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April 18, 2016

PN: 01136.382

Steven Azar  
Director of Development  
MarKa  
202 River Street  
Cambridge, Massachusetts 02139

RE: Polychlorinated Biphenyls (PCBs) Survey Report  
Powderhouse School Building  
1060 Broadway, Somerville, Massachusetts;

Dear Mr. Azar:

This draft report presents Axiom Partners' (AXIOM's) findings of the PCB survey completed at the above-referenced building in accordance with our August 18, 2015 proposal to evaluate caulking material and adjoining substrate for the presence of polychlorinated biphenyls (PCBs)

**EXECUTIVE SUMMARY**

On March 3 through March 5, 2014 Axiom Partners, Inc. (AXIOM) collected a total of twenty-two (22) samples of caulking from selected interior and exterior windows, doors, and construction joints at the Powderhouse Community School building at 1060 Broadway in Somerville, Massachusetts. On September 23, 2015, AXIOM collected three additional caulking samples and sixteen substrate samples to further evaluate the presence of PCBs. The site location is shown on **Figure 1**. The objective of the investigations were to assess whether PCBs are present at concentrations greater than 50 parts per million (ppm) in caulking used to seal windows, doors, and construction joints at the building and the extent to which PCBs (>50 ppm) had migrated into the adjoining substrate. Use of caulking, glazing, or sealants with concentrations greater than 50 ppm was not authorized by USEPA and, if present, removal and disposal is required in accordance with 40 CFR 761.

The school is a three-story building with an interior courtyard and three levels of roof: a large upper roof; a smaller middle roof, including a small triangular-shaped middle roof at the southern end of the building; and small lower roof at the northeast corner of the building, as shown on **Figure 2**. The southern end of the building is connected to the adjoining brick

building to the south, which is reportedly occupied by the Tufts University Medford Campus Purchasing Office.

The materials sampled and the sampling locations are described in **Table 1** and the approximate sample locations are shown on **Figure 3**. The analytical results are summarized in **Table 2** and the laboratory report is provided in **Appendix A**.

As shown on **Table 2**, PCBs were detected in at concentrations greater than 50 ppm in the following five samples:

<u>Sample Identification</u>	<u>Sample Location</u>	<u>PCB Concentration (ppm)</u>
PHS-MROOF-02	White caulking in exterior vertical construction joint (concrete to concrete) above air handler units on western side of Middle Roof	1,768
PHS-MROOF-04	Gray caulking under black paint on exterior door frame on Middle Roof	1,784
PHS-3FL-09	White/gray caulking in construction joint (metal door frame to uncoated concrete masonry units) - third floor doorway to triangular Middle Roof on southern side of building	3,625
PHS-2FL-14	Gray caulking/sealant in interior construction joint between formed, textural concrete wall and concrete masonry wall. Inside double door entry way to gym on western side of the building. Stairway leading up to gym and stairway leading down to first floor.	1,036
PHS-1FL-19C	Gray exterior caulking in construction joint between concrete beam/panel and textural concrete wall on north wall in courtyard.	674

Representative samples of caulking material observed in the building were collected in March 2014 to evaluate these materials for the presence of PCB; however, this was not a comprehensive survey. For disposal purposes, caulking/sealants that are similar in appearance, texture, flexibility and use to those identified above should be presumed to contain PCBs at concentrations greater than 50 ppm or should otherwise be tested to confirm the concentration of PCBs. Similarly, caulking and sealants that are similar in appearance, texture, flexibility and use to those tested as part of this investigation and found to contain PCBs at less than 50 ppm may be presumed to have similarly low concentrations of PCBs.

On September 23, 2015, three additional caulking samples were obtained from doorways associated with access to the middle rooftops based on the results of two samples obtained during the initial PCB survey. The analytical results indicated PCB concentrations were less than 50 ppm.

Polychlorinated biphenyls can migrate from the caulking into the adjoining substrate materials (including concrete), as such, the USEPA allows the caulking/sealant **and adjoining substrate** to be removed and disposed as a PCB Bulk Product Waste, provided the substrate is

designated for removal and disposal along with the caulking. Otherwise the substrate must be removed and disposed as a PCB Remediation Waste, which requires EPA notification and approval prior to proceeding with the remediation effort.

Based on the analytical results obtained in March 2014 and in accordance with AXIOM's August 18, 2015 proposal, eighteen samples were obtained from the adjoining substrate at distances of 6 inches, 12 inches, and 18 inches. The samples obtained from 6 inches were analyzed for PCBs via EPA Method 8082 with Soxhlet extraction. The laboratory was instructed to hold the substrate samples obtained at 12 inches and 18 inches pending the analytical results of the 6-inch sample locations. The analytical results for the samples obtained from the 6-inch locations indicated that PCBs were either not detected above the laboratory reporting limits or were detected below 1 ppm; as such, analysis of the 12-inch and 18-inch samples was not recommended. Substrate analytical results are summarized on **Table 2**.

The majority of caulking containing concentrations of PCBs greater than 50 ppm are located between the construction joints for exterior concrete panels and the exterior concrete panels and the textured concrete blocks and associated concrete masonry units (CMU).

## **SAMPLE COLLECTION**

Samples of caulking material were collected from different floors and different sides of the buildings and from interior and exterior locations to provide testing results from a small but representative subset of the caulking used throughout the building. The locations and types of materials sampled in each building during this investigation are summarized on **Table 1**.

The caulking samples were obtained by AXIOM personnel using either dedicated disposal equipment (e.g. nitrile gloves, disposable razor blades, etc.) or hand-tools that had been decontaminated prior to obtaining a samples. Substrate samples were typically obtained using a diamond core bit advanced to 0.5 inches to 0.75 inches, otherwise representative substrate samples were obtained using a hammer and chisel, which were decontaminated prior to use. Decontamination consisted of a coarse wash and a fine wash. The coarse wash consisted of a tri-sodium phosphate solution and dedicated gauze pad followed by a water rinse and the fine wash consisted of a methanol solution and dedicated gauze pad followed by a distilled water rinse then dried with a dedicated disposable towel. The samples were placed into sample containers that were provided by the laboratory and preserved on ice. The samples were transported to a qualified laboratory under chain of custody protocol.

## **SAMPLE ANALYSIS**

The samples were extracted at the laboratory (Alpha Analytical, Inc. of Westborough, Massachusetts) using EPA Method 3540C (Soxhlet method) and were analyzed for PCBs using EPA Method 8082A. As shown on **Table 2**, PCBs were detected in 23 of the 25 samples caulking samples obtained in March 2014 or September 2015, and the concentrations were generally less than 2 ppm. However, PCBs were detected in five samples at concentrations greater than 50 ppm, and removal and disposal of caulking containing PCBs at concentrations greater than 50 ppm is required in accordance with 40 CFR 761. Six substrate samples

obtained from 6 inches from the caulking joint were submitted for PCB analysis. Concentrations of PCBs were not detected above the laboratory reporting limit, and PCB concentrations in one sample was less than 1 ppm. The laboratory reports are provided in **Appendix A**.

## CONCLUSIONS

1. Samples of the exterior caulking located between smooth concrete panels and in the joints between the textured concrete blocks and the smooth concrete panels on the exterior of the building were found to contain PCBs at concentrations greater than 50 ppm. Sample PHS-MROOF-02 taken from the north wall of the mechanical room on the middle roof contained 1,220 ppm of Aroclor 1248 and 548 ppm of Aroclor 1254; while the sample obtained from the north wall of the courtyard (PHS-1FL-19C) contained 389 ppm of Aroclor 1248 and 285 ppm of Aroclor 1254. The caulking in the exterior joints between the textured concrete blocks and smooth concrete panels and between concrete panels have the same appearance at various locations on the exterior of the building and the analytical results indicate that all of the exterior caulking between the panels and panels and textured block likely contain PCBs at concentrations greater than 50 ppm. Substrate samples did not indicate PCBs had migrated beyond 6 inches from the joints. Approximately 756 feet of caulking are generally located between the vertical joints (concrete panel to concrete panel) and approximately 2,964 feet are generally located between horizontal joints (concrete panel to textured concrete block).
2. The exterior caulking around the door leading to the mechanical room on the middle roof (PHS-MROOF-04) also contained PCBs at concentrations greater than 50 ppm. Aroclor 1248 was detected at 1,320 ppm and Aroclor 1254 was detected at 548 ppm. These are the same Aroclors detected in the exterior caulking described above and concentrations are similar to those detected in the exterior caulking, indicating that the same caulking was used on the door to the mechanical room. Caulking obtained from around exterior door on the western side of the building (PHS-GR-22) was also analyzed for PCBs and PCBs were not detected, indicating caulking containing PCBs at concentrations greater than 50 ppm was not used on all of the exterior doors. Additional caulking samples obtained from doorways leading to middle rooftops did not indicate the presence of PCBs at concentrations greater than 50 ppm. Substrate samples did not indicate PCBs had migrated beyond 6 inches from the joints.
3. A sample of a caulking obtained from an interior vertical joint (PHS-2FL-14) located inside the western entrance to the building near the stairs leading up to the gym and stairs leading down to the first floor was found to contain Aroclor 1248 at 672 ppm and Aroclor 1254 at 364 ppm. These Aroclors and concentrations are similar to those detected in the exterior caulking sample (PHS-1FL-19C), but the sealant appeared to be a different material based on color and consistency. This was the only location where this material was observed in the building. Substrate samples did not indicate PCBs had migrated beyond 6 inches from the caulking bead.
4. A sample of caulking obtained from around the access door to a small room with a second door leading to the middle roof at the southern end of the building was also



found to contain PCBs at concentrations greater than 50 ppm. However, the Aroclors detected were 1242 (2,820 ppm) and 1254 (805 ppm). This was the only sample where Aroclor 1242 was detected at a significant concentration. Samples of caulking were obtained from around two other interior doors (PHS-3FL-03 and PHS-3FL-10) and the concentrations of PCBs were less than 1 ppm, indicating that use of the caulking with elevated PCB is likely limited to the doors in this room and may have been an addition/modification associated with the abutting Tufts University building to the south.

## RECOMMENDATIONS

The caulking containing PCBs at concentrations greater than 50 ppm and the adjoining metal doorframes and concrete and CMU can be disposed as a PCB Bulk Product Waste. In early 2016, MarKa communicated to AXIOM that the concrete beams at which PCB-impacted caulking had been identified are structural and would therefore be compromised if more than one inch of concrete were to be removed. Based on this specification, additional samples from the concrete structural components that are in contact with PCB-containing caulking is needed to identify appropriate remedial options.

Please contact us if you have any questions, or if we can be of further assistance.

Sincerely,



Daniel Batchelor, P.G.  
Senior Project Manager



Edward K. Kearney, CIH  
Senior Project Manager

Table 1  
Sampling Locations for PCBs in Caulking  
Powderhouse School  
1060 Broadway  
Somerville, Massachusetts

