



411 Lake Zurich Road
Barrington, IL 60010

MAIN: 847.381.2760
CELL: 847.489-9846

INDOOR AIR QUALITY SAMPLING REPORT

FOR

CRYSTAL LAKE ELEMENTARY SCHOOL DISTRICT 47

AT

**RICHARD BERNOTAS MIDDLE SCHOOL
170 N OAK STREET
CRYSTAL LAKE, IL 60014**

PREPARED BY:

**PEPPER ENVIRONMENTAL TECHNOLOGIES, INC.
411 LAKE ZURICH ROAD
BARRINGTON, ILLINOIS 60010
PET JOB # 2400913GGG**

MARCH 2025

BACKGROUND

Pepper Environmental Technologies, Inc. (PET) was contracted by Crystal Lake Elementary School District 47 to provide indoor air quality sampling (IAQ) at Richard Bernotas Middle School, located at 170 N. Oak Street, in Crystal Lake, Illinois. Sampling was performed for total volatile organic compounds (TVOC) in air in **Classroom 35** using a pre-calibrated eight-hour mini-canister and analytical method "TO-15." The sampling was performed due to occupant concerns regarding possible chemical or paint odors within Classroom 35.

According to the National Library of Medicine, volatile organic compounds (VOCs) has been an indoor environmental quality concern in schools and other buildings for many years. Newer designs, construction practices and building materials for "green" buildings and the use of "environmentally friendly" products have the promise of lowering chemical exposures. VOCs encompass a wide range of chemicals, and many may cause acute or chronic health effects. These chemicals arise from both indoor and outdoor sources. The VOCs most commonly measured using the "TO-15" air sampling method include:

- Benzene
- Toluene
- Xylene
- Ethylbenzene
- A-pinene
- D-limonene

STAT Analysis of Chicago, Illinois was contracted to provide the sampling media and perform the laboratory analysis. The "TO-15" sampling was conducted in accordance with sampling guidelines. Once collected, the sampling canister was hand-delivered to STAT for analysis with the appropriate chain of custody form. STAT Analysis is accredited by the National Environmental Laboratory Accreditation Program (NELAP), the National Volunteer Laboratory Accreditation Program (NVLAP) and certified by the American Industrial Hygiene Association (AIHA).

RESULTS

On March 19, 2025, PET performed air sampling for total VOCs at the above referenced location. The results of the sampling event indicated that most of the VOCs measured were below the detectable limit. Acetone was the only detectable VOC, measuring at 0.0172 milligrams per cubic meter of air (mg/m³) during the time of this study. The laboratory report can be found in the Appendix. Results for the measured VOCs are listed on the next page.

	Laboratory ID :		O25C0865-01
	Customer Sample ID :		CAN-1/Classroom 35
	Date Collected :		3/19/2025 15:00
Analyte	Test Method	Units	
1,1,1-Trichloroethane	TO-15	mg/m3	<0.00171
1,1,2-Trichloroethane	TO-15	mg/m3	<0.00171
1,1-Dichloroethane	TO-15	mg/m3	<0.00127
1,1-Dichloroethene	TO-15	mg/m3	<0.00125
1,2,4-Trichlorobenzene	TO-15	mg/m3	<0.0583
1,2-Dibromoethane	TO-15	mg/m3	<0.00242
1,2-Dichlorobenzene	TO-15	mg/m3	<0.00189
1,2-Dichloroethane	TO-15	mg/m3	<0.00127
1,2-Dichloropropane	TO-15	mg/m3	<0.00145
1,4-Dichlorobenzene	TO-15	mg/m3	<0.00189
1,4-Dioxane	TO-15	mg/m3	<0.00283
2-Butanone	TO-15	mg/m3	<0.00231
Acetone	TO-15	mg/m3	0.0172
Benzene	TO-15	mg/m3	<0.00100
Bromodichloromethane	TO-15	mg/m3	<0.00211
Bromoform	TO-15	mg/m3	<0.00812
Bromomethane	TO-15	mg/m3	<0.00305
Carbon disulfide	TO-15	mg/m3	<0.000979
Carbon tetrachloride	TO-15	mg/m3	<0.00198
Chlorobenzene	TO-15	mg/m3	<0.00145
Chloroform	TO-15	mg/m3	<0.00154
cis-1,2-Dichloroethene	TO-15	mg/m3	<0.00125
cis-1,3-Dichloropropene	TO-15	mg/m3	<0.00143
Dibromochloromethane	TO-15	mg/m3	<0.00267
Dichlorodifluoromethane	TO-15	mg/m3	<0.00155
Ethylbenzene	TO-15	mg/m3	<0.00136
m,p-Xylene	TO-15	mg/m3	<0.00273
Methyl tert-butyl ether	TO-15	mg/m3	<0.00113
Methylene chloride	TO-15	mg/m3	<0.0109
Naphthalene	TO-15	mg/m3	<0.0412
o-Xylene	TO-15	mg/m3	<0.00136
Styrene	TO-15	mg/m3	<0.00134
Tetrachloroethene	TO-15	mg/m3	<0.00214
Toluene	TO-15	mg/m3	<0.00118
trans-1,2-Dichloroethene	TO-15	mg/m3	<0.00125
trans-1,3-Dichloropropene	TO-15	mg/m3	<0.00143
Trichloroethene	TO-15	mg/m3	<0.00168
Trichlorofluoromethane	TO-15	mg/m3	<0.00176
Vinyl acetate	TO-15	mg/m3	<0.0111
Vinyl chloride	TO-15	mg/m3	<0.000803
Xylenes, Total	TO-15	mg/m3	<0.00410

