

REPORT OF FINDINGS

INDOOR AIR QUALITY STUDY
CRYSTAL LAKE ELEMENTARY SCHOOL DISTRICT 47
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

FEBRUARY 14, 2025

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INTRODUCTION

Brief overview of the consultant's responsibilities:

Pepper Environmental Technologies, Inc. (PET) was contracted by Crystal Lake Elementary School District 47 representative, Mr. David Schuh, to perform a limited indoor air quality study within Room 32 at Richard Bernotas Middle School, located at 170 N. Oak St., Crystal Lake, Illinois 60014.

Dates air monitoring performed:

February 11th through February 13th, 2025

Name of Crystal Lake Elementary School District 47 point of contact.

Mr. David Schuh
Director of Operations
Operations Center
221 Liberty Rd.
Crystal Lake, Illinois 60014
Phone (815) 788-5061

Name and address of rental equipment provider:

RAECO Rents
4340 Grove Ave
Gurnee, IL 60031
Phone: (866) 736-8347

TEST PERFORMED/SCOPE OF WORK

Direct read for hydrogen sulfide (H₂S) using portable 4-gas detector. All instruments calibrated before and after use. The respective calibration sheets are attached.

Substances, Media types, Methods of Analysis

Analysis	Media Type	Method/Model
Hydrogen Sulfide	Direct Read	RAE Systems; QRAE3 4-Gas Detector

Summary of Findings, Task and Sampling Locations

Analysis	Task	Location(s)
Hydrogen Sulfide	Readings collected every minute from the morning of February 11 th to the afternoon of February 13 th of 2025	Room 32

SUMMARY OF DIRECT READ FINDINGS

Please find the attached tables containing the direct-read H₂S findings taken at Richard Bernotas Middle School in Crystal Lake, Illinois from Tuesday February 11th through Thursday February 13th, 2025. Each instruments’ respective calibration certificates are also attached.

The direct readings suggest that H₂S is not likely pollutant sources in the area tested. All readings were effectively non-detectable for H₂S. See the attached “H₂S Monitoring Locations Map” for the individual device location. Synopses of the findings are as follows:

Hydrogen Sulfide

The findings in Room 32, through direct readings on the portable RAE Systems QRAE-3 instrument, were consistently non-detectable for H₂S. H₂S readings were detected at 0.0 parts per million (ppm) during the entire time of the study. These findings suggest that H₂S is not a likely pollutant source in Room 32. All readings, taken at one (1) minute intervals, are attached.

CONCLUSIONS AND RECOMMENDATIONS

Based on our air monitoring results and data, we find that the indoor target location (Room 32) appears to be safe for occupancy and is without elevated levels of airborne toxins associated with the constituent measured during this study. Based on the wide range of sensitivities that vary amongst occupants, PET recommends that Crystal Lake School District 47 continues:

- Using “green” cleaning agents to perform the daily housekeeping activities.
- Keeping exterior doors closed whenever possible.
- Regularly changing filters on heating, ventilation and air conditioning equipment.
- Consider employing a plumbing contractor to explore options for “routing out” the building’s various floor drains and traps.

CONFIDENTIALITY

Pepper Environmental Technologies, Inc. has treated all aspects of this study as strictly confidential.

This study was not intended to include every health hazard or exposure that may be present in a building; only those items specifically addressed in the report were evaluated. Results are based on conditions observed during our survey. Substantial changes in conditions, methods of operation, or materials used can alter the outcome of an environmental survey. If you have any questions concerning this study, please let us know.

Pepper Environmental Technologies Inc. has conducted this study in the interest of Crystal Lake Elementary School District 47 to assist in preventing occupant illness and in meeting environmental obligations. In this respect, we hope the results of this study are useful.

Respectfully submitted,

Pepper Environmental Technologies, Inc.

