3 October 2017

Mr. Michael Losasso
Antinozzi Associates
271 Fairfield Avenue
Bridgeport, Connecticut 06604

RE: Addendum #2: PCB Air Sampling Results – 3rd Round
Francis Walsh Intermediate School
Branford, Connecticut
Langan Project No. 140139902

Dear Mr. Losasso:

The following report is the second addendum to Langan CT, Inc.'s (Langan's) PCB Indoor Air and Surface Dust Wipe Sampling report, dated 5 September 2017. Addendum #2 documents the results of a third round of PCB indoor air sampling, completed on 21 September 2017, in the large gymnasium, girls' locker room and boys' locker room at the Francis Walsh Intermediate School (FWIS) located at 185 Damascus Road in Branford, Connecticut.

BACKGROUND

As part of the preparation effort for a new school renovation project, Langan was engaged to conduct a Hazardous Building Materials (HBM) survey at FWIS. The HBM survey report was completed in September 2016 and it identified PCBs greater than 50 ppm in some of the interior sealant compounds. Concentrations ranged from non-detect to 59,000 ppm.

In August of 2017, Langan was engaged to conduct indoor air and wipe sampling for PCBs prior to opening for the 2017/2018 school year as part of the renovation application process. A summary of sample results is presented below:

- 23 air samples collected:
  - All 23 sample results <500 ng/m^3
  - 21 sample results <300 ng/m^3; 2 sample results >300 ng/m^3:
    - Large Gym: PCBs = 407.2 ng/m^3
    - Pool: PCBs = 328.7 ng/m^3
- 28 wipe samples collected:
  - All 28 samples <1.0 µg/100 cm^2

The Superintendent and First Selectman immediately restricted access to the wing of the school that contained the large gym, girls' and boys' locker rooms, auxiliary gym and pool (designated as AREA #2 on the attached figures).

A preliminary assessment of the HVAC systems for AREA #2 identified a number of system components that were not operating properly, resulting in insufficient air circulation and elevated temperatures in these spaces. Manual adjustments to the systems were made to promote better air circulation as an interim measure until the replacement parts arrive (expected in early October 2017).

Upon completion of the manual adjustments, a second round of air sampling was completed in AREA #2 to determine if the increased air flow had any effect on the PCB concentrations in air. A summary of sample result is presented below:

- 6 air samples were collected (2 in large gym, 1 in pool, 1 in boys' locker room, 1 in girls' locker room and 1 in auxiliary gym):
    - All 6 sample results <500 ng/m^3
    - 5 sample results <300 ng/m^3; 1 sample result >300 ng/m^3:
        - Boys' and Girls' Locker Rooms 67.4 and 68.1 ng/m^3
        - Large Gym = 177.5 and 198.3 ng/m^3
        - Pool = 256.2 ng/m^3
        - Auxiliary Gym = 378.2 ng/m^3

INDOOR AIR SAMPLING RESULTS – 3rd ROUND

Best Management Practices – Pre-Sampling

Closure of the large gymnasium and girls' and boys' locker rooms presented considerable logistic issues for the school, and the decision was made by the project team to complete a number of EPA Best Management Practices (BMPs) in an attempt to safely re-open those areas, with the pool and auxiliary gym to remain closed, with reopening to follow at a later date. The following BMPs were completed between 20 September and 26 September 2017:

- Wipe down of the accessible walls and horizontal surfaces in the large gym and locker rooms by a certified abatement contractor (AAIS);
- Cover accessible, exposed caulking with a hardened barrier (plywood) as an interim measure to prevent direct contact; and
- Conduct a third round of air sampling (described in detail below).

Pre-Sampling Comfort Parameters

Prior to commencing the third round of indoor air sampling, Langan recorded the following comfort parameters in the interior of the sample areas. Although not indicators of health hazards, comfort parameters, such as temperature and relative humidity, are indicators of proper air exchange in a building and were noticeably lower (improved) in AREA #2 during the third round of air sampling as follows:

Comfort Parameters - AREA #2		
Sampling Date	**Temperature (°F)**	**Humidity (%)**
Industry guidance levels	68-79 °F	30-60%
Sampling Event 1 08/16/2017	85°F-88°F	80%-85%
Sampling Event 2 08/29/2017	67°F-77°F	52%-78%
Sampling Event 3 09/21/2017	75 °F–78 °F	61%-68%

Indoor Air PCB Sampling Procedures

A total of five (5) air samples were collected using a sorbent, polyurethane foam (PUF) cartridge in accordance with USEPA 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), dated January 1999* and USEPA Method 680 Modified *(Determination of Pesticides and PCBs in Water and Soil/Sediment by Gas*

Chromatography/Mass Spectrometry) dated November 1985 with Soxhlet extraction. The samples were collected at a low-flow rate of approximately three (3) liters per minute for approximately eight (8) hours, for a total volume of approximately 1,440 liters per sample. Sufficient sample volume was collected to ensure laboratory reporting limits of five (5) nanograms per cubic meter (ng/m^3) or less for each of the ten (10) homolog analytes. This reporting limit allowed quantification of the data relative to the EPA guidance levels for PCBs in school building indoor air of 300 ng/m^3 for elementary school aged children (6 - <12 years old) and 500 ng/m^3 for middle school aged children (12 - <15 years old).

The air samples (including blanks and duplicates) were submitted under proper chain-of-custody protocol to Con-test Analytical Laboratory of East Longmeadow, Massachusetts, a NELAP and State of Connecticut Department of Public Health certified environmental testing laboratory (Connecticut # PH-0567), for PCB homolog analysis.

Indoor Air Sample Results

All five air sample results were below the EPA air guidance values for elementary school aged children (300 ng/m^3). Concentrations ranged from non-detect to 146.0 ng/m^3. See Table 1 for a summary of the third round of indoor air sample results and Figures 1.1 through 1.4 for the locations of each sample. Raw analytical lab data is provided in Attachment A.

