

Illinois Department of
**Public
Health**

Jim Edgar, Governor • John R. Lumpkin, M.D., M.P.H., Director

2309 West Main Street • Marion, Illinois 62959-1195

December 22, 1997

UNION COUNTY - Anna
Indoor Air Investigation
#512179701

RE: Davie School

Mr. John Hill
Superintendent
301 South Green
Anna, IL 62906

Dear Mr. Hill:

On December 17, 1997, our representative, Lynn Stone, conducted an investigation at the Davie School in Anna. This was in response to concerns of possible elevated levels of carbon monoxide (CO) inside the school as a result of the coal operated furnace. Air monitoring was conducted using a Q-Trak IAQ Monitor to measure CO levels.

While Ms. Stone was at the school, CO concentrations of 2 to 3 parts per million (ppm) were generally detected throughout the building. A walk-through survey was conducted throughout the entire building. The highest CO concentration detected in the school was 5 ppm. This was detected in the cafeteria area near the kitchen. This was measured at approximately 12:30 p.m. following the lunch period.

Carbon monoxide is found in the atmosphere at normal background levels of approximately 10 ppm. Average levels of CO in buildings range from 0.5 to 5 ppm. In general, CO is a product of incomplete combustion of carbon-containing material. Common sources of CO include gas appliances, kerosene heaters, wood stoves, automobile exhaust and tobacco smoke. Most accidents from CO poisoning occur when the sources of combustion are inadequately vented. A thorough and periodic inspection of all sources that involve combustion should be routinely performed to ensure carbon monoxide does not become a problem in a building. Levels of carbon monoxide inside a building should not exceed 9 ppm. It is recommended that all buildings with indoor combustion sources install carbon monoxide detectors approved by Underwriters Laboratories (UL) to continuously monitor for this gas.

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Carbon monoxide combines with hemoglobin in the blood to form carboxyhemoglobin. A small amount of CO is normally produced in the body maintaining a carboxyhemoglobin level between 0.4 to 0.7%. In comparison, a smoker may have a carboxyhemoglobin level of 5 to 20%. Carbon monoxide becomes toxic when the carboxyhemoglobin interferes with the oxygen-carrying capacity of the blood interrupting the normal oxygen supply to the tissues. The typical symptoms of acute CO poisoning include headache, dizziness, drowsiness, nausea, vomiting and confusion. At very high concentrations, coma or death may occur. The amount of carboxyhemoglobin formed in an individual is dependent on such factors as the concentration and duration of CO exposure and the health and metabolism of the exposed individual.

If you should have any questions or we can be of additional assistance, do not hesitate to contact Lynn Stone at the Marion Regional Office, telephone 618/993-7010, TTY 800/547-0466 (for the hearing impaired only).

Very truly yours,



James M. Buitt
Regional Supervisor

LMS/kay

cc: Div. of Env. Health - Env. Tox. ✓
MRO - Env. Tox.