Sample identification	Sample Location	Description	Substrate
PHS-UROOF-01	exterior caulking on flashing on upper roof - east side of courtyard	white (gray beneath), brittle*	flashing to concrete
PHS-MROOF-02	exterior caulking in vertical joint above air handler units on middle roof - north-facing wall of mechanical room above gym	white, very flexible	textured concrete to untextured concrete
PHS-MROOF-LTV-6	exterior concrete panel at 6 inches from vertical joint	uncoated concrete	concrete
PHS-MROOF-03	exterior caulking around metal vent for mechanical room on middle roof	white, brittle*	metal vent to concrete
PHS-MROOF-04	exterior caulking around metal door to mechanical room above gym on middle roof	gray, soft, under black paint	metal door frame to concrete
PHS-MROOF-04-6	exterior substrate at 6 inches from caulking	uncoated textured CMU	CMU right of door frame
PHS-MROOF-04-B	interior caulking around metal door frame leading to northeast middle roof from mechanical room.	gray, putty consistency under black paint	metal door frame to uncoated CMU
PHS-MROOF-04-C	exterior caulking around metal door frame leading to mechanical room from northeast middle roof.	gray, stiff, under black paint	metal door frame to uncoated textured CMU
PHS-3FL-05	interior caulking around metal door frame, classroom in southeast corner of third floor	gray, stiff, under yellow paint	black-painted metal door frame to yellow-painted concrete
PHS-3FL-06	interior caulking in joint, room immediately west of classroom in southeast corner of third floor	stiff, under yellow paint	caulking in joint between interior and exterior CMU ** walls
PHS-3FL-07	interior caulking in joint in classroom in southeast corner of third floor	stiff, under yellow paint	caulking in joint between interior and exterior CMU ** walls
PHS-3FL-08	interior caulking in joint between interior and exterior CMU walls, third floor south wall	gray-brown, dry, stiff	uncoated concrete interior CMU wall to uncoated exterior CMU wall
PHS-3FL-09	interior caulking around door in 3rd floor room, access to middle roof on south side of building	very flexible	metal door frame to uncoated CMU
PHS-3FL-09 - 6	interior substrate at 6 inches from caulking	uncoated CMU	right of door frame
PHS-3FL-MROOF	interior caulking around metal door leading to southern middle roof.	white, stiff, putty consistency	black-painted metal door frame to interior uncoated CMU wall.
PHS-3FL-10	interior caulking around metal door south of door marked storage at top of stairway, third floor	gray, stiff, putty consistency	metal door frame to yellow painted CMU
PHS-2FL-11	interior caulking around metal window frame in second floor room (08) overlooking cafeteria/stage on first floor	gray-white	metal window frame to yellow-painted CMU
PHS-2FL-12	interior caulking in room west of room 08 (room with sink, health room?) second floor	stiff	joint between concrete column and CMU wall
PHS-2FL-13	interior caulking around metal drinking fountain second floor at top of stairway from entrance at NW corner of building	gray-white, flexible	metal drinking water fountain to CMU wall
PHS-2FL-14	sealant in construction joint inside entryway on west side of building (stairs up to gym and stairs down to first floor) It appears a new entry way may have been added in the past and the sealant is in the joint connecting the new entry way to the old entry way	gray, flexible	textured concrete wall to CMU wall
PHS-2FL-14-6	interior substrate at 6 inches on left side of caulking bead located on left-hand side when entering building.	uncoated textured CMU	left of caulking bead, textured CMU
PHS-2FL-14-6B	interior substrate at 6 inches on left side of caulking bead located on right-hand side when entering building	CMU painted yellow	left of caulking bead, CMU
PHS-2FL-15	interior caulking beneath windows in second floor classroom at northeast corner of building	brown, flexible to brittle	metal window frame to concrete/CMU
PHS-1FL-16C	exterior caulking at base of metal window frame to concrete, northeast corner of courtyard	gray-white, stiff to flexible	metal window frame to concrete
PHS-1FL-17C	exterior caulking, metal window frames to metal vertical columns in northeast corner of courtyard	brown, soft	metal to metal
PHS-1FL-18C	exterior window caulking west side of courtyard, metal window frame to concrete column and CMU	gray-white	metal window frame to concrete and CMU
PHS-1FL-19C	exterior joint caulking, north courtyard wall	gray-white flexible	untextured concrete to textured concrete
PHS-1FL-19C-6	exterior concrete panel at 6 inches from vertical joint	uncoated concrete	concrete
PHS-GR-20	exterior caulking, vertical expansion joint, west side of building to right of double door entry way	white-gray, flexible	textured concrete to textured concrete
PHS-GR-21	exterior caulking, vertical expansion joint, west side of building to left of double door entry way at southwest corner of the building	white flexible	textured concrete to textured concrete
PHS-GR-22	exterior caulking, metal door frame to textured concrete at entry way at southwest corner of building	gray, stiff brittle	metal door frame to textured concrete
Notes			
* Caulking described as "brittle" may be caused in part due to cold weather. The building was unheated.			
** CMU indicates concrete masonry units (generally standard concrete block wall construction)			
- Indicates PCBs detected at concentration greater than 50 ppm in this sample.			

**Table 2**  
**Summary of PCB Analytical Results**  
PCB Evaluation of Caulking Material  
Powderhouse School  
1060 Broadway  
Somerville, Massachusetts

Sample ID	PHS-UROOF-01	PHS-MROOF-02	PHS-MROOF-03	PHS-MROOF-04	PHS-3FL-05	PHS-3FL-06	PHS-3FL-07	PHS-3FL-08	PHS-3FL-09	PHS-3FL-10	PHS-2FL-11	PHS-2FL-12	PHS-2FL-13	PHS-2FL-14	PHS-2FL-15
Sample Date	03-MAR-14	03-MAR-14	03-MAR-14	03-MAR-14	03-MAR-14	03-MAR-14	03-MAR-14	03-MAR-14	03-MAR-14	04-MAR-14	04-MAR-14	04-MAR-14	04-MAR-14	04-MAR-14	04-MAR-14
Sample Type	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking
Lab Sample ID	L1404700-01	L1404700-02	L1404700-03	L1404700-04	L1404700-05	L1404700-06	L1404700-07	L1404700-08	L1404700-09	L1404700-10	L1404700-11	L1404700-12	L1404700-13	L1404700-14	L1404700-15
PCBs	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor 1016	ND(0.305)	ND(80)	ND(0.142)	ND(47.6)	ND(0.551)	ND(0.116)	ND(0.102)	ND(0.143)	ND(106)	ND(0.113)	ND(0.124)	ND(0.132)	ND(0.103)	ND(44.8)	ND(0.115)
Aroclor 1221	ND(0.305)	ND(80)	ND(0.142)	ND(47.6)	ND(0.551)	ND(0.116)	ND(0.102)	ND(0.143)	ND(106)	ND(0.113)	ND(0.124)	ND(0.132)	ND(0.103)	ND(44.8)	ND(0.115)
Aroclor 1232	ND(0.305)	ND(80)	ND(0.142)	ND(47.6)	ND(0.551)	ND(0.116)	ND(0.102)	ND(0.143)	ND(106)	ND(0.113)	ND(0.124)	ND(0.132)	ND(0.103)	ND(44.8)	ND(0.115)
Aroclor 1242	<b>3.14</b>	ND(80)	<b>0.43</b>	ND(47.6)	<b>0.691</b>	<b>0.876</b>	<b>0.731</b>	<b>0.932</b>	<b>2,820</b>	<b>0.207</b>	<b>0.364</b>	<b>0.813</b>	<b>1.49</b>	ND(44.8)	<b>1.06</b>
Aroclor 1248	ND(0.203)	<b>1,220</b>	ND(0.0948)	<b>1,320</b>	ND(0.368)	ND(0.0772)	ND(0.0678)	ND(0.0952)	ND(70.4)	ND(0.0752)	ND(0.0826)	ND(0.0877)	ND(0.0687)	<b>672</b>	ND(0.0766)
Aroclor 1254	<b>2.26</b>	<b>548</b>	<b>0.85</b>	<b>464</b>	<b>0.72</b>	<b>0.533</b>	<b>0.519</b>	<b>0.593</b>	<b>805</b>	<b>0.122</b>	<b>1.03</b>	<b>0.285</b>	<b>0.616</b>	<b>364</b>	<b>1.61</b>
Aroclor 1260	ND(0.203)	ND(53.3)	ND(0.0948)	ND(31.7)	ND(0.368)	ND(0.0772)	ND(0.0678)	ND(0.0952)	ND(70.4)	ND(0.0752)	ND(0.0826)	ND(0.0877)	ND(0.0687)	ND(29.8)	ND(0.0766)
Aroclor 1262	ND(0.102)	ND(26.7)	ND(0.0474)	ND(15.9)	ND(0.184)	ND(0.0386)	ND(0.0339)	ND(0.0476)	ND(35.2)	ND(0.0376)	ND(0.0413)	ND(0.0438)	ND(0.0344)	ND(14.9)	ND(0.0383)
Aroclor 1268	ND(0.102)	ND(26.7)	ND(0.0474)	ND(15.9)	ND(0.184)	ND(0.0386)	ND(0.0339)	ND(0.0476)	ND(35.2)	ND(0.0376)	ND(0.0413)	ND(0.0438)	ND(0.0344)	ND(14.9)	ND(0.0383)
Total PCBs	5.4	<b>1,768</b>	1.28	<b>1,784</b>	1.41	1.41	1.25	1.53	<b>3,625</b>	0.33	1.39	1.1	2.11	<b>1,036</b>	2.67

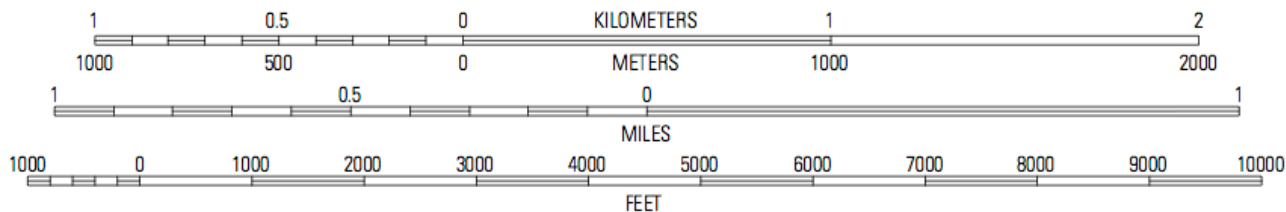
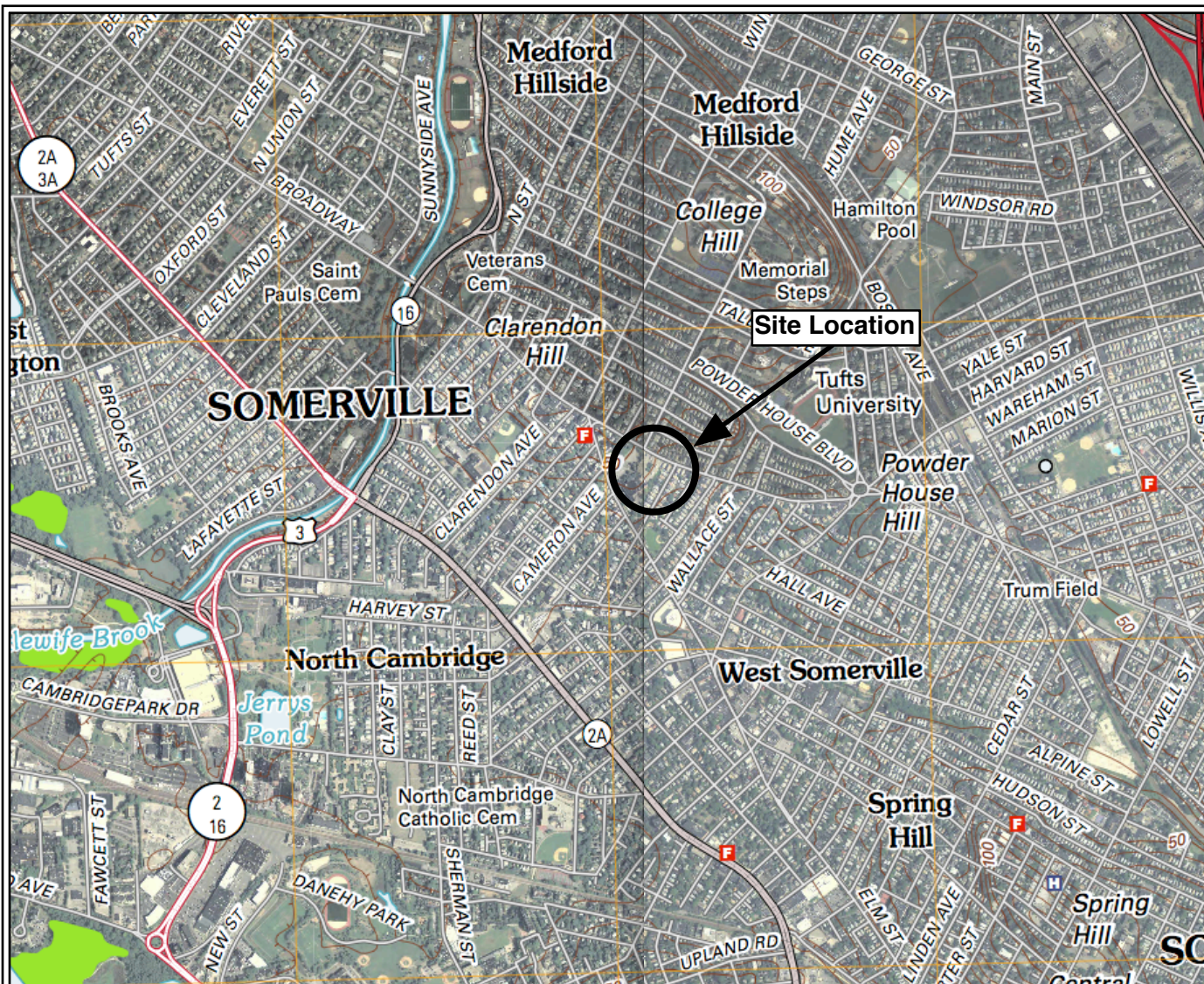
Notes:  
Highlight indicates PCBs detected above 50 mg/kg (50 ppm).  
Bold indicates analyte detected above method detection limit.  
mg/kg = milligrams per kilogram = parts per million (ppm).  
ND indicates analyte not detected above laboratory reporting limit.



