



Weston Solutions, Inc.
Suites I and J
6779 Engle Road
Middleburg Heights, Ohio 44130

April 25, 2007

Mr. Brian Kelly
On-Scene Coordinator
United States Environmental Protection Agency Region V
9311 Groh Road
Detroit, MI 48138

Re: Beloit Elementary School Emergency Response
Beloit, Mahoning County, Ohio
TDD: S05-0703-0016
DCN: 168-2A-AAOP
WO#: 20405.012.001.0168.00

Dear Mr. Kelly:

The United States Environmental Protection Agency (U.S. EPA) tasked the Weston Solutions, Inc., (WESTON®) Superfund Technical Assessment and Response Team (START) under Technical Direction Document (TDD) S05-0703-0016 to support U.S. EPA's emergency response at the Beloit Elementary School, located at 14409 Beloit-Snodes Road, Beloit, Mahoning County, Ohio (the Site). U.S. EPA actions were part of the State of Ohio response, which investigated an unknown rash that 45 elementary children developed in Rooms 203, 204, the gymnasium, and the music room.

SITE DESCRIPTION

The Site (Meridian coordinates 40.91031 north and -80.99406 west) is located in a residential and agricultural area of Beloit, Mahoning County, Ohio (Attachment A, Figure 1). The one-story elementary school consists of an office, 16 classrooms, a cafeteria, a media room, a gymnasium, an art room, a music room, and several other support rooms. The Beloit Elementary School building is three years old and 250 students from kindergarten to fifth grade attend the school. The Site is connected to the Beloit Middle School and the two facilities share several common halls. The Site is bordered to the north, south, and east by residential and agricultural properties and to the west by Beloit-Snodes Road.

BACKGROUND

On March 15, 2007, at 9:45 AM, approximately 31 fourth-grade children and a teacher reported developing a rash on portions of their arms, neck, face, and chest. The rash first appeared on students and a teacher in Room 204. As students went to the bathrooms, music, and gym classes, the rash appeared on additional students in Rooms 203, the gym, and the music room. A school nurse treating the affected students also developed the rash. Doctors at Alliance Community Hospital who treated the students determined the rash to be a non-contagious contact dermatitis.

Local hazardous materials and county health workers conducted air monitoring with several multigas meters and did not find levels that deviated from background for volatile organic compounds, oxygen, or combustible atmospheres. Ohio Environmental Protection Agency (Ohio EPA) On-Scene Coordinator (OSC) Kurt Kollar monitored the classrooms with a Lumex mercury vapor analyzer and did not find any detectable levels of mercury vapor. Mahoning County health officials and school officials closed the Site the following day, March 16, 2007, to allow custodians to disinfect surfaces with hospital-grade disinfectants. On March 19, 2007, school resumed and an additional 12 to 15 students developed the rash. In response, the Site was closed again from March 20 through 22, 2007.

EMERGENCY RESPONSE ACTIVITIES

Current Activities

On March 19, 2007, Ohio EPA OSC Kollar requested U.S. EPA assistance at the Site. U.S. EPA OSC Brian Kelly organized a conference call between state and local officials, federal health agencies including the Agency for Toxic Substance and Disease Registry (ATSDR) and the Center for Disease Control and Prevention (CDC), and U.S. EPA's Environmental Response Team. On March 20, Ohio EPA requested U.S. EPA assistance in conducting environmental air and wipe sampling at the Site. U.S. EPA tasked WESTON START to conduct this sampling. On March 21, 2007, START collected air samples for metals, pesticides, fibers, and volatile organics analysis. WESTON START equipment and supplies were staged in Room 605, which is located in the middle-school portion of the Site. This room, as well as Room 603, was considered to be "clean" as no students in either room developed the rash. Personal sampling pumps were set up to collect air samples with mixed cellulose ester (MCE) filter cassettes for metals analysis (National Institute for Occupational Safety and Health [NIOSH] method 7300) in Room 204, where the rash first appeared, and in Room 603 (Attachment A, Figure 2). Personal sampling pumps were also set up in Rooms 204, 603, and the music room to collect air samples for pesticide analysis with glass fiber filter cassettes (U.S. EPA method 8081a) and polyurethane filters (U.S. EPA method TO-15). Grab air samples for volatile organics analysis (U.S. EPA method TO-10A) were collected with SUMMA canisters in Rooms 204, 603, the music room, the gym, and outside of the gym at the northwestern corner of the building. Wipe samples for pesticide analysis (U.S. EPA method 8081a) were collected from Rooms 204, 603, and the music room. In each room, three wipe samples were collected one from the teacher's desk, one from a tiled corner of the room, and one from the cold air return grate utilizing a gauze wipe and hexane wetting solution. Microvacuum samples were collected from the carpeted floors in Room 204 and the music room, and from the tiled floor in Room 603 for pesticide analysis (NIOSH method 8081a) and fibers analysis. Microvacuum samples for pesticides and fiber analysis were collected utilizing the method outlined in the American Society for Testing and Materials method D7144-05a and MCE microvacuum filter cassettes. Following completion of site activities, START demobilized from the Site at 6:30 PM. All samples were sent to RTI Laboratories, Inc., located in Livonia, Michigan, for analysis. The following table lists what samples were collected.

Samples Collected Beloit Elementary School Beloit, Mahoning County, Ohio March 21, 2007							
Analytical Parameters	VOCs	Metals	Organochlorine Pesticides			Fibers	
Methods	U.S. EPA TO-15	NIOSH 7300	U.S. EPA 8081a			U.S. EPA TO-10a	Microscopy
Media	SUMMA Canister	MCE Cassette	Wipes	Quartz Filter Cassette	Microvacuum MCE Cassette	PUF Tube	Microvacuum MCE Cassette
Matrix	Air	Air	Surface	Air	Carpet/floor	Air	Carpet/floor
Sampling Locations							
Elementary School Room 204	1	1	3	1	1	1	1
Elementary School Gymnasium	1	0	0	0	0	0	0
Elementary School Music Room	1	0	3	1	1	1	1
Middle School Room 603	1	1	3	1	1	1	1
Outside	1	0	0	0	0	0	0
Media Blank	0	1	1	1	1	1	1

Key:
MCE – Mixed Cellulose Ester
NIOSH – National Institute of Occupational, Safety & Health
PUF – Polyurethane Foam
U.S. EPA – U.S. Environmental Protection Agency
VOC – Volatile Organic Compound