RESULTS CONTINUED

Acetone is present in the atmosphere due to its emission from combustion. Acetone also occurs naturally in varying concentrations in foods and water. Therefore, people may be exposed to acetone simply by breathing air or through eating and drinking. Air concentrations of acetone tend to be higher in urban areas and indoors. Acetone concentrations in air are typically higher indoors than outdoors. According to the Agency for Toxic Substances and Disease Registry (ATSDR), acetone levels in U.S. outdoor air range from 0.0 – 18.5 parts per billion (ppb), and acetone levels in U.S. indoor air ranges from 1.2 to 8,732.3 ppb.

During this study, acetone levels in Room 35 were determined to be 0.0172 mg/m³, which equates to 7.24 ppb. Based on this data, the acetone levels in Classroom 35 are within the range of the background levels typically found in outdoor air. The acetone levels are also at the low end of the typical indoor range described by the ATSDR. All other measured VOCs in Room 35 were non-detectable by laboratory analysis.

CONCLUSION

Based on the air monitoring data derived from this study, Classroom 35 appears to be safe for occupancy and is without elevated levels of airborne VOCs. All but one VOC analyte, acetone, was detectable during this study. The levels of acetone detected in Classroom 35 are within the background range typically found in outdoor air.

PET appreciates the opportunity to provide this environmental service. This study was not intended to include every health hazard or exposure that may be present in the building. Only the items specifically addressed in this report were evaluated. Results are based on the conditions apparent during the time of this study. Substantial changes in conditions, methods of operations, or materials used, can alter the outcome of an environmental survey. If you have any questions or concerns, please let us know.

Sincerely,
PEPPER ENVIRONMENTAL TECHNOLOGIES, INC.



Steve Soloma
Senior Project Manager

APPENDIX

LABORATORY RESULTS

SAMPLING EVENT: MARCH 19, 2021



sterling^{labs}

- O'Hare Location

509 N. 3rd Avenue Des Plaines, IL 60016-1162 P 847.967.6666 800.246.0663 F 847.967.6735 www.thesterlinglab.com

March 25, 2025

Pepper Environmental Technologies
411 Lake Zurich Road
Barrington, IL 60610

Telephone: (847) 381-2760 ext 4
Fax:

Analytical Report for Work Order: O25C0865 Revision 0

RE: 2400913GGG, D47 Bernotas 1AQ, Crystal Lake, IL

Dear Pepper Environmental Technologies:

Sterling Labs has received 1 sample for the referenced project on March 19, 2025 13:56. The analytical results are presented in the following report.

All analyses were performed in accordance with the requirements of 35 IAC Pat 186 / TNI standards. Analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except when noted in the Case Narrative or Analytical Report. If required, an estimate of uncertainty for the analyses can be provided.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (847) 967-6666.