A summary of the air sampling completed to date is illustrated in the table below:

PCB Sampling Locations	**PCB Air Sampling Results (ng/m^3)**				
	1st Round	**HVAC Manually Adjusted**	**2nd Round**	**HVAC Adjustments Wipe Down Completed**	**3rd Round**
AREA #1					
Large Gym	407.2		177.5 - 198.3		146.0 – 144.7
Pool	328.7		256.2		n/a
Auxiliary Gym	n/a		378.2		n/a
Boys' Locker Room	n/a		67.4		74.2
Girls' Locker Room	n/a		68.1		85.2
AREA#2					
Classrooms, student lockers, cafeteria, etc.	38.4 – 160.6		n/a		n/a

n/a=not applicable

Conclusions and Recommendations

Based on the three rounds of indoor air sampling performed in AREA #2 of FWIS, we conclude and recommend the following:

- With respect to the large gymnasium and the girls' and boys' locker rooms:
  - PCB concentrations in air have been below EPA Guidance value of 300 ng/m^3 for two consecutive rounds of air testing.
  - Accessible areas of each room have been wiped down/cleaned.
  - Accessible PCB containing column caulking compounds have been covered with plywood as an interim measure to prevent direct contact.

- Langan recommends implementing the same or analogous BMPs at the pool and auxiliary gym areas prior to re-opening these spaces. Once BMPs are implemented, Langan also recommends collecting a sample of the pool water for PCB analysis, prior to re-opening.

If you have any questions or comments, please feel free to contact us.

Sincerely,

Langan CT, Inc.

Matthew A. Myers
Senior Hazmat Specialist

Jamie P. Barr, L.E.P.
Senior Associate/Vice President

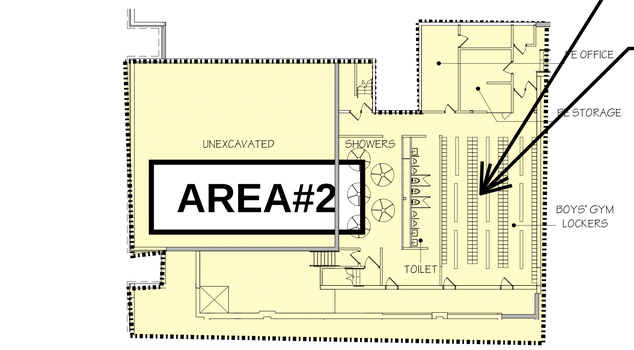
Attachments

Figures 1.1 through 1.4 – Indoor Air Sampling Locations (three rounds)
Table 1 – Air Sampling Analytical Results
Appendix A - Con-Test Analytical Laboratory Reports

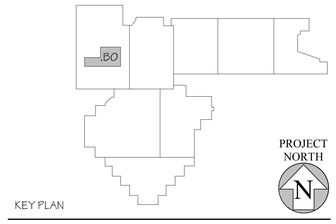
FIGURES

Air #04: 67.4 ng/m³

Air #03: 74.2 ng/m³



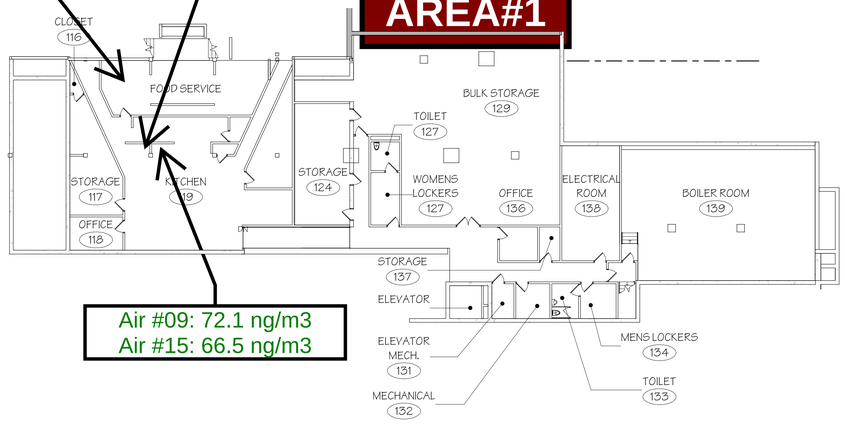
B1 PARTIAL BASEMENT FLOOR PLAN - PUMP ROOM & BOY'S LOCKER ROOM
SCALE: 1/16" = 1'-0"



