

INDUSTRIAL HYGIENE REPORT

Washington Elementary School

Report to: Vonnie Good, Risk Management

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On-site: January 28-31, 2013

Report: February 12, 2013

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, January 28 to Thursday, January 31, 2013, 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).

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:

SK

WASHINGTON

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
4597153	COUNSELOR	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597155	CSOC OFFICE	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597145	CUSTODIAN	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597159	FOOD SERVICE	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	0.5	2013-02-05
4597133	MUSIC	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	1.2	2013-02-05
4597152	OFFICE MANAGER	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	1.1	2013-02-05
4597134	PE OFFICE	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	1.0	2013-02-05
4597160	PRINCIPAL	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	0.7	2013-02-05
4597154	RM 1	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	0.9	2013-02-05
4597140	RM 10	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	0.7	2013-02-05
4597142	RM 11	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	0.7	2013-02-05
4597144	RM 12	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597147	RM 13	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597149	RM 14	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597148	RM 15	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	1.1	2013-02-05
4597146	RM 16	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	1.1	2013-02-05
4597157	RM 17	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597158	RM 19	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597150	RM 2	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	1.9	2013-02-05
4597143	RM 3	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	1.2	2013-02-05
4597141	RM 4	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	1.4	2013-02-05
4597139	RM 5	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	0.8	2013-02-05
4597138	RM 6	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	0.5	2013-02-05
4597136	RM 7	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597135	RM 8	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	0.9	2013-02-05
4597137	RM 9	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	0.7	2013-02-05
4597156	SPEECH PATH	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05
4597151	STAFF	2013-01-28 @ 2:00 pm	2013-01-31 @ 2:00 pm	< 0.3	2013-02-05