Sincerely,

Melissa Dunham
Project Manager

The information contained in this report and any attachments is confidential information intended only for the use of the individual or entities named above. The results of this report relate only to the samples as received and tested. Sterling Labs is not responsible for customer provided information found in the report that is used to calculate final results. If you have received this report in error, please notify us immediately by phone. This report shall not be reproduced, except in its entirety, unless written approval has been obtained from the laboratory. This analytical report shall become property of the Customer upon payment in full. Otherwise, Sterling Labs will be under no obligation to support, defend or discuss the analytical report

Customer: Pepper Environmental Technologies

Work Order Sample Summary

Project: 2400913GGG, D47 Bernotas 1AQ, Crystal Lake, IL

WorkOrder: O25C0865

Laboratory ID	Sample ID	Tag Number	Collection Date	Date Received
O25C0865-01	CAN-1/Classroom 35		03/19/25 15:00	03/19/25 13:56



sterling^{labs}

- O'Hare Location

509 N. 3rd Avenue Des Plaines, IL 60016-1162 P 847.967.6666 800.246.0663 F 847.967.6735 www.thesterlinglab.com

Customer: Pepper Environmental Technologies

Project: 2400913GGG, D47 Bernotas 1AQ, Crystal Lake, IL

Case Narrative

WorkOrder: O25C0865

Work Order: O25C0865

The samples were received on 3/19/2025 1:56:00 PM.

The samples were received in good condition and were properly preserved.

GC/MS Volatiles

TO-15

TO-15 results that are reported in mg/m³ are calculated based on a temperature of 25 deg C, atmospheric pressure of 760 mm Hg, and the molecular weight of the analyte.



sterling labs

- O'Hare Location

509 N. 3rd Avenue Des Plaines, IL 60016-1162 P 847.967.6666 800.246.0663 F 847.967.6735 www.thesterlinglab.com

Date Reported: 3/25/2025

Date Printed: 3/25/2025

Analytical Results

Customer: Pepper Environmental Technologies
Work Order: O25C0865
Project: 2400913GGG, D47 Bernotas 1AQ, Crystal Lake, IL

Client Sample ID: CAN-1/Classroom 35
Collection Date: 03/19/2025 15:00
Matrix: Air

Lab ID: O25C0865-01

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed	Batch	AnaBatch
Volatile Organic Compounds by GC/MS		TO-15 / TO-15 Prep			Prep Date:	03/21/25 06:00	Analyst: KV1	
ILEPA 100256								
1,1,1-Trichloroethane	ND	0.00171		mg/m3	1	03/21/2025	B25C1289	S25C0773
1,1,2-Trichloroethane	ND	0.00171		mg/m3	1	03/21/2025	B25C1289	S25C0773
1,1-Dichloroethane	ND	0.00127		mg/m3	1	03/21/2025	B25C1289	S25C0773
1,1-Dichloroethene	ND	0.00125		mg/m3	1	03/21/2025	B25C1289	S25C0773
1,2,4-Trichlorobenzene	ND	0.0583	*	mg/m3	1	03/21/2025	B25C1289	S25C0773
1,2-Dibromoethane	ND	0.00242		mg/m3	1	03/21/2025	B25C1289	S25C0773
1,2-Dichlorobenzene	ND	0.00189		mg/m3	1	03/21/2025	B25C1289	S25C0773
1,2-Dichloroethane	ND	0.00127		mg/m3	1	03/21/2025	B25C1289	S25C0773
1,2-Dichloropropane	ND	0.00145		mg/m3	1	03/21/2025	B25C1289	S25C0773
1,4-Dichlorobenzene	ND	0.00189		mg/m3	1	03/21/2025	B25C1289	S25C0773
1,4-Dioxane	ND	0.00283		mg/m3	1	03/21/2025	B25C1289	S25C0773
2-Butanone	ND	0.00231		mg/m3	1	03/21/2025	B25C1289	S25C0773
Acetone	0.0172	0.00746	*	mg/m3	1	03/21/2025	B25C1289	S25C0773
Benzene	ND	0.00100		mg/m3	1	03/21/2025	B25C1289	S25C0773
Bromodichloromethane	ND	0.00211		mg/m3	1	03/21/2025	B25C1289	S25C0773
Bromoform	ND	0.00812		mg/m3	1	03/21/2025	B25C1289	S25C0773
Bromomethane	ND	0.00305		mg/m3	1	03/21/2025	B25C1289	S25C0773
Carbon disulfide	ND	0.000979		mg/m3	1	03/21/2025	B25C1289	S25C0773
Carbon tetrachloride	ND	0.00198		mg/m3	1	03/21/2025	B25C1289	S25C0773
Chlorobenzene	ND	0.00145		mg/m3	1	03/21/2025	B25C1289	S25C0773
Chloroform	ND	0.00154		mg/m3	1	03/21/2025	B25C1289	S25C0773
cis-1,2-Dichloroethene	ND	0.00125		mg/m3	1	03/21/2025	B25C1289	S25C0773
cis-1,3-Dichloropropene	ND	0.00143		mg/m3	1	03/21/2025	B25C1289	S25C0773
Dibromochloromethane	ND	0.00267		mg/m3	1	03/21/2025	B25C1289	S25C0773
Dichlorodifluoromethane	ND	0.00155		mg/m3	1	03/21/2025	B25C1289	S25C0773
Ethylbenzene	ND	0.00136		mg/m3	1	03/21/2025	B25C1289	S25C0773
m,p-Xylene	ND	0.00273		mg/m3	1	03/21/2025	B25C1289	S25C0773
Methyl tert-butyl ether	ND	0.00113		mg/m3	1	03/21/2025	B25C1289	S25C0773
Methylene chloride	ND	0.0109		mg/m3	1	03/21/2025	B25C1289	S25C0773
Naphthalene	ND	0.0412		mg/m3	1	03/21/2025	B25C1289	S25C0773
o-Xylene	ND	0.00136		mg/m3	1	03/21/2025	B25C1289	S25C0773
Styrene	ND	0.00134		mg/m3	1	03/21/2025	B25C1289	S25C0773
Tetrachloroethene	ND	0.00214		mg/m3	1	03/21/2025	B25C1289	S25C0773
Toluene	ND	0.00118		mg/m3	1	03/21/2025	B25C1289	S25C0773
trans-1,2-Dichloroethene	ND	0.00125		mg/m3	1	03/21/2025	B25C1289	S25C0773
trans-1,3-Dichloropropene	ND	0.00143		mg/m3	1	03/21/2025	B25C1289	S25C0773
Trichloroethene	ND	0.00168		mg/m3	1	03/21/2025	B25C1289	S25C0773
Trichlorofluoromethane	ND	0.00176		mg/m3	1	03/21/2025	B25C1289	S25C0773
Vinyl acetate	ND	0.0111		mg/m3	1	03/21/2025	B25C1289	S25C0773



