



2019 Long Term Monitoring Report

Lederle Graduate
Research Center

Tower A and Low-Rise
Buildings
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1. INTRODUCTION

This monitoring report has been prepared by Woodard & Curran on behalf of the University of Massachusetts (UMass) in accordance with the requirements of the Consent Agreement and Final Order (CAFO) dated June 20, 2012 between UMass and the U.S. Environmental Protection Agency (EPA) for the Lederle Graduate Research Center (LGRC) Tower A and Low-Rise buildings located at 701 – 740 North Pleasant Street on the UMass campus in Amherst, Massachusetts (see Figure 1-1).

This monitoring report provides the results of the monitoring activities conducted in accordance with the December 2014 Revised Monitoring and Maintenance Implementation Plan (MMIP) developed in accordance with the requirements of the CAFO for the encapsulated polychlorinated biphenyl (PCB) containing window glazing sealants at the Tower A and Low-Rise buildings and the encapsulated residual PCBs in certain exterior masonry materials at the Low-Rise building.

1.1 BACKGROUND

As described in the CAFO, an approach was developed for the encapsulation of PCB-containing window glazing sealants as an interim measure until the glazing sealant could be removed during future window replacement projects. There were approximately 900 windows located at the LGRC subject to the CAFO. To date, windows have been removed in the following three areas:

- As part of the National Institute of Health (NIH) renovations, 42 laboratory windows on the 3rd, 7th, and 8th floors of Tower A were removed as reported in the PCB Remediation Activities Completion Report dated December 17, 2012.
- All windows within the Low-Rise building (except for those within Room A106, see below) including the library areas, were removed as part of a large-scale window replacement project (refer to the September 17, 2013 notification submittal and the December 29, 2014 Completion Report).
- Seven laboratory windows in Tower A Rooms 501 through 504 were removed as part of a laboratory renovation project in 2014/2015 (refer to the 2015 Long Term Monitoring Report – LGRC Tower A and Low-Rise Buildings, dated September 29, 2015).
- Windows within the Low-Rise building Room A106 were removed in the fourth quarter of 2018 as described in the notification submittal dated August 22, 2018 and in *Final Completion Report for Room A106 Renovations* dated September 23, 2019 by ATC Group Services of West Springfield, Massachusetts (ATC).

In addition to the specific window removals mentioned above, removal and off-site disposal of ≥ 50 parts per million (ppm) exterior perimeter window caulking and the remediation of exterior building materials impacted by PCBs was conducted in accordance with EPA's June 22, 2007 Alternative Decontamination Approval under 40 CFR 761.61(a), 62, and 79(h). The remediation activities included the removal and off-site disposal of the exterior caulking and removal of a minimum of $\frac{1}{2}$ inch of exterior concrete masonry around each of the windows to achieve the applicable high or low occupancy use clean up criteria (≤ 1 ppm for first floor locations and ≤ 25 ppm for second and third floor locations). However, as described in the CAFO Notification submittal on September 17, 2013, the 2007/2008 exterior remediation activities were not completed at the 50 Type L windows on the Low-Rise and bridge connector due to the inaccessibility of exterior perimeter window caulking at these locations (the windows are located between two structural concrete features approximately 1.5 feet apart). Remediation activities associated with the exterior perimeter caulking at the Type L windows was completed in 2014 for the majority of locations and in 2018 for the windows in Room A106. Remediation included caulking and window removal and the in-place management of residual PCB impacts > 25 ppm in exterior concrete, along with long term monitoring.

1.2 SUMMARY OF INTERIM MEASURES – INTERIOR GLAZING SEALANTS

Beginning in July 2012, Interim Measures were implemented/completed at the respective windows in Tower A and the Low-Rise building. A summary of the activities is provided below.

1.2.1 Summary of Remedial Activities

In accordance with the CAFO, Interim Measures were conducted to address the presence of PCBs ≥ 50 ppm in glazing sealants as follows:

- A general cleaning of the window units and surrounding surfaces was conducted via the removal of dust and debris using a vacuum equipped with HEPA filtration followed by cleaning of surfaces with a standard industrial/commercial cleaner (Klean-Strip TSP Plus).
- Containment of the glazing sealants was achieved through the installation of a layer of aluminum foil tape and a bead of silicone caulking to reduce potential direct contact exposures.

As previously reported, these interim measures were completed at the following locations:

- Tower A High-Rise
 - July - August 2012: Elevator lobby windows located on the 1st, 3rd, 7th, and 8th floors, as part of the NIH Grant Lab Renovation project.
 - July - August 2013: All remaining Tower A subject windows, as well as an additional sealant encountered in the stairwells (refer to the August 23, 2013 new condition notification submittal).
- Low-Rise
 - December 2013: Windows within Room A106 (the computer room). NOTE: all other low rise and library windows were removed in 2013 and 2014 and Room A106 windows were removed in 2018 as described in Section 1.3. As such, the glazing containment condition is no longer present within the Low-Rise.

1.2.2 Visual Inspection and Verification/Baseline Sampling

Following completion of the Interim Measures, visual inspections were conducted to confirm completion of the activities. Post-cleaning verification wipe samples were collected from accessible non-porous surfaces surrounding the windows and post-encapsulation surface wipe samples were collected from the encapsulated surfaces and window frames following the procedures and frequencies described in the Interim Measures Plan (IMP). A summary of the results of the initial/baseline wipe samples is provided below.

Post-Cleaning Wipe Samples

Post-cleaning wipe samples were collected from window ledges as part of the interim measures implementation and prior to the removal of the Low-Rise windows. Following the cleaning of the surrounding areas, verification wipe samples were collected from the non-porous window ledges adjacent to the windows. In accordance with the IMP, post-cleaning wipe samples were collected at a frequency of one sample per floor in the high rise and at a frequency of one sample per 20 windows in the Low-Rise. Analytical results of the verification wipe samples indicated that PCBs were below the high occupancy use cleanup standard for non-porous surfaces ($10 \mu\text{g}/100 \text{ cm}^2$) in all samples with results reported as follows:

- Total PCBs were reported as non-detect ($< 0.20 \mu\text{g}/100 \text{ cm}^2$) in 31 samples; and
- Total PCBs were present in 23 samples at concentrations below $10 \mu\text{g}/100 \text{ cm}^2$, with concentrations ranging from 0.20 to $2.0 \mu\text{g}/100 \text{ cm}^2$ and an average concentration of $0.56 \mu\text{g}/100 \text{ cm}^2$.

Post-Encapsulation Wipe Samples

To confirm that the aluminum foil tape and caulking were effective encapsulants of PCBs in the glazing sealants, wipe samples were collected from the surface of the newly installed caulking following standard wipe sampling procedures described in 40 CFR 761.123. A summary of the analytical results from the wipe samples is as follows:

- Total PCBs were reported as either non-detect (ten samples at $< 0.20 \mu\text{g}/100 \text{ cm}^2$) or $< 1 \mu\text{g}/100 \text{ cm}^2$ (five samples with reported concentrations ranging from 0.21 to $0.95 \mu\text{g}/100 \text{ cm}^2$) in 15 of the 17 samples collected; and
- Total PCBs were reported at concentrations $> 1 \mu\text{g}/100 \text{ cm}^2$ in two samples with reported concentrations of 1.5 and $3.1 \mu\text{g}/100 \text{ cm}^2$ (both samples were collected from areas encapsulated during the NIH renovation prior to modifications to the application methods).

To evaluate the suitability of an alternative wipe sampling procedure to assess “surface” concentrations on the newly applied porous caulking, additional wipe samples were collected using four different solvents/methods: hexane, isopropyl alcohol, saline, and dry wipe. Wipe samples were collected from the surfaces of the glazing sealants and from the encapsulated surfaces following installation of the aluminum tape and caulking barriers. Results from the wipe samples were described in detail in the PCB Interim Measures Completion Report dated June 2, 2014 and December 2014 Revised MMIP and indicated that while all four methods were able to detect PCBs on the surface of the source materials and the encapsulated surfaces, the more aggressive solvents reported higher results.

Based on these results, the December 2014 Revised MMIP included the potential collection of saline wipes to evaluate the potential presence of PCBs on the surface of the encapsulating barriers; however, saline wipes were not analyzed during subsequent events due to the continued results of the hexane wipes as presented in this report.

1.3 SUMMARY OF REMEDIATION ACTIVITIES – EXTERIOR CONCRETE AT TYPE L WINDOWS

Remediation activities associated with residual PCBs in exterior concrete surfaces surrounding the 50 Type L windows in the Low-Rise and the bridge connector were conducted in conjunction with the 2013/2014 window removal project and the 2018 Room A106 renovation project.

1.3.1 Summary of Remedial Activities

The remediation consisted of the following:

- Exterior perimeter window caulking containing $\geq 50 \text{ ppm}$ PCBs was removed for disposal as PCB Bulk Product Waste using hand tools as part of the window removal project.
- Residual PCBs were encapsulated through the application of the following:
 - Liquid Epoxy Coating – A two-inch-wide strip of epoxy (either Sikagard 62 liquid epoxy or DevCon 5-minute epoxy), centered on the former joint, was applied to concrete surfaces;
 - Elastomeric Coating – Two coats of Sikagard 550W elastomeric coating were applied to concrete materials away from the joints and extending along the inner face of the concrete façade to match the rest of the building façade; and
 - Replacement Frames – The replacement window frames and a replacement bead of caulking were installed over the former caulked joints.

Detailed descriptions of the implemented activities were presented in the Window Removal Completion Report submittal dated December 29, 2014 and in the *Final Completion Report for Room A106 Renovations* dated September 23, 2019 by ATC.

1.3.2 Visual Inspection and Verification/Baseline Sampling

Following application/installation of each of the above barriers, visual inspections were conducted. For liquid coatings, the visual inspection was conducted to confirm the coatings were applied over the designated areas and had a smooth uniform appearance. For window frames and caulking, the inspection confirmed installation in accordance with the project specifications.

To confirm that the epoxy and elastomeric coatings were effective encapsulants of residual PCBs in the concrete, wipe samples were collected from the surfaces of the newly applied coatings at a frequency of one sample for every five window locations (twelve wipe samples were collected from each type of coating due to the phased sequencing of work at the Type L windows). A summary of the analytical results from the wipe samples is as follows:

- Liquid Epoxy Coatings – Analytical results from eleven of the twelve samples indicated that PCBs were non-detect (9 samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) or less than the encapsulation target of $1 \mu\text{g}/100\text{cm}^2$ (2 samples with reported concentrations of 0.22 and $0.28 \mu\text{g}/100\text{cm}^2$). PCBs in the remaining sample were reported at concentration of $1.4 \mu\text{g}/100\text{cm}^2$.
- Elastomeric Coatings – Analytical results indicated that PCBs were either non-detect (8 samples at $< 0.20 \mu\text{g}/100\text{cm}^2$) or less than the encapsulation target of $1 \mu\text{g}/100\text{cm}^2$ (4 samples with a maximum concentration of $0.56 \mu\text{g}/100\text{cm}^2$).

1.4 MONITORING AND MAINTENANCE IMPLEMENTATION PLAN

In accordance with the requirements of the CAFO, annual monitoring is to be completed as part of the Interim Measures to monitor, over time, the effectiveness of the remedy for encapsulated PCB-containing glazing sealants. In addition, and as described in the December 2014 Revised MMIP, monitoring is also to be conducted for the residual PCB impacted exterior concrete encapsulated through the application of liquid coatings and replacement frames at the Type L windows. As presented in 2018 long term monitoring report, the removal of windows in Low-Rise Room A106 was completed in Q4 of 2018. Therefore, indoor monitoring will no longer be conducted in this space consistent with other low-rise locations.

As discussed in the MMIP, the evaluation of the effectiveness of the measures will be accomplished through:

- Visual inspection – to evaluate the physical condition of the new caulking and/or window frames; to look for signs of separation between the silicone sealant/aluminum foil tape and the glazing sealant, window frame or glass; to look for signs of disturbance to the new sealants or exterior elastomeric coatings (Type L windows); and a general inspection of the surrounding areas.
- Accessible, Interior Non-Porous Surface Wipe Samples – A total of 8 wipe samples are to be collected from the Tower A high rise from adjacent window ledges /sills to assess the effectiveness of the Interim Measure in reducing / eliminating PCB-containing dust or particulate levels on these adjacent surfaces.
- Encapsulated, Interior Surfaces Wipe Samples – A total of 8 wipe samples are to be collected from the Tower A high rise from the new caulking/adjacent frame to assess the concentrations of PCBs on the surface of the encapsulating barrier; and
- Indoor Air Samples – 5 samples are to be collected from the Tower A high rise to assess indoor air levels of PCBs over time.

Annual monitoring activities were initiated in 2015. Results of the monitoring from 2015 through 2018 were consistent with the baseline monitoring results and communicated to EPA in the annual monitoring reports submitted in September of each year.

2. 2019 MONITORING ACTIVITIES

2.1 VISUAL INSPECTIONS

Visual inspections of the encapsulated surfaces were conducted at the Tower A high rise and at the Type L windows of the Low-Rise building (exterior elastomeric coatings only). The inspections consisted of an assessment as described in Section 1.4.

For encapsulated window glazing sealants, the specific windows that were visually inspected included the window unit randomly selected for wipe sampling (see discussion below) plus the window units on both sides of the selected window (total of three windows per sample location). For the Low-Rise Building, 20% of the Type L windows were included in the visual inspection (10 windows).

Consistent with the results of the previous monitoring events, no signs of disturbance or deterioration were observed during the visual inspections.

2.2 NON-ROUTINE MAINTENANCE ACTIVITIES

No non-routine maintenance activities that disturbed the encapsulated materials were observed or conducted in 2018/2019 in the Tower, as reported by UMass personnel. Window removals in Room A106 were conducted in 2018, resulting in the removal of source materials as documented in the Final Completion Report for Room A106 Renovations dated September 23, 2019 by ATC.

2.3 ACCESSIBLE INTERIOR NON-POROUS SURFACES

Surface wipe samples were collected from eight representative locations on the accessible interior non-porous surfaces adjacent to the Tower A windows as described in the MMIP. The locations of the wipe samples are depicted on Figures 2-1 through 2-4.

At each location, the wipe sample was collected in accordance with the standard wipe test method as described in 40 CFR 761.123. At each sample location, a 2-inch square gauze pad, saturated with hexane, was wiped across a 100 square centimeter template area. All samples were transported to the laboratory under standard Chain of Custody procedures, extracted using USEPA Method 3540C (Soxhlet extraction), and analyzed for PCBs using USEPA Method 8082.

