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January 9, 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 Metals**
P.S. 234M
ATC Project No. 15-19125-0279

Dear Mr. Orlan:

ATC Associates, Inc. (ATC) is pleased to provide this letter report of air sampling for metals in airborne dust on December 11, 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.

ATC collected eight (8) samples for metals at specified locations. Samples were collected for a minimum of ten (10) hours using 37 mm mixed cellulose ester filters connected to battery-powered sampling pumps at a flow rate of 2 liters per minute. Pumps were calibrated before and after each sampling period. Four (4) samples were collected inside the building and four (4) were collected outdoors. One blank sample was also submitted. The samples were sent to PSC Analytical Services, Inc., an American Industrial Hygiene Association-accredited laboratory in Reading, PA. Analysis was performed by NIOSH Methods 7300M. Each sample was analyzed for a panel of eleven (11) metals. The metals were aluminum (Al), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), iron (Fe), magnesium (Mg), manganese (Mn), molybdenum (Mo), nickel (Ni) and zinc (Zn). Copies of the analytical reports are 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.

The established regulatory values for metals are intended for industrial workplace exposures and are not generally applicable to office/school settings. *There are no standards for these metals in indoor air in non-industrial situations.*

AIR SAMPLE RESULTS

The metals that were found above the limits of detection were chromium and copper. The other nine metals were not detected. Table 1 lists the metals that were detected and their respective concentration ranges.

Mr. Bernard P. Orlan
Air Sampling for Metals
P.S. 234 (Manhattan)

January 9, 2002
Page 2
ATC Project No. 15-19125-0279

TABLE 1
DETECTED METAL CONCENTRATIONS (ug/m³ *)

Metal	Indoors	Outdoors
Chromium	0.180	0.198 - 0.207
Copper	0.185 - 0.951	0.233

* - micrograms per cubic meter of air

Copper was found in all four indoor samples and one outdoor sample. Chromium was found in one indoor and two outdoor samples. Only one indoor sample (M2, Room 118) and one outdoor sample (M5, Main entrance) contained both metals. Two outdoor samples, from the courtyard and the playground, were indistinguishable from the blank.

The Environmental Protection Agency (EPA) has set a screening level for hexavalent chromium in air of 0.6 ug/m³, this assumes a continuous exposure for one year. The samples here were analyzed for total chromium (trivalent and hexavalent). The concentrations are well below the EPA level. The EPA has no published screening level or guideline for copper.

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