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January 7, 2002

Mr. Bernard P. Orlan
 Director, Environmental Health & Safety
 New York City Board of Education
 28-11 Queens Plaza North
 Long Island City, NY 11101-4008

**Re: Wipe Samples for Dioxin
 Stuyvesant High School
 345 Chambers Street
 New York, New York
 ATC Project No. 15-19125-0246**

Dear Mr. Orlan:

ATC Associates Inc. (ATC) is pleased to provide this report of the results of the wipe-samples for polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs) collected on December 13, 2001, at the referenced location. The New York City Board of Education (BOE) requested these samples to evaluate possible contamination in the school building per the recommendation of H. A. Bader, consultant to the parents association..

SCOPE OF WORK

Wagdi Abdelshahid, Industrial Hygienist of ATC's New York City office, collected the samples on all three days.

The samples were collected using gauze pads and hexane as a solvent. The pads and solvent were provided and samples were analyzed by Pace Analytical Services, Inc. (Pace) of Minneapolis, MN, a laboratory experienced in dioxin analysis. The analysis was performed by modified EPA Method 8290 using combined capillary column gas chromatography/high resolution mass spectrometry.

ATC's findings and conclusions are based on the laboratory samples results and the conditions present in the school at the time of the assessment.

The sampling was performed consistent with generally accepted industrial hygiene practices. There were inherent limitations created by constraints of time, operational and work practice variability, variations in contaminant concentrations, and sampling and analytical accuracy. The results of the sampling represent conditions found on the dates the samples were collected.

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SUBSTANCE DESCRIPTION

"Dioxins" or "dioxin" is a name used for a group of chlorinated multi-ringed organic compounds that includes polychlorinated dibenzo dioxins (PCDDs) and polychlorinated dibenzo furans (PCDFs). They are related to polychlorinated biphenyls (PCBs). PCDDs and PCDFs are not produced commercially except for research purposes. They occur as trace level by-products of combustion and industrial chemical processes. Combustion of PCB-containing oils, such as during an electrical transformer fire, is known to produce dioxins. Burning of some plastics may also produce dioxins. Dioxins are toxic and are considered to be carcinogenic.

The New York State Department of Environmental Conservation (NYSDEC) has set 0.0006 parts per million (ppm) as the allowable concentration of dioxin in soil. The Environmental Protection Agency has a residential clean-up goal for dioxins of 1 part per billion (ppb). The Occupational Safety and Health Administration (OSHA) has not established a Permissible Exposure Limit (PEL) for dioxin on surfaces.

WIPE SAMPLING RESULTS

ATC submitted three wipe samples for PCDDs/PCDFs (plus one blank) to Pace for analysis. A copy of the laboratory report is provided in Attachment 1. Samples were taken from areas specified by the parents association consultant. The sample area for each sample was 1 square meter (1m²). The areas sampled were:

- 1st floor main entrance wall;
- 2nd floor bridge entrance wall;
- Mixed air plenum- AC #1

Each sample was analyzed for sixteen (16) PCDD/PCDF isomers. The results for each isomer were then converted to 2, 3, 7, 8 -tetrachloro-dibenzo-p-dioxin (2, 3, 7, 8-TCDD) equivalents by multiplying by an established equivalency factor (See Attachment). This provides a single value (in nanograms) for the analytical results for each sample. A copy of the complete laboratory report is attached. The results of the samples are shown in the following table.

**DIOXIN WIPE SAMPLE RESULTS
(2, 3, 7, 8 TCDD EQUIVALENTS)**

LOCATION	DIOXIN CONCENTRATION
1 ST FLOOR - HALLWAY	0.0022 ng/m ²
2 ND FLOOR - HALLWAY	0.00032 ng/m ²
MIXED AIR PLENUM - AC#1	0.0078 ng/m ²
FIELD BLANK	0.00 ng/sample

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DISCUSSION

The concentrations on indoor surfaces were 0.0022 and 0.00032 nanograms per square meter (ng/m^2). The concentration in the mixed air plenum was $0.0078 \text{ ng}/\text{m}^2$. No standard has been established for dioxin on indoor surfaces. The NYSDEC acceptable soil concentration is 0.0006 parts per million (ppm) or 0.6 ppb. The EPA residential clean-up goal is 1 ppb. The levels found in these samples appear to be below these levels.

It is not possible to determine when the 2, 3, 7, 8 - TCDD equivalents detected in these samples were deposited. Dioxin samples were not collected from these locations prior to November 8th.

It is our pleasure to provide these indoor environmental services to the NYC Board of Education. If you have any questions about this report, please call (212) 353-8280, extension 212.

Sincerely,
ATC ASSOCIATES INC.



James R. Cohn, CIH, CSP
Regional Manager
Industrial Hygiene Division

Attachment