ANALYTICAL RESULTS

Pesticide analytical results (U.S. EPA 8081a and U.S. EPA TO-10a) for all the samples were below the detection limits. No identifiable fiber structures were identified by microscopy analysis in all of the microvacuum samples. Results from the air samples collected for volatile organic compounds in Rooms 204 and 206, the gym, the music room, and outside of the school had concentrations of dichlorodifluoromethane, 2-propanol, chloromethane, acetone, methylene chloride, ethanol, heptane, n-hexane, and toluene below the Occupational Health and Safety Administration (OSHA) Permissible Exposure Limits (PEL) and NIOSH Recommended Exposure Limits (REL) for these compounds. The results from air samples collected from Rooms 204 and 603 for metal analysis had concentrations of aluminum, barium, cadmium, calcium, chromium, copper, lead, magnesium, manganese, potassium, selenium, sodium, and zinc below the OSHA PELs and NIOSH RELs. In addition, concentrations of cobalt, iron, silver, and thallium were also identified in air samples collected from Room 603 at concentrations below the NIOSH REL and OSHA PEL. Concentrations of nickel in the air samples collected from Room 204 were at concentrations below the NIOSH PEL and OSHA PEL. Concentrations of beryllium were identified above the NIOSH REL of 0.5 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in the air samples collected from Rooms 204 and 603 at concentrations of $0.53 \mu\text{g}/\text{m}^3$ and $0.88 \mu\text{g}/\text{m}^3$, respectively. In addition, concentrations of nickel ($230 \mu\text{g}/\text{m}^3$) in the air sample collected from Room 603 exceeded the OSHA PEL of $15 \mu\text{g}/\text{m}^3$.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of sampling conducted for this emergency response, WESTON START identified no threat to human health, welfare and the environment due to the presence of pesticides, mercury, volatile organic compounds, or fibers at the Site. According to U.S. EPA OSC Kelly, sampling results were reviewed by ATSDR and Ohio Department of Health. Results and recommendations of the overall State and Local investigation are not included in this report.

Mr. Brian Kelly
U.S. EPA

Beloit Elementary School Emergency Response
April 23, 2007

The preparation of this letter report serves as the final TDD deliverable, per the request of U.S. EPA OSC Kelly. All tasks pertaining to this TDD have been completed. If there are any questions or comments regarding this report, please do not hesitate to contact WESTON at 440-202-2805.

Very truly yours,

Weston Solutions, Inc.



Anne A. Busher
START Site Leader

Attachment:

- A- Figure 1
- B- Figure 2
- C- Photo Log
- D- Analytical Data

cc: Gail Stanuch, U.S. EPA Project Officer
Frank Beodray, WESTON Project Manager
START DCN File

Attachment A

Figure 1

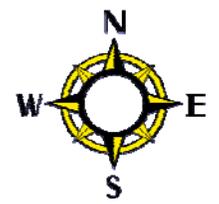
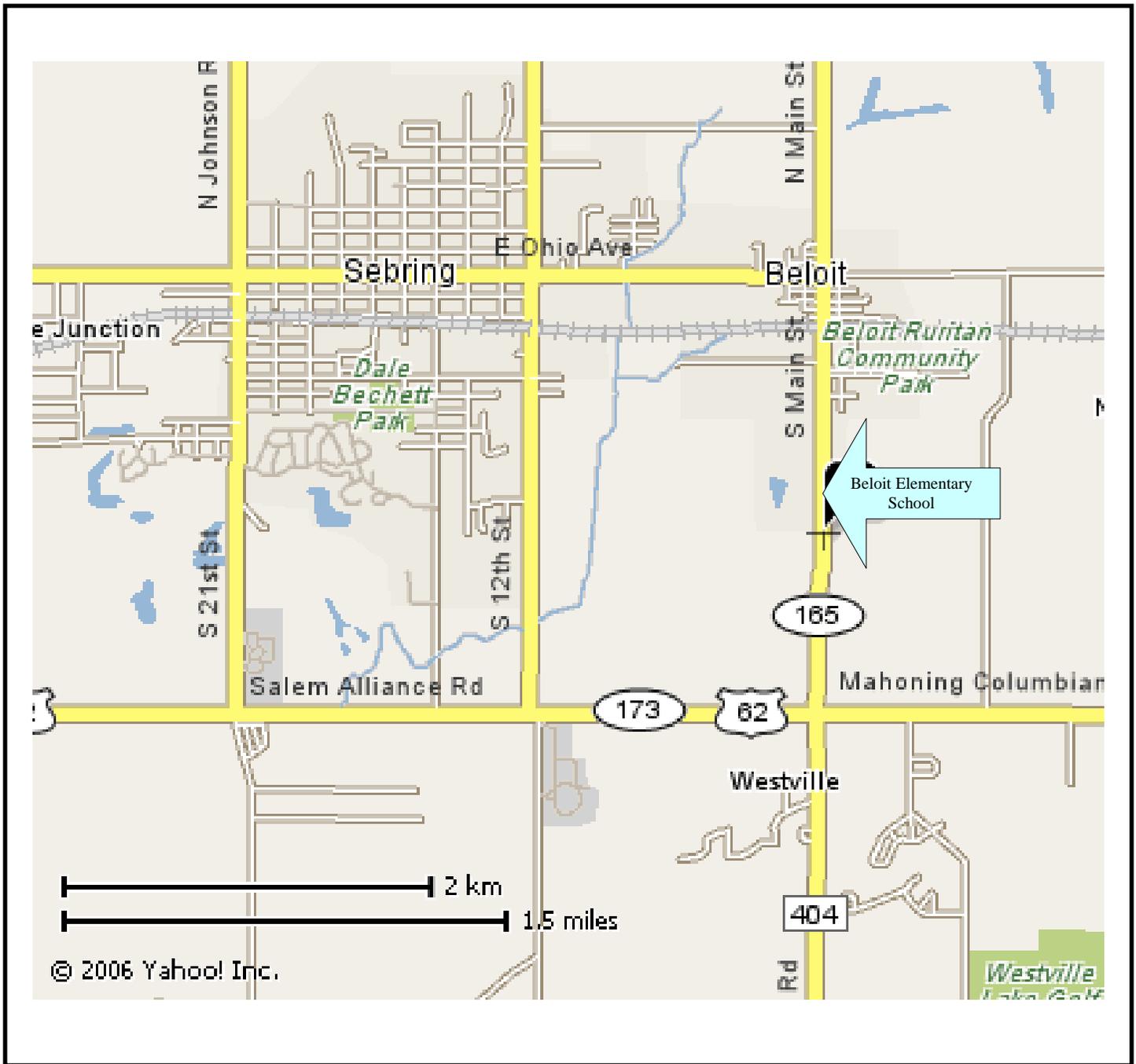


Figure 1

Prepared for:
U.S. EPA. REGION V
 Contract No: EP-S5-06-04
 TDD No.: S05-0703-0016
 DCN: 168-2A-AAOP

WESTON
 Prepared by:
WESTON SOLUTIONS, INC.
 6779 Engle Road, Suites I & J
 Middleburg Heights, OH

Beloit Elementary School
 Beloit, Mahoning County, Ohio
 March 21, 2007
 Scale: See scale on map

