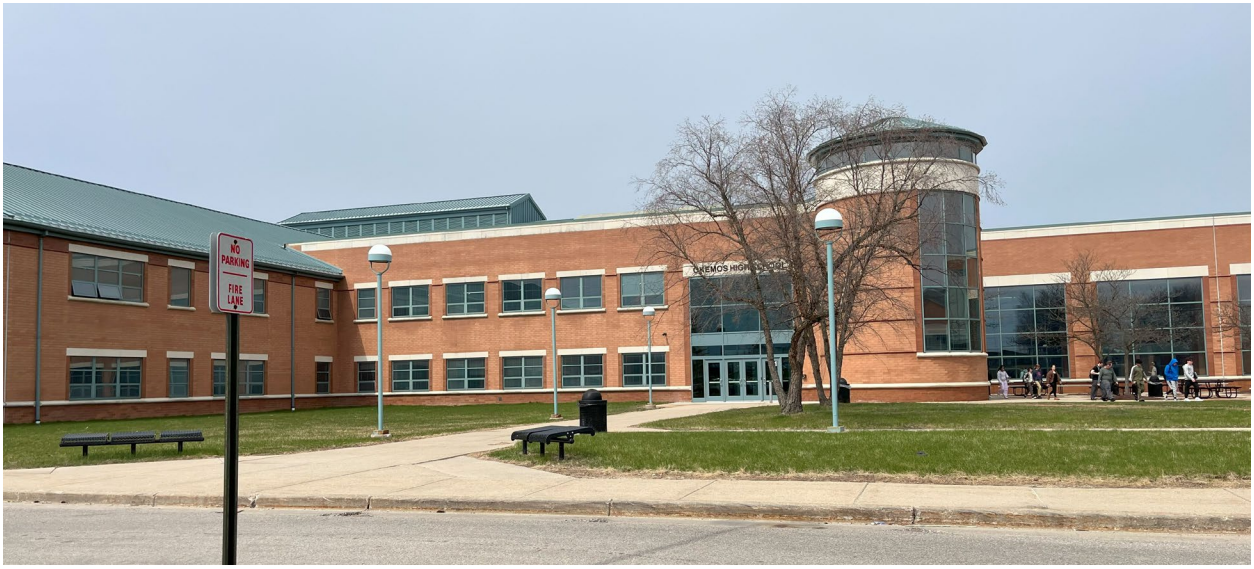
Environmental Resources Group
Assessment • Remediation • Compliance • Risk Management

INDOOR AIR QUALITY EVALUATION REPORT



OKEMOS HIGH SCHOOL KIVA
2800 JOLLY ROAD
OKEMOS, MICHIGAN 48864

PREPARED FOR:

OKEMOS PUBLIC SCHOOLS-OPERATIONS
4000 OKEMOS ROAD
OKEMOS, MICHIGAN 48864
ATTENTION: MR. BRIAN LIEBER

PREPARED BY:

ENVIRONMENTAL RESOURCES GROUP, LLC
3125 SOVEREIGN DRIVE, SUITE 9B
LANSING, MICHIGAN 48911

ERG PROJECT NO.: 250759

PROJECT DATE: APRIL 9, 2025

FINAL REPORT DATE: MAY 30, 2025

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1.0 INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION

Environmental Resources Group, LLC (ERG) was retained by Okemos Public Schools to conduct an Indoor Air Quality Evaluation within the Kiva at Okemos High School, 2800 Jolly Road, Okemos, Michigan. The specific tasks of the evaluation were as follows:

- Conduct visual and olfactory observations in and around the Kiva.
- Conduct sampling for carbon dioxide, oxygen, carbon monoxide, lower explosive limit (LEL) and hydrogen sulfide and conduct measurements of temperature and relative humidity in select locations in and around the Kiva.
- Conduct bioaerosol (air) and microvauum (settled dust) sampling for mold, pollen and other particulate using Zefon Air-O-Cell cassettes in and around the Kiva and out-of-doors.
- Conduct tape sampling of water damaged materials for mold, using IMS Tapelift Samplers.
- Conduct asbestos sampling of water damaged building materials.
- Conduct moisture testing of select substrates in the aforementioned rooms.
- Collect digital photographs of current conditions.

Kristin Peterson conducted the evaluation on April 9, 2025, to determine current indoor air quality conditions in and around the Kiva following a water intrusion event and the presence of visible mold in the Kiva.

1.2 BACKGROUND INFORMATION

The structure is a two-story building of steel and masonry construction. The building has portions of the roof that are metal and portions that are a membrane roof. The building is believed to have been built in the 1990's and was estimated to occupy approximately 320,000 square feet. The school was constructed slab on grade.

The building is heated and cooled by multiple ducted supply and return air forced air mechanical ventilation systems.

Operations Department staff are concerned that the visible mold in the Kiva might be affecting indoor air quality in the room.

Maintenance staff reported that there was a leak from the Mechanical Room above the Kiva in which the dynamic air filters filled with water and caused water to infiltrate into the ceiling below. Maintenance staff

reported that the area was caulked to stop the water infiltration. The dynamic filters were believed to have been the source of water and they were replaced with pleated, wire back filters. No leaks have been reported since the filter change.

1.3 EVALUATION EQUIPMENT AND METHODS

Kristin Peterson, a trained investigator with over 26 years of environmental experience, made visual and olfactory observations and collected samples.

Carbon dioxide measurements were made using an TSI IAQCalc Carbon Dioxide Meter. The meter was allowed to equilibrate for five minutes prior to the collection of data from the instrument. The instrument was used pursuant to the manufacturer's recommendations.

Oxygen, carbon monoxide, LEL and hydrogen sulfide concentrations were measured using an RKI Instruments Inc., Model GX-3R four gas meter. The instrument was allowed to equilibrate for five minutes prior to the collection of data from the instrument. The four-gas meter was used pursuant to the manufacturer's recommendations.

Temperature and relative humidity measurements were made using a Protmex, Model MS6508, digital temperature humidity meter. This instrument was allowed to equilibrate for 5 minutes prior to the collection of data and was used pursuant to the manufacturer's recommendations.

Moisture measurements were collected using an Tramex Moisture Meter. The meter requires no warmup period, its calibration was field verified prior to use and the instrument was used pursuant to the manufacturer's recommendations.

Bioaerosol (air) and microvacuum (dust) samples were collected using Air-O-Cell cassettes, tubing, a calibrated rotometer and a high-volume vacuum pump. All bioaerosol and microvacuum samples were submitted to and analyzed in the ERG Indoor Air Quality Laboratory pursuant to the requirements of modified ASTM International Standard D7391.

