signature) [signature] | 8-1-11/14:20 |
| Received by: (signature) [signature] | 8/1 14:20 |
| Relinquished by: (signature) [signature] | 8/1 1635 |
| Received by: (signature) [signature] 3-5°C | 8/1/11 16:35 |

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 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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# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

11H0031

Company Name: Woodard & Curran
Address: 35 New England Business Center Suite 180, Andover MA 01810
Attention: George Franklin
Project Location: UMass Amherst, Amherst MA
Sampled By: Rhonda Forrester

Telephone: (978) 557-8150
Project #: 224733
Client PO#:

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

Project Proposal Provided? (for billing purposes)
O 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 | PCBs (Soxhlet) |
|---|---|---|---|---|---|---|---|---|
| -1 | TH-CBC-128 | 8-1-11 | 10:40 | | X | S | L | X |
| -2 | TH-CBC-129 | | 10:55 | | X | S | L | X |
| -3 | TH-CBC-130 | | 11:43 | | X | S | L | X |
| -4 | TH-CBC-131 | | 12:20 | | X | S | L | X |
| -5 | TH-VBC-133 | | 14:10 | | X | S | L | X |

| # of Containers | 1 |
|---|---|
| ** Preservation | none |
| ***Container Code | A |

ANALYSIS REQUESTED

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:
PCBs by USEPA 8082 via 3540C (Soxhlet)
R.L. ≤ 1.0 mg/kg

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: |
|---|---|
| Rhonda M Forrester | 8-1-11/14:20 |
| Received by: (signature) | Date/Time: 8/1 1420 |
| Relinquished by: (signature) | Date/Time: 8/1 1635 |
| Received by: (signature) 3-5a | Date/Time: 8/1/11 16:35 |

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 ?
O MCP Analytical Certification Form Required
O RCP Analysis Certification Form Required
O 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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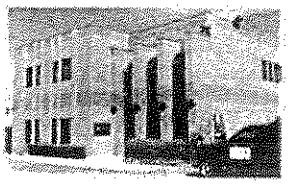

# Sample Receipt Checklist

**CLIENT NAME:** Woodard + Curran **RECEIVED BY:** CB **DATE:** 8/1/14

**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 3.5 Temperature °C by Temp gun _____

**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:

## 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) | 5 | 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:**

**Do all samples have the proper Acid pH: Yes No N/A** _____

**Do all samples have the proper Base pH: Yes No N/A** _____

Doc# 277

**11H0031-01** TH-CBC-142

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.38 | 0.372495 | 1.99 |
| Aroclor-1248 [2C] | 0.55 | 0.52367 | 4.9 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.18 | 1.41226 | 17.9 |
| Tetrachloro-m-xylene | 1.06 | 0.95632 | 10.3 |

**11H0031-02** TH-CBC-143

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 | 0.23 | 0.22715 | 1.25 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.921 | 1.09565 | 17.3 |
| Tetrachloro-m-xylene | 0.852 | 0.80109 | 6.16 |

**11H0031-03** TH-CBC-144

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.14 | 0.139205 | 0.569 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.71 | 2.033765 | 17.3 |
| Tetrachloro-m-xylene | 1.57 | 1.45147 | 7.85 |

**11H0031-04** TH-CBC-145

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 [2C] | 0.88 | 0.8653318 | 1.68 |
| Aroclor-1254 [2C] | 0.43 | 0.3997636 | 7.29 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.14 | 1.361968 | 17.7 |
| Tetrachloro-m-xylene | 1.03 | 0.9503864 | 8.04 |

**11H0031-05** TH-VBC-146

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.05 | 1.245752 | 17.1 |
| Tetrachloro-m-xylene | 0.991 | 0.9092477 | 8.6 |

**B034671-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.892 | 0.84824 | 5.03 |
| Decachlorobiphenyl | 1.01 | 1.205885 | 17.7 |

**B034671-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.27 | 0.293915 | 8.48 |
| Aroclor-1260 | 0.23 | 0.260195 | 12.3 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.829 | 0.990715 | 17.8 |
| Tetrachloro-m-xylene | 0.945 | 0.90915 | 3.87 |

**B034671-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.22 | 0.250045 | 12.8 |
| Aroclor-1016 | 0.26 | 0.284035 | 8.84 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.760 | 0.90571 | 17.5 |
| Tetrachloro-m-xylene | 0.904 | 0.84583 | 6.65 |

**B034671-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.31 | 0.41712 | 29.5 |
| Aroclor-1016 | 0.61 | 0.765305 | 22.6 |

| Surrogates | | | |
|---|---|---|---|
| Decachlorobiphenyl | 1.01 | 1.195755 | 16.8 |
| Tetrachloro-m-xylene | 1.01 | 0.942595 | 6.9 |

**B034671-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.62 | 0.726605 | 15.8 |
| Aroclor-1260 | 0.33 | 0.422765 | 24.6 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.972 | 0.90724 | 6.89 |
| Decachlorobiphenyl | 1.04 | 1.23507 | 17.1 |

# MADEP MCP Analytical Method Report Certification Form

| | | | |
|---|---|---|---|
| Laboratory Name: | Con-Test Analytical Laboratory | Project #: | 11H0031 |
| Project Location: | UMASS Amherst, Amherst, MA | RTN: | |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0031-01 thru 11H0031-05

Matrices: Product/Solid

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☐ Yes | ☑ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: M Erickson Position: Laboratory Director

Printed Name: Michael A. Erickson Date: 08/03/11

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

August 5, 2011

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

Project Location: UMASS - Tobin  Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0070

Enclosed are results of analyses for samples received by the laboratory on August 2, 2011. 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: 8/5/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0070

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

PROJECT LOCATION: UMASS - Tobin Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBS-150 | 11H0070-03 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-151 | 11H0070-04 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-152 | 11H0070-05 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-153 | 11H0070-06 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-154 | 11H0070-07 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-155 | 11H0070-08 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-156 | 11H0070-09 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-147 | 11H0070-10 | Concrete | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-157 | 11H0070-11 | Soil | | SM 2540G | |
| | | | | 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 individuuals 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 - Tobin Amherst, MA  Sample Description:  Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-150**  Sampled: 8/2/2011 10:40

**Sample ID: 11H0070-03**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:25 | PJG |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:25 | PJG |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:25 | PJG |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:25 | PJG |
| Aroclor-1248 [2] | 0.14 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:25 | PJG |
| Aroclor-1254 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:25 | PJG |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:25 | PJG |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:25 | PJG |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:25 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 90.8 | 30-150 | | 8/3/11 21:25 |
| Decachlorobiphenyl [2] | 94.3 | 30-150 | | 8/3/11 21:25 |
| Tetrachloro-m-xylene [1] | 93.1 | 30-150 | | 8/3/11 21:25 |
| Tetrachloro-m-xylene [2] | 108 | 30-150 | | 8/3/11 21:25 |

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

Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-150**
Sampled: 8/2/2011 10:40

**Sample ID: 11H0070-03**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 93.9 | | % Wt | 1 | | SM 2540G | 8/2/11 | 8/3/11 8:45 | PJS |

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

Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-151**  Sampled: 8/2/2011 10:45

**Sample ID: 11H0070-04**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.21 | mg/Kg dry | 2 | | SW-846 8082A | 8/2/11 | 8/4/11 17:02 | PJG |
| Aroclor-1221 [1] | ND | 0.21 | mg/Kg dry | 2 | | SW-846 8082A | 8/2/11 | 8/4/11 17:02 | PJG |
| Aroclor-1232 [1] | ND | 0.21 | mg/Kg dry | 2 | | SW-846 8082A | 8/2/11 | 8/4/11 17:02 | PJG |
| Aroclor-1242 [1] | ND | 0.21 | mg/Kg dry | 2 | | SW-846 8082A | 8/2/11 | 8/4/11 17:02 | PJG |
| Aroclor-1248 [1] | 2.0 | 0.21 | mg/Kg dry | 2 | | SW-846 8082A | 8/2/11 | 8/4/11 17:02 | PJG |
| Aroclor-1254 [1] | 0.89 | 0.21 | mg/Kg dry | 2 | | SW-846 8082A | 8/2/11 | 8/4/11 17:02 | PJG |
| Aroclor-1260 [1] | ND | 0.21 | mg/Kg dry | 2 | | SW-846 8082A | 8/2/11 | 8/4/11 17:02 | PJG |
| Aroclor-1262 [1] | ND | 0.21 | mg/Kg dry | 2 | | SW-846 8082A | 8/2/11 | 8/4/11 17:02 | PJG |
| Aroclor-1268 [1] | ND | 0.21 | mg/Kg dry | 2 | | SW-846 8082A | 8/2/11 | 8/4/11 17:02 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 88.5 | 30-150 | | 8/4/11 17:02 |
| Decachlorobiphenyl [2] | 114 | 30-150 | | 8/4/11 17:02 |
| Tetrachloro-m-xylene [1] | 129 | 30-150 | | 8/4/11 17:02 |
| Tetrachloro-m-xylene [2] | 81.9 | 30-150 | | 8/4/11 17:02 |

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

Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-151**
Sampled: 8/2/2011 10:45

**Sample ID: 11H0070-04**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.4 | | % Wt | 1 | | SM 2540G | 8/2/11 | 8/3/11 8:45 | PJS |

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

Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-152**  Sampled: 8/2/2011 10:50

**Sample ID: 11H0070-05**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:51 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:51 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:51 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:51 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:51 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:51 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:51 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:51 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 21:51 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 89.9 | 30-150 | | 8/3/11 21:51 |
| Decachlorobiphenyl [2] | 94.1 | 30-150 | | 8/3/11 21:51 |
| Tetrachloro-m-xylene [1] | 93.7 | 30-150 | | 8/3/11 21:51 |
| Tetrachloro-m-xylene [2] | 109 | 30-150 | | 8/3/11 21:51 |

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

Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-152**  Sampled: 8/2/2011 10:50

**Sample ID: 11H0070-05**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.4 | | % Wt | 1 | | SM 2540G | 8/2/11 | 8/3/11 8:45 | PJS |

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

Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-153**  Sampled: 8/2/2011 10:55

**Sample ID: 11H0070-06**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:04 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:04 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:04 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:04 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:04 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:04 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:04 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:04 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:04 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 95.6 | 30-150 | | 8/3/11 22:04 |
| Decachlorobiphenyl [2] | 98.1 | 30-150 | | 8/3/11 22:04 |
| Tetrachloro-m-xylene [1] | 95.8 | 30-150 | | 8/3/11 22:04 |
| Tetrachloro-m-xylene [2] | 111 | 30-150 | | 8/3/11 22:04 |

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

Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-153**
Sampled: 8/2/2011 10:55

**Sample ID: 11H0070-06**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.2 | | % Wt | 1 | | SM 2540G | 8/2/11 | 8/3/11 8:45 | PJS |

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

Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-CBC-154** Sampled: 8/2/2011 11:00

**Sample ID: 11H0070-07**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.35 | mg/Kg | 4 | | SW-846 8082A | 8/2/11 | 8/4/11 16:42 | PJG |
| Aroclor-1221 [1] | ND | 0.35 | mg/Kg | 4 | | SW-846 8082A | 8/2/11 | 8/4/11 16:42 | PJG |
| Aroclor-1232 [1] | ND | 0.35 | mg/Kg | 4 | | SW-846 8082A | 8/2/11 | 8/4/11 16:42 | PJG |
| Aroclor-1242 [1] | ND | 0.35 | mg/Kg | 4 | | SW-846 8082A | 8/2/11 | 8/4/11 16:42 | PJG |
| Aroclor-1248 [1] | 1.6 | 0.35 | mg/Kg | 4 | | SW-846 8082A | 8/2/11 | 8/4/11 16:42 | PJG |
| Aroclor-1254 [1] | 0.77 | 0.35 | mg/Kg | 4 | | SW-846 8082A | 8/2/11 | 8/4/11 16:42 | PJG |
| Aroclor-1260 [1] | ND | 0.35 | mg/Kg | 4 | | SW-846 8082A | 8/2/11 | 8/4/11 16:42 | PJG |
| Aroclor-1262 [1] | ND | 0.35 | mg/Kg | 4 | | SW-846 8082A | 8/2/11 | 8/4/11 16:42 | PJG |
| Aroclor-1268 [1] | ND | 0.35 | mg/Kg | 4 | | SW-846 8082A | 8/2/11 | 8/4/11 16:42 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 76.5 | 30-150 | | 8/4/11 16:42 |
| Decachlorobiphenyl [2] | 97.7 | 30-150 | | 8/4/11 16:42 |
| Tetrachloro-m-xylene [1] | 109 | 30-150 | | 8/4/11 16:42 |
| Tetrachloro-m-xylene [2] | 72.9 | 30-150 | | 8/4/11 16:42 |

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

Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-CBC-154**
Sampled: 8/2/2011 11:00

**Sample ID: 11H0070-07**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.2 | | % Wt | 1 | | SM 2540G | 8/2/11 | 8/3/11 8:45 | PJS |

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

Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-155** Sampled: 8/2/2011 11:15

**Sample ID: 11H0070-08**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:16 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:16 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:16 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:16 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:16 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:16 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:16 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:16 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:16 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 90.3 | 30-150 | | 8/3/11 22:16 |
| Decachlorobiphenyl [2] | 97.2 | 30-150 | | 8/3/11 22:16 |
| Tetrachloro-m-xylene [1] | 93.0 | 30-150 | | 8/3/11 22:16 |
| Tetrachloro-m-xylene [2] | 108 | 30-150 | | 8/3/11 22:16 |

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

Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-155**
Sampled: 8/2/2011 11:15

**Sample ID: 11H0070-08**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.6 | | % Wt | 1 | | SM 2540G | 8/2/11 | 8/3/11 8:45 | PJS |

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

Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-156** Sampled: 8/2/2011 11:20

**Sample ID: 11H0070-09**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:29 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:29 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:29 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:29 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:29 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:29 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:29 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:29 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:29 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.3 | 30-150 | | 8/3/11 22:29 |
| Decachlorobiphenyl [2] | 99.7 | 30-150 | | 8/3/11 22:29 |
| Tetrachloro-m-xylene [1] | 98.0 | 30-150 | | 8/3/11 22:29 |
| Tetrachloro-m-xylene [2] | 114 | 30-150 | | 8/3/11 22:29 |

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

Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-156**
Sampled: 8/2/2011 11:20

**Sample ID: 11H0070-09**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.6 | | % Wt | 1 | | SM 2540G | 8/2/11 | 8/3/11 8:45 | PJS |

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

Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-CBC-147**  Sampled: 8/2/2011 14:00

**Sample ID: 11H0070-10**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/2/11 | 8/3/11 18:58 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 18:58 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 18:58 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 18:58 | PJG |
| Aroclor-1248 [1] | 0.26 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 18:58 | PJG |
| Aroclor-1254 [1] | 0.17 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 18:58 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 18:58 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 18:58 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 18:58 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 73.4 | 30-150 | | 8/3/11 18:58 |
| Decachlorobiphenyl [2] | 98.6 | 30-150 | | 8/3/11 18:58 |
| Tetrachloro-m-xylene [1] | 100 | 30-150 | | 8/3/11 18:58 |
| Tetrachloro-m-xylene [2] | 68.6 | 30-150 | | 8/3/11 18:58 |

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

Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-CBC-147**
Sampled: 8/2/2011 14:00

**Sample ID: 11H0070-10**

Sample Matrix: Concrete

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.2 | | % Wt | 1 | | SM 2540G | 8/2/11 | 8/3/11 8:45 | PJS |

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Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-157** Sampled: 8/2/2011 13:30

**Sample ID: 11H0070-11**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:42 | PJG |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:42 | PJG |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:42 | PJG |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:42 | PJG |
| Aroclor-1248 [1] | 0.15 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:42 | PJG |
| Aroclor-1254 [2] | 0.13 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:42 | PJG |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:42 | PJG |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:42 | PJG |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/2/11 | 8/3/11 22:42 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.9 | 30-150 | | 8/3/11 22:42 |
| Decachlorobiphenyl [2] | 102 | 30-150 | | 8/3/11 22:42 |
| Tetrachloro-m-xylene [1] | 103 | 30-150 | | 8/3/11 22:42 |
| Tetrachloro-m-xylene [2] | 110 | 30-150 | | 8/3/11 22:42 |

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

Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0070

Date Received: 8/2/2011

**Field Sample #: TH-VBS-157**
Sampled: 8/2/2011 13:30

**Sample ID: 11H0070-11**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 87.0 | | % Wt | 1 | | SM 2540G | 8/2/11 | 8/3/11 8:45 | PJS |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11H0070-03 [TH-VBS-150] | B034758 | 08/02/11 |
| 11H0070-04 [TH-VBS-151] | B034758 | 08/02/11 |
| 11H0070-05 [TH-VBS-152] | B034758 | 08/02/11 |
| 11H0070-06 [TH-VBS-153] | B034758 | 08/02/11 |
| 11H0070-07 [TH-CBC-154] | B034758 | 08/02/11 |
| 11H0070-08 [TH-VBS-155] | B034758 | 08/02/11 |
| 11H0070-09 [TH-VBS-156] | B034758 | 08/02/11 |
| 11H0070-10 [TH-CBC-147] | B034758 | 08/02/11 |
| 11H0070-11 [TH-VBS-157] | B034758 | 08/02/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0070-07 [TH-CBC-154] | B034749 | 2.30 | 10.0 | 08/02/11 |
| 11H0070-10 [TH-CBC-147] | B034749 | 2.00 | 10.0 | 08/02/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0070-03 [TH-VBS-150] | B034751 | 10.1 | 50.0 | 08/02/11 |
| 11H0070-04 [TH-VBS-151] | B034751 | 10.1 | 50.0 | 08/02/11 |
| 11H0070-05 [TH-VBS-152] | B034751 | 10.2 | 50.0 | 08/02/11 |
| 11H0070-06 [TH-VBS-153] | B034751 | 10.2 | 50.0 | 08/02/11 |
| 11H0070-08 [TH-VBS-155] | B034751 | 10.3 | 50.0 | 08/02/11 |
| 11H0070-09 [TH-VBS-156] | B034751 | 10.3 | 50.0 | 08/02/11 |
| 11H0070-11 [TH-VBS-157] | B034751 | 10.3 | 50.0 | 08/02/11 |

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

**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 B034749 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034749-BLK1)** | | | | Prepared: 08/02/11 Analyzed: 08/03/11 | | | | | | |
| 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 | *1.10* | | mg/Kg | 1.00 | | 110 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.06* | | mg/Kg | 1.00 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.981* | | mg/Kg | 1.00 | | 98.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.967* | | mg/Kg | 1.00 | | 96.7 | 30-150 | | | |
| **LCS (B034749-BS1)** | | | | Prepared: 08/02/11 Analyzed: 08/03/11 | | | | | | |
| Aroclor-1016 | 0.32 | 0.10 | mg/Kg | 0.250 | | 128 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.34 | 0.10 | mg/Kg | 0.250 | | 137 | 40-140 | | | |
| Aroclor-1260 | 0.33 | 0.10 | mg/Kg | 0.250 | | 131 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.33 | 0.10 | mg/Kg | 0.250 | | 131 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *1.11* | | mg/Kg | 1.00 | | 111 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.07* | | mg/Kg | 1.00 | | 107 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.03* | | mg/Kg | 1.00 | | 103 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.996* | | mg/Kg | 1.00 | | 99.6 | 30-150 | | | |
| **LCS Dup (B034749-BSD1)** | | | | Prepared: 08/02/11 Analyzed: 08/03/11 | | | | | | |
| Aroclor-1016 | 0.29 | 0.10 | mg/Kg | 0.250 | | 114 | 40-140 | 11.2 | 30 | |
| Aroclor-1016 [2C] | 0.30 | 0.10 | mg/Kg | 0.250 | | 120 | 40-140 | 13.5 | 30 | |
| Aroclor-1260 | 0.31 | 0.10 | mg/Kg | 0.250 | | 123 | 40-140 | 6.92 | 30 | |
| Aroclor-1260 [2C] | 0.30 | 0.10 | mg/Kg | 0.250 | | 120 | 40-140 | 9.08 | 30 | |
| Surrogate: Decachlorobiphenyl | *1.07* | | mg/Kg | 1.00 | | 107 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.05* | | mg/Kg | 1.00 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.974* | | mg/Kg | 1.00 | | 97.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.949* | | mg/Kg | 1.00 | | 94.9 | 30-150 | | | |

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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 B034751 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034751-BLK1)** | | | | Prepared: 08/02/11 Analyzed: 08/03/11 | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.183* | | mg/Kg wet | 0.200 | | 91.4 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.198* | | mg/Kg wet | 0.200 | | 98.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.195* | | mg/Kg wet | 0.200 | | 97.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.208* | | mg/Kg wet | 0.200 | | 104 | 30-150 | | | |
| **LCS (B034751-BS1)** | | | | Prepared: 08/02/11 Analyzed: 08/03/11 | | | | | | |
| Aroclor-1016 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 97.4 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 111 | 40-140 | | | |
| Aroclor-1260 | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 98.5 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 110 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.187* | | mg/Kg wet | 0.200 | | 93.6 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.203* | | mg/Kg wet | 0.200 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.201* | | mg/Kg wet | 0.200 | | 100 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.214* | | mg/Kg wet | 0.200 | | 107 | 30-150 | | | |
| **LCS Dup (B034751-BSD1)** | | | | Prepared: 08/02/11 Analyzed: 08/03/11 | | | | | | |
| Aroclor-1016 | 0.18 | 0.10 | mg/Kg wet | 0.200 | | 92.4 | 40-140 | 5.24 | 30 | |
| Aroclor-1016 [2C] | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 106 | 40-140 | 4.94 | 30 | |
| Aroclor-1260 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 95.0 | 40-140 | 3.59 | 30 | |
| Aroclor-1260 [2C] | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 106 | 40-140 | 3.72 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.173* | | mg/Kg wet | 0.200 | | 86.7 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.188* | | mg/Kg wet | 0.200 | | 93.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.187* | | mg/Kg wet | 0.200 | | 93.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.199* | | mg/Kg wet | 0.200 | | 99.5 | 30-150 | | | |

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

**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 |
| ***SW-846 8082A in Soil*** | |
| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 2

11H0070

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERST, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ✓ EMAIL ○ WEBSITE
Fax # franklin@
Email: jhamel@woodardcurran.com
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 | PCB's (Soxhlet Extraction) | | | | | | | | | | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | I | | | | | | | | | | I | | A |
| -1 | TH-VBS-148 | 8/2/11 | 1030 | | ✓ | S | L | X | | | | | | | | | | | | |
| -2 | TH-VBS-149 | | 1035 | | ✓ | S | L | X | | | | | | | | | | | | |
| -3 | TH-VBS-150 | | 1040 | | ✓ | S | L | X | | | | | | | | | | | | |
| -4 | TH-VBS-151 | | 1045 | | ✓ | S | L | X | | | | | | | | | | | | |
| -5 | TH-VBS-152 | | 1050 | | ✓ | S | L | X | | | | | | | | | | | | |
| -6 | TH-VBS-153 | | 1055 | | ✓ | S | L | X | | | | | | | | | | | | |
| -7 | TH-CBC-154 | | 1100 | | ✓ | S | L | X | | | | | | | | | | | | |
| -8 | TH-VBS-155 | | 1115 | | ✓ | S | L | X | | | | | | | | | | | | |
| -9 | TH-VBS-156 | | 1120 | | ✓ | S | L | X | | | | | | | | | | | | |
| -10 | TH-CBC-147 | 8/1/11 | 1400 | | ✓ | S | L | X | | | | | | | | | | | | |

ANALYSIS REQUESTED

Comments: PCB's by USEPA 8082 via 3540c (Soxhlet)
R.L. ≤1.0 mg/kg

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: 8/2/11 | 15:00 |
| Received by: (signature) | Date/Time: 8/2 | 15:00 |
| Relinquished by: (signature) | Date/Time: 8/2 | 15:55 |
| Received by: (signature) 2-4oc | Date/Time: 8/2/11 | 15:55 |

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 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

# CHAIN OF CUSTODY RECORD

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Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

Page 2 of 2

1140070

Company Name: WOODARD & CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERST, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

**DATA DELIVERY** (check all that apply)
O FAX ☑ EMAIL O WEBSITE
Fax # gfranklin
Email: jhamel@woodardcurran.com
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 | PCB's (Soxhlet Extraction) | | | | | | | | | | | # of Containers | ** Preservation | ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | | | | | | | | | | | 1 | I | A |
| -11 | TH-VBS-157 | 8/2/11 | 1330 | | ✓ | S | L | X | | | | | | | | | | | | | |
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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: PCB's by USEPA 8082 via 3540c (Soxhlet)
R.L. ≤1.0 mg/kg

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: 8/2/11 1500 |
|---|---|
| Received by: (signature) | Date/Time: 8/2 1500 |
| Relinquished by: (signature) | Date/Time: 8/2 1555 |
| Received by: (signature) 2.4°c | Date/Time: 8/2/11 15:55 |

**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 ?**
O MCP Analytical Certification Form Required
O RCP Analysis Certification Form Required
O MA State DW Form Required PWSID # _____

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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

con-test® ANALYTICAL LABORATORY

# Sample Receipt Checklist

CLIENT NAME: Woodard & Curran RECEIVED BY: CB DATE: 8/2/11

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 2.4 °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: _____

## 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) | 11 | | 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:

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

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

Doc# 277
Rev. 1 May 2011

**11H0069-01** 802JH-02

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 | 0.39 | 0.3073087 | 23.7 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.652 | 0.9138739 | 33.4 |
| Tetrachloro-m-xylene | 0.832 | 0.5842435 | 35 |

**11H0070-03** TH-VBS-150

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 [2C] | 0.14 | 0.1289817 | 8.19 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.191 | 0.1988633 | 4.03 |
| Tetrachloro-m-xylene | 0.196 | 0.2279653 | 15.1 |

**11H0070-04** TH-VBS-151

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 | 0.89 | 0.7602071 | 15.7 |
| Aroclor-1248 | 2.0 | 1.653361 | 19 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.184 | 0.2372605 | 25.3 |
| Tetrachloro-m-xylene | 0.268 | 0.1699566 | 44.8 |

**11H0070-05** TH-VBS-152

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.185 | 0.1933397 | 4.41 |
| Tetrachloro-m-xylene | 0.193 | 0.2238665 | 14.8 |

**11H0070-06** TH-VBS-153

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.197 | 0.2290122 | 15 |
| Decachlorobiphenyl | 0.197 | 0.202036 | 2.52 |

**11H0070-07** TH-CBC-154

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 1.6 | 1.119287 | 35.4 |
| Aroclor-1254 | 0.77 | 0.5969913 | 25.3 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.665 | 0.8491826 | 24.3 |
| Tetrachloro-m-xylene | 0.946 | 0.6337044 | 39.5 |

**11H0070-08** TH-VBS-155

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.183 | 0.1973738 | 7.56 |
| Tetrachloro-m-xylene | 0.189 | 0.2190204 | 14.7 |

**11H0070-09** TH-VBS-156

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.194 | 0.2047404 | 5.39 |
| Tetrachloro-m-xylene | 0.201 | 0.2329789 | 14.7 |

**11H0070-10** TH-CBC-147

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.26 | 0.199585 | 26.3 |
| Aroclor-1254 | 0.17 | 0.13512 | 22.9 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.734 | 0.985865 | 29.3 |
| Tetrachloro-m-xylene | 1.00 | 0.6855 | 37.3 |