Wipe W-04: ND

Wipe W-03: ND

AREA#1



Air #09: 72.1 ng/m3
Air #15: 66.5 ng/m3

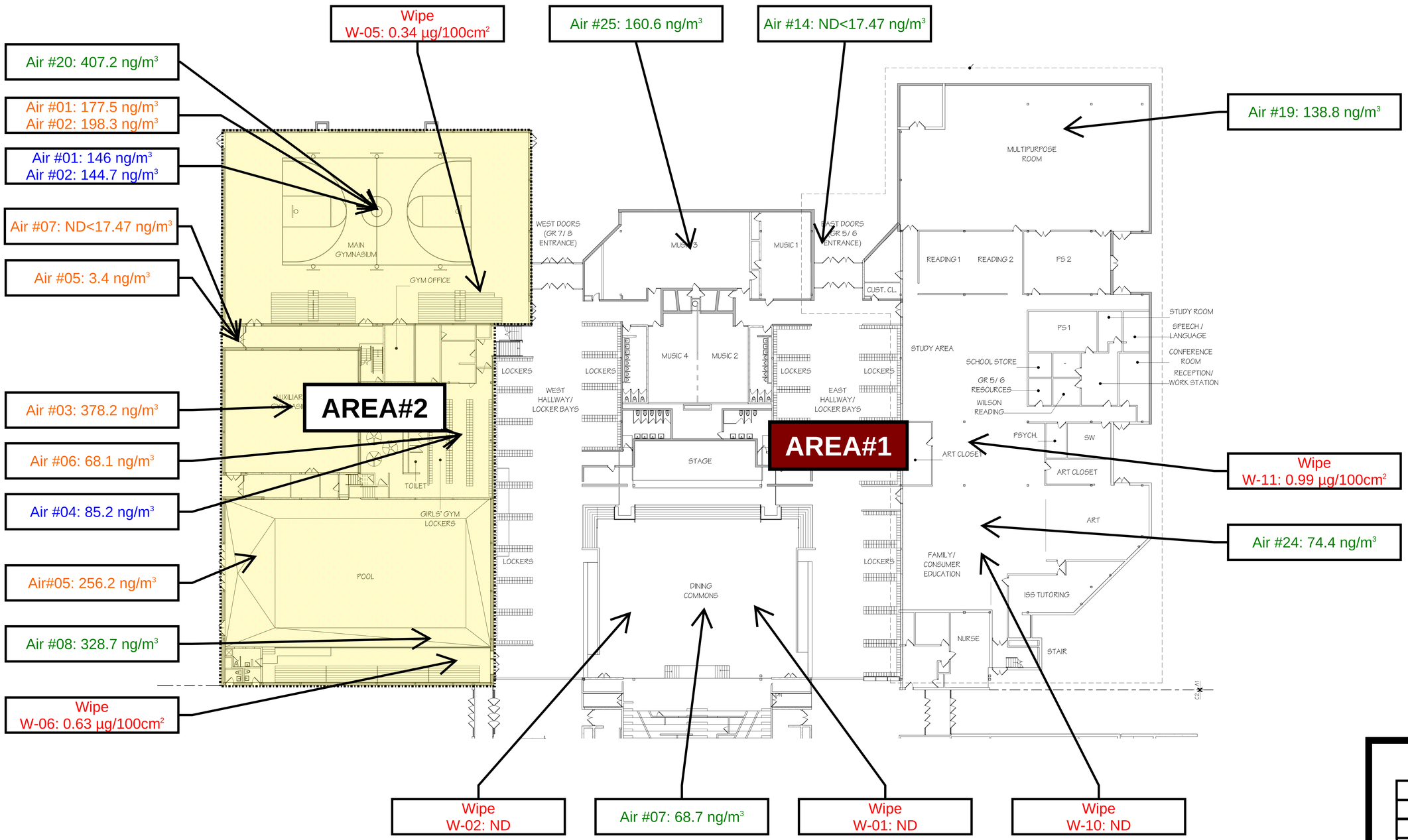
SAMPLE LEGEND

Wipe Samples
Air Samples 1st Round
Air Samples 2nd Round
Air Samples 3rd Round

NOT TO SCALE

LANGAN

PROJECT	PROJECT NUMBER	SKETCH TITLE	REFERENCE	SHEET NUMBER	DATE
FRANCIS WALSH INTERMEDIATE SCHOOL	140139902	PCB SAMPLE LOCATIONS	ANTINOZZI ASSOCIATES PARTIAL BASEMENT FLOOR PLAN	1.1	09/08/2017



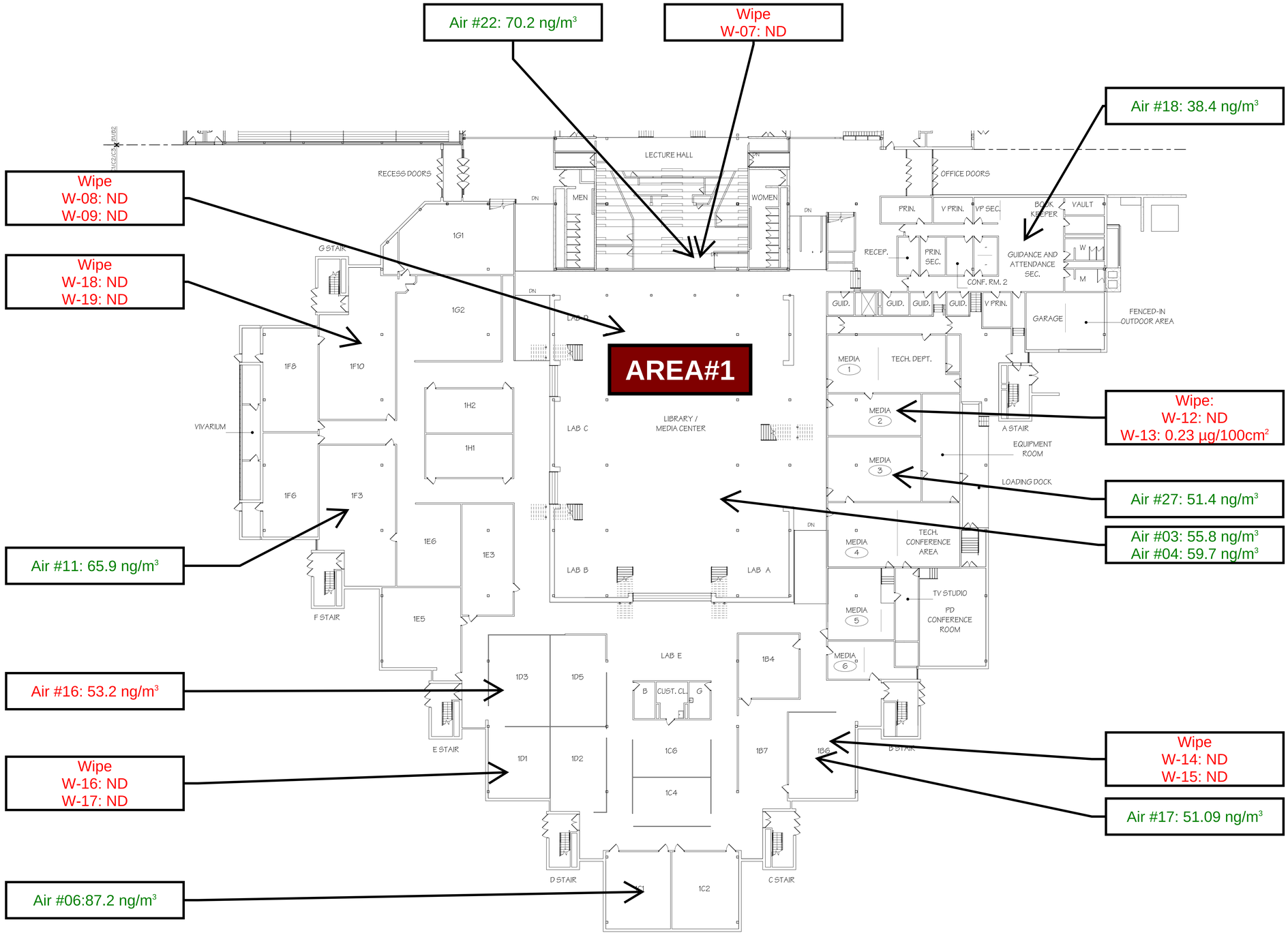
SAMPLE LEGEND

Wipe Samples
Air Samples 1st Round
Air Samples 2nd Round
Air Samples 3rd Round

NOT TO SCALE

PROJECT	PROJECT NUMBER	SKETCH TITLE	REFERENCE	SHEET NUMBER	DATE
FRANCIS WALSH INTERMEDIATE SCHOOL	140139902	PCB SAMPLE LOCATIONS	ANTINOZZI ASSOCIATES PARTIAL 1ST FLOOR PLAN - NORTH	1.2	09/08/2017