Tape samples were collected using IMS Tape Lifter Samples. All tape samples were submitted to and analyzed in the ERG Indoor Air Quality Laboratory pursuant to the requirements of modified ASTM International Standard D7391.

Drywall and drywall joint compound were sampled and tested for asbestos content. The samples were collected by Kristin Peterson of ERG. Ms. Peterson is a State of Michigan accredited asbestos building inspector with Accreditation Number A25037. The collected samples were submitted to ERG for asbestos analysis by Polarized Light Microscopy (PLM) with dispersion staining. The collected samples were analyzed using the Environmental Protection Agency (EPA) Method 600/R-93/116. The ERG PLM Laboratory maintains current National Voluntary Laboratory Accreditation Program (NVLAP) accreditation (Lab Code 101510-0).

Digital photographs were collected using a digital camera.

2.0 VISUAL AND OLFACTORY OBSERVATIONS

During the ERG evaluation, visual and olfactory observations were made by the inspector. A summary of observations in select areas of the building follows:

Kiva

- No musty or other odors were observed immediately upon entry.
- A total of approximately 7 square feet of visible mold was observed on the ceiling in separate locations.
- Water staining was observed on the ceiling in several areas. Water staining was observed on the walls above the door. The carpet was water stained under the ceiling water stain.
- The overall level of dust was low.

Air Handler Area

- No unusual odors were observed upon entry to the area.
- Water-stained building materials were found. No mold growth was observed.
- Caulk was observed on the floor at the air handling unit that was reported to have leaked.
- The overall level of dust was low.

Out-of-doors

- Temperature was warm and skies were overcast with a slight breeze.
- The grounds appeared well maintained.
- Light vehicular traffic was observed.
- Light pedestrian traffic was observed.
- No unusual odors were observed.

3.0 RESULTS OF TESTING

All samples were collected by Kristin Peterson. During sampling, the building was occupied by school staff, students and the investigator.

A log with sample description information and the results of bioaerosol (air), microvauum and tape samples and other sample data appear in Appendix A and are summarized below.

Indoor carbon dioxide was measured between 540 and 646 parts per million (ppm) indoors. Carbon dioxide was measured at 434 ppm out-of-doors.

Oxygen was recorded at 20.9 percent at all indoor and out-of-doors locations.

Carbon monoxide was not detected indoors or out-of-doors.

LEL was not detected indoors or out-of-doors.

Hydrogen sulfide was not detected indoors or out-of-doors.

Indoor temperature was recorded between 72.5 and 79.3 degrees Fahrenheit. Out-of-doors temperature was recorded at 45.0 degrees Fahrenheit.

Indoor relative humidity was recorded between 14.6 and 17 percent. Out-of-doors relative humidity was measured at 18.5 percent.

Moldy and water-stained building materials were observed in the inspected areas.

The results of indoor bioaerosol sample analysis indicated total airborne spore concentrations between 0 and 160 structures per cubic meter of air (s/m^3). Pollen was not detected indoors, and other particulate was recorded between 980 and 5,600 s/m^3. The out-of-door sample had an airborne spore concentration of 200 s/m^3, no pollen was detected and other particulate was recorded at 1,800 s/m^3.

The microvacuum samples had no spores to less than 1% spores in the settled dust.

The tape samples had no spores to 40% spores in the settled dust.

No asbestos was detected in the drywall of drywall joint compound.

Digital photographs appear in Appendix B.

4.0 CONCLUSIONS

Based upon reports by others, the visual and olfactory observations made by the investigator and the results of sample analysis, the following conclusions were drawn:

Test results were indicative of conditions at the time of the investigation and may not represent conditions at other times. No conclusions can be drawn regarding areas of the building which were not inspected.

4.1 DIRECT READ INSTRUMENT MEASUREMENTS

Carbon dioxide (CO_2, a colorless odorless gas that results from normal human respiration) concentrations were acceptable in the tested areas of the building and were below the limits established by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) in Voluntary Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality. The ASHRAE carbon dioxide recommended limit is 700 parts per million (ppm) above the out-of-doors concentration. The out-of-doors carbon dioxide concentration was 434 ppm, making CO_2 concentrations of 1134 ppm or less acceptable in this case. The data indicates that adequate fresh air ventilation was provided to the tested areas of the building.

Oxygen (0_2, a colorless, odorless gas necessary for human life that makes up approximately 20.9% of the atmosphere by volume) concentrations were within the acceptable range of 19.5 – 23.5% at all sampling locations.

Carbon monoxide (CO, a simple asphyxiant gas and possible source of headache) concentrations were acceptable in all indoor tested areas. In fact, carbon monoxide was not detected indoors or out-of-doors.

LEL (combustible gases and possible upper respiratory irritant) concentrations were acceptable in all tested areas. In fact, LEL was not detected indoors or out-of-doors.

Hydrogen sulfide (H_2S, a flammable, colorless, gas that smells like rotten eggs and which may cause upper respiratory irritation) concentrations were acceptable in all tested areas. In fact, hydrogen sulfide was not detected indoors or out-of-doors.

Indoor temperature readings were within the ASHRAE (Standard 55) recommended human comfort temperature range (73-79 degrees Fahrenheit) in all tested locations, excluding one sample collected from the Projection Room which was slightly above the recommended range. As no complaints of thermal discomfort were known from the Projection Room, this finding is believed to be insignificant.

Indoor relative humidity recorded during the inspection was acceptable and was below the limit (65%) recommended by ASHRAE (in voluntary standard 62.1-2007) in all of the collected samples.

4.2 BIOAEROSOL SAMPLE RESULTS

Airborne mold concentrations in "clean" commercial buildings generally total 2,650 s/m^3 or less with spores of the genera *Aspergillus and/or Penicillium* making up not more than 750 s/m^3 and spores of the groups Ascospores and Basidiospores together making up not more than 1,000 s/m^3. The total of all other spores should not exceed 900 s/m^3 (Baxter, Journal of Occupational Environmental Hygiene, January 2005). Those limits are called the Baxter Criteria. Additionally, highly allergenic spores (i.e. – *Pithomyces, Stemphyllium, Stachybotrys*) should not be present in a statistically significant number (i.e. – a raw count of 10 or more spores). Airborne mold concentrations in the building at the times and locations of sampling were within the limits established as the Baxter Criteria and are indicative of "clean" conditions. The out of doors spore concentration was higher than indoors and of a different assemblage.