**11H0070-11** TH-VBS-157

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.15 | 0.133696 | 11.5 |
| Aroclor-1254 [2C] | 0.13 | 0.1023714 | 23.8 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.212 | 0.228027 | 7.28 |
| Tetrachloro-m-xylene | 0.230 | 0.2444314 | 6.08 |

**B034749-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.10 | 1.06353 | 3.37 |
| Tetrachloro-m-xylene | 0.981 | 0.96673 | 1.47 |

**B034749-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.32 | 0.342865 | 6.9 |
| Aroclor-1260 | 0.33 | 0.32733 | 0.812 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.11 | 1.073495 | 3.34 |
| Tetrachloro-m-xylene | 1.03 | 0.99602 | 3.35 |

**B034749-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.29 | 0.299525 | 3.23 |
| Aroclor-1260 | 0.31 | 0.298885 | 3.65 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.07 | 1.045875 | 2.28 |
| Tetrachloro-m-xylene | 0.974 | 0.949185 | 2.58 |

**B034749-MS1** Matrix Spike

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.37 | 0.3919286 | 5.76 |
| Aroclor-1016 | 0.34 | 0.3609238 | 5.97 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.03 | 1.003981 | 2.56 |
| Tetrachloro-m-xylene | 0.913 | 0.8578191 | 6.23 |

**B034749-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.41 | 0.4267227 | 4 |
| Aroclor-1016 | 0.36 | 0.3883773 | 7.58 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.05 | 1.018 | 3.09 |
| Tetrachloro-m-xylene | 0.907 | 0.8961818 | 1.2 |

**B034751-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.195 | 0.20785 | 6.38 |
| Decachlorobiphenyl | 0.183 | 0.19767 | 7.71 |

**B034751-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.19 | 0.221705 | 15.4 |
| Aroclor-1260 | 0.20 | 0.219385 | 9.24 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.201 | 0.214015 | 6.27 |
| Decachlorobiphenyl | 0.187 | 0.20336 | 8.38 |

**B034751-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Aroclor-1016 | 0.18 | 0.211025 | 15.9 |
| Aroclor-1260 | 0.19 | 0.21138 | 10.7 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.187 | 0.199005 | 6.22 |
| Decachlorobiphenyl | 0.173 | 0.187785 | 8.2 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0070 |
| Project Location: UMASS - Tobin Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0070-03 thru 11H0070-11

Matrices: Product/Solid Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | |
|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 08/04/11

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

August 8, 2011

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

Project Location: Umass-Tobin Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0133

Enclosed are results of analyses for samples received by the laboratory on August 3, 2011. 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: 8/8/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0133

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

PROJECT LOCATION: Umass-Tobin Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-CBC-158 | 11H0133-01 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBCD-159 | 11H0133-02 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBCQ-160 | 11H0133-03 | Equipment Blank Water | | SW-846 8082A | |
| TH-VBC-161 | 11H0133-04 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBC-162 | 11H0133-05 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBC-163 | 11H0133-06 | Soil | | SM 2540G | |
| | | | | 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, Aroclor-1016 [2C]**

B034818-MS1, B034818-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 individuuals 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-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-CBC-158**
Sampled: 8/3/2011 10:50

**Sample ID: 11H0133-01**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/3/11 | 8/4/11 20:18 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:18 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:18 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:18 | JMB |
| Aroclor-1248 [1] | 0.19 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:18 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:18 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:18 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:18 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:18 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 73.8 | 30-150 | | 8/4/11 20:18 |
| Decachlorobiphenyl [2] | 102 | 30-150 | | 8/4/11 20:18 |
| Tetrachloro-m-xylene [1] | 106 | 30-150 | | 8/4/11 20:18 |
| Tetrachloro-m-xylene [2] | 74.4 | 30-150 | | 8/4/11 20:18 |

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

Project Location: Umass-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-CBC-158**
Sampled: 8/3/2011 10:50

**Sample ID: 11H0133-01**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.9 | | % Wt | 1 | | SM 2540G | 8/4/11 | 8/5/11 8:42 | PJS |

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

Project Location: Umass-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-CBCD-159**
Sampled: 8/3/2011 10:50

**Sample ID: 11H0133-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/3/11 | 8/4/11 20:31 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:31 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:31 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:31 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:31 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:31 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:31 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:31 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:31 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 75.5 | 30-150 | | 8/4/11 20:31 |
| Decachlorobiphenyl [2] | 103 | 30-150 | | 8/4/11 20:31 |
| Tetrachloro-m-xylene [1] | 111 | 30-150 | | 8/4/11 20:31 |
| Tetrachloro-m-xylene [2] | 76.9 | 30-150 | | 8/4/11 20:31 |

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Project Location: Umass-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-CBCD-159**
Sampled: 8/3/2011 10:50

**Sample ID: 11H0133-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.7 | | % Wt | 1 | | SM 2540G | 8/4/11 | 8/5/11 8:42 | PJS |

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Project Location: Umass-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-CBCQ-160**
Sampled: 8/3/2011 11:00

**Sample ID: 11H0133-03**

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 | 8/4/11 | 8/5/11 20:17 | JMB |
| Aroclor-1221 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/4/11 | 8/5/11 20:17 | JMB |
| Aroclor-1232 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/4/11 | 8/5/11 20:17 | JMB |
| Aroclor-1242 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/4/11 | 8/5/11 20:17 | JMB |
| Aroclor-1248 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/4/11 | 8/5/11 20:17 | JMB |
| Aroclor-1254 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/4/11 | 8/5/11 20:17 | JMB |
| Aroclor-1260 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/4/11 | 8/5/11 20:17 | JMB |
| Aroclor-1262 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/4/11 | 8/5/11 20:17 | JMB |
| Aroclor-1268 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/4/11 | 8/5/11 20:17 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 38.1 | 30-150 | | 8/5/11 20:17 |
| Decachlorobiphenyl [2] | 41.2 | 30-150 | | 8/5/11 20:17 |
| Tetrachloro-m-xylene [1] | 80.7 | 30-150 | | 8/5/11 20:17 |
| Tetrachloro-m-xylene [2] | 84.0 | 30-150 | | 8/5/11 20:17 |

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Project Location: Umass-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-VBC-161**
Sampled: 8/3/2011 13:00

**Sample ID: 11H0133-04**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/3/11 | 8/4/11 20:44 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:44 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:44 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:44 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:44 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:44 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:44 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:44 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:44 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 75.6 | 30-150 | | 8/4/11 20:44 |
| Decachlorobiphenyl [2] | 104 | 30-150 | | 8/4/11 20:44 |
| Tetrachloro-m-xylene [1] | 111 | 30-150 | | 8/4/11 20:44 |
| Tetrachloro-m-xylene [2] | 77.1 | 30-150 | | 8/4/11 20:44 |

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Project Location: Umass-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-VBC-161**
Sampled: 8/3/2011 13:00

**Sample ID: 11H0133-04**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.9 | | % Wt | 1 | | SM 2540G | 8/4/11 | 8/5/11 8:42 | PJS |

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Project Location: Umass-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-VBC-162**
Sampled: 8/3/2011 13:10

**Sample ID: 11H0133-05**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/3/11 | 8/4/11 20:57 | JMB |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:57 | JMB |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:57 | JMB |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:57 | JMB |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:57 | JMB |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:57 | JMB |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:57 | JMB |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:57 | JMB |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 20:57 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 74.4 | 30-150 | | 8/4/11 20:57 |
| Decachlorobiphenyl [2] | 101 | 30-150 | | 8/4/11 20:57 |
| Tetrachloro-m-xylene [1] | 108 | 30-150 | | 8/4/11 20:57 |
| Tetrachloro-m-xylene [2] | 75.1 | 30-150 | | 8/4/11 20:57 |

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Project Location: Umass-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-VBC-162**
Sampled: 8/3/2011 13:10

**Sample ID: 11H0133-05**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.8 | | % Wt | 1 | | SM 2540G | 8/4/11 | 8/5/11 8:42 | PJS |

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

Project Location: Umass-Tobin Amherst, MA | Sample Description: | Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-VBC-163** | Sampled: 8/3/2011 13:20

**Sample ID: 11H0133-06**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/3/11 | 8/4/11 21:10 | JMB |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 21:10 | JMB |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 21:10 | JMB |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 21:10 | JMB |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 21:10 | JMB |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 21:10 | JMB |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 21:10 | JMB |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 21:10 | JMB |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/3/11 | 8/4/11 21:10 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 57.5 | 30-150 | | 8/4/11 21:10 |
| Decachlorobiphenyl [2] | 77.4 | 30-150 | | 8/4/11 21:10 |
| Tetrachloro-m-xylene [1] | 84.2 | 30-150 | | 8/4/11 21:10 |
| Tetrachloro-m-xylene [2] | 57.7 | 30-150 | | 8/4/11 21:10 |

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

Project Location: Umass-Tobin Amherst, MA
Sample Description:
Work Order: 11H0133

Date Received: 8/3/2011

**Field Sample #: TH-VBC-163**
Sampled: 8/3/2011 13:20

**Sample ID: 11H0133-06**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.4 | | % Wt | 1 | | SM 2540G | 8/4/11 | 8/5/11 8:42 | PJS |

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

## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11H0133-01 [TH-CBC-158] | B034914 | 08/04/11 |
| 11H0133-02 [TH-CBCD-159] | B034914 | 08/04/11 |
| 11H0133-04 [TH-VBC-161] | B034914 | 08/04/11 |
| 11H0133-05 [TH-VBC-162] | B034914 | 08/04/11 |
| 11H0133-06 [TH-VBC-163] | B034914 | 08/04/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0133-01 [TH-CBC-158] | B034818 | 2.20 | 10.0 | 08/03/11 |
| 11H0133-02 [TH-CBCD-159] | B034818 | 2.10 | 10.0 | 08/03/11 |
| 11H0133-04 [TH-VBC-161] | B034818 | 2.10 | 10.0 | 08/03/11 |
| 11H0133-05 [TH-VBC-162] | B034818 | 2.30 | 10.0 | 08/03/11 |
| 11H0133-06 [TH-VBC-163] | B034818 | 2.30 | 10.0 | 08/03/11 |

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

| Lab Number [Field ID] | Batch | Initial [mL] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0133-03 [TH-CBCQ-160] | B034825 | 1000 | 10.0 | 08/04/11 |

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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 B034818 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034818-BLK1)** | | | | Prepared: 08/03/11 Analyzed: 08/04/11 | | | | | | |
| 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 | *0.972* | | mg/Kg | 1.00 | | 97.2 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.938* | | mg/Kg | 1.00 | | 93.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.995* | | mg/Kg | 1.00 | | 99.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.994* | | mg/Kg | 1.00 | | 99.4 | 30-150 | | | |
| **LCS (B034818-BS1)** | | | | Prepared: 08/03/11 Analyzed: 08/04/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg | 0.250 | | 102 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 99.4 | 40-140 | | | |
| Aroclor-1260 | 0.28 | 0.10 | mg/Kg | 0.250 | | 113 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 114 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.969* | | mg/Kg | 1.00 | | 96.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.957* | | mg/Kg | 1.00 | | 95.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.997* | | mg/Kg | 1.00 | | 99.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.993* | | mg/Kg | 1.00 | | 99.3 | 30-150 | | | |
| **LCS Dup (B034818-BSD1)** | | | | Prepared: 08/03/11 Analyzed: 08/04/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg | 0.250 | | 94.2 | 40-140 | 7.73 | 30 | |
| Aroclor-1016 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 105 | 40-140 | 5.59 | 30 | |
| Aroclor-1260 | 0.30 | 0.10 | mg/Kg | 0.250 | | 120 | 40-140 | 5.62 | 30 | |
| Aroclor-1260 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 118 | 40-140 | 3.40 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.999* | | mg/Kg | 1.00 | | 99.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.968* | | mg/Kg | 1.00 | | 96.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.02* | | mg/Kg | 1.00 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.02* | | mg/Kg | 1.00 | | 102 | 30-150 | | | |

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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 B034818 - SW-846 3540C** | | | | | | | | | | | |
| **Matrix Spike (B034818-MS1)** | | **Source: 11H0133-01** | | Prepared: 08/03/11 Analyzed: 08/04/11 | | | | | | | |
| **Aroclor-1016** | 0.40 | 0.087 | mg/Kg | 0.217 | 0.0 | **183** | * | 40-140 | | | MS-21 |
| **Aroclor-1016 [2C]** | 0.48 | 0.087 | mg/Kg | 0.217 | 0.0 | **219** | * | 40-140 | | | MS-21 |
| Aroclor-1260 | 0.26 | 0.087 | mg/Kg | 0.217 | 0.0 | 119 | | 40-140 | | | |
| Aroclor-1260 [2C] | 0.29 | 0.087 | mg/Kg | 0.217 | 0.0 | 133 | | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.887* | | mg/Kg | 0.870 | | 102 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.879* | | mg/Kg | 0.870 | | 101 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.883* | | mg/Kg | 0.870 | | 102 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.855* | | mg/Kg | 0.870 | | 98.3 | | 30-150 | | | |
| **Matrix Spike Dup (B034818-MSD1)** | | **Source: 11H0133-01** | | Prepared: 08/03/11 Analyzed: 08/04/11 | | | | | | | |
| **Aroclor-1016** | 0.35 | 0.091 | mg/Kg | 0.227 | 0.0 | **155** | * | 40-140 | 12.2 | 50 | MS-21 |
| **Aroclor-1016 [2C]** | 0.37 | 0.091 | mg/Kg | 0.227 | 0.0 | **162** | * | 40-140 | 25.8 | 50 | MS-21 |
| Aroclor-1260 | 0.28 | 0.091 | mg/Kg | 0.227 | 0.0 | 122 | | 40-140 | 6.17 | 50 | |
| Aroclor-1260 [2C] | 0.29 | 0.091 | mg/Kg | 0.227 | 0.0 | 128 | | 40-140 | 0.902 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.927* | | mg/Kg | 0.909 | | 102 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.918* | | mg/Kg | 0.909 | | 101 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.919* | | mg/Kg | 0.909 | | 101 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.912* | | mg/Kg | 0.909 | | 100 | | 30-150 | | | |
| **Batch B034825 - SW-846 3510C** | | | | | | | | | | | |
| **Blank (B034825-BLK1)** | | | | Prepared: 08/04/11 Analyzed: 08/05/11 | | | | | | | |
| 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 | *1.32* | | µg/L | 2.00 | | 66.2 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.40* | | µg/L | 2.00 | | 69.9 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.49* | | µg/L | 2.00 | | 74.4 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.55* | | µg/L | 2.00 | | 77.5 | | 30-150 | | | |

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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 B034825 - SW-846 3510C** | | | | | | | | | | |
| **LCS (B034825-BS1)** | | | | Prepared: 08/04/11 Analyzed: 08/05/11 | | | | | | |
| Aroclor-1016 | 0.42 | 0.20 | µg/L | 0.500 | | 83.8 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.47 | 0.20 | µg/L | 0.500 | | 94.5 | 40-140 | | | |
| Aroclor-1260 | 0.45 | 0.20 | µg/L | 0.500 | | 90.7 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.50 | 0.20 | µg/L | 0.500 | | 99.6 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *1.05* | | µg/L | 2.00 | | 52.7 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.12* | | µg/L | 2.00 | | 56.2 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.49* | | µg/L | 2.00 | | 74.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.55* | | µg/L | 2.00 | | 77.7 | 30-150 | | | |
| **LCS Dup (B034825-BSD1)** | | | | Prepared: 08/04/11 Analyzed: 08/05/11 | | | | | | |
| Aroclor-1016 | 0.44 | 0.20 | µg/L | 0.500 | | 87.2 | 40-140 | 3.92 | 20 | |
| Aroclor-1016 [2C] | 0.55 | 0.20 | µg/L | 0.500 | | 110 | 40-140 | 14.8 | 20 | |
| Aroclor-1260 | 0.47 | 0.20 | µg/L | 0.500 | | 94.9 | 40-140 | 4.58 | 20 | |
| Aroclor-1260 [2C] | 0.53 | 0.20 | µg/L | 0.500 | | 105 | 40-140 | 5.29 | 20 | |
| Surrogate: Decachlorobiphenyl | *1.28* | | µg/L | 2.00 | | 64.2 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.36* | | µg/L | 2.00 | | 68.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.52* | | µg/L | 2.00 | | 75.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.57* | | µg/L | 2.00 | | 78.7 | 30-150 | | | |

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**QUALITY CONTROL**

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B034914 - % Solids** | | | | | | | | | | |
| **Duplicate (B034914-DUP1)** | | **Source: 11H0133-01** | | Prepared: 08/04/11 Analyzed: 08/05/11 | | | | | | |
| % Solids | 95.9 | | % Wt | | 95.9 | | | 0.00 | 20 | |

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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 |
| ***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 |

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

| Code | Description | Number | Expires |
|---|---|---|---|
| AIHA | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

# CHAIN OF CUSTODY RECORD

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
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Email: info@contestlabs.com
www.contestlabs.com
39 Spruce Street
East longmeadow, MA 01028

Page 1 of ____

11H0133

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR., SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERST, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # gfranklin
Email: jhanet@woodardcurran.com
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 | PCB's (Soxhlet Extraction) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -01 | TH-CBC-158 | 8/3/11 | 1050 | | ✓ | S | L | X | | | | | | | | | | |
| -02 | TH-CBCD-159 | 8/3/11 | 1050 | | ✓ | S | L | X | | | | | | | | | | |
| -03 | TH-CBCQ-160 | 8/3/11 | 1100 | | ✓ | O | L | X | | | | | | | | | | |
| -04 | TH-VBC-161 | 8/3/11 | 1300 | | ✓ | S | L | X | | | | | | | | | | |
| -05 | TH-VBC-162 | 8/3/11 | 1310 | | ✓ | S | L | X | | | | | | | | | | |
| -06 | TH-VBC-163 | 8/3/11 | 1320 | | ✓ | S | L | X | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
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ANALYSIS REQUESTED

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | | | | | | | | | | | | | | | | | | |
| I | | | | | | | | | | | | | | | | | | |
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# of Containers
** Preservation
***Container Code

Dissolved Metals
○ Field Filtered
○ Lab to Filter

***Cont. Code:
A=amber glass
G=glass
P=plastic
ST=sterile
V= vial
S=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: PCB's by USEPA 8082 via 3540c (Soxhlet Extraction)
R.L. ≤ 1.0 mg/kg

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] | 8/3/11 1605 |
| Received by: (signature) | Date/Time: |
| [signature] 33°C | 8/3/11 1605 |
| 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: ____

**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: Woodward + Curran RECEIVED BY: [illegible] DATE: 8/3/11

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°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 C.E.C Date 8/3/11 Time 16:05

7) Location where samples are stored: 19

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

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | 2 mp. | 8 oz amber/clear jar | |
| 500 mL Amber | | 4 oz amber/clear jar | |
| 250 mL Amber (8oz amber) | 5 | 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:

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

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

Doc# 277

Rev. 1 May

**11H0133-01** TH-CBC-158

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.19 | 0.1398136 | 30.4 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.671 | 0.9316772 | 32.5 |
| Tetrachloro-m-xylene | 0.966 | 0.6760818 | 35.3 |

**11H0133-02** TH-CBCD-159

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.719 | 0.9765715 | 30.4 |
| Tetrachloro-m-xylene | 1.05 | 0.7323476 | 35.6 |

**11H0133-03** TH-CBCQ-160

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.761 | 0.82417 | 7.97 |
| Tetrachloro-m-xylene | 1.61 | 1.68047 | 4.28 |

**11H0133-04** TH-VBC-161

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.720 | 0.9897715 | 31.6 |
| Tetrachloro-m-xylene | 1.06 | 0.7339953 | 36.3 |

**11H0133-05** TH-VBC-162

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.647 | 0.8782478 | 30.3 |
| Tetrachloro-m-xylene | 0.939 | 0.6531478 | 35.9 |

**11H0133-06** TH-VBC-163

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.732 | 0.5019739 | 37.3 |
| Decachlorobiphenyl | 0.500 | 0.6730174 | 29.5 |

**B034818-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.972 | 0.93839 | 3.52 |
| Tetrachloro-m-xylene | 0.995 | 0.99371 | 0.13 |

**B034818-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.25 | 0.24857 | 0.574 |
| Aroclor-1260 | 0.28 | 0.284285 | 1.52 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.969 | 0.95685 | 1.26 |
| Tetrachloro-m-xylene | 0.997 | 0.99308 | 0.394 |

**B034818-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.24 | 0.26287 | 9.1 |
| Aroclor-1260 | 0.30 | 0.294115 | 1.98 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.999 | 0.968345 | 3.12 |
| Tetrachloro-m-xylene | 1.02 | 1.01625 | 0.368 |

**B034818-MS1** Matrix Spike

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.40 | 0.4769304 | 17.5 |

| | | | |
|---|---|---|---|
| Aroclor-1260 | 0.26 | 0.2885261 | 10.4 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.887 | 0.8787609 | 0.933 |
| Tetrachloro-m-xylene | 0.883 | 0.8550304 | 3.22 |

**B034818-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.28 | 0.2911409 | 3.9 |
| Aroclor-1016 | 0.35 | 0.3680636 | 5.03 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.927 | 0.9175091 | 1.03 |
| Tetrachloro-m-xylene | 0.919 | 0.9116409 | 0.804 |

**B034825-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.49 | 1.54923 | 3.9 |
| Decachlorobiphenyl | 1.32 | 1.39809 | 5.75 |

**B034825-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.42 | 0.47251 | 11.8 |
| Aroclor-1260 | 0.45 | 0.49819 | 10.2 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.05 | 1.12347 | 6.76 |
| Tetrachloro-m-xylene | 1.49 | 1.55364 | 4.18 |

**B034825-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.44 | 0.54827 | 21.9 |
| Aroclor-1260 | 0.47 | 0.52526 | 11.1 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.52 | 1.57393 | 3.49 |
| Decachlorobiphenyl | 1.28 | 1.36169 | 6.18 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0133 |
| Project Location: Umass-Tobin Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0133-01 thru 11H0133-06

Matrices: Soil Water

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC CAM II A ( ) | 7470/7471 Hg CAM IIIB ( ) | MassDEP VPH CAM IV A ( ) | 8081 Pesticides CAM V B ( ) | 7196 Hex Cr CAM VI B ( ) | MassDEP APH CAM IX A ( ) |
| 8270 SVOC CAM II B ( ) | 7010 Metals CAM III C ( ) | MassDEP EPH CAM IV A ( ) | 8151 Herbicides CAM V C ( ) | 8330 Explosives CAM VIII A ( ) | TO-15 VOC CAM IX B ( ) |
| 6010 Metals CAM III A ( ) | 6020 Metals CAM III D ( ) | 8082 PCB CAM V A (X) | 9014 Total Cyanide/PAC CAM VI A ( ) | 6860 Perchlorate CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☐ Yes | ☑ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: M Erickson Position: Laboratory Director

Printed Name: Michael A. Erickson Date: 08/08/11

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

August 9, 2011

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

Project Location: UMASS - Tobin Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0177

Enclosed are results of analyses for samples received by the laboratory on August 4, 2011. 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: 8/9/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0177

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

PROJECT LOCATION: UMASS - Tobin Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VWS-164 | 11H0177-01 | Wipe | | SW-846 8082A | |
| TH-VBC-165 | 11H0177-02 | Concrete | | SW-846 8082A | |
| TH-VBC-166 | 11H0177-03 | Concrete | | SW-846 8082A | |
| TH-VBC-167 | 11H0177-04 | Concrete | | SW-846 8082A | |
| TH-VBC-168 | 11H0177-05 | 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.