Attachment B

Figure 2

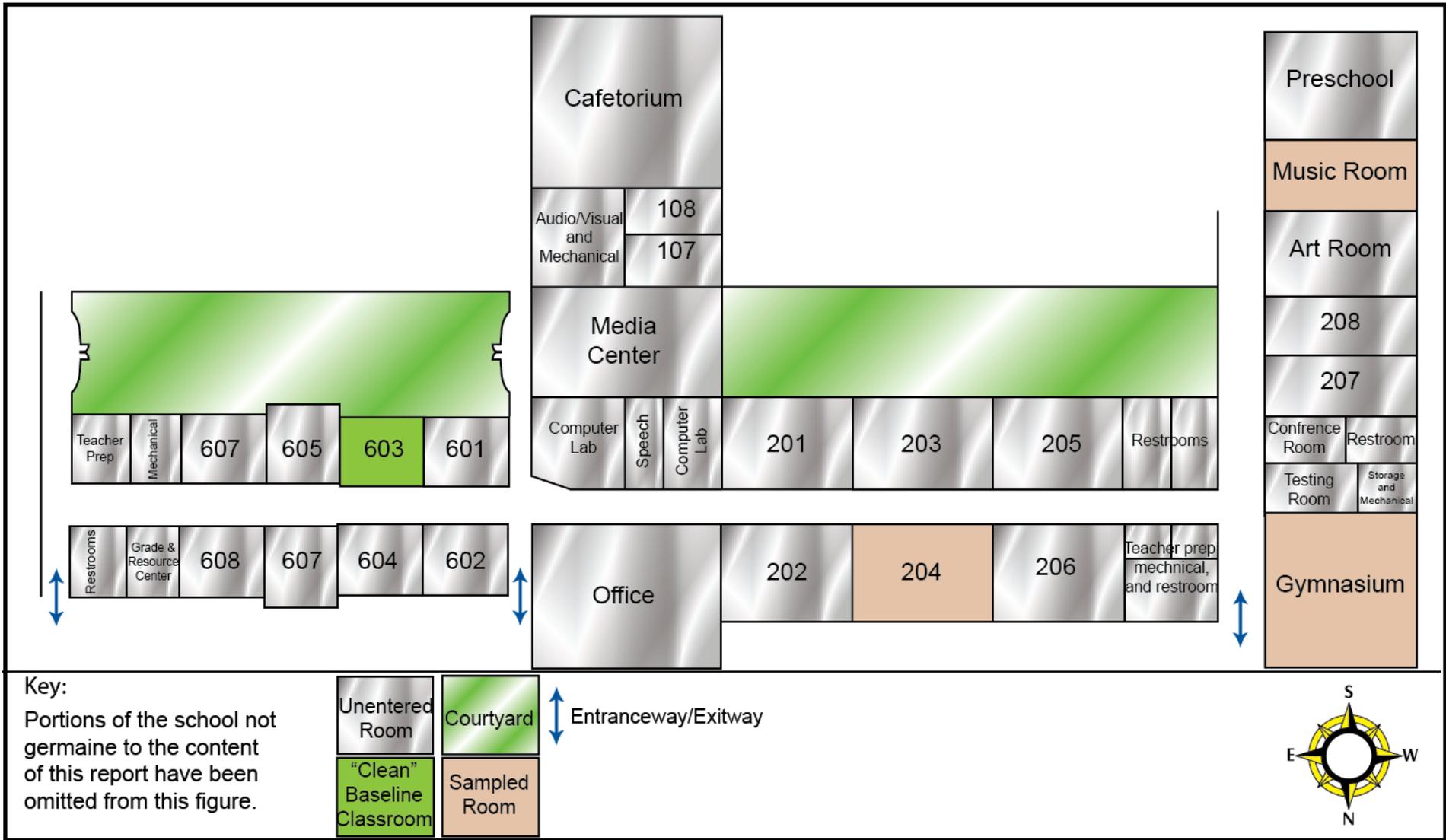


Figure 2



Prepared for:
U.S. EPA. REGION V
 Contract No: EP-S5-06-04

TDD No.:0001-0703-009
 DCN: 168-2A-AAOP

WESTON SOLUTIONS

Prepared by:
WESTON SOLUTIONS, INC.
 6779 Engle Road, Suite I & J
 Middleburg, OH

Site Map
 Beloit Elementary School ER
 Beloit, Mahoning County, Ohio
 March 23, 2007
 Scale: Not to Scale

Attachment C

Photo Log



Site: Beloit Elementary School

Photo Number: 1

Date: March 21, 2007

Direction: South

Photographer: Daniel Hockensmith, WKSU reporter

Subject: Front view of the Beloit Elementary School located in Beloit, Ohio.

Photo Source: WKSU News, Kent, Ohio



Site: Beloit Elementary School

Photo Number: 2

Date: March 21, 2007

Direction: South

Photographer: Frank Beodray

Subject: Air sampling for pesticides, student desk Room 204.



Site: Beloit Elementary School

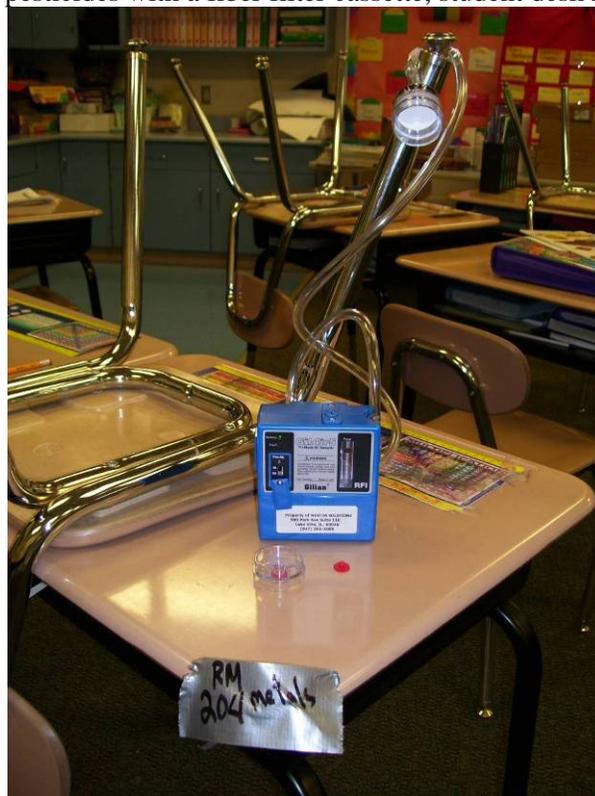
Photo Number: 3

Direction: South

Subject: Air sampling for pesticides with a fiber filter cassette, student desk Room 204.

Date: March 21, 2007

Photographer: Frank Beodray



Site: Beloit Elementary School

Photo Number: 4

Direction: South

Subject: Air sampling for total metals, student desk Room 204.

Date: March 21, 2007

Photographer: Frank Beodray



Site: Beloit Elementary School

Photo Number: 5

Direction: West

Subject: Air sampling for chlorinated pesticides with a polyurethane foam tube, music stand in the Music Room.

Date: March 21, 2007

Photographer: Frank Beodray



Site: Beloit Elementary School

Photo Number: 6

Direction: West

Subject: Air sampling for volatile organic compounds using a SUMMA canister, student desk, Room 204.

Date: March 21, 2007

Photographer: Anne Busher



Site: Beloit Elementary School

Photo Number: 7

Direction: Northwest

Subject: Location of the cold air return wipe sampling in Room 206.

Date: March 21, 2007

Photographer: Anne Busher



Site: Beloit Elementary School

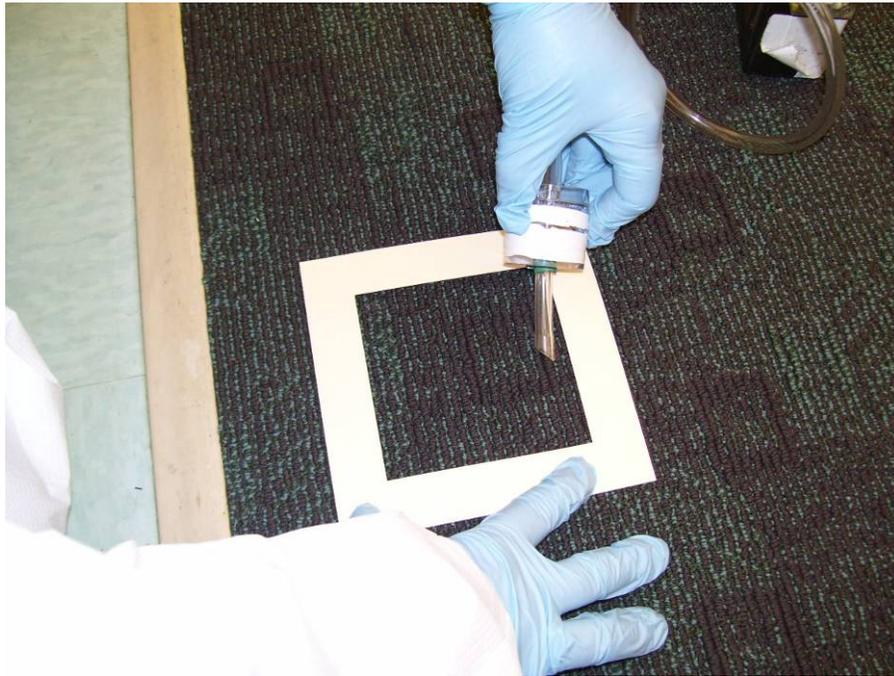
Photo Number: 8

Direction: West

Subject: Location of the Room 204 teacher's desk wipe sampling for pesticide analysis.

Date: March 21, 2007

Photographer: Anne Busher



Site: Beloit Elementary School

Photo Number: 9

Direction: South

Subject: Collection of the Music Room carpet microvacuum sampling for fiber analysis.

Date: March 21, 2007

Photographer: Frank Beodray

Attachment D

Analytical Data Tables

Table 1
 Volatile Organic Compounds, EPA Method TO-15
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	REGULATORY LEVELS		BES-0240-MAR21-V				BES-0603-MAR21-V			
			Room 204				Room 603			
LOCATION			March 21, 2007				March 21, 2007			
DATE SAMPLED			Results				Results			
ANALYTE	OSHA PEL (ppb)	NIOSH REL (ppb)	ppb	Qual	Dilution	RL ppb	ppb	Qual	Dilution	RL ppb
			Dichlorodifluoromethane	1,000,000	1,000,000	0.47	J	1.00	1.00	0.49
2-Propanol	200,000	200,000	16		1.00	1.00	4		1.00	1.00
Chloromethane	NL	100,000	ND		1.00	2.00	ND		1.00	2.00
Acetone	250,000	1,000,000	7.4	U	1.00	1.00	7.9		1.00	1.00
Methylene Chloride	NL	25,000	1.5	BU	1.00	1.00	6	BU	1.00	1.00
Ethanol	1,000,000	1,000,000	11		1.00	1.00	8.4		1.00	1.00
Ethyl acetate	400,000	400,000	1		1.00	1.00	ND		1.00	1.00
n-Hexane	50,000	500,000	0.53	J	1.00	1.00	3.2		1.00	1.00
Heptane	85,000	500,000	0.59	J	1.00	1.00	0.48	J	1.00	1.00
Toluene	100,000	200,000	0.56		1.00	0.50	0.37	J	1.00	0.50

Notes:

Bolded results indicates detected analytes

B - analyte detected in method blank

EPA - United States Environmental Protection Agency

J - Result below reporting limited, reported as estimated

ND – Not detected

ppb - parts per billion

qual - laboratory qualifier

RL - reporting limit

U - Not detected

Source: RTI Laboratories, Inc.

Table 1
 Volatile Organic Compounds, EPA Method TO-15
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	REGULATORY LEVELS		BES-MUS-MAR21-V				BES-GYM-MAR21-V			
			Music Room				Gymnasium			
LOCATION			March 21, 2007				March 21, 2007			
DATE SAMPLED			Results				Results			
ANALYTE	OSHA PEL (ppb)	NIOSH REL (ppb)	ppb	Qual	Dilution	RL ppb	ppb	Qual	Dilution	RL ppb
			Dichlorodifluoromethane	1,000,000	1,000,000	0.47	J	1.00	1.00	0.45
2-Propanol	200,000	200,000	5		1.00	1.00	2.3		1.00	1.00
Chloromethane	NL	100,000	ND		1.00	2.00	0.77	J	1.00	2.00
Acetone	250,000	1,000,000	26		1.00	1.00	2.9	U	1.00	1.00
Methylene Chloride	NL	25,000	3.9	BU	1.00	1.00	1.2	BU	1.00	1.00
Ethanol	1,000,000	1,000,000	4.7		1.00	1.00	2.6		1.00	1.00
Ethyl acetate	400,000	400,000	ND		1.00	1.00	ND		1.00	1.00
n-Hexane	50,000	500,000	2.8		1.00	1.00	0.44	J	1.00	1.00
Heptane	85,000	500,000	6.2		1.00	1.00	0.47	J	1.00	1.00
Toluene	100,000	200,000	0.45	J	1.00	0.50	3.3		1.00	0.50

Notes:

Bolded results indicates detected analytes

B - analyte detected in method blank

EPA - United States Environmental Protection Agency

J - Result below reporting limited, reported as estimated

ND - Not detected

ppb - parts per billion

qual - laboratory qualifier

RL - reporting limit

U - Not detected

Source: RTI Laboratories, Inc.

Table 1
 Volatile Organic Compounds, EPA Method TO-15
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	REGULATORY LEVELS		BES-OUT-MAR21-V			
			OUT			
LOCATION			March 21, 2007			
DATE SAMPLED			Results			
ANALYTE	OSHA PEL (ppb)	NIOSH REL (ppb)	ppb	Qual	Dilution	RL ppb
			Dichlorodifluoromethane	1,000,000	1,000,000	0.45
2-Propanol	200,000	200,000	ND		1.00	1.00
Chloromethane	NL	100,000	ND		1.00	2.00
Acetone	250,000	1,000,000	2.3	U	1.00	1.00
Methylene Chloride	NL	25,000	1.2	BU	1.00	1.00
Ethanol	1,000,000	1,000,000	0.61	J	1.00	1.00
Ethyl acetate	400,000	400,000	ND		1.00	1.00
n-Hexane	50,000	500,000	ND		1.00	1.00
Heptane	85,000	500,000	ND		1.00	1.00
Toluene	100,000	200,000	ND		1.00	0.50

Notes:

Bolded results indicates detected analytes

B - analyte detected in method blank

EPA - United States Environmental Protection Agency

J - Result below reporting limited, reported as estimated

ND - Not detected

ppb - parts per billion

qual - laboratory qualifier

RL - reporting limit

U - Not detected

Source: RTI Laboratories, Inc.

Table 2
Metals in Air, NIOSH Method 7300
Beloit Elementary School Emergency Response
Beloit, Mahoning County, Ohio

SAMPLE ID LOCATION DATE	REGULATORY LEVELS		BES-OFCM-204					BES-OFCM-603					OFCM-Method Blank				
			Room 204					Room 603					Method Blank				
			March 21, 2007					March 21, 2007					March 21, 2007				
ANALYTE	OSHA PEL ($\mu\text{g}/\text{m}^3$)	NIOSH REL ($\mu\text{g}/\text{m}^3$)	Results			qual	dl (μg)	Results			qual	dl (μg)	Results			qual	dl (μg)
			$\mu\text{g, total}$	ppb	$\mu\text{g}/\text{m}^3$			$\mu\text{g, total}$	ppb	$\mu\text{g}/\text{m}^3$			$\mu\text{g, total}$	ppb	$\mu\text{g}/\text{m}^3$		
Aluminum	15,000	10,000,000	54	51	56	U	1.00	130	120	130	J+	1.00	82	NA	NA		1.00
Antimony	50	500	<0.1	<0.021	<0.11		0.10	<0.1	<0.021	<0.10		0.10	0.8	NA	NA		0.10
Arsenic	10	2	<0.1	<0.034	<0.11		0.10	<0.1	<0.034	<0.10		0.10	0.27	NA	NA		0.10
Barium	NL	NL	2.9	NA	3.1	U	0.10	23	NA	24	J+	0.10	3.2	NA	NA		0.10
Beryllium	2	0.5	0.5	1.4	0.53		0.10	0.84	2.4	0.88		0.10	<0.1	NA	NA		0.10
Cadmium	5	NL	0.32	NA	0.34	J+	0.10	2.3	NA	2.4	J+	0.10	0.2	NA	NA		0.10
Calcium		NA	270	170	280	U	1.00	1,500	970	1,600	J+	1.00	1,300	NA	NA		1.00
Chromium	1,000	500	57	NA	60	U	0.10	57	NA	59	U	0.10	130	NA	NA		0.10
Cobalt	100	50	<0.1	<0.044	<0.11		0.10	0.93	0.4	0.97		0.10	<0.1	NA	NA		0.10
Copper	1,000	1,000	25	10	27	U	0.10	38	15	39	J+	0.10	35	NA	NA		0.10
Iron	NL	NL	<1.0	<0.46	<1.1		1.00	260	120	270	J+	1.00	35	NA	NA		1.00
Lead	500	50	5.5	0.68	5.8	J+	0.10	10	1.3	11	J+	0.10	3.7	NA	NA		0.10
Magnesium	NL	NL	120	130	130		1.00	280	300	300	J+	1.00	200	NA	NA		1.00
Manganese	500	1,000	4.1	1.9	4.3	J+	0.10	16	7.5	17	J+	0.10	4	NA	NA		0.10
Nickel	15	1,000	6.8	3	7.1	U	0.10	220	94	230	J+	0.10	26	NA	NA		0.10
Potassium	NL	NL	260	170	280	U	1.00	1,000	660	1,100	U	1.00	1,200	NA	NA		1.00
Selenium	200	200	8.6	2.8	9	U	0.10	9.4	3	9.8	U	0.10	15	NA	NA		0.10
Silver	10	10	<0.1	<0.024	<0.11		0.10	0.44	0.1	0.45	U	0.10	0.58	NA	NA		0.10
Sodium	NL	NL	2,300	NA	2,400	U	1.00	2,900	NA	3,100	U	1.00	3,400	NA	NA		1.00
Thallium	100	100	<0.1	<0.013	<0.11		0.10	0.17	0.021	0.18	U	0.10	3.7	NA	NA		0.10
Vanadium	500	50	<0.1	<0.050	<0.11		0.10	<0.1	<0.050	<0.10		0.10	<0.1	NA	NA		0.10
Zinc	NL	NL	320	120	330	J+	0.10	420	160	440	J+	0.10	350	NA	NA		0.10

Notes: J+ - data estimated but biased high PEL - Permissible Exposure Level U - Not detected
 Bolded results indicates detected analyte. mg/m³ - milligrams per cubic meter ppb - parts per billion
 B - Analyte detected in field blank NIOSH - National Institute of qual - laboratory qualifier μg - microgram
 DL - Detection limit for method Occupational Safety and Health REL - Recommended Exposure Level $\mu\text{g}/\text{m}^3$ - micrograms per cubic meter
 ID - Identification NL - Not listed < - less than
 Source: RTI Laboratories, Inc

Table 3
 Chlorinated Pesticides, NIOSH Method TO-10A
 Polyurethane Filters
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-PPUF-204				BES-PPUF-603			
LOCATION	Room 204				Room 603			
DATE SAMPLED	March 21, 2007				March 21, 2007			
SAMPLE MATRIX	Polyurethane Foam				Polyurethane Foam			
ANALYTE	Results				Results			
	µg	µg/m ³	qual	dl (µg)	µg	µg/m ³	qual	dl (µg)
4,4'-DDD	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
4,4'-DDE	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
4,4'-DDT	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Aldrin	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
alpha-BHC	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
beta-BHC	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Chlordane	<0.10	<0.10		0.1	<0.10	<0.10		0.1
delta-BHC	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Dieldrin	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Endosulfan I	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Endosulfan II	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Endosulfan sulfate	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Endrin	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Endrin aldehyde	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
gamma-BHC	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Heptachlor	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Heptachlor epoxide	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Methoxychlor	<0.0050	<0.0052		0.005	<0.0050	<0.0051		0.005
Toxaphene	<0.10	<0.10		0.1	<0.10	<0.10		0.1

Notes:

BHC – benzene hexachloride

DDD – dichloro-diphenyl-dichloroethane

DDE – dichlorodiphenyldichloroethylene

DDT – dichloro-diphenyl-trichloroethane

dl – Detection limit for method

ID – Identification

NA - Not applicable

qual – laboratory qualifier

µg – micrograms

µg/m³ – micrograms per cubic meter

< – less than

Source: RTI Laboratories, Inc.