Table 2  
Summary of PCB Analytical Results  
PCB Survey of Caulking Material  
Powderhouse School  
1060 Broadway  
Somerville, Massachusetts

Sample ID	PHS-1FL-16C	PHS-1FL-17C	PHS-1FL-18C	PHS-1FL-19C	PHS-GR-20	PHS-GR-21	PHS-GR-22	PHS-3FL-MROOF	PHS-3FL-09-6	PHS-MROOF-04-B	PHS-MROOF-04-C	PHS-MROOF-LTV-6	PHS-2FL-14-6	PHS-2FL-14-6B	PHS-MROOF-04-6	PHS-1FL-19C-6
Sample Date	04-MAR-14	04-MAR-14	04-MAR-14	04-MAR-14	05-MAR-14	05-MAR-14	05-MAR-14	23-Sep-15	23-Sep-15	23-Sep-15	23-Sep-15	23-Sep-15	23-Sep-15	23-Sep-15	23-Sep-15	23-Sep-15
Sample Type	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Caulking	Substrate	Caulking	Caulking	Substrate	Substrate	Substrate	Substrate	Substrate
Lab Sample ID	L1404700-16	L1404700-17	L1404700-18	L1404700-19	L1404700-20	L1404700-21	L1404700-22	L1523828-01	L1523828-02	L1523828-05	L1523828-06	L1523828-07	L1523828-10	L1523828-13	L1523828-16	L1523828-19
PCBs	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Aroclor 1016	ND(0.109)	ND(5.62)	ND(0.111)	ND(46.5)	ND(0.11)	ND(0.682)	ND(0.144)	ND(0.535)	ND(0.0554)	ND(0.645)	ND(0.613)	ND(0.0545)	ND(0.0515)	ND(0.0548)	ND(0.0512)	ND(0.0579)
Aroclor 1221	ND(0.109)	ND(5.62)	ND(0.111)	ND(46.5)	ND(0.11)	ND(0.682)	ND(0.144)	ND(0.535)	ND(0.0554)	ND(0.645)	ND(0.613)	ND(0.0545)	ND(0.0515)	ND(0.0548)	ND(0.0512)	ND(0.0579)
Aroclor 1232	ND(0.109)	ND(5.62)	ND(0.111)	ND(46.5)	ND(0.11)	ND(0.682)	ND(0.144)	<b>6.82</b>	ND(0.0554)	<b>1.99</b>	<b>0.646</b>	ND(0.0545)	ND(0.0515)	<b>0.223</b>	ND(0.0512)	ND(0.0579)
Aroclor 1242	<b>0.34</b>	ND(5.62)	<b>0.563</b>	ND(46.5)	<b>0.324</b>	ND(0.682)	ND(0.144)	ND(0.267)	ND(0.0554)	ND(0.322)	ND(0.307)	ND(0.0545)	ND(0.0515)	ND(0.0548)	ND(0.0512)	ND(0.0579)
Aroclor 1248	ND(0.073)	ND(3.74)	ND(0.0738)	<b>389</b>	ND(0.0733)	ND(0.454)	ND(0.0957)	ND(0.535)	ND(0.0369)	ND(0.645)	ND(0.613)	ND(0.0364)	ND(0.0344)	ND(0.0366)	ND(0.0341)	ND(0.0386)
Aroclor 1254	<b>0.444</b>	ND(5.62)	<b>0.112</b>	<b>285</b>	ND(0.11)	ND(0.682)	ND(0.144)	ND(0.535)	ND(0.0554)	<b>0.89</b>	ND(0.613)	ND(0.0545)	ND(0.0515)	<b>0.624</b>	ND(0.0512)	ND(0.0579)
Aroclor 1260	ND(0.073)	ND(3.74)	ND(0.0738)	ND(31)	ND(0.0733)	ND(0.454)	ND(0.0957)	ND(0.535)	ND(0.0369)	ND(0.645)	ND(0.613)	ND(0.0364)	ND(0.0344)	ND(0.0366)	ND(0.0341)	ND(0.0386)
Aroclor 1262	ND(0.0365)	ND(1.87)	ND(0.0369)	ND(15.5)	ND(0.0366)	ND(0.227)	ND(0.0478)	ND(0.535)	ND(0.0184)	ND(0.322)	ND(0.613)	ND(0.0182)	ND(0.0172)	ND(0.0183)	ND(0.0171)	ND(0.0193)
Aroclor 1268	ND(0.0365)	ND(1.87)	ND(0.0369)	ND(15.5)	ND(0.0366)	ND(0.227)	ND(0.0478)	ND(0.267)	ND(0.0184)	ND(0.322)	ND(0.307)	ND(0.0182)	ND(0.0172)	ND(0.0183)	ND(0.0171)	ND(0.0193)
Total PCBs	0.78	ND	0.68	<b>674</b>	0.32	ND	ND	<b>6.82</b>	ND	<b>2.88</b>	0.65	ND	ND	0.847	ND	ND

Notes:  
Highlight indicates analyte detected above 1 mg/kg (1 ppm).  
Bold indicates analyte detected above method detection limit.  
mg/kg = milligrams per kilogram = parts per million (ppm).  
ND indicates analyte not detected above laboratory reporting limit.

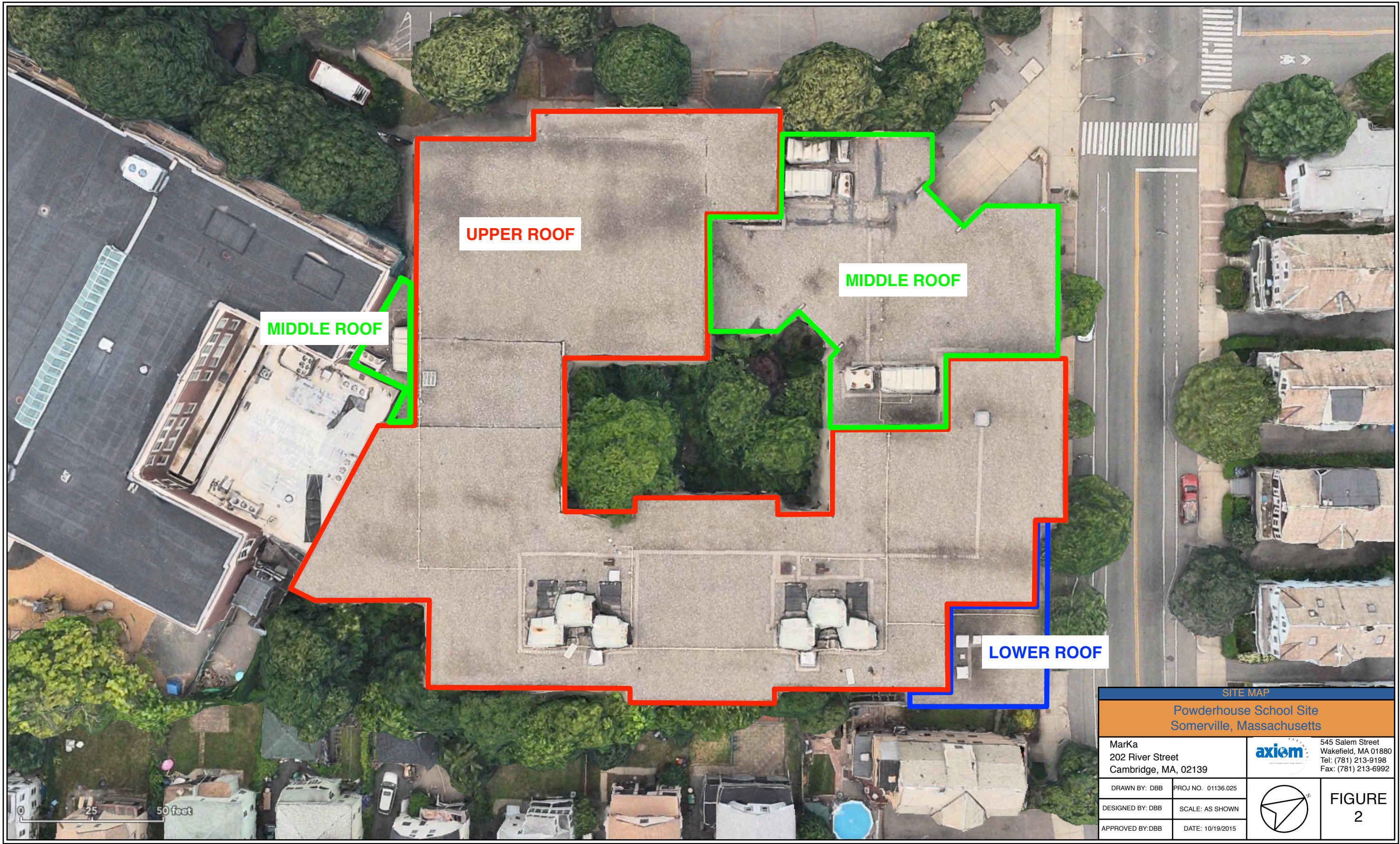



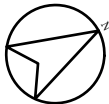


SITE LOCATION MAP			
Powderhouse School Site Somerville, Massachusetts			
MarKa 202 River Street Cambridge, MA, 02139			545 Salem Street Wakefield, MA 01880 Tel: (781) 213-9198 Fax: (781) 213-6992
DRAWN BY: DBB	PROJ NO. 01136.382		<b>FIGURE</b> 1
DESIGNED BY: DBB	SCALE: AS SHOWN		
APPROVED BY: DBB	DATE: 10/19/2015		

Source: USGS 7.5 Minute Series Topographic  
 Quadrangles: Lexington 2012, Boston North 2012





SITE MAP			
Powderhouse School Site Somerville, Massachusetts			
Marka 202 River Street Cambridge, MA, 02139			545 Salem Street Wakefield, MA 01880 Tel: (781) 213-9198 Fax: (781) 213-6992
DRAWN BY: DBB	PROJ NO. 01136.025		
DESIGNED BY: DBB	SCALE: AS SHOWN		FIGURE 2
APPROVED BY: DBB	DATE: 10/19/2015		





## APPENDIX A

### Laboratory Analytical Reports





## ANALYTICAL REPORT

Lab Number:	L1523828
Client:	Axiom Partners, Inc. 545 Salem Street Wakefield, MA 01880
ATTN:	Dan Batchelor
Phone:	(781) 213-9198
Project Name:	POWDERHOUSE
Project Number:	01136.382
Report Date:	10/05/15

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** POWDERHOUSE  
**Project Number:** 01136.382

**Lab Number:** L1523828  
**Report Date:** 10/05/15

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1523828-01	PHS-3FL-MROOF	SOLID	SOMERVILLE, MA	09/23/15 08:15	09/24/15
L1523828-02	PHS-3FL-09-6	SOLID	SOMERVILLE, MA	09/23/15 08:30	09/24/15
L1523828-03	PHS-3FL-09-12	SOLID	SOMERVILLE, MA	09/23/15 08:40	09/24/15
L1523828-04	PHS-3FL-09-18	SOLID	SOMERVILLE, MA	09/23/15 08:50	09/24/15
L1523828-05	PHS-MROOF-04-B	SOLID	SOMERVILLE, MA	09/23/15 09:20	09/24/15
L1523828-06	PHS-MROOF-04-C	SOLID	SOMERVILLE, MA	09/23/15 09:30	09/24/15
L1523828-07	PHS-MROOF-LTV-6	SOLID	SOMERVILLE, MA	09/23/15 10:10	09/24/15
L1523828-08	PHS-MROOF-LTV-12	SOLID	SOMERVILLE, MA	09/23/15 10:20	09/24/15
L1523828-09	PHS-MROOF-LTV-18	SOLID	SOMERVILLE, MA	09/23/15 10:30	09/24/15
L1523828-10	PHS-2FL-14-6	SOLID	SOMERVILLE, MA	09/23/15 11:25	09/24/15
L1523828-11	PHS-2FL-14-12	SOLID	SOMERVILLE, MA	09/23/15 11:30	09/24/15
L1523828-12	PHS-2FL-14-18	SOLID	SOMERVILLE, MA	09/23/15 11:35	09/24/15
L1523828-13	PHS-2FL-14-6B	SOLID	SOMERVILLE, MA	09/23/15 11:40	09/24/15
L1523828-14	PHS-2FL-14-12B	SOLID	SOMERVILLE, MA	09/23/15 11:50	09/24/15
L1523828-15	PHS-2FL-14-18B	SOLID	SOMERVILLE, MA	09/23/15 12:00	09/24/15
L1523828-16	PHS-MROOF-04-6	SOLID	SOMERVILLE, MA	09/23/15 12:20	09/24/15
L1523828-17	PHS-MROOF-04-12	SOLID	SOMERVILLE, MA	09/23/15 12:25	09/24/15
L1523828-18	PHS-MROOF-04-18	SOLID	SOMERVILLE, MA	09/23/15 12:30	09/24/15
L1523828-19	PHS-1FL-19C-6	SOLID	SOMERVILLE, MA	09/23/15 13:15	09/24/15

**Project Name:** POWDERHOUSE  
**Project Number:** 01136.382

**Lab Number:** L1523828  
**Report Date:** 10/05/15

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

---

**Project Name:** POWDERHOUSE  
**Project Number:** 01136.382

**Lab Number:** L1523828  
**Report Date:** 10/05/15

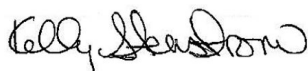
**Case Narrative (continued)**

PCBs

L1523828-01 contains peaks which match the retention times for Aroclor 1232, but do not match the area ratios typical for this aroclor. The result for Aroclor 1232 is reported as "weathered".