LANGAN



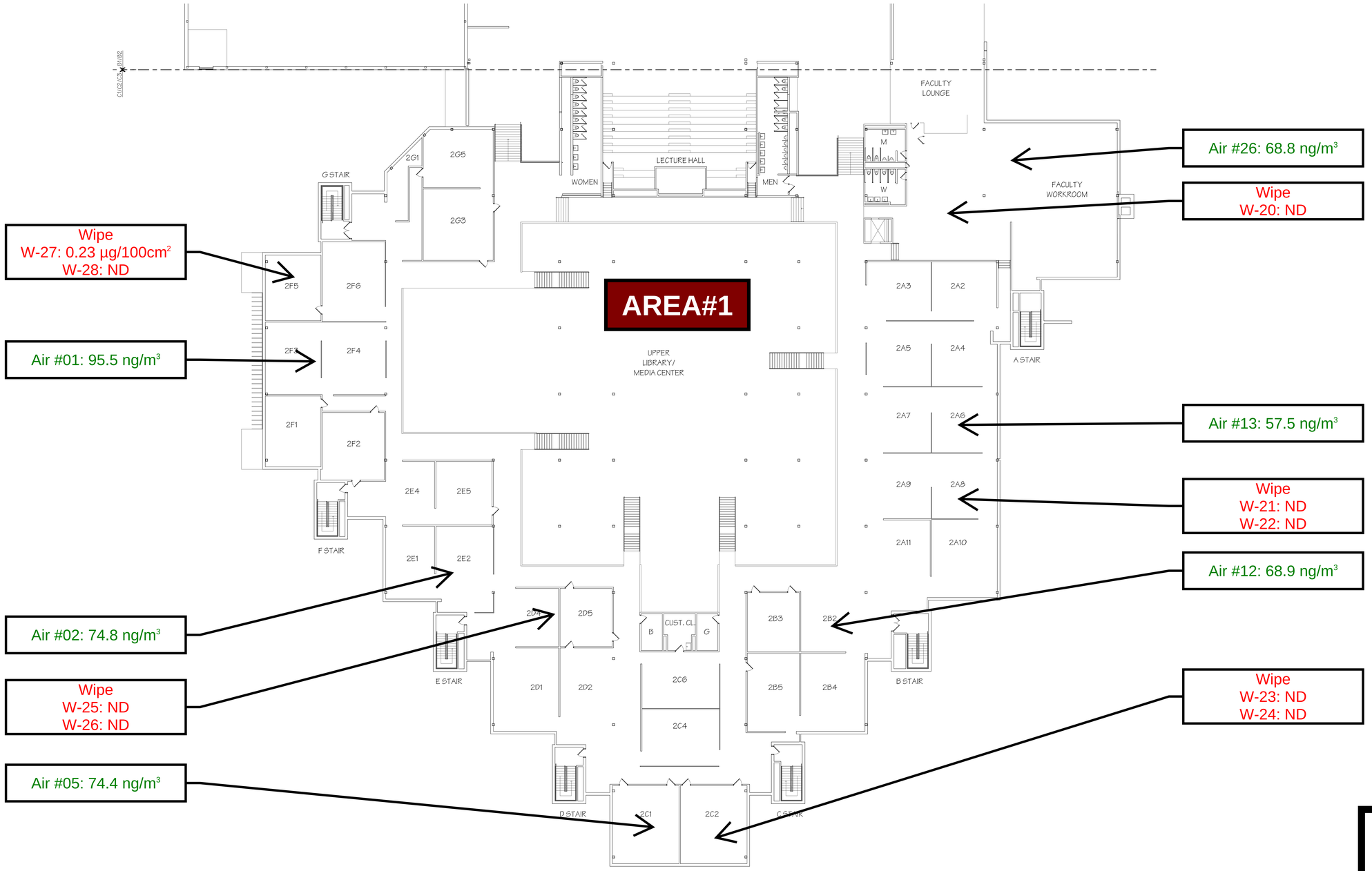
SAMPLE LEGEND

Wipe Samples
Air Samples 1st Round
Air Samples 2nd Round
Air Samples 3rd Round

NOT TO SCALE

LANGAN

PROJECT	PROJECT NUMBER	SKETCH TITLE	REFERENCE	SHEET NUMBER	DATE
FRANCIS WALSH INTERMEDIATE SCHOOL	140139902	PCB SAMPLE LOCATIONS	ANTINOZZI ASSOCIATES PARTIAL 1ST FLOOR PLAN - SOUTH	1.3	09/08/2017



SAMPLE LEGEND

Wipe Samples
Air Samples 1st Round
Air Samples 2nd Round
Air Samples 3rd Round

NOT TO SCALE

LANGAN

PROJECT	PROJECT NUMBER	SKETCH TITLE	REFERENCE	SHEET NUMBER	DATE
FRANCIS WALSH INTERMEDIATE SCHOOL	140139902	PCB SAMPLE LOCATIONS	ANTINOZZI ASSOCIATES PARTIAL 2ND FLOOR PLAN	1.4	09/08/2017

TABLES

Table 1
PCB Air Sampling Analytical Results - Third Round in Area #2
Francis Walsh Intermediate School
Branford, Connecticut
Langan Project No.: 140139902

