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January 7, 2002

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

Re: Air Sampling for Dioxins
P.S. 234M
ATC Project No. 15-19125-0279

Dear Mr. Orlan:

ATC Associates, Inc. (ATC) is pleased to provide this letter report of the results of air sampling for polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzofurans (PCDFs) conducted on December 12, 2001, at the referenced school. The New York City Board of Education (BOE) requested this sampling at the recommendation of Environ Corp., a consultant retained by the parents association.

SCOPE OF WORK

ATC collected eight (8) samples for dioxins at specified locations. Samples were collected for twenty-four (24) hours using polyurethane foam (PUF) cartridges and General Metal Works samplers. Total sample volumes were 430 to 617 cubic meters of air (m³). Pumps were calibrated using vendor-provided software and a laptop computer. Four (4) samples were collected inside the building and four (4) were collected outdoors. The PUFs were provided and analyzed by Pace Analytical Services, Inc., (Pace) of Minneapolis, MN, a laboratory experienced in dioxin analysis. The analysis was performed by Method TO-9 with modifications from EPA Method 23 using combined capillary column gas chromatography/high resolution mass spectrometry. A copy of the complete laboratory report is attached.

The sampling locations were specified by the parents association consultant. They were as follows: Cafeteria, Room 118, 2nd floor hallway, Room 315, Outdoors by main entrance, Outdoors in front courtyard, Outdoors in back playground, Roof by the air intake.

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.

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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 Environmental Protection Agency (EPA) has a screening level for dioxins in air of 0.16 nanograms per cubic meter (0.16 ng/m^3). A nanogram is a thousandth of a microgram (1×10^{-9} gram). The EPA screening level is based on continuous exposure for one year. The Occupational Safety and Health Administration (OSHA) has not established a Permissible Exposure Limit (PEL) for dioxins in air.

RESULTS

Each sample was analyzed for seventeen (17) 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 for the analytical results for each sample.

The results for both days are summarized in the table. A picogram is one one-thousandth of a nanogram (10^{-12} gram).

AIRBORNE DIOXIN LEVELS (2, 3, 7, 8 TCDD EQUIVALENTS)

LOCATION	DIOXIN LEVEL Picograms per cubic meter of air (pg/m ³)
Room 118	0.0018
2 nd Floor Hallway	0.0024
Cafeteria	0.0035
Room 315	0.0013
Outdoors Front Entrance	0.0014
Outdoors Roof	0.0022
Outdoors Back Playground	0.0019
Outdoors North Courtyard	0.0017
Lab Blank	0.000081

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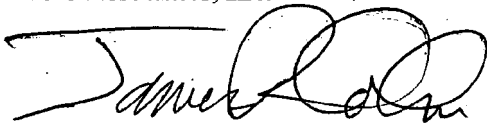
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The indoor dioxin concentration range was 0.0013 to 0.0035 pg/m^3 (0.0000013 to 0.0000035 ng/m^3). The outdoor concentration range was 0.0014 to 0.0022 pg/m^3 (0.0000014 to 0.0000022 ng/m^3). *All concentrations were below the EPA screening level of 0.16 ng/m^3 .*

ATC appreciates the opportunity to provide this indoor air quality service to the BOE. Please call me at (212) 353-8280 extension 212 if you have any questions.

Sincerely,
ATC Associates, Inc.



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

Attachment