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 individuuals 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

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

Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0177

Date Received: 8/4/2011

**Field Sample #: TH-VWS-164**  Sampled: 8/4/2011 13:15

**Sample ID: 11H0177-01**

Sample Matrix: Wipe

**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/Wipe | 1 | | SW-846 8082A | 8/4/11 | 8/9/11 13:24 | PJG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/4/11 | 8/9/11 13:24 | PJG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/4/11 | 8/9/11 13:24 | PJG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/4/11 | 8/9/11 13:24 | PJG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/4/11 | 8/9/11 13:24 | PJG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/4/11 | 8/9/11 13:24 | PJG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/4/11 | 8/9/11 13:24 | PJG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/4/11 | 8/9/11 13:24 | PJG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/4/11 | 8/9/11 13:24 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 109 | 30-150 | | 8/9/11 13:24 |
| Decachlorobiphenyl [2] | 116 | 30-150 | | 8/9/11 13:24 |
| Tetrachloro-m-xylene [1] | 91.7 | 30-150 | | 8/9/11 13:24 |
| Tetrachloro-m-xylene [2] | 106 | 30-150 | | 8/9/11 13:24 |

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

Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0177

Date Received: 8/4/2011

**Field Sample #: TH-VBC-165**  Sampled: 8/4/2011 14:15

**Sample ID: 11H0177-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/4/11 | 8/8/11 10:56 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 10:56 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 10:56 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 10:56 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 10:56 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 10:56 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 10:56 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 10:56 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 10:56 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 83.1 | 30-150 | | 8/8/11 10:56 |
| Decachlorobiphenyl [2] | 88.4 | 30-150 | | 8/8/11 10:56 |
| Tetrachloro-m-xylene [1] | 96.1 | 30-150 | | 8/8/11 10:56 |
| Tetrachloro-m-xylene [2] | 99.4 | 30-150 | | 8/8/11 10:56 |

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Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0177

Date Received: 8/4/2011

**Field Sample #: TH-VBC-166**  Sampled: 8/4/2011 14:30

**Sample ID: 11H0177-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/4/11 | 8/8/11 11:09 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:09 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:09 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:09 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:09 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:09 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:09 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:09 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:09 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 77.0 | 30-150 | | 8/8/11 11:09 |
| Decachlorobiphenyl [2] | 82.1 | 30-150 | | 8/8/11 11:09 |
| Tetrachloro-m-xylene [1] | 82.8 | 30-150 | | 8/8/11 11:09 |
| Tetrachloro-m-xylene [2] | 84.8 | 30-150 | | 8/8/11 11:09 |

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Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0177

Date Received: 8/4/2011

**Field Sample #: TH-VBC-167**  Sampled: 8/4/2011 14:45

**Sample ID: 11H0177-04**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/4/11 | 8/8/11 11:22 | PJG |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:22 | PJG |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:22 | PJG |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:22 | PJG |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:22 | PJG |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:22 | PJG |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:22 | PJG |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:22 | PJG |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:22 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 90.5 | 30-150 | | 8/8/11 11:22 |
| Decachlorobiphenyl [2] | 95.6 | 30-150 | | 8/8/11 11:22 |
| Tetrachloro-m-xylene [1] | 96.7 | 30-150 | | 8/8/11 11:22 |
| Tetrachloro-m-xylene [2] | 98.1 | 30-150 | | 8/8/11 11:22 |

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Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0177

Date Received: 8/4/2011

**Field Sample #: TH-VBC-168**  Sampled: 8/4/2011 14:55

**Sample ID: 11H0177-05**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/4/11 | 8/8/11 11:35 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:35 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:35 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:35 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:35 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:35 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:35 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:35 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/4/11 | 8/8/11 11:35 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.8 | 30-150 | | 8/8/11 11:35 |
| Decachlorobiphenyl [2] | 98.7 | 30-150 | | 8/8/11 11:35 |
| Tetrachloro-m-xylene [1] | 101 | 30-150 | | 8/8/11 11:35 |
| Tetrachloro-m-xylene [2] | 102 | 30-150 | | 8/8/11 11:35 |

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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 |
|---|---|---|---|---|
| 11H0177-02 [TH-VBC-165] | B034905 | 2.10 | 10.0 | 08/04/11 |
| 11H0177-03 [TH-VBC-166] | B034905 | 2.20 | 10.0 | 08/04/11 |
| 11H0177-04 [TH-VBC-167] | B034905 | 2.10 | 10.0 | 08/04/11 |
| 11H0177-05 [TH-VBC-168] | B034905 | 2.20 | 10.0 | 08/04/11 |

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

| Lab Number [Field ID] | Batch | Initial [Wipe] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0177-01 [TH-VWS-164] | B034913 | 1.00 | 10.0 | 08/04/11 |

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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 B034905 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034905-BLK1)** | | | | Prepared: 08/04/11 Analyzed: 08/08/11 | | | | | | |
| 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 | *0.855* | | mg/Kg | 1.00 | | 85.5 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.916* | | mg/Kg | 1.00 | | 91.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.993* | | mg/Kg | 1.00 | | 99.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.01* | | mg/Kg | 1.00 | | 101 | 30-150 | | | |
| **LCS (B034905-BS1)** | | | | Prepared: 08/04/11 Analyzed: 08/08/11 | | | | | | |
| Aroclor-1016 | 0.26 | 0.10 | mg/Kg | 0.250 | | 104 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 117 | 40-140 | | | |
| Aroclor-1260 | 0.25 | 0.10 | mg/Kg | 0.250 | | 102 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 117 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.947* | | mg/Kg | 1.00 | | 94.7 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.02* | | mg/Kg | 1.00 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.998* | | mg/Kg | 1.00 | | 99.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.03* | | mg/Kg | 1.00 | | 103 | 30-150 | | | |
| **LCS Dup (B034905-BSD1)** | | | | Prepared: 08/04/11 Analyzed: 08/08/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg | 0.250 | | 100 | 40-140 | 4.22 | 30 | |
| Aroclor-1016 [2C] | 0.30 | 0.10 | mg/Kg | 0.250 | | 119 | 40-140 | 1.42 | 30 | |
| Aroclor-1260 | 0.25 | 0.10 | mg/Kg | 0.250 | | 102 | 40-140 | 0.122 | 30 | |
| Aroclor-1260 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 117 | 40-140 | 0.143 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.931* | | mg/Kg | 1.00 | | 93.1 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.995* | | mg/Kg | 1.00 | | 99.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.02* | | mg/Kg | 1.00 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.03* | | mg/Kg | 1.00 | | 103 | 30-150 | | | |

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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 B034913 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034913-BLK1)** | | | | Prepared: 08/04/11 Analyzed: 08/09/11 | | | | | | |
| 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 | *2.20* | | µg/Wipe | 2.00 | | 110 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *2.34* | | µg/Wipe | 2.00 | | 117 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.82* | | µg/Wipe | 2.00 | | 90.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *2.11* | | µg/Wipe | 2.00 | | 105 | 30-150 | | | |
| **LCS (B034913-BS1)** | | | | Prepared: 08/04/11 Analyzed: 08/09/11 | | | | | | |
| Aroclor-1016 | 0.53 | 0.20 | µg/Wipe | 0.500 | | 106 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.60 | 0.20 | µg/Wipe | 0.500 | | 121 | 40-140 | | | |
| Aroclor-1260 | 0.52 | 0.20 | µg/Wipe | 0.500 | | 104 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.57 | 0.20 | µg/Wipe | 0.500 | | 114 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *2.10* | | µg/Wipe | 2.00 | | 105 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *2.25* | | µg/Wipe | 2.00 | | 113 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.79* | | µg/Wipe | 2.00 | | 89.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *2.10* | | µg/Wipe | 2.00 | | 105 | 30-150 | | | |
| **LCS Dup (B034913-BSD1)** | | | | Prepared: 08/04/11 Analyzed: 08/09/11 | | | | | | |
| Aroclor-1016 | 0.53 | 0.20 | µg/Wipe | 0.500 | | 105 | 40-140 | 1.08 | 30 | |
| Aroclor-1016 [2C] | 0.60 | 0.20 | µg/Wipe | 0.500 | | 119 | 40-140 | 1.25 | 30 | |
| Aroclor-1260 | 0.53 | 0.20 | µg/Wipe | 0.500 | | 105 | 40-140 | 1.02 | 30 | |
| Aroclor-1260 [2C] | 0.59 | 0.20 | µg/Wipe | 0.500 | | 118 | 40-140 | 4.10 | 30 | |
| Surrogate: Decachlorobiphenyl | *2.05* | | µg/Wipe | 2.00 | | 102 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *2.24* | | µg/Wipe | 2.00 | | 112 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.72* | | µg/Wipe | 2.00 | | 86.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *2.09* | | µg/Wipe | 2.00 | | 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.

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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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

11H0177

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERST, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # gfranklin@woodardcurran.com
Email: jhanel@
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 | PCB's (Soxhlet Extraction) | | | | | | | | | | # of Containers / ** Preservation / ***Container Code |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | TH-VWS-164 | 8/4/11 | 1315 | | ✓ | O | L | X | | | | | | | | | | |
| -2 | TH-VBC-165 | ↓ | 1415 | | ✓ | O | L | X | | | | | | | | | | |
| -3 | TH-VBC-166 | ↓ | 1430 | | ✓ | O | L | X | | | | | | | | | | |
| -4 | TH-VBC-167 | ↓ | 1445 | | ✓ | O | L | X | | | | | | | | | | |
| -5 | TH-VBC-168 | ↓ | 1455 | | ✓ | O | L | X | | | | | | | | | | |

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: PCB's by USEPA 8082 via 3540c (Soxhlet)
R.L. ≤1 mg/kg

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: |
|---|---|
| Jesse Abbey | 8/4/11 1459 |
| Received by: (signature) Ed Cahal | 8/4/11 1459 |
| Relinquished by: (signature) Ed Cahal | 8/4/11 1606 |
| Received by: (signature) [signature] 4.8°C | 8/4/11 16:06 |

**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 Analytical Certification Form Required
○ RCP Analysis Certification Form Required
○ MA State DW Form Required PWSID # 6

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

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www.contestlabs.com

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# Sample Receipt Checklist

**CLIENT NAME:** Woodard + Curran **RECEIVED BY:** CJB **DATE:** 8/4/11

**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 4.8°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: _____

## 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 (TH-VWS-164, wipe) |
| 250 mL Amber (8oz amber) | 4 (concrete) | 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:**

**Do all samples have the proper Acid pH:** Yes No N/A _____

**Do all samples have the proper Base pH:** Yes No N/A _____

Doc# 277
Rev. 1 May 2011

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0177 |
| Project Location: UMASS - Tobin Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0177-01 thru 11H0177-05

Matrices: Product/Solid Wipe

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC CAM II A ( ) | 7470/7471 Hg CAM IIIB ( ) | MassDEP VPH CAM IV A ( ) | 8081 Pesticides CAM V B ( ) | 7196 Hex Cr CAM VI B ( ) | MassDEP APH CAM IX A ( ) |
| 8270 SVOC CAM II B ( ) | 7010 Metals CAM III C ( ) | MassDEP EPH CAM IV A ( ) | 8151 Herbicides CAM V C ( ) | 8330 Explosives CAM VIII A ( ) | TO-15 VOC CAM IX B ( ) |
| 6010 Metals CAM III A ( ) | 6020 Metals CAM III D ( ) | 8082 PCB CAM V A (X) | 9014 Total Cyanide/PAC CAM VI A ( ) | 6860 Perchlorate CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | |
|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: Meghan E. Kelley Position: Project Chemist

Printed Name: Meghan E. Kelley Date: 08/09/11

**11H0177-01** TH-VWS-164

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.83 | 2.11263 | 14.3 |
| Decachlorobiphenyl | 2.18 | 2.31943 | 6.2 |

**11H0177-02** TH-VBC-165

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.792 | 0.8420619 | 6.13 |
| Tetrachloro-m-xylene | 0.915 | 0.9469763 | 3.43 |

**11H0177-03** TH-VBC-166

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.700 | 0.7461682 | 6.38 |
| Tetrachloro-m-xylene | 0.753 | 0.7704682 | 2.29 |

**11H0177-04** TH-VBC-167

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.862 | 0.9105524 | 5.48 |
| Tetrachloro-m-xylene | 0.921 | 0.9343857 | 1.44 |

**11H0177-05** TH-VBC-168

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.861 | 0.8971454 | 4.11 |
| Tetrachloro-m-xylene | 0.921 | 0.9265773 | 0.604 |

**B034905-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.855 | 0.916325 | 6.92 |
| Tetrachloro-m-xylene | 0.993 | 1.006115 | 1.31 |

**B034905-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.26 | 0.29344 | 12.1 |
| Aroclor-1260 | 0.25 | 0.29373 | 16.1 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.998 | 1.02656 | 2.82 |
| Decachlorobiphenyl | 0.947 | 1.024415 | 7.85 |

**B034905-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.25 | 0.29764 | 17.4 |
| Aroclor-1260 | 0.25 | 0.29331 | 15.9 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.931 | 0.99528 | 6.67 |
| Tetrachloro-m-xylene | 1.02 | 1.02951 | 0.928 |

**B034913-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 2.20 | 2.34159 | 6.24 |
| Tetrachloro-m-xylene | 1.82 | 2.10897 | 14.7 |

**B034913-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.53 | 0.60463 | 13.2 |
| Aroclor-1260 | 0.52 | 0.5682 | 8.86 |

| Surrogates | | | |
|---|---|---|---|
| Decachlorobiphenyl | 2.10 | 2.25154 | 6.96 |
| Tetrachloro-m-xylene | 1.79 | 2.0993 | 15.9 |

**B034913-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.53 | 0.59709 | 11.9 |
| Aroclor-1260 | 0.53 | 0.59198 | 11 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.72 | 2.08502 | 19.2 |
| Decachlorobiphenyl | 2.05 | 2.24245 | 8.97 |

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August 10, 2011

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

Project Location: UMASS - Tobin Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0235

Enclosed are results of analyses for samples received by the laboratory on August 5, 2011. 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: 8/10/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0235

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

PROJECT LOCATION: UMASS - Tobin Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-CBC-169 | 11H0235-01 | Concrete | | SW-846 8082A | |
| TH-VBC-170 | 11H0235-02 | Concrete | | SW-846 8082A | |
| TH-VBC-171 | 11H0235-03 | Concrete | | SW-846 8082A | |
| TH-VBS-172 | 11H0235-04 | Soil | | SM 2540G | |
| | | | | 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:**

Surrogate recovery is outside of control limits on confirmatory column, but within control limits on primary column. Data validation is not affected.

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

**Tetrachloro-m-xylene**

11H0235-03[TH-VBC-171]

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 individuuals 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 - Tobin Amherst, MA  Sample Description:  Work Order: 11H0235

Date Received: 8/5/2011

**Field Sample #: TH-CBC-169**  Sampled: 8/5/2011 14:45

**Sample ID: 11H0235-01**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/5/11 | 8/8/11 16:03 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:03 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:03 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:03 | PJG |
| Aroclor-1248 [1] | 0.25 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:03 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:03 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:03 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:03 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:03 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 78.3 | 30-150 | | 8/8/11 16:03 |
| Decachlorobiphenyl [2] | 84.5 | 30-150 | | 8/8/11 16:03 |
| Tetrachloro-m-xylene [1] | 77.7 | 30-150 | | 8/8/11 16:03 |
| Tetrachloro-m-xylene [2] | 89.8 | 30-150 | | 8/8/11 16:03 |

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Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0235

Date Received: 8/5/2011

**Field Sample #: TH-VBC-170**  Sampled: 8/5/2011 14:50

**Sample ID: 11H0235-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/5/11 | 8/8/11 16:18 | PJG |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:18 | PJG |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:18 | PJG |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:18 | PJG |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:18 | PJG |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:18 | PJG |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:18 | PJG |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:18 | PJG |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/8/11 16:18 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 72.5 | 30-150 | | 8/8/11 16:18 |
| Decachlorobiphenyl [2] | 78.6 | 30-150 | | 8/8/11 16:18 |
| Tetrachloro-m-xylene [1] | 84.1 | 30-150 | | 8/8/11 16:18 |
| Tetrachloro-m-xylene [2] | 96.1 | 30-150 | | 8/8/11 16:18 |

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Project Location: UMASS - Tobin Amherst, MA | Sample Description: | Work Order: 11H0235

Date Received: 8/5/2011

**Field Sample #: TH-VBC-171** | Sampled: 8/5/2011 14:55

**Sample ID: 11H0235-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [2] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 15:17 | PJG |
| Aroclor-1221 [2] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 15:17 | PJG |
| Aroclor-1232 [2] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 15:17 | PJG |
| Aroclor-1242 [2] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 15:17 | PJG |
| Aroclor-1248 [2] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 15:17 | PJG |
| Aroclor-1254 [2] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 15:17 | PJG |
| Aroclor-1260 [2] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 15:17 | PJG |
| Aroclor-1262 [2] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 15:17 | PJG |
| Aroclor-1268 [2] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 15:17 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 30.1 | 30-150 | | 8/9/11 15:17 |
| Decachlorobiphenyl [2] | 32.3 | 30-150 | | 8/9/11 15:17 |
| **Tetrachloro-m-xylene [1]** | **29.2** * | 30-150 | S-12 | 8/9/11 15:17 |
| Tetrachloro-m-xylene [2] | 34.6 | 30-150 | | 8/9/11 15:17 |

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Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0235

Date Received: 8/5/2011

**Field Sample #: TH-VBS-172**
Sampled: 8/5/2011 15:00

**Sample ID: 11H0235-04**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 19:45 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 19:45 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 19:45 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 19:45 | JMB |
| Aroclor-1248 [1] | 0.56 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 19:45 | JMB |
| Aroclor-1254 [2] | 0.30 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 19:45 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 19:45 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 19:45 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/5/11 | 8/9/11 19:45 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 113 | 30-150 | | 8/9/11 19:45 |
| Decachlorobiphenyl [2] | 120 | 30-150 | | 8/9/11 19:45 |
| Tetrachloro-m-xylene [1] | 108 | 30-150 | | 8/9/11 19:45 |
| Tetrachloro-m-xylene [2] | 123 | 30-150 | | 8/9/11 19:45 |

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Project Location: UMASS - Tobin Amherst, MA
Sample Description:
Work Order: 11H0235

Date Received: 8/5/2011

**Field Sample #: TH-VBS-172**
Sampled: 8/5/2011 15:00

**Sample ID: 11H0235-04**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 94.8 | | % Wt | 1 | | SM 2540G | 8/5/11 | 8/6/11 11:31 | VAF |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11H0235-04 [TH-VBS-172] | B035000 | 08/05/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0235-01 [TH-CBC-169] | B035001 | 2.20 | 10.0 | 08/05/11 |
| 11H0235-02 [TH-VBC-170] | B035001 | 2.20 | 10.0 | 08/05/11 |
| 11H0235-03 [TH-VBC-171] | B035001 | 2.20 | 10.0 | 08/05/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0235-04 [TH-VBS-172] | B034996 | 10.0 | 50.0 | 08/05/11 |

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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 B034996 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B034996-BLK1)** | | | | Prepared: 08/05/11 Analyzed: 08/09/11 | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.217* | | mg/Kg wet | 0.200 | | 108 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.231* | | mg/Kg wet | 0.200 | | 116 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.208* | | mg/Kg wet | 0.200 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.235* | | mg/Kg wet | 0.200 | | 118 | 30-150 | | | |
| **LCS (B034996-BS1)** | | | | Prepared: 08/05/11 Analyzed: 08/09/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 108 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.23 | 0.10 | mg/Kg wet | 0.200 | | 113 | 40-140 | | | |
| Aroclor-1260 | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 102 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 110 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.225* | | mg/Kg wet | 0.200 | | 112 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.239* | | mg/Kg wet | 0.200 | | 119 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.204* | | mg/Kg wet | 0.200 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.230* | | mg/Kg wet | 0.200 | | 115 | 30-150 | | | |
| **LCS Dup (B034996-BSD1)** | | | | Prepared: 08/05/11 Analyzed: 08/09/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 110 | 40-140 | 2.33 | 30 | |
| Aroclor-1016 [2C] | 0.23 | 0.10 | mg/Kg wet | 0.200 | | 115 | 40-140 | 2.01 | 30 | |
| Aroclor-1260 | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 106 | 40-140 | 3.20 | 30 | |
| Aroclor-1260 [2C] | 0.23 | 0.10 | mg/Kg wet | 0.200 | | 115 | 40-140 | 3.95 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.227* | | mg/Kg wet | 0.200 | | 114 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.241* | | mg/Kg wet | 0.200 | | 120 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.207* | | mg/Kg wet | 0.200 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.234* | | mg/Kg wet | 0.200 | | 117 | 30-150 | | | |

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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 B035001 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035001-BLK1)** | | | | Prepared: 08/05/11 Analyzed: 08/08/11 | | | | | | |
| 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 | *1.26* | | mg/Kg | 1.00 | | 126 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.34* | | mg/Kg | 1.00 | | 134 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.21* | | mg/Kg | 1.00 | | 121 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.36* | | mg/Kg | 1.00 | | 136 | 30-150 | | | |
| **LCS (B035001-BS1)** | | | | Prepared: 08/05/11 Analyzed: 08/08/11 | | | | | | |
| Aroclor-1016 | 0.27 | 0.10 | mg/Kg | 0.250 | | 107 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 116 | 40-140 | | | |
| Aroclor-1260 | 0.24 | 0.10 | mg/Kg | 0.250 | | 97.1 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 113 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *1.10* | | mg/Kg | 1.00 | | 110 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.19* | | mg/Kg | 1.00 | | 119 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.05* | | mg/Kg | 1.00 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.18* | | mg/Kg | 1.00 | | 118 | 30-150 | | | |
| **LCS Dup (B035001-BSD1)** | | | | Prepared: 08/05/11 Analyzed: 08/08/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg | 0.250 | | 98.2 | 40-140 | 8.27 | 30 | |
| Aroclor-1016 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 114 | 40-140 | 1.77 | 30 | |
| Aroclor-1260 | 0.24 | 0.10 | mg/Kg | 0.250 | | 94.2 | 40-140 | 2.99 | 30 | |
| Aroclor-1260 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 109 | 40-140 | 3.52 | 30 | |
| Surrogate: Decachlorobiphenyl | *1.06* | | mg/Kg | 1.00 | | 106 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.13* | | mg/Kg | 1.00 | | 113 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.04* | | mg/Kg | 1.00 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.20* | | mg/Kg | 1.00 | | 120 | 30-150 | | | |

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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 B035001 - SW-846 3540C** | | | | | | | | | | |
| **Matrix Spike (B035001-MS1)** | | **Source: 11H0235-01** | | Prepared: 08/05/11 Analyzed: 08/08/11 | | | | | | |
| Aroclor-1016 | 0.31 | 0.10 | mg/Kg | 0.250 | 0.0 | 123 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.32 | 0.10 | mg/Kg | 0.250 | 0.0 | 127 | 40-140 | | | |
| Aroclor-1260 | 0.20 | 0.10 | mg/Kg | 0.250 | 0.0 | 79.2 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.23 | 0.10 | mg/Kg | 0.250 | 0.0 | 90.7 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.755* | | mg/Kg | 1.00 | | 75.5 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.817* | | mg/Kg | 1.00 | | 81.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.777* | | mg/Kg | 1.00 | | 77.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.905* | | mg/Kg | 1.00 | | 90.5 | 30-150 | | | |
| **Matrix Spike Dup (B035001-MSD1)** | | **Source: 11H0235-01** | | Prepared: 08/05/11 Analyzed: 08/09/11 | | | | | | |
| Aroclor-1016 | 0.28 | 0.091 | mg/Kg | 0.227 | 0.0 | 122 | 40-140 | 10.1 | 50 | |
| Aroclor-1016 [2C] | 0.31 | 0.091 | mg/Kg | 0.227 | 0.0 | 136 | 40-140 | 2.50 | 50 | |
| Aroclor-1260 | 0.19 | 0.091 | mg/Kg | 0.227 | 0.0 | 85.6 | 40-140 | 1.75 | 50 | |
| Aroclor-1260 [2C] | 0.22 | 0.091 | mg/Kg | 0.227 | 0.0 | 98.7 | 40-140 | 1.05 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.767* | | mg/Kg | 0.909 | | 84.4 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.832* | | mg/Kg | 0.909 | | 91.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.624* | | mg/Kg | 0.909 | | 68.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.783* | | mg/Kg | 0.909 | | 86.1 | 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. |
| S-12 | Surrogate recovery is outside of control limits on confirmatory column, but within control limits on primary column. Data validation is not affected. |

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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 |
| ***SW-846 8082A in Soil*** | |
| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of ___

11 H0 235

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
O FAX ✓ EMAIL O WEBSITE
Fax # jhamel
Email: gfranklin@woodardcurran.com
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 | PCB's (Soxhlet Extraction) |
|---|---|---|---|---|---|---|---|---|
| -1 | TH - VBC-169 | 8/5/11 | 1445 | | ✓ | O | L | X |
| -2 | TH-VBC-170 | ↓ | 1450 | | ✓ | O | L | X |
| -3 | TH-VBC-171 | | 1455 | | ✓ | O | L | X |
| -4 | TH-VBS-172 | ↓ | 1500 | | ✓ | S | L | X |

# of Containers
** Preservation
***Container Code

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: PCB's by USEPA by 8082 via 3540c (Soxhlet)
R.L. ≤1.0 mg/kg

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: |
|---|---|
| Jesse Abbey | 8/5/11 1430 |
| Received by: (signature) | Date/Time: |
| Ed Pelusio | 8/5/11 1430 |
| Relinquished by: (signature) | Date/Time: |
| Ed Pelusio | 8/5/11 1530 |
| Received by: (signature) | Date/Time: |
| Henry Nyberg | 8/5/11 1530 |

**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 ?**
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

**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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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: SD DATE: 9/5/11

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

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: _____

## 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) | 4 | 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:

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

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

Doc# 277

Rev. 1 May 2011

**11H0235-01** TH-CBC-169

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.25 | 0.22215 | 11.8 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.712 | 0.7683409 | 7.61 |
| Tetrachloro-m-xylene | 0.706 | 0.8161045 | 14.5 |

**11H0235-02** TH-VBC-170

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.659 | 0.7147364 | 8.11 |
| Tetrachloro-m-xylene | 0.765 | 0.8739681 | 13.3 |

**11H0235-03** TH-VBC-171

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl [2C] | 0.294 | 0.2733045 | 7.3 |
| Tetrachloro-m-xylene [2C] | 0.315 | 0.26535 | 17.1 |

**11H0235-04** TH-VBS-172

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.30 | 0.2889662 | 3.75 |
| Aroclor-1248 | 0.56 | 0.5507595 | 1.66 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.238 | 0.2527268 | 6 |
| Tetrachloro-m-xylene | 0.228 | 0.2597574 | 13 |

**B034996-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.217 | 0.231035 | 6.27 |
| Tetrachloro-m-xylene | 0.208 | 0.23524 | 12.3 |

**B034996-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.22 | 0.225145 | 2.31 |
| Aroclor-1260 | 0.20 | 0.22085 | 9.91 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.225 | 0.238865 | 5.98 |
| Tetrachloro-m-xylene | 0.204 | 0.22978 | 11.9 |

**B034996-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.22 | 0.229705 | 4.32 |
| Aroclor-1260 | 0.21 | 0.229745 | 8.98 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.207 | 0.23435 | 12.4 |
| Decachlorobiphenyl | 0.227 | 0.240675 | 5.85 |

**B035001-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.26 | 1.33664 | 5.9 |
| Tetrachloro-m-xylene | 1.21 | 1.36307 | 11.9 |

**B035001-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.27 | 0.291095 | 7.52 |
| Aroclor-1260 | 0.24 | 0.28233 | 16.2 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.10 | 1.187435 | 7.64 |

| | | | |
|---|---|---|---|
| Tetrachloro-m-xylene | 1.05 | 1.183075 | 11.9 |

**B035001-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.24 | 0.27256 | 12.7 |
| Aroclor-1016 | 0.25 | 0.285995 | 13.4 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.06 | 1.12906 | 6.31 |
| Tetrachloro-m-xylene | 1.04 | 1.196965 | 14 |

**B035001-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.31 | 0.31763 | 2.43 |
| Aroclor-1260 | 0.20 | 0.22673 | 12.5 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.755 | 0.81701 | 7.89 |
| Tetrachloro-m-xylene | 0.777 | 0.90546 | 15.3 |

**B035001-MSD1** Matrix Spike Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.28 | 0.3097727 | 10.1 |
| Aroclor-1260 | 0.19 | 0.2243591 | 16.6 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.624 | 0.7827545 | 22.6 |
| Decachlorobiphenyl | 0.767 | 0.8323363 | 8.17 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0235 |
| Project Location: UMASS - Tobin Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0235-01 thru 11H0235-04

Matrices: Product/Solid Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC CAM II A ( ) | 7470/7471 Hg CAM IIIB ( ) | MassDEP VPH CAM IV A ( ) | 8081 Pesticides CAM V B ( ) | 7196 Hex Cr CAM VI B ( ) | MassDEP APH CAM IX A ( ) |
| 8270 SVOC CAM II B ( ) | 7010 Metals CAM III C ( ) | MassDEP EPH CAM IV A ( ) | 8151 Herbicides CAM V C ( ) | 8330 Explosives CAM VIII A ( ) | TO-15 VOC CAM IX B ( ) |
| 6010 Metals CAM III A ( ) | 6020 Metals CAM III D ( ) | 8082 PCB CAM V A (X) | 9014 Total Cyanide/PAC CAM VI A ( ) | 6860 Perchlorate CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☐ Yes | ☑ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 08/10/11

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

August 10, 2011

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

Project Location: UMASS - Tobin  Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0280

Enclosed are results of analyses for samples received by the laboratory on August 8, 2011. 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: 8/10/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0280

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

PROJECT LOCATION: UMASS - Tobin Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-CBC-173 | 11H0280-01 | Concrete | | SW-846 8082A | |
| TH-VBC-174 | 11H0280-02 | Concrete | | SW-846 8082A | |
| TH-VBC-175 | 11H0280-03 | Concrete | | SW-846 8082A | |
| TH-CBC-176 | 11H0280-04 | Concrete | | SW-846 8082A | |
| TH-CBC-177 | 11H0280-05 | Concrete | | SW-846 8082A | |
| TH-CBC-178 | 11H0280-06 | Concrete | | SW-846 8082A | |
| TH-CBCD-179 | 11H0280-07 | Concrete | | SW-846 8082A | |
| TH-CBCQ-180 | 11H0280-08 | 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 individuuals 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 - Tobin Amherst, MA Sample Description: Work Order: 11H0280

Date Received: 8/8/2011

**Field Sample #: TH-CBC-173** Sampled: 8/8/2011 13:25

**Sample ID: 11H0280-01**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/8/11 | 8/9/11 22:33 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:33 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:33 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:33 | JMB |
| Aroclor-1248 [1] | 0.13 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:33 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:33 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:33 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:33 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:33 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 114 | 30-150 | | 8/9/11 22:33 |
| Decachlorobiphenyl [2] | 123 | 30-150 | | 8/9/11 22:33 |
| Tetrachloro-m-xylene [1] | 109 | 30-150 | | 8/9/11 22:33 |
| Tetrachloro-m-xylene [2] | 125 | 30-150 | | 8/9/11 22:33 |

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Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0280

Date Received: 8/8/2011

**Field Sample #: TH-VBC-174** Sampled: 8/8/2011 13:40

**Sample ID: 11H0280-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/8/11 | 8/9/11 22:47 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:47 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:47 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:47 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:47 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:47 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:47 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:47 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 22:47 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 105 | 30-150 | | 8/9/11 22:47 |
| Decachlorobiphenyl [2] | 112 | 30-150 | | 8/9/11 22:47 |
| Tetrachloro-m-xylene [1] | 105 | 30-150 | | 8/9/11 22:47 |
| Tetrachloro-m-xylene [2] | 120 | 30-150 | | 8/9/11 22:47 |

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Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0280

Date Received: 8/8/2011

**Field Sample #: TH-VBC-175** Sampled: 8/8/2011 13:45

**Sample ID: 11H0280-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/8/11 | 8/9/11 23:01 | JMB |
| Aroclor-1221 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:01 | JMB |
| Aroclor-1232 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:01 | JMB |
| Aroclor-1242 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:01 | JMB |
| Aroclor-1248 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:01 | JMB |
| Aroclor-1254 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:01 | JMB |
| Aroclor-1260 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:01 | JMB |
| Aroclor-1262 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:01 | JMB |
| Aroclor-1268 [1] | ND | 0.095 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:01 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 115 | 30-150 | | 8/9/11 23:01 |
| Decachlorobiphenyl [2] | 123 | 30-150 | | 8/9/11 23:01 |
| Tetrachloro-m-xylene [1] | 103 | 30-150 | | 8/9/11 23:01 |
| Tetrachloro-m-xylene [2] | 117 | 30-150 | | 8/9/11 23:01 |

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Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0280

Date Received: 8/8/2011

**Field Sample #: TH-CBC-176** Sampled: 8/8/2011 14:10

**Sample ID: 11H0280-04**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/8/11 | 8/9/11 23:15 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:15 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:15 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:15 | JMB |
| Aroclor-1248 [1] | 0.71 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:15 | JMB |
| Aroclor-1254 [2] | 0.28 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:15 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:15 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:15 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:15 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 103 | 30-150 | | 8/9/11 23:15 |
| Decachlorobiphenyl [2] | 111 | 30-150 | | 8/9/11 23:15 |
| Tetrachloro-m-xylene [1] | 112 | 30-150 | | 8/9/11 23:15 |
| Tetrachloro-m-xylene [2] | 129 | 30-150 | | 8/9/11 23:15 |

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Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0280

Date Received: 8/8/2011

**Field Sample #: TH-CBC-177** Sampled: 8/8/2011 14:15

**Sample ID: 11H0280-05**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/8/11 | 8/9/11 23:29 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:29 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:29 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:29 | JMB |
| Aroclor-1248 [2] | 0.26 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:29 | JMB |
| Aroclor-1254 [1] | 0.20 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:29 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:29 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:29 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:29 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 110 | 30-150 | | 8/9/11 23:29 |
| Decachlorobiphenyl [2] | 118 | 30-150 | | 8/9/11 23:29 |
| Tetrachloro-m-xylene [1] | 104 | 30-150 | | 8/9/11 23:29 |
| Tetrachloro-m-xylene [2] | 117 | 30-150 | | 8/9/11 23:29 |

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Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0280

Date Received: 8/8/2011

**Field Sample #: TH-CBC-178** Sampled: 8/8/2011 14:20

**Sample ID: 11H0280-06**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/8/11 | 8/9/11 23:43 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:43 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:43 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:43 | JMB |
| Aroclor-1248 [1] | 0.16 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:43 | JMB |
| Aroclor-1254 [1] | 0.20 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:43 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:43 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:43 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:43 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 118 | 30-150 | | 8/9/11 23:43 |
| Decachlorobiphenyl [2] | 127 | 30-150 | | 8/9/11 23:43 |
| Tetrachloro-m-xylene [1] | 112 | 30-150 | | 8/9/11 23:43 |
| Tetrachloro-m-xylene [2] | 124 | 30-150 | | 8/9/11 23:43 |

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Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0280

Date Received: 8/8/2011

**Field Sample #: TH-CBCD-179** Sampled: 8/8/2011 14:25

**Sample ID: 11H0280-07**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/8/11 | 8/9/11 23:57 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:57 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:57 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:57 | JMB |
| Aroclor-1248 [2] | 0.12 | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:57 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:57 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:57 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:57 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/8/11 | 8/9/11 23:57 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 102 | 30-150 | | 8/9/11 23:57 |
| Decachlorobiphenyl [2] | 110 | 30-150 | | 8/9/11 23:57 |
| Tetrachloro-m-xylene [1] | 99.0 | 30-150 | | 8/9/11 23:57 |
| Tetrachloro-m-xylene [2] | 112 | 30-150 | | 8/9/11 23:57 |

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Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0280

Date Received: 8/8/2011

**Field Sample #: TH-CBCQ-180** Sampled: 8/8/2011 14:30

**Sample ID: 11H0280-08**

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 | 8/8/11 | 8/10/11 4:52 | JMB |
| Aroclor-1221 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/8/11 | 8/10/11 4:52 | JMB |
| Aroclor-1232 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/8/11 | 8/10/11 4:52 | JMB |
| Aroclor-1242 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/8/11 | 8/10/11 4:52 | JMB |
| Aroclor-1248 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/8/11 | 8/10/11 4:52 | JMB |
| Aroclor-1254 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/8/11 | 8/10/11 4:52 | JMB |
| Aroclor-1260 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/8/11 | 8/10/11 4:52 | JMB |
| Aroclor-1262 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/8/11 | 8/10/11 4:52 | JMB |
| Aroclor-1268 [1] | ND | 0.20 | µg/L | 1 | | SW-846 8082A | 8/8/11 | 8/10/11 4:52 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 45.4 | 30-150 | | 8/10/11 4:52 |
| Decachlorobiphenyl [2] | 50.0 | 30-150 | | 8/10/11 4:52 |
| Tetrachloro-m-xylene [1] | 72.0 | 30-150 | | 8/10/11 4:52 |
| Tetrachloro-m-xylene [2] | 76.5 | 30-150 | | 8/10/11 4:52 |

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 |
|---|---|---|---|---|
| 11H0280-01 [TH-CBC-173] | B035079 | 2.00 | 10.0 | 08/08/11 |
| 11H0280-02 [TH-VBC-174] | B035079 | 2.10 | 10.0 | 08/08/11 |
| 11H0280-03 [TH-VBC-175] | B035079 | 2.10 | 10.0 | 08/08/11 |
| 11H0280-04 [TH-CBC-176] | B035079 | 2.20 | 10.0 | 08/08/11 |
| 11H0280-05 [TH-CBC-177] | B035079 | 2.20 | 10.0 | 08/08/11 |
| 11H0280-06 [TH-CBC-178] | B035079 | 2.00 | 10.0 | 08/08/11 |
| 11H0280-07 [TH-CBCD-179] | B035079 | 2.20 | 10.0 | 08/08/11 |

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

| Lab Number [Field ID] | Batch | Initial [mL] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0280-08 [TH-CBCQ-180] | B035081 | 1000 | 10.0 | 08/08/11 |

con-test® ANALYTICAL LABORATORY

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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 B035079 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035079-BLK1)** | | | | Prepared: 08/08/11 Analyzed: 08/09/11 | | | | | | |
| 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 | *1.02* | | mg/Kg | 1.00 | | 102 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.09* | | mg/Kg | 1.00 | | 109 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.945* | | mg/Kg | 1.00 | | 94.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.08* | | mg/Kg | 1.00 | | 108 | 30-150 | | | |
| **LCS (B035079-BS1)** | | | | Prepared: 08/08/11 Analyzed: 08/09/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg | 0.250 | | 94.2 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 108 | 40-140 | | | |
| Aroclor-1260 | 0.24 | 0.10 | mg/Kg | 0.250 | | 94.2 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 103 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.983* | | mg/Kg | 1.00 | | 98.3 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.04* | | mg/Kg | 1.00 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.948* | | mg/Kg | 1.00 | | 94.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.09* | | mg/Kg | 1.00 | | 109 | 30-150 | | | |
| **LCS Dup (B035079-BSD1)** | | | | Prepared: 08/08/11 Analyzed: 08/09/11 | | | | | | |
| Aroclor-1016 | 0.28 | 0.10 | mg/Kg | 0.250 | | 112 | 40-140 | 16.9 | 30 | |
| Aroclor-1016 [2C] | 0.30 | 0.10 | mg/Kg | 0.250 | | 119 | 40-140 | 9.73 | 30 | |
| Aroclor-1260 | 0.26 | 0.10 | mg/Kg | 0.250 | | 104 | 40-140 | 9.81 | 30 | |
| Aroclor-1260 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 116 | 40-140 | 11.9 | 30 | |
| Surrogate: Decachlorobiphenyl | *1.09* | | mg/Kg | 1.00 | | 109 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.16* | | mg/Kg | 1.00 | | 116 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.04* | | mg/Kg | 1.00 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.20* | | mg/Kg | 1.00 | | 120 | 30-150 | | | |

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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 B035081 - SW-846 3510C** | | | | | | | | | | |
| **Blank (B035081-BLK1)** | | | | Prepared: 08/08/11 Analyzed: 08/10/11 | | | | | | |
| 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 | *1.23* | | µg/L | 2.00 | | 61.6 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.33* | | µg/L | 2.00 | | 66.7 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.49* | | µg/L | 2.00 | | 74.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.59* | | µg/L | 2.00 | | 79.5 | 30-150 | | | |
| **LCS (B035081-BS1)** | | | | Prepared: 08/08/11 Analyzed: 08/10/11 | | | | | | |
| Aroclor-1016 | 0.48 | 0.20 | µg/L | 0.500 | | 96.3 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.54 | 0.20 | µg/L | 0.500 | | 109 | 40-140 | | | |
| Aroclor-1260 | 0.45 | 0.20 | µg/L | 0.500 | | 89.7 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.51 | 0.20 | µg/L | 0.500 | | 101 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *1.31* | | µg/L | 2.00 | | 65.5 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.42* | | µg/L | 2.00 | | 70.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.51* | | µg/L | 2.00 | | 75.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.61* | | µg/L | 2.00 | | 80.7 | 30-150 | | | |
| **LCS Dup (B035081-BSD1)** | | | | Prepared: 08/08/11 Analyzed: 08/10/11 | | | | | | |
| Aroclor-1016 | 0.46 | 0.20 | µg/L | 0.500 | | 92.0 | 40-140 | 4.51 | 20 | |
| Aroclor-1016 [2C] | 0.51 | 0.20 | µg/L | 0.500 | | 103 | 40-140 | 5.57 | 20 | |
| Aroclor-1260 | 0.43 | 0.20 | µg/L | 0.500 | | 87.0 | 40-140 | 3.13 | 20 | |
| Aroclor-1260 [2C] | 0.49 | 0.20 | µg/L | 0.500 | | 98.3 | 40-140 | 3.20 | 20 | |
| Surrogate: Decachlorobiphenyl | *1.27* | | µg/L | 2.00 | | 63.5 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.38* | | µg/L | 2.00 | | 69.0 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.44* | | µg/L | 2.00 | | 71.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.54* | | µg/L | 2.00 | | 77.2 | 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 |
| ***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 |

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

| Code | Description | Number | Expires |
|---|---|---|---|
| AIHA | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

con-test® ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com
www.contestlabs.com

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of ____

11H0280

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERST, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # franklin@
Email: jhamel
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 | PCB's (Soxhlet Extraction) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -1 | TH-CBC-173 | 8/8/11 | 1325 | | ✓ | S | L | X | | | | | | | | | | |
| -2 | TH-VBC-174 | ↓ | 1340 | | ✓ | S | L | X | | | | | | | | | | |
| -3 | TH-VBC-175 | ↓ | 1345 | | ✓ | S | L | X | | | | | | | | | | |
| -4 | TH-CBC-176 | ↓ | 1410 | | ✓ | S | L | X | | | | | | | | | | |
| -5 | TH-CBC-177 | ↓ | 1415 | | ✓ | S | L | X | | | | | | | | | | |
| -6 | TH-CBC-178 | ↓ | 1420 | | ✓ | S | L | X | | | | | | | | | | |
| -7 | TH-CBCD-179 | ↓ | 1425 | | ✓ | S | L | X | | | | | | | | | | |
| -8 | TH-CBCQ-180 | ↓ | 1430 | | ✓ | S | L | X | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

ANALYSIS REQUESTED

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # of Containers | 1 | | | | | | | | | | | | | | | | | |
| ** Preservation | I | | | | | | | | | | | | | | | | | |
| ***Container Code | A | | | | | | | | | | | | | | | | | |

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: PCB's by USEPA 8082 via 3540c (Soxhlet)
R.L. ≤ 1.0 mg/kg

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] | Date/Time: 8/8/11 1435 |
| Received by: (signature) [signature] | Date/Time: 8/8/11 1435 |
| Relinquished by: (signature) [signature] | Date/Time: 8/8 1600 |
| Received by: (signature) [signature] 4.9 | Date/Time: 8/8 1600 |

**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 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

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

con-test® ANALYTICAL LABORATORY

# Sample Receipt Checklist

**CLIENT NAME:** Woodland & Curran **RECEIVED BY:** SD **DATE:** 8/8/11

**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 4.9

**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:

## Containers received at Con-Test

| | # of containers | | # of containers |
|---|---|---|---|
| 1 Liter Amber | 2 | 8 oz amber/clear jar | |
| 500 mL Amber | | 4 oz amber/clear jar | |
| 250 mL Amber (8oz amber) | 7 | 2 oz amber/clear jar | |
| 1 Liter Plastic | | Air Cassette | |
| 500 mL Plastic | | Hg/Hopcalite Tube | |
| 250 mL plastic | ~~7~~ 6 | 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:**

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

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

Doc# 277

Rev. 1 May 2011

**11H0252-01** C-1

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.944 | 1.092857 | 14.6 |
| Decachlorobiphenyl | 1.01 | 1.081695 | 6.86 |

**11H0280-01** TH-CBC-173

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.13 | 0.132085 | 1.59 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.14 | 1.22797 | 7.43 |
| Tetrachloro-m-xylene | 1.09 | 1.250805 | 13.7 |

**11H0280-02** TH-VBC-174

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.995 | 1.068324 | 7.11 |
| Tetrachloro-m-xylene | 0.996 | 1.13851 | 13.4 |

**11H0280-03** TH-VBC-175

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.10 | 1.175757 | 6.66 |
| Tetrachloro-m-xylene | 0.981 | 1.113262 | 12.6 |

**11H0280-04** TH-CBC-176

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.71 | 0.5993909 | 16.9 |
| Aroclor-1254 [2C] | 0.28 | 0.2788136 | 0.425 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.02 | 1.174068 | 14 |
| Decachlorobiphenyl | 0.938 | 1.007359 | 7.13 |

**11H0280-05** TH-CBC-177

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 [2C] | 0.26 | 0.2217091 | 15.9 |
| Aroclor-1254 | 0.20 | 0.1912636 | 4.47 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.947 | 1.061841 | 11.4 |
| Decachlorobiphenyl | 0.997 | 1.071559 | 7.21 |

**11H0280-06** TH-CBC-178

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 | 0.16 | 0.142505 | 11.6 |
| Aroclor-1254 | 0.20 | 0.196175 | 1.93 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.18 | 1.267095 | 7.12 |
| Tetrachloro-m-xylene | 1.12 | 1.244705 | 10.5 |

**11H0280-07** TH-CBCD-179

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1248 [2C] | 0.12 | 0.1096636 | 9 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.926 | 1.000614 | 7.75 |
| Tetrachloro-m-xylene | 0.900 | 1.018664 | 12.4 |

**11H0280-08** TH-CBCQ-180

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.909 | 0.99929 | 9.46 |
| Tetrachloro-m-xylene | 1.44 | 1.53059 | 6.1 |

**B035079-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.945 | 1.08153 | 13.5 |
| Decachlorobiphenyl | 1.02 | 1.086135 | 6.28 |

**B035079-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.24 | 0.270815 | 12.1 |
| Aroclor-1260 | 0.24 | 0.257225 | 6.93 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.983 | 1.042395 | 5.87 |
| Tetrachloro-m-xylene | 0.948 | 1.08618 | 13.6 |

**B035079-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.28 | 0.29852 | 6.4 |
| Aroclor-1260 | 0.26 | 0.289715 | 10.8 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.09 | 1.163365 | 6.51 |
| Tetrachloro-m-xylene | 1.04 | 1.197685 | 14.1 |

**B035079-MS1** Matrix Spike

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.21 | 0.2396191 | 13.2 |
| Aroclor-1260 | 0.23 | 0.2546095 | 10.2 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.01 | 1.140357 | 12.1 |
| Decachlorobiphenyl | 1.05 | 1.142995 | 8.48 |

**B035079-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.22 | 0.2407174 | 8.99 |
| Aroclor-1260 | 0.22 | 0.2498304 | 12.7 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.933 | 1.061144 | 12.9 |
| Decachlorobiphenyl | 0.974 | 1.057152 | 8.19 |

**B035081-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 1.23 | 1.3347 | 8.16 |
| Tetrachloro-m-xylene | 1.49 | 1.59019 | 6.51 |

**B035081-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.48 | 0.54398 | 12.5 |
| Aroclor-1260 | 0.45 | 0.50734 | 12 |
| Surrogates | | | |
| Decachlorobiphenyl | 1.31 | 1.41858 | 7.96 |
| Tetrachloro-m-xylene | 1.51 | 1.61422 | 6.67 |

**B035081-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.46 | 0.51449 | 11.2 |
| Aroclor-1260 | 0.43 | 0.49136 | 13.3 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.44 | 1.54467 | 7.01 |
| Decachlorobiphenyl | 1.27 | 1.38019 | 8.32 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0280 |
| Project Location: UMASS - Tobin Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0280-01 thru 11H0280-08

Matrices: Product/Solid Water

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC CAM II A ( ) | 7470/7471 Hg CAM IIIB ( ) | MassDEP VPH CAM IV A ( ) | 8081 Pesticides CAM V B ( ) | 7196 Hex Cr CAM VI B ( ) | MassDEP APH CAM IX A ( ) |
| 8270 SVOC CAM II B ( ) | 7010 Metals CAM III C ( ) | MassDEP EPH CAM IV A ( ) | 8151 Herbicides CAM V C ( ) | 8330 Explosives CAM VIII A ( ) | TO-15 VOC CAM IX B ( ) |
| 6010 Metals CAM III A ( ) | 6020 Metals CAM III D ( ) | 8082 PCB CAM V A (X) | 9014 Total Cyanide/PAC CAM VI A ( ) | 6860 Perchlorate CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | |
|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: M Erickson Position: Laboratory Director

Printed Name: Michael A. Erickson Date: 08/10/11

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

August 11, 2011

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

Project Location: UMASS - Tobin Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0350

Enclosed are results of analyses for samples received by the laboratory on August 9, 2011. 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: 8/11/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0350

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

PROJECT LOCATION: UMASS - Tobin Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBC-181 | 11H0350-01 | Concrete | | SW-846 8082A | |
| TH-VBC-182 | 11H0350-02 | Concrete | | SW-846 8082A | |
| TH-VBC-183 | 11H0350-03 | Concrete | | SW-846 8082A | |
| TH-VBC-184 | 11H0350-04 | 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 individuuals 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: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0350

Date Received: 8/9/2011

**Field Sample #: TH-VBC-181**  Sampled: 8/9/2011 12:05

**Sample ID: 11H0350-01**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/9/11 | 8/11/11 11:41 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:41 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:41 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:41 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:41 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:41 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:41 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:41 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:41 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 91.8 | 30-150 | | 8/11/11 11:41 |
| Decachlorobiphenyl [2] | 99.2 | 30-150 | | 8/11/11 11:41 |
| Tetrachloro-m-xylene [1] | 102 | 30-150 | | 8/11/11 11:41 |
| Tetrachloro-m-xylene [2] | 118 | 30-150 | | 8/11/11 11:41 |

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Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0350

Date Received: 8/9/2011

**Field Sample #: TH-VBC-182**  Sampled: 8/9/2011 12:20

**Sample ID: 11H0350-02**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/9/11 | 8/11/11 11:55 | JMB |
| Aroclor-1221 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:55 | JMB |
| Aroclor-1232 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:55 | JMB |
| Aroclor-1242 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:55 | JMB |
| Aroclor-1248 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:55 | JMB |
| Aroclor-1254 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:55 | JMB |
| Aroclor-1260 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:55 | JMB |
| Aroclor-1262 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:55 | JMB |
| Aroclor-1268 [1] | ND | 0.087 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 11:55 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 98.0 | 30-150 | | 8/11/11 11:55 |
| Decachlorobiphenyl [2] | 106 | 30-150 | | 8/11/11 11:55 |
| Tetrachloro-m-xylene [1] | 94.5 | 30-150 | | 8/11/11 11:55 |
| Tetrachloro-m-xylene [2] | 106 | 30-150 | | 8/11/11 11:55 |

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Project Location: UMASS - Tobin Amherst, MA  Sample Description:  Work Order: 11H0350

Date Received: 8/9/2011

**Field Sample #: TH-VBC-183**  Sampled: 8/9/2011 12:55

**Sample ID: 11H0350-03**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/9/11 | 8/11/11 12:09 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:09 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:09 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:09 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:09 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:09 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:09 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:09 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:09 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 83.9 | 30-150 | | 8/11/11 12:09 |
| Decachlorobiphenyl [2] | 90.2 | 30-150 | | 8/11/11 12:09 |
| Tetrachloro-m-xylene [1] | 97.3 | 30-150 | | 8/11/11 12:09 |
| Tetrachloro-m-xylene [2] | 113 | 30-150 | | 8/11/11 12:09 |

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Project Location: UMASS - Tobin Amherst, MA Sample Description: Work Order: 11H0350

Date Received: 8/9/2011

**Field Sample #: TH-VBC-184** Sampled: 8/9/2011 13:10

**Sample ID: 11H0350-04**

Sample Matrix: Concrete

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/9/11 | 8/11/11 12:23 | JMB |
| Aroclor-1221 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:23 | JMB |
| Aroclor-1232 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:23 | JMB |
| Aroclor-1242 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:23 | JMB |
| Aroclor-1248 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:23 | JMB |
| Aroclor-1254 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:23 | JMB |
| Aroclor-1260 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:23 | JMB |
| Aroclor-1262 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:23 | JMB |
| Aroclor-1268 [1] | ND | 0.091 | mg/Kg | 1 | | SW-846 8082A | 8/9/11 | 8/11/11 12:23 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 87.8 | 30-150 | | 8/11/11 12:23 |
| Decachlorobiphenyl [2] | 94.8 | 30-150 | | 8/11/11 12:23 |
| Tetrachloro-m-xylene [1] | 114 | 30-150 | | 8/11/11 12:23 |
| Tetrachloro-m-xylene [2] | 132 | 30-150 | | 8/11/11 12:23 |

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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 |
|---|---|---|---|---|
| 11H0350-01 [TH-VBC-181] | B035170 | 2.00 | 10.0 | 08/09/11 |
| 11H0350-02 [TH-VBC-182] | B035170 | 2.30 | 10.0 | 08/09/11 |
| 11H0350-03 [TH-VBC-183] | B035170 | 2.00 | 10.0 | 08/09/11 |
| 11H0350-04 [TH-VBC-184] | B035170 | 2.20 | 10.0 | 08/09/11 |

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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 B035170 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035170-BLK1)** | | | | Prepared: 08/09/11 Analyzed: 08/11/11 | | | | | | |
| 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 | *0.906* | | mg/Kg | 1.00 | | 90.6 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.976* | | mg/Kg | 1.00 | | 97.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.889* | | mg/Kg | 1.00 | | 88.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.994* | | mg/Kg | 1.00 | | 99.4 | 30-150 | | | |
| **LCS (B035170-BS1)** | | | | Prepared: 08/09/11 Analyzed: 08/11/11 | | | | | | |
| Aroclor-1016 | 0.26 | 0.10 | mg/Kg | 0.250 | | 105 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 107 | 40-140 | | | |
| Aroclor-1260 | 0.25 | 0.10 | mg/Kg | 0.250 | | 101 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 110 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *2.03* | | mg/Kg | 2.00 | | 102 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *2.19* | | mg/Kg | 2.00 | | 110 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.85* | | mg/Kg | 2.00 | | 92.5 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *2.06* | | mg/Kg | 2.00 | | 103 | 30-150 | | | |
| **LCS Dup (B035170-BSD1)** | | | | Prepared: 08/09/11 Analyzed: 08/11/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg | 0.250 | | 97.4 | 40-140 | 7.81 | 30 | |
| Aroclor-1016 [2C] | 0.29 | 0.10 | mg/Kg | 0.250 | | 117 | 40-140 | 8.65 | 30 | |
| Aroclor-1260 | 0.23 | 0.10 | mg/Kg | 0.250 | | 92.4 | 40-140 | 9.07 | 30 | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg | 0.250 | | 101 | 40-140 | 9.00 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.824* | | mg/Kg | 1.00 | | 82.4 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.888* | | mg/Kg | 1.00 | | 88.8 | 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 | | | |

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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 B035170 - SW-846 3540C** | | | | | | | | | | |
| **Matrix Spike (B035170-MS1)** | | **Source: 11H0350-01** | | Prepared: 08/09/11 Analyzed: 08/11/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.091 | mg/Kg | 0.227 | 0.0 | 95.5 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.23 | 0.091 | mg/Kg | 0.227 | 0.0 | 101 | 40-140 | | | |
| Aroclor-1260 | 0.21 | 0.091 | mg/Kg | 0.227 | 0.0 | 91.9 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.23 | 0.091 | mg/Kg | 0.227 | 0.0 | 101 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.893* | | mg/Kg | 0.909 | | 98.2 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.961* | | mg/Kg | 0.909 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.896* | | mg/Kg | 0.909 | | 98.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.01* | | mg/Kg | 0.909 | | 111 | 30-150 | | | |
| **Matrix Spike Dup (B035170-MSD1)** | | **Source: 11H0350-01** | | Prepared: 08/09/11 Analyzed: 08/11/11 | | | | | | |
| Aroclor-1016 | 0.26 | 0.095 | mg/Kg | 0.238 | 0.0 | 111 | 40-140 | 19.5 | 50 | |
| Aroclor-1016 [2C] | 0.28 | 0.095 | mg/Kg | 0.238 | 0.0 | 119 | 40-140 | 20.8 | 50 | |
| Aroclor-1260 | 0.24 | 0.095 | mg/Kg | 0.238 | 0.0 | 100 | 40-140 | 13.3 | 50 | |
| Aroclor-1260 [2C] | 0.27 | 0.095 | mg/Kg | 0.238 | 0.0 | 113 | 40-140 | 15.1 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.965* | | mg/Kg | 0.952 | | 101 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.03* | | mg/Kg | 0.952 | | 109 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.904* | | mg/Kg | 0.952 | | 94.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.02* | | mg/Kg | 0.952 | | 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.

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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 |

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| Code | Description | Number | Expires |
|---|---|---|---|
| AIHA | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

11H0350

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERST, MA
Sampled By: J. REAM

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

Telephone: 1(978)557-8150
Project #: 224733
Client PO#:

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | # of Containers | 1 |
| | | | | | | | ** Preservation | I |
| | | | | | | | ***Container Code | A |
| 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 | PCB's (Soxhlet Extraction) |
| -1 | TH-VBC-181 | 8/9/11 | 1205 | | ✓ | S | L | X |
| -2 | TH-VBC-182 | ↓ | 1220 | | ✓ | S | L | X |
| -3 | TH-VBC-183 | ↓ | 1255 | | ✓ | S | L | X |
| -4 | TH-VBC-184 | ↓ | 1310 | | ✓ | S | L | X |

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: PCB's by USEPA by 8082 via 3540c (Soxhlet Extraction)
R.L. ≤ 1.0 mg/kg

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

| Signature | Date/Time |
|---|---|
| Relinquished by: (signature) [signature] | 8/9/11 |
| Received by: (signature) [signature] | 8/9/11 14:05 |
| Relinquished by: (signature) [signature] | 8/9/11 16:1[illegible] |
| Received by: (signature) [signature] 4.7°C | 8/9/11 16:15 |

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 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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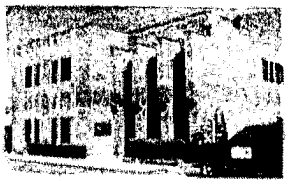

# Sample Receipt Checklist

**CLIENT NAME:** Woodard & Curran **RECEIVED BY:** GS **DATE:** 8/9/11

**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:

## 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) | 4 | 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:-**

**Do all samples have the proper Acid pH: Yes No N/A** _____

**Do all samples have the proper Base pH: Yes No N/A** _____

Doc# 277

Rev. 1 May 2011

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0350 |
| Project Location: UMASS - Tobin Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0350-01 thru 11H0350-04

Matrices: Product/Solid

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes | ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 08/11/11

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August 15, 2011

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

Project Location: UMASS-Brown Amherst, MA
Client Job Number:
Project Number: 224166
Laboratory Work Order Number: 11H0380

Enclosed are results of analyses for samples received by the laboratory on August 10, 2011. 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: 8/15/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224166

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0380

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

PROJECT LOCATION: UMASS-Brown Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBC-185 | 11H0380-01 | Soil | | SM 2540G | |
| | | | | 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 - 08/15/2011 - Sample 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 individuuals 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

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

Project Location: UMASS-Brown Amherst, MA
Sample Description:
Work Order: 11H0380

Date Received: 8/10/2011

**Field Sample #: TH-VBC-185**
Sampled: 8/10/2011 07:15

**Sample ID: 11H0380-01**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/10/11 | 8/12/11 0:52 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/10/11 | 8/12/11 0:52 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/10/11 | 8/12/11 0:52 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/10/11 | 8/12/11 0:52 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/10/11 | 8/12/11 0:52 | PJG |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/10/11 | 8/12/11 0:52 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/10/11 | 8/12/11 0:52 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/10/11 | 8/12/11 0:52 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/10/11 | 8/12/11 0:52 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 119 | 30-150 | | 8/12/11 0:52 |
| Decachlorobiphenyl [2] | 112 | 30-150 | | 8/12/11 0:52 |
| Tetrachloro-m-xylene [1] | 127 | 30-150 | | 8/12/11 0:52 |
| Tetrachloro-m-xylene [2] | 120 | 30-150 | | 8/12/11 0:52 |

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Project Location: UMASS-Brown Amherst, MA
Sample Description:
Work Order: 11H0380

Date Received: 8/10/2011

**Field Sample #: TH-VBC-185**
Sampled: 8/10/2011 07:15

**Sample ID: 11H0380-01**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.1 | | % Wt | 1 | | SM 2540G | 8/12/11 | 8/12/11 16:48 | FA |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11H0380-01 [TH-VBC-185] | B035382 | 08/12/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0380-01 [TH-VBC-185] | B035268 | 2.00 | 10.0 | 08/10/11 |

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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 B035268 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035268-BLK1)** | | | | Prepared: 08/10/11 Analyzed: 08/12/11 | | | | | | |
| Aroclor-1016 | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1221 | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1232 | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1242 | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1248 | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1254 | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1260 | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1262 | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1268 | ND | 0.020 | mg/Kg | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.020 | mg/Kg | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.221* | | mg/Kg | 0.200 | | 111 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.209* | | mg/Kg | 0.200 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.231* | | mg/Kg | 0.200 | | 116 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.220* | | mg/Kg | 0.200 | | 110 | 30-150 | | | |
| **LCS (B035268-BS1)** | | | | Prepared: 08/10/11 Analyzed: 08/12/11 | | | | | | |
| Aroclor-1016 | 0.046 | 0.020 | mg/Kg | 0.0500 | | 92.8 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.058 | 0.020 | mg/Kg | 0.0500 | | 115 | 40-140 | | | |
| Aroclor-1260 | 0.057 | 0.020 | mg/Kg | 0.0500 | | 115 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.058 | 0.020 | mg/Kg | 0.0500 | | 116 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.226* | | mg/Kg | 0.200 | | 113 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.212* | | mg/Kg | 0.200 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.238* | | mg/Kg | 0.200 | | 119 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.227* | | mg/Kg | 0.200 | | 113 | 30-150 | | | |
| **LCS Dup (B035268-BSD1)** | | | | Prepared: 08/10/11 Analyzed: 08/12/11 | | | | | | |
| Aroclor-1016 | 0.055 | 0.020 | mg/Kg | 0.0500 | | 109 | 40-140 | 16.5 | 30 | |
| Aroclor-1016 [2C] | 0.056 | 0.020 | mg/Kg | 0.0500 | | 112 | 40-140 | 2.65 | 30 | |
| Aroclor-1260 | 0.055 | 0.020 | mg/Kg | 0.0500 | | 111 | 40-140 | 3.39 | 30 | |
| Aroclor-1260 [2C] | 0.055 | 0.020 | mg/Kg | 0.0500 | | 111 | 40-140 | 4.54 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.219* | | mg/Kg | 0.200 | | 109 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.207* | | mg/Kg | 0.200 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.229* | | mg/Kg | 0.200 | | 115 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.218* | | mg/Kg | 0.200 | | 109 | 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 |
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| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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# CHAIN OF CUSTODY RECORD

11H0380

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERST, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # gfranklin
Email: jhamed@woodardcurran.com
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 | PCB's (Soxhlet Extraction) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -01 | TH-VWS-185 | 8/10/11 | 0715 | | ✓ | S | L | X | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 1 | | | | | | | | | | # of Containers |
| | | | | | | | | I | | | | | | | | | | ** Preservation |
| | | | | | | | | A | | | | | | | | | | ***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: PCB's (Soxhlet Extraction) USEPA 8082 via 3540c
R.L. ≤1.0 mg/kg

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: 1130 8/10/11 |
|---|---|
| Received by: (signature) | Date/Time: 1130 8/10/11 |
| 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:

**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

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:** PB **DATE:** 8·10·11

**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) 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: _____

## 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) | 1 | 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:**

**Do all samples have the proper Acid pH: Yes No N/A** _____

**Do all samples have the proper Base pH: Yes No N/A** _____

Doc# 277

Rev. 1 May 2011

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0380 |
| Project Location: UMASS-Brown Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0380-01

Matrices: Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes | ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 08/12/11

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

August 15, 2011

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

Project Location: Umass Tobin Amherst
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0464

Enclosed are results of analyses for samples received by the laboratory on August 11, 2011. 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: 8/15/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0464

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

PROJECT LOCATION: Umass Tobin Amherst

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VWS-186 | 11H0464-01 | Wipe | | SW-846 8082A | |
| TH-VBS-187 | 11H0464-02 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-188 | 11H0464-03 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-189 | 11H0464-04 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-190 | 11H0464-05 | Soil | | SM 2540G | |
| | | | | 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 - 08/15/2011 - Sample IDs -02 through -05 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 individuuals 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

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

Project Location: Umass Tobin Amherst | Sample Description: | Work Order: 11H0464

Date Received: 8/11/2011

**Field Sample #: TH-VWS-186** | Sampled: 8/11/2011 13:45

**Sample ID: 11H0464-01**

Sample Matrix: Wipe

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [2] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/11/11 | 8/13/11 14:44 | JMB |
| Aroclor-1221 [2] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/11/11 | 8/13/11 14:44 | JMB |
| Aroclor-1232 [2] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/11/11 | 8/13/11 14:44 | JMB |
| Aroclor-1242 [2] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/11/11 | 8/13/11 14:44 | JMB |
| Aroclor-1248 [2] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/11/11 | 8/13/11 14:44 | JMB |
| Aroclor-1254 [2] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/11/11 | 8/13/11 14:44 | JMB |
| Aroclor-1260 [2] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/11/11 | 8/13/11 14:44 | JMB |
| Aroclor-1262 [2] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/11/11 | 8/13/11 14:44 | JMB |
| Aroclor-1268 [2] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 8/11/11 | 8/13/11 14:44 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 104 | 30-150 | | 8/13/11 14:44 |
| Decachlorobiphenyl [2] | 97.7 | 30-150 | | 8/13/11 14:44 |
| Tetrachloro-m-xylene [1] | 102 | 30-150 | | 8/13/11 14:44 |
| Tetrachloro-m-xylene [2] | 101 | 30-150 | | 8/13/11 14:44 |

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Project Location: Umass Tobin Amherst
Sample Description:
Work Order: 11H0464

Date Received: 8/11/2011

**Field Sample #: TH-VBS-187**
Sampled: 8/11/2011 13:50

**Sample ID: 11H0464-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:12 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:12 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:12 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:12 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:12 | JMB |
| Aroclor-1254 [1] | 0.13 | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:12 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:12 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:12 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:12 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 86.9 | 30-150 | | 8/14/11 12:12 |
| Decachlorobiphenyl [2] | 100 | 30-150 | | 8/14/11 12:12 |
| Tetrachloro-m-xylene [1] | 113 | 30-150 | | 8/14/11 12:12 |
| Tetrachloro-m-xylene [2] | 96.4 | 30-150 | | 8/14/11 12:12 |

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Project Location: Umass Tobin Amherst
Sample Description:
Work Order: 11H0464

Date Received: 8/11/2011

**Field Sample #: TH-VBS-187**
Sampled: 8/11/2011 13:50

**Sample ID: 11H0464-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 96.2 | | % Wt | 1 | | SM 2540G | 8/11/11 | 8/12/11 9:35 | MXG |

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Project Location: Umass Tobin Amherst | Sample Description: | Work Order: 11H0464

Date Received: 8/11/2011

**Field Sample #: TH-VBS-188** | Sampled: 8/11/2011 13:55

**Sample ID: 11H0464-03**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:40 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:40 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:40 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:40 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:40 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:40 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:40 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:40 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:40 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 82.6 | 30-150 | | 8/14/11 12:40 |
| Decachlorobiphenyl [2] | 95.0 | 30-150 | | 8/14/11 12:40 |
| Tetrachloro-m-xylene [1] | 107 | 30-150 | | 8/14/11 12:40 |
| Tetrachloro-m-xylene [2] | 95.0 | 30-150 | | 8/14/11 12:40 |

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Project Location: Umass Tobin Amherst
Sample Description:
Work Order: 11H0464

Date Received: 8/11/2011

**Field Sample #: TH-VBS-188**
Sampled: 8/11/2011 13:55

**Sample ID: 11H0464-03**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.4 | | % Wt | 1 | | SM 2540G | 8/11/11 | 8/12/11 9:35 | MXG |

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Project Location: Umass Tobin Amherst
Sample Description:
Work Order: 11H0464

Date Received: 8/11/2011

**Field Sample #: TH-VBS-189**
Sampled: 8/11/2011 14:00

**Sample ID: 11H0464-04**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:54 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:54 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:54 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:54 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:54 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:54 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:54 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:54 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 12:54 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 97.1 | 30-150 | | 8/14/11 12:54 |
| Decachlorobiphenyl [2] | 113 | 30-150 | | 8/14/11 12:54 |
| Tetrachloro-m-xylene [1] | 111 | 30-150 | | 8/14/11 12:54 |
| Tetrachloro-m-xylene [2] | 97.3 | 30-150 | | 8/14/11 12:54 |

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Project Location: Umass Tobin Amherst
Sample Description:
Work Order: 11H0464

Date Received: 8/11/2011

**Field Sample #: TH-VBS-189**
Sampled: 8/11/2011 14:00

**Sample ID: 11H0464-04**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.6 | | % Wt | 1 | | SM 2540G | 8/11/11 | 8/12/11 9:35 | MXG |

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Project Location: Umass Tobin Amherst
Sample Description:
Work Order: 11H0464

Date Received: 8/11/2011

**Field Sample #: TH-VBS-190**
Sampled: 8/11/2011 14:20

**Sample ID: 11H0464-05**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 13:08 | JMB |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 13:08 | JMB |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 13:08 | JMB |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 13:08 | JMB |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 13:08 | JMB |
| Aroclor-1254 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 13:08 | JMB |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 13:08 | JMB |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 13:08 | JMB |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg dry | 1 | | SW-846 8082A | 8/11/11 | 8/14/11 13:08 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 80.1 | 30-150 | | 8/14/11 13:08 |
| Decachlorobiphenyl [2] | 92.0 | 30-150 | | 8/14/11 13:08 |
| Tetrachloro-m-xylene [1] | 115 | 30-150 | | 8/14/11 13:08 |
| Tetrachloro-m-xylene [2] | 102 | 30-150 | | 8/14/11 13:08 |

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Project Location: Umass Tobin Amherst
Sample Description:
Work Order: 11H0464

Date Received: 8/11/2011

**Field Sample #: TH-VBS-190**
Sampled: 8/11/2011 14:20

**Sample ID: 11H0464-05**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 95.4 | | % Wt | 1 | | SM 2540G | 8/11/11 | 8/12/11 9:35 | MXG |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11H0464-02 [TH-VBS-187] | B035354 | 08/11/11 |
| 11H0464-03 [TH-VBS-188] | B035354 | 08/11/11 |
| 11H0464-04 [TH-VBS-189] | B035354 | 08/11/11 |
| 11H0464-05 [TH-VBS-190] | B035354 | 08/11/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0464-02 [TH-VBS-187] | B035346 | 10.1 | 50.0 | 08/11/11 |
| 11H0464-03 [TH-VBS-188] | B035346 | 10.1 | 50.0 | 08/11/11 |
| 11H0464-04 [TH-VBS-189] | B035346 | 10.2 | 50.0 | 08/11/11 |
| 11H0464-05 [TH-VBS-190] | B035346 | 10.0 | 50.0 | 08/11/11 |

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

| Lab Number [Field ID] | Batch | Initial [Wipe] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0464-01 [TH-VWS-186] | B035356 | 1.00 | 10.0 | 08/11/11 |

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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 B035346 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035346-BLK1)** | | | | Prepared: 08/11/11 Analyzed: 08/14/11 | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.180* | | mg/Kg wet | 0.200 | | 89.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.203* | | mg/Kg wet | 0.200 | | 101 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.220* | | mg/Kg wet | 0.200 | | 110 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.192* | | mg/Kg wet | 0.200 | | 96.1 | 30-150 | | | |
| **LCS (B035346-BS1)** | | | | Prepared: 08/11/11 Analyzed: 08/14/11 | | | | | | |
| Aroclor-1016 | 0.23 | 0.10 | mg/Kg wet | 0.200 | | 116 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 103 | 40-140 | | | |
| Aroclor-1260 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 94.3 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 94.2 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.163* | | mg/Kg wet | 0.200 | | 81.3 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.184* | | mg/Kg wet | 0.200 | | 91.8 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.206* | | mg/Kg wet | 0.200 | | 103 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.183* | | mg/Kg wet | 0.200 | | 91.3 | 30-150 | | | |
| **LCS Dup (B035346-BSD1)** | | | | Prepared: 08/11/11 Analyzed: 08/14/11 | | | | | | |
| Aroclor-1016 | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 112 | 40-140 | 3.40 | 30 | |
| Aroclor-1016 [2C] | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 102 | 40-140 | 0.838 | 30 | |
| Aroclor-1260 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 93.5 | 40-140 | 0.825 | 30 | |
| Aroclor-1260 [2C] | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 93.4 | 40-140 | 0.842 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.163* | | mg/Kg wet | 0.200 | | 81.4 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.185* | | mg/Kg wet | 0.200 | | 92.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.209* | | mg/Kg wet | 0.200 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.185* | | mg/Kg wet | 0.200 | | 92.7 | 30-150 | | | |

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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 B035356 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035356-BLK1)** | | | | Prepared: 08/11/11 Analyzed: 08/13/11 | | | | | | |
| 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 | *2.15* | | µg/Wipe | 2.00 | | 108 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *2.01* | | µg/Wipe | 2.00 | | 101 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *2.09* | | µg/Wipe | 2.00 | | 104 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *2.02* | | µg/Wipe | 2.00 | | 101 | 30-150 | | | |
| **LCS (B035356-BS1)** | | | | Prepared: 08/11/11 Analyzed: 08/13/11 | | | | | | |
| Aroclor-1016 | 0.49 | 0.20 | µg/Wipe | 0.500 | | 98.8 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.56 | 0.20 | µg/Wipe | 0.500 | | 112 | 40-140 | | | |
| Aroclor-1260 | 0.52 | 0.20 | µg/Wipe | 0.500 | | 104 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.52 | 0.20 | µg/Wipe | 0.500 | | 105 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *2.07* | | µg/Wipe | 2.00 | | 104 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.95* | | µg/Wipe | 2.00 | | 97.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *2.09* | | µg/Wipe | 2.00 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *2.04* | | µg/Wipe | 2.00 | | 102 | 30-150 | | | |
| **LCS Dup (B035356-BSD1)** | | | | Prepared: 08/11/11 Analyzed: 08/13/11 | | | | | | |
| Aroclor-1016 | 0.54 | 0.20 | µg/Wipe | 0.500 | | 108 | 40-140 | 8.69 | 30 | |
| Aroclor-1016 [2C] | 0.59 | 0.20 | µg/Wipe | 0.500 | | 117 | 40-140 | 4.99 | 30 | |
| Aroclor-1260 | 0.54 | 0.20 | µg/Wipe | 0.500 | | 107 | 40-140 | 3.45 | 30 | |
| Aroclor-1260 [2C] | 0.55 | 0.20 | µg/Wipe | 0.500 | | 109 | 40-140 | 4.05 | 30 | |
| Surrogate: Decachlorobiphenyl | *2.16* | | µg/Wipe | 2.00 | | 108 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *2.04* | | µg/Wipe | 2.00 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *2.19* | | µg/Wipe | 2.00 | | 110 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *2.14* | | µg/Wipe | 2.00 | | 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.

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## CERTIFICATIONS

**Certified Analyses included in this Report**

| Analyte | Certifications |
|---|---|
| ***SW-846 8082A in Soil*** | |
| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

11H0464

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS - TOBIN AMHERST, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # gfranklin
Email: jhamel@woodardcurran.com
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 | PCB's (Soxhlet Extr.) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | TH-VWS-186 | 8/11/11 | 1345 | | ✓ | O | L | X | | | | | | | | | | |
| 02 | TH-VCS-187 | | 1350 | | ✓ | O | L | X | | | | | | | | | | |
| 03 | TH-VCS-188 | | 1355 | | ✓ | O | L | X | | | | | | | | | | |
| 04 | TH-VCS-189 | | 1400 | | ✓ | O | L | X | | | | | | | | | | |
| 05 | TH-VCS-190 | | 1420 | | ✓ | O | L | X | | | | | | | | | | |

ANALYSIS REQUESTED

# of Containers: I
** Preservation: I
***Container Code: A

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: PCB's (Soxhlet) by USEPA 8082 via 3540c
R.L. ≤1.0 mg/kg.

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] | 8/11/11 1430 |
| Received by: (signature) [signature] | Date/Time: 8/11/11 1430 |
| Relinquished by: (signature) [signature] | Date/Time: 8/11/11 1540 |
| Received by: (signature) Paula Blakeborough | Date/Time: 8-11-11 1540 |

**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 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 See attached org 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.

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:** PB **DATE:** 8·11·11

**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 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:

## 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) | 4 | 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:**

**Do all samples have the proper Acid pH: Yes No N/A** _____

**Do all samples have the proper Base pH: Yes No N/A** _____

Doc# 277

Rev. 1 May

**11H0253-01** S-2

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.17 | 0.1671219 | 1.71 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.235 | 0.269682 | 13.7 |
| Tetrachloro-m-xylene | 0.248 | 0.2163692 | 13.6 |

**11H0464-01** TH-VWS-186

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl [2C] | 1.95 | 2.07734 | 6.32 |
| Tetrachloro-m-xylene [2C] | 2.03 | 2.04305 | 0.641 |

**11H0464-02** TH-VCS-187

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1254 | 0.13 | 0.137173 | 5.37 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.179 | 0.2060837 | 14.1 |
| Tetrachloro-m-xylene | 0.234 | 0.1984315 | 16.5 |

**11H0464-03** TH-VCS-188

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.222 | 0.1971688 | 11.8 |
| Decachlorobiphenyl | 0.171 | 0.1971843 | 14.2 |

**11H0464-04** TH-VCS-189

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.199 | 0.2324278 | 15.5 |
| Tetrachloro-m-xylene | 0.227 | 0.1995088 | 12.9 |

**11H0464-05** TH-VCS-190

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.168 | 0.192914 | 13.8 |
| Tetrachloro-m-xylene | 0.242 | 0.2134382 | 12.5 |

**B035346-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.180 | 0.202815 | 11.9 |
| Tetrachloro-m-xylene | 0.220 | 0.192225 | 13.5 |

**B035346-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.23 | 0.206655 | 10.7 |
| Aroclor-1260 | 0.19 | 0.18837 | 0.862 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.163 | 0.183555 | 11.9 |
| Tetrachloro-m-xylene | 0.206 | 0.182685 | 12 |

**B035346-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.19 | 0.18679 | 1.7 |
| Aroclor-1016 | 0.22 | 0.20493 | 7.09 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.163 | 0.18526 | 12.8 |
| Tetrachloro-m-xylene | 0.209 | 0.185435 | 11.9 |

**B035346-MS1** Matrix Spike

| Analyte | | Results | %RPD |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Aroclor-1016 | 0.25 | 0.2315281 | 7.67 |
| Aroclor-1260 | 0.35 | 0.3696868 | 5.47 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.177 | 0.2053402 | 14.8 |
| Tetrachloro-m-xylene | 0.234 | 0.2108585 | 10.4 |

**B035346-MSD1** Matrix Spike Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.39 | 0.409487 | 4.87 |
| Aroclor-1016 | 0.24 | 0.2289255 | 4.72 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.196 | 0.2270194 | 14.7 |
| Tetrachloro-m-xylene | 0.234 | 0.2084341 | 11.6 |

**B035356-BLK1** Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 2.09 | 2.01879 | 3.47 |
| Decachlorobiphenyl | 2.15 | 2.01061 | 6.7 |

**B035356-BS1** LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.49 | 0.558 | 13 |
| Aroclor-1260 | 0.52 | 0.52354 | 0.678 |
| Surrogates | | | |
| Decachlorobiphenyl | 2.07 | 1.94821 | 6.06 |
| Tetrachloro-m-xylene | 2.09 | 2.03787 | 2.53 |

**B035356-BSD1** LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.54 | 0.58654 | 8.26 |
| Aroclor-1260 | 0.54 | 0.54516 | 0.951 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 2.19 | 2.13719 | 2.44 |
| Decachlorobiphenyl | 2.16 | 2.04025 | 5.7 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0464 |
| Project Location: Umass Tobin Amherst | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0464-01 thru 11H0464-05

Matrices: Soil Wipe

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC CAM II A ( ) | 7470/7471 Hg CAM IIIB ( ) | MassDEP VPH CAM IV A ( ) | 8081 Pesticides CAM V B ( ) | 7196 Hex Cr CAM VI B ( ) | MassDEP APH CAM IX A ( ) |
| 8270 SVOC CAM II B ( ) | 7010 Metals CAM III C ( ) | MassDEP EPH CAM IV A ( ) | 8151 Herbicides CAM V C ( ) | 8330 Explosives CAM VIII A ( ) | TO-15 VOC CAM IX B ( ) |
| 6010 Metals CAM III A ( ) | 6020 Metals CAM III D ( ) | 8082 PCB CAM V A (X) | 9014 Total Cyanide/PAC CAM VI A ( ) | 6860 Perchlorate CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | |
|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | |
|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: M Erickson Position: Laboratory Director

Printed Name: Michael A. Erickson Date: 08/15/11

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

August 18, 2011

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

Project Location: Umass-Tobin, Amherst, MA
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0525

Enclosed are results of analyses for samples received by the laboratory on August 12, 2011. 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: 8/18/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0525

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

PROJECT LOCATION: Umass-Tobin, Amherst, MA

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBS-191 | 11H0525-01 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-192 | 11H0525-02 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-CBC-193 | 11H0525-03 | Soil | | SM 2540G | |
| | | | | 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 - 08/18/2011 - Results revised for sample 11H05025-03.

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

B035451-MS1, B035451-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 individuuals 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-Tobin, Amherst, MA
Sample Description:
Work Order: 11H0525

Date Received: 8/12/2011

**Field Sample #: TH-VBS-191**
Sampled: 8/12/2011 10:10

**Sample ID: 11H0525-01**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:43 | PJG |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:43 | PJG |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:43 | PJG |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:43 | PJG |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:43 | PJG |
| Aroclor-1254 [2] | 0.17 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:43 | PJG |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:43 | PJG |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:43 | PJG |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:43 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 97.3 | 30-150 | | 8/15/11 12:43 |
| Decachlorobiphenyl [2] | 114 | 30-150 | | 8/15/11 12:43 |
| Tetrachloro-m-xylene [1] | 111 | 30-150 | | 8/15/11 12:43 |
| Tetrachloro-m-xylene [2] | 105 | 30-150 | | 8/15/11 12:43 |

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Project Location: Umass-Tobin, Amherst, MA
Sample Description:
Work Order: 11H0525

Date Received: 8/12/2011

**Field Sample #: TH-VBS-191**
Sampled: 8/12/2011 10:10

**Sample ID: 11H0525-01**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 93.7 | | % Wt | 1 | | SM 2540G | 8/12/11 | 8/14/11 13:37 | VAF |

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Project Location: Umass-Tobin, Amherst, MA
Sample Description:
Work Order: 11H0525

Date Received: 8/12/2011

**Field Sample #: TH-VBS-192**
Sampled: 8/12/2011 10:15

**Sample ID: 11H0525-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:57 | PJG |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:57 | PJG |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:57 | PJG |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:57 | PJG |
| Aroclor-1248 [2] | 0.43 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:57 | PJG |
| Aroclor-1254 [1] | 0.24 | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:57 | PJG |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:57 | PJG |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:57 | PJG |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 12:57 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 96.9 | 30-150 | | 8/15/11 12:57 |
| Decachlorobiphenyl [2] | 113 | 30-150 | | 8/15/11 12:57 |
| Tetrachloro-m-xylene [1] | 109 | 30-150 | | 8/15/11 12:57 |
| Tetrachloro-m-xylene [2] | 106 | 30-150 | | 8/15/11 12:57 |

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Project Location: Umass-Tobin, Amherst, MA
Sample Description:
Work Order: 11H0525

Date Received: 8/12/2011

**Field Sample #: TH-VBS-192**
Sampled: 8/12/2011 10:15

**Sample ID: 11H0525-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 92.3 | | % Wt | 1 | | SM 2540G | 8/12/11 | 8/14/11 13:37 | VAF |

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Project Location: Umass-Tobin, Amherst, MA | Sample Description: | Work Order: 11H0525

Date Received: 8/12/2011

**Field Sample #: TH-CBC-193** | Sampled: 8/12/2011 12:45

**Sample ID: 11H0525-03**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| 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 | 8/13/11 | 8/15/11 18:19 | PJG |
| Aroclor-1221 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 18:19 | PJG |
| Aroclor-1232 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 18:19 | PJG |
| Aroclor-1242 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 18:19 | PJG |
| Aroclor-1248 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 18:19 | PJG |
| Aroclor-1254 [2] | 0.21 | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 18:19 | PJG |
| Aroclor-1260 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 18:19 | PJG |
| Aroclor-1262 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 18:19 | PJG |
| Aroclor-1268 [1] | ND | 0.10 | mg/Kg | 1 | | SW-846 8082A | 8/13/11 | 8/15/11 18:19 | PJG |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 86.6 | 30-150 | | 8/15/11 18:19 |
| Decachlorobiphenyl [2] | 102 | 30-150 | | 8/15/11 18:19 |
| Tetrachloro-m-xylene [1] | 108 | 30-150 | | 8/15/11 18:19 |
| Tetrachloro-m-xylene [2] | 119 | 30-150 | | 8/15/11 18:19 |

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Project Location: Umass-Tobin, Amherst, MA
Sample Description:
Work Order: 11H0525

Date Received: 8/12/2011

**Field Sample #: TH-CBC-193**
Sampled: 8/12/2011 12:45

**Sample ID: 11H0525-03**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 93.5 | | % Wt | 1 | | SM 2540G | 8/14/11 | 8/15/11 8:44 | PJS |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11H0525-01 [TH-VBS-191] | B035429 | 08/12/11 |
| 11H0525-02 [TH-VBS-192] | B035429 | 08/12/11 |

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11H0525-03 [TH-CBC-193] | B035449 | 08/14/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0525-03 [TH-CBC-193] | B035450 | 2.00 | 10.0 | 08/13/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0525-01 [TH-VBS-191] | B035451 | 10.1 | 50.0 | 08/13/11 |
| 11H0525-02 [TH-VBS-192] | B035451 | 10.0 | 50.0 | 08/13/11 |

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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 B035450 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035450-BLK1)** | | | | Prepared: 08/13/11 Analyzed: 08/15/11 | | | | | | |
| 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 | *0.912* | | mg/Kg | 1.00 | | 91.2 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.08* | | mg/Kg | 1.00 | | 108 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.01* | | mg/Kg | 1.00 | | 101 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.987* | | mg/Kg | 1.00 | | 98.7 | 30-150 | | | |
| **LCS (B035450-BS1)** | | | | Prepared: 08/13/11 Analyzed: 08/15/11 | | | | | | |
| Aroclor-1016 | 0.28 | 0.10 | mg/Kg | 0.250 | | 112 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.28 | 0.10 | mg/Kg | 0.250 | | 112 | 40-140 | | | |
| Aroclor-1260 | 0.24 | 0.10 | mg/Kg | 0.250 | | 96.9 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 103 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.920* | | mg/Kg | 1.00 | | 92.0 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.08* | | mg/Kg | 1.00 | | 108 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.991* | | mg/Kg | 1.00 | | 99.1 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.983* | | mg/Kg | 1.00 | | 98.3 | 30-150 | | | |
| **LCS Dup (B035450-BSD1)** | | | | Prepared: 08/13/11 Analyzed: 08/15/11 | | | | | | |
| Aroclor-1016 | 0.28 | 0.10 | mg/Kg | 0.250 | | 110 | 40-140 | 1.34 | 30 | |
| Aroclor-1016 [2C] | 0.27 | 0.10 | mg/Kg | 0.250 | | 109 | 40-140 | 2.69 | 30 | |
| Aroclor-1260 | 0.25 | 0.10 | mg/Kg | 0.250 | | 98.2 | 40-140 | 1.32 | 30 | |
| Aroclor-1260 [2C] | 0.26 | 0.10 | mg/Kg | 0.250 | | 106 | 40-140 | 2.80 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.915* | | mg/Kg | 1.00 | | 91.5 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *1.09* | | mg/Kg | 1.00 | | 109 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *1.03* | | mg/Kg | 1.00 | | 103 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *1.03* | | mg/Kg | 1.00 | | 103 | 30-150 | | | |

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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 B035451 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035451-BLK1)** | | | | Prepared: 08/13/11 Analyzed: 08/15/11 | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.184* | | mg/Kg wet | 0.200 | | 92.1 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.215* | | mg/Kg wet | 0.200 | | 108 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.204* | | mg/Kg wet | 0.200 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.196* | | mg/Kg wet | 0.200 | | 98.0 | 30-150 | | | |
| **LCS (B035451-BS1)** | | | | Prepared: 08/13/11 Analyzed: 08/15/11 | | | | | | |
| Aroclor-1016 | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 103 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 104 | 40-140 | | | |
| Aroclor-1260 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 92.6 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 94.7 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.162* | | mg/Kg wet | 0.200 | | 81.0 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.189* | | mg/Kg wet | 0.200 | | 94.4 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.205* | | mg/Kg wet | 0.200 | | 103 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.200* | | mg/Kg wet | 0.200 | | 99.9 | 30-150 | | | |
| **LCS Dup (B035451-BSD1)** | | | | Prepared: 08/13/11 Analyzed: 08/15/11 | | | | | | |
| Aroclor-1016 | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 104 | 40-140 | 0.869 | 30 | |
| Aroclor-1016 [2C] | 0.21 | 0.10 | mg/Kg wet | 0.200 | | 106 | 40-140 | 1.92 | 30 | |
| Aroclor-1260 | 0.19 | 0.10 | mg/Kg wet | 0.200 | | 95.8 | 40-140 | 3.38 | 30 | |
| Aroclor-1260 [2C] | 0.20 | 0.10 | mg/Kg wet | 0.200 | | 98.8 | 40-140 | 4.17 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.170* | | mg/Kg wet | 0.200 | | 84.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.199* | | mg/Kg wet | 0.200 | | 99.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.204* | | mg/Kg wet | 0.200 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.199* | | mg/Kg wet | 0.200 | | 99.6 | 30-150 | | | |

con-test® ANALYTICAL LABORATORY

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

**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 B035451 - SW-846 3540C** | | | | | | | | | | | |
| **Matrix Spike (B035451-MS1)** | | **Source: 11H0525-02** | | Prepared: 08/13/11 Analyzed: 08/15/11 | | | | | | | |
| **Aroclor-1016** | 0.43 | 0.11 | mg/Kg dry | 0.217 | 0.0 | **199** | * | 40-140 | | | MS-21 |
| **Aroclor-1016 [2C]** | 0.44 | 0.11 | mg/Kg dry | 0.217 | 0.0 | **203** | * | 40-140 | | | MS-21 |
| Aroclor-1260 | 0.27 | 0.11 | mg/Kg dry | 0.217 | 0.0 | 125 | | 40-140 | | | |
| Aroclor-1260 [2C] | 0.28 | 0.11 | mg/Kg dry | 0.217 | 0.0 | 131 | | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.207* | | mg/Kg dry | 0.217 | | 95.7 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.242* | | mg/Kg dry | 0.217 | | 112 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.233* | | mg/Kg dry | 0.217 | | 108 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.228* | | mg/Kg dry | 0.217 | | 105 | | 30-150 | | | |
| **Matrix Spike Dup (B035451-MSD1)** | | **Source: 11H0525-02** | | Prepared: 08/13/11 Analyzed: 08/15/11 | | | | | | | |
| **Aroclor-1016** | 0.55 | 0.11 | mg/Kg dry | 0.217 | 0.0 | **255** | * | 40-140 | 24.7 | 50 | MS-21 |
| **Aroclor-1016 [2C]** | 0.49 | 0.11 | mg/Kg dry | 0.217 | 0.0 | **226** | * | 40-140 | 10.9 | 50 | MS-21 |
| Aroclor-1260 | 0.28 | 0.11 | mg/Kg dry | 0.217 | 0.0 | 128 | | 40-140 | 1.71 | 50 | |
| Aroclor-1260 [2C] | 0.29 | 0.11 | mg/Kg dry | 0.217 | 0.0 | 134 | | 40-140 | 2.35 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.202* | | mg/Kg dry | 0.217 | | 93.1 | | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.235* | | mg/Kg dry | 0.217 | | 109 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.233* | | mg/Kg dry | 0.217 | | 107 | | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.227* | | mg/Kg dry | 0.217 | | 105 | | 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 |
| ***SW-846 8082A in Soil*** | |
| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

con-test® ANALYTICAL LABORATORY
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www.contestlabs.com

# CHAIN OF CUSTODY RECORD

39 Spruce Street
East longmeadow, MA 01028

Page 1 of 1

11H0525

Company Name: WOODARD + CURRAN
Address: 35 N.E. BUSINESS CTR, SUITE 180
ANDOVER, MA
Attention: GEORGE FRANKLIN
Project Location: UMASS-TOBIN AMHERT, MA
Sampled By: J. REAM

Telephone: 1(978)557-8150
Project # 224733
Client PO#

DATA DELIVERY (check all that apply)
○ FAX ☑ EMAIL ○ WEBSITE
Fax # gfranklin
Email: jhamel@woodardcurran.com
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 | PCB's (Soxhlet) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| -01 | TH-VBS-191 | 8/12/11 | 1010 | | ✓ | S | L | X | | | | | | | | | | |
| -02 | TH-VBS-192 | ↓ | 1015 | | ✓ | S | L | X | | | | | | | | | | |
| -03 | TH-CBC-193 | ↓ | 1245 | | ✓ | S | L | X | | | | | | | | | | |

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

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: PCB's (Soxhlet) 8082 via 3540c
R.L. 1.0 mg/kg

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] | 8/12/11 |
| Received by: (signature) [signature] | Date/Time: 8/12/11 1310 |
| Relinquished by: (signature) [signature] | Date/Time: 8/12/11 1745 |
| Received by: (signature) [signature] 2.8°C | Date/Time: 8/12/11 1740 |

**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 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

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East Longmeadow, MA. 01028
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# Sample Receipt Checklist

**CLIENT NAME:** Woodward + Curran **RECEIVED BY:** [illegible] **DATE:** 8/12/11

**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°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: _____

## 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) | 8 | 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:**

**Do all samples have the proper Acid pH: Yes No N/A** _____

**Do all samples have the proper Base pH: Yes No N/A** _____

Doc# 277

Rev. 1 May 2011

## 11H0525-01 TH-VBS-191

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1254 [2C] | 0.17 | 0.1475269 | 14.2 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.206 | 0.2401862 | 15.3 |
| Tetrachloro-m-xylene | 0.235 | 0.2213828 | 5.97 |

## 11H0525-02 TH-VBS-192

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1248 [2C] | 0.43 | 0.3786078 | 12.7 |
| Aroclor-1254 | 0.24 | 0.2311322 | 3.76 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.210 | 0.2459209 | 15.8 |
| Tetrachloro-m-xylene | 0.236 | 0.2286511 | 3.16 |

## 11H0525-03 TH-CBC-193

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.08 | 1.19226 | 9.88 |
| Decachlorobiphenyl | 0.865 | 1.024815 | 16.9 |

## B035450-BLK1 Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.912 | 1.079135 | 16.8 |
| Tetrachloro-m-xylene | 1.01 | 0.987345 | 2.27 |

## B035450-BS1 LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.28 | 0.278845 | 0.413 |
| Aroclor-1260 | 0.24 | 0.256525 | 6.66 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.920 | 1.0793 | 15.9 |
| Tetrachloro-m-xylene | 0.991 | 0.983275 | 0.783 |

## B035450-BSD1 LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.28 | 0.27145 | 3.1 |
| Aroclor-1260 | 0.25 | 0.263815 | 5.38 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 1.03 | 1.033085 | 0.299 |
| Decachlorobiphenyl | 0.915 | 1.089575 | 17.4 |

## B035451-BLK1 Blank

| Analyte | | Results | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.184 | 0.21538 | 15.7 |
| Tetrachloro-m-xylene | 0.204 | 0.19599 | 4.01 |

## B035451-BS1 LCS

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.21 | 0.208255 | 0.834 |
| Aroclor-1260 | 0.19 | 0.189475 | 0.277 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.162 | 0.18886 | 15.3 |
| Tetrachloro-m-xylene | 0.205 | 0.19988 | 2.53 |

## B035451-BSD1 LCS Dup

| Analyte | | Results | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.19 | 0.19754 | 3.89 |
| Aroclor-1016 | 0.21 | 0.212295 | 1.09 |

| Surrogates | | | |
|---|---|---|---|
| Decachlorobiphenyl | 0.170 | 0.19862 | 15.5 |
| Tetrachloro-m-xylene | 0.204 | 0.1991 | 2.43 |

**B035451-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.43 | 0.4398591 | 2.27 |
| Aroclor-1260 | 0.27 | 0.2846479 | 5.28 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.207 | 0.2418906 | 15.5 |
| Tetrachloro-m-xylene | 0.233 | 0.2283478 | 2.02 |

**B035451-MSD1** Matrix Spike Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.55 | 0.490325 | 11.5 |
| Aroclor-1260 | 0.28 | 0.2914193 | 4 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.233 | 0.2273348 | 2.46 |
| Decachlorobiphenyl | 0.202 | 0.2354171 | 15.3 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0525 |
| Project Location: Umass-Tobin, Amherst, MA | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0525-01 thru 11H0525-03

Matrices: Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☐ Yes | ☑ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: _____ Position: Laboratory Manager

Printed Name: Daren J. Damboragian Date: 08/16/11

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

August 19, 2011

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

Project Location: Umass Amherst-Tobin Hall
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0553

Enclosed are results of analyses for samples received by the laboratory on August 15, 2011. 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: 8/19/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0553

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-Tobin Hall

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBS-194 | 11H0553-01 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-195 | 11H0553-02 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBC-196 | 11H0553-03 | Soil | | SM 2540G | |
| | | | | 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 - 08/19/2011 - Date sampled revised to 8/15/2011 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 individuuals 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

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Project Location: Umass Amherst-Tobin Hall | Sample Description: | Work Order: 11H0553

Date Received: 8/15/2011

**Field Sample #: TH-VBS-194** | Sampled: 8/15/2011 11:10

**Sample ID: 11H0553-01**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:15 | JMB |
| Aroclor-1221 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:15 | JMB |
| Aroclor-1232 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:15 | JMB |
| Aroclor-1242 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:15 | JMB |
| Aroclor-1248 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:15 | JMB |
| Aroclor-1254 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:15 | JMB |
| Aroclor-1260 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:15 | JMB |
| Aroclor-1262 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:15 | JMB |
| Aroclor-1268 [1] | ND | 0.11 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:15 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.0 | 30-150 | | 8/16/11 19:15 |
| Decachlorobiphenyl [2] | 91.4 | 30-150 | | 8/16/11 19:15 |
| Tetrachloro-m-xylene [1] | 121 | 30-150 | | 8/16/11 19:15 |
| Tetrachloro-m-xylene [2] | 117 | 30-150 | | 8/16/11 19:15 |

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Project Location: Umass Amherst-Tobin Hall
Sample Description:
Work Order: 11H0553

Date Received: 8/15/2011

**Field Sample #: TH-VBS-194**
Sampled: 8/15/2011 11:10

**Sample ID: 11H0553-01**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 87.9 | | % Wt | 1 | | SM 2540G | 8/15/11 | 8/16/11 9:36 | MXG |

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Project Location: Umass Amherst-Tobin Hall | Sample Description: | Work Order: 11H0553

Date Received: 8/15/2011

**Field Sample #: TH-VBS-195** | Sampled: 8/15/2011 13:32

**Sample ID: 11H0553-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:28 | JMB |
| Aroclor-1221 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:28 | JMB |
| Aroclor-1232 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:28 | JMB |
| Aroclor-1242 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:28 | JMB |
| Aroclor-1248 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:28 | JMB |
| Aroclor-1254 [1] | 0.17 | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:28 | JMB |
| Aroclor-1260 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:28 | JMB |
| Aroclor-1262 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:28 | JMB |
| Aroclor-1268 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:28 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 112 | 30-150 | | 8/16/11 19:28 |
| Decachlorobiphenyl [2] | 111 | 30-150 | | 8/16/11 19:28 |
| Tetrachloro-m-xylene [1] | 127 | 30-150 | | 8/16/11 19:28 |
| Tetrachloro-m-xylene [2] | 124 | 30-150 | | 8/16/11 19:28 |

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Project Location: Umass Amherst-Tobin Hall
Sample Description:
Work Order: 11H0553

Date Received: 8/15/2011

**Field Sample #: TH-VBS-195**
Sampled: 8/15/2011 13:32

**Sample ID: 11H0553-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 85.1 | | % Wt | 1 | | SM 2540G | 8/15/11 | 8/16/11 9:36 | MXG |

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Project Location: Umass Amherst-Tobin Hall | Sample Description: | Work Order: 11H0553

Date Received: 8/15/2011

**Field Sample #: TH-VBC-196** | Sampled: 8/15/2011 14:37

**Sample ID: 11H0553-03**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:41 | JMB |
| Aroclor-1221 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:41 | JMB |
| Aroclor-1232 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:41 | JMB |
| Aroclor-1242 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:41 | JMB |
| Aroclor-1248 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:41 | JMB |
| Aroclor-1254 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:41 | JMB |
| Aroclor-1260 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:41 | JMB |
| Aroclor-1262 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:41 | JMB |
| Aroclor-1268 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:41 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 112 | 30-150 | | 8/16/11 19:41 |
| Decachlorobiphenyl [2] | 114 | 30-150 | | 8/16/11 19:41 |
| Tetrachloro-m-xylene [1] | 125 | 30-150 | | 8/16/11 19:41 |
| Tetrachloro-m-xylene [2] | 124 | 30-150 | | 8/16/11 19:41 |

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Project Location: Umass Amherst-Tobin Hall
Sample Description:
Work Order: 11H0553

Date Received: 8/15/2011

**Field Sample #: TH-VBC-196**
Sampled: 8/15/2011 14:37

**Sample ID: 11H0553-03**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 78.0 | | % Wt | 1 | | SM 2540G | 8/15/11 | 8/16/11 9:36 | MXG |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11H0553-01 [TH-VBS-194] | B035524 | 08/15/11 |
| 11H0553-02 [TH-VBS-195] | B035524 | 08/15/11 |
| 11H0553-03 [TH-VBC-196] | B035524 | 08/15/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0553-01 [TH-VBS-194] | B035519 | 10.0 | 50.0 | 08/15/11 |
| 11H0553-02 [TH-VBS-195] | B035519 | 10.0 | 50.0 | 08/15/11 |
| 11H0553-03 [TH-VBC-196] | B035519 | 10.3 | 50.0 | 08/15/11 |

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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 B035519 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035519-BLK1)** | | | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.210* | | mg/Kg wet | 0.200 | | 105 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.205* | | mg/Kg wet | 0.200 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.243* | | mg/Kg wet | 0.200 | | 122 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.228* | | mg/Kg wet | 0.200 | | 114 | 30-150 | | | |
| **LCS (B035519-BS1)** | | | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg wet | 0.200 | | 119 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.23 | 0.10 | mg/Kg wet | 0.200 | | 115 | 40-140 | | | |
| Aroclor-1260 | 0.27 | 0.10 | mg/Kg wet | 0.200 | | 137 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg wet | 0.200 | | 126 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.221* | | mg/Kg wet | 0.200 | | 111 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.212* | | mg/Kg wet | 0.200 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.213* | | mg/Kg wet | 0.200 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.201* | | mg/Kg wet | 0.200 | | 100 | 30-150 | | | |
| **LCS Dup (B035519-BSD1)** | | | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg wet | 0.200 | | 123 | 40-140 | 3.09 | 30 | |
| Aroclor-1016 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 109 | 40-140 | 5.26 | 30 | |
| Aroclor-1260 | 0.27 | 0.10 | mg/Kg wet | 0.200 | | 133 | 40-140 | 2.87 | 30 | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg wet | 0.200 | | 126 | 40-140 | 0.316 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.219* | | mg/Kg wet | 0.200 | | 109 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.210* | | mg/Kg wet | 0.200 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.209* | | mg/Kg wet | 0.200 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.202* | | mg/Kg wet | 0.200 | | 101 | 30-150 | | | |

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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 B035519 - SW-846 3540C** | | | | | | | | | | |
| **Matrix Spike (B035519-MS1)** | | **Source: 11H0553-01** | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| Aroclor-1016 | 0.29 | 0.11 | mg/Kg dry | 0.221 | 0.0 | 130 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.26 | 0.11 | mg/Kg dry | 0.221 | 0.0 | 119 | 40-140 | | | |
| Aroclor-1260 | 0.28 | 0.11 | mg/Kg dry | 0.221 | 0.0 | 126 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.28 | 0.11 | mg/Kg dry | 0.221 | 0.0 | 128 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.247* | | mg/Kg dry | 0.221 | | 112 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.242* | | mg/Kg dry | 0.221 | | 109 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.236* | | mg/Kg dry | 0.221 | | 107 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.232* | | mg/Kg dry | 0.221 | | 105 | 30-150 | | | |
| **Matrix Spike Dup (B035519-MSD1)** | | **Source: 11H0553-01** | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| Aroclor-1016 | 0.28 | 0.11 | mg/Kg dry | 0.223 | 0.0 | 124 | 40-140 | 3.85 | 50 | |
| Aroclor-1016 [2C] | 0.26 | 0.11 | mg/Kg dry | 0.223 | 0.0 | 116 | 40-140 | 1.48 | 50 | |
| Aroclor-1260 | 0.30 | 0.11 | mg/Kg dry | 0.223 | 0.0 | 134 | 40-140 | 6.56 | 50 | |
| Aroclor-1260 [2C] | 0.27 | 0.11 | mg/Kg dry | 0.223 | 0.0 | 121 | 40-140 | 4.10 | 50 | |
| Surrogate: Decachlorobiphenyl | *0.245* | | mg/Kg dry | 0.223 | | 110 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.242* | | mg/Kg dry | 0.223 | | 109 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.234* | | mg/Kg dry | 0.223 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.230* | | mg/Kg dry | 0.223 | | 103 | 30-150 | | | |

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**QUALITY CONTROL**

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B035524 - % Solids** | | | | | | | | | | |
| **Duplicate (B035524-DUP1)** | | **Source: 11H0553-01** | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| % Solids | 87.0 | | % Wt | | 87.9 | | | 1.03 | 20 | |

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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 Soil*** | |
| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

# CHAIN OF CUSTODY RECORD

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

Page 1 of 1

11H0553

Company Name: Woodard & Curran
Address: 35 New England Business Center, Suite 180, Andover MA 01810
Attention: George Franklin
Project Location: UMass Amherst - Tobin Hall
Sampled By: Rhonda Forrester

Telephone: (978)557-8150
Project #: 224733
Client PO#:

DATA DELIVERY (check all that apply)
○ FAX ☒ EMAIL ○ WEBSITE
Fax #:
Email: gfranklin@woodardcurran.com
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 | PCBs (Soxhlet) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | TH-VBS-194 | 8-15-11 | 11:10 | | X | S | L | X | | | | | | | | | | |
| 02 | TH-VBS-195 | ↓ | 13:32 | | X | S | L | X | | | | | | | | | | |
| 03 | TH-VBC-196 | ↓ | 14:37 | | X | S | L | X | | | | | | | | | | |

ANALYSIS REQUESTED

| # of Containers | 1 |
|---|---|
| ** Preservation | none |
| ***Container Code | A |

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: PCBs by USEPA 8082 via 3540C (Soxhlet)
R.L. ≤ 1.0 mg/kg

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] | 8/15/11 15:00 |
| Received by: (signature) [signature] | Date/Time: 8/15 15:00 |
| Relinquished by: (signature) [signature] | Date/Time: 8/15 16:08 |
| Received by: (signature) [signature] 4.4 | Date/Time: 8/15 1608 |

**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 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 LETELY 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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East Longmeadow, MA. 01028
P: 413-525-2332
F: 413-525-6405
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# Sample Receipt Checklist

CLIENT NAME: Woodard + Curran RECEIVED BY: SD DATE: 8/15/11

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: _____

## 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) | 3 | 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:

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

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

Doc# 277

Rev. 1 May 2011

**11H0553-01** TH-VBS-194

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.274 | 0.2659841 | 2.97 |
| Decachlorobiphenyl | 0.214 | 0.2079238 | 2.88 |

**11H0553-02** TH-VBS-195

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1254 | 0.17 | 0.1621739 | 4.71 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.264 | 0.2608225 | 1.21 |
| Tetrachloro-m-xylene | 0.298 | 0.2923796 | 1.9 |

**11H0553-03** TH-VBC-196

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.279 | 0.283937 | 1.75 |
| Tetrachloro-m-xylene | 0.312 | 0.3080844 | 1.26 |

**B035519-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.210 | 0.20488 | 2.47 |
| Tetrachloro-m-xylene | 0.243 | 0.22794 | 6.4 |

**B035519-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.24 | 0.22978 | 4.35 |
| Aroclor-1260 | 0.27 | 0.2518 | 6.98 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.213 | 0.20082 | 5.89 |
| Decachlorobiphenyl | 0.221 | 0.21225 | 4.04 |

**B035519-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.27 | 0.251005 | 7.29 |
| Aroclor-1016 | 0.25 | 0.217995 | 13.7 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.219 | 0.20966 | 4.36 |
| Tetrachloro-m-xylene | 0.209 | 0.201805 | 3.5 |

**B035519-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.29 | 0.2621194 | 10.1 |
| Aroclor-1260 | 0.28 | 0.2820836 | 0.741 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.247 | 0.2417189 | 2.16 |
| Tetrachloro-m-xylene | 0.236 | 0.2317782 | 1.81 |

**B035519-MSD1** Matrix Spike Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.28 | 0.2582703 | 8.07 |
| Aroclor-1260 | 0.30 | 0.2707399 | 10.3 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.234 | 0.2296839 | 1.86 |
| Decachlorobiphenyl | 0.245 | 0.2421758 | 1.16 |

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0553 |
| Project Location: Umass Amherst-Tobin Hall | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0553-01 thru 11H0553-03

Matrices: Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☑ Yes | ☐ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes | ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: M Erickson Position: Laboratory Director

Printed Name: Michael A. Erickson Date: 08/18/11

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

August 19, 2011

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

Project Location: UMass Amherst
Client Job Number:
Project Number: 224733
Laboratory Work Order Number: 11H0565

Enclosed are results of analyses for samples received by the laboratory on August 15, 2011. 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: 8/19/2011

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 224733

**ANALYTICAL SUMMARY**

WORK ORDER NUMBER: 11H0565

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

| FIELD SAMPLE # | LAB ID: | MATRIX | SAMPLE DESCRIPTION | TEST | SUB LAB |
|---|---|---|---|---|---|
| TH-VBS-197 | 11H0565-01 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBC-198 | 11H0565-02 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBC-199 | 11H0565-03 | Soil | | SM 2540G | |
| | | | | SW-846 8082A | |
| TH-VBS-200 | 11H0565-04 | Soil | | SM 2540G | |
| | | | | 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 - 08/19/2011 - Sample IDs for -02 and -03 revised per clients request.