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 10/05/15

# ORGANICS

# PCBS

**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15**SAMPLE RESULTS**

**Lab ID:** L1523828-01  
**Client ID:** PHS-3FL-MROOF  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Solid  
**Analytical Method:** 1,8082A  
**Analytical Date:** 10/02/15 10:04  
**Analyst:** JT  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 09/23/15 08:15  
**Date Received:** 09/24/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 09/30/15 09:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 10/01/15  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 10/01/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 10/01/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	535	--	1	A
Aroclor 1221	ND		ug/kg	535	--	1	A
Aroclor 1232	6820		ug/kg	535	--	1	A
Aroclor 1242	ND		ug/kg	267	--	1	A
Aroclor 1248	ND		ug/kg	535	--	1	A
Aroclor 1254	ND		ug/kg	535	--	1	A
Aroclor 1260	ND		ug/kg	535	--	1	A
Aroclor 1262	ND		ug/kg	535	--	1	A
Aroclor 1268	ND		ug/kg	267	--	1	A
PCBs, Total	6820		ug/kg	267	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	95		30-150	B

Project Name: POWDERHOUSE

Lab Number: L1523828

Project Number: 01136.382

Report Date: 10/05/15

## SAMPLE RESULTS

Lab ID: L1523828-02  
 Client ID: PHS-3FL-09-6  
 Sample Location: SOMERVILLE, MA  
 Matrix: Solid  
 Analytical Method: 1,8082A  
 Analytical Date: 10/01/15 05:42  
 Analyst: JT  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 09/23/15 08:30  
 Date Received: 09/24/15  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 09/29/15 11:45  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 09/30/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 09/30/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	55.4	--	1	A
Aroclor 1221	ND		ug/kg	55.4	--	1	A
Aroclor 1232	ND		ug/kg	55.4	--	1	A
Aroclor 1242	ND		ug/kg	55.4	--	1	A
Aroclor 1248	ND		ug/kg	36.9	--	1	A
Aroclor 1254	ND		ug/kg	55.4	--	1	A
Aroclor 1260	ND		ug/kg	36.9	--	1	A
Aroclor 1262	ND		ug/kg	18.4	--	1	A
Aroclor 1268	ND		ug/kg	18.4	--	1	A
PCBs, Total	ND		ug/kg	18.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	47		30-150	A
Decachlorobiphenyl	33		30-150	A
2,4,5,6-Tetrachloro-m-xylene	32		30-150	B
Decachlorobiphenyl	29	Q	30-150	B



**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15**SAMPLE RESULTS**

**Lab ID:** L1523828-05  
**Client ID:** PHS-MROOF-04-B  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Solid  
**Analytical Method:** 1,8082A  
**Analytical Date:** 10/02/15 10:17  
**Analyst:** JT  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 09/23/15 09:20  
**Date Received:** 09/24/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 09/30/15 09:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 10/01/15  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 10/01/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 10/01/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	645	--	1	A
Aroclor 1221	ND		ug/kg	645	--	1	A
Aroclor 1232	1990		ug/kg	645	--	1	A
Aroclor 1242	ND		ug/kg	322	--	1	A
Aroclor 1248	ND		ug/kg	645	--	1	A
Aroclor 1254	890		ug/kg	645	--	1	B
Aroclor 1260	ND		ug/kg	645	--	1	A
Aroclor 1262	ND		ug/kg	645	--	1	A
Aroclor 1268	ND		ug/kg	322	--	1	A
PCBs, Total	2880		ug/kg	322	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	59		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	79		30-150	B

**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15**SAMPLE RESULTS**

**Lab ID:** L1523828-06  
**Client ID:** PHS-MROOF-04-C  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Solid  
**Analytical Method:** 1,8082A  
**Analytical Date:** 10/02/15 10:29  
**Analyst:** JT  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 09/23/15 09:30  
**Date Received:** 09/24/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 09/30/15 09:45  
**Cleanup Method:** EPA 3630  
**Cleanup Date:** 10/01/15  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 10/01/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 10/01/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	613	--	1	A
Aroclor 1221	ND		ug/kg	613	--	1	A
Aroclor 1232	646		ug/kg	613	--	1	B
Aroclor 1242	ND		ug/kg	307	--	1	A
Aroclor 1248	ND		ug/kg	613	--	1	A
Aroclor 1254	ND		ug/kg	613	--	1	B
Aroclor 1260	ND		ug/kg	613	--	1	A
Aroclor 1262	ND		ug/kg	613	--	1	A
Aroclor 1268	ND		ug/kg	307	--	1	A
PCBs, Total	646		ug/kg	307	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	84		30-150	B

**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15**SAMPLE RESULTS**

**Lab ID:** L1523828-07  
**Client ID:** PHS-MROOF-LTV-6  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Solid  
**Analytical Method:** 1,8082A  
**Analytical Date:** 10/01/15 05:54  
**Analyst:** JT  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 09/23/15 10:10  
**Date Received:** 09/24/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 09/29/15 11:45  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 09/30/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 09/30/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	54.5	--	1	A
Aroclor 1221	ND		ug/kg	54.5	--	1	A
Aroclor 1232	ND		ug/kg	54.5	--	1	A
Aroclor 1242	ND		ug/kg	54.5	--	1	A
Aroclor 1248	ND		ug/kg	36.4	--	1	A
Aroclor 1254	ND		ug/kg	54.5	--	1	A
Aroclor 1260	ND		ug/kg	36.4	--	1	A
Aroclor 1262	ND		ug/kg	18.2	--	1	A
Aroclor 1268	ND		ug/kg	18.2	--	1	A
PCBs, Total	ND		ug/kg	18.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	46		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	63		30-150	B

**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15**SAMPLE RESULTS**

**Lab ID:** L1523828-10  
**Client ID:** PHS-2FL-14-6  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Solid  
**Analytical Method:** 1,8082A  
**Analytical Date:** 10/01/15 06:06  
**Analyst:** JT  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 09/23/15 11:25  
**Date Received:** 09/24/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 09/29/15 11:45  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 09/30/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 09/30/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	51.5	--	1	A
Aroclor 1221	ND		ug/kg	51.5	--	1	A
Aroclor 1232	ND		ug/kg	51.5	--	1	A
Aroclor 1242	ND		ug/kg	51.5	--	1	A
Aroclor 1248	ND		ug/kg	34.4	--	1	A
Aroclor 1254	ND		ug/kg	51.5	--	1	A
Aroclor 1260	ND		ug/kg	34.4	--	1	A
Aroclor 1262	ND		ug/kg	17.2	--	1	A
Aroclor 1268	ND		ug/kg	17.2	--	1	A
PCBs, Total	ND		ug/kg	17.2	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	A
Decachlorobiphenyl	40		30-150	A
2,4,5,6-Tetrachloro-m-xylene	46		30-150	B
Decachlorobiphenyl	48		30-150	B

**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15**SAMPLE RESULTS**

**Lab ID:** L1523828-13  
**Client ID:** PHS-2FL-14-6B  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Solid  
**Analytical Method:** 1,8082A  
**Analytical Date:** 10/03/15 20:10  
**Analyst:** JT  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 09/23/15 11:40  
**Date Received:** 09/24/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 10/02/15 12:00  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 10/03/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 10/03/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	54.8	--	1	A
Aroclor 1221	ND		ug/kg	54.8	--	1	A
Aroclor 1232	223		ug/kg	54.8	--	1	A
Aroclor 1242	ND		ug/kg	54.8	--	1	A
Aroclor 1248	ND		ug/kg	36.6	--	1	A
Aroclor 1254	62.4		ug/kg	54.8	--	1	A
Aroclor 1260	ND		ug/kg	36.6	--	1	A
Aroclor 1262	ND		ug/kg	18.3	--	1	A
Aroclor 1268	ND		ug/kg	18.3	--	1	A
PCBs, Total	285		ug/kg	18.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	58		30-150	A
2,4,5,6-Tetrachloro-m-xylene	45		30-150	B
Decachlorobiphenyl	69		30-150	B

**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15**SAMPLE RESULTS**

**Lab ID:** L1523828-16  
**Client ID:** PHS-MROOF-04-6  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Solid  
**Analytical Method:** 1,8082A  
**Analytical Date:** 10/01/15 06:31  
**Analyst:** JT  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 09/23/15 12:20  
**Date Received:** 09/24/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 09/29/15 11:45  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 09/30/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 09/30/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	51.2	--	1	A
Aroclor 1221	ND		ug/kg	51.2	--	1	A
Aroclor 1232	ND		ug/kg	51.2	--	1	A
Aroclor 1242	ND		ug/kg	51.2	--	1	A
Aroclor 1248	ND		ug/kg	34.1	--	1	A
Aroclor 1254	ND		ug/kg	51.2	--	1	A
Aroclor 1260	ND		ug/kg	34.1	--	1	A
Aroclor 1262	ND		ug/kg	17.1	--	1	A
Aroclor 1268	ND		ug/kg	17.1	--	1	A
PCBs, Total	ND		ug/kg	17.1	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	A
Decachlorobiphenyl	43		30-150	A
2,4,5,6-Tetrachloro-m-xylene	50		30-150	B
Decachlorobiphenyl	56		30-150	B

**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15**SAMPLE RESULTS**

**Lab ID:** L1523828-19  
**Client ID:** PHS-1FL-19C-6  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Solid  
**Analytical Method:** 1,8082A  
**Analytical Date:** 10/01/15 06:43  
**Analyst:** JT  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 09/23/15 13:15  
**Date Received:** 09/24/15  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 09/29/15 11:45  
**Cleanup Method:** EPA 3665A  
**Cleanup Date:** 09/30/15  
**Cleanup Method:** EPA 3660B  
**Cleanup Date:** 09/30/15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
PCB by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	57.9	--	1	A
Aroclor 1221	ND		ug/kg	57.9	--	1	A
Aroclor 1232	ND		ug/kg	57.9	--	1	A
Aroclor 1242	ND		ug/kg	57.9	--	1	A
Aroclor 1248	ND		ug/kg	38.6	--	1	A
Aroclor 1254	ND		ug/kg	57.9	--	1	A
Aroclor 1260	ND		ug/kg	38.6	--	1	A
Aroclor 1262	ND		ug/kg	19.3	--	1	A
Aroclor 1268	ND		ug/kg	19.3	--	1	A
PCBs, Total	ND		ug/kg	19.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	52		30-150	A
2,4,5,6-Tetrachloro-m-xylene	70		30-150	B
Decachlorobiphenyl	73		30-150	B

Project Name: POWDERHOUSE

Lab Number: L1523828

Project Number: 01136.382

Report Date: 10/05/15

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8082A  
 Analytical Date: 10/01/15 04:20  
 Analyst: JT

Extraction Method: EPA 3540C  
 Extraction Date: 09/29/15 11:45  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 09/30/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 09/30/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
PCB by GC - Westborough Lab for sample(s): 02,07,10,16,19 Batch: WG825972-1						
Aroclor 1016	ND		ug/kg	52.6	--	A
Aroclor 1221	ND		ug/kg	52.6	--	A
Aroclor 1232	ND		ug/kg	52.6	--	A
Aroclor 1242	ND		ug/kg	52.6	--	A
Aroclor 1248	ND		ug/kg	35.1	--	A
Aroclor 1254	ND		ug/kg	52.6	--	A
Aroclor 1260	ND		ug/kg	35.1	--	A
Aroclor 1262	ND		ug/kg	17.5	--	A
Aroclor 1268	ND		ug/kg	17.5	--	A
PCBs, Total	ND		ug/kg	17.5	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		30-150	A
Decachlorobiphenyl	44		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	59		30-150	B



**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8082A  
 Analytical Date: 10/02/15 10:41  
 Analyst: JT

Extraction Method: EPA 3540C  
 Extraction Date: 09/30/15 09:45  
 Cleanup Method: EPA 3630  
 Cleanup Date: 10/01/15  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/01/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/01/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
PCB by GC - Westborough Lab for sample(s): 01,05-06 Batch: WG826378-1						
Aroclor 1016	ND		ug/kg	612	--	A
Aroclor 1221	ND		ug/kg	612	--	A
Aroclor 1232	ND		ug/kg	612	--	A
Aroclor 1242	ND		ug/kg	306	--	A
Aroclor 1248	ND		ug/kg	612	--	A
Aroclor 1254	ND		ug/kg	612	--	A
Aroclor 1260	ND		ug/kg	612	--	A
Aroclor 1262	ND		ug/kg	612	--	A
Aroclor 1268	ND		ug/kg	306	--	A
PCBs, Total	ND		ug/kg	306	--	A

Surrogate	%Recovery	Qualifier	Acceptance	Column
			Criteria	
2,4,5,6-Tetrachloro-m-xylene	64		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	59		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: POWDERHOUSE

Lab Number: L1523828

Project Number: 01136.382

Report Date: 10/05/15

### Method Blank Analysis Batch Quality Control

Analytical Method: 1,8082A  
 Analytical Date: 10/03/15 20:35  
 Analyst: JT

Extraction Method: EPA 3540C  
 Extraction Date: 10/02/15 12:00  
 Cleanup Method: EPA 3665A  
 Cleanup Date: 10/03/15  
 Cleanup Method: EPA 3660B  
 Cleanup Date: 10/03/15

Parameter	Result	Qualifier	Units	RL	MDL	Column
PCB by GC - Westborough Lab for sample(s): 13 Batch: WG827290-1						
Aroclor 1016	ND		ug/kg	53.2	--	A
Aroclor 1221	ND		ug/kg	53.2	--	A
Aroclor 1232	ND		ug/kg	53.2	--	A
Aroclor 1242	ND		ug/kg	53.2	--	A
Aroclor 1248	ND		ug/kg	35.5	--	A
Aroclor 1254	ND		ug/kg	53.2	--	A
Aroclor 1260	ND		ug/kg	35.5	--	A
Aroclor 1262	ND		ug/kg	17.7	--	A
Aroclor 1268	ND		ug/kg	17.7	--	A
PCBs, Total	ND		ug/kg	17.7	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	82		30-150	A
Decachlorobiphenyl	77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	99		30-150	B

# **Lab Control Sample Analysis** Batch Quality Control

Project Name: POWDERHOUSE

Project Number: 01136.382

Lab Number: L1523828

Report Date: 10/05/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
PCB by GC - Westborough Lab Associated sample(s): 02,07,10,16,19 Batch: WG825972-2 WG825972-3									
Aroclor 1016	64		78		40-140	20		50	A
Aroclor 1260	52		57		40-140	9		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67		76		30-150	A
Decachlorobiphenyl	48		53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		73		30-150	B
Decachlorobiphenyl	79		74		30-150	B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: POWDERHOUSE

Project Number: 01136.382

Lab Number: L1523828

Report Date: 10/05/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
PCB by GC - Westborough Lab Associated sample(s): 01,05-06 Batch: WG826378-2 WG826378-3									
Aroclor 1016	57		80		40-140	34		50	A
Aroclor 1260	48		71		40-140	39		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		85		30-150	A
Decachlorobiphenyl	49		73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	52		77		30-150	B
Decachlorobiphenyl	65		96		30-150	B

## Lab Control Sample Analysis

### Batch Quality Control

Project Name: POWDERHOUSE

Project Number: 01136.382

Lab Number: L1523828

Report Date: 10/05/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
PCB by GC - Westborough Lab Associated sample(s): 13 Batch: WG827290-2 WG827290-3									
Aroclor 1016	85		81		40-140	5		50	A
Aroclor 1260	78		75		40-140	4		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	89		87		30-150	A
Decachlorobiphenyl	84		83		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		79		30-150	B
Decachlorobiphenyl	109		105		30-150	B

Project Name: POWDERHOUSE

Lab Number: L1523828

Project Number: 01136.382

Report Date: 10/05/15

## Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

Reagent H2O Preserved Vials Frozen on: NA

## Cooler Information Custody Seal

## Cooler

A Absent

## Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1523828-01A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	PCB-8082-CAULK(14)
L1523828-02A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	PCB-8082LL-CNCRT(14)
L1523828-03A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-04A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-05A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	PCB-8082-CAULK(14)
L1523828-06A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	PCB-8082-CAULK(14)
L1523828-07A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	PCB-8082LL-CNCRT(14)
L1523828-08A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-09A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-10A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	PCB-8082LL-CNCRT(14)
L1523828-11A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-12A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-13A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	PCB-8082LL-CNCRT(14)
L1523828-14A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-15A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-16A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	PCB-8082LL-CNCRT(14)
L1523828-17A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-18A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	HOLD(14)
L1523828-19A	Glass 60mL/2oz unpreserved	A	N/A	5.8	Y	Absent	PCB-8082LL-CNCRT(14)

\*Values in parentheses indicate holding time in days



**Project Name:** POWDERHOUSE  
**Project Number:** 01136.382

**Lab Number:** L1523828  
**Report Date:** 10/05/15

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

**Report Format:** Data Usability Report



**Project Name:** POWDERHOUSE**Lab Number:** L1523828**Project Number:** 01136.382**Report Date:** 10/05/15**Data Qualifiers**

- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e., co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.



**Project Name:** POWDERHOUSE  
**Project Number:** 01136.382

**Lab Number:** L1523828  
**Report Date:** 10/05/15

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

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The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide) (soil), Methyl methacrylate (soil), Azobenzene.

**EPA 8270D:** Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**EPA 8270D:** Biphenyl.

**EPA 2540D:** TSS

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

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The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

### Drinking Water

**EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, Tl; **EPA 200.7:** Ba, Be, Ca, Cd, Cr, Cu, Na; **EPA 245.1:** Mercury;

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

### Non-Potable Water

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, Zn;

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, Ti, Tl, V, Zn;

**EPA 245.1, SM4500H-B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

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For a complete listing of analytes and methods, please contact your Alpha Project Manager.



## CHAIN OF CUSTODY

PAGE 1 OF 2

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Project Information

Project Name: Powderhouse

Project Location: Somerville, MA

Project #: 01136.382

Project Manager: Dan Batchelor

ALPHA Quote #:

## Turn-Around Time

☒ Standard☐ RUSH (only confirmed if pre-approved!)

Date Due:

Date Rec'd in Lab: 9/24/15

ALPHA Job #: L1523828

## Report Information - Data Deliverables

☒ ADEX☐ EMAIL

## Billing Information

☒ Same as Client info

PO #:

## Client Information

Client: Axiom Partners, Inc.  
Address: 545 Salem Street  
Wakefield, MA 01880  
Phone: 781-213-9198  
Fax: 781-213-6992  
Email: dbatchelor@axiomenv.com  
kweston@axiomenv.com

## Additional Project Information:

X-1: caulking  
X-2: solid

Note HOLD samples

## Regulatory Requirements &amp; Project Information Requirements

- ☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods  
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)  
☐ Yes ☒ No NPDES RGP  
☐ Other State /Fed Program Criteria

ANALYSIS		SAMPLE INFO	
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2		Filtration	
SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH		<input type="checkbox"/> Field	
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15		<input type="checkbox"/> Lab to do	
METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8		Preservation	
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only		<input type="checkbox"/> Lab to do	
VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only			
<input checked="" type="checkbox"/> PCB <input type="checkbox"/> PEST			
TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint			
8082 (Soxhlet)			
		TOTAL # BOTTLES	

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
23828-01	PHS-3FL-MR00F	9/23/15	0815	X-1	DBB
02	PHS-3FL-09-6		0830	X-2	
03	PHS-3FL-09-12		0840	X-2	
04	PHS-3FL-09-18		0850	X-2	
05	PHS-MR00F-04-B		0920	X-1	
06	PHS-MR00F-04-C		0930	X-1	
07	PHS-MR00F-LTV-6		1010	X-2	
08	PHS-MR00F-LTV-12		1020	X-2	
09	PHS-MR00F-LTV-18		1030	X-2	
10	PHS-2FL-14-6		1125	X-2	

Container Type  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

Preservative  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type

Preservative

Relinquished By:

Date/Time

Received By:

Date/Time

All samples submitted are subject to Alpha's Terms and Conditions.  
See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)





## CHAIN OF CUSTODY

PAGE 2 OF 2

8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

## Client Information

Client: Axiom Partners, Inc.  
Address: 545 Salem Street  
Wakefield, MA 01880  
Phone: 781-213-9198  
Fax: 781-213-6992  
Email: dbatchelor@axiomenv.com  
kweston@axiomenv.com

## Additional Project Information:

X-1: caulking  
X-2: Solid  
Note HOLD samples

## Project Information

Project Name: Powderhouse  
Project Location: Somerville, MA  
Project #: 01136.382  
Project Manager: Dan Batchelor  
ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)  
Date Due:

Date Rec'd in Lab:

9/24/15

ALPHA Job #:

11523828

## Report Information - Data Deliverables

☒ ADEX ☐ EMAIL

## Billing Information

☒ Same as Client info PO #:

## Regulatory Requirements &amp; Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods  
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)  
☐ Yes ☒ No NPDES RGP  
☐ Other State /Fed Program Criteria

ANALYSIS		SAMPLE INFO	
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 624 <input type="checkbox"/> 524.2		Filtration	
SVOC: <input type="checkbox"/> ABN <input type="checkbox"/> PAH		<input type="checkbox"/> Field	
METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15		<input type="checkbox"/> Lab to do	
METALS: <input type="checkbox"/> RCRA5 <input type="checkbox"/> RCRA8 <input type="checkbox"/> PP13		Preservation	
EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only		<input type="checkbox"/> Lab to do	
VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only			
<input type="checkbox"/> PCB <input type="checkbox"/> PEST			
TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint			
8082 (Soxhlet)			
		Sample Comments	

TOTAL # BOTTLES

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
23828-11	PHS-2FL-14-12	9/23/15	1130	X-2	DBB
12	PHS-2FL-14-18		1135	X-2	
13	PHS-2FL-14-6B		1140	X-2	
14	PHS-2FL-14-12B		1150	X-2	
15	PHS-2FL-14-18B		1200	X-2	
16	PHS-MRGOF-04-6		1220	X-2	
17	PHS-MRGOF-04-12		1225	X-2	
18	PHS-MRGOF-04-18		1230	X-2	
19	PHS-1FL-19C-6		1315	X-2	

Container Type  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

Preservative  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type

Preservative

Relinquished By:

Date/Time

Received By:

Date/Time

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO. 01-01 (rev. 12-Mar-2012)



## ANALYTICAL REPORT

Lab Number:	L1404700
Client:	Axiom Partners, Inc. 545 Salem Street Wakefield, MA 01880
ATTN:	Phil Knotts
Phone:	(781) 213-9198
Project Name:	POWDER HOUSE SCHOOL
Project Number:	Not Specified
Report Date:	03/13/14

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), USDA (Permit #P-330-11-00240), NC (666), TX (T104704476), DOD (L2217), US Army Corps of Engineers.

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)



**Project Name:** POWDER HOUSE SCHOOL  
**Project Number:** Not Specified

**Lab Number:** L1404700  
**Report Date:** 03/13/14

Alpha Sample ID	Client ID	Sample Location	Collection Date/Time
L1404700-01	PHS-UROOF-01	SOMERVILLE, MA	03/03/14 11:20
L1404700-02	PHS-MROOF-02	SOMERVILLE, MA	03/03/14 11:40
L1404700-03	PHS-MROOF-03	SOMERVILLE, MA	03/03/14 11:50
L1404700-04	PHS-MROOF-04	SOMERVILLE, MA	03/03/14 12:05
L1404700-05	PHS-3FL-05	SOMERVILLE, MA	03/03/14 14:05
L1404700-06	PHS-3FL-06	SOMERVILLE, MA	03/03/14 14:50
L1404700-07	PHS-3FL-07	SOMERVILLE, MA	03/03/14 15:00
L1404700-08	PHS-3FL-08	SOMERVILLE, MA	03/03/14 15:20
L1404700-09	PHS-3FL-09	SOMERVILLE, MA	03/03/14 15:35
L1404700-10	PHS-3FL-10	SOMERVILLE, MA	03/04/14 08:35
L1404700-11	PHS-2FL-11	SOMERVILLE, MA	03/04/14 10:25
L1404700-12	PHS-2FL-12	SOMERVILLE, MA	03/04/14 10:40
L1404700-13	PHS-2FL-13	SOMERVILLE, MA	03/04/14 10:55
L1404700-14	PHS-2FL-14	SOMERVILLE, MA	03/04/14 11:10
L1404700-15	PHS-2FL-15	SOMERVILLE, MA	03/04/14 11:40
L1404700-16	PHS-1FL-16C	SOMERVILLE, MA	03/04/14 14:05
L1404700-17	PHS-1FL-17C	SOMERVILLE, MA	03/04/14 14:15
L1404700-18	PHS-1FL-18C	SOMERVILLE, MA	03/04/14 14:40
L1404700-19	PHS-1FL-19C	SOMERVILLE, MA	03/04/14 15:05
L1404700-20	PHS-GR-20	SOMERVILLE, MA	03/05/14 09:48
L1404700-21	PHS-GR-21	SOMERVILLE, MA	03/05/14 09:33
L1404700-22	PHS-GR-22	SOMERVILLE, MA	03/05/14 09:55

Project Name: POWDER HOUSE SCHOOL

Lab Number: L1404700

Project Number: Not Specified

Report Date: 03/13/14

**MADEP MCP Response Action Analytical Report Certification**

**This form provides certifications for all samples performed by MCP methods. Please refer to the Sample Results and Container Information sections of this report for specification of MCP methods used for each analysis. The following questions pertain only to MCP Analytical Methods.**

<b>An affirmative response to questions A through F is required for "Presumptive Certainty" status</b>		
A	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times?	YES
B	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	YES
C	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	YES
D	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data?"	YES
E a.	VPH, EPH, and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications).	N/A
E b.	APH and TO-15 Methods only: Was the complete analyte list reported for each method?	N/A
F	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	YES
<b>A response to questions G, H and I is required for "Presumptive Certainty" status</b>		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	YES
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	YES
<b>For any questions answered "No", please refer to the case narrative section on the following page(s).</b>		

**Please note that sample matrix information is located in the Sample Results section of this report.**



**Project Name:** POWDER HOUSE SCHOOL  
**Project Number:** Not Specified

**Lab Number:** L1404700  
**Report Date:** 03/13/14

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. Performance criteria for CAM and RCP methods allow for some LCS compound failures to occur and still be within method compliance. In these instances, the specific failures are not narrated but are noted in the associated QC table. This information is also incorporated in the Data Usability format for our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

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**Project Name:** POWDER HOUSE SCHOOL  
**Project Number:** Not Specified

**Lab Number:** L1404700  
**Report Date:** 03/13/14

### Case Narrative (continued)

#### MCP Related Narratives

##### PCBs

L1404700-01, -05, and -21 have elevated detection limits due to the dilutions required by matrix interferences encountered during the concentration of the samples.

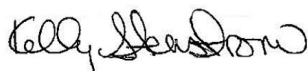
L1404700-17 has elevated detection limits due to the dilution required by the sample matrix.

In reference to question H:

The surrogate recoveries for L1404700-02, -04, -09, -14, -17, and -19 are below the acceptance criteria for 2,4,5,6-tetrachloro-m-xylene and decachlorobiphenyl (all 0%) due to the dilutions required to quantitate the samples. Re-extraction was not required; therefore, the results of the original analyses are reported.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Kelly Stenstrom

Title: Technical Director/Representative

Date: 03/13/14

# ORGANICS

# PCBS

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-01  
 Client ID: PHS-UROOF-01  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/12/14 10:21  
 Analyst: JW  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/03/14 11:20  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 03/10/14 15:40  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/12/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	305	--	3	A
Aroclor 1221	ND		ug/kg	305	--	3	A
Aroclor 1232	ND		ug/kg	305	--	3	A
Aroclor 1242	3140		ug/kg	305	--	3	B
Aroclor 1248	ND		ug/kg	203	--	3	A
Aroclor 1254	2260		ug/kg	305	--	3	A
Aroclor 1260	ND		ug/kg	203	--	3	A
Aroclor 1262	ND		ug/kg	102	--	3	A
Aroclor 1268	ND		ug/kg	102	--	3	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	39		30-150	A
Decachlorobiphenyl	33		30-150	A
2,4,5,6-Tetrachloro-m-xylene	37		30-150	B
Decachlorobiphenyl	41		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-02 D  
 Client ID: PHS-MROOF-02  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/10/14 13:15  
 Analyst: TQ  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/03/14 11:40  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3580A  
 Extraction Date: 03/07/14 16:59  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/10/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/10/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	80000	--	40	A
Aroclor 1221	ND		ug/kg	80000	--	40	A
Aroclor 1232	ND		ug/kg	80000	--	40	A
Aroclor 1242	ND		ug/kg	80000	--	40	A
Aroclor 1248	1220000		ug/kg	53300	--	40	B
Aroclor 1254	548000		ug/kg	80000	--	40	A
Aroclor 1260	ND		ug/kg	53300	--	40	A
Aroclor 1262	ND		ug/kg	26700	--	40	A
Aroclor 1268	ND		ug/kg	26700	--	40	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	A
Decachlorobiphenyl	0	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	B
Decachlorobiphenyl	0	Q	30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

**Lab ID:** L1404700-03  
**Client ID:** PHS-MROOF-03  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Caulk  
**Analytical Method:** 97,8082  
**Analytical Date:** 03/13/14 10:06  
**Analyst:** JW  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 03/03/14 11:50  
**Date Received:** 03/06/14  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 03/12/14 14:03  
**Cleanup Method1:** EPA 3665A  
**Cleanup Date1:** 03/13/14  
**Cleanup Method2:** EPA 3660B  
**Cleanup Date2:** 03/13/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	142	--	1	A
Aroclor 1221	ND		ug/kg	142	--	1	A
Aroclor 1232	ND		ug/kg	142	--	1	A
Aroclor 1242	430		ug/kg	142	--	1	B
Aroclor 1248	ND		ug/kg	94.8	--	1	A
Aroclor 1254	850		ug/kg	142	--	1	B
Aroclor 1260	ND		ug/kg	94.8	--	1	A
Aroclor 1262	ND		ug/kg	47.4	--	1	A
Aroclor 1268	ND		ug/kg	47.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	53		30-150	A
Decachlorobiphenyl	51		30-150	A
2,4,5,6-Tetrachloro-m-xylene	51		30-150	B
Decachlorobiphenyl	62		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-04 D  
 Client ID: PHS-MROOF-04  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/10/14 12:08  
 Analyst: TQ  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/03/14 12:05  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3580A  
 Extraction Date: 03/07/14 16:59  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/10/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/10/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	47600	--	20	A
Aroclor 1221	ND		ug/kg	47600	--	20	A
Aroclor 1232	ND		ug/kg	47600	--	20	A
Aroclor 1242	ND		ug/kg	47600	--	20	A
Aroclor 1248	1320000		ug/kg	31700	--	20	B
Aroclor 1254	464000		ug/kg	47600	--	20	B
Aroclor 1260	ND		ug/kg	31700	--	20	A
Aroclor 1262	ND		ug/kg	15900	--	20	A
Aroclor 1268	ND		ug/kg	15900	--	20	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	A
Decachlorobiphenyl	0	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	B
Decachlorobiphenyl	0	Q	30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-05  
 Client ID: PHS-3FL-05  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/13/14 10:19  
 Analyst: JW  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/03/14 14:05  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 03/12/14 14:03  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/13/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/13/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	551	--	5	A
Aroclor 1221	ND		ug/kg	551	--	5	A
Aroclor 1232	ND		ug/kg	551	--	5	A
Aroclor 1242	691		ug/kg	551	--	5	A
Aroclor 1248	ND		ug/kg	368	--	5	A
Aroclor 1254	720		ug/kg	551	--	5	B
Aroclor 1260	ND		ug/kg	368	--	5	A
Aroclor 1262	ND		ug/kg	184	--	5	A
Aroclor 1268	ND		ug/kg	184	--	5	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	91		30-150	B



**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

**Lab ID:** L1404700-06  
**Client ID:** PHS-3FL-06  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Caulk  
**Analytical Method:** 97,8082  
**Analytical Date:** 03/12/14 11:01  
**Analyst:** JW  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 03/03/14 14:50  
**Date Received:** 03/06/14  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 03/10/14 15:40  
**Cleanup Method1:** EPA 3665A  
**Cleanup Date1:** 03/12/14  
**Cleanup Method2:** EPA 3660B  
**Cleanup Date2:** 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	116	--	1	A
Aroclor 1221	ND		ug/kg	116	--	1	A
Aroclor 1232	ND		ug/kg	116	--	1	A
Aroclor 1242	876		ug/kg	116	--	1	B
Aroclor 1248	ND		ug/kg	77.2	--	1	A
Aroclor 1254	533		ug/kg	116	--	1	B
Aroclor 1260	ND		ug/kg	77.2	--	1	A
Aroclor 1262	ND		ug/kg	38.6	--	1	A
Aroclor 1268	ND		ug/kg	38.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	50		30-150	A
Decachlorobiphenyl	49		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	53		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

**Lab ID:** L1404700-07  
**Client ID:** PHS-3FL-07  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Caulk  
**Analytical Method:** 97,8082  
**Analytical Date:** 03/12/14 11:14  
**Analyst:** JW  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 03/03/14 15:00  
**Date Received:** 03/06/14  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 03/10/14 15:40  
**Cleanup Method1:** EPA 3665A  
**Cleanup Date1:** 03/12/14  
**Cleanup Method2:** EPA 3660B  
**Cleanup Date2:** 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	102	--	1	A
Aroclor 1221	ND		ug/kg	102	--	1	A
Aroclor 1232	ND		ug/kg	102	--	1	A
Aroclor 1242	731		ug/kg	102	--	1	A
Aroclor 1248	ND		ug/kg	67.8	--	1	A
Aroclor 1254	519		ug/kg	102	--	1	A
Aroclor 1260	ND		ug/kg	67.8	--	1	A
Aroclor 1262	ND		ug/kg	33.9	--	1	A
Aroclor 1268	ND		ug/kg	33.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	75		30-150	B
Decachlorobiphenyl	80		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-08  
 Client ID: PHS-3FL-08  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/12/14 11:27  
 Analyst: JW  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/03/14 15:20  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 03/10/14 15:40  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/12/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	143	--	1	A
Aroclor 1221	ND		ug/kg	143	--	1	A
Aroclor 1232	ND		ug/kg	143	--	1	A
Aroclor 1242	932		ug/kg	143	--	1	B
Aroclor 1248	ND		ug/kg	95.2	--	1	A
Aroclor 1254	593		ug/kg	143	--	1	A
Aroclor 1260	ND		ug/kg	95.2	--	1	A
Aroclor 1262	ND		ug/kg	47.6	--	1	A
Aroclor 1268	ND		ug/kg	47.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	53		30-150	A
Decachlorobiphenyl	50		30-150	A
2,4,5,6-Tetrachloro-m-xylene	52		30-150	B
Decachlorobiphenyl	57		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-09 D  
 Client ID: PHS-3FL-09  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/10/14 11:41  
 Analyst: TQ  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/03/14 15:35  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3580A  
 Extraction Date: 03/07/14 16:59  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/10/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/10/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	106000	--	50	A
Aroclor 1221	ND		ug/kg	106000	--	50	A
Aroclor 1232	ND		ug/kg	106000	--	50	A
Aroclor 1242	2820000		ug/kg	106000	--	50	A
Aroclor 1248	ND		ug/kg	70400	--	50	A
Aroclor 1254	805000		ug/kg	106000	--	50	A
Aroclor 1260	ND		ug/kg	70400	--	50	A
Aroclor 1262	ND		ug/kg	35200	--	50	A
Aroclor 1268	ND		ug/kg	35200	--	50	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	A
Decachlorobiphenyl	0	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	B
Decachlorobiphenyl	0	Q	30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

**Lab ID:** L1404700-10  
**Client ID:** PHS-3FL-10  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Caulk  
**Analytical Method:** 97,8082  
**Analytical Date:** 03/12/14 11:41  
**Analyst:** JW  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 03/04/14 08:35  
**Date Received:** 03/06/14  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 03/10/14 15:40  
**Cleanup Method1:** EPA 3665A  
**Cleanup Date1:** 03/12/14  
**Cleanup Method2:** EPA 3660B  
**Cleanup Date2:** 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	113	--	1	A
Aroclor 1221	ND		ug/kg	113	--	1	A
Aroclor 1232	ND		ug/kg	113	--	1	A
Aroclor 1242	207		ug/kg	113	--	1	B
Aroclor 1248	ND		ug/kg	75.2	--	1	A
Aroclor 1254	122		ug/kg	113	--	1	B
Aroclor 1260	ND		ug/kg	75.2	--	1	A
Aroclor 1262	ND		ug/kg	37.6	--	1	A
Aroclor 1268	ND		ug/kg	37.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	39		30-150	A
Decachlorobiphenyl	40		30-150	A
2,4,5,6-Tetrachloro-m-xylene	40		30-150	B
Decachlorobiphenyl	51		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-11  
 Client ID: PHS-2FL-11  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/13/14 10:33  
 Analyst: JW  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/04/14 10:25  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 03/12/14 14:03  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/13/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/13/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	124	--	1	A
Aroclor 1221	ND		ug/kg	124	--	1	A
Aroclor 1232	ND		ug/kg	124	--	1	A
Aroclor 1242	364		ug/kg	124	--	1	B
Aroclor 1248	ND		ug/kg	82.6	--	1	A
Aroclor 1254	1030		ug/kg	124	--	1	B
Aroclor 1260	ND		ug/kg	82.6	--	1	A
Aroclor 1262	ND		ug/kg	41.3	--	1	A
Aroclor 1268	ND		ug/kg	41.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	60		30-150	A
Decachlorobiphenyl	67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	61		30-150	B
Decachlorobiphenyl	81		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

**Lab ID:** L1404700-12  
**Client ID:** PHS-2FL-12  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Caulk  
**Analytical Method:** 97,8082  
**Analytical Date:** 03/12/14 12:07  
**Analyst:** JW  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 03/04/14 10:40  
**Date Received:** 03/06/14  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 03/10/14 15:40  
**Cleanup Method1:** EPA 3665A  
**Cleanup Date1:** 03/12/14  
**Cleanup Method2:** EPA 3660B  
**Cleanup Date2:** 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	132	--	1	A
Aroclor 1221	ND		ug/kg	132	--	1	A
Aroclor 1232	ND		ug/kg	132	--	1	A
Aroclor 1242	813		ug/kg	132	--	1	A
Aroclor 1248	ND		ug/kg	87.7	--	1	A
Aroclor 1254	285	P	ug/kg	132	--	1	A
Aroclor 1260	ND		ug/kg	87.7	--	1	A
Aroclor 1262	ND		ug/kg	43.8	--	1	A
Aroclor 1268	ND		ug/kg	43.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	69		30-150	A
2,4,5,6-Tetrachloro-m-xylene	77		30-150	B
Decachlorobiphenyl	85		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-13  
 Client ID: PHS-2FL-13  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/12/14 12:20  
 Analyst: JW  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/04/14 10:55  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 03/10/14 15:40  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/12/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	103	--	1	A
Aroclor 1221	ND		ug/kg	103	--	1	A
Aroclor 1232	ND		ug/kg	103	--	1	A
Aroclor 1242	1490		ug/kg	103	--	1	A
Aroclor 1248	ND		ug/kg	68.7	--	1	A
Aroclor 1254	616		ug/kg	103	--	1	A
Aroclor 1260	ND		ug/kg	68.7	--	1	A
Aroclor 1262	ND		ug/kg	34.4	--	1	A
Aroclor 1268	ND		ug/kg	34.4	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	87		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	80		30-150	B
Decachlorobiphenyl	86		30-150	B



**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-14 D  
 Client ID: PHS-2FL-14  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/10/14 11:28  
 Analyst: TQ  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/04/14 11:10  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3580A  
 Extraction Date: 03/07/14 16:59  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/10/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/10/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	44800	--	20	A
Aroclor 1221	ND		ug/kg	44800	--	20	A
Aroclor 1232	ND		ug/kg	44800	--	20	A
Aroclor 1242	ND		ug/kg	44800	--	20	A
Aroclor 1248	672000		ug/kg	29800	--	20	B
Aroclor 1254	364000		ug/kg	44800	--	20	B
Aroclor 1260	ND		ug/kg	29800	--	20	A
Aroclor 1262	ND		ug/kg	14900	--	20	A
Aroclor 1268	ND		ug/kg	14900	--	20	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	A
Decachlorobiphenyl	0	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	B
Decachlorobiphenyl	0	Q	30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-15  
 Client ID: PHS-2FL-15  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/12/14 12:34  
 Analyst: JW  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/04/14 11:40  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 03/10/14 15:40  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/12/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	115	--	1	A
Aroclor 1221	ND		ug/kg	115	--	1	A
Aroclor 1232	ND		ug/kg	115	--	1	A
Aroclor 1242	1060		ug/kg	115	--	1	B
Aroclor 1248	ND		ug/kg	76.6	--	1	A
Aroclor 1254	1610		ug/kg	115	--	1	A
Aroclor 1260	ND		ug/kg	76.6	--	1	A
Aroclor 1262	ND		ug/kg	38.3	--	1	A
Aroclor 1268	ND		ug/kg	38.3	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	84		30-150	A
Decachlorobiphenyl	74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	76		30-150	B
Decachlorobiphenyl	97		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

**Lab ID:** L1404700-16  
**Client ID:** PHS-1FL-16C  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Caulk  
**Analytical Method:** 97,8082  
**Analytical Date:** 03/12/14 12:47  
**Analyst:** JW  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 03/04/14 14:05  
**Date Received:** 03/06/14  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 03/10/14 15:40  
**Cleanup Method1:** EPA 3665A  
**Cleanup Date1:** 03/12/14  
**Cleanup Method2:** EPA 3660B  
**Cleanup Date2:** 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	109	--	1	A
Aroclor 1221	ND		ug/kg	109	--	1	A
Aroclor 1232	ND		ug/kg	109	--	1	A
Aroclor 1242	340		ug/kg	109	--	1	A
Aroclor 1248	ND		ug/kg	73.0	--	1	A
Aroclor 1254	444		ug/kg	109	--	1	A
Aroclor 1260	ND		ug/kg	73.0	--	1	A
Aroclor 1262	ND		ug/kg	36.5	--	1	A
Aroclor 1268	ND		ug/kg	36.5	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	68		30-150	B
Decachlorobiphenyl	74		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-17 D  
 Client ID: PHS-1FL-17C  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/12/14 13:00  
 Analyst: JW  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/04/14 14:15  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 03/10/14 15:42  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/12/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	5620	--	50	A
Aroclor 1221	ND		ug/kg	5620	--	50	A
Aroclor 1232	ND		ug/kg	5620	--	50	A
Aroclor 1242	ND		ug/kg	5620	--	50	A
Aroclor 1248	ND		ug/kg	3740	--	50	A
Aroclor 1254	ND		ug/kg	5620	--	50	A
Aroclor 1260	ND		ug/kg	3740	--	50	A
Aroclor 1262	ND		ug/kg	1870	--	50	A
Aroclor 1268	ND		ug/kg	1870	--	50	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	A
Decachlorobiphenyl	0	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	B
Decachlorobiphenyl	0	Q	30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

**Lab ID:** L1404700-18  
**Client ID:** PHS-1FL-18C  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Caulk  
**Analytical Method:** 97,8082  
**Analytical Date:** 03/12/14 13:14  
**Analyst:** JW  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 03/04/14 14:40  
**Date Received:** 03/06/14  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 03/10/14 15:42  
**Cleanup Method1:** EPA 3665A  
**Cleanup Date1:** 03/12/14  
**Cleanup Method2:** EPA 3660B  
**Cleanup Date2:** 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	111	--	1	A
Aroclor 1221	ND		ug/kg	111	--	1	A
Aroclor 1232	ND		ug/kg	111	--	1	A
Aroclor 1242	563		ug/kg	111	--	1	A
Aroclor 1248	ND		ug/kg	73.8	--	1	A
Aroclor 1254	112		ug/kg	111	--	1	B
Aroclor 1260	ND		ug/kg	73.8	--	1	A
Aroclor 1262	ND		ug/kg	36.9	--	1	A
Aroclor 1268	ND		ug/kg	36.9	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	49		30-150	A
Decachlorobiphenyl	43		30-150	A
2,4,5,6-Tetrachloro-m-xylene	49		30-150	B
Decachlorobiphenyl	52		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-19 D  
 Client ID: PHS-1FL-19C  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/10/14 13:27  
 Analyst: TQ  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/04/14 15:05  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3580A  
 Extraction Date: 03/07/14 16:59  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/10/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/10/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	46500	--	20	A
Aroclor 1221	ND		ug/kg	46500	--	20	A
Aroclor 1232	ND		ug/kg	46500	--	20	A
Aroclor 1242	ND		ug/kg	46500	--	20	A
Aroclor 1248	389000		ug/kg	31000	--	20	A
Aroclor 1254	285000		ug/kg	46500	--	20	B
Aroclor 1260	ND		ug/kg	31000	--	20	A
Aroclor 1262	ND		ug/kg	15500	--	20	A
Aroclor 1268	ND		ug/kg	15500	--	20	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	A
Decachlorobiphenyl	0	Q	30-150	A
2,4,5,6-Tetrachloro-m-xylene	0	Q	30-150	B
Decachlorobiphenyl	0	Q	30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-20  
 Client ID: PHS-GR-20  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/12/14 13:27  
 Analyst: JW  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/05/14 09:48  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 03/10/14 15:42  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/12/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	110	--	1	A
Aroclor 1221	ND		ug/kg	110	--	1	A
Aroclor 1232	ND		ug/kg	110	--	1	A
Aroclor 1242	324		ug/kg	110	--	1	B
Aroclor 1248	ND		ug/kg	73.3	--	1	A
Aroclor 1254	ND		ug/kg	110	--	1	B
Aroclor 1260	ND		ug/kg	73.3	--	1	A
Aroclor 1262	ND		ug/kg	36.6	--	1	A
Aroclor 1268	ND		ug/kg	36.6	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	68		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	76		30-150	B



**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

Lab ID: L1404700-21  
 Client ID: PHS-GR-21  
 Sample Location: SOMERVILLE, MA  
 Matrix: Caulk  
 Analytical Method: 97,8082  
 Analytical Date: 03/12/14 13:40  
 Analyst: JW  
 Percent Solids: Results reported on an 'AS RECEIVED' basis.

Date Collected: 03/05/14 09:33  
 Date Received: 03/06/14  
 Field Prep: Not Specified  
 Extraction Method: EPA 3540C  
 Extraction Date: 03/10/14 15:42  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/12/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	682	--	6	A
Aroclor 1221	ND		ug/kg	682	--	6	A
Aroclor 1232	ND		ug/kg	682	--	6	A
Aroclor 1242	ND		ug/kg	682	--	6	A
Aroclor 1248	ND		ug/kg	454	--	6	A
Aroclor 1254	ND		ug/kg	682	--	6	A
Aroclor 1260	ND		ug/kg	454	--	6	A
Aroclor 1262	ND		ug/kg	227	--	6	A
Aroclor 1268	ND		ug/kg	227	--	6	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	109		30-150	A
Decachlorobiphenyl	119		30-150	A
2,4,5,6-Tetrachloro-m-xylene	101		30-150	B
Decachlorobiphenyl	124		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**SAMPLE RESULTS**

**Lab ID:** L1404700-22  
**Client ID:** PHS-GR-22  
**Sample Location:** SOMERVILLE, MA  
**Matrix:** Caulk  
**Analytical Method:** 97,8082  
**Analytical Date:** 03/12/14 13:54  
**Analyst:** JW  
**Percent Solids:** Results reported on an 'AS RECEIVED' basis.

**Date Collected:** 03/05/14 09:55  
**Date Received:** 03/06/14  
**Field Prep:** Not Specified  
**Extraction Method:** EPA 3540C  
**Extraction Date:** 03/10/14 15:42  
**Cleanup Method1:** EPA 3665A  
**Cleanup Date1:** 03/12/14  
**Cleanup Method2:** EPA 3660B  
**Cleanup Date2:** 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
MCP Polychlorinated Biphenyls - Westborough Lab							
Aroclor 1016	ND		ug/kg	144	--	1	A
Aroclor 1221	ND		ug/kg	144	--	1	A
Aroclor 1232	ND		ug/kg	144	--	1	A
Aroclor 1242	ND		ug/kg	144	--	1	A
Aroclor 1248	ND		ug/kg	95.7	--	1	A
Aroclor 1254	ND		ug/kg	144	--	1	A
Aroclor 1260	ND		ug/kg	95.7	--	1	A
Aroclor 1262	ND		ug/kg	47.8	--	1	A
Aroclor 1268	ND		ug/kg	47.8	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		30-150	A
Decachlorobiphenyl	78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	71		30-150	B
Decachlorobiphenyl	83		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082  
 Analytical Date: 03/10/14 10:47  
 Analyst: TQ

Extraction Method: EPA 3580A  
 Extraction Date: 03/07/14 16:59  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/10/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/10/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 02,04,09,14,19 Batch: WG674281-1						
Aroclor 1016	ND		ug/kg	2000	--	A
Aroclor 1221	ND		ug/kg	2000	--	A
Aroclor 1232	ND		ug/kg	2000	--	A
Aroclor 1242	ND		ug/kg	2000	--	A
Aroclor 1248	ND		ug/kg	1330	--	A
Aroclor 1254	ND		ug/kg	2000	--	A
Aroclor 1260	ND		ug/kg	1330	--	A
Aroclor 1262	ND		ug/kg	667	--	A
Aroclor 1268	ND		ug/kg	667	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	99		30-150	A
Decachlorobiphenyl	104		30-150	A
2,4,5,6-Tetrachloro-m-xylene	105		30-150	B
Decachlorobiphenyl	126		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082  
 Analytical Date: 03/12/14 14:07  
 Analyst: JW

Extraction Method: EPA 3540C  
 Extraction Date: 03/10/14 15:40  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/12/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/12/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 01,06-08,10,12-13,15-18,20-22 Batch: WG674583-1						
Aroclor 1016	ND		ug/kg	149	--	A
Aroclor 1221	ND		ug/kg	149	--	A
Aroclor 1232	ND		ug/kg	149	--	A
Aroclor 1242	ND		ug/kg	149	--	A
Aroclor 1248	ND		ug/kg	99.5	--	A
Aroclor 1254	ND		ug/kg	149	--	A
Aroclor 1260	ND		ug/kg	99.5	--	A
Aroclor 1262	ND		ug/kg	49.8	--	A
Aroclor 1268	ND		ug/kg	49.8	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	67		30-150	A
2,4,5,6-Tetrachloro-m-xylene	69		30-150	B
Decachlorobiphenyl	75		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14

### Method Blank Analysis Batch Quality Control

Analytical Method: 97,8082  
 Analytical Date: 03/13/14 10:46  
 Analyst: JW

Extraction Method: EPA 3540C  
 Extraction Date: 03/12/14 14:03  
 Cleanup Method1: EPA 3665A  
 Cleanup Date1: 03/13/14  
 Cleanup Method2: EPA 3660B  
 Cleanup Date2: 03/13/14

Parameter	Result	Qualifier	Units	RL	MDL	Column
MCP Polychlorinated Biphenyls - Westborough Lab for sample(s): 03,05,11 Batch: WG675058-1						
Aroclor 1016	ND		ug/kg	118	--	A
Aroclor 1221	ND		ug/kg	118	--	A
Aroclor 1232	ND		ug/kg	118	--	A
Aroclor 1242	ND		ug/kg	118	--	A
Aroclor 1248	ND		ug/kg	78.4	--	A
Aroclor 1254	ND		ug/kg	118	--	A
Aroclor 1260	ND		ug/kg	78.4	--	A
Aroclor 1262	ND		ug/kg	39.2	--	A
Aroclor 1268	ND		ug/kg	39.2	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		30-150	A
Decachlorobiphenyl	79		30-150	A
2,4,5,6-Tetrachloro-m-xylene	81		30-150	B
Decachlorobiphenyl	96		30-150	B

**Lab Control Sample Analysis****Batch Quality Control****Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>	<b>Column</b>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 02,04,09,14,19 Batch: WG674281-2 WG674281-3									
Aroclor 1016	92		111		40-140	19		30	A
Aroclor 1260	89		105		40-140	16		30	A

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>	<b>Column</b>
2,4,5,6-Tetrachloro-m-xylene	90		102		30-150	A
Decachlorobiphenyl	115		118		30-150	A
2,4,5,6-Tetrachloro-m-xylene	90		102		30-150	B
Decachlorobiphenyl	109		123		30-150	B

# Lab Control Sample Analysis

## Batch Quality Control

**Project Name:** POWDER HOUSE SCHOOL

**Project Number:** Not Specified

**Lab Number:** L1404700

**Report Date:** 03/13/14

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 01,06-08,10,12-13,15-18,20-22 Batch: WG674583-2 WG674583-3									
Aroclor 1016	86		73		40-140	16		30	A
Aroclor 1260	89		75		40-140	17		30	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	93		76		30-150	A
Decachlorobiphenyl	86		74		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		70		30-150	B
Decachlorobiphenyl	94		80		30-150	B



**Lab Control Sample Analysis****Batch Quality Control****Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14

<b>Parameter</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>%Recovery Limits</b>	<b>RPD</b>	<b>Qual</b>	<b>RPD Limits</b>	<b>Column</b>
MCP Polychlorinated Biphenyls - Westborough Lab Associated sample(s): 03,05,11 Batch: WG675058-2 WG675058-3									
Aroclor 1016	73		82		40-140	12		30	A
Aroclor 1260	70		77		40-140	10		30	A

<b>Surrogate</b>	<b>LCS %Recovery</b>	<b>Qual</b>	<b>LCSD %Recovery</b>	<b>Qual</b>	<b>Acceptance Criteria</b>	<b>Column</b>
2,4,5,6-Tetrachloro-m-xylene	84		95		30-150	A
Decachlorobiphenyl	81		87		30-150	A
2,4,5,6-Tetrachloro-m-xylene	87		91		30-150	B
Decachlorobiphenyl	101		105		30-150	B

**Project Name:** POWDER HOUSE SCHOOL**Project Number:** Not Specified**Lab Number:** L1404700**Report Date:** 03/13/14**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Reagent H2O Preserved Vials Frozen on:** NA**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1404700-01A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-02A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-03A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-04A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-05A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-06A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-07A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-08A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-09A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-10A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-11A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-12A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-13A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-14A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-15A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-16A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-17A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-18A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-19A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-20A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-21A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)
L1404700-22A	Amber 250ml unpreserved	A	N/A	2.4	Y	Absent	MCP-8082LL-10-3540C(365)

\*Values in parentheses indicate holding time in days

**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit.
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.

Report Format: Data Usability Report



**Project Name:** POWDER HOUSE SCHOOL**Lab Number:** L1404700**Project Number:** Not Specified**Report Date:** 03/13/14**Data Qualifiers**

- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** POWDER HOUSE SCHOOL  
**Project Number:** Not Specified

**Lab Number:** L1404700  
**Report Date:** 03/13/14

## REFERENCES

- 97 EPA Test Methods (SW-846) with QC Requirements & Performance Standards for the Analysis of EPA SW-846 Methods under the Massachusetts Contingency Plan, WSC-CAM-IIA, IIB, IIIA, IIIB, IIIC, IIID, VA, VB, VC, VIA, VIB, VIIIA and VIIIB, July 2010.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

Last revised December 11, 2013

**The following analytes are not included in our NELAP Scope of Accreditation:**

### **Westborough Facility**

**EPA 524.2:** Acetone, 2-Butanone (Methyl ethyl ketone (MEK)), Tert-butyl alcohol, 2-Hexanone, Tetrahydrofuran, 1,3,5-Trichlorobenzene, 4-Methyl-2-pentanone (MIBK), Carbon disulfide, Diethyl ether.

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene, 4-Ethyltoluene, Iodomethane (methyl iodide), Methyl methacrylate, Azobenzene.

**EPA 8330A/B:** PETN, Picric Acid, Nitroglycerine, 2,6-DANT, 2,4-DANT.

**EPA 8270D:** 1-Methylnaphthalene, Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

**EPA 9071:** Total Petroleum Hydrocarbons, Oil & Grease.

### **Mansfield Facility**

**EPA 8270D:** Biphenyl.

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

**The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:**

### ***Drinking Water***

**EPA 200.8:** Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, Tl; **EPA 200.7:** Ba, Be, Ca, Cd, Cr, Cu, Na; **EPA 245.1:** Mercury;

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO<sub>3</sub>-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

### ***Non-Potable Water***

**EPA 200.8:** Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, Tl, Zn;

**EPA 200.7:** Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, Ti, Tl, V, Zn;

**EPA 245.1, SM4500H-B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH<sub>3</sub>-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO<sub>3</sub>-F, EPA 353.2:** Nitrate-N, **SM4500NH<sub>3</sub>-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

# CHAIN OF CUSTODY

PAGE 1 OF 3

Date Rec'd in Lab: 3/6/14

ALPHA Job #: L1404700

## Project Information

Project Name: Powderhouse School

Project Location: Somerville, MA

Project #:

Project Manager: P Knotts

ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)

Date Due: 3/13/14

## Report Information - Data Deliverables

☒ ADEX ☐ EMAIL

## Billing Information

☐ Same as Client Info PO #:

## Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods  
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)  
☐ Yes ☒ No NPDES RGP  
☒ Other State / Fed Program EPA 40 CFR 761 Criteria 1 PPM

ANALYSIS										SAMPLE-INFO		TOTAL # BOTTLES	
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN	METALS: <input type="checkbox"/> MCP 3 <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	METALS: <input type="checkbox"/> RCP 15 <input type="checkbox"/> RCP 14 <input type="checkbox"/> RCP 13	EPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	PCB: <input type="checkbox"/> PEST	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint						
										Filtration			
										<input type="checkbox"/> Field			
										<input type="checkbox"/> Lab to do			
										Preservation			
										<input type="checkbox"/> Lab to do			
										Sample Comments			

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
04700-01	PHS - U Roof - 01	3/3/14	11:20	Canik	DBB/fik
02	PHS - M Roof - 02		11:40		
03	PHS - M Roof - 03		11:50		
04	PHS - M Roof - 04		12:05		
05	PHS - 3 FL - 05		14:05		
06	PHS - 3 FL - 06		14:50		
07	PHS - 3 FL - 07		15:00		
08	PHS - 3 FL - 08		15:20		
09	PHS - 3 FL - 09		15:35		
10	PHS - 3 FL - 10	3/4/14	8:35		

Container Type  
P= Plastic  
A= Amber glass  
V= Vial  
G= Glass  
B= Bacteria cup  
C= Cube  
O= Other  
E= Encore  
D= BOD Bottle

Preservative  
A= None  
B= HCl  
C= HNO<sub>3</sub>  
D= H<sub>2</sub>SO<sub>4</sub>  
E= NaOH  
F= MeOH  
G= NaHSO<sub>4</sub>  
H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
I= Ascorbic Acid  
J= NH<sub>4</sub>Cl  
K= Zn Acetate  
O= Other

Container Type

Preservative

Relinquished By:

Date/Time

Received By:

Date/Time

P Knotts  
Pete J. Vero

3/6/14  
3:07 PM

Pete J. Vero  
Willa J. McEllen

3/6/14 11:52  
3/6/14 18:14

All samples submitted are subject to Alpha's Terms and Conditions.

See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)





8 Walkup Drive  
Westboro, MA 01581  
Tel: 508-898-9220

320 Forbes Blvd  
Mansfield, MA 02048  
Tel: 508-822-9300

# CHAIN OF CUSTODY

PAGE 2 OF 3

Date Rec'd in Lab:

3/6/14

ALPHA Job #:

L1404700

## Project Information

Project Name: Powderhouse School

Project Location: Somerville, MA

Project #:

Project Manager: Pknotts

ALPHA Quote #:

## Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved)

Date Due:

3/13/14

## Report Information - Data Deliverables

☒ ADEX ☐ EMAIL

## Billing Information

☐ Same as Client info ☐ PO #:

## Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods  
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)  
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)  
☐ Yes ☒ No NPDES RGP  
☒ Other State /Fed Program EPA 40 CFR 761 Criteria 1 PPM

## Client Information

Client: Axiom Partners Inc.

Address: 545 Salem St  
Wakefield, MA 01880

Phone: 781-213-9198

Email: pknotts@axiomenv.com

Additional Project Information:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler Initials
		Date	Time		
01700-11	PHS - 2FL - 11	3/4/14	1025	Canik	DBB/RLK
12	PHS - 2FL - 12		1040		
13	PHS - 2FL - 13		1055		
14	PHS - 2FL - 14		1110		
15	PHS - 2FL - 15		1140		
16	PHS - 1FL - 16C		1405		
17	PHS - 1FL - 17C		1415		
18	PHS - 1FL - 18C		1440		
19	PHS - 1FL - 19C		1505		
20	PHS - GR - 20	3/5/14	948		

## Container Type

P= Plastic  
 A= Amber glass  
 V= Vial  
 G= Glass  
 B= Bacteria cup  
 C= Cube  
 O= Other  
 E= Encore  
 D= BOD Bottle

## Preservative

A= None  
 B= HCl  
 C= HNO<sub>3</sub>  
 D= H<sub>2</sub>SO<sub>4</sub>  
 E= NaOH  
 F= MeOH  
 G= NaHSO<sub>4</sub>  
 H= Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
 I= Ascorbic Acid  
 J= NH<sub>4</sub>Cl  
 K= Zn Acetate  
 O= Other

## Container Type

## Preservative

Relinquished By:

Pknotts  
Pete J. Vane

Date/Time

3/6/14  
2-6-14 18:14

Received By:

Pete J. Vane  
Walter McLeod

Date/Time

3-6-14 11:52  
3/6/14 12:14

All samples submitted are subject to Alpha's Terms and Conditions

See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

ANALYSIS										SAMPLE INFO		TOTAL # BOTTLES
VOC: <input type="checkbox"/> 8260 <input type="checkbox"/> 824 <input type="checkbox"/> 524.2	SVOC: <input type="checkbox"/> ABN	METALS: <input type="checkbox"/> MCP 13 <input type="checkbox"/> PAH	METALS: <input type="checkbox"/> MCP 14 <input type="checkbox"/> RCP 15	EPH: <input type="checkbox"/> RCRA 8 <input type="checkbox"/> RCRA 6	VPH: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	PCB: <input type="checkbox"/> Ranges & Targets <input type="checkbox"/> Ranges Only	TPH: <input type="checkbox"/> Quant Only <input type="checkbox"/> Fingerprint			Filtration		
										<input type="checkbox"/> Field		
										<input type="checkbox"/> Lab to do		
										Preservation		
										<input type="checkbox"/> Lab to do		
										Sample Comments		

Soxhlet extr.