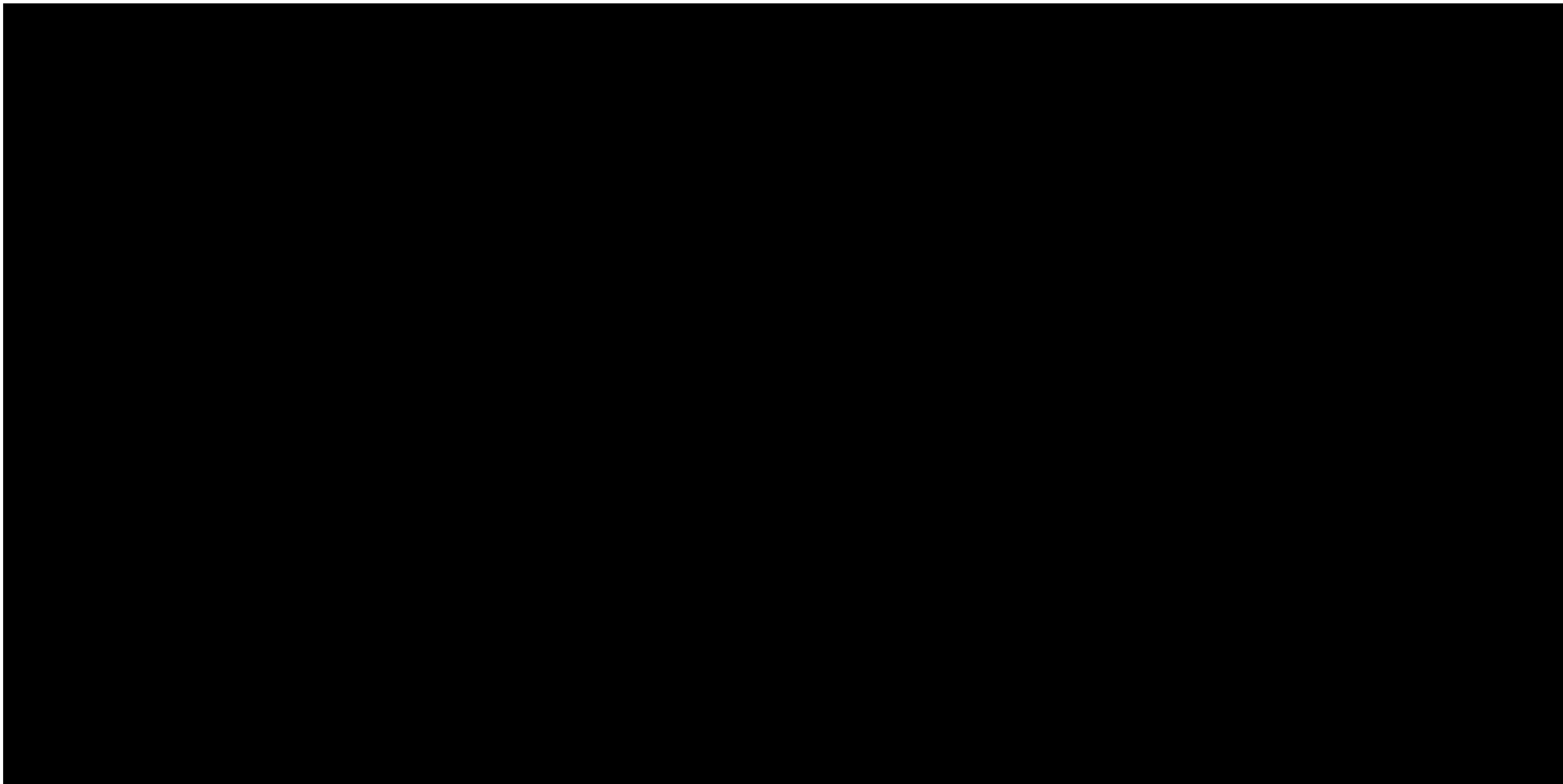


Steve Soloma
Senior Project Manager

*Forms Attached:
Sample Location Map, RAE Systems Direct-Read Findings Tables and Calibration Certificates*

ATTACHMENTS

FEBRUARY 11 THROUGH 13, 2025 - H2S MONITORING LOCATIONS



CALIBRATION CERTIFICATE | PASS

Test Performed On 2/10/2025 9:47:38 AM

Visual Alarm --- Audible Alarm ---

Product Name QRAE 3	Model Name QRAE 3	Serial Number M02A018562	Firmware Version V2.18
Next Cal Due 8/6/2025	Next Bump Due ---		
Location ---	Assigned User ---		

Sensor Information

Sensor	Serial Number	Status	Results	Next Cal Due	Due In
LEL	S01403A245UA	Disabled	---	8/6/2025	177 Days
H2S	S032490200C9	Enabled	Pass	8/9/2025	180 Days
OXY	S022035928E5	Disabled	---	8/6/2025	177 Days
CO	S032480509UA	Disabled	---	8/6/2025	177 Days

Fresh Air Calibration | PASS

Sensor	Gas Result	Concentration	Before Cal	After Cal
LEL (%LEL)	---	NA	NA	NA
H2S (ppm)	Pass	0.0	0.0	0.0
OXY (%)	---	NA	NA	NA
CO (ppm)	---	NA	NA	NA

Span Calibration | PASS

Sensor	Gas Result	Concentration	Before Cal	After Cal
LEL (%LEL)	---	NA	NA	NA
H2S (ppm)	Pass	NA	23.4	25.0
OXY (%)	---	NA	NA	NA
CO (ppm)	---	NA	NA	NA

Set Points

Sensor	Low	High	STEL	TWA
LEL (%LEL)	10.0	20.0	---	---
H2S (ppm)	10.0	20.0	15.0	10.0
OXY (%)	19.5	23.5	---	---
CO (ppm)	35.0	200.0	100.0	35.0

Honeywell | Safety Suite Device Configurator

Certificate Generated On 2/10/2025 10:03:24 AM

M02A018562	2/11/2025 9:40:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:39:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:38:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:37:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:36:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:35:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:34:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:33:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:32:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:31:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:30:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:29:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:28:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:27:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0
M02A018562	2/11/2025 9:26:49 AM	H2S	ppm	S032490200C9	Normal	0.0	0.0	0.0	0.0	0.0	0.0

CALIBRATION CERTIFICATE PASS

CalTestPerformedOn 2/13/2025 3:07:51 PM

Audible Alarm ---

Visual Alarm ---

Product Name	Model Name	Serial Number	Firmware Version
QRAE 3	QRAE 3	M02A018562	V2.18

Next Cal Due	Next Bump Due
8/6/2025	---

Location	Assigned User
---	---

Sensor Information

Sensor	Serial Number	Status	Results	Next Cal Due	Due In
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OXY	S022035928E5	Disabled	---	8/6/2025	174 Days
CO	S032480509UA	Disabled	---	8/6/2025	174 Days

Span Calibration PASS

Sensor	Gas Result	Concentration	Before Cal	After Cal
LEL (%LEL)	---	NA	NA	NA
H2S (ppm)	Pass	NA	21.4	25.0
OXY (%)	---	NA	NA	NA
CO (ppm)	---	NA	NA	NA

Set Points

Sensor	Low	High	STEL	TWA
LEL (%LEL)	10.0	20.0	---	---
H2S (ppm)	10.0	20.0	15.0	10.0
OXY (%)	19.5	23.5	---	---
CO (ppm)	35.0	200.0	100.0	35.0