

PILOT STUDY TEST RESULTS 2010

In January, 2010, New York City entered into a consent agreement with the U.S. Environmental Protection Agency (EPA) to conduct a pilot study of five New York City school buildings. The goals of this pilot study are to measure the amount of polychlorinated biphenyls (PCBs) in the air, dust, and soil, and to determine the most effective ways to reduce potential exposures.

As way of background, beginning in 1950, building materials containing PCBs were legally used to construct and renovate buildings, including schools, across the U.S. and in New York City. The EPA banned the use of PCBs in the late 1970s. However, buildings constructed during this time period may still contain materials that were made with PCBs. This pilot study focuses on a specific building material: PCB containing caulk. Both EPA and the City want to learn more about whether this PCB caulk can lead to high levels of PCBs in the indoor air, dust, and soil and, if so, how to prevent that from occurring.

The New York City School Construction Authority (SCA) with the New York City Department of Education (DOE) implemented the pilot study in three (3) of the schools this summer: PS 309K/Excellence Charter, PS 199M, and PS 178. As part of the work plan, the SCA conducted an initial inspection and baseline sampling of PCBs in air, dust, and soil. The remediations specified in the pilot study for managing PCB Caulk in each of the schools were performed in the pilot study classrooms and other areas. For a detailed description of the remedial work plans in these schools, see RIWP Fact Sheet Final 6/16/2010 on this website.

Air Tests

At least three (3) rounds of air tests were performed at each school. A representative number of classrooms and other school areas, such as gyms, cafeterias and hallways, were tested in each school. A summary of the results is shown in the chart below and full laboratory results are provided, as they become available, in the link at the bottom of the chart. The test results represent the PCB air levels in the areas tested on the date and under the conditions reported in the chart.

The air tests performed at the schools included the following:

- Pre-remediation air tests. For these tests, all the windows were closed. The results of these tests showed elevated PCBs in air in all three (3) schools.
- Post-remediation air tests. Using the same conditions in the rooms, air tests were repeated after the remediation work was completed and results generally showed a decrease in air levels, but some levels were still above the EPA guidance.
- Post-ventilation. The schools were completely ventilated and another round of air tests was taken with windows open. Results of these air tests showed some additional improvement in air levels.
- Post-lighting fixture removal. After the first round of air tests showed elevated PCBs in air in spaces without PCB-containing caulk, SCA further investigated

PCB sources and identified some evidence of leaking PCB-containing ballasts in the lighting fixtures. Lighting fixtures are being replaced in the schools and air tests will be taken after this work is completed. These test results are pending.

The chart below contains air sample results from the three (3) rounds of testing conducted so far. However, only the results from the baseline round are based upon final, confirmed data. The results from post-remediation air sampling are preliminary and final data will be posted when received from the laboratory. It is important to review all of the test results from each school over time. In most cases, conditions in the schools have improved since remediation has been completed and the schools have been ventilated. There are still some areas that exceed guidance levels and the SCA continues to take actions to reduce these levels. The chart will be updated as soon as final, confirmed data for the remaining rounds of air tests are available.

As explained above, the SCA is replacing all of the light fixtures in the three (3) pilot schools. Old fluorescent lighting with PCB-containing ballasts may become a source of PCBs in the environment if not replaced before leaks occur. Additional air tests will be conducted at the completion of this work and the results posted in the chart.

EPA Guidance Levels

EPA has set guidance level for PCBs in air of 300 nanograms/cubic meter of air for elementary schools. Air levels in PreK/K areas are targeted at 100 nanograms/cubic meter of air. These are very low levels. A nanogram is one billionth of a gram. Short term exposures above the guidance level would not indicate the likelihood of an adverse effect. If PCBs are found above the guidance level, the number one priority is to reduce exposures as quickly as possible.

Dust Tests

The SCA took 74 baseline dust samples in the three schools, all of which were below guidance levels. This EPA guidance level is 10 micrograms per 100 square centimeters.

Soil Tests

Soil tests indicated certain areas at the three schools with PCB concentrations generally ranging from less than 0.5 to 19.4 parts per million (ppm) with one isolated sample at PS 309 at 211 ppm. The EPA guidance level for soil is 1 ppm. The SCA is currently developing remedial work plans to remove impacted soils that will be implemented upon approval by the appropriate regulatory authorities. Pending remediation, the SCA will isolate these areas with a geotextile fabric and covering material as approved by EPA.

General information about PCBs and their known health effects can be found at www.nyc.gov/html/doh and www.epa.gov.

Preliminary Air Sample Data - July and August 2010

PS 309K

Brooklyn, NY

	Event	# Areas Sampled	Sample Collection Date	Daily Average Temp (°F)	Sampling Conditions	Mean (ng/m3)	Minimum (ng/m3)	Maximum (ng/m3)	% Areas Under Guidance Criteria
Classrooms	Pre-Remediation Round 1	6	7/13/10 7/14/10	77.0 85.7	Windows and doors closed, window A/C off, Exhaust Ventilation on	1402	838	2950	0
	Pre-Remediation Round 2	6	07/24/10	83.2	Windows and doors closed, window A/C off, Exhaust Ventilation on	1609	350	4957	0
	Post-Remediation	6	08/01/10	82.4	Windows and doors closed, window A/C off, Exhaust Ventilation on	807	296	1815	0
	Post-Ventilation	6	08/04/10	84.0	Doors closed, window A/C off, Windows open, Exhaust Ventilation on	142	54	212	100
	Post-Light Fixture Replacement	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Common Spaces	Pre-Remediation Round 1	8	07/13/10	77.0	Windows and doors closed, window A/C off, Exhaust Ventilation on	341	236	511	62.5
Gyms, Halls, Stairways, Art Rooms, Cafeterias, etc.	Pre-Remediation Round 2	5	07/24/10	83.2	Windows and doors closed, window A/C off, Exhaust Ventilation on	754	396	1246	0
	Post-Remediation	8	08/01/10	82.4	Windows and doors closed, window A/C off, Exhaust Ventilation on	370	165	1021	62.5
	Post-Ventilation	8	08/04/10	84.0	Doors closed, window A/C off, Windows open, Exhaust Ventilation on	174	53	227	100
	Post-Light Fixture Replacement	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

- Notes:
- EPA Guidance values for the schools are 300 ng/m3 for children 6-12 years old and 100 ng/m3 for children 3-6 years old in kindergarten and pre-kindergarten classrooms (<http://www.epa.gov/pcbsincaulk/maxconcentrations.pdf>)
 - Ambient air samples collected in each round indicated that PCBs were not detected (reporting limit approximately 50 ng/m3).
 - ng/m3 - nanograms per cubic meter.
 - The air samples were collected following US EPA Method TO-10A.
 - TBD - To be determined.
 - The data presented have not been validated and are subject to change.

Preliminary Air Sample Data - July and August 2010

PS 199M

New York, NY

	Event	# Areas Sampled	Sample Collection Date	Daily Average Temp (°F)	Sampling Conditions	Mean (ng/m3)	Minimum (ng/m3)	Maximum (ng/m3)	% Areas Under Guidance Criteria
Classrooms	Pre-Remediation	8	07/17/10	83	Windows and doors closed, window A/C off, Exhaust Ventilation on	842	414	1460	0
	Post-Remediation	8	08/07/10	80	Windows and doors closed, window A/C off, Exhaust Ventilation on	548	321	729	0
	Post-Ventilation	8	08/11/10	82.3	Doors closed, window A/C off, Windows open, Exhaust Ventilation on	450	293	624	12.5
	Post-Light Fixture Replacement	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Common Spaces	Pre-Remediation	4	07/17/10	83	Windows and doors closed, window A/C off, Exhaust Ventilation on	832	551	1362	0
	Post-Remediation	4	08/07/10	80	Windows and doors closed, window A/C off, Exhaust Ventilation on	494	244	929	25
	Post-Ventilation	4	08/11/10	82.3	Doors closed, window A/C off, Windows open, Exhaust Ventilation on	398	272	536	25
	Post-Light Fixture Replacement	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

- Notes:
- EPA Guidance values for the schools are 300 ng/m3 for children 6-12 years old and 100 ng/m3 for children 3-6 years old in kindergarten and pre-kindergarten classrooms (<http://www.epa.gov/pcbsincaulk/maxconcentrations.pdf>)
 - Ambient air samples collected in each round indicated that PCBs were not detected (reporting limit approximately 50 ng/m3).
 - ng/m3 - nanograms per cubic meter.
 - The air samples were collected following US EPA Method TO-10A.
 - TBD - To be determined.
 - The data presented have not been validated and are subject to change.

Preliminary Air Sample Data - July and August 2010

PS 178X

Bronx, NY

	Event	# Areas Sampled	Sample Collection Date	Daily Average Temp (°F)	Sampling Conditions	Mean (ng/m3)	Minimum (ng/m3)	Maximum (ng/m3)	% Areas Under Guidance Criteria
Classrooms (Pre-K and K only)	Pre-Remediation	4	07/15/10	74	Windows and doors closed, HVAC on	118	58	195	50
	Post-Remediation	4	07/28/10	79.6	Windows and doors closed, HVAC on	205	146	328	0
Classrooms (1st grade and higher)	Pre-Remediation	5	07/15/10	74	Windows and doors closed, HVAC on	78	49	129	100
	Post-Remediation	5	07/28/10	79.6	Windows and doors closed, HVAC on	148	60	285	100
Common Spaces	Pre-Remediation	2	07/15/10	74	Windows and doors closed, HVAC on	NA	48	49	100
Lobby and Cafeteria	Post-Remediation	2	07/28/10	79.6	Windows and doors closed, HVAC on	NA	50	69	100

1. EPA Guidance values for the schools are 300 ng/m3 for children 6-12 years old and 100 ng/m3 for children 3-6 years old in kindergarten and pre-kindergarten classrooms (<http://www.epa.gov/pcbsincaulk/maxconcentrations.pdf>)
2. Ambient air samples collected in each round indicated that PCBs were not detected (reporting limit approximately 50 ng/m3).
3. ng/m3 - nanograms per cubic meter.
4. The air samples were collected following US EPA Method TO-10A.
5. TBD - To be determined.
6. The data presented have not been validated and are subject to change.
7. NA - Not applicable
8. All kindergarten and pre-kindergarten classrooms were ventilated and re-tested, since they were the only areas with air values elevated above guidance values (See next chart).

Preliminary Air Sample Data - July and August 2010

PS 178X Prekindergarten and Kindergarten

Bronx, NY

	Event	# Areas Sampled	Sample Collection Date	Daily Average Temp (°F)	Sampling Conditions	Mean (ng/m3)	Minimum (ng/m3)	Maximum (ng/m3)	% Areas Under Guidance Criteria
Kindergarten and Prekindergarten Classrooms Only	Post-Ventilation	15	08/09/10	75.1	Windows and doors closed, HVAC on	123	49	384	27
	Post-Light Fixture Replacement	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

- Notes:
1. EPA Guidance values for the schools are 300 ng/m3 for children 6-12 years old and 100 ng/m3 for children 3-6 years old in kindergarten and pre-kindergarten classrooms (<http://www.epa.gov/pcbsincaulk/maxconcentrations.pdf>)
 2. Ambient air samples collected in each round indicated that PCBs were not detected (reporting limit approximately 50 ng/m3).
 3. ng/m3 - nanograms per cubic meter.
 4. The air samples were collected following US EPA Method TO-10A.
 5. TBD - To be determined.
 6. The data presented have not been validated and are subject to change.
 7. NA - Not applicable.
 8. All kindergarten and pre-kindergarten classrooms were ventilated and re-tested, since they were the only areas with air values elevated above guidance values

For TRC's Pre-Remediation Baseline Air Sampling Report [click here](#)