Table 3
 Chlorinated Pesticides, NIOSH Method TO-10A
 Polyurethane Filters
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-PPUF-MUS				Method Blank			
LOCATION	Music Room				Method Blank			
DATE SAMPLED	March 21, 2007				March 21, 2007			
SAMPLE MATRIX	Polyurethane Foam				Polyurethane Foam			
ANALYTE	Results				Results			
	µg	µg/m ³	qual	dl (µg)	µg	µg/m ³	qual	dl (µg)
4,4'-DDD	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
4,4'-DDE	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
4,4'-DDT	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Aldrin	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
alpha-BHC	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
beta-BHC	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Chlordane	<0.10	<0.10		0.1	<0.10	NA		0.1
delta-BHC	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Dieldrin	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Endosulfan I	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Endosulfan II	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Endosulfan sulfate	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Endrin	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Endrin aldehyde	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
gamma-BHC	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Heptachlor	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Heptachlor epoxide	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Methoxychlor	<0.0050	<0.0051		0.005	<0.0050	NA		0.005
Toxaphene	<0.10	<0.10		0.1	<0.10	NA		0.1

Notes:

BHC – benzene hexachloride

DDD – dichloro-diphenyl-dichloroethane

DDE – dichlorodiphenyldichloroethylene

DDT – dichloro-diphenyl-trichloroethane

dl – Detection limit for method

ID – Identification

NA - Not applicable

qual – laboratory qualifier

µg – micrograms

µg/m³ – micrograms per cubic meter

< – less than

Source: RTI Laboratories, Inc.

Table 4
 Chlorinated Pesticides, NIOSH Method 8081a
 Open-face Glass Fiber Filter
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-OFCP-204				BES-OFCP-603			
LOCATION	Room 204				Room 603			
DATE SAMPLED	March 21, 2007				March 21, 2007			
MEDIA	Open-face Glass Fiber				Open-face Glass Fiber			
	Results				Results			
ANALYTE	µg	µg/m ³	qual	dl (µg)	µg	µg/m ³	qual	dl (µg)
4,4'-DDD	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
4,4'-DDE	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
4,4'-DDT	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Aldrin	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
alpha-BHC	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
beta-BHC	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Chlordane	<0.10	<0.10		0.1	<0.10	<0.10		0.1
delta-BHC	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Dieldrin	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Endosulfan I	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Endosulfan II	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Endosulfan sulfate	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Endrin	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Endrin aldehyde	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
gamma-BHC	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Heptachlor	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Heptachlor epoxide	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Methoxychlor	<0.0050	<0.0052		0.005	<0.0050	<0.0052		0.005
Toxaphene	<0.10	<0.10		0.1	<0.10	<0.10		0.1

Notes:

BHC – benzene hexachloride

DDD – dichloro-diphenyl-dichloroethane

DDE – dichlorodiphenyldichloroethylene

DDT – dichloro-diphenyl-trichloroethane

dl – Detection limit for method

ID – Identification

NA - Not applicable

qual – laboratory qualifier

µg – micrograms

µg/m³ – micrograms per cubic meter

< – less than

Source: RTI Laboratories, Inc.

Table 4
 Chlorinated Pesticides, NIOSH Method 8081a
 Open-face Glass Fiber Filter
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-OFCP-MUS				OFCP Method Blank			
LOCATION	Music Room				Method Blank			
DATE SAMPLED	March 21, 2007				March 21, 2007			
MEDIA	Open-face Glass Fiber				Open-face Glass Fiber			
	Results				Results			
ANALYTE	µg	µg/m ³	qual	dl (µg)	µg	µg/m ³	qual	dl (µg)
4,4'-DDD	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
4,4'-DDE	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
4,4'-DDT	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Aldrin	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
alpha-BHC	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
beta-BHC	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Chlordane	<0.10	<0.10		0.1	<0.10	NA		0.1
delta-BHC	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Dieldrin	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Endosulfan I	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Endosulfan II	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Endosulfan sulfate	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Endrin	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Endrin aldehyde	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
gamma-BHC	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Heptachlor	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Heptachlor epoxide	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Methoxychlor	<0.0050	<0.0052		0.005	<0.0050	NA		0.005
Toxaphene	<0.10	<0.10		0.1	<0.10	NA		0.1

Notes:

BHC – benzene hexachloride

DDD – dichloro-diphenyl-dichloroethane

DDE – dichlorodiphenyldichloroethylene

DDT – dichloro-diphenyl-trichloroethane

dl – Detection limit for method

ID – Identification

NA - Not applicable

qual – laboratory qualifier

µg – micrograms

µg/m³ – micrograms per cubic meter

< – less than

Source: RTI Laboratories, Inc.

Table 5
 Chlorinated Pesticides, NIOSH Method 8081a
 Microvacuum Cassettes
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-MVPEST-204			BES-MVPEST-603		
LOCATION	Room 204			Room 603		
DATE SAMPLED	March 21, 2007			March 21, 2007		
MEDIA	Microvacuum Cassette			Microvacuum Cassette		
ANALYTE	Results			Results		
	µg	qual	dl (µg)	µg	qual	dl (µg)
4,4'-DDD	<0.0050		0.005	<0.0050		0.005
4,4'-DDE	<0.0050		0.005	<0.0050		0.005
4,4'-DDT	<0.0050		0.005	<0.0050		0.005
Aldrin	<0.0050		0.005	<0.0050		0.005
alpha-BHC	<0.0050		0.005	<0.0050		0.005
beta-BHC	<0.0050		0.005	<0.0050		0.005
Chlordane	<0.10		0.1	<0.10		0.1
delta-BHC	<0.0050		0.005	<0.0050		0.005
Dieldrin	<0.0050		0.005	<0.0050		0.005
Endosulfan I	<0.0050		0.005	<0.0050		0.005
Endosulfan II	<0.0050		0.005	<0.0050		0.005
Endosulfan sulfate	<0.0050		0.005	<0.0050		0.005
Endrin	<0.0050		0.005	<0.0050		0.005
Endrin aldehyde	<0.0050		0.005	<0.0050		0.005
gamma-BHC	<0.0050		0.005	<0.0050		0.005
Heptachlor	<0.0050		0.005	<0.0050		0.005
Heptachlor epoxide	<0.0050		0.005	<0.0050		0.005
Methoxychlor	<0.0050		0.005	<0.0050		0.005
Toxaphene	<0.10		0.1	<0.10		0.1

Notes:

dl - Detection limit for method

BHC – benzene hexachloride

DDD – dichloro-diphenyl-dichloroethane

DDE – dichlorodiphenyldichloroethylene

DDT – dichloro-diphenyl-trichloroethane

ID – Identification

qual – laboratory qualifier

µg – micrograms

< – less than

Source: RTI Laboratories, Inc.

