Indiana State Department of Health
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Michael R. Pence
Governor

Jerome M. Adams, MD, MPH
State Health Commissioner

November 2, 2016

MB3-99-RLP-#356
Mr. Jeff Fritz, Superintendent
Clay Community Schools
1013 S. Forest Ave.
Brazil, IN 47834

Dear Mr. Fritz:

The purpose of this letter is to report the result of our indoor air quality evaluation at Clay City Elementary School on October 24, 2016. This evaluation was conducted at Mr. Howard's request to address the health concerns of the occupants that may be related to indoor air quality of the school.

The Indiana State Department of Health's Microbiological Laboratory incubated and counted the fungal and bacterial units. The total colony forming units per cubic meter of air (CFU/M^3) were computed by adding the fungal and bacterial counts, and dividing the sum by the total volume of the sampled air. Please refer to Table 1 for further details. Outdoor fungal counts were higher than any areas inside the building. There are no limits established as an acceptable concentration of fungal counts indoors. There are guidelines that recommend fewer counts indoors than outdoors.

The Carbon dioxide (CO_2) level was measured inside the classrooms. The highest carbon dioxide level measured was 1072 parts CO_2 per million parts of air (ppm). The School Indoor Air Quality rule, 410 IAC 33-4-2 states "carbon dioxide concentrations in the breathing zone shall never exceed 700 ppm over the outdoor concentration", in this case giving a limit of 1088 ppm. 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 40 percent (%). The indoor relative humidity was 47%. The American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE) recommend the relative humidity in habitable spaces preferably should be maintained between 30% and 60% to minimize growth of allergenic and pathogenic organisms.

Humidity levels above 50% have been found to increase the population size of molds, fungi and mites that may cause allergies. The evidence suggests that humidity levels should be maintained between 40% and 50% to reduce the incidence of upper respiratory infections and to minimize the adverse effect on people suffering from asthma or allergies. Such a range would be hard to maintain, however, exposure to higher or lower levels are unlikely to affect the health of most people.

Individuals experiencing any health problems should seek medical advice from a physician.

The School Indoor Air Quality rule 410 IAC 33-6-2 requires this report be posted for 14 days at the location of the school building stated in the report so they are accessible to all students, parents, and employees.

If you have questions, please contact me at 317/351-7190 ext. 264

Sincerely,

RICK PLEW
Industrial Hygienist
Indoor Air Section, Environmental Public Health Division

Enclosure

TABLE 1

Clay City Elementary School
681 N. Lankford Street
Clay City, IN

Computed Microbiological Air Sample Results
Taken October 24, 2016

SAMPLE ID	LOCATION	NO. OF OCCUPANTS	RELATIVE HUMIDITY (%)	CARBON DIOXIDE (ppm)	AIR SAMPLED (liters)	FUNGAL COUNT (CFU/M^3)	BACTERIAL COUNT (CFU/M^3)	TOTAL COUNT (CFU/M^3)
17	B-152	31	46	843	50	240	0	240
18	B-153	30	47	1072	50	260	0	260
19	Outdoor	-	40	388	50	360	20	380

Notes:

% ---------percent
Ppm-------parts per million
CFU/M^3—colony forming units per cubic meter of air