Analytical results indicated that PCBs were either non-detect (7 samples with reporting limits of $< 0.20 \mu\text{g}/100 \text{ cm}^2$) or present at a concentration $< 1 \mu\text{g}/100 \text{ cm}^2$ (one sample with a concentration of $0.24 \mu\text{g}/100 \text{ cm}^2$). These results are consistent with the results from the 2014 baseline sampling and the results from the previous samples collected as part of long-term monitoring from 2015 to 2018. The complete analytical laboratory report and the associated data validation summary are provided in Appendix A. A summary of the analytical results is presented on Table 2-1.

2.4 ENCAPSULATED INTERIOR SURFACES

Surface wipe samples were collected from eight representative locations on the encapsulated surfaces and frame within the Tower A High Rise as described in the MMIP. The locations of the wipe samples were co-located with those collected from accessible non-porous surfaces and are depicted on Figures 2-1 through 2-4.

Wipe samples were collected in accordance with the standard wipe test method as described in 40 CFR 761.123 modified due to the narrow width of the sample area (total width of caulking and frame is approximately $\frac{3}{4}$ -inch). At each sample location, a 2-inch square gauze pad, saturated with hexane, was wiped across a 22-inch long section of the caulking/window frame (to achieve a 100 cm^2 area). Samples were submitted for laboratory analysis as described above.

Analytical results from all nine samples reported PCBs as non-detect (reporting limit of $< 0.20 \mu\text{g}/100 \text{ cm}^2$) consistent with the 2017 and 2018 long-term monitoring events where results were reported as either non-detect or $< 1 \mu\text{g}/100 \text{ cm}^2$

in the samples collected. For surfaces on the 3rd, 7th, and 8th floors which were encapsulated as part of the NIH renovations, these results are lower than reported in the baseline wipes and the first two rounds of long-term monitoring in 2015 and 2016. Based on the overall data set overtime, the results continue to show effective encapsulation of the glazing sealant materials. The complete analytical laboratory report and the associated data validation summary are provided in Appendix A. A summary of the analytical results is presented on Table 2-2.

2.5 INDOOR AIR –

Five indoor air samples were collected from representative locations throughout the LGRC Tower A. No indoor air samples were collected from the Low-Rise as a result of removals completed during window replacements (refer to **Section 2.2**). In addition, one ambient/outdoor air sample was collected from outside Tower A. Indoor air samples were distributed in accordance with the MMIP. The individual spaces were selected based on the use of the space (e.g., offices, laboratories, common areas) throughout the building.

Air samples were collected in accordance with USEPA Compendium Method TO-10A “*Determination of Pesticides and Polychlorinated Biphenyls In Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)*” and submitted for laboratory analysis of PCBs homologs. At each of the sample locations, a low volume PUF cartridge was connected to a personal air pump with flexible tubing and the cartridge was positioned between three and five feet above the floor using a telescoping tubing stand.

Samples were collected at an approximate flow rate of 3.6 L/min for minimum of six hours. The flow rates were set by the equipment rental supply company prior to delivery and verified and adjusted as needed in the field using a digital flow rate calibrator. Atmospheric information (ambient temperatures and barometric pressures) was obtained from a portable commercially available weather monitoring station. Pumps and flow rates were monitored periodically throughout the sample collection period. At the end of the required sample interval, the pump was shut off and the cartridge placed in aluminum foil, labeled, and placed on ice for delivery to the analytical laboratory.

Analytical results indicated that PCBs were reported at concentrations ranging from 24.6 ng/m³ to 250.9 ng/m³ with an average reported concentration of 93.4 ng/m³. Analytical results were non-detect for PCBs in the outdoor/ambient sample.

These indoor air results are consistent with results from the previous sampling events conducted in Tower A in 2015 through 2018 and remain below the project action level of 500 ng/m³ (EPA’s exposure levels for evaluating PCBs in indoor school air for students ages 19 plus and adults, as amended on July 2015). Additionally, the average reported concentrations in samples collected after the interim measures were completed (i.e., 2015 through 2019) ranged from 40.1 ng/m³ in 2015 to 159.2 ng/m³ in 2017. These post-interim measures results are consistent with the average reported concentrations in the two sampling events conducted in 2008 (150 ng/m³) and 2009 (58.8 ng/m³) after the abatement of the exterior caulking was complete but prior to the interim measures. The consistency of the results indicates that the interior conditions within Tower A, as related to the presence of PCBs in indoor air, has remained stable overtime.

The complete analytical laboratory report and the associated data validation summary are provided in Appendix A and a summary of the analytical results is provided on Table 2-3.

3. SUMMARY AND CONCLUSIONS

Results of the 2019 long term monitoring event were as follows:

- Visual inspections indicated that the encapsulating barriers were in good physical condition with no observed damage or deterioration.
- Analytical results from wipe samples collected from accessible non-porous surfaces indicated that PCBs were non-detect ($< 0.2 \mu\text{g}/100\text{cm}^2$) or $< 1 \mu\text{g}/100\text{cm}^2$ in the eight samples collected.
- Analytical results from wipe samples collected from encapsulated surfaces indicated that PCBs were non-detect ($< 0.2 \mu\text{g}/100\text{cm}^2$) in the eight samples collected.
- Analytical results from indoor air samples indicated that PCBs were consistent with previous sampling events and remain at concentrations below the action level of $500 \text{ ng}/\text{m}^3$.

In summary, the results of visual inspections, surface wipe sampling, and indoor air sampling conducted in 2019 as part of the long-term monitoring activities were consistent with the results of previous monitoring events and below the applicable action levels presented in the MMIP.

3.1 CORRECTIVE ACTIONS

No corrective actions are warranted based on the results of the 2019 monitoring event.

3.2 MODIFICATIONS TO THE LONG TERM MONITORING AND MAINTENANCE PLAN

Based on the results of the inspections and sampling activities conducted in 2019, no modifications are proposed to be implemented for long term monitoring.

3.3 NEXT MONITORING EVENT

Pursuant to the CAFO, the next monitoring event will be conducted in June 2020 and consist of the following activities to be conducted in accordance with the December 2014 Revised MMIP:

- Visual inspections of encapsulated glazing sealants and exterior masonry surrounding the Type L windows;
- Wipe sampling of accessible interior non-porous surfaces from randomly selected locations;
- Wipe sampling of encapsulated interior surfaces from randomly selected locations; and
- Collecting indoor air samples.

TABLES

Table 2-1: Summary of Long Term Monitoring Wipe Sampling Results – Accessible Non-Porous Surfaces

Table 2-2: Summary of Long Term Monitoring Wipe Sampling Results – Encapsulated Surfaces

Table 2-3: Summary of Long Term Monitoring Indoor Air Sampling Results

Table 2-1
Summary of Long Term Monitoring Wipe Sampling Results - Accessible Non-Porous Surfaces
UMass Amherst

| Floor | Room Number | Sample ID | Sample Date | Total PCBs ($\mu\text{g}/100\text{cm}^2$) |
|-------|----------------|-------------|-------------|--|
| 1 | Elevator Lobby | LGRC-VWP-16 | 6/26/2019 | <0.20 |
| 4 | 407 | LGRC-VWP-14 | 6/26/2019 | <0.20 |
| 5 | 503 | LGRC-VWP-12 | 6/26/2019 | <0.20 |
| 7 | Elevator Lobby | LGRC-VWP-10 | 6/26/2019 | <0.20 |
| 9 | 901 | LGRC-VWP-08 | 6/26/2019 | <0.20 |
| 11 | 1104 | LGRC-VWP-06 | 6/26/2019 | 0.24 |
| 13 | Stairwell | LGRC-VWP-04 | 6/26/2019 | <0.20 |
| 15 | Elevator Lobby | LGRC-VWP-02 | 6/26/2019 | <0.20 |

Notes:

Wipe samples collected in accordance with the standard wipe test method of 40 CFR 761.123 over a 4" x 4" square centered on the window sill to achieve a 100cm² sample area.

Samples submitted for extraction via USEPA method 3540C (Soxhlet Extraction) and analyzed for PCBs via USEPA method 8082A.

Table 2-2
Summary of Long Term Monitoring Wipe Sampling Results - Encapsulated Surfaces
UMass Amherst

| Floor | 2014 Baseline Wipe Samples | | | | June 2018 Wipe Samples | | | | June 2019 Wipe Samples | | | |
|----------|----------------------------|-----------------|-------------|--|------------------------|--------------|-------------|--|------------------------|-------------|-------------|--|
| | Room Number | Sample ID | Sample Date | Total PCBs (µg/100cm ²) | Room Number | Sample ID | Sample Date | Total PCBs (µg/100cm ²) | Room Number | Sample ID | Sample Date | Total PCBs (µg/100cm ²) |
| 1 | Elevator Lobby | LGRC-EN-VWK-124 | 2/24/2014 | < 0.20 | -- | -- | -- | -- | Elevator Lobby | LGRC-VWP-15 | 6/26/2019 | <0.20 |
| 2 | Elevator Lobby | LGRC-EN-VWK-128 | 2/24/2014 | < 0.20 | Elevator Lobby | LGRC-VWP-018 | 6/25/2018 | 0.24 | -- | -- | -- | -- |
| 3 | Elevator Lobby | LGRC-EN-VWK-130 | 2/24/2014 | 3.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| 4 | 408 | LGRC-EN-VWK-100 | 2/24/2014 | < 0.20 | 408 | LGRC-VWP-016 | 6/25/2018 | < 0.20 | 407 | LGRC-VWP-13 | 6/26/2019 | <0.20 |
| 5 | 502 | LGRC-EN-VWK-102 | 2/24/2014 | < 0.20 | -- | -- | -- | -- | 503 | LGRC-VWP-11 | 6/26/2019 | <0.20 |
| 6 | 605 | LGRC-EN-VWK-104 | 2/24/2014 | 0.27 | 601 | LGRC-VWP-014 | 6/25/2018 | 0.24 | -- | -- | -- | -- |
| 7 | Elevator Lobby | LGRC-EN-VWK-126 | 2/24/2014 | 0.64 | -- | -- | -- | -- | Elevator Lobby | LGRC-VWP-09 | 6/26/2019 | <0.20 |
| 8 | Elevator Lobby | LGRC-EN-VWK-122 | 2/24/2014 | 1.5 | Elevator Lobby | LGRC-VWP-012 | 6/25/2018 | < 0.20 | -- | -- | -- | -- |
| 9 | 903A | LGRC-EN-VWK-120 | 2/24/2014 | < 0.20 | -- | -- | -- | -- | 901 | LGRC-VWP-07 | 6/26/2019 | <0.20 |
| 10 | 1003 | LGRC-EN-VWK-118 | 2/24/2014 | 0.21 | 1004 | LGRC-VWP-010 | 6/25/2018 | 0.41 | -- | -- | -- | -- |
| 11 | 1108 | LGRC-EN-VWK-116 | 2/24/2014 | < 0.20 | -- | -- | -- | -- | 1104 | LGRC-VWP-05 | 6/26/2019 | <0.20 |
| 12 | 1209 | LGRC-EN-VWK-114 | 2/24/2014 | < 0.20 | 1205 | LGRC-VWP-008 | 6/25/2018 | < 0.20 | -- | -- | -- | -- |
| 13 | 1306 | LGRC-EN-VWK-112 | 2/24/2014 | < 0.20 | -- | -- | -- | -- | Stairwell | LGRC-VWP-03 | 6/26/2019 | <0.20 |
| 14 | Elevator Lobby | LGRC-EN-VWK-110 | 2/24/2014 | 0.21 | 1404 | LGRC-VWP-006 | 6/25/2018 | < 0.20 | -- | -- | -- | -- |
| 15 | 1508 | LGRC-EN-VWK-108 | 2/24/2014 | < 0.20 | -- | -- | -- | -- | Elevator Lobby | LGRC-VWP-01 | 6/26/2019 | <0.20 |
| 16 | 1607 | LGRC-EN-VWK-106 | 2/24/2014 | 0.95 | 1606 | LGRC-VWP-004 | 6/25/2018 | < 0.20 | -- | -- | -- | -- |
| Low Rise | A106 | LGRC-EN-VWK-132 | 2/24/2014 | < 0.20 | A106 | LGRC-VWP-002 | 6/25/2018 | 0.52 | -- | -- | -- | -- |

Notes:

Wipe samples collected in accordance with the standard wipe test method of 40 CFR 761.123 modified due to the narrow width of the area.
Samples submitted for extraction via USEPA method 3540C (Soxhlet Extraction) and analyzed for PCBs via USEPA method 8082A.

Table 2-3
Summary of Long Term Monitoring Indoor Air Sampling Results
UMass Amherst

| Location | Air Sample | PCB Concentration (ng/cartridge) | Flow Rate (L/Minute) | Duration (minutes) | PCB Concentration (ng/m ³) |
|--|----------------------|----------------------------------|----------------------|--------------------|--|
| Project Action Level: 500 ng/m³ | | | | | |
| June 18, 2015 Average Recorded Temperature: Morning - 73 °F and Afternoon 74 °F | | | | | |
| Tower A - 403B | LGRC-403B-IAS-LT-011 | 35 | 2.79 | 240 | 53.5 |
| Tower A - 599A | LGRC-599A-IAS-LT-012 | 33 | 2.70 | 240 | 52.2 |
| Tower A - 903 | LGRC-903-IAS-LT-013 | 16 | 2.78 | 240 | 24.7 |
| Tower A - 1105 | LGRC-1105-IAS-LT-014 | 11 | 2.67 | 240 | 18.7 |
| Tower A - 1506 | LGRC-1506-IAS-LT-015 | 29 | 2.68 | 240 | 49.1 |
| Low Rise - A106 | LGRC-A106-IAS-LT-010 | 27 | 2.71 | 240 | 42.5 |
| Ambient Air | LGRC-OUT-IAS-LT-016 | 0 | 2.68 | 240 | 0.0 |
| June 21, 2016 Average Recorded Temperature: Morning - 77 °F and Afternoon 75 °F | | | | | |
| Tower A - 399A | LGRC-399A-IAS-005 | 32 | 2.66 | 365 | 33.8 |
| Tower A - 407 | LGRC-407-IAS-007 | 46 | 2.67 | 361 | 49.4 |
| Tower A - 606 | LGRC-606-IAS-003 | 88 | 2.65 | 373 | 91.8 |
| Tower A - 1003C | LGRC-1003C-IAS-006 | 98 | 2.63 | 361 | 106.7 |
| Tower A - 1606 | LGRC-1606-IAS-002 | 63 | 2.67 | 378 | 64.3 |
| Low Rise - A106 | LGRC-A106-IAS-001 | 64 | 2.68 | 396 | 62.2 |
| Ambient Air | LGRC-AMB-IAS-004 | 0 | 2.52 | 361 | 0.0 |
| June 19, 2017 Average Recorded Temperature: Morning - 76 °F and Afternoon 79 °F | | | | | |
| Tower A - 299T | LGRC-299A-IAS-001 | 160 | 2.64 | 360 | 175.2 |
| Tower A - 399A | LGRC-399A-IAS-002 | 340 | 2.62 | 360 | 374.1 |
| Tower A - 507 | LGRC-507-IAS-003 | 86 | 2.68 | 360 | 92.3 |
| Tower A - 1303 | LGRC-1303-IAS-004 | 73 | 2.65 | 360 | 79.1 |
| Tower A - 1507 | LGRC-1507-IAS-005 | 70 | 2.68 | 360 | 75.0 |
| Low Rise - A106 | LGRC-A106-IAS-007 | 17 | 2.66 | 360 | 18.3 J/UJ |
| Ambient Air | LGRC-AMB-IAS-006 | 0 | 2.62 | 360 | 0.0 |
| June 25, 2018 Average Recorded Temperature: Morning - 74 °F and Afternoon 73 °F | | | | | |
| Tower A - 299T | LGRC-299-IAS-004 | 94 | 2.65 | 374 | 95.4 |
| Tower A - 408 | LGRC-408-IAS-003 | 19 | 2.65 | 373 | 19.3 UJ |
| Tower A - 899A | LGRC-899-IAS-002 | 22 | 2.63 | 369 | 23.4 UJ |
| Tower A - 1205 | LGRC-1205-IAS-005 | 49 | 2.64 | 372 | 51.2 |
| Tower A - 1606 | LGRC-1606-IAS-001 | 80 | 2.65 | 371 | 101.7 UJ |
| Low Rise - A106 | LGRC-A106-IAS-006 | 94 | 2.63 | 398 | 91.2 |
| Ambient Air | LGRC-AMB-IAS-007 | 0 | 2.67 | 365 | 0.0 |
| June 26, 2019 Average Recorded Temperature: Morning - 76 °F and Afternoon 77 °F | | | | | |
| Tower A - 399A | LGRC-399-IAS-01 | 315 | 3.61 | 360 | 250.9 |
| Tower A - 503 | LGRC-503-IAS-03 | 98 | 3.64 | 360 | 77.6 |
| Tower A - 799A | LGRC-799A-IAS-02 | 31 | 3.63 | 360 | 24.6 |
| Tower A - 901 | LGRC-901-IAS-04 | 33 | 3.62 | 362 | 26.4 |
| Tower A - 1404 | LGRC-1404-IAS-05 | 111 | 3.63 | 362 | 87.5 |
| Ambient Air | LGRC-Ambient-07 | 0 | 3.64 | 361 | < 0.003 |

Notes:

Project Specific Risk-based Action Level based on the EPA's exposure levels for evaluating PCBs in indoor school air for students ages 19 plus and adults (July 2015).

Air samples collected in accordance with USEPA Compendium Method TO-10A "Determination of Pesticides and Polychlorinated Biphenyls In Ambient Air Using Low Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD)" and submitted for laboratory analysis of PCBs homologs.

ng/m³ = nanograms per cubic meter

J/UJ = Analytical results qualified as estimated based on the results of data validation. See Appendix A for additional information.

FIGURES

Figure 1-1: Site Location Map

Figure 2-1: Areas of Encapsulated Materials – Tower A 1st – 4th Floors

Figure 2-2: Areas of Encapsulated Materials – Tower A 5th – 8th Floors

Figure 2-3: Areas of Encapsulated Materials – Tower A 9th – 12th Floors

Figure 2-4: Areas of Encapsulated Materials – Tower A 13th – 16th Floors

Figure 2-5: Areas of Encapsulated Materials – Low-Rise Building



University of Massachusetts Amherst Campus Map

July 2011

University Switchboard - (413) 545-0111

Tour Service - (413) 545-4237

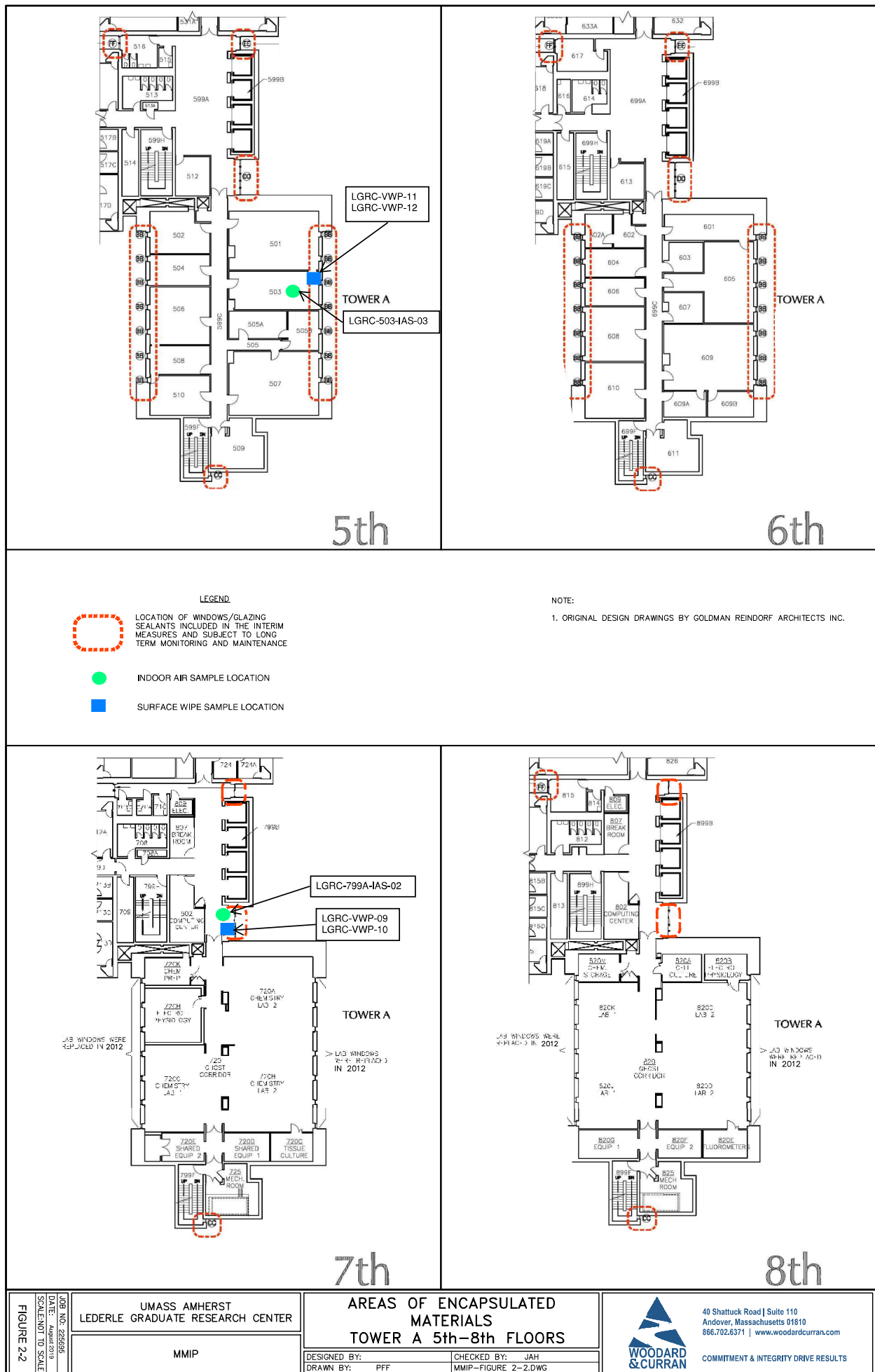
Robsham Memorial Visitors Center - (413) 545-0306

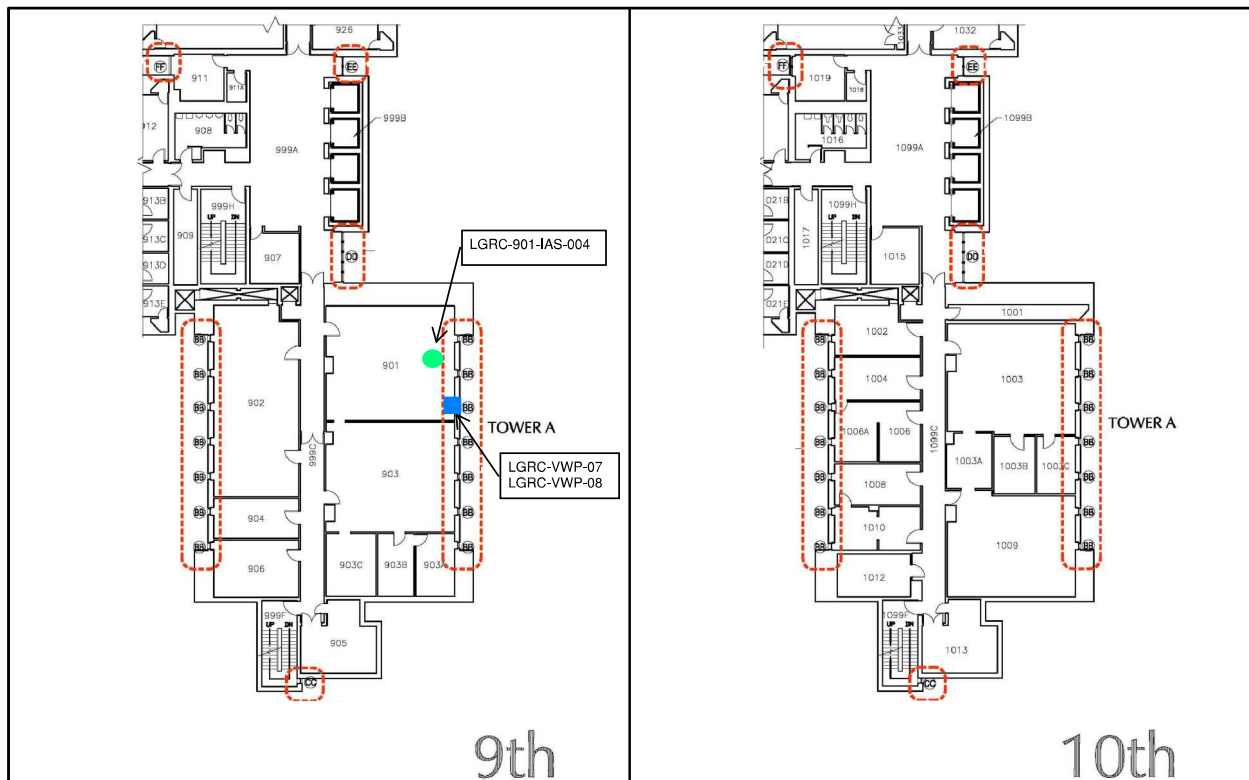
Map Key

- 31 Numbered Parking Lots
- P Metered/Public Parking
- ▲ PVTA Bus Stops
- ✕ Traffic Lights

Project Location

Figure 1-1 Site Location Map





- LEGEND**
- LOCATION OF WINDOWS/GLAZING SEALANTS INCLUDED IN THE INTERIM MEASURES AND SUBJECT TO LONG TERM MONITORING AND MAINTENANCE
- INDOOR AIR SAMPLE LOCATION
- SURFACE WIPE SAMPLE LOCATION

NOTE:

1. ORIGINAL DESIGN DRAWINGS BY GOLDMAN REINDORF ARCHITECTS INC.

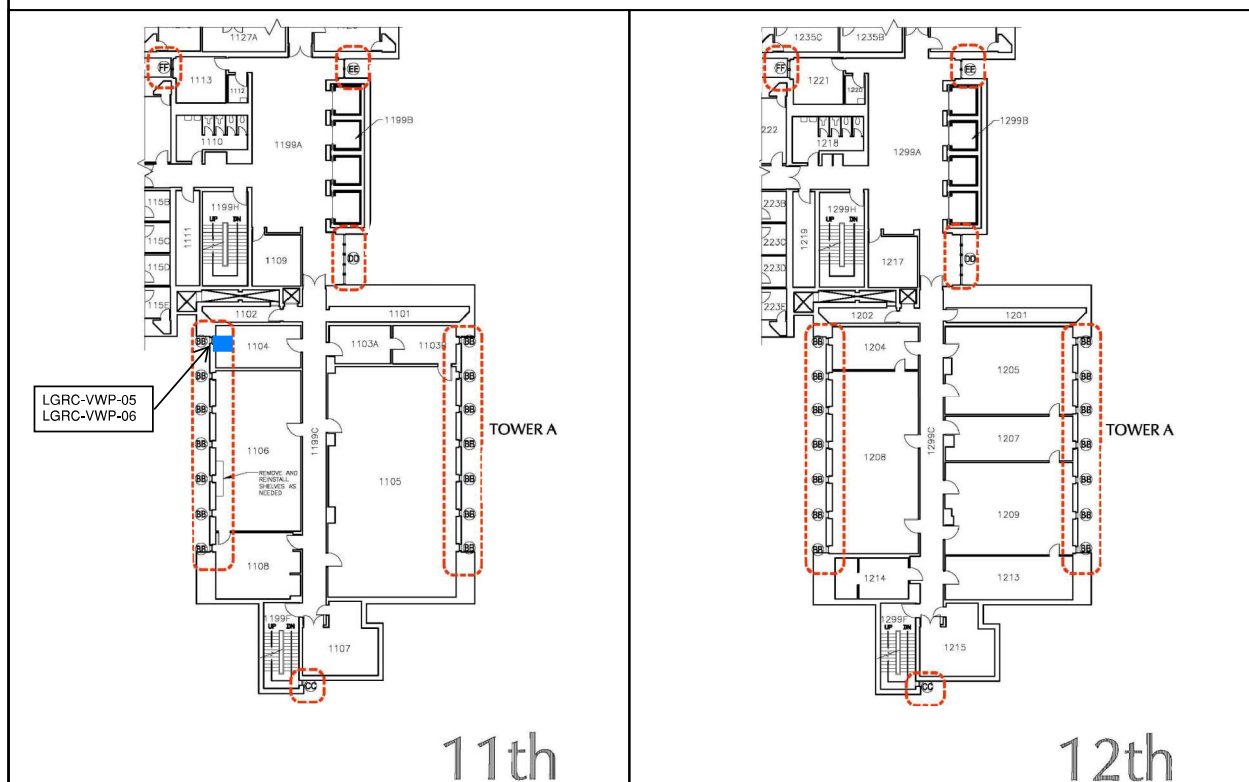


FIGURE 2-3

LOG NO. 225855
DATE: August 2019
SCALE: NOT TO SCALE

UMASS AMHERST
LEDERLE GRADUATE RESEARCH CENTER

MMIP

AREAS OF ENCAPSULATED MATERIALS TOWER A 9th-12th FLOORS

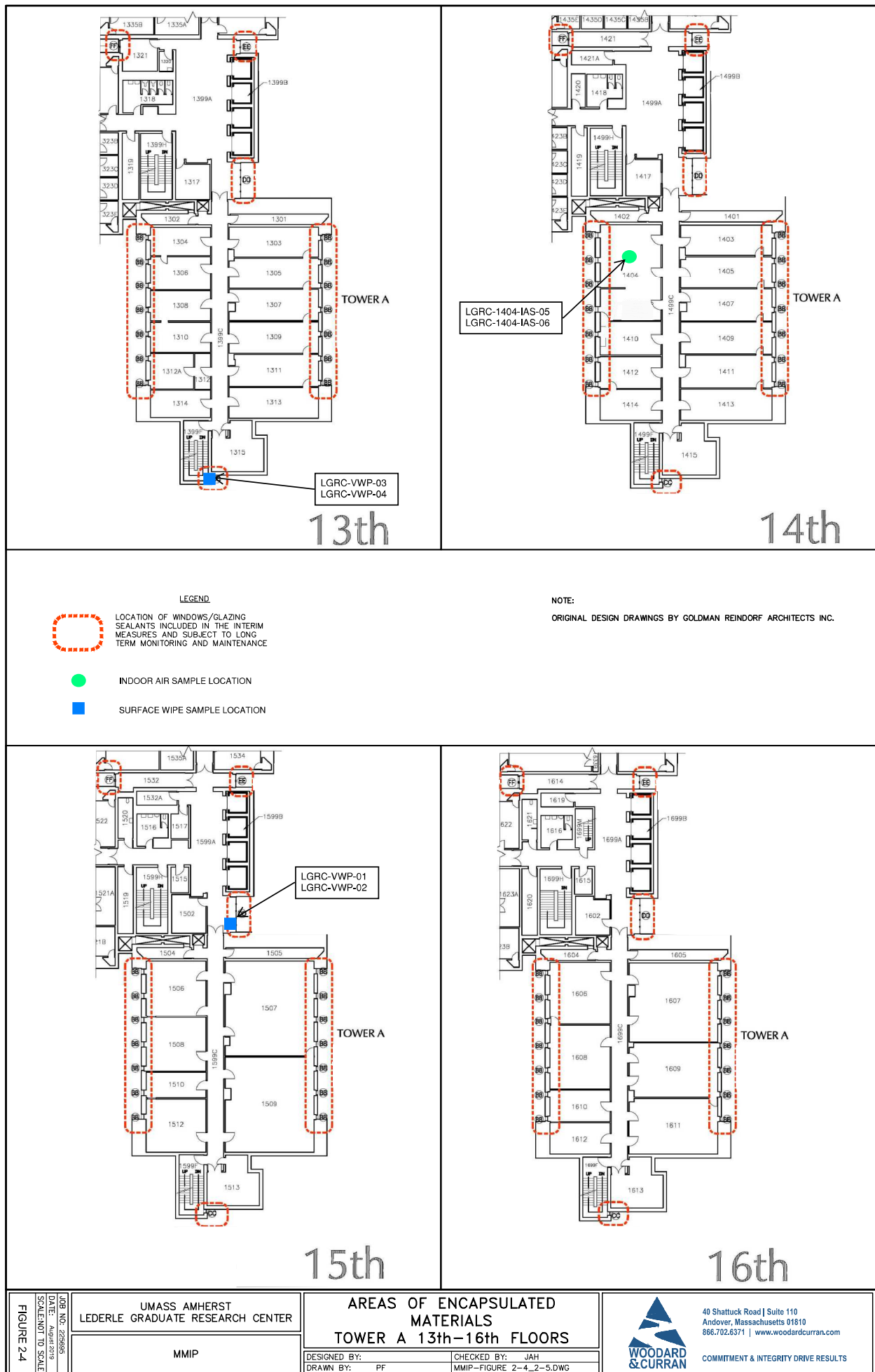
DESIGNED BY:
DRAWN BY: PF

CHECKED BY: JAH
MMIP-FIGURE 2-3.DWG



40 Shattuck Road | Suite 110
Andover, Massachusetts 01810
866.702.6371 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

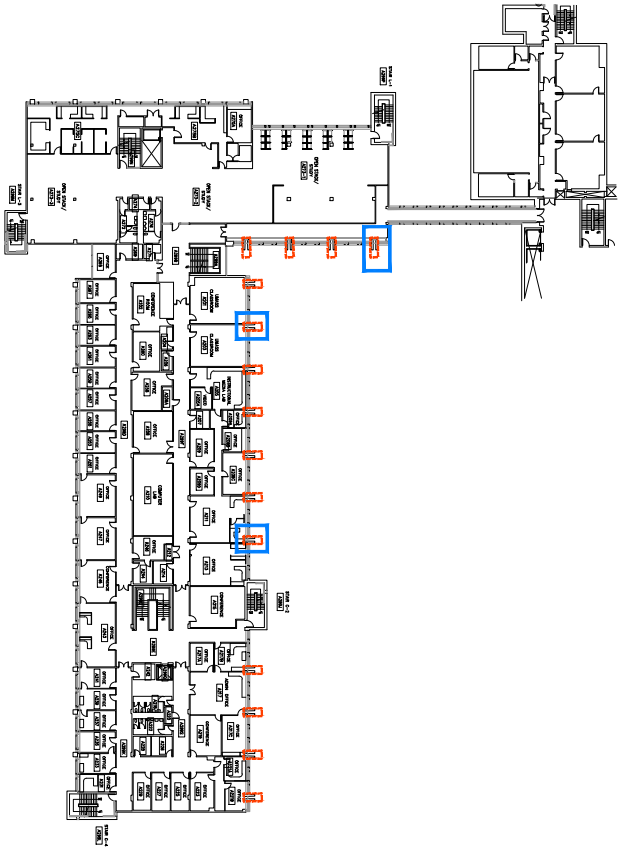


LEGEND:

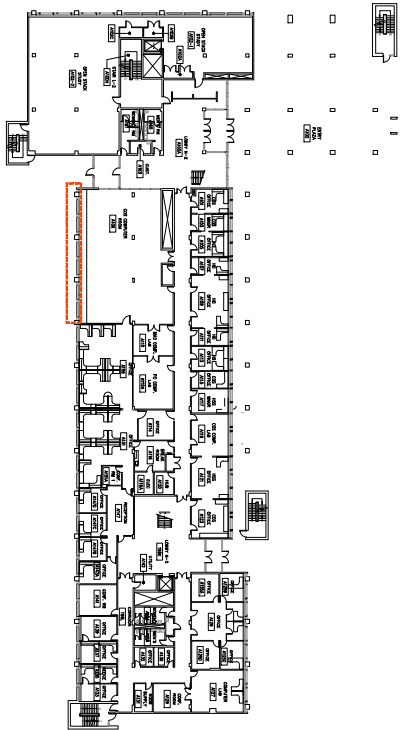
- LOCATION OF WINDOWS/GLAZING SEALANTS OR EXTERIOR CONCRETE SURFACES INCLUDED IN THE INTERIM MEASURE AND SUBJECT TO LONG TERM MONITORING AND MAINTENANCE.
- TYPE-L, VISUAL INSPECTION

NOTE:
ORIGINAL DESIGN DRAWINGS BY GOLDMAN REINDORF ARCHITECTS INC.

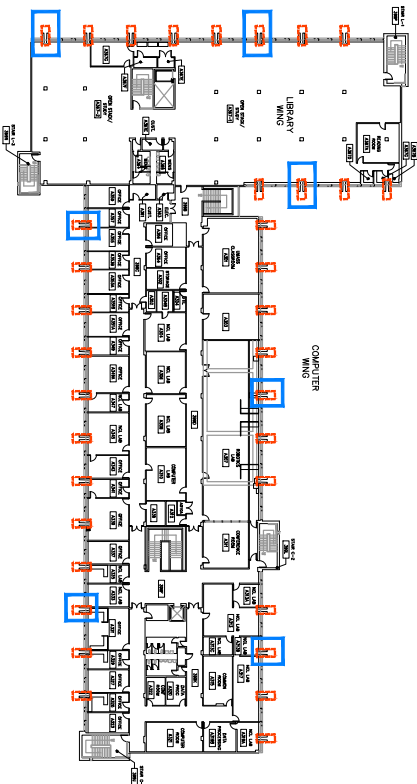
SECOND FLOOR PLAN



FIRST FLOOR PLAN



THIRD FLOOR PLAN



APPENDIX A: ANALYTICAL LABORATORY REPORTS AND DATA VALIDATION SUMMARIES

July 2, 2019

George Franklin
Woodard & Curran - CT
213 Court Street., 4th Floor
Middletown, CT 06457

Project Location: Amherst, MA
Client Job Number:
Project Number: 225695
Laboratory Work Order Number: 19F1419

Enclosed are results of analyses for samples received by the laboratory on June 26, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Meghan E. Kelley". The signature is written in a cursive style with a large, sweeping "M" and a long, trailing flourish at the end.

Meghan E. Kelley
Project Manager

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

Woodard & Curran - CT
213 Court Street., 4th Floor
Middletown, CT 06457
ATTN: George Franklin

REPORT DATE: 7/2/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19F1419

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 |
|----------------|------------|--------|--------------------|--------------|---------|
| LGRC-VWP-01 | 19F1419-01 | Wipe | | SW-846 8082A | |
| LGRC-VWP-02 | 19F1419-02 | Wipe | | SW-846 8082A | |
| LGRC-VWP-03 | 19F1419-03 | Wipe | | SW-846 8082A | |
| LGRC-VWP-04 | 19F1419-04 | Wipe | | SW-846 8082A | |
| LGRC-VWP-05 | 19F1419-05 | Wipe | | SW-846 8082A | |
| LGRC-VWP-06 | 19F1419-06 | Wipe | | SW-846 8082A | |
| LGRC-VWP-07 | 19F1419-07 | Wipe | | SW-846 8082A | |
| LGRC-VWP-08 | 19F1419-08 | Wipe | | SW-846 8082A | |
| LGRC-VWP-09 | 19F1419-09 | Wipe | | SW-846 8082A | |
| LGRC-VWP-10 | 19F1419-10 | Wipe | | SW-846 8082A | |
| LGRC-VWP-11 | 19F1419-11 | Wipe | | SW-846 8082A | |
| LGRC-VWP-12 | 19F1419-12 | Wipe | | SW-846 8082A | |
| LGRC-VWP-13 | 19F1419-13 | Wipe | | SW-846 8082A | |
| LGRC-VWP-14 | 19F1419-14 | Wipe | | SW-846 8082A | |
| LGRC-VWP-15 | 19F1419-15 | Wipe | | SW-846 8082A | |
| LGRC-VWP-16 | 19F1419-16 | Wipe | | SW-846 8082A | |

CASE NARRATIVE SUMMARY

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

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

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

A handwritten signature in black ink, appearing to read "Lisa Worthington", is written over a light pink rectangular background.

Lisa A. Worthington
Technical Representative

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-01

Sampled: 6/26/2019 11:30

Sample ID: 19F1419-01

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:13 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:13 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:13 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:13 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:13 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:13 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:13 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:13 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:13 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 101 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 113 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 89.6 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 88.6 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-02

Sampled: 6/26/2019 11:35

Sample ID: 19F1419-02

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:25 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:25 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:25 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:25 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:25 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:25 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:25 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:25 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:25 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 98.7 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 110 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 87.9 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 86.9 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-03

Sampled: 6/26/2019 11:40

Sample ID: 19F1419-03

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:37 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:37 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:37 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:37 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:37 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:37 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:37 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:37 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:37 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 96.1 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 107 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 90.5 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 89.5 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-04

Sampled: 6/26/2019 11:45

Sample ID: 19F1419-04

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:50 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:50 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:50 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:50 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:50 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:50 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:50 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:50 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 16:50 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 98.7 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 110 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 88.9 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 88.0 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-05

Sampled: 6/26/2019 11:50

Sample ID: 19F1419-05

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:02 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:02 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:02 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:02 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:02 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:02 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:02 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:02 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:02 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 96.7 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 108 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 91.3 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 90.3 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-06

Sampled: 6/26/2019 11:55

Sample ID: 19F1419-06

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:14 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:14 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:14 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:14 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:14 | TG |
| Aroclor-1254 [2] | 0.24 | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:14 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:14 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:14 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:14 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 100 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 112 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 90.7 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 89.7 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-07

Sampled: 6/26/2019 12:00

Sample ID: 19F1419-07

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:27 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:27 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:27 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:27 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:27 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:27 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:27 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:27 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 17:27 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 99.3 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 110 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 90.3 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 89.3 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-08

Sampled: 6/26/2019 12:05

Sample ID: 19F1419-08

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:26 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:26 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:26 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:26 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:26 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:26 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:26 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:26 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:26 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 99.2 | 30-150 | | | | | | 7/1/19 18:26 | |
| Decachlorobiphenyl [2] | 110 | 30-150 | | | | | | 7/1/19 18:26 | |
| Tetrachloro-m-xylene [1] | 93.3 | 30-150 | | | | | | 7/1/19 18:26 | |
| Tetrachloro-m-xylene [2] | 92.3 | 30-150 | | | | | | 7/1/19 18:26 | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-09

Sampled: 6/26/2019 12:10

Sample ID: 19F1419-09

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:38 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:38 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:38 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:38 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:38 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:38 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:38 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:38 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:38 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 86.7 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 95.9 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 87.8 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 86.7 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-10

Sampled: 6/26/2019 12:15

Sample ID: 19F1419-10

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:50 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:50 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:50 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:50 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:50 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:50 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:50 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:50 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 18:50 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 88.7 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 98.4 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 89.3 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 88.5 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-11

Sampled: 6/26/2019 12:20

Sample ID: 19F1419-11

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:03 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:03 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:03 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:03 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:03 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:03 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:03 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:03 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:03 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 93.8 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 104 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 92.2 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 91.3 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-12

Sampled: 6/26/2019 12:25

Sample ID: 19F1419-12

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:15 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:15 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:15 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:15 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:15 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:15 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:15 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:15 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:15 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 91.4 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 102 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 88.2 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 87.4 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-13

Sampled: 6/26/2019 12:30

Sample ID: 19F1419-13

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:27 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:27 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:27 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:27 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:27 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:27 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:27 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:27 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:27 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 95.5 | 30-150 | | | | | | 7/1/19 19:27 | |
| Decachlorobiphenyl [2] | 106 | 30-150 | | | | | | 7/1/19 19:27 | |
| Tetrachloro-m-xylene [1] | 90.6 | 30-150 | | | | | | 7/1/19 19:27 | |
| Tetrachloro-m-xylene [2] | 89.7 | 30-150 | | | | | | 7/1/19 19:27 | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-14

Sampled: 6/26/2019 12:35

Sample ID: 19F1419-14

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:39 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:39 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:39 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:39 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:39 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:39 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:39 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:39 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:39 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 103 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 115 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 95.6 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 94.5 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-15

Sampled: 6/26/2019 12:40

Sample ID: 19F1419-15

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:52 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:52 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:52 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:52 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:52 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:52 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:52 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:52 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 19:52 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 104 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 116 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 97.6 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 96.7 | 30-150 | | | | | | | |

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

Project Location: Amherst, MA

Sample Description:

Work Order: 19F1419

Date Received: 6/26/2019

Field Sample #: LGRC-VWP-16

Sampled: 6/26/2019 12:45

Sample ID: 19F1419-16

Sample Matrix: Wipe

Polychlorinated Biphenyls with 3540 Soxhlet Extraction

| Analyte | Results | RL | Units | Dilution | Flag/Qual | Method | Date Prepared | Date/Time Analyzed | Analyst |
|--------------------------|------------|-----------------|-----------|----------|-----------|--------------|---------------|--------------------|---------|
| Aroclor-1016 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 20:04 | TG |
| Aroclor-1221 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 20:04 | TG |
| Aroclor-1232 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 20:04 | TG |
| Aroclor-1242 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 20:04 | TG |
| Aroclor-1248 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 20:04 | TG |
| Aroclor-1254 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 20:04 | TG |
| Aroclor-1260 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 20:04 | TG |
| Aroclor-1262 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 20:04 | TG |
| Aroclor-1268 [1] | ND | 0.20 | µg/Wipe | 1 | | SW-846 8082A | 6/28/19 | 7/1/19 20:04 | TG |
| Surrogates | % Recovery | Recovery Limits | Flag/Qual | | | | | | |
| Decachlorobiphenyl [1] | 108 | 30-150 | | | | | | | |
| Decachlorobiphenyl [2] | 120 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [1] | 99.2 | 30-150 | | | | | | | |
| Tetrachloro-m-xylene [2] | 98.3 | 30-150 | | | | | | | |

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332**Sample Extraction Data****Prep Method: SW-846 3540C-SW-846 8082A**

| Lab Number [Field ID] | Batch | Initial [Wipe] | Final [mL] | Date |
|--------------------------|---------|----------------|------------|----------|
| 19F1419-01 [LGRC-VWP-01] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-02 [LGRC-VWP-02] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-03 [LGRC-VWP-03] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-04 [LGRC-VWP-04] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-05 [LGRC-VWP-05] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-06 [LGRC-VWP-06] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-07 [LGRC-VWP-07] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-08 [LGRC-VWP-08] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-09 [LGRC-VWP-09] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-10 [LGRC-VWP-10] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-11 [LGRC-VWP-11] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-12 [LGRC-VWP-12] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-13 [LGRC-VWP-13] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-14 [LGRC-VWP-14] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-15 [LGRC-VWP-15] | B234298 | 1.00 | 10.0 | 06/28/19 |
| 19F1419-16 [LGRC-VWP-16] | B234298 | 1.00 | 10.0 | 06/28/19 |

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

QUALITY CONTROL
Polychlorinated Biphenyls with 3540 Soxhlet Extraction - Quality Control

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

Batch B234298 - SW-846 3540C
Blank (B234298-BLK1)

Prepared: 06/27/19 Analyzed: 07/01/19

| | | | | | | | | | | |
|--------------------------------------|------|------|---------|------|--|------|--------|--|--|--|
| Aroclor-1016 | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1016 [2C] | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1221 | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1221 [2C] | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1232 | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1232 [2C] | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1242 | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1242 [2C] | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1248 | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1248 [2C] | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1254 | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1254 [2C] | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1260 | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1260 [2C] | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1262 | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1262 [2C] | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1268 | ND | 0.20 | µg/Wipe | | | | | | | |
| Aroclor-1268 [2C] | ND | 0.20 | µg/Wipe | | | | | | | |
| Surrogate: Decachlorobiphenyl | 1.91 | | µg/Wipe | 2.00 | | 95.7 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | 2.13 | | µg/Wipe | 2.00 | | 107 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | 1.81 | | µg/Wipe | 2.00 | | 90.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | 1.79 | | µg/Wipe | 2.00 | | 89.4 | 30-150 | | | |

LCS (B234298-BS1)

Prepared: 06/27/19 Analyzed: 07/01/19

| | | | | | | | | | | |
|--------------------------------------|------|------|---------|-------|--|------|--------|--|--|--|
| Aroclor-1016 | 0.50 | 0.20 | µg/Wipe | 0.500 | | 100 | 40-140 | | | |
| Aroclor-1016 [2C] | 0.45 | 0.20 | µg/Wipe | 0.500 | | 90.5 | 40-140 | | | |
| Aroclor-1260 | 0.41 | 0.20 | µg/Wipe | 0.500 | | 81.7 | 40-140 | | | |
| Aroclor-1260 [2C] | 0.43 | 0.20 | µg/Wipe | 0.500 | | 86.7 | 40-140 | | | |
| Surrogate: Decachlorobiphenyl | 1.94 | | µg/Wipe | 2.00 | | 97.0 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | 2.14 | | µg/Wipe | 2.00 | | 107 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | 1.85 | | µg/Wipe | 2.00 | | 92.6 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | 1.83 | | µg/Wipe | 2.00 | | 91.6 | 30-150 | | | |

LCS Dup (B234298-BSD1)

Prepared: 06/27/19 Analyzed: 07/01/19

| | | | | | | | | | | |
|--------------------------------------|------|------|---------|-------|--|------|--------|------|----|--|
| Aroclor-1016 | 0.45 | 0.20 | µg/Wipe | 0.500 | | 89.4 | 40-140 | 11.4 | 30 | |
| Aroclor-1016 [2C] | 0.40 | 0.20 | µg/Wipe | 0.500 | | 81.0 | 40-140 | 11.1 | 30 | |
| Aroclor-1260 | 0.36 | 0.20 | µg/Wipe | 0.500 | | 72.8 | 40-140 | 11.5 | 30 | |
| Aroclor-1260 [2C] | 0.37 | 0.20 | µg/Wipe | 0.500 | | 73.5 | 40-140 | 16.5 | 30 | |
| Surrogate: Decachlorobiphenyl | 1.66 | | µg/Wipe | 2.00 | | 82.9 | 30-150 | | | |
| Surrogate: Decachlorobiphenyl [2C] | 1.83 | | µg/Wipe | 2.00 | | 91.3 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene | 1.70 | | µg/Wipe | 2.00 | | 84.9 | 30-150 | | | |
| Surrogate: Tetrachloro-m-xylene [2C] | 1.68 | | µg/Wipe | 2.00 | | 83.9 | 30-150 | | | |

**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES****LGRC-VWP-06***SW-846 8082A*

Lab Sample ID: 19F1419-06 Date(s) Analyzed: 07/01/2019 07/01/2019
Instrument ID (1): ECD10 Instrument ID (2): ECD10
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

| ANALYTE | COL | RT | RT WINDOW | | CONCENTRATION | %RPD |
|--------------|-----|-------|-----------|-------|---------------|------|
| | | | FROM | TO | | |
| Aroclor-1254 | 1 | 0.000 | 0.000 | 0.000 | 0.23 | |
| | 2 | 0.000 | 0.000 | 0.000 | 0.24 | 4.3 |

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**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES***SW-846 8082A***LCS**

Lab Sample ID: B234298-BS1 Date(s) Analyzed: 07/01/2019 07/01/2019
Instrument ID (1): ECD10 Instrument ID (2): ECD10
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

| ANALYTE | COL | RT | RT WINDOW | | CONCENTRATION | %RPD |
|--------------|-----|-------|-----------|-------|---------------|------|
| | | | FROM | TO | | |
| Aroclor-1016 | 1 | 0.000 | 0.000 | 0.000 | 0.50 | |
| | 2 | 0.000 | 0.000 | 0.000 | 0.45 | 10.5 |
| Aroclor-1260 | 1 | 0.000 | 0.000 | 0.000 | 0.41 | |
| | 2 | 0.000 | 0.000 | 0.000 | 0.43 | 4.8 |

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**IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES***SW-846 8082A***LCS Dup**

Lab Sample ID: B234298-BSD1 Date(s) Analyzed: 07/01/2019 07/01/2019
Instrument ID (1): ECD10 Instrument ID (2): ECD10
GC Column (1): ID: (mm) GC Column (2): ID: (mm)

| ANALYTE | COL | RT | RT WINDOW | | CONCENTRATION | %RPD |
|--------------|-----|-------|-----------|-------|---------------|------|
| | | | FROM | TO | | |
| Aroclor-1016 | 1 | 0.000 | 0.000 | 0.000 | 0.45 | |
| | 2 | 0.000 | 0.000 | 0.000 | 0.40 | 11.8 |
| Aroclor-1260 | 1 | 0.000 | 0.000 | 0.000 | 0.36 | |
| | 2 | 0.000 | 0.000 | 0.000 | 0.37 | 2.7 |

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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 |
| ND | Not Detected |
| RL | Reporting Limit is at the level of quantitation (LOQ) |
| DL | Detection Limit is the lower limit of detection determined by the MDL study |
| MCL | Maximum Contaminant Level |
| | Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded. |
| | No results have been blank subtracted unless specified in the case narrative section. |

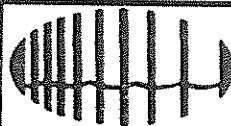
CERTIFICATIONS
Certified Analyses included in this Report

| Analyte | Certifications |
|-----------------------------|----------------------|
| SW-846 8082A in Soil | |
| Aroclor-1016 | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1016 [2C] | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1221 | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1221 [2C] | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1232 | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1232 [2C] | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1242 | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1242 [2C] | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1248 | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1248 [2C] | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1254 | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1254 [2C] | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1260 | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1260 [2C] | CT,NH,NY,ME,NC,VA,PA |
| Aroclor-1262 | NY,NC,VA,PA |
| Aroclor-1262 [2C] | NY,NC,VA,PA |
| Aroclor-1268 | NY,NC,VA,PA |
| Aroclor-1268 [2C] | NY,NC,VA,PA |

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

| Code | Description | Number | Expires |
|-------|--|---------------|------------|
| AIHA | AIHA-LAP, LLC - ISO17025:2005 | 100033 | 03/1/2020 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2020 |
| CT | Connecticut Department of Public Health | PH-0567 | 09/30/2019 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2020 |
| NH-S | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2020 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2019 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2019 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2020 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2020 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2020 |
| ME | State of Maine | 2011028 | 06/9/2021 |
| VA | Commonwealth of Virginia | 460217 | 12/14/2019 |
| NH-P | New Hampshire Environmental Lab | 2557 NELAP | 09/6/2019 |
| VT-DW | Vermont Department of Health Drinking Water | VT-255716 | 06/12/2020 |
| NC-DW | North Carolina Department of Health | 25703 | 07/31/2019 |
| PA | Commonwealth of Pennsylvania DEP | 68-05812 | 06/30/2020 |

I Have Not Confirmed Sample Container
Numbers With Lab Staff Before Relinquishing
Over Samples _____



con-test®
ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False
Statement will be brought to the attention of the Client - State True or False

Client W+C

Received By CR Date 6-26-19 Time 1725

How were the samples received? In Cooler T No Cooler _____ On Ice T No Ice _____
Direct from Sampling _____ Ambient _____ Melted Ice _____

Were samples within Temperature? 2-6°C T By Gun # 4 Actual Temp - 5-9
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

Was COC Relinquished? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all Client T Analysis T Sampler Name T

pertinent Information? Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? _____

Are there Rushes? F Who was notified? _____

Are there Short Holds? F Who was notified? _____

Is there enough Volume? T

Is there Headspace where applicable? NA

Proper Media/Containers Used? T

Were trip blanks received? F

Do all samples have the proper pH? NA Acid _____ Base _____

| Vials | # | Containers: | # | # | # | # |
|--------------|---|--------------|---|-----------------|---|---------------|
| Unp- | | 1 Liter Amb. | | 1 Liter Plastic | | 16 oz Amb. |
| HCL- | | 500 mL Amb. | | 500 mL Plastic | | 8oz Amb/Clear |
| Meoh- | | 250 mL Amb. | | 250 mL Plastic | | 4oz Amb/Clear |
| Bisulfate- | | Flashpoint | | Col./Bacteria | | 2oz Amb/Clear |
| DI- | | Other Glass | | Other Plastic | | Encore |
| Thiosulfate- | | SOC Kit | | Plastic Bag | | Frozen: |
| Sulfuric- | | Perchlorate | | Ziplock | | |

Unused Media

| Vials | # | Containers: | # | # | # | # |
|--------------|---|---------------|---|-----------------|---|---------------|
| Unp- | | 1 Liter Amb. | | 1 Liter Plastic | | 16 oz Amb. |
| HCL- | | 500 mL Amb. | | 500 mL Plastic | | 8oz Amb/Clear |
| Meoh- | | 250 mL Amb. | | 250 mL Plastic | | 4oz Amb/Clear |
| Bisulfate- | | Col./Bacteria | | Flashpoint | | 2oz Amb/Clear |
| DI- | | Other Plastic | | Other Glass | | Encore |
| Thiosulfate- | | SOC Kit | | Plastic Bag | | Frozen: |
| Sulfuric- | | Perchlorate | | Ziplock | | |

Comments:

July 11, 2019

George Franklin
Woodard & Curran - CT
213 Court Street., 4th Floor
Middletown, CT 06457

Project Location: Amherst, MA
Client Job Number:
Project Number: 225695
Laboratory Work Order Number: 19F1420

Enclosed are results of analyses for samples received by the laboratory on June 26, 2019. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Meghan E. Kelley
Project Manager

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332Woodard & Curran - CT
213 Court Street., 4th Floor
Middletown, CT 06457
ATTN: George Franklin

REPORT DATE: 7/11/2019

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 225695

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 19F1420

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 |
|------------------|------------|--------|--------------------|----------------------------|---------|
| LGRC-399-1AS-01 | 19F1420-01 | Air | | TO-10A/EPA 680 Modified | |
| LGRC-799A-1AS-02 | 19F1420-02 | Air | | TO-10A/EPA 680 Modified | |
| LGRC-503-1AS-03 | 19F1420-03 | Air | | TO-10A/EPA 680 Modified | |
| LGRC-901-1AS-04 | 19F1420-04 | Air | | TO-10A/EPA 680 Modified | |
| LGRC-1404-1AS-05 | 19F1420-05 | Air | | TO-10A/EPA 680 Modified | |
| LGRC-1404-1AS-06 | 19F1420-06 | Air | | TO-10A/EPA 680 Modified | |
| LGRC-Ambient-07 | 19F1420-07 | Air | | TO-10A/EPA 680 Modified | |

CASE NARRATIVE SUMMARY

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

TO-10A/EPA 680 Modified**Qualifications:****V-06**

Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound.

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

S037736-CCV2

V-20

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

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

19F1420-01[LGRC-399-1AS-01], 19F1420-02[LGRC-799A-1AS-02], 19F1420-03[LGRC-503-1AS-03], 19F1420-04[LGRC-901-1AS-04],
19F1420-05[LGRC-1404-1AS-05], 19F1420-06[LGRC-1404-1AS-06], 19F1420-07[LGRC-Ambient-07]

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

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



Lisa A. Worthington
Technical Representative

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

ANALYTICAL RESULTS

Project Location: Amherst, MA
Date Received: 6/26/2019
Field Sample #: LGRC-399-1AS-01
Sample ID: 19F1420-01

Sample Description/Location:
Sub Description/Location:

Work Order: 19F1420

Sample Matrix: Air
Sampled: 6/26/2019 14:35

Flow Controller ID:
Sample Type:
Air Volume L: 1298.5

TO-10A/EPA 680 Modified

| Analyte | Total µg | | Flag/Qual | ug/m3 | | Dilution | Date/Time | | Analyst |
|---------------------------------|------------|--------|-----------|--------------|---------|----------|-----------|------|---------|
| | Results | RL | | Results | RL | | Analyzed | | |
| Monochlorobiphenyls | ND | 0.0010 | V-20 | ND | 0.00077 | 1 | 7/3/19 | 2:56 | CLA |
| Dichlorobiphenyls | 0.0014 | 0.0010 | | 0.0011 | 0.00077 | 1 | 7/3/19 | 2:56 | CLA |
| Trichlorobiphenyls | 0.0033 | 0.0020 | | 0.0025 | 0.0015 | 1 | 7/3/19 | 2:56 | CLA |
| Tetrachlorobiphenyls | 0.10 | 0.0020 | | 0.080 | 0.0015 | 1 | 7/3/19 | 2:56 | CLA |
| Pentachlorobiphenyls | 0.17 | 0.0020 | | 0.13 | 0.0015 | 1 | 7/3/19 | 2:56 | CLA |
| Hexachlorobiphenyls | 0.040 | 0.0020 | | 0.031 | 0.0015 | 1 | 7/3/19 | 2:56 | CLA |
| Heptachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 2:56 | CLA |
| Octachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 2:56 | CLA |
| Nonachlorobiphenyls | ND | 0.0050 | | ND | 0.0039 | 1 | 7/3/19 | 2:56 | CLA |
| Decachlorobiphenyl | ND | 0.0050 | | ND | 0.0039 | 1 | 7/3/19 | 2:56 | CLA |
| Total Polychlorinated biphenyls | 0.32 | | | 0.25 | | 1 | 7/3/19 | 2:56 | CLA |
| Surrogates | % Recovery | | | % REC Limits | | | | | |
| Tetrachloro-m-xylene | 67.8 | | | 50-125 | | | 7/3/19 | 2:56 | |

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

ANALYTICAL RESULTS

Project Location: Amherst, MA

Date Received: 6/26/2019

Field Sample #: LGRC-799A-1AS-02

Sample ID: 19F1420-02

Sample Matrix: Air

Sampled: 6/26/2019 14:48

Sample Description/Location:

Sub Description/Location:

Work Order: 19F1420

Flow Controller ID:

Sample Type:

Air Volume L: 1307.2

TO-10A/EPA 680 Modified

| Analyte | Total µg | | Flag/Qual | ug/m3 | | Dilution | Date/Time | | Analyst |
|---------------------------------|----------|--------|-----------|---------|---------|----------|-------------|--|---------|
| | Results | RL | | Results | RL | | Analyzed | | |
| Monochlorobiphenyls | ND | 0.0010 | V-20 | ND | 0.00076 | 1 | 7/3/19 3:33 | | CLA |
| Dichlorobiphenyls | ND | 0.0010 | | ND | 0.00076 | 1 | 7/3/19 3:33 | | CLA |
| Trichlorobiphenyls | ND | 0.0020 | | ND | 0.0015 | 1 | 7/3/19 3:33 | | CLA |
| Tetrachlorobiphenyls | 0.014 | 0.0020 | | 0.011 | 0.0015 | 1 | 7/3/19 3:33 | | CLA |
| Pentachlorobiphenyls | 0.017 | 0.0020 | | 0.013 | 0.0015 | 1 | 7/3/19 3:33 | | CLA |
| Hexachlorobiphenyls | ND | 0.0020 | | ND | 0.0015 | 1 | 7/3/19 3:33 | | CLA |
| Heptachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 3:33 | | CLA |
| Octachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 3:33 | | CLA |
| Nonachlorobiphenyls | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 3:33 | | CLA |
| Decachlorobiphenyl | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 3:33 | | CLA |
| Total Polychlorinated biphenyls | 0.031 | | | 0.024 | | 1 | 7/3/19 3:33 | | CLA |

| Surrogates | % Recovery | % REC Limits | |
|----------------------|------------|--------------|-------------|
| Tetrachloro-m-xylene | 71.2 | 50-125 | 7/3/19 3:33 |

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

ANALYTICAL RESULTS

Project Location: Amherst, MA

Date Received: 6/26/2019

Field Sample #: LGRC-503-1AS-03

Sample ID: 19F1420-03

Sample Matrix: Air

Sampled: 6/26/2019 15:02

Sample Description/Location:

Sub Description/Location:

Work Order: 19F1420

Flow Controller ID:

Sample Type:

Air Volume L: 1311.5

TO-10A/EPA 680 Modified

| Analyte | Total µg | | Flag/Qual | ug/m3 | | Dilution | Date/Time | | |
|---------------------------------|----------|--------|-----------|---------|---------|----------|-----------|---------|-----|
| | Results | RL | | Results | RL | | Analyzed | Analyst | |
| Monochlorobiphenyls | ND | 0.0010 | V-20 | ND | 0.00076 | 1 | 7/3/19 | 4:10 | CLA |
| Dichlorobiphenyls | ND | 0.0010 | | ND | 0.00076 | 1 | 7/3/19 | 4:10 | CLA |
| Trichlorobiphenyls | ND | 0.0020 | | ND | 0.0015 | 1 | 7/3/19 | 4:10 | CLA |
| Tetrachlorobiphenyls | 0.031 | 0.0020 | | 0.024 | 0.0015 | 1 | 7/3/19 | 4:10 | CLA |
| Pentachlorobiphenyls | 0.046 | 0.0020 | | 0.035 | 0.0015 | 1 | 7/3/19 | 4:10 | CLA |
| Hexachlorobiphenyls | 0.021 | 0.0020 | | 0.016 | 0.0015 | 1 | 7/3/19 | 4:10 | CLA |
| Heptachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 4:10 | CLA |
| Octachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 4:10 | CLA |
| Nonachlorobiphenyls | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 | 4:10 | CLA |
| Decachlorobiphenyl | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 | 4:10 | CLA |
| Total Polychlorinated biphenyls | 0.098 | | | 0.075 | | 1 | 7/3/19 | 4:10 | CLA |

| Surrogates | % Recovery | % REC Limits | |
|----------------------|------------|--------------|-------------|
| Tetrachloro-m-xylene | 79.2 | 50-125 | 7/3/19 4:10 |

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

ANALYTICAL RESULTS

Project Location: Amherst, MA

Date Received: 6/26/2019

Field Sample #: LGRC-901-1AS-04

Sample ID: 19F1420-04

Sample Matrix: Air

Sampled: 6/26/2019 15:14

Sample Description/Location:

Sub Description/Location:

Work Order: 19F1420

Flow Controller ID:

Sample Type:

Air Volume L: 1309.0

TO-10A/EPA 680 Modified

| Analyte | Total µg | | Flag/Qual | ug/m3 | | Dilution | Date/Time | | |
|---------------------------------|----------|--------|-----------|---------|---------|----------|-----------|---------|-----|
| | Results | RL | | Results | RL | | Analyzed | Analyst | |
| Monochlorobiphenyls | ND | 0.0010 | V-20 | ND | 0.00076 | 1 | 7/3/19 | 4:48 | CLA |
| Dichlorobiphenyls | ND | 0.0010 | | ND | 0.00076 | 1 | 7/3/19 | 4:48 | CLA |
| Trichlorobiphenyls | ND | 0.0020 | | ND | 0.0015 | 1 | 7/3/19 | 4:48 | CLA |
| Tetrachlorobiphenyls | 0.013 | 0.0020 | | 0.0099 | 0.0015 | 1 | 7/3/19 | 4:48 | CLA |
| Pentachlorobiphenyls | 0.015 | 0.0020 | | 0.011 | 0.0015 | 1 | 7/3/19 | 4:48 | CLA |
| Hexachlorobiphenyls | 0.0054 | 0.0020 | | 0.0041 | 0.0015 | 1 | 7/3/19 | 4:48 | CLA |
| Heptachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 4:48 | CLA |
| Octachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 4:48 | CLA |
| Nonachlorobiphenyls | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 | 4:48 | CLA |
| Decachlorobiphenyl | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 | 4:48 | CLA |
| Total Polychlorinated biphenyls | 0.033 | | | 0.025 | | 1 | 7/3/19 | 4:48 | CLA |

| Surrogates | % Recovery | % REC Limits | |
|----------------------|------------|--------------|-------------|
| Tetrachloro-m-xylene | 76.6 | 50-125 | 7/3/19 4:48 |

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ANALYTICAL RESULTS

Project Location: Amherst, MA

Date Received: 6/26/2019

Field Sample #: LGRC-1404-1AS-05

Sample ID: 19F1420-05

Sample Matrix: Air

Sampled: 6/26/2019 15:25

Sample Description/Location:

Sub Description/Location:

Work Order: 19F1420

Flow Controller ID:

Sample Type:

Air Volume L: 1314.1

TO-10A/EPA 680 Modified

| Analyte | Total µg | | Flag/Qual | ug/m3 | | Dilution | Date/Time | | |
|---------------------------------|----------|--------|-----------|---------|---------|----------|-----------|---------|-----|
| | Results | RL | | Results | RL | | Analyzed | Analyst | |
| Monochlorobiphenyls | ND | 0.0010 | V-20 | ND | 0.00076 | 1 | 7/3/19 | 5:25 | CLA |
| Dichlorobiphenyls | ND | 0.0010 | | ND | 0.00076 | 1 | 7/3/19 | 5:25 | CLA |
| Trichlorobiphenyls | ND | 0.0020 | | ND | 0.0015 | 1 | 7/3/19 | 5:25 | CLA |
| Tetrachlorobiphenyls | 0.046 | 0.0020 | | 0.035 | 0.0015 | 1 | 7/3/19 | 5:25 | CLA |
| Pentachlorobiphenyls | 0.049 | 0.0020 | | 0.037 | 0.0015 | 1 | 7/3/19 | 5:25 | CLA |
| Hexachlorobiphenyls | 0.016 | 0.0020 | | 0.012 | 0.0015 | 1 | 7/3/19 | 5:25 | CLA |
| Heptachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 5:25 | CLA |
| Octachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 5:25 | CLA |
| Nonachlorobiphenyls | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 | 5:25 | CLA |
| Decachlorobiphenyl | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 | 5:25 | CLA |
| Total Polychlorinated biphenyls | 0.11 | | | 0.085 | | 1 | 7/3/19 | 5:25 | CLA |

| Surrogates | % Recovery | % REC Limits | |
|----------------------|------------|--------------|-------------|
| Tetrachloro-m-xylene | 84.4 | 50-125 | 7/3/19 5:25 |

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ANALYTICAL RESULTS

Project Location: Amherst, MA

Date Received: 6/26/2019

Field Sample #: LGRC-1404-1AS-06

Sample ID: 19F1420-06

Sample Matrix: Air

Sampled: 6/26/2019 15:25

Sample Description/Location:

Sub Description/Location:

Work Order: 19F1420

Flow Controller ID:

Sample Type:

Air Volume L: 1286.9

TO-10A/EPA 680 Modified

| Analyte | Total µg | | Flag/Qual | ug/m3 | | Dilution | Date/Time | | |
|---------------------------------|----------|--------|-----------|---------|---------|----------|-----------|---------|-----|
| | Results | RL | | Results | RL | | Analyzed | Analyst | |
| Monochlorobiphenyls | ND | 0.0010 | V-20 | ND | 0.00078 | 1 | 7/3/19 | 6:03 | CLA |
| Dichlorobiphenyls | ND | 0.0010 | | ND | 0.00078 | 1 | 7/3/19 | 6:03 | CLA |
| Trichlorobiphenyls | ND | 0.0020 | | ND | 0.0016 | 1 | 7/3/19 | 6:03 | CLA |
| Tetrachlorobiphenyls | 0.045 | 0.0020 | | 0.035 | 0.0016 | 1 | 7/3/19 | 6:03 | CLA |
| Pentachlorobiphenyls | 0.061 | 0.0020 | | 0.047 | 0.0016 | 1 | 7/3/19 | 6:03 | CLA |
| Hexachlorobiphenyls | 0.016 | 0.0020 | | 0.013 | 0.0016 | 1 | 7/3/19 | 6:03 | CLA |
| Heptachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 6:03 | CLA |
| Octachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 6:03 | CLA |
| Nonachlorobiphenyls | ND | 0.0050 | | ND | 0.0039 | 1 | 7/3/19 | 6:03 | CLA |
| Decachlorobiphenyl | ND | 0.0050 | | ND | 0.0039 | 1 | 7/3/19 | 6:03 | CLA |
| Total Polychlorinated biphenyls | 0.12 | | | 0.096 | | 1 | 7/3/19 | 6:03 | CLA |

| Surrogates | % Recovery | % REC Limits | |
|----------------------|------------|--------------|-------------|
| Tetrachloro-m-xylene | 83.3 | 50-125 | 7/3/19 6:03 |

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ANALYTICAL RESULTS

Project Location: Amherst, MA

Date Received: 6/26/2019

Field Sample #: LGRC-Ambient-07

Sample ID: 19F1420-07

Sample Matrix: Air

Sampled: 6/26/2019 15:33

Sample Description/Location:

Sub Description/Location:

Work Order: 19F1420

Flow Controller ID:

Sample Type:

Air Volume L: 1314.0

TO-10A/EPA 680 Modified

| Analyte | Total µg | | Flag/Qual | ug/m3 | | Dilution | Date/Time | | |
|---------------------------------|----------|--------|-----------|---------|---------|----------|-----------|---------|-----|
| | Results | RL | | Results | RL | | Analyzed | Analyst | |
| Monochlorobiphenyls | ND | 0.0010 | V-20 | ND | 0.00076 | 1 | 7/3/19 | 6:40 | CLA |
| Dichlorobiphenyls | ND | 0.0010 | | ND | 0.00076 | 1 | 7/3/19 | 6:40 | CLA |
| Trichlorobiphenyls | ND | 0.0020 | | ND | 0.0015 | 1 | 7/3/19 | 6:40 | CLA |
| Tetrachlorobiphenyls | ND | 0.0020 | | ND | 0.0015 | 1 | 7/3/19 | 6:40 | CLA |
| Pentachlorobiphenyls | ND | 0.0020 | | ND | 0.0015 | 1 | 7/3/19 | 6:40 | CLA |
| Hexachlorobiphenyls | ND | 0.0020 | | ND | 0.0015 | 1 | 7/3/19 | 6:40 | CLA |
| Heptachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 6:40 | CLA |
| Octachlorobiphenyls | ND | 0.0030 | | ND | 0.0023 | 1 | 7/3/19 | 6:40 | CLA |
| Nonachlorobiphenyls | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 | 6:40 | CLA |
| Decachlorobiphenyl | ND | 0.0050 | | ND | 0.0038 | 1 | 7/3/19 | 6:40 | CLA |
| Total Polychlorinated biphenyls | 0.0 | | | 0 | | 1 | 7/3/19 | 6:40 | CLA |

| Surrogates | % Recovery | % REC Limits | |
|----------------------|------------|--------------|-------------|
| Tetrachloro-m-xylene | 78.2 | 50-125 | 7/3/19 6:40 |

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332**Sample Extraction Data****Prep Method: SW-846 3540C-TO-10A/EPA 680 Modified**

| Lab Number [Field ID] | Batch | Initial [Cartridge | Final [mL] | Date |
|-------------------------------|---------|--------------------|------------|----------|
| 19F1420-01 [LGRC-399-1AS-01] | B234359 | 1.00 | 1.00 | 06/27/19 |
| 19F1420-02 [LGRC-799A-1AS-02] | B234359 | 1.00 | 1.00 | 06/27/19 |
| 19F1420-03 [LGRC-503-1AS-03] | B234359 | 1.00 | 1.00 | 06/27/19 |
| 19F1420-04 [LGRC-901-1AS-04] | B234359 | 1.00 | 1.00 | 06/27/19 |
| 19F1420-05 [LGRC-1404-1AS-05] | B234359 | 1.00 | 1.00 | 06/27/19 |
| 19F1420-06 [LGRC-1404-1AS-06] | B234359 | 1.00 | 1.00 | 06/27/19 |
| 19F1420-07 [LGRC-Ambient-07] | B234359 | 1.00 | 1.00 | 06/27/19 |

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

QUALITY CONTROL

PCB Homologues by GC/MS with Soxhlet Extraction - Quality Control

| Analyte | Total µg | | ug/m3 | | Spike Level | Source | %REC | %REC | RPD | RPD | Flag/Qual |
|---------|----------|----|---------|----|-------------|--------|------|--------|-----|-------|-----------|
| | Results | RL | Results | RL | Total µg | Result | %REC | Limits | RPD | Limit | |

Batch B234359 - SW-846 3540C

Blank (B234359-BLK1)

Prepared: 06/27/19 Analyzed: 06/28/19

| | | |
|---------------------------------|-----|--------|
| Monochlorobiphenyls | ND | 0.0010 |
| Dichlorobiphenyls | ND | 0.0010 |
| Trichlorobiphenyls | ND | 0.0020 |
| Tetrachlorobiphenyls | ND | 0.0020 |
| Pentachlorobiphenyls | ND | 0.0020 |
| Hexachlorobiphenyls | ND | 0.0020 |
| Heptachlorobiphenyls | ND | 0.0030 |
| Octachlorobiphenyls | ND | 0.0030 |
| Nonachlorobiphenyls | ND | 0.0050 |
| Decachlorobiphenyl | ND | 0.0050 |
| Total Polychlorinated biphenyls | 0.0 | |

Surrogate: Tetrachloro-m-xylene 0.158 0.200 79.2 50-125

LCS (B234359-BS1)

Prepared: 06/27/19 Analyzed: 06/28/19

| | | | | | |
|----------------------|------|--------|-------|------|--------|
| Monochlorobiphenyls | 0.12 | 0.0010 | 0.200 | 62.4 | 40-140 |
| Dichlorobiphenyls | 0.14 | 0.0010 | 0.200 | 72.1 | 40-140 |
| Trichlorobiphenyls | 0.13 | 0.0020 | 0.200 | 67.1 | 40-140 |
| Tetrachlorobiphenyls | 0.26 | 0.0020 | 0.400 | 66.0 | 40-140 |
| Pentachlorobiphenyls | 0.26 | 0.0020 | 0.400 | 66.2 | 40-140 |
| Hexachlorobiphenyls | 0.25 | 0.0020 | 0.400 | 62.3 | 40-140 |
| Heptachlorobiphenyls | 0.35 | 0.0030 | 0.600 | 58.3 | 40-140 |
| Octachlorobiphenyls | 0.36 | 0.0030 | 0.600 | 59.7 | 40-140 |
| Nonachlorobiphenyls | 0.63 | 0.0050 | 1.00 | 63.4 | 40-140 |
| Decachlorobiphenyl | 0.64 | 0.0050 | 1.00 | 63.8 | 40-140 |

Surrogate: Tetrachloro-m-xylene 0.153 0.200 76.3 50-125

LCS Dup (B234359-BSD1)

Prepared: 06/27/19 Analyzed: 06/28/19

| | | | | | | | |
|----------------------|------|--------|-------|------|--------|------|----|
| Monochlorobiphenyls | 0.11 | 0.0010 | 0.200 | 53.9 | 40-140 | 14.7 | 50 |
| Dichlorobiphenyls | 0.15 | 0.0010 | 0.200 | 73.3 | 40-140 | 1.72 | 50 |
| Trichlorobiphenyls | 0.15 | 0.0020 | 0.200 | 74.0 | 40-140 | 9.86 | 50 |
| Tetrachlorobiphenyls | 0.30 | 0.0020 | 0.400 | 75.1 | 40-140 | 12.9 | 50 |
| Pentachlorobiphenyls | 0.36 | 0.0020 | 0.400 | 89.2 | 40-140 | 29.6 | 50 |
| Hexachlorobiphenyls | 0.25 | 0.0020 | 0.400 | 63.6 | 40-140 | 2.14 | 50 |
| Heptachlorobiphenyls | 0.36 | 0.0030 | 0.600 | 59.5 | 40-140 | 2.09 | 50 |
| Octachlorobiphenyls | 0.37 | 0.0030 | 0.600 | 61.3 | 40-140 | 2.61 | 50 |
| Nonachlorobiphenyls | 0.65 | 0.0050 | 1.00 | 65.1 | 40-140 | 2.65 | 50 |
| Decachlorobiphenyl | 0.66 | 0.0050 | 1.00 | 65.6 | 40-140 | 2.92 | 50 |

Surrogate: Tetrachloro-m-xylene 0.152 0.200 76.1 50-125

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FLAG/QUALIFIER SUMMARY

| | |
|------|---|
| * | QC result is outside of established limits. |
| † | Wide recovery limits established for difficult compound. |
| ‡ | Wide RPD limits established for difficult compound. |
| # | Data exceeded client recommended or regulatory level |
| ND | Not Detected |
| RL | Reporting Limit is at the level of quantitation (LOQ) |
| DL | Detection Limit is the lower limit of detection determined by the MDL study |
| MCL | Maximum Contaminant Level |
| | Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded. |
| | No results have been blank subtracted unless specified in the case narrative section. |
| V-06 | Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side for this compound. |
| V-20 | Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side. Data validation is not affected since sample result was "not detected" for this compound. |

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INTERNAL STANDARD AREA AND RT SUMMARY

TO-10A/EPA 680 Modified

| Internal Standard | Response | RT | Reference Response | Reference RT | Area % | Area % Limits | RT Diff | RT Diff Limit | Q |
|--|----------|--------|--------------------------|--------------|--------|--------------------------|---------|---------------|---|
| Calibration Check (S037674-CCV1) | | | Lab File ID: F1917903c.D | | | Analyzed: 06/28/19 13:05 | | | |
| Phenanthrene-d10 | 954316 | 19.294 | 1300502 | 20.307 | 73 | 0 - 200 | -1.0130 | +/-0.50 | |
| Chrysene-d12 | 603663 | 26.61 | 755395 | 28.009 | 80 | 0 - 200 | -1.3990 | +/-0.50 | |
| LCS (B234359-BS1) | | | Lab File ID: F1917915.D | | | Analyzed: 06/28/19 20:33 | | | |
| Phenanthrene-d10 | 1106647 | 19.288 | 954316 | 19.294 | 116 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 657516 | 26.61 | 603663 | 26.61 | 109 | 50 - 200 | 0.0000 | +/-0.50 | |
| LCS Dup (B234359-BSD1) | | | Lab File ID: F1917916.D | | | Analyzed: 06/28/19 21:10 | | | |
| Phenanthrene-d10 | 747764 | 19.288 | 954316 | 19.294 | 78 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 587811 | 26.604 | 603663 | 26.61 | 97 | 50 - 200 | -0.0060 | +/-0.50 | |
| Blank (B234359-BLK1) | | | Lab File ID: F1917919.D | | | Analyzed: 06/28/19 22:25 | | | |
| Phenanthrene-d10 | 943988 | 19.288 | 954316 | 19.294 | 99 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 539026 | 26.602 | 603663 | 26.61 | 89 | 50 - 200 | -0.0080 | +/-0.50 | |
| Calibration Check (S037674-CCV2) | | | Lab File ID: F1917921.D | | | Analyzed: 06/28/19 23:40 | | | |
| Phenanthrene-d10 | 983376 | 19.288 | 954316 | 19.294 | 103 | 0 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 548915 | 26.602 | 603663 | 26.61 | 91 | 0 - 200 | -0.0080 | +/-0.50 | |

INTERNAL STANDARD AREA AND RT SUMMARY

TO-10A/EPA 680 Modified

| Internal Standard | Response | RT | Reference Response | Reference RT | Area % | Area % Limits | RT Diff | RT Diff Limit | Q |
|--|----------|--------|-------------------------|--------------|--------|--------------------------|---------|---------------|---|
| Calibration Check (S037736-CCV1) | | | Lab File ID: F1918320.D | | | Analyzed: 07/02/19 20:41 | | | |
| Phenanthrene-d10 | 1018712 | 19.294 | 1300502 | 20.307 | 78 | 0 - 200 | -1.0130 | +/-0.50 | |
| Chrysene-d12 | 563775 | 26.612 | 755395 | 28.009 | 75 | 0 - 200 | -1.3970 | +/-0.50 | |
| LGRC-399-1AS-01 (19F1420-01) | | | Lab File ID: F1918330.D | | | Analyzed: 07/03/19 02:56 | | | |
| Phenanthrene-d10 | 1142548 | 19.288 | 1018712 | 19.294 | 112 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 587487 | 26.61 | 563775 | 26.612 | 104 | 50 - 200 | -0.0020 | +/-0.50 | |
| LGRC-799A-1AS-02 (19F1420-02) | | | Lab File ID: F1918331.D | | | Analyzed: 07/03/19 03:33 | | | |
| Phenanthrene-d10 | 1167317 | 19.288 | 1018712 | 19.294 | 115 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 608749 | 26.611 | 563775 | 26.612 | 108 | 50 - 200 | -0.0010 | +/-0.50 | |
| LGRC-503-1AS-03 (19F1420-03) | | | Lab File ID: F1918332.D | | | Analyzed: 07/03/19 04:10 | | | |
| Phenanthrene-d10 | 1106820 | 19.288 | 1018712 | 19.294 | 109 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 579869 | 26.61 | 563775 | 26.612 | 103 | 50 - 200 | -0.0020 | +/-0.50 | |
| LGRC-901-1AS-04 (19F1420-04) | | | Lab File ID: F1918333.D | | | Analyzed: 07/03/19 04:48 | | | |
| Phenanthrene-d10 | 1008542 | 19.288 | 1018712 | 19.294 | 99 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 503661 | 26.603 | 563775 | 26.612 | 89 | 50 - 200 | -0.0090 | +/-0.50 | |
| LGRC-1404-1AS-05 (19F1420-05) | | | Lab File ID: F1918334.D | | | Analyzed: 07/03/19 05:25 | | | |
| Phenanthrene-d10 | 1077914 | 19.288 | 1018712 | 19.294 | 106 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 603555 | 26.61 | 563775 | 26.612 | 107 | 50 - 200 | -0.0020 | +/-0.50 | |

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

INTERNAL STANDARD AREA AND RT SUMMARY

TO-10A/EPA 680 Modified

| Internal Standard | Response | RT | Reference Response | Reference RT | Area % | Area % Limits | RT Diff | RT Diff Limit | Q |
|--|----------|--------|-------------------------|--------------|--------|--------------------------|---------|---------------|---|
| LGRC-1404-IAS-06 (19F1420-06) | | | Lab File ID: F1918335.D | | | Analyzed: 07/03/19 06:03 | | | |
| Phenanthrene-d10 | 1056525 | 19.288 | 1018712 | 19.294 | 104 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 547439 | 26.61 | 563775 | 26.612 | 97 | 50 - 200 | -0.0020 | +/-0.50 | |
| LGRC-Ambient-07 (19F1420-07) | | | Lab File ID: F1918336.D | | | Analyzed: 07/03/19 06:40 | | | |
| Phenanthrene-d10 | 1042585 | 19.288 | 1018712 | 19.294 | 102 | 50 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 559226 | 26.602 | 563775 | 26.612 | 99 | 50 - 200 | -0.0100 | +/-0.50 | |
| Calibration Check (S037736-CCV2) | | | Lab File ID: F1918337.D | | | Analyzed: 07/03/19 07:17 | | | |
| Phenanthrene-d10 | 911580 | 19.288 | 1018712 | 19.294 | 89 | 0 - 200 | -0.0060 | +/-0.50 | |
| Chrysene-d12 | 446212 | 26.602 | 563775 | 26.612 | 79 | 0 - 200 | -0.0100 | +/-0.50 | |

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

CONTINUING CALIBRATION CHECK

TO-10A/EPA 680 Modified

S037674-CCV1

| COMPOUND | TYPE | CONC. (ng/mL) | | RESPONSE FACTOR | | | % DIFF / DRIFT | |
|----------------------|------|---------------|-----|-----------------|----------|---------|----------------|-----------|
| | | STD | CCV | ICAL | CCV | MIN (#) | CCV | LIMIT (#) |
| Monochlorobiphenyls | A | 100 | 100 | 25.8674 | 25.90232 | | 0.1 | 20 |
| Dichlorobiphenyls | A | 100 | 110 | 23.62162 | 26.01811 | | 10.1 | 20 |
| Trichlorobiphenyls | A | 100 | 113 | 19.79156 | 22.37388 | | 13.0 | 20 |
| Tetrachlorobiphenyls | A | 200 | 213 | 11.92361 | 12.71631 | | 6.6 | 20 |
| Pentachlorobiphenyls | A | 200 | 212 | 10.19841 | 10.82097 | | 6.1 | 20 |
| Hexachlorobiphenyls | A | 200 | 183 | 16.8474 | 15.40118 | | -8.6 | 20 |
| Heptachlorobiphenyls | A | 300 | 260 | 16.84104 | 14.60487 | | -13.3 | 20 |
| Octachlorobiphenyls | A | 300 | 258 | 14.7698 | 12.68174 | | -14.1 | 20 |
| Nonachlorobiphenyls | A | 500 | 425 | 13.16719 | 11.19615 | | -15.0 | 20 |
| Decachlorobiphenyl | A | 500 | 429 | 11.15062 | 9.571483 | | -14.2 | 20 |

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

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

CONTINUING CALIBRATION CHECK

TO-10A/EPA 680 Modified

S037674-CCV2

| COMPOUND | TYPE | CONC. (ng/mL) | | RESPONSE FACTOR | | | % DIFF / DRIFT | |
|----------------------|------|---------------|-----|-----------------|----------|---------|----------------|-----------|
| | | STD | CCV | ICAL | CCV | MIN (#) | CCV | LIMIT (#) |
| Monochlorobiphenyls | A | 100 | 102 | 25.8674 | 26.42402 | | 2.2 | 20 |
| Dichlorobiphenyls | A | 100 | 104 | 23.62162 | 24.65918 | | 4.4 | 20 |
| Trichlorobiphenyls | A | 100 | 104 | 19.79156 | 20.58216 | | 4.0 | 20 |
| Tetrachlorobiphenyls | A | 200 | 204 | 11.92361 | 12.14795 | | 1.9 | 20 |
| Pentachlorobiphenyls | A | 200 | 196 | 10.19841 | 10.01499 | | -1.8 | 20 |
| Hexachlorobiphenyls | A | 200 | 194 | 16.8474 | 16.35066 | | -2.9 | 20 |
| Heptachlorobiphenyls | A | 300 | 280 | 16.84104 | 15.71555 | | -6.7 | 20 |
| Octachlorobiphenyls | A | 300 | 285 | 14.7698 | 14.03693 | | -5.0 | 20 |
| Nonachlorobiphenyls | A | 500 | 474 | 13.16719 | 12.48253 | | -5.2 | 20 |
| Decachlorobiphenyl | A | 500 | 483 | 11.15062 | 10.76633 | | -3.4 | 20 |

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

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CONTINUING CALIBRATION CHECK

TO-10A/EPA 680 Modified

S037736-CCV1

| COMPOUND | TYPE | CONC. (ng/mL) | | RESPONSE FACTOR | | | % DIFF / DRIFT | |
|----------------------|------|---------------|-----|-----------------|----------|---------|----------------|-----------|
| | | STD | CCV | ICAL | CCV | MIN (#) | CCV | LIMIT (#) |
| Monochlorobiphenyls | A | 100 | 114 | 25.8674 | 29.6119 | | 14.5 | 20 |
| Dichlorobiphenyls | A | 100 | 107 | 23.62162 | 25.31996 | | 7.2 | 20 |
| Trichlorobiphenyls | A | 100 | 104 | 19.79156 | 20.50261 | | 3.6 | 20 |
| Tetrachlorobiphenyls | A | 200 | 197 | 11.92361 | 11.76964 | | -1.3 | 20 |
| Pentachlorobiphenyls | A | 200 | 186 | 10.19841 | 9.491397 | | -6.9 | 20 |
| Hexachlorobiphenyls | A | 200 | 183 | 16.8474 | 15.39111 | | -8.6 | 20 |
| Heptachlorobiphenyls | A | 300 | 260 | 16.84104 | 14.59388 | | -13.3 | 20 |
| Octachlorobiphenyls | A | 300 | 262 | 14.7698 | 12.88088 | | -12.8 | 20 |
| Nonachlorobiphenyls | A | 500 | 441 | 13.16719 | 11.62263 | | -11.7 | 20 |
| Decachlorobiphenyl | A | 500 | 444 | 11.15062 | 9.897477 | | -11.2 | 20 |

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

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CONTINUING CALIBRATION CHECK

TO-10A/EPA 680 Modified

S037736-CCV2

| COMPOUND | TYPE | CONC. (ng/mL) | | RESPONSE FACTOR | | | % DIFF / DRIFT | |
|----------------------|------|---------------|-----|-----------------|----------|---------|----------------|-----------|
| | | STD | CCV | ICAL | CCV | MIN (#) | CCV | LIMIT (#) |
| Monochlorobiphenyls | A | 100 | 122 | 25.8674 | 31.53974 | | 21.9 | 20 * |
| Dichlorobiphenyls | A | 100 | 114 | 23.62162 | 26.94936 | | 14.1 | 20 |
| Trichlorobiphenyls | A | 100 | 111 | 19.79156 | 21.9328 | | 10.8 | 20 |
| Tetrachlorobiphenyls | A | 200 | 216 | 11.92361 | 12.88847 | | 8.1 | 20 |
| Pentachlorobiphenyls | A | 200 | 196 | 10.19841 | 10.00886 | | -1.9 | 20 |
| Hexachlorobiphenyls | A | 200 | 221 | 16.8474 | 18.6394 | | 10.6 | 20 |
| Heptachlorobiphenyls | A | 300 | 313 | 16.84104 | 17.55668 | | 4.2 | 20 |
| Octachlorobiphenyls | A | 300 | 308 | 14.7698 | 15.16618 | | 2.7 | 20 |
| Nonachlorobiphenyls | A | 500 | 497 | 13.16719 | 13.08638 | | -0.6 | 20 |
| Decachlorobiphenyl | A | 500 | 487 | 11.15062 | 10.86188 | | -2.6 | 20 |

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

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

CERTIFICATIONS

Certified Analyses included in this Report

| Analyte | Certifications |
|---------|----------------|
|---------|----------------|

No certified Analyses included in this Report

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

| Code | Description | Number | Expires |
|-------|--|---------------|------------|
| AIHA | AIHA-LAP, LLC - ISO17025:2005 | 100033 | 03/1/2020 |
| MA | Massachusetts DEP | M-MA100 | 06/30/2020 |
| CT | Connecticut Department of Public Health | PH-0567 | 09/30/2019 |
| NY | New York State Department of Health | 10899 NELAP | 04/1/2020 |
| NH-S | New Hampshire Environmental Lab | 2516 NELAP | 02/5/2020 |
| RI | Rhode Island Department of Health | LAO00112 | 12/30/2019 |
| NC | North Carolina Div. of Water Quality | 652 | 12/31/2019 |
| NJ | New Jersey DEP | MA007 NELAP | 06/30/2020 |
| FL | Florida Department of Health | E871027 NELAP | 06/30/2020 |
| VT | Vermont Department of Health Lead Laboratory | LL015036 | 07/30/2020 |
| ME | State of Maine | 2011028 | 06/9/2021 |
| VA | Commonwealth of Virginia | 460217 | 12/14/2019 |
| NH-P | New Hampshire Environmental Lab | 2557 NELAP | 09/6/2019 |
| VT-DW | Vermont Department of Health Drinking Water | VT-255716 | 06/12/2020 |
| NC-DW | North Carolina Department of Health | 25703 | 07/31/2019 |
| PA | Commonwealth of Pennsylvania DEP | 68-05812 | 06/30/2020 |

19F1420



MEK

Company Name:

Address:

Phone:

Project Name:

Project Location:

Project Number:

Project Manager:

Con-Test Quote Name/Number:

Invoice Recipient:

Sampled By:

Lab Use

Con-Test Work Order#

Client Sample ID / Description

Beginning Date/Time

Ending Date/Time

Duration

Total Minutes Sampled

Flow Rate

Matrix

Code

Volume

Liters m³

L/min

Matrix

Code

Volume

Liters m³

L/min

Matrix

Code

Volume

Liters m³

L/min

Matrix

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Volume

Liters m³

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Matrix

Code

Volume

Liters m³

L/min

Woodward & Curran

213 Court St Middletown CT

203-699-6116

LGR-C-LTA

Ankner MA

225695

George Franklin

George Franklin

Gray Reynolds

LGR-C-399-1AS-01

LGR-C-799A-1AS-02

LGR-C-503-1AS-03

LGR-C-901-1AS-04

LGR-C-1404-1AS-05

LGR-C-1404-1AS-06

LGR-C-Ambient-07

8/31/14 14:35

8/31/14 14:48

9/07/14 15:02

9/13/14 15:14

9/23/14 15:25

9/23/14 15:35

9/23/14 15:45

9/23/14 15:55

9/23/14 16:05

9/23/14 16:15

9/23/14 16:25

9/23/14 16:35

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9/23/14 18:45

9/23/14 18:55

9/23/14 19:05

7-Day ☐ 10-Day ☐

Due Date: 5-day

1-Day ☐ 3-Day ☐2-Day ☐ 4-Day ☐

Data Delivery

Format: PDF ☒ EXCEL ☒Other: ☐CLP Like Data Pkg Required: ☐

Email To: gfranklin@woodwardcurran.com

Fax To #: greynolds

Matrix

Code

Volume

Liters m³

L/min

Matrix

Code

Volume

Liters m³

L/min

Matrix

Code

Volume

Liters m³

L/min

Matrix

Code

Volume

Liters m³

L/min

Matrix

Code

Volume

Liters m³

L/min

Matrix

Code

Volume

Liters m³

L/min

Matrix

Code

Volume

ANALYSIS REQUESTED

Lab Receipt Pressure

Final Pressure

Initial Pressure

" Hg

PCB homolog

PCB

12985

13672

13165

13090

13141

12869

13140

12985

13672

13165

13090

13141

12869

13140

12985

13672

13165

13090

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12869

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12985

13672

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13672

13165

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13141

12869

13140

12985

Please fill out completely, sign, date and retain the yellow copy for your records

Summa canisters and flow controllers must be returned within 15 days of receipt or rental fees will apply

For summa canister and flow controller information please refer to Con-Test's Air Media Agreement

Summa Can ID

Flow Controller ID

Summa Can ID

Flow Controller ID

Summa Can ID

Flow Controller ID

Summa Can ID

Flow Controller ID

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Comments:

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Matrix Codes:

SG = SOIL GAS
IA = INDOOR AIR
AMB = AMBIENT
SS = SUB SLAB
D = DUP
BL = BLANK
O = OtherSpecial Requirements
☐ MA MCP Required
☐ MCP Certification Form Required
☐ CT RCP Required
☐ RCP Certification Form Required
☐ Other

NELAC and AIHA-LAP, LLC Accredited

Other

☐ WRTA☐ MWRA☐ Municipality☐ Government☐ Federal☐ City☐ 21 J☐ Brownfield☐ School☐ MBTA☐ Soxhlet☐ Non Soxhlet☐ Soxhlet☐ Non Soxhlet☐ Soxhlet☐ Non Soxhlet☐ Soxhlet☐ Non Soxhlet

I Have Not Confirmed Sample Container
Numbers With Lab Staff Before
Relinquishing Over
Samples _____



con-test®
ANALYTICAL LABORATORY

Doc# 278 Rev 6 2017

**Air Media Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False
Statement will be brought to the attention of the Client - State True or False**

Client W+C

Received By UR Date 6-26-19 Time 1720
How were the samples received? In Cooler T On Ice T No Ice _____
In Box _____ Ambient _____ Melted Ice _____
Were samples within Temperature Compliance? 2-6°C T By Gun # 4 Actual Temp - 5.9
By Blank # _____ Actual Temp - _____
Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished? T Does Chain Agree With Samples? T
Are there any loose caps/valves on any samples? F
Is COC in ink/ Legible? T
Did COC Include all Client T Analysis T Sampler Name T
Pertinent Information? Project T ID's T Collection Dates/Times T
Are Sample Labels filled out and legible? T
Are there Rushes? F Who was notified? _____
Samples are received within holding time? T
Proper Media Used? T Individually Certified Cans? F
Are there Trip Blanks? F Is there enough Volume? T

| Containers: | # | Size | Regulator | Duration | Accessories: | | |
|-------------|----------|-----------|-----------|----------|--------------|--|------------------|
| Summa Cans | | | | | Nut/Ferrule | | IC Train |
| Tedlar Bags | | | | | Tubing | | |
| TO-17 Tubes | | | | | T-Connector | | Shipping Charges |
| Radiello | | | | | Syringe | | |
| Pufs/TO-11s | <u>7</u> | <u>11</u> | | | Tedlar | | |

| Can #'s | | | | | Reg #'s | | | | |
|--------------|--|--|--|--|--------------|-----|--|--|--|
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |
| Unused Media | | | | | Pufs/TO-17's | | | | |
| | | | | | 06254-01 | -06 | | | |
| | | | | | -02 | -07 | | | |
| | | | | | -03 | | | | |
| | | | | | -04 | | | | |
| | | | | | -05 | | | | |

Comments:

UMASS LGRC 2019 LONG TERM MONITORING - PROJECT SUMMARY

Con-Test Analytical Laboratory Job Number: 19F1420

The criteria detailed below were used to qualify the data. Raw data were not used to verify the results reported by the laboratory.

The data validation was conducted in accordance with "USEPA National Functional Guidelines for Organic Superfund Methods Data Review" January 2017; "EPA New England Environmental Data Review Supplement For Regional Data Review Elements and Superfund Specific Guidance/Procedures" April 2013; and the referenced method.

Samples were received at 5.9 degrees Celsius. No qualifications were applied.

PCB Homologs:

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

The laboratory noted in the case narrative that for monochlorobiphenyls: "Continuing calibration verification (CCV) did not meet method specifications and was biased on the high side." The laboratory V-20 is removed and the non-detected monochlorobiphenyls result in all samples was accepted without qualification.

All surrogates met laboratory acceptance criteria. No qualifications were applied.

The method blank was non-detect (ND) for all target analytes. No qualifications were applied.

No field blanks were submitted with this analytical package. No qualifications were applied.

No matrix spike/matrix spike duplicate (MS/MSD) was performed since the samples in this analytical package are air samples. No qualifications were applied.

The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) met laboratory acceptance criteria. No qualifications were applied.

The field duplicate samples LGRC-1404-IAS-05 (19F1420-05)/LGRC-1404-IAS-06 (19F1420-06) met acceptance criteria. No qualifications were applied.

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

Gloria J. Switalski:
President



Date:

7/19/2019