Table 5
 Chlorinated Pesticides, NIOSH Method 8081a
 Microvacuum Cassettes
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-MVPEST-MUS			Method Blank-PEST		
LOCATION	Music Room			Method Blank		
DATE SAMPLED	March 21, 2007			March 21, 2007		
MEDIA	Microvacuum Cassette			Microvacuum Cassette		
ANALYTE	Results			Results		
	µg	qual	dl (µg)	µg	qual	dl (µg)
4,4'-DDD	<0.0050		0.005	<0.0050		0.005
4,4'-DDE	<0.0050		0.005	<0.0050		0.005
4,4'-DDT	<0.0050		0.005	<0.0050		0.005
Aldrin	<0.0050		0.005	<0.0050		0.005
alpha-BHC	<0.0050		0.005	<0.0050		0.005
beta-BHC	<0.0050		0.005	<0.0050		0.005
Chlordane	<0.10		0.1	<0.10		0.1
delta-BHC	<0.0050		0.005	<0.0050		0.005
Dieldrin	<0.0050		0.005	<0.0050		0.005
Endosulfan I	<0.0050		0.005	<0.0050		0.005
Endosulfan II	<0.0050		0.005	<0.0050		0.005
Endosulfan sulfate	<0.0050		0.005	<0.0050		0.005
Endrin	<0.0050		0.005	<0.0050		0.005
Endrin aldehyde	<0.0050		0.005	<0.0050		0.005
gamma-BHC	<0.0050		0.005	<0.0050		0.005
Heptachlor	<0.0050		0.005	<0.0050		0.005
Heptachlor epoxide	<0.0050		0.005	<0.0050		0.005
Methoxychlor	<0.0050		0.005	<0.0050		0.005
Toxaphene	<0.10		0.1	<0.10		0.1

Notes:

dl - Detection limit for method
 BHC – benzene hexachloride
 DDD – dichloro-diphenyl-dichloroethane
 DDE – dichlorodiphenyldichloroethylene
 DDT – dichloro-diphenyl-trichloroethane

ID – Identification
 qual – laboratory qualifier
 µg – micrograms
 < – less than
 Source: RTI Laboratories, Inc.

Table 6
 Chlorinated Pesticides, NIOSH Method 80801a
 Wipe Samples
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-PWIP-204-TD			BES-PWIP-204-DC		
LOCATION	Room 204 Teachers Desk			Room 204 Tiled Corner		
DATE SAMPLED	March 21, 2007			March 21, 2007		
ANALYTE	Results			Results		
	µg	qual	dl (µg)	µg	qual	dl (µg)
4,4'-DDD	<0.0050		0.005	<0.0050		0.005
4,4'-DDE	<0.0050		0.005	<0.0050		0.005
4,4'-DDT	<0.0050		0.005	<0.0050		0.005
Aldrin	<0.0050		0.005	<0.0050		0.005
alpha-BHC	<0.0050		0.005	<0.0050		0.005
beta-BHC	<0.0050		0.005	<0.0050		0.005
Chlordane	<0.10		0.1	<0.10		0.1
delta-BHC	<0.0050		0.005	<0.0050		0.005
Dieldrin	<0.0050		0.005	<0.0050		0.005
Endosulfan I	<0.0050		0.005	<0.0050		0.005
Endosulfan II	<0.0050		0.005	<0.0050		0.005
Endosulfan sulfate	<0.0050		0.005	<0.0050		0.005
Endrin	<0.0050		0.005	<0.0050		0.005
Endrin aldehyde	<0.0050		0.005	<0.0050		0.005
gamma-BHC	<0.0050		0.005	<0.0050		0.005
Heptachlor	<0.0050		0.005	<0.0050		0.005
Heptachlor epoxide	<0.0050		0.005	<0.0050		0.005
Methoxychlor	<0.0050		0.005	<0.0050		0.005
Toxaphene	<0.10		0.1	<0.10		0.1

Notes:

- BHC – benzene hexachloride
 - DDD – dichloro-diphenyl-dichloroethane
 - DDE – dichlorodiphenyldichloroethylene
 - DDT – dichloro-diphenyl-trichloroethane
 - dl – Detection limit for method
 - ID – Identification
 - qual – laboratory qualifier
 - µg – micrograms
 - < – less than
- Source: RTI Laboratories, Inc.

Table 6
 Chlorinated Pesticides, NIOSH Method 80801a
 Wipe Samples
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-PWIP-204-CAI			Method Blank		
LOCATION	Room 204 Cold Air Return			Method Blank		
DATE SAMPLED	March 21, 2007			March 21, 2007		
ANALYTE	Results			Results		
	µg	qual	dl (µg)	µg	qual	dl (µg)
4,4'-DDD	<0.0050		0.005	<0.0050		0.005
4,4'-DDE	<0.0050		0.005	<0.0050		0.005
4,4'-DDT	<0.0050		0.005	<0.0050		0.005
Aldrin	<0.0050		0.005	<0.0050		0.005
alpha-BHC	<0.0050		0.005	<0.0050		0.005
beta-BHC	<0.0050		0.005	<0.0050		0.005
Chlordane	<0.10		0.1	<0.10		0.1
delta-BHC	<0.0050		0.005	<0.0050		0.005
Dieldrin	<0.0050		0.005	<0.0050		0.005
Endosulfan I	<0.0050		0.005	<0.0050		0.005
Endosulfan II	<0.0050		0.005	<0.0050		0.005
Endosulfan sulfate	<0.0050		0.005	<0.0050		0.005
Endrin	<0.0050		0.005	<0.0050		0.005
Endrin aldehyde	<0.0050		0.005	<0.0050		0.005
gamma-BHC	<0.0050		0.005	<0.0050		0.005
Heptachlor	<0.0050		0.005	<0.0050		0.005
Heptachlor epoxide	<0.0050		0.005	<0.0050		0.005
Methoxychlor	<0.0050		0.005	<0.0050		0.005
Toxaphene	<0.10		0.1	<0.10		0.1

Notes:

- BHC – benzene hexachloride
 - DDD – dichloro-diphenyl-dichloroethane
 - DDE – dichlorodiphenyldichloroethylene
 - DDT – dichloro-diphenyl-trichloroethane
 - dl – Detection limit for method
 - ID – Identification
 - qual – laboratory qualifier
 - µg – micrograms
 - < – less than
- Source: RTI Laboratories, Inc.

