

# INDUSTRIAL HYGIENE REPORT

## Faye Wright Elementary School

Report to: Vonnie Good, Risk Management

by: Kathy Ellis Senior Industrial Hygiene Consultant and  
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On-site: December 3 – 6, 2012

Report: December 12, 2012

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### **PURPOSE**

Radon monitoring was done to measure the background levels in all classrooms, offices and staff work rooms that are in contact with the ground or below ground level.

### **TEST METHOD**

Radon Air-Chek short-term test devices were used in each location by placing the device 5-6 feet above the floor where it is not in direct contact with airflow from the ventilation system, windows or exterior doors. Staff were requested to keep windows closed during the testing.

These short-term devices work by trapping room air inside the grains of charcoal with the devices, meaning that live radon gas is being captured. The analysis is performed by measuring the radiation emitted from the charcoal, which is proportional to the amount of radon that was present in the room air.

The testing occurred from Monday, December 3 to Thursday, December 6 during normal and routine operation of the school.

### **EPA RADON GUIDELINES**

The EPA has set an Action Level of 4.0 pCi/L (picoCuries per liter) for schools. If classrooms or buildings have radon levels at or above 4.0 pCi/L, EPA recommends that schools take action to reduce the level. These actions include:

Step 1: If your result is 4.0 pCi/L or higher, take a follow-up test (Step 2) to be sure.

Step 2: Follow up with either a long-term test or a second short-term test:

### **RESULTS and RECOMMENDATION**

No test locations were above the EPA's Action Level of 4.0 picoCuries per liter (pCi/l). One test location was slightly below the Action Level, Media Center Technology room @ 3.6 pCi/L.

It is recommended that the operation of the ventilation system(s) for this room be checked to make sure that the amount of outdoor air supplied has not been shut off. If possible increase the amount of outdoor air to this room, then retest the room for radon levels.

### **BACKGROUND ON RADON**

Radon is a gas that occurs in nature, seeping up from the earth. It is odorless, colorless and tasteless. Radon comes from the natural breakdown, or radioactive decay, from uranium 238, and produces radon. The half-life of an individual element is relatively short. Within two weeks, about 90% of a given amount of radon gas will be gone. However, the actual health concern is for the radon decay products, called radon progeny, which carry a small static charge that allows their attachment to water vapor, dust and smoke particles in the air.

The Radon progeny can become lodged in the lung tissue when they are inhaled, and it is these particles' further radiation decay that is associated with potential lung cancer effects.

Radon can seep into buildings or schools through cracks in slab floors or porous cinderblock. It can enter around loose-fitting drainage pipes or through sump pumps.

The US EPA has set an action level of 4.0 pCi/L. At or above this level of radon, the EPA recommends that corrective measures should be taken to reduce the exposure to radon gas.

### **CONTROL OF RADON LEVELS IN SCHOOLS**

The major control mechanism for lowering radon levels within school buildings is use of dilution ventilation. If the amount of outside air delivered into a building increases, the radon levels should decrease.

**Sample Data Attached**

Radon test result report for:**FAYE WRIGHT  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4588518	COMPUTER LAB	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.8	2012-12-11
4588490	COORDNATOR	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.9	2012-12-11
4588489	COUNSELOR	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	< 0.3	2012-12-11
4588519	CUSTODIAL	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.6	2012-12-11
4588520	KITCHEN	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.6	2012-12-11
4588491	LRC	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.5	2012-12-11
4588504	MEDIA/TECH	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	3.6	2012-12-11
4588488	PRINCIPAL	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	1.3	2012-12-11
4588497	RM 1	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	< 0.3	2012-12-11
4588506	RM 10	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	1.1	2012-12-11
4588507	RM 12	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.9	2012-12-11
4588508	RM 14	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.8	2012-12-11
4588517	RM 15	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	< 0.3	2012-12-11
4588509	RM 16	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	1.0	2012-12-11
4588516	RM 17	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.7	2012-12-11
4588510	RM 18	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.8	2012-12-11
4588515	RM 19	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.5	2012-12-11
4588500	RM 2	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.5	2012-12-11
4588511	RM 20	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.7	2012-12-11
4588514	RM 21	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	1.0	2012-12-11
4588512	RM 22	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	1.2	2012-12-11
4588513	RM 23	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	< 0.3	2012-12-11
4588496	RM 3	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	< 0.3	2012-12-11
4588501	RM 4	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	1.6	2012-12-11
4588495	RM 5	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	1.0	2012-12-11
4588502	RM 6	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.6	2012-12-11
4588494	RM 7	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	< 0.3	2012-12-11
4588503	RM 8	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.8	2012-12-11
4588493	RM 9	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	< 0.3	2012-12-11
4588492	RM11 OFFICE	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	< 0.3	2012-12-11
4588487	SPEECH	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	0.6	2012-12-11
4588505	STAFF RM	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	2.5	2012-12-11

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December 11, 2012

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:  
**FAYE WRIGHT**  
**GYM**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4588499	MUSIC	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	2.1	2012-12-11
4588498	PE OFFICE	2012-12-03 @ 11:00 am	2012-12-06 @ 2:00 pm	2.3	2012-12-11

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