sterling labs

- O'Hare Location

509 N. 3rd Avenue Des Plaines, IL 60016-1162 P 847.967.6666 800.246.0663 F 847.967.6735 www.thesterlinglab.com

Date Reported: 3/25/2025

Date Printed: 3/25/2025

Analytical Results

Customer: Pepper Environmental Technologies

Client Sample ID: CAN-1/Classroom 35

Work Order: O25C0865

Collection Date: 03/19/2025 15:00

Project: 2400913GGG, D47 Bernotas 1AQ, Crystal Lake, IL

Matrix: Air

Lab ID: O25C0865-01 (Continued)

Analyses	Result	RL	Qualifier	Units	DF	Date Analyzed	Batch	AnaBatch
Volatile Organic Compounds by GC/MS		TO-15 / TO-15 Prep			Prep Date:	03/21/25 06:00	Analyst: KV1	
ILEPA 100256								
Vinyl chloride	ND	0.000803		mg/m3	1	03/21/2025	B25C1289	S25C0773
Xylenes, Total	ND	0.00410		mg/m3	1	03/21/2025	B25C1289	S25C0773

Qualifiers:	ND - Not Detected at the Reporting Limit	RL - Reporting / Quantitation Limit for the analysis
	J - Analyte detected below quantitation limits	S - Spike Recovery outside accepted recovery limits
	B - Analyte detected in the associated method blank	P - RPD outside accepted recovery limits
	HT - Sample received past holding time	E - Value above quantitation range
	J1 - Estimated result based on MS/MSD results	H - Holding time exceeded
	* - Non-accredited parameter	Q - Quality control issue. Please see case narrative



info@thesterlinglab.com

509 N. 3rd Ave., Des Plaines, IL 60016 Phone: (800) 246-0663
2242 W. Harrison St., Suite 200, Chicago, IL 60612 Phone: (312) 733-0551
info@theesterlinglab.com

No: 104920



025C0865

PM:Melissa Dunham
Pepper Environmental Technologies

CHAIN OF CUSTODY RECORD

[illegible]