Table 6
 Chlorinated Pesticides, NIOSH Method 80801a
 Wipe Samples
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-PWIP-603-TD			BES-PWIP-603-DC		
LOCATION	Room 603 Teachers Desk			Room 603 Tiled Corner		
DATE SAMPLED	March 21, 2007			March 21, 2007		
ANALYTE	Results			Results		
	µg	qual	dl (µg)	µg	qual	dl (µg)
4,4'-DDD	<0.0050		0.005	<0.0050		0.005
4,4'-DDE	<0.0050		0.005	<0.0050		0.005
4,4'-DDT	<0.0050		0.005	<0.0050		0.005
Aldrin	<0.0050		0.005	<0.0050		0.005
alpha-BHC	<0.0050		0.005	<0.0050		0.005
beta-BHC	<0.0050		0.005	<0.0050		0.005
Chlordane	<0.10		0.1	<0.10		0.1
delta-BHC	<0.0050		0.005	<0.0050		0.005
Dieldrin	<0.0050		0.005	<0.0050		0.005
Endosulfan I	<0.0050		0.005	<0.0050		0.005
Endosulfan II	<0.0050		0.005	<0.0050		0.005
Endosulfan sulfate	<0.0050		0.005	<0.0050		0.005
Endrin	<0.0050		0.005	<0.0050		0.005
Endrin aldehyde	<0.0050		0.005	<0.0050		0.005
gamma-BHC	<0.0050		0.005	<0.0050		0.005
Heptachlor	<0.0050		0.005	<0.0050		0.005
Heptachlor epoxide	<0.0050		0.005	<0.0050		0.005
Methoxychlor	<0.0050		0.005	<0.0050		0.005
Toxaphene	<0.10		0.1	<0.10		0.1

Notes:

- BHC – benzene hexachloride
 - DDD – dichloro-diphenyl-dichloroethane
 - DDE – dichlorodiphenyldichloroethylene
 - DDT – dichloro-diphenyl-trichloroethane
 - dl – Detection limit for method
 - ID – Identification
 - qual – laboratory qualifier
 - µg – micrograms
 - < – less than
- Source: RTI Laboratories, Inc.

Table 6
 Chlorinated Pesticides, NIOSH Method 80801a
 Wipe Samples
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-PWIP-603-CAI			BES-PWIP-MUS-TD		
LOCATION	Room 603 Cold Air Return			Music Room Teachers Desk		
DATE SAMPLED	March 21, 2007			March 21, 2007		
ANALYTE	Results			Results		
	µg	qual	dl (µg)	µg	qual	dl (µg)
4,4'-DDD	<0.0050		0.005	<0.0050		0.005
4,4'-DDE	<0.0050		0.005	<0.0050		0.005
4,4'-DDT	<0.0050		0.005	<0.0050		0.005
Aldrin	<0.0050		0.005	<0.0050		0.005
alpha-BHC	<0.0050		0.005	<0.0050		0.005
beta-BHC	<0.0050		0.005	<0.0050		0.005
Chlordane	<0.10		0.1	<0.10		0.1
delta-BHC	<0.0050		0.005	<0.0050		0.005
Dieldrin	<0.0050		0.005	<0.0050		0.005
Endosulfan I	<0.0050		0.005	<0.0050		0.005
Endosulfan II	<0.0050		0.005	<0.0050		0.005
Endosulfan sulfate	<0.0050		0.005	<0.0050		0.005
Endrin	<0.0050		0.005	<0.0050		0.005
Endrin aldehyde	<0.0050		0.005	<0.0050		0.005
gamma-BHC	<0.0050		0.005	<0.0050		0.005
Heptachlor	<0.0050		0.005	<0.0050		0.005
Heptachlor epoxide	<0.0050		0.005	<0.0050		0.005
Methoxychlor	<0.0050		0.005	<0.0050		0.005
Toxaphene	<0.10		0.1	<0.10		0.1

Notes:

- BHC – benzene hexachloride
- DDD – dichloro-diphenyl-dichloroethane
- DDE – dichlorodiphenyldichloroethylene
- DDT – dichloro-diphenyl-trichloroethane
- dl – Detection limit for method
- ID – Identification
- qual – laboratory qualifier
- µg – micrograms
- < – less than

Source: RTI Laboratories, Inc.

Table 6
 Chlorinated Pesticides, NIOSH Method 80801a
 Wipe Samples
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

SAMPLE ID	BES-PWIP-MUS-DC			BES-PWIP-MUS-CAI		
LOCATION	Music Room Tiled Corner			Music Room Cold Air Return		
DATE SAMPLED	March 21, 2007			March 21, 2007		
ANALYTE	Results			Results		
	µg	qual	dl (µg)	µg	qual	dl (µg)
4,4'-DDD	<0.0050		0.005	<0.0050		0.005
4,4'-DDE	<0.0050		0.005	<0.0050		0.005
4,4'-DDT	<0.0050		0.005	<0.0050		0.005
Aldrin	<0.0050		0.005	<0.0050		0.005
alpha-BHC	<0.0050		0.005	<0.0050		0.005
beta-BHC	<0.0050		0.005	<0.0050		0.005
Chlordane	<0.10		0.1	<0.10		0.1
delta-BHC	<0.0050		0.005	<0.0050		0.005
Dieldrin	<0.0050		0.005	<0.0050		0.005
Endosulfan I	<0.0050		0.005	<0.0050		0.005
Endosulfan II	<0.0050		0.005	<0.0050		0.005
Endosulfan sulfate	<0.0050		0.005	<0.0050		0.005
Endrin	<0.0050		0.005	<0.0050		0.005
Endrin aldehyde	<0.0050		0.005	<0.0050		0.005
gamma-BHC	<0.0050		0.005	<0.0050		0.005
Heptachlor	<0.0050		0.005	<0.0050		0.005
Heptachlor epoxide	<0.0050		0.005	<0.0050		0.005
Methoxychlor	<0.0050		0.005	<0.0050		0.005
Toxaphene	<0.10		0.1	<0.10		0.1

Notes:

- BHC – benzene hexachloride
- DDD – dichloro-diphenyl-dichloroethane
- DDE – dichlorodiphenyldichloroethylene
- DDT – dichloro-diphenyl-trichloroethane
- dl – Detection limit for method
- ID – Identification
- qual – laboratory qualifier
- µg – micrograms
- < – less than

Source: RTI Laboratories, Inc.

Table 7
 Microvacuum Fibers
 Beloit Elementary School Emergency Response
 Beloit, Mahoning County, Ohio

Date	Sample Number	Room	Sample	Sample	Type of	Percentage	Other	Percentage
		Number	Location	Media/Type	Asbestos	Asbestos	Fibers	Other Fibers
March 21, 2007	BES-MVFIB-204	Room 204	Carpeted area of classroom	MCE Microvac	NSD	NSD	NSD	NSD
March 21, 2007	BES-MVFIB-603	Room 603	Tiled corner of the classroom	MCE Microvac	NSD	NSD	NSD	NSD
March 21, 2007	BES-MVFIB-MUS	Music Room	Carpeted area of classroom	MCE Microvac	NSD	NSD	NSD	NSD
March 21, 2007	Method Blank-FIB	Method Blank	NA	MCE Microvac	NSD	NSD	NSD	NSD

Note:

MCE – Mixed Cellular Ester

Microvac – Microvacuum

NA – No applicable

NSD – No structures detected

Source: APEX Research