Francis Walsh Intermediate School												
Analyte		Monochlorobiphenyls	Dichlorobiphenyls	Trichlorobiphenyls	Tetrachlorobiphenyls	Pentachlorobiphenyls	Hexachlorobiphenyls	Heptachlorobiphenyls	Octachlorobiphenyls	Nonachlorobiphenyls	Decachlorobiphenyl	Total PCBs (ng/m^3)
		PCBs (ng/m^3)	PCBs (ng/m^3)	PCBs (ng/m^3)	PCBs (ng/m^3)	PCBs (ng/m^3)	PCBs (ng/m^3)	PCBs (ng/m^3)	PCBs (ng/m^3)	PCBs (ng/m^3)	PCBs (ng/m^3)	PCBs (ng/m^3)
Sample ID	**Sample Location**											
#01	Large Gym	ND<0.69	ND<0.69	ND<0.69	59.0	76.0	11.0	ND<2.1	ND<2.1	ND<3.5	ND<3.5	146.0
#02	Large Gym	ND<0.69	ND<0.69	ND<0.69	57.0	78.0	9.7	ND<2.1	ND<2.1	ND<3.5	ND<3.5	144.7
#03	Boys' Locker Room	3.4	2.6	3.2	31.0	32.0	2.0	ND<2.1	ND<2.1	ND<3.5	ND<3.5	74.2
#04	Girls' Locker Room	3.3	2.8	4.6	35.0	36.0	3.5	ND<2.1	ND<2.1	ND<3.5	ND<3.5	85.2
#05	Outside Door 12	ND<0.69	ND<0.69	ND<0.69	3.4	ND<1.4	ND<1.4	ND<2.1	ND<2.1	ND<3.5	ND<3.5	3.4

Notes:
PCBs - Polychlorinated Biphenyls
ng/m^3 - nanograms per cubic meter
ND - Not detected
N/A - Not applicable
Air samples analyzed via EPA Method TO - 10A/EPA 680 Modified
EPA Guidance Levels for Evaluating PCBs in School Indoor Air:
*200 ng/m^3 - Ages 3 - <6 years
*300 ng/m^3 - Ages 6 - <12 years
*500 ng/m^3 Ages 12+ years
Bold value indicates exceedance of EPA Guidance Value for Ages 6-<12 years

Date: 2 October 2017

Appendix A

Con-Test Analytical Laboratory Reports

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

September 25, 2017

Matt Myers
Langan Eng. & Env. Svc, Inc - CT
555 Long Wharf Drive
New Haven, CT 06511

Project Location: Branford, CT
Client Job Number:
Project Number: 140139902
Laboratory Work Order Number: 17I1016

Enclosed are results of analyses for samples received by the laboratory on September 22, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Aaron L. Benoit
Project Manager

Table of Contents

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

Langan Eng. & Env. Svc, Inc - CT
555 Long Wharf Drive
New Haven, CT 06511
ATTN: Matt Myers

REPORT DATE: 9/25/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 140139902

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 17I1016

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

PROJECT LOCATION: Branford, CT

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
#1 Large Gymansium	17I1016-01	Indoor air		TO-10A/EPA 680 Modified	
#2 Large Gymansium	17I1016-02	Indoor air		TO-10A/EPA 680 Modified	
#3 Boys Locker Room	17I1016-03	Indoor air		TO-10A/EPA 680 Modified	
#4 Girls Locker Room	17I1016-04	Indoor air		TO-10A/EPA 680 Modified	
#5 Outside Door 12	17I1016-05	Indoor air		TO-10A/EPA 680 Modified	
#6 Blank	17I1016-06	Air		TO-10A/EPA 680 Modified	
#7 Blank	17I1016-07	Air		TO-10A/EPA 680 Modified	

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

CASE NARRATIVE SUMMARY

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

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

Lisa A. Worthington
Project Manager

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

ANALYTICAL RESULTS

Project Location: Branford, CT
Date Received: 9/22/2017
Field Sample #: #1 Large Gymansium
Sample ID: 17I1016-01
Sample Matrix: Indoor air
Sampled: 9/21/2017 14:50

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 1440

Work Order: 17I1016

TO-10A/EPA 680 Modified

Analyte	Total µg Results	RL	Flag/Qual	ug/m3 Results	RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		ND	0.00069	1	9/24/17 14:39	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.00069	1	9/24/17 14:39	CJM
Trichlorobiphenyls	ND	0.0010		ND	0.00069	1	9/24/17 14:39	CJM
Tetrachlorobiphenyls	0.086	0.0020		0.059	0.0014	1	9/24/17 14:39	CJM
Pentachlorobiphenyls	0.11	0.0020		0.076	0.0014	1	9/24/17 14:39	CJM
Hexachlorobiphenyls	0.016	0.0020		0.011	0.0014	1	9/24/17 14:39	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 14:39	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 14:39	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0035	1	9/24/17 14:39	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0035	1	9/24/17 14:39	CJM
Total Polychlorinated biphenyls	0.21			0.15		1	9/24/17 14:39	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	82.9	50-125	9/24/17 14:39

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ANALYTICAL RESULTS

Project Location: Branford, CT
Date Received: 9/22/2017
Field Sample #: #2 Large Gymansium
Sample ID: 17I1016-02
Sample Matrix: Indoor air
Sampled: 9/21/2017 14:51

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 1440

Work Order: 17I1016

TO-10A/EPA 680 Modified

Analyte	Total µg Results	Total µg RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		ND	0.00069	1	9/24/17 15:16	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.00069	1	9/24/17 15:16	CJM
Trichlorobiphenyls	ND	0.0010		ND	0.00069	1	9/24/17 15:16	CJM
Tetrachlorobiphenyls	0.082	0.0020		0.057	0.0014	1	9/24/17 15:16	CJM
Pentachlorobiphenyls	0.11	0.0020		0.078	0.0014	1	9/24/17 15:16	CJM
Hexachlorobiphenyls	0.014	0.0020		0.0097	0.0014	1	9/24/17 15:16	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 15:16	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 15:16	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0035	1	9/24/17 15:16	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0035	1	9/24/17 15:16	CJM
Total Polychlorinated biphenyls	0.21			0.14		1	9/24/17 15:16	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	78.3	50-125	9/24/17 15:16