Indoor airborne pollen concentrations in "clean" air-conditioned buildings are generally below 30 s/m^3. Individuals with pollen allergy may exhibit symptoms when pollen concentrations exceed approximately 50 s/m^3, especially when grass or highly allergenic ragweed pollen are present. Pollen was not detected in the collected indoor air samples.

Organic fibers such as cellulose (paper fibers) may be present in "clean" buildings in the range of 0 to 10,000 s/m^3. These fibers are not known to cause illness or allergy at these levels, but might suggest inadequate housekeeping or poor ventilation, among other things. Cellulose concentrations were within the normal range (0 to 10,000 s/m^3) in the collected air samples.

Inorganic fibers such as mineral wool or fiberglass (fibrous glass) may create dermal irritation when present in concentrations exceeding 1,000 s/m^3. Fibrous glass was not detected in the collected air samples.

Synthetic fibers include polyester and Dacron and do not generally exceed 1,000 s/m^3. The presence of elevated synthetic fiber concentrations suggests degrading synthetic fiber surfaces (clothing, carpet, upholstered furniture) and/or the need for improved housekeeping. Synthetic fibers were detected in the samples but was below the recommend threshold except for two samples which had synthetic fibers above the recommended limit of 1,000 s/m^3.

Mineral fibers, such as gypsum, generally do not exceed 1,000 s/m^3 and may be indicative of uncontrolled renovation or demolition. Mineral fibers were not detected in the collected air samples.

Opaque particles, including soot, fly ash, binders, copy toner, etc., generally do not exceed 5,000 s/m^3. When indoor concentrations exceed 10,000 s/m^3, attempts to identify the source of the particles and reduce their number should be made. The opaque particle concentrations did not exceed the 5,000 s/m^3 threshold in any collected air sample.

Insect fragments, including antennae, legs, wings, etc., should not be observed in "clean" indoor environments. Detectable quantities of insect fragments, including excrement, may cause allergic reactions in sensitive individuals and suggests the existence of current or past infestation or poor housekeeping. Insect fragments were not detected in the collected samples.

This analytical technique cannot differentiate spores of the genus *Aspergillus/Penicillium*, among others, due to their similar morphology. Additionally, some mold, pollen, yeast, bacteria, arthropods, and other airborne constituents may be present, but are not identifiable by this technique.

Water stained (ceiling, walls and carpet) and moldy building materials were found in the Kiva.

Airborne spore concentrations were indicative of "clean" conditions. Elevated synthetic fiber concentrations were found in two of the collected air samples, the source of the elevated synthetic fibers was not found during the inspection and this condition was not believed to be a source of concern. Elevated spores were found on the water-stained ceiling above the west wall. One elevated temperature was found during the investigation. No complaints of elevated temperature were known and this finding is believed to be insignificant.

One elevated mold concentration was found in the tape sample (bulk) was found on the ceiling near the platform of the Kiva.

No asbestos was found in the drywall and drywall joint compound.

The above conclusions are based on the inspection results, observations made at the time of the inspection and information provided by others. Should new or revised information become available, ERG reserves the right to revise the report, modify or change the above conclusions and subsequent recommendations.

5.0 RECOMMENDATIONS

Based on the observations made by the investigator, the findings of this evaluation and the conclusions above, the following recommendation is offered:

1. Ensure that the leak from the HVAC unit has been repaired.
2. Retain GFL Environmental to conduct the removal of mold and water-stained material from the Kiva. Ensure that GFL conducts the work consistent with the New York City Department of Health and Mental Hygiene Guidelines on Assessment and Remediation of Fungi in Indoor Environments, medium isolated areas and requirements and conduct the following:
   a. Remove and dispose of the mold damaged sections of the ceiling in the Kiva. Remove and dispose of any insulation in the wall cavities. Clean and disinfect cavities. Scaffolding and lifts will be required to reach the ceiling in the Kiva.
   b. Clean and disinfect the areas where the moldy ceiling was removed with a EPA registered cleaning agent. Allow the areas to dry.
3. Conduct a visual inspection in the work area in which no visible mold is found.
4. Apply a long-acting biocidal paint to the surfaces and allow it to dry.
5. Following a successful visual inspection conduct mold in air final clearance sampling.
6. Following a successful clearance sampling, rebuild the space.

This evaluation was conducted consistent with sound investigative principles and current industry standards. Information in this report was provided by other than ERG. The accuracy or correctness of that information was not confirmed or verified by ERG. For additional information, please review the attached data or call ERG.

Kristin Peterson
Senior Industrial Hygienist

Phillip A. Peterson
Senior Project Manager

APPENDIX A

Air Sample Data Sheet and Laboratory Data

PROJECT NUMBER 250759 DATE 4/9/2025

PROJECT Okemos High School SAMPLED BY Kristin Peterson

CLIENT Okemos Public Schools ANALYZED BY ERG

AIR SAMPLE DATA SHEET

SAMPLE #	TYPE	DESCRIPTION	TIME ON / TIME OFF	SAMPLE TIME (MIN)	FLOW ON / FLOW OFF (L/MIN)	AVERAGE FLOW	VOLUME (LITERS)	RESULTS CO_2	O_2	LEL	CO	H_2S	T (° F)	RH (%)	Other
1	BA	Bottom vent near entrance to Kiva	13:05 / 13:10		16.1 / 16.1	16.1	80.5								See attached data sheets
2	BA	Top west entrance in Kiva	13:13 / 13:18		16.1 / 16.1	16.1	80.5								See attached data sheets
3	Tape	Under vent at bottom west wall entrance	13:20 /		/										See attached data sheets
4	BA	In hallway outside west Kiva door	13:23 / 13:28		16.1 / 16.1	16.1	80.5								See attached data sheets
5	V	On table lower level of Kiva	13:41 /		/			611	20.6	0	0	0	75.1	17	
6	MV	Water stained soundboard west wall	13:42 /		/										See attached data sheets
7	MV	On water stained carpet west end of Kiva	13:44 /		/										See attached data sheets
8	V	On front desk of Kiva	13:46 /		/			554	20.9	0	0	0	76.6	15.7	
9	V	2nd desk row from top	13:47 /		/			583	20.9	0	0	0	78.2	17	
10	V	Projection Room on desk	13:48 /		/			621	20.9	0	0	0	79.3	14.6	