**Login**

**Qualifications:**

Samples were received directly from the field at ambient temperature.

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

11H0565-01[TH-VBS-197], 11H0565-02[TH-VBC-198], 11H0565-03[TH-VBC-199], 11H0565-04[TH-VBS-200]

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

Project Location: UMass Amherst | Sample Description: | Work Order: 11H0565

Date Received: 8/15/2011

**Field Sample #: TH-VBS-197** | Sampled: 8/15/2011 15:10

**Sample ID: 11H0565-01**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:54 | JMB |
| Aroclor-1221 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:54 | JMB |
| Aroclor-1232 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:54 | JMB |
| Aroclor-1242 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:54 | JMB |
| Aroclor-1248 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:54 | JMB |
| Aroclor-1254 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:54 | JMB |
| Aroclor-1260 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:54 | JMB |
| Aroclor-1262 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:54 | JMB |
| Aroclor-1268 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 19:54 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 91.2 | 30-150 | | 8/16/11 19:54 |
| Decachlorobiphenyl [2] | 90.5 | 30-150 | | 8/16/11 19:54 |
| Tetrachloro-m-xylene [1] | 116 | 30-150 | | 8/16/11 19:54 |
| Tetrachloro-m-xylene [2] | 113 | 30-150 | | 8/16/11 19:54 |

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Project Location: UMass Amherst
Sample Description:
Work Order: 11H0565

Date Received: 8/15/2011

**Field Sample #: TH-VBS-197**
Sampled: 8/15/2011 15:10

**Sample ID: 11H0565-01**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 82.7 | | % Wt | 1 | | SM 2540G | 8/15/11 | 8/16/11 9:34 | MXG |

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Project Location: UMass Amherst
Sample Description:
Work Order: 11H0565

Date Received: 8/15/2011

**Field Sample #: TH-VBC-198**
Sampled: 8/15/2011 15:18

**Sample ID: 11H0565-02**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:07 | JMB |
| Aroclor-1221 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:07 | JMB |
| Aroclor-1232 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:07 | JMB |
| Aroclor-1242 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:07 | JMB |
| Aroclor-1248 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:07 | JMB |
| Aroclor-1254 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:07 | JMB |
| Aroclor-1260 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:07 | JMB |
| Aroclor-1262 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:07 | JMB |
| Aroclor-1268 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:07 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 83.6 | 30-150 | | 8/16/11 20:07 |
| Decachlorobiphenyl [2] | 80.5 | 30-150 | | 8/16/11 20:07 |
| Tetrachloro-m-xylene [1] | 102 | 30-150 | | 8/16/11 20:07 |
| Tetrachloro-m-xylene [2] | 102 | 30-150 | | 8/16/11 20:07 |

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Project Location: UMass Amherst
Sample Description:
Work Order: 11H0565

Date Received: 8/15/2011

**Field Sample #: TH-VBC-198**
Sampled: 8/15/2011 15:18

**Sample ID: 11H0565-02**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 86.3 | | % Wt | 1 | | SM 2540G | 8/15/11 | 8/16/11 9:34 | MXG |

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Project Location: UMass Amherst | Sample Description: | Work Order: 11H0565

Date Received: 8/15/2011

**Field Sample #: TH-VBC-199** | Sampled: 8/15/2011 15:40

**Sample ID: 11H0565-03**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:20 | JMB |
| Aroclor-1221 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:20 | JMB |
| Aroclor-1232 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:20 | JMB |
| Aroclor-1242 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:20 | JMB |
| Aroclor-1248 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:20 | JMB |
| Aroclor-1254 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:20 | JMB |
| Aroclor-1260 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:20 | JMB |
| Aroclor-1262 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:20 | JMB |
| Aroclor-1268 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:20 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 94.4 | 30-150 | | 8/16/11 20:20 |
| Decachlorobiphenyl [2] | 92.9 | 30-150 | | 8/16/11 20:20 |
| Tetrachloro-m-xylene [1] | 108 | 30-150 | | 8/16/11 20:20 |
| Tetrachloro-m-xylene [2] | 107 | 30-150 | | 8/16/11 20:20 |

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Project Location: UMass Amherst
Sample Description:
Work Order: 11H0565

Date Received: 8/15/2011

**Field Sample #: TH-VBC-199**
Sampled: 8/15/2011 15:40

**Sample ID: 11H0565-03**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 83.6 | | % Wt | 1 | | SM 2540G | 8/15/11 | 8/16/11 9:34 | MXG |

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Project Location: UMass Amherst
Sample Description:
Work Order: 11H0565

Date Received: 8/15/2011

**Field Sample #: TH-VBS-200**
Sampled: 8/15/2011 15:58

**Sample ID: 11H0565-04**

Sample Matrix: Soil

**Polychlorinated Biphenyls By GC/ECD**

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:33 | JMB |
| Aroclor-1221 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:33 | JMB |
| Aroclor-1232 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:33 | JMB |
| Aroclor-1242 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:33 | JMB |
| Aroclor-1248 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:33 | JMB |
| Aroclor-1254 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:33 | JMB |
| Aroclor-1260 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:33 | JMB |
| Aroclor-1262 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:33 | JMB |
| Aroclor-1268 [1] | ND | 0.12 | mg/Kg dry | 1 | | SW-846 8082A | 8/15/11 | 8/16/11 20:33 | JMB |

| Surrogates | % Recovery | Recovery Limits | Flag | |
|---|---|---|---|---|
| Decachlorobiphenyl [1] | 98.7 | 30-150 | | 8/16/11 20:33 |
| Decachlorobiphenyl [2] | 98.3 | 30-150 | | 8/16/11 20:33 |
| Tetrachloro-m-xylene [1] | 110 | 30-150 | | 8/16/11 20:33 |
| Tetrachloro-m-xylene [2] | 109 | 30-150 | | 8/16/11 20:33 |

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Project Location: UMass Amherst
Sample Description:
Work Order: 11H0565

Date Received: 8/15/2011

**Field Sample #: TH-VBS-200**
Sampled: 8/15/2011 15:58

**Sample ID: 11H0565-04**

Sample Matrix: Soil

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

| Analyte | Results | RL | Units | Dilution | Flag | Method | Date Prepared | Date/Time Analyzed | Analyst |
|---|---|---|---|---|---|---|---|---|---|
| % Solids | 84.7 | | % Wt | 1 | | SM 2540G | 8/15/11 | 8/16/11 9:34 | MXG |

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## Sample Extraction Data

**Prep Method: % Solids-SM 2540G**

| Lab Number [Field ID] | Batch | Date |
|---|---|---|
| 11H0565-01 [TH-VBS-197] | B035532 | 08/15/11 |
| 11H0565-02 [TH-VBC-198] | B035532 | 08/15/11 |
| 11H0565-03 [TH-VBC-199] | B035532 | 08/15/11 |
| 11H0565-04 [TH-VBS-200] | B035532 | 08/15/11 |

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

| Lab Number [Field ID] | Batch | Initial [g] | Final [mL] | Date |
|---|---|---|---|---|
| 11H0565-01 [TH-VBS-197] | B035519 | 10.2 | 50.0 | 08/15/11 |
| 11H0565-02 [TH-VBC-198] | B035519 | 10.0 | 50.0 | 08/15/11 |
| 11H0565-03 [TH-VBC-199] | B035519 | 10.0 | 50.0 | 08/15/11 |
| 11H0565-04 [TH-VBS-200] | B035519 | 10.1 | 50.0 | 08/15/11 |

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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 B035519 - SW-846 3540C** | | | | | | | | | | |
| **Blank (B035519-BLK1)** | | | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| Aroclor-1016 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 | ND | 0.10 | mg/Kg wet | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.10 | mg/Kg wet | | | | | | | |
| Surrogate: Decachlorobiphenyl | *0.210* | | mg/Kg wet | 0.200 | | 105 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.205* | | mg/Kg wet | 0.200 | | 102 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.243* | | mg/Kg wet | 0.200 | | 122 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.228* | | mg/Kg wet | 0.200 | | 114 | 30-150 | | | |
| **LCS (B035519-BS1)** | | | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| Aroclor-1016 | 0.24 | 0.10 | mg/Kg wet | 0.200 | | 119 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.23 | 0.10 | mg/Kg wet | 0.200 | | 115 | 40-140 | | | |
| Aroclor-1260 | 0.27 | 0.10 | mg/Kg wet | 0.200 | | 137 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg wet | 0.200 | | 126 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | *0.221* | | mg/Kg wet | 0.200 | | 111 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.212* | | mg/Kg wet | 0.200 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.213* | | mg/Kg wet | 0.200 | | 106 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.201* | | mg/Kg wet | 0.200 | | 100 | 30-150 | | | |
| **LCS Dup (B035519-BSD1)** | | | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| Aroclor-1016 | 0.25 | 0.10 | mg/Kg wet | 0.200 | | 123 | 40-140 | 3.09 | 30 | |
| Aroclor-1016 [2C] | 0.22 | 0.10 | mg/Kg wet | 0.200 | | 109 | 40-140 | 5.26 | 30 | |
| Aroclor-1260 | 0.27 | 0.10 | mg/Kg wet | 0.200 | | 133 | 40-140 | 2.87 | 30 | |
| Aroclor-1260 [2C] | 0.25 | 0.10 | mg/Kg wet | 0.200 | | 126 | 40-140 | 0.316 | 30 | |
| Surrogate: Decachlorobiphenyl | *0.219* | | mg/Kg wet | 0.200 | | 109 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | *0.210* | | mg/Kg wet | 0.200 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | *0.209* | | mg/Kg wet | 0.200 | | 105 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | *0.202* | | mg/Kg wet | 0.200 | | 101 | 30-150 | | | |

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**QUALITY CONTROL**

**Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control**

| Analyte | Result | Reporting Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B035532 - % Solids** | | | | | | | | | | |
| **Duplicate (B035532-DUP1)** | | **Source: 11H0565-01** | | Prepared: 08/15/11 Analyzed: 08/16/11 | | | | | | |
| % Solids | 81.8 | | % Wt | | 82.7 | | | 1.09 | 20 | |

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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. |
| T-04 | Samples were received directly from the field at ambient temperature. |

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## CERTIFICATIONS

**Certified Analyses included in this Report**

| Analyte | Certifications |
|---|---|
| ***SW-846 8082A in Soil*** | |
| 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 | American Industrial Hygiene Association | 100033 | 01/1/2012 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2012 |
| CT | Connecticut Department of Publilc Health | PH-0567 | 09/30/2011 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2012 |
| NH | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2012 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2011 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2011 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2012 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2012 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2012 |
| WA | State of Washington Department of Ecology | C2065 | 02/23/2012 |
| ME | State of Maine | 2011028 | 06/9/2013 |

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Email: info@contestlabs.com
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# CHAIN OF CUSTODY RECORD

11H0565

Page 1 of 1

Company Name: Woodard & Curran
Address: 35 New England Business Center Suite 180, Andover MA 01810
Attention: George Franklin
Project Location: Umass Amherst
Sampled By: Rhonda N. Forrester

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

Telephone: (978) 557-8150
Project # 224733
Client PO#

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

| | |
|---|---|
| # of Containers | 1 |
| ** Preservation | none |
| ***Container Code | A |

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 | PCBs (Soxhlet) |
|---|---|---|---|---|---|---|---|---|
| 01 | TH-VBS-197 | 8/15/11 | 15:10 | | X | S | L | X |
| 02 | TH-VBC-198 | ↓ | 15:18 | | X | S | L | X |
| 03 | TH-VBC-199 | ↓ | 15:40 | | X | S | L | X |
| 04 | TH-VBS-200 | ↓ | 15:58 | | X | S | L | X |

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: PCBs by USEPA 8082 via 3540C (Soxhlet)
R.L. ≤ 1.0 mg/kg

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

| Signature | Date/Time |
|---|---|
| Relinquished by: (signature) [signature] | Date/Time: 8/15/11 18:25 |
| Received by: (signature) [signature] DFS 2.0°C | Date/Time: 8/15/2011 1825 |
| 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:

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: PB DATE: 8.15.11

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 20.0C

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: _____

## 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) | 4 | 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:

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

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

# MADEP MCP Analytical Method Report Certification Form

| | |
|---|---|
| Laboratory Name: Con-Test Analytical Laboratory | Project #: 11H0565 |
| Project Location: UMass Amherst | RTN: |

This Form provides certifications for the following data set: [list Laboratory Sample ID Number(s)]

11H0565-01 thru 11H0565-04

Matrices: Soil

**CAM Protocol (check all that below)**

| | | | | | |
|---|---|---|---|---|---|
| 8260 VOC<br>CAM II A ( ) | 7470/7471 Hg<br>CAM IIIB ( ) | MassDEP VPH<br>CAM IV A ( ) | 8081 Pesticides<br>CAM V B ( ) | 7196 Hex Cr<br>CAM VI B ( ) | MassDEP APH<br>CAM IX A ( ) |
| 8270 SVOC<br>CAM II B ( ) | 7010 Metals<br>CAM III C ( ) | MassDEP EPH<br>CAM IV A ( ) | 8151 Herbicides<br>CAM V C ( ) | 8330 Explosives<br>CAM VIII A ( ) | TO-15 VOC<br>CAM IX B ( ) |
| 6010 Metals<br>CAM III A ( ) | 6020 Metals<br>CAM III D ( ) | 8082 PCB<br>CAM V A (X) | 9014 Total Cyanide/PAC<br>CAM VI A ( ) | 6860 Perchlorate<br>CAM VIII B ( ) | |

***Affirmative response to Questions A throughF is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **A** | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | ☐ Yes | ☑ No[1] |
| **B** | Were the analytical method(s) and all associated QC requirements specificed in the selected CAM protocol(s) followed? | ☑ Yes | ☐ No[1] |
| **C** | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | ☑ Yes | ☐ No[1] |
| **D** | Does the laboratory report comply with all the reporting requirements specified in CAM VII A, Quality Assurance and Quality Control Guidlines for the Acquisition and Reporting of Analytical Data? | ☑ Yes | ☐ No[1] |
| **E a** | VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | ☐ Yes | ☐ No[1] |
| **E b** | APH and TO-15 Methods only: Was the complete analyte list reported for each method? | ☐ Yes | ☐ No[1] |
| **F** | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all No responses to Qestions A through E)? | ☑ Yes | ☐ No[1] |

***A response to questions G, H and I below is required for "Presumptive Certainty" status***

| | | | |
|---|---|---|---|
| **G** | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

***Data User Note:* Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.**

| | | | |
|---|---|---|---|
| **H** | Were all QC perfomance standards specified in the CAM protocol(s) achieved? | ☑ Yes | ☐ No[1] |
| **I** | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | ☑ Yes | ☐ No[1] |

[1] *All Negative responses must be addressed in an attached Environmental Laboratory case narrative.*

***I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.***

Signature: M Erickson Position: Laboratory Director

Printed Name: Michael A. Erickson Date: 08/18/11

**11H0553-01** TH-VBS-194

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.274 | 0.2659841 | 2.97 |
| Decachlorobiphenyl | 0.214 | 0.2079238 | 2.88 |

**11H0565-01** TH-VBS-197

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.216 | 0.2145541 | 0.672 |
| Tetrachloro-m-xylene | 0.275 | 0.2684283 | 2.42 |

**11H0565-02** TH-VBS-198

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.194 | 0.1865875 | 3.9 |
| Tetrachloro-m-xylene | 0.237 | 0.2352491 | 0.742 |

**11H0565-03** TH-VBS-199

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.226 | 0.2223086 | 1.65 |
| Tetrachloro-m-xylene | 0.258 | 0.2563636 | 0.636 |

**11H0565-04** TH-VBS-200

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.231 | 0.2298152 | 0.514 |
| Tetrachloro-m-xylene | 0.257 | 0.2540475 | 1.16 |

**B035519-BLK1** Blank

| Analyte | Results | | %RPD |
|---|---|---|---|
| Surrogates | | | |
| Decachlorobiphenyl | 0.210 | 0.20488 | 2.47 |
| Tetrachloro-m-xylene | 0.243 | 0.22794 | 6.4 |

**B035519-BS1** LCS

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1260 | 0.27 | 0.2518 | 6.98 |
| Aroclor-1016 | 0.24 | 0.22978 | 4.35 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.221 | 0.21225 | 4.04 |
| Tetrachloro-m-xylene | 0.213 | 0.20082 | 5.89 |

**B035519-BSD1** LCS Dup

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.25 | 0.217995 | 13.7 |
| Aroclor-1260 | 0.27 | 0.251005 | 7.29 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.219 | 0.20966 | 4.36 |
| Tetrachloro-m-xylene | 0.209 | 0.201805 | 3.5 |

**B035519-MS1** Matrix Spike

| Analyte | Results | | %RPD |
|---|---|---|---|
| Aroclor-1016 | 0.29 | 0.2621194 | 10.1 |
| Aroclor-1260 | 0.28 | 0.2820836 | 0.741 |
| Surrogates | | | |
| Decachlorobiphenyl | 0.247 | 0.2417189 | 2.16 |
| Tetrachloro-m-xylene | 0.236 | 0.2317782 | 1.81 |

**B035519-MSD1** Matrix Spike Dup

| Analyte | Results | | %RPD |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Aroclor-1016 | 0.28 | 0.2582703 | 8.07 |
| Aroclor-1260 | 0.30 | 0.2707399 | 10.3 |
| Surrogates | | | |
| Tetrachloro-m-xylene | 0.234 | 0.2296839 | 1.86 |
| Decachlorobiphenyl | 0.245 | 0.2421758 | 1.16 |

# APPENDIX E: WASTE DISPOSAL DOCUMENTS

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 002878380FLE | 1201785 | 1125 | MAD0008446 | 002878380FLE |

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: 800 966 9282
4. Manifest Tracking Number: 002878380 FLE

5. Generator's Name and Mailing Address:
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn. Jim Field

Generator's Site Address (if different than mailing address):
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: Triumvirate Environmental, Inc. — U.S. EPA ID Number: MAD985286988

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address:
EQ-Wayne Disposal, Inc.
49350 North I-94 Service Drive
Bellville, 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. UN3432, RQ: Polychlorinated biphenyls, solid 9, II | 001 | CM | Est. 10,000 | K | MA02 | PCB1 | |
| | 2. | | | 17,700 | ✓ | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information

1 - (1 x Roll-off) ~~I105073WDT~~ : Out of Service Date: 8/17 /2011 Unique ID# 817201173928-1 2- 3- 4-

Cun # 992058 I105073WDIT

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. GAGNON — Signature: [signature] — Month 9 Day 18 Year 11

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: Aaron Rousseau — Signature: Aaron Rousseau — Month 8 Day 18 Year 11

Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

corrected approval per Glen Topping @ EQAE - TC 8/19/11

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: David Tornadi — Signature: [signature] — Month 8 Day 19 Year 11

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 002878380 FLE, Line Item 1 has been landfilled on

8/19, 2001 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 accompnying 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:

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. I-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

COD #2

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 004146074FLE | 1201703 | 1125 | MAD0008446 | 004146074FLE |

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: MAD008446670
2. Page 1 of: 1
3. Emergency Response Phone: 800 966 9282
4. Manifest Tracking Number: 004146074 FLE

5. Generator's Name and Mailing Address:
University of Massachusetts - Amherst
RH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003

Generator's Site Address (if different than mailing address):
RH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

Generator's Phone: (413) 545-5122 Attn: Jim Field

6. Transporter 1 Company Name: Triumvirate Environmental, Inc.
U.S. EPA ID Number: MAD985286988

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address:
EQ-Wayne Disposal, Inc
49350 North 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. UN3432, RQ: Polychlorinated biphenyls, solid 9, II | 001 | CM | Est 14,450 | K | MA02 | PCB1 | |
| | 2. | | | 14,580 | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1 - (1 x Roll-off) ~~HAZARDOUS~~ Out of Service Date. 8/16/2011 Unique ID# 816 201173329-2 2- 3- 4-
I105073WDIT

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. GAGNON
Signature: Dennis D. Gagnon
Month Day Year: 8 17 11

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: Blaise A. Sullivan
Signature:
Month Day Year: 8 17 11
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year:

18. Discrepancy
18a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
approval corrected per glintopping@EQ - TC/AK 8/18/11
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. PC6 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 Cougar
Signature:
Month Day Year: 8 18 11

GENERATOR — INTL — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO GENERATOR

COD #2

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 004146074FLE, Line Item 1 has been landfilled on

8-18, 2001 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 accompnying 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: Ch D

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 0042000772FLE | 1201702 | 1125 | MAD0008446 | 0042000772FLE |

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: 800 966 9282
4. Manifest Tracking Number: 004200772 FLE

5. Generator's Name and Mailing Address
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn. Jun Field

Generator's Site Address (if different than mailing address)
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: Triumvirate Environmental, Inc.
U.S. EPA ID Number: MAD98[illegible]286928

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
EQ-Wayne Disposal, Inc.
49350 North I-94 Service Drive
Belleville, MI 48111
Facility's Phone: (800) 592-5489
U.S. EPA ID Number: MID04[illegible]090623

| 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. UN3432, RQ Polychlorinated biphenyls, solid 9, II | 001 | CM | EST 14 450 | K | MA02 | PCB1 | |
| | 2. | | | 16,718 | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1 - (1) Poll-off) 1105073WB* Out of Service Date 8/15/2011 Unique ID# 816 201173926-1 2 - 3 - 4
*DIT

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. GAGNON
Signature: Dennis D. Gagnon
Month Day Year: 8 17 11

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: DAVID C TIBERIO
Signature: David C. Tiberio
Month Day Year: 08 17 11
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year:

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
[illegible] EQ-WE 8/17 [illegible]
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: [illegible]
Signature:
Month Day Year: 08 18 11

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY'S COPY

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 004200772 FLE, Line Item 1 has been landfilled on

8-18, 2001 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 accompnying 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: _____

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. I-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

COD #7

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 004515957FLE | 1200842 | 1125 | MAD0008446 | 004515957FLE |

XXXXX

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: 800 966 9282
4. Manifest Tracking Number: 004515957 FLE

5. Generator's Name and Mailing Address
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn: Jim Field

Generator's Site Address (if different than mailing address)
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: ~~Triumvirate Environmental, Inc.~~ GOULET TRUCKING, INC.
U.S. EPA ID Number: MAC300006038

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
EQ-Wayne Disposal, Inc.
49350 North I-94 Service Drive
Bellville, MI 48111
Facility's Phone: (800) 592-5489
U.S. EPA ID Number: MI D048090633

| 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 | UN3432, RQ: Polychlorinated Biphenyls, solid 9, II | 001 | CM | 15909 KG | K | MA02 | PCB1 | |
| | 2. | | | 16082 | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1- (1 x Roll-off) I105073WDT I : Out of Service Date: 8/1/2011 Unique ID# 73929832011 2- 3- 4-
CAN # 032012

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. GAGNON
Signature: [signature]
Month 08 Day 01 Year 11

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: CARLTON R LOOMIS
Signature: [signature]
Month 8 Day 1 Year 11
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: [signature]
Signature: [signature]
Month 08 Day 02 Year 11

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB solid

and specified on Manifest # 004515957FLE, Line Item 1 has been landfilled on

8/2, 2011 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: _____

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 005001953FLE | 1201495 | 1125 | MAD0008446 | 005001953FLE |

TRK # 4067

XXXXX

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: 800 966 9282
4. Manifest Tracking Number: 005001953 FLE

5. Generator's Name and Mailing Address
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn: Jim Field

Generator's Site Address (if different than mailing address)
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: Triumvirate Environmental, Inc. — U.S. EPA ID Number: MAD985286988

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
EQ-Wayne Disposal, Inc.
49350 North I-94 Service Drive
Bellville, 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. | Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes | | |
|---|---|---|---|---|---|---|---|---|
| X | 1. UN3432, RQ: Polychlorinated biphenyls, solid 9, II | 001 | CM | EST 18,000 | K | MA02 | PCB1 | |
| | 2. | | | 13,936 | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1- (1 x Roll-off) ~~I105073WDT~~ : Out of Service Date: 8/15/2011 Unique ID# 8 201173928-2 2- 3-
4- I105073WDIT
CONF # 326366

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. GAGNON — Signature: [signature] — Month 8 Day 15 Year 11

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: ROBERT SILISBY — Signature: [signature] — Month 08 Day 15 Year 11
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
ok to change Approval per Glenn Topping @ EQNE 8-16-11 JB
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: [signature] — Signature: [signature] — Month 08 Day 16 Year 11

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 005001953 FLE, Line Item 1 has been landfilled on

8/16/2011 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 accompnying 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:

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. I-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

COD #2

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 004146452FLE | 1200996 | 1125 | MAD0008446 | 004146452FLE |

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: 800 966 9282
4. Manifest Tracking Number: 004146452 FLE

5. Generator's Name and Mailing Address
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn. Jim Field

Generator's Site Address (if different than mailing address)
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: ~~[illegible]~~ Goulet Trucking, Inc.
U.S. EPA ID Number: MAC 300006058 ~~[illegible]~~

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
EQ-Wayne Disposal, Inc.
49350 North I-94 Service Drive
Bellville, 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. UN3432, RQ: Polychlorinated biphenyls, solid 9, II | 001 | CM | 15318 | K | MA02 | PCB1 | |
| | 2. | | | 14618 | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1 - (1 x Roll-off) I105073WDT : Out of Service Date: 8/3/2011 Unique ID# 73928832011-1 2 - 3 - 4 -
992058

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. Gagnon
Signature: [signature]
Month 08 Day 03 Year 11

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: Carleen R Loomis
Signature: [signature]
Month 8 Day 3 Year 11

Transporter 2 Printed/Typed Name: Jeffrey M. Stowell
Signature: [signature]
Month 08 Day 04 Year 11

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: [signature]
Signature: [signature]
Month 08 Day 05 Year 11

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 604146452 FLE Line Item 1 has been landfilled on

8/05/2001 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: _____

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 004200773FLE | 1200979 | 1125 | MAD0008446 | 004200773FLE |

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: 800 966 9282
4. Manifest Tracking Number: 004200773 FLE

5. Generator's Name and Mailing Address
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn: Jim Field

Generator's Site Address (if different than mailing address)
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: ~~Triumvirate Environmental, Inc~~ GOULET TRUCKING, INC.
U.S. EPA ID Number: MAC 300006038 ~~MAD048522868~~

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
EQ-Wayne Disposal, Inc.
49350 North I-94 Service Drive
Bellville, MI 48111
Facility's Phone: (800) 592-5489
U.S. EPA ID Number: MI D048090633

| 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. UN3432, RQ: Polychlorinated biphenyls, solid 9, II | 001 | CM | 17272 16954 | K | MA02 | PCB1 | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1 - (1 x Roll-off) I105073WDF : Out of Service Date: 8/3/2011 Unique ID# 73928832011-2 2- 3- 4-
042 011

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. GAGNON
Signature: [signature]
Month 08 Day 03 Year 11

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: CARLTON R LOOMIS
Signature: [signature]
Month 8 Day 3 Year 11
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: Josh Heath
Signature: [signature]
Month 8 Day 4 Year 11

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 004260773 FLE, Line Item 1 has been landfilled on

8-4, 2001 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: _____

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 005001955FLE | 1201178 | 1125 | MAD0008446 | 005001955FLE |

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

XXXXX

Form Approved. OMB No. 2050-0039

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator ID Number: MAD000844670
2. Page 1 of: 1
3. Emergency Response Phone: 800 966 9282
4. Manifest Tracking Number: 005001955 FLE

5. Generator's Name and Mailing Address
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn: Jim Field

Generator's Site Address (if different than mailing address)
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: Triumvirate Environmental, Inc.
U.S. EPA ID Number: MAD985286988

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
EQ-Wayne Disposal, Inc.
49350 North I-94 Service Drive
Bellville, 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 UN3432, RQ: Polychlorinated biphenyls, solid 9, II | 001 | CM | Est 13,200 | K | MA02 | PCB1 | |
| | 2. | | | 12627 | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1- (1 x Roll-off) I105073WDT : Out of Service Date: 8/8/2011 Unique ID# 88201173928-1 2- 3- 4-
992032

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. GAGNON
Signature: [signature]
Month 08 Day 08 Year 11

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: Blaise A. Sullivan
Signature: [signature]
Month 8 Day 8 Year 11
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
ok to change Approval code per Ken Wenstrom @ EQNE 8-9-11 JB
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: Josh Heath
Signature: [signature]
Month 8 Day 9 Year 11

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 005001955FLE, Line Item 1 has been landfilled on

8-9, 2011 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 accompnying 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:

THE ENVIRONMENTAL QUALITY COMPANY 49350 N. I-94 SERVICE DRIVE BELLEVILLE MICHIGAN 48111

COD #3

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 004515958FLE | 1200821 | 1125 | MAD0008446 | 004515958FLE |

XXXXX

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: 800 966 9282
4. Manifest Tracking Number: 004515958 FLE

5. Generator's Name and Mailing Address
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn: Jim Field

Generator's Site Address (if different than mailing address)
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: Triumvirate Environmental, Inc.
U.S. EPA ID Number: MAD985286988

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
EQ-Wayne Disposal, Inc.
49350 North 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 | UN3432, RQ: Polychlorinated biphenyls, solid 9, II | 001 | CM | 13500 | K | MA02 | PCB1 | |
| | 2. | | | 16100 | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1- (1 x Roll-off) I105073WDT : Out of Service Date: 8/1/2011 Unique ID# 73920812011 2- 3- 4-
# 808975

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. GAGNON
Signature: Dennis D. Gagnon
Month 08 Day 11 Year 11

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: Gary Roy
Signature
Month 8 Day 1 Year 11
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☒ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Actual weight 116,100 kg OK per Mike Farrell VP Triumvirate 8/3/11 JV
18b. Alternate Facility (or Generator) Mailing and Site Address 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 Tarnali
Signature
Month 8 Day 2 Year 11

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

COD #2

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 004515958 FLE, Line Item _____ has been landfilled on

8/02/2011 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: _____

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 002877166FLE | 1202486 | 1125 | MAD0008446 | 002877166FLE |

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: 800 966 9282
4. Manifest Tracking Number: 002877166 FLE

5. Generator's Name and Mailing Address
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn: Jim Field

Generator's Site Address (if different than mailing address)
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: ~~Triumvirate Environmental, Inc~~ Goulet Trucking Inc.
U.S. EPA ID Number: MAD300006038 ~~MAD 0 8 5 2 8 6 9 8~~

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
EQ-Wayne Disposal, Inc.
49350 North I-94 Service Drive
Bellville, MI 48111
Facility's Phone: (800) 592-5489
U.S. EPA ID Number: MI D048090633

| 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. UN3432, RQ: Polychlorinated biphenyls, solid 9, II | 001 | CM | 15454 ~~1818~~ 15836 | K | MA02 | PCB1 | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1 - (1 x Roll-off) I105073 ~~WDT~~ WDIT : Out of Service Date: 8/26/2011 Unique ID# 826201173928-1 2- 3- 4-
~~ESI0099~~ SS 032012

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: Theresa W. Bechtel
Signature: [signature]
Month Day Year: 08 26 2011

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: Randy Purinton
Signature: [signature]
Month Day Year: 8 26 11
Transporter 2 Printed/Typed Name: Kenneth E Currington
Signature: [signature]
Month Day Year: 8 29 11

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Corrected App # Per Glen Topping @ EQNE JB 8-30-11 [initials]
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: Leary Lehning
Signature: [signature]
Month Day Year: 8 30 11

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

COD #2

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB SOLID

and specified on Manifest # 002877166 FLE, Line Item 1 has been landfilled on

Aug 30, 2011 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: _____

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 000893542JJK | 1202487 | 1125 | MAD0008446 | 000893542JJK |

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: MAD000144670
2. Page 1 of: 1
3. Emergency Response Phone: 800-966-9282
4. Manifest Tracking Number: 000893542 JJK

5. Generator's Name and Mailing Address: University of Massachusetts Dragon Hill 40 Campus Center Way Amherst MA. 01003

Generator's Phone: 413 545-5122

Generator's Site Address (if different than mailing address): EH&S/117 Dragon Hall Center U-MASS Amherst 40 Campus Way Amherst, MA. 01003

6. Transporter 1 Company Name: Triumvirate Environmental — U.S. EPA ID Number: MAD 985286988

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: EQ - Wayne Disposal Inc. 49350 North I-94 Service Dr. Belleville, MI — U.S. EPA ID Number: MID 048090633

Facility's Phone: 800-592-5489

| 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 | | |
|---|---|---|---|---|---|---|---|---|
| | 1. UN3432 RQ Polychlorinated biphenyls solid, | 001 | CM | EST. 12,000 | | MA02 | PCB-1 | |
| | 2. | | | | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information

I105073 WDIT out of Service Date 8-29-11 SDM 815

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. Gagnon — Signature: Dennis D. Gagnon — Month 08 Day 29 Year 11

**INTL**

16. International Shipments: ☐ Import to U.S. ☐ Export from U.S. — Port of entry/exit: — Date leaving U.S.:
Transporter signature (for exports only):

**TRANSPORTER**

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Gary Roy — Signature: Gary Roy — Month 8 Day 29 Year 11
Transporter 2 Printed/Typed Name — Signature — Month Day Year

**DESIGNATED FACILITY**

18. Discrepancy
18a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
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: Ashley Buttzin — Signature: Ashley Buttzin — Month 08 Day 30 Year 11

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB Solid

and specified on Manifest # 000893542JJK, Line Item 1 has been landfilled on

8/30, 2011 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: Ashley Button

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 000893541JJK | 1202488 | 1125 | MAD0008446 | 000893541JJK |

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: 1-800-966-9282
4. Manifest Tracking Number: 000893541 JJK

5. Generator's Name and Mailing Address: University of Massachusetts Amherst. EH&S 117 Draper hall 40 Campus Center Way Amherst MA 01003 | 413-545-5122

Generator's Site Address (if different than mailing address): EH&S 117 Draper Hall U-MASS Amherst 40 Campus Center Way Amherst MA 01003

Generator's Phone:

6. Transporter 1 Company Name: Triumvirate Environmental Inc.
U.S. EPA ID Number: MAD935286988

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Ed Wayne Disposal Inc. 49350 North I94 Service Drive Belleville MI 48111
U.S. EPA ID Number: MID048090633

Facility's Phone: 800-592-[illegible]

| 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. UN3432 RQ Polychlorinated biphenyls Solid 9, II | 001 | Cm | Est 11,000 | K | MA02 | PCB1 | |
| | 2. | | | 10645 | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information:
(1 Roll of FI105073WDT)
Out of Service Date 8/29/11

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. GAGNON
Signature: Dennis D Gagnon
Month 8 Day 29 Year 11

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: Aaron Rouillard
Signature: Aaron Rouillard
Month 8 Day 29 Year 11
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
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: [illegible]
Signature:
Month 08 Day 30 Year 11

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as pcb solid

and specified on Manifest # 000893541JJK, Line Item 1 has been landfilled on

8/30, 2011 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:

| 03-01 Document Type | Document Name | Receipt | Customer | Generator | Manifest |
|---|---|---|---|---|---|
| Manifest | 004146080FLE | 1202485 | 1125 | MAD0008446 | 004146080FLE |

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

Form Approved. OMB No. 2050-003

**UNIFORM HAZARDOUS WASTE MANIFEST**

1. Generator ID Number: MAD000844670
2. Page 1 of 1
3. Emergency Response Phone: 800 966 9282
4. Manifest Tracking Number: 004146080 FLE

5. Generator's Name and Mailing Address:
University of Massachusetts - Amherst
EH&S/117 Draper Hall 40 Campus Center Way
Amherst, MA 01003
Generator's Phone: (413) 545-5122 Attn: Jim Field

Generator's Site Address (if different than mailing address):
EH&S/117 Draper Hall
UMass Amherst 40 Campus Center Way
Amherst, MA 01003

6. Transporter 1 Company Name: ~~Triumvirate Environmental, Inc.~~ Goulet Trucking Inc.
U.S. EPA ID Number: MEL300006038

7. Transporter 2 Company Name: Goulet Trucking Inc.
U.S. EPA ID Number:

8. Designated Facility Name and Site Address:
EQ-Wayne Disposal, Inc.
49350 North I-94 Service Drive
Bellville, MI 48111
Facility's Phone: (800) 592-5480
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. | Type | 11. Total Quantity | 12. Unit Wt./Vol. | 13. Waste Codes | | |
|---|---|---|---|---|---|---|---|---|
| X | 1. UN3432, RQ Polychlorinated biphenyls, solid 9, II | 001 | CM | 18181 | K | MA02 | PCB1 | |
| | 2. | | | 15881 | | | | |
| | 3. | | | | | | | |
| | 4. | | | | | | | |

14. Special Handling Instructions and Additional Information
1 - (1 x Roll-off) I105073 ~~WDIT~~ WDIT : Out of Service Date: 8/26/2011 Unique ID# 826201173928-2 2- 3- 4-
# 042018

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: Theresa W. Beckton
Signature: [signature]
Month 08 Day 26 Year 2011

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: Randy Purinton
Signature: [signature]
Month 8 Day 26 Year 11
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Corrected approval per Glenn Topping @ EQNE JB 8-30-11 (DS)
18b. Alternate Facility (or Generator) Manifest Reference Number:
Facility's Phone: U.S. EPA ID Number
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: Leroy Leling
Signature: [signature]
Month 8 Day 30 Year 11

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

COD #2

# CERTIFICATE OF DISPOSAL

***FOR MANIFESTED PCB WASTE***

This certificate is to verify the wastes identified as PCB SOLID

and specified on Manifest # 004146080 FLE, Line Item 1 has been landfilled on

Aug 30, 2011 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: _____

# APPENDIX F: MONITORING AND MAINTENANCE IMPLEMENTATION PLAN

# MONITORING AND MAINTENANCE IMPLEMENTATION PLAN

Concrete Deck -
Tobin Hall

**University of Massachusetts**

Amherst, Massachusetts

224733

**University of Massachusetts**

March 2012

WOODARD &CURRAN

woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

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Figure 1: Site Location Map

Figure 2: Encapsulated Building Surfaces

# 1. INTRODUCTION

This Monitoring and Maintenance Implementation Plan (MMIP) has been prepared by Woodard & Curran (W&C) on behalf of the University of Massachusetts (UMass). The remediation of polychlorinated biphenyls (PCBs) associated with the concrete decking project adjacent to Tobin Hall on the UMass campus in Amherst, Massachusetts (the site) has been completed in accordance with the Notification[1] and the U.S. Environmental Protection Agency's (EPA) February 28, 2012 PCB Risk-Based Decontamination and Disposal Approval granted under 40 CFR 761.61(c) and 761.79(h) (the Approval).

As required by Condition 8 of the Approval, this MMIP presents the monitoring and maintenance activities that will be conducted to assess the long-term effectiveness of encapsulants applied to select building surfaces as part of the PCB remediation activities completed at the site as further described in the Final Completion Report.

## 1.1 BACKGROUND

As part of the overall Commonwealth Honors College Residential Complex construction project being conducted on the UMass Amherst campus, the concrete decking along the west side of Tobin Hall was scheduled to be removed (see Figure 1). The project site consisted of an approximately 150 foot long by 46 foot wide concrete deck and associated retaining walls and building walls on the west side of Tobin Hall. The concrete decking was approximately six inches thick and comprised of concrete aggregate slabs separated by concrete bands. Two elevated concrete planting beds were located in the central portion of the decking. Concrete retaining walls were located along the north, south, and west sides of the decking as well as on the far north and south ends of the east side. The remainder of the east side of the decking was bordered by the Tobin Hall building.

In preparation for the removal of the concrete deck, an inspection and inventory of caulking was conducted. Caulking was identified along approximately 1,325 linear feet (l.f.) of concrete to concrete joints including approximately 80 l.f. of joints between the concrete decking and the concrete walls of Tobin Hall.

## 1.2 REMEDIATION SUMMARY

Remediation activities related to the ≥ 50 ppm PCB containing caulking were conducted in July and August 2011 and primarily consisted of material segregation (through sampling) and off-site disposal. A total of 218 tons of bulk PCB waste (caulking, concrete decking, concrete retaining walls, concrete planting beds, and soils) and associated disposable materials and equipment (poly sheeting, PPE, decontamination materials, etc.) contained in 13 roll-off containers was removed for off-site disposal as ≥ 50 ppm PCB wastes at Environmental Quality's Wayne Disposal Landfill in Belleville, Michigan.

At the concrete deck to building joint, where removal activities could not be performed on the building wall following concrete deck removal, residual PCB concentrations > 1 ppm were detected in an 80 foot long 1 foot wide area (6 inches above and 6 inches below the former joint). This area was subsequently encapsulated with two coats of a liquid coating (Sikagard 670W clear, acrylic, protective coating). 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. The location of this area is shown on Figure 2.

[1] Information was prepared by W&C on behalf of UMass to satisfy the requirements under 40 CFR 761.61(c) and 761.79(h). Information was submitted on July 20, 2011 (Remediation Plan), August 5, 2011 (Status update) and February 21, 2012 (sampling results). These submittals, together, form the "Notification."

Following application of the coating, two baseline verification wipe samples were collected at a sample frequency of approximately one sample per 40 l.f. of encapsulated surface. Analytical results indicated that PCBs were not present at concentrations above the encapsulation target level of 1 µg/100cm$^2$ (total PCBs were reported as non-detect in both samples with a minimum laboratory reporting limit of < 0.20 µg/100cm$^2$).

Per the conditions of the Approval, a deed notice will be recorded identifying the encapsulated areas and a long term monitoring and maintenance program will be implemented to assess and verify the effectiveness of the coatings / barriers over time.

# 2. MONITORING AND MAINTENANCE IMPLEMENTATION

This MMIP has been developed to monitor the effectiveness of the remedy for exterior building wall materials that contain PCBs at concentrations above the high occupancy use criteria of 1 ppm remaining in place beneath the liquid encapsulating coating. The encapsulation extends to a distance of six inches above and six inches below the former caulked joint along 80 l.f. of the Tobin Hall building walls.

## 2.1 ROUTINE MAINTENANCE ACTIVITIES

Based on a review of the products' technical specifications and history of use at similar project sites, it is not anticipated that the coatings applied to the exterior building surfaces will require any routine maintenance activities other than any corrective measures that may be deemed necessary as a result of the visual inspections.

## 2.2 VISUAL INSPECTION AND SAMPLING

The following describes the visual inspections and sampling to be conducted for this area:

- Visual inspections of the encapsulated surfaces will consist of an assessment of the following:
  - A general inspection of the condition of accessible encapsulated surfaces.
  - Signs of wear, pitting, peeling, or breakages in the coating.
  - The results of these inspections will be documented in the report submitted to the EPA (see Section 4).
- Sampling of the encapsulated surfaces will consist of the following:
  - Surface wipe samples of the encapsulated building wall will be collected using a hexane-soaked wipe following the standard wipe test procedures described in 40 CFR 761.123 over a 100 square centimeter surface area.
  - Wipe samples will be transported to the laboratory under standard chain of custody procedures, extracted by USEPA Method 3540C (Soxhlet) and analyzed for PCBs by USEPA Method 8082.
  - A total of two samples (one from the northern portion of the wall and one from the southern portion of the wall) will be collected. The location will be selected by randomly selecting a number between 0 and 40 (representing the length of the individual joints in feet).
  - The results of the sampling will be documented in the report submitted to the EPA (see Section 4).

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.

## 2.3 ACTION LEVELS AND CORRECTIVE MEASURES

A combination of visual inspections and laboratory sample results will be used to verify the continued effectiveness of the applied barriers. Upon receipt of the laboratory results after each monitoring round, the data will be compared to baseline data and the following action levels to determine whether additional monitoring or corrective measures are needed:

- At locations where sample results are reported with PCBs ≤ 1 µg/100 $cm^2$, no corrective measures will be implemented.

- At locations where encapsulant deterioration is observed or sample results are reported with PCBs > 10 µg/100 $cm^2$, an additional liquid coating will be applied to the represented area and follow-up wipe samples collected. If analytical results indicate that PCBs continue to be present at concentrations > 10 µg/100 $cm^2$, EPA will be notified of the subsequent plans to implement corrective measures.

- At locations where sample results are reported with PCBs > 1 and ≤ 10 µg/100 $cm^2$, this location will be selected for follow-up monitoring during the next round of sampling to establish patterns or trends in concentrations. 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 this area is an exterior area where access is transitory in nature (students and staff progressing to and from Tobin Hall) and where staff would not spend any routine time.

# 3. TRAINING AND COMMUNICATIONS

It is not anticipated that any students, staff, or workers will come into prolonged or routine contact with the encapsulated areas. However, UMass will conduct general awareness training for facility and maintenance personnel that may have activities or tasks in this vicinity 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., building façade repair projects or exterior cleaning), 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 walls at Tobin Hall have been flagged as a having residual PCB containing material under liquid encapsulants. 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 a PCB component in their Physical Plant "Right To Know" training and in their asbestos awareness training.

# 4. COMMUNICATIONS, REPORTING & SCHEDULE

The results of the monitoring and maintenance activities will be documented in a report submitted to the EPA. 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 projects conducted at the building that encountered the coatings, and a description of the training and protective measures that were implemented;
- A statement on the continued effectiveness of the encapsulants; and
- Any proposed modifications to the monitoring and maintenance program, including a recommendation as to the frequency for the next round of inspections and sampling.

The report will be submitted to EPA following inspection and sample collection. In addition, UMass EHS will communicate the results and any needs for follow-up actions to personnel responsible for the building.

The initial round of monitoring will commence following approval of this MMIP and is anticipated to be conducted in the Summer of 2012. A recommendation for subsequent rounds of monitoring will be based on these results and included in the report submittal.

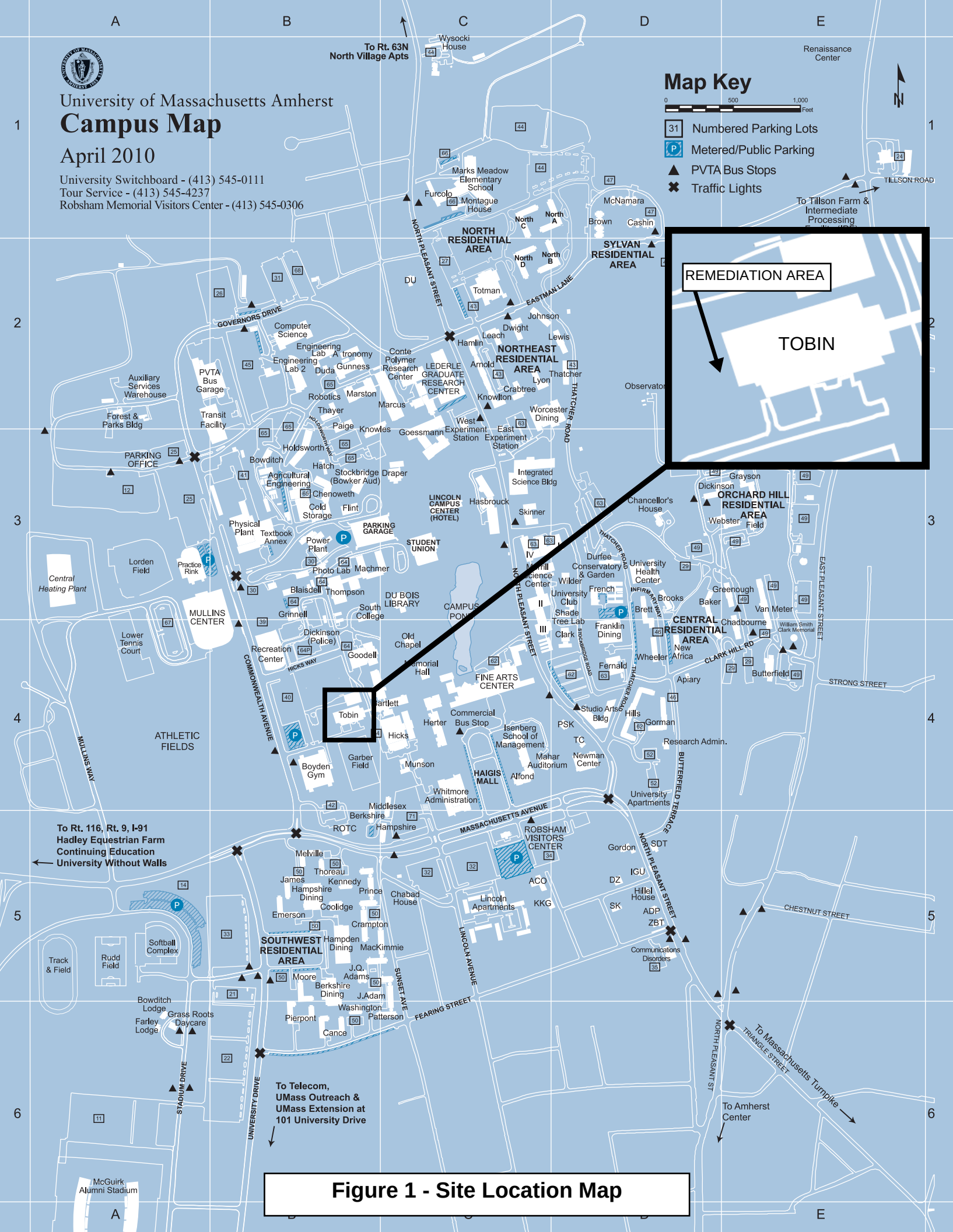
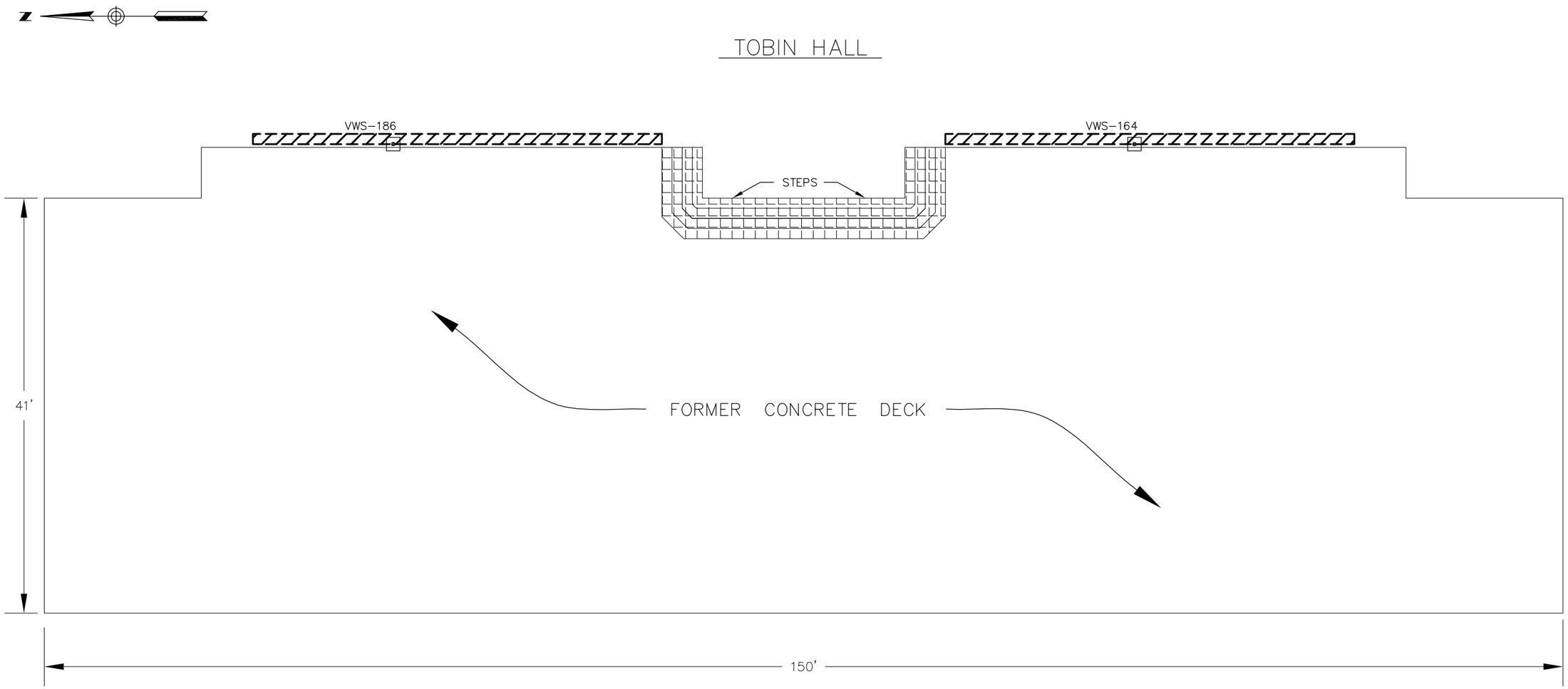



**Figure 1 - Site Location Map**




LEGEND

AREA OF TOBIN HALL CONCRETE ENCAPSULATION TO A DISTANCE OF 6" ABOVE AND 6" BELOW CAULKED JOINT OVER 80 LINEAR FEET

VWS-186 CONCRETE BUILDING WALL WIPE SAMPLE LOCATION AND IDENTIFIER

NOTE:

BASELINE VERIFICATION WIPE SAMPLES COLLECTED FOLLOWING APPLICATION OF TWO COATS OF CLEAR ACRYLIC COATING.

16' 12' 8' 4' 0 12' 24'

BAR SCALE
3/32" = 1'-0"
CHECK GRAPHIC SCALE BEFORE USING

35 NEW ENGLAND BUSINESS CENTER
ANDOVER, MA. 01810
866.702.6371 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

WOODARD & CURRAN

ENCAPSULATED BUILDING SURFACES

DESIGNED BY:
DRAWN BY:
CHECKED BY: GJF
224733-FIGURE 2.DWG

UNIVERSITY OF MASSACHUSETTS
AMHERST, MASSACHUSETTS

TOBIN HALL PCB MMIP

JOB NO: 224733
DATE: MARCH 2012
SCALE: AS NOTED

**FIGURE 2**