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ANALYTICAL RESULTS

Project Location: Branford, CT
Date Received: 9/22/2017
Field Sample #: #3 Boys Locker Room
Sample ID: 17I1016-03
Sample Matrix: Indoor air
Sampled: 9/21/2017 14:55

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 1440

Work Order: 17I1016

TO-10A/EPA 680 Modified

Analyte	Total µg Results	Total µg RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	0.0048	0.0010		0.0034	0.00069	1	9/24/17 15:54	CJM
Dichlorobiphenyls	0.0037	0.0010		0.0026	0.00069	1	9/24/17 15:54	CJM
Trichlorobiphenyls	0.0046	0.0010		0.0032	0.00069	1	9/24/17 15:54	CJM
Tetrachlorobiphenyls	0.045	0.0020		0.031	0.0014	1	9/24/17 15:54	CJM
Pentachlorobiphenyls	0.046	0.0020		0.032	0.0014	1	9/24/17 15:54	CJM
Hexachlorobiphenyls	0.0029	0.0020		0.002	0.0014	1	9/24/17 15:54	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 15:54	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 15:54	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0035	1	9/24/17 15:54	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0035	1	9/24/17 15:54	CJM
Total Polychlorinated biphenyls	0.11			0.074		1	9/24/17 15:54	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	85.4	50-125	9/24/17 15:54

con-test® ANALYTICAL LABORATORY
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ANALYTICAL RESULTS

Project Location: Branford, CT
Date Received: 9/22/2017
Field Sample #: #4 Girls Locker Room
Sample ID: 17I1016-04
Sample Matrix: Indoor air
Sampled: 9/21/2017 15:00

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 1440

Work Order: 17I1016

TO-10A/EPA 680 Modified

Analyte	Total µg Results	Total µg RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	0.0048	0.0010		0.0033	0.00069	1	9/24/17 16:31	CJM
Dichlorobiphenyls	0.0040	0.0010		0.0028	0.00069	1	9/24/17 16:31	CJM
Trichlorobiphenyls	0.0066	0.0010		0.0046	0.00069	1	9/24/17 16:31	CJM
Tetrachlorobiphenyls	0.050	0.0020		0.035	0.0014	1	9/24/17 16:31	CJM
Pentachlorobiphenyls	0.052	0.0020		0.036	0.0014	1	9/24/17 16:31	CJM
Hexachlorobiphenyls	0.0050	0.0020		0.0035	0.0014	1	9/24/17 16:31	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 16:31	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 16:31	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0035	1	9/24/17 16:31	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0035	1	9/24/17 16:31	CJM
Total Polychlorinated biphenyls	0.12			0.085		1	9/24/17 16:31	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	76.6	50-125	9/24/17 16:31

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

ANALYTICAL RESULTS

Project Location: Branford, CT
Date Received: 9/22/2017
Field Sample #: #5 Outside Door 12
Sample ID: 17I1016-05
Sample Matrix: Indoor air
Sampled: 9/21/2017 15:06

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:
Air Volume L: 1440

Work Order: 17I1016

TO-10A/EPA 680 Modified

Analyte	Total µg Results	Total µg RL	Flag/Qual	ug/m3 Results	ug/m3 RL	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		ND	0.00069	1	9/24/17 17:09	CJM
Dichlorobiphenyls	ND	0.0010		ND	0.00069	1	9/24/17 17:09	CJM
Trichlorobiphenyls	ND	0.0010		ND	0.00069	1	9/24/17 17:09	CJM
Tetrachlorobiphenyls	0.0048	0.0020		0.0034	0.0014	1	9/24/17 17:09	CJM
Pentachlorobiphenyls	ND	0.0020		ND	0.0014	1	9/24/17 17:09	CJM
Hexachlorobiphenyls	ND	0.0020		ND	0.0014	1	9/24/17 17:09	CJM
Heptachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 17:09	CJM
Octachlorobiphenyls	ND	0.0030		ND	0.0021	1	9/24/17 17:09	CJM
Nonachlorobiphenyls	ND	0.0050		ND	0.0035	1	9/24/17 17:09	CJM
Decachlorobiphenyl	ND	0.0050		ND	0.0035	1	9/24/17 17:09	CJM
Total Polychlorinated biphenyls	0.0048			0.0034		1	9/24/17 17:09	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	82.7	50-125	9/24/17 17:09

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ANALYTICAL RESULTS

Project Location: Branford, CT
Date Received: 9/22/2017
Field Sample #: #6 Blank
Sample ID: 17I1016-06
Sample Matrix: Air
Sampled: 9/21/2017 00:00

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:

Work Order: 17I1016

TO-10A/EPA 680 Modified

Analyte	Total µg Results	RL	Flag/Qual	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		1	9/24/17 17:46	CJM
Dichlorobiphenyls	ND	0.0010		1	9/24/17 17:46	CJM
Trichlorobiphenyls	ND	0.0010		1	9/24/17 17:46	CJM
Tetrachlorobiphenyls	ND	0.0020		1	9/24/17 17:46	CJM
Pentachlorobiphenyls	ND	0.0020		1	9/24/17 17:46	CJM
Hexachlorobiphenyls	ND	0.0020		1	9/24/17 17:46	CJM
Heptachlorobiphenyls	ND	0.0030		1	9/24/17 17:46	CJM
Octachlorobiphenyls	ND	0.0030		1	9/24/17 17:46	CJM
Nonachlorobiphenyls	ND	0.0050		1	9/24/17 17:46	CJM
Decachlorobiphenyl	ND	0.0050		1	9/24/17 17:46	CJM
Total Polychlorinated biphenyls	0.0			1	9/24/17 17:46	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	81.3	50-125	9/24/17 17:46

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ANALYTICAL RESULTS

Project Location: Branford, CT
Date Received: 9/22/2017
Field Sample #: #7 Blank
Sample ID: 17I1016-07
Sample Matrix: Air
Sampled: 9/21/2017 00:00

Sample Description/Location:
Sub Description/Location:
Flow Controller ID:
Sample Type:

Work Order: 17I1016

TO-10A/EPA 680 Modified

Analyte	Total µg Results	RL	Flag/Qual	Dilution	Date/Time Analyzed	Analyst
Monochlorobiphenyls	ND	0.0010		1	9/24/17 18:23	CJM
Dichlorobiphenyls	ND	0.0010		1	9/24/17 18:23	CJM
Trichlorobiphenyls	ND	0.0010		1	9/24/17 18:23	CJM
Tetrachlorobiphenyls	ND	0.0020		1	9/24/17 18:23	CJM
Pentachlorobiphenyls	ND	0.0020		1	9/24/17 18:23	CJM
Hexachlorobiphenyls	ND	0.0020		1	9/24/17 18:23	CJM
Heptachlorobiphenyls	ND	0.0030		1	9/24/17 18:23	CJM
Octachlorobiphenyls	ND	0.0030		1	9/24/17 18:23	CJM
Nonachlorobiphenyls	ND	0.0050		1	9/24/17 18:23	CJM
Decachlorobiphenyl	ND	0.0050		1	9/24/17 18:23	CJM
Total Polychlorinated biphenyls	0.0			1	9/24/17 18:23	CJM

Surrogates	% Recovery	% REC Limits	
Tetrachloro-m-xylene	86.6	50-125	9/24/17 18:23

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Sample Extraction Data

Prep Method: SW-846 3540C-TO-10A/EPA 680 Modified

Lab Number [Field ID]	Batch	Initial [Cartridge]	Final [mL]	Date
17I1016-01 [#1 Large Gymansium]	B186833	1.00	1.00	09/22/17
17I1016-02 [#2 Large Gymansium]	B186833	1.00	1.00	09/22/17
17I1016-03 [#3 Boys Locker Room]	B186833	1.00	1.00	09/22/17
17I1016-04 [#4 Girls Locker Room]	B186833	1.00	1.00	09/22/17
17I1016-05 [#5 Outside Door 12]	B186833	1.00	1.00	09/22/17
17I1016-06 [#6 Blank]	B186833	1.00	1.00	09/22/17
17I1016-07 [#7 Blank]	B186833	1.00	1.00	09/22/17

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QUALITY CONTROL

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

Analyte	Total µg Results	Total µg RL	ug/m3 Results	ug/m3 RL	Spike Level Total µg	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag/Qual
Batch B186833 - SW-846 3540C											
Blank (B186833-BLK1)					Prepared: 09/22/17 Analyzed: 09/24/17						
Monochlorobiphenyls	ND	0.0010									
Dichlorobiphenyls	ND	0.0010									
Trichlorobiphenyls	ND	0.0010									
Tetrachlorobiphenyls	ND	0.0020									
Pentachlorobiphenyls	ND	0.0020									
Hexachlorobiphenyls	ND	0.0020									
Heptachlorobiphenyls	ND	0.0030									
Octachlorobiphenyls	ND	0.0030									
Nonachlorobiphenyls	ND	0.0050									
Decachlorobiphenyl	ND	0.0050									
Total Polychlorinated biphenyls	0.0										
Surrogate: Tetrachloro-m-xylene	*0.171*				*0.200*		*85.3*	*50-125*			
LCS (B186833-BS1)					Prepared: 09/22/17 Analyzed: 09/24/17						
Monochlorobiphenyls	0.16	0.0010			0.200		79.1	40-140			
Dichlorobiphenyls	0.16	0.0010			0.200		80.5	40-140			
Trichlorobiphenyls	0.15	0.0010			0.200		76.8	40-140			
Tetrachlorobiphenyls	0.32	0.0020			0.400		78.8	40-140			
Pentachlorobiphenyls	0.33	0.0020			0.400		83.4	40-140			
Hexachlorobiphenyls	0.33	0.0020			0.400		82.0	40-140			
Heptachlorobiphenyls	0.49	0.0030			0.600		81.3	40-140			
Octachlorobiphenyls	0.50	0.0030			0.600		82.7	40-140			
Nonachlorobiphenyls	0.90	0.0050			1.00		90.4	40-140			
Decachlorobiphenyl	0.83	0.0050			1.00		82.6	40-140			
Surrogate: Tetrachloro-m-xylene	*0.181*				*0.200*		*90.5*	*50-125*			
LCS Dup (B186833-BSD1)					Prepared: 09/22/17 Analyzed: 09/24/17						
Monochlorobiphenyls	0.18	0.0010			0.200		91.7	40-140	14.8	50	
Dichlorobiphenyls	0.18	0.0010			0.200		89.6	40-140	10.6	50	
Trichlorobiphenyls	0.17	0.0010			0.200		83.6	40-140	8.43	50	
Tetrachlorobiphenyls	0.34	0.0020			0.400		85.9	40-140	8.65	50	
Pentachlorobiphenyls	0.36	0.0020			0.400		89.6	40-140	7.16	50	
Hexachlorobiphenyls	0.35	0.0020			0.400		88.0	40-140	7.10	50	
Heptachlorobiphenyls	0.52	0.0030			0.600		86.9	40-140	6.77	50	
Octachlorobiphenyls	0.53	0.0030			0.600		88.8	40-140	7.13	50	
Nonachlorobiphenyls	0.98	0.0050			1.00		98.2	40-140	8.22	50	
Decachlorobiphenyl	0.89	0.0050			1.00		89.1	40-140	7.60	50	
Surrogate: Tetrachloro-m-xylene	*0.184*				*0.200*		*91.8*	*50-125*			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit
DL	Method Detection Limit
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.