SAMPLE TYPES:
CO - CARBON MONOXIDE
CO_2 - CARBON DIOXIDE
O_2 - OXYGEN
H_2S - HYDROGEN SULFIDE
LEL - LOWER EXPLOSIVE LIMIT
T - TEMPERATURE
RH - RELATIVE HUMIDITY
FB - FIELD BLANK
B - BULK
MV - MICROVACUUM
BA - BIOAEROSOL
V - VARIOUS

PROJECT NUMBER 250759 DATE 4/9/2025

PROJECT Okemos High School SAMPLED BY Kristin Peterson

CLIENT Okemos Public Schools ANALYZED BY ERG

AIR SAMPLE DATA SHEET

SAMPLE #	TYPE	DESCRIPTION	TIME ON / TIME OFF	SAMPLE TIME (MIN)	FLOW ON / FLOW OFF (L/MIN)	AVERAGE FLOW	VOLUME (LITERS)	RESULTS CO_2	O_2	LEL	CO	H_2S	T (° F)	RH (%)	Other
11	V	Hallway outside Kiva	13:59					646	20.9	0	0	0	78.4	15.2	
12	Tape	Ceiling above west entrance to Kiva	14:02												See attached data sheets
13	BA	Out of doors front of Building	14:00 / 14:05	5	16.1 / 16.1	16.1	80.5								See attached data sheets
14	FB	Field blank													See attached data sheets
15	V	Science Department east wall	14:18					591	20.9	0	0	0	73.4	16.3	
16	BA	Science Department copy area	14:18 / 14:23		16.1 / 16.1	16.1	80.5								See attached data sheets
17	V	Small copy area near entry	14:20					540	20.9	0	0	0	72.5	17	
18	BA	Science department near center	14:24 / 14:29		16.1 / 16.1	16.1	80.5								See attached data sheets
19	V	Out-of-doors front of building	14:27					434	20.9	0	0	0	45	18.5	

SAMPLE TYPES:
CO - CARBON MONOXIDE
CO_2 - CARBON DIOXIDE
O_2 - OXYGEN
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LEL - LOWER EXPLOSIVE LIMIT
T - TEMPERATURE
RH - RELATIVE HUMIDITY
FB - FIELD BLANK
B - BULK
MV - MICROVACUUM
BA - BIOAEROSOL
V - VARIOUS

IAQ Bioaerosol Analytical Report

ERG Project Number: 250759

Client Name: Okemos Public Schools

Project Name: Okemos High School

Date of Sample Collection: 4/9/2025
Date of Submittal: 4/9/2025
Date of Analysis: 4/16/2025

Report Date: 4/16/2025
Analyst: Kaila Schwanitz
Minimum Reporting Limit: 60 s/m³

Sample #	1			2			4		
Sample Location	West entrance below vent kiva			Top west entrance near back wall			Hallway outside kiva west entrance		
Spores	structures/ sample	s/m³	% trace scanned	structures/ sample	s/m³	% trace scanned	structures/ sample	s/m³	% trace scanned
Alternaria	ND			ND			ND		
Ascospore	ND			ND			ND		
Aspergillus/Penicillium	10	100	20.3%	ND			ND		
Basidiospore	ND			ND			ND		
Botrytis	ND			ND			ND		
Chaetomium	ND			ND			ND		
Cladosporium	5	60	20.3%	ND			5	60	20.3%
Curvularia	ND			ND			ND		
Drechslera/Bipolaris	ND			ND			ND		
Epicoccum	ND			ND			ND		
Erysiphae/Oidium	ND			ND			ND		
Fusarium	ND			ND			ND		
Hyphal Fragments	ND			ND			ND		
Nigrospora	ND			ND			ND		
Periconia/ Myxomycete/Smut	ND			ND			ND		
Ulocladium/Pithomyces	ND			ND			ND		
Rhizopus	ND			ND			ND		
Stachybotrys	ND			ND			ND		
Stemphyllium	ND			ND			ND		
Torula	ND			ND			ND		
Miscellaneous/Unidentified Spores	ND			ND			ND		
Total	15	160		ND			5	60	
Pollen									
Grass	ND			ND			ND		
Tree	ND			ND			ND		
Other/Unknown Pollen	ND			ND			ND		
Total	ND			ND			ND		
Other Particulate									
Cellulose Fibers	34	400	20.3%	ND			10	100	20.3%
Fibrous Glass	ND			ND			ND		
Synthetic Fibers	133	1700	20.3%	25	300	20.3%	103	1300	20.3%
Mineral Fibers	ND			ND			ND		
Opaque Particles	276	3500	20.3%	54	680	20.3%	281	3600	20.3%
Insect Fragments	ND			ND			ND		
Total	443	5600		79	980		394	5000	
*Debris rating	1			1			1		

Notes:

All samples prepared and analyzed per the modified ASTM D7391-09.

IAQ Bioaerosol Analytical Report

ERG Project Number: 250759

Client Name: Okemos Public Schools

Project Name: Okemos High School

Date of Sample Collection: 4/9/2025
Date of Submittal: 4/9/2025
Date of Analysis: 4/16/2025

Report Date: 4/16/2025
Analyst: Kaila Schwanitz
Minimum Reporting Limit: 60 s/m³

Sample #	13			14			16		
Sample Location	Out-of-doors front of building			Field Blank			Science dept copy room at entry		
Spores	structures/ sample	s/m³	% trace scanned	structures/ sample	s/m³	% trace scanned	structures/ sample	s/m³	% trace scanned
Alternaria	ND			ND			ND		
Ascospore	ND			ND			ND		
Aspergillus/Penicillium	ND			ND			ND		
Basidiospore	ND			ND			ND		
Botrytis	ND			ND			ND		
Chaetomium	ND			ND			ND		
Cladosporium	15	200	20.3%	ND			ND		
Curvularia	ND			ND			ND		
Drechslera/Bipolaris	ND			ND			ND		
Epicoccum	ND			ND			ND		
Erysiphae/Oidium	ND			ND			ND		
Fusarium	ND			ND			ND		
Hyphal Fragments	ND			ND			ND		
Nigrospora	ND			ND			ND		
Periconia/ Myxomycete/Smut	ND			ND			ND		
Ulocladium/Pithomyces	ND			ND			ND		
Rhizopus	ND			ND			ND		
Stachybotrys	ND			ND			ND		
Stemphyllium	ND			ND			ND		
Torula	ND			ND			ND		
Miscellaneous/Unidentified Spores	ND			ND			ND		
Total	15	200		ND			ND		
Pollen									
Grass	ND			ND			ND		
Tree	ND			ND			ND		
Other/Unknown Pollen	ND			ND			ND		
Total	ND			ND			ND		
Other Particulate									
Cellulose Fibers	10	100	20.3%	ND			ND		
Fibrous Glass	ND			ND			ND		
Synthetic Fibers	20	300	20.3%	5		20.3%	20	300	20.3%
Mineral Fibers	ND			ND			ND		
Opaque Particles	108	1400	20.3%	ND			182	2300	20.3%
Insect Fragments	ND			ND			ND		
Total	138	1800		5			202	2600	
*Debris rating	1			1			1		

Notes:

All samples prepared and analyzed per the modified ASTM D7391-09.

IAQ Bioaerosol Analytical Report

ERG Project Number: 250759

Client Name: Okemos Public Schools

Project Name: Okemos High School

Date of Sample Collection: 4/9/2025 | Report Date: 4/16/2025

Date of Submittal: 4/9/2025 | Analyst: Kaila Schwanitz

Date of Analysis: 4/16/2025 | Minimum Reporting Limit: 60 s/m³

Sample #	18								
Sample Location	Science dept near center at main area								
Spores	structures/ sample	s/m³	% trace scanned	structures/ sample	s/m³	% trace scanned	structures/ sample	s/m³	% trace scanned
Alternaria	ND								
Ascospore	ND								
Aspergillus/Penicillium	ND								
Basidiospore	ND								
Botrytis	ND								
Chaetomium	ND								
Cladosporium	5	60	20.3%						
Curvularia	ND								
Drechslera/Bipolaris	ND								
Epicoccum	ND								
Erysiphae/Oidium	ND								
Fusarium	ND								
Hyphal Fragments	ND								
Nigrospora	ND								
Periconia/ Myxomycete/Smut	ND								
Ulocladium/Pithomyces	ND								
Rhizopus	ND								
Stachybotrys	ND								
Stemphyllium	ND								
Torula	ND								
Miscellaneous/Unidentified Spores	ND								
Total	5	60							
Pollen									
Grass	ND								
Tree	ND								
Other/Unknown Pollen	ND								
Total	ND								
Other Particulate									
Cellulose Fibers	10	100	20.3%						
Fibrous Glass	ND								
Synthetic Fibers	64	810	20.3%						
Mineral Fibers	ND								
Opaque Particles	350	4400	20.3%						
Insect Fragments	ND								
Total	424	5310							
*Debris rating	1								

IAQ Surface Sample Analytical Results

ERG Project Number: 250759

Client Name: Okemos Public Schools
Project Name: Okemos High School

Date of Sample Collection: 4/9/2025
Date of Submittal: 4/9/2025
Date of Analysis: 4/16/2025

Report Date: 4/16/2025
Analyst: Kaila Schwanitz

Sample #	3	6	7
Sample Type	Tape Lift	Microvacuum	Microvacuum
Sample Location	Under vent on drywall west entrance	Water stained sound board west wall	On carpet near west wall
Spores, Pollen, and Other Particulate (In decreasing order of abundance)	Non Fibrous Matter Opaque Particles Synthetic Fibers	Non Fibrous Matter Synthetic Fibers Opaque Particles	Non Fibrous Matter Synthetic Fibers Opaque Particles Pollen *Aspergillus/Penicillium* *Cladosporium* Ascospore
Notes:			This sample contains less than 1% spores.

Surface samples were analyzed pursuant to the requirements of the ASTM International Standard D-7391.

IAQ Surface Sample Analytical Results

ERG Project Number: 250759

Client Name: Okemos Public Schools
Project Name: Okemos High School

Date of Sample Collection: 4/9/2025
Date of Submittal: 4/9/2025
Date of Analysis: 4/16/2025

Report Date: 4/16/2025
Analyst: Kaila Schwanitz

Sample #	12		
Sample Type	Tape Lift		
Sample Location	Water stained ceiling above west wall		
Spores, Pollen, and Other Particulate (In decreasing order of abundance)	Non Fibrous Matter *Pithomyces* Hyphal Fragments Synthetic Fibers		
Notes:	This sample contains approximately 40% spores and related structures.		

Surface samples were analyzed pursuant to the requirements of the ASTM International Standard D-7391.

Comments

*Debris rating (% obstructed by particulate matter): 0= no particulate matter detected, 1= >0-5%, 2= 6%-25%, 3= 26%-76%, 4= 75%-90%, 5= >90%. Where debris rating =5, fungal/pollen/other particulate are reported as "present." For debris ratings 2-4, negative bias is expected. The degree of negative bias increases with the percent of the trace that is obstructed.

Samples were received in acceptable condition, unless otherwise indicated. Results relate only to items tested. Results are reported in units of structures per cubic meter of air (s/m³), except blank samples, where the actual number of observed particles are reported. Spore types listed without a count or other data indicate that the specific analyte was not detected during the course of sample analysis. Spores of the genera *Aspergillus* and *Penicillium* are categorized together due to their small size and spherical shape with few distinguishing characteristics. Other similar spores will be categorized as *Aspergillus*/*Penicillium* unless fruiting bodies allow more precise identifications.

ND= none detected (minimum of 20.3% trace scanned) unless otherwise reported .

Minimum Reporting Limit represents the lowest calculated limit in this report.

Flow Rate is in liters per minute. Time is reported in minutes.

The enclosed data from Environmental Resources Group, LLC (ERG) is for sample(s) collected by our client. The client bears all risk relative to the use of this data, including any course of action or inaction. Further, ERG asserts that the data pertains only to the submitted sample(s). ERG makes no representation or guarantee about the source of the material analyzed, the suitability of the sample size, sample frequency or sample distribution, or the relationship of the submitted sample(s) to the area sampled.

Approved Signatory: _____

Date: 4/16/2025

ERG Environmental Resources Group
3125 Sovereign Drive • Suite B • Lansing, MI 48911
Phone: 517-999-6020 • Fax 248-924-3108

Client Name: Okemos Public Schools
Contact Person: K. Peterson
Project Name/ Number: 250759
Project Location: Okemos High School
Email Distribution List:
Phone No.:
Purchase Order No.:

Date	Time	Sample #	Client Sample Descriptor	MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	PARAMETERS: TAQ	HOLD SAMPLE	Remarks:
4/9/25		-01	west entrance below vent Riva	A	1	X		79L - BA
		-02	Top west entrance near backwall	A	1	X		BA - 79L
		-03	under vent on drywall west entrance	A	1	X		Tape
		-04	Hallway outside Riva west entrance	A	1	X		BA - 79L
		-06	water stained sound board west wall	A	1	X		MV
		-07	on carpet near west wall	A	1	X		MV
		-12	Water stained ceiling tile above west wall	A	1	X		Tape
		-13	out-of doors front of bld	A	1	X		BA - 79L
		-14	Field Blank	A	1	X		BA - 0L
		-16	science dept copy room at entry	A	1	X		BA - 79L

Matrix Code: S Soil; A Air; O Oil; B Bulks; GW Ground Water; SW Surface Water; W Wastewater; X Other: Specify

Comments:

Samples received in acceptable condition ☑

Sampled/Relinquished By: [signature] Date/ Time 4/9/25
Relinquished By: Date/ Time
Relinquished By: Date/ Time

Received By:
Received By:
Received By Laboratory: [signature]

Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

_____Same day _____ 1 bus. day _____ 2 bus. days _____ 3 bus. days _____ 4 bus. days

●
_____5-7 bus. days (standard) Other (specify time/date requirement): _____

LAB USE ONLY

ERG project number: 250759

Temperature upon receipt at Lab (If applicable):

Please see back for terms and conditions

Environmental Resources Group
3125 Sovereign Drive • Suite B • Lansing, MI 48911
Phone: 517-999-6020 • Fax 248-924-3108

Client Name: Okemos Public Schools
Contact Person: K. Peterson
Project Name/ Number: 250759
Project Location: Okemos High School
Email Distribution List:
Phone No.:
Purchase Order No.:

Date	Time	Sample #	Client Sample Descriptor	MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	PARAMETERS: TAT	PARAMETERS	HOLD SAMPLE	Remarks
4/9/25		-18	Science dept near center of main area	A	1	X			BA -79L

Matrix Code: S Soil; A Air; O Oil; B Bulks; GW Ground Water; SW Surface Water; W Wastewater; X Other: Specify

Comments:

Samples received in acceptable condition ☑

Sampled/Relinquished By:	Date/ Time: 4/9/25 @ 16:00	Received By:
Relinquished By:	Date/ Time:	Received By:
Relinquished By:	Date/ Time:	Received By Laboratory:

Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

_____Same day _____ 1 bus. day _____ 2 bus. days _____ 3 bus. days _____ 4 bus. days

●_____5-7 bus. days (standard) Other (specify time/date requirement): _____

LAB USE ONLY

ERG project number: 250759

Temperature upon receipt at Lab (if applicable):

Please see back for terms and conditions

APPENDIX B

Asbestos Sampling Report

BULK SAMPLE ANALYTICAL REPORT

Project # 250759

NVLAP Accreditation #101510-0

Client Name: Okemos Public Schools
Project Name: Okemos High Schools
Summary: 6 Collected Bulk Samples, 11 Sample Layers Analyzed.

Date Sampled: 4/9/2025
Date Submitted: 4/9/2025
Date Analyzed: 4/11/2025

Client P.O. #: N/A
C.O.C. #: N/A
Report Date: 4/11/2025

ERG Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos Containing Portion	Analyst
1-1	1-1	White powdery material, Drywall. Layer 1 of 3. (Homogeneous)	NAD	Cellulose fibers 1% Non-fibrous material 99%	KS
1-1	1-1	Tan fibrous material, Drywall. Layer 2 of 3. (Homogeneous)	NAD	Cellulose fibers 90% Non-fibrous material 10%	KS
1-1	1-1	White powdery material, Drywall. Layer 3 of 3. (Homogeneous)	NAD	Cellulose fibers 2% Fibrous glass 2% Non-fibrous material 96%	KS
1-2	1-2	White powdery material, Drywall. Layer 1 of 3. (Homogeneous)	NAD	Cellulose fibers 1% Non-fibrous material 99%	KS
1-2	1-2	Tan fibrous material, Drywall. Layer 2 of 3. (Homogeneous)	NAD	Cellulose fibers 90% Non-fibrous material 10%	KS
1-2	1-2	White powdery material, Drywall. Layer 3 of 3. (Homogeneous)	NAD	Cellulose fibers 2% Fibrous glass 2% Non-fibrous material 96%	KS
1-3	1-3	Tan fibrous material, Drywall. Layer 1 of 2. (Homogeneous)	NAD	Cellulose fibers 90% Non-fibrous material 10%	KS

BULK SAMPLE ANALYTICAL REPORT

Project # 250759

NVLAP Accreditation #101510-0

Client Name: Okemos Public Schools
Project Name: Okemos High Schools
Summary: 6 Collected Bulk Samples, 11 Sample Layers Analyzed.

Date Sampled: 4/9/2025
Date Submitted: 4/9/2025
Date Analyzed: 4/11/2025

Client P.O. #: N/A
C.O.C. #: N/A
Report Date: 4/11/2025

ERG Sample No.	Client I.D. No.	Description / Location	Asbestos Type	Non-Asbestos-Containing Portion	Analyst
1-3	1-3	White powdery material, Drywall. Layer 2 of 2. (Homogeneous)	NAD	Cellulose fibers 2% Fibrous glass 2% Non-fibrous material 96%	KS
2-1	2-1	White powdery material, Drywall joint compound. (Homogeneous)	NAD	Cellulose fibers 1% Non-fibrous material 99%	KS
2-2	2-2	White powdery material, Drywall joint compound. (Homogeneous)	NAD	Cellulose fibers 1% Non-fibrous material 99%	KS
2-3	2-3	White powdery material, Drywall joint compound. (Homogeneous)	NAD	Cellulose fibers 1% Non-fibrous material 99%	KS

Comments

Bulk samples were analyzed using the USEPA Test Method EPA/600/R-93/116: Method for Determination of Asbestos in Bulk Building Materials and EPA-40 CFR Appendix E to Subpart 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples. The constituent percent reported represents an estimate of the area percent of the component. The test report relates only to items tested. This report is not intended to be used as a product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced, except in full, without the written approval of the laboratory. Individual sample layers are homogeneous, unless otherwise noted.

If no asbestos was detected in a sample the acronym NAD (no asbestos detected) will appear in the Asbestos Type column of the report.

Fine fibers like those in floor tile may not be discernible by this method.

Factors related to measurement uncertainty have been identified and are available up request.

Test items were received in acceptable condition unless otherwise noted. Revision 5.0 dated 08/27/19.

Approved Signatory: Kristin Schmidt

Date: 4/11/2025

Environmental Resources Group
3125 Sovereign Drive • Suite B • Lansing, MI 48911
Phone: 517-999-6020 • Fax 248-924-3108

Client Name: Okemos Public Schools
Contact Person: K. Peterson
Project Name/ Number: 250759
Project Location: Okemos High School
Email Distribution List:
Phone No.:
Purchase Order No.:

Date	Time	Sample #	Client Sample Descriptor	MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	PARAMETERS: PLM	HOLD SAMPLE
4/9/25		1-1	white drywall	B	1	X	
		1-2	" "	B	1	X	
		1-3	" "	B	1	X	
		2-1	white drywall joint compound	B	1	X	
		2-2	" "	B	1	X	
		2-3	" "	B	1	X	

Matrix Code

S	Soil	GW	Ground Water
A	Air	SW	Surface Water
O	Oil	W	Wastewater
B	Bulks	X	Other: Specify

Remarks: test till postive

Comments:

Samples received in acceptable condition ☑

Sampled/Relinquished By:	Date/ Time 4/9/25	Received By:
Relinquished By:	Date/ Time	Received By:
Relinquished By:	Date/ Time	Received By Laboratory:

Turnaround Time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

_____Same day _____1 bus. day _____2 bus. days _____3 bus. days _____4 bus. days

X 5-7 bus. days (standard) Other (specify time/date requirement): _____

LAB USE ONLY

ERG project number:

Temperature upon receipt at Lab (if applicable):

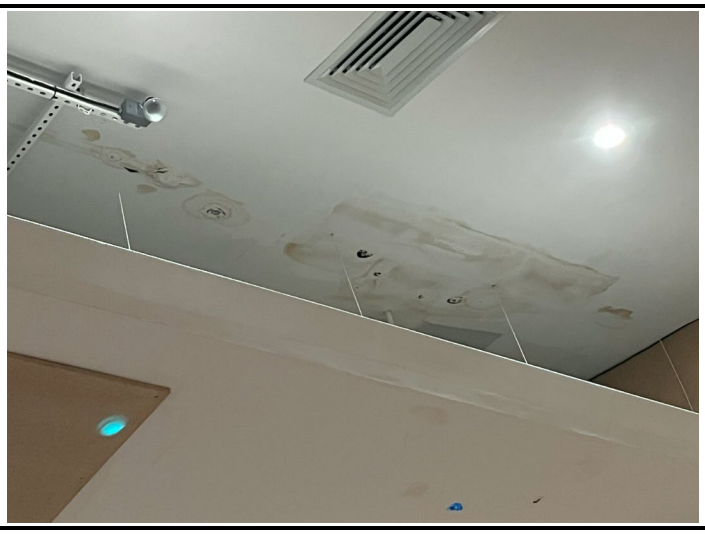
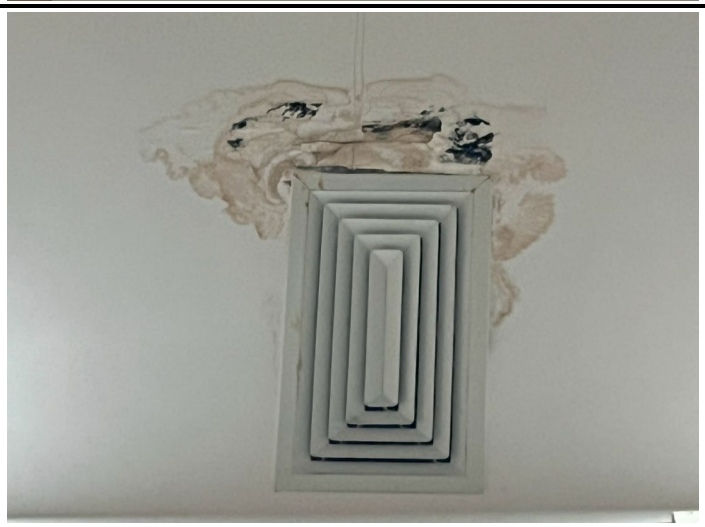
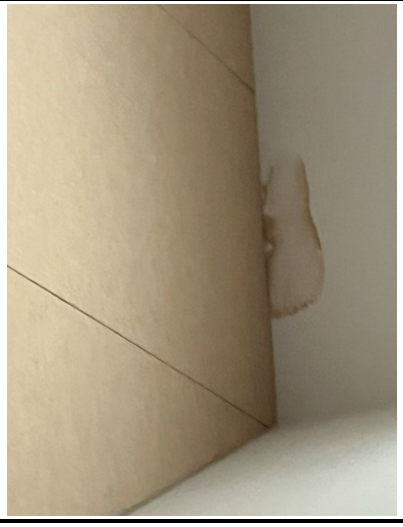
Please see back for terms and conditions

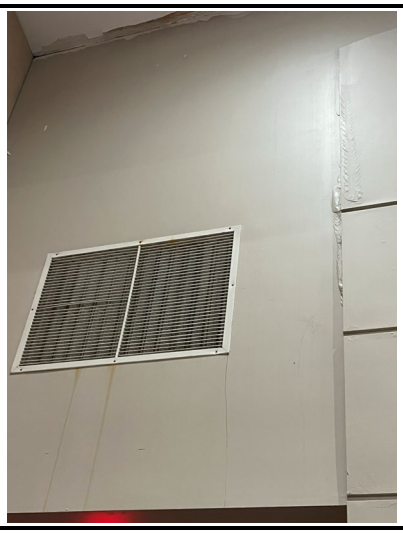
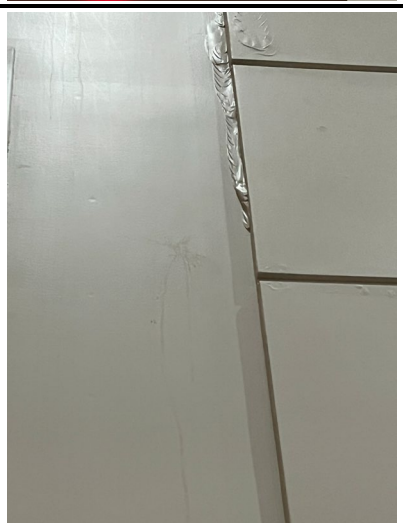
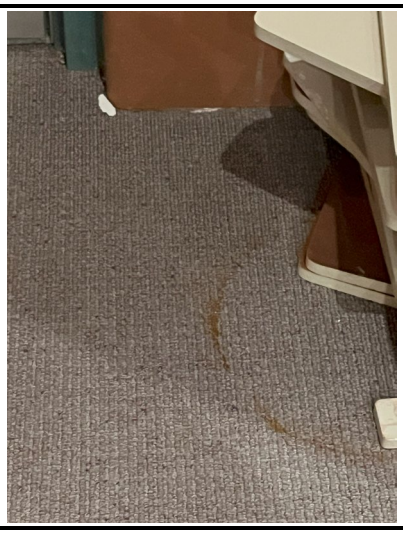
APPENDIX C

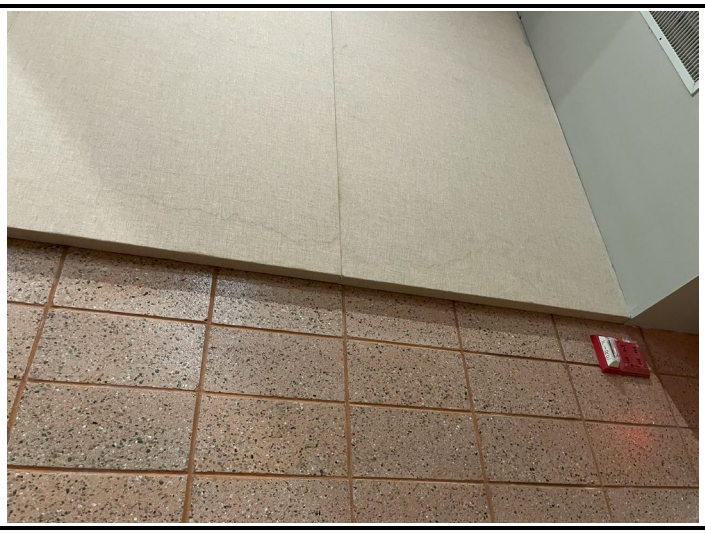
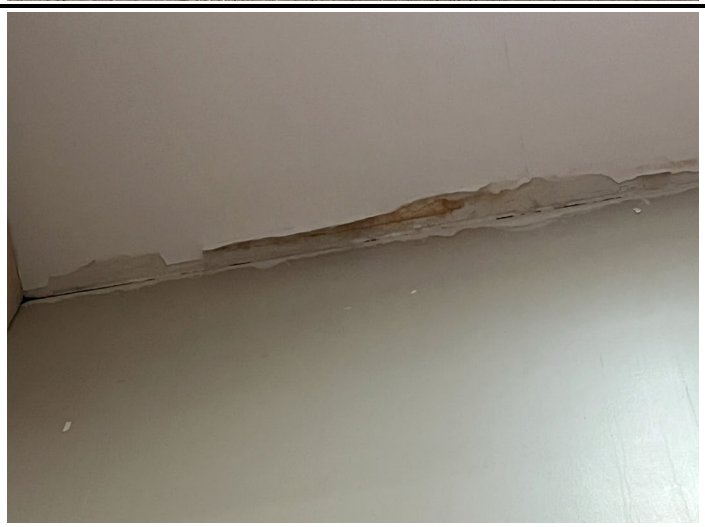
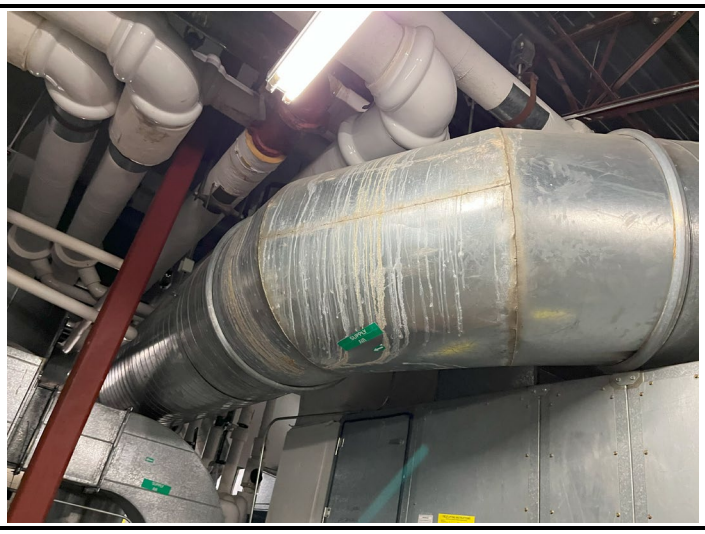
Digital Photograph Log

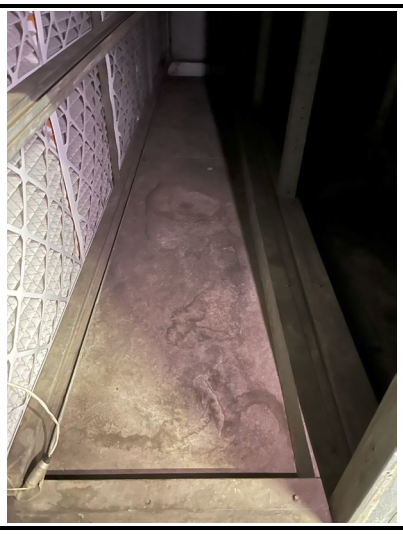
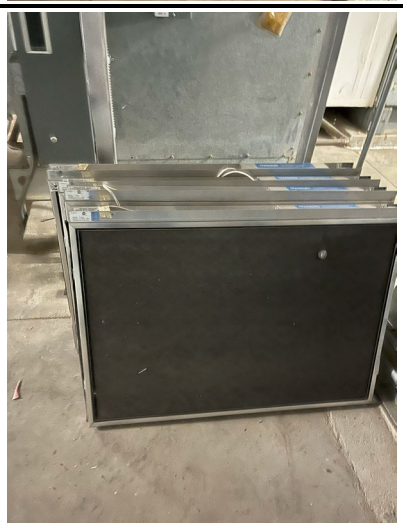
Photograph Date: April 9, 2025
Photo taken by: ERG
Site: Okemos High School, Kiva, Okemos, MI
ERG Project #: 250759

ERG Environmental Resources Group
Assessment • Remediation • Compliance • Risk Management

	1. Water stained and moldy ceiling was observed in the Kiva.
	2. Visible mold was observed around the vent in the Kiva.
	3. Water stained ceiling was observed in the Kiva near the door.

	4. Water stains and peeling paint was observed above the door.
	5. Damaged paint was observed over the door way.
	6. Water stained carpet was observed upon entry to the Kiva.

	7. Water stains were observed on the fabric on the walls.
	8. Water stained and damaged ceiling was observed in the Kiva.
	9. Water stains were observed in the mechanical Room.

	10. Picture inside the air handler that services the Kiva.
	11. A picture of the dynamic air filter that was removed from the Air Handler.