



Eric J. Holcomb
Governor

Lindsay M. Weaver, MD, FACEP
State Health Commissioner

September 4, 2024

RDC 589

Dr. Jamison Wilkins, Superintendent
Southwestern Consolidated School District
3406 W 600 S
Shelbyville, IN 46176

Dear Dr. Wilkins:

The purpose of this letter is to report the result of our indoor air quality evaluation of the Southwestern Elementary School on August 13th and August 27th. This evaluation was to follow-up on our June 18th visit. At that time there were no students in the building so carbon dioxide concentrations would not be representative of occupied classrooms.

The Indiana State Department of Health's Microbiological Laboratory incubated and counted the fungal and bacterial units. The colony forming units per cubic meter of air (CFU/M³) were computed taking the fungal or bacterial counts and dividing by the total volume of the sampled air. For sample number 9, collected in the Music room, our laboratory reported that there was a fast-growing fungus (mold) on the sample that covered the petri dish during the required two-day incubation period. Because of that, they were not able to report a fungal or bacterial concentration for that sample. We returned on August 27th and resampled the Music room. The indoor fungal concentrations were lower than the outdoor concentrations. Please refer to Table 1 for further details. There are no limits established as an acceptable concentration of fungal counts indoors. There are guidelines that recommend fewer counts indoors than outdoors. The indoor bacteria concentrations were within the range typically seen indoors.

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The Carbon dioxide (CO₂) levels inside were measured with the highest reading 955 parts CO₂ per million parts of air (ppm). The School Indoor Air Quality rule, 410 IAC 33-4-2 states "(a) Outdoor Air shall be supplied to classrooms when occupied. (b) Carbon dioxide concentrations in the breathing zone shall never exceed 700 ppm over the outdoor concentration", in this case giving a limit of 1110 ppm on August 18th and 1178 on August 27th. ASHRAE (American Society of Heating, Refrigeration, and Air Conditioning Engineers) recommends 15 cfm (cubic feet per minute) of outdoor air per person for classrooms.

The outdoor relative humidity was measured at 43 percent (%) on August 18th and the indoor relative humidity had a range of 58 to 64%. 410 IAC 33-4-4 sets the maximum relative humidity level in air-conditioned schools at 65% during periods of student occupancy. In the US EPA's publication "Mold Remediation in Schools and Commercial Buildings" they recommend maintaining a relative humidity level below 60% but ideally 30 – 50% if possible. Studies have shown that low relative humidity can cause dryness and irritation of the respiratory tract making individuals more susceptible to infections while high relative humidity levels can promote the growth of allergens such as dust mites or mold.

Based on sample results and our visual inspection we note the following:

- 1) The fungal and bacteria concentrations were all acceptable. The sample results did not indicate that there was an issue with airborne mold spores in the building.
- 2) Our air quality measurements and sample results were all within the acceptable range. We found no problems with the air quality in the building.



As no deficiencies are noted in this report you are not required to send a response letter to us.

The School Indoor Air Quality rule 410 IAC 33-6-2 requires this report, within 5 working days of receipt, to be posted for 14 days both at the school building stated in the report, and on the school's website, where it is accessible to students, parents, and employees. Please respond back providing the link where this is posted on the website.

If you have questions, I can be reached at 317.682.9033.

Sincerely,

RON CLARK,
Industrial Hygienist
Indoor Air Section, Environmental Public Health

Enclosure



TABLE 1
Southwestern Elementary School

Computed Microbiological Air Sample Results
Taken August 13th and August 27th, 2024

Sample	Location (room)	Occupants	Temp °F	RH %	CO2 ppm	Fungal cfu/m ³	Bacterial cfu/m ³
1	107	22	73	58	908	0	20
2	108	2	73	60	816	40	0
3	139	0	71	64	823	20	0
4	Gym	12	74	63	921	160	40
5	130	23	73	61	954	100	0
6	127	0	72	61	804	20	0
7	124	24	72	62	955	40	0
8	Art	17	74	63	755	40	0
9	Music	19	73	62	751	**	**
10	Outside	0	80	43	410	1020	20
1A	Music (8/27)	0	71	54	570	60	0
2A	Outside (8/27)	0	73	78	478	1020	500

Notes: ** See comments above regarding sample 9.

% -----percent

ppm-----parts per million

CFU/M³—colony forming units per cubic meter of air