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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
LCS (B186833-BS1)			Lab File ID: F0924004.D			Analyzed: 09/24/17 12:47			
Phenanthrene-d10	1021922	20.414				50 - 200	20.4140	+/-0.50	
Chrysene-d12	745505	28.234	673014	28.234	111	50 - 200	0.0000	+/-0.50	
LCS Dup (B186833-BSD1)			Lab File ID: F0924005.D			Analyzed: 09/24/17 13:24			
Phenanthrene-d10	1054597	20.415				50 - 200	20.4150	+/-0.50	
Chrysene-d12	767248	28.23	673014	28.234	114	50 - 200	-0.0040	+/-0.50	
Blank (B186833-BLK1)			Lab File ID: F0924006.D			Analyzed: 09/24/17 14:02			
Phenanthrene-d10	1036241	20.414				50 - 200	20.4140	+/-0.50	
Chrysene-d12	749671	28.23	673014	28.234	111	50 - 200	-0.0040	+/-0.50	
#1 Large Gymansium (17I1016-01)			Lab File ID: F0924007.D			Analyzed: 09/24/17 14:39			
Phenanthrene-d10	1061064	20.414				50 - 200	20.4140	+/-0.50	
Chrysene-d12	764363	28.23	673014	28.234	114	50 - 200	-0.0040	+/-0.50	
#2 Large Gymansium (17I1016-02)			Lab File ID: F0924008.D			Analyzed: 09/24/17 15:16			
Phenanthrene-d10	1029161	20.418				50 - 200	20.4180	+/-0.50	
Chrysene-d12	753991	28.23	673014	28.234	112	50 - 200	-0.0040	+/-0.50	
#3 Boys Locker Room (17I1016-03)			Lab File ID: F0924009.D			Analyzed: 09/24/17 15:54			
Phenanthrene-d10	1057737	20.418				50 - 200	20.4180	+/-0.50	
Chrysene-d12	781979	28.234	673014	28.234	116	50 - 200	0.0000	+/-0.50	
#4 Girls Locker Room (17I1016-04)			Lab File ID: F0924010.D			Analyzed: 09/24/17 16:31			
Phenanthrene-d10	1104785	20.418				50 - 200	20.4180	+/-0.50	
Chrysene-d12	818267	28.234	673014	28.234	122	50 - 200	0.0000	+/-0.50	
#5 Outside Door 12 (17I1016-05)			Lab File ID: F0924011.D			Analyzed: 09/24/17 17:09			
Phenanthrene-d10	1082614	20.419				50 - 200	20.4190	+/-0.50	
Chrysene-d12	784682	28.234	673014	28.234	117	50 - 200	0.0000	+/-0.50	
#6 Blank (17I1016-06)			Lab File ID: F0924012.D			Analyzed: 09/24/17 17:46			
Phenanthrene-d10	1098634	20.418				50 - 200	20.4180	+/-0.50	
Chrysene-d12	830352	28.234	673014	28.234	123	50 - 200	0.0000	+/-0.50	
#7 Blank (17I1016-07)			Lab File ID: F0924013.D			Analyzed: 09/24/17 18:23			
Phenanthrene-d10	1043842	20.418				50 - 200	20.4180	+/-0.50	
Chrysene-d12	748214	28.234	673014	28.234	111	50 - 200	0.0000	+/-0.50	

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CONTINUING CALIBRATION CHECK

COMPOUND	TYPE	STD	CCV	RESPONSE FACTOR ICAL	RESPONSE FACTOR CCV	RESPONSE FACTOR MIN (#)	% DIFF / DRIFT CCV	% DIFF / DRIFT LIMIT (#)

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
TO-10A/EPA 680 Modified in Air	
Total Polychlorinated biphenyls	AIHA

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018

con-test ANALYTICAL LABORATORY

17I1016

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

http://www.contestlabs.com

Doc #378 Rev 1_03242017

CHAIN OF CUSTODY RECORD (AIR)

39 Spruce Street
East Longmeadow, MA 01028

Company Name:	Langan Engineering
Address:	555 Long Wharf Drive
Phone:	203.562.5771
Project Name:	Walsh Intermediate
Project Location:	Branford, Connecticut
Project Number:	140139902
Project Manager:	Matthew Myers
Con-Test Quote Name/Number:	
Invoice Recipient:	Langan_InvoiceCapture@ConcurSolutions.com
Sampled By:	Brian Quintan

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date: 9/26/2017

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☑ 4-Day ☐

Data Delivery
Format: PDF ☑ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: mmyers@langan.com
Fax To #:

ANALYSIS REQUESTED

Lab Use	Client Use	Collection Data		Duration	Flow Rate	Matrix	Volume	Method 8082 Homolog PCB Soxhlet EPA Method TO-10A/680				" Hg			Summa Can ID	Flow Controller ID
Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Total Minutes Sampled	☐ m³/min ☑ L/min	Code	☑ Liters ☐ m³					Initial Pressure	Final Pressure	Lab Receipt Pressure		
01	#1 - Large Gymnasium	9/21 0650	9/21 1450	480	3 L/min	IA	1440	X								
02	#2 - Large Gymnasium	0651	1451					X								
03	#3 - Boys' Locker Room	0655	1455					X								
04	#4 - Girls' Locker Room	0700	1500					X								
05	#5 - Outside Door 12	0706	1506					X								
06	#6 - Blank	—	—	—	—		—	X								
07	#7 - Blank	—	—	—	—	—	—	X								

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

Comments: Per email conversation with Aaron Benoit, results due EOD Tuesday 9/26/2017
#8 - Calibration Tube. Do Not Analyze, #9, #10 Not Used. Do Not Analyze

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 = Other_____

Relinquished by: (signature)	BDQ	Date/Time: 9/22 745
Received by: (signature)	2.5	Date/Time: 9/22 745
Relinquished by: (signature)		Date/Time:
Received by: (signature)		Date/Time:
Relinquished by: (signature)		Date/Time:
Received by: (signature)		Date/Time:

Detection Limit Requirements
MA
CT <5 ng/m³ for each
Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ Other

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RELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☑ School **Non-Taxable**
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ *AIHA-LAP,LLC*

PCB ONLY
☑ Soxhlet
☐ Non Soxhlet

Table of Contents

39 Spruce St.
East Longmeadow, MA. 01028
P: 413-525-2332
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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 Langan Engineering

Received By WCG Date 9/22/17 Time 7:45

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 # 1 Actual Temp - 2.5°C By Blank # ____ Actual Temp - ____

Was Custody Seal Intact? N/A Were Samples Tampered with? N/A

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 Pertinent Information? Client T Project T Analysis T ID's T Sampler Name T Collection Dates/Times T

Are Sample Labels filled out and legible? T

Are there Rushes? T Who was notified? Mac

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	10	TO-10A			Tedlar			

Can #'s					Reg #'s				
Unused Media					**Pufs/TO-17's**				
091917-8					091917-01	091917-06			
091917-9					091917-02	091917-07			
091917-10					091917-03				
					091917-04				
					091917-05				

Comments: