

Salem Keizer School District

Schirle School

Report to: Vonnie B. Good, EHS Salem Keizer School District
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RADON TESTING SAMPLE REPORT

On-site: March 29 – April 1, 2016 and April 1–4, 2016
Report: April 10, 2016

PURPOSE

Follow up radon testing was done in all occupied rooms after a radon remediation system had been installed next to the school office and the ventilation systems in the school were checked and adjusted.

Testing was conducted during three days while the school was fully occupied and then again over a weekend when the ventilation systems are operated in a non-occupied mode to determine if the remediation system is reducing the amount of radon emitted into the school.

CONCLUSION and RECOMMENDATION

All of the tested rooms, during both ventilation system operation conditions, had radon levels below the EPA's Action Level at or above 4 picoCuries/Liter (pCi/L.) The remediation system has reduced the amount of radon in the school to very low levels.

TESTING

Radon Air-Chek short-term test devices were used in offices and all classrooms in the school by suspending the device in each room. The testing occurred while the school was occupied from Tuesday, March 29 to Friday, April 1, 2016, during normal and routine school ventilation system operation, as well as with the new radon abatement system operating. The second set of tests were done while the school was not occupied, from Friday, April 1 to Monday, April 4, 2016, while the ventilation systems were in a non-occupied mode and while the new radon abatement system was operating.

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, of Uranium 238. 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. Pressure differentials between the building and the soil surrounding the foundation can draw soil gases into the building.

The US EPA has set an Action Level of 4.0 pCi/L. At or above this level of radon, the EPA recommends 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 the use of dilution ventilation. If the amount of outside air delivered into a building increases, the radon levels should decrease. Modifications to the ventilation system were not effective in reducing the radon levels to below EPA's Action Level. Therefore, a sub-slab depressurization system was installed March 18-23, 2016 to reduce the radon level in this school. This post-mitigation testing report shows that the mitigation system is effective.

Schirle – Post Remediation Radon Test Results – Occupied School

April 8, 2016 ** LABORATORY ANALYSIS REPORT **

Radon test result report for:

**SK
SCHIRLE**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
8153221	B1	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.7 ± 0.3	2016-04-05
8153222	B2	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	1.1 ± 0.3	2016-04-05
8153223	B3	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	1.4 ± 0.3	2016-04-05
8153224	B4	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.7 ± 0.3	2016-04-05
8153225	B5	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.6 ± 0.3	2016-04-05
8153226	B6	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.6 ± 0.3	2016-04-05
8153215	C1	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153216	C2	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153217	C3	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.7 ± 0.3	2016-04-05
8153218	C4	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153219	C5	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153220	C6	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.6 ± 0.3	2016-04-05
8153212	COMMUNITY RM	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	1.2 ± 0.3	2016-04-05
4925979	CONFERENCE RM	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
4925980	COUNSELOR	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.6 ± 0.3	2016-04-05
8153227	CUSTODIAN CLOSET	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	2.5 ± 0.4	2016-04-05
8153210	CUSTODIAN OFFICE	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153202	E1	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153203	E2	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153204	E3	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153205	E4	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153206	E5	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.6 ± 0.3	2016-04-05
8153207	E6	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153208	E7	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.7 ± 0.3	2016-04-05
8153209	KITCHEN	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153214	LUNCH RM	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.7 ± 0.3	2016-04-05
8153213	MUSIC	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.5 ± 0.3	2016-04-05
8153211	PE OFFICE	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	1.5 ± 0.3	2016-04-05
4925978	PRINCIPAL OFFICE	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
4925981	SPEECH	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	< 0.3	2016-04-05
8153201	TIME OUT	2016-03-29 @ 8:00 am	2016-04-01 @ 3:00 pm	0.7 ± 0.3	2016-04-05

Schirle – Post Remediation Radon Test Results – Unoccupied School over weekend

April 8, 2016
**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**SK
SCHIRLE**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
8153229	B1	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.1 ± 0.2	2016-04-05
8153232	B2	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	2.4 ± 0.2	2016-04-05
8153252	B3	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	2.6 ± 0.3	2016-04-05
8153253	B4	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	0.8 ± 0.2	2016-04-05
8153254	B5	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	0.9 ± 0.2	2016-04-05
8153255	B6	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.6 ± 0.2	2016-04-05
8153246	C1	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.5 ± 0.2	2016-04-05
8153247	C2	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.9 ± 0.2	2016-04-05
8153248	C3	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.8 ± 0.2	2016-04-05
8153249	C4	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.0 ± 0.2	2016-04-05
8153250	C5	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.0 ± 0.2	2016-04-05
8153251	C6	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.0 ± 0.2	2016-04-05
8153243	COMMUNITY RM	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.0 ± 0.2	2016-04-05
8153230	COUNSELOR	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.4 ± 0.2	2016-04-05
8153241	CUSTODIAN OFFICE	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	0.9 ± 0.2	2016-04-05
8153233	E1	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	< 0.3	2016-04-05
8153234	E2	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	< 0.3	2016-04-05
8153235	E3	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	0.6 ± 0.2	2016-04-05
8153236	E4	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	0.7 ± 0.2	2016-04-05
8153237	E5	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	0.9 ± 0.2	2016-04-05
8153238	E6	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	0.8 ± 0.2	2016-04-05
8153239	E7	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.3 ± 0.2	2016-04-05
8153240	KITCHEN	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.1 ± 0.2	2016-04-05
8153245	LUNCH RM	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.2 ± 0.2	2016-04-05
8153244	MUSIC	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.9 ± 0.2	2016-04-05
8153242	PE OFFICE	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.3 ± 0.2	2016-04-05
8153228	PRINCIPAL OFFICE	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.1 ± 0.2	2016-04-05
8153231	SPEECH	2016-04-01 @ 3:00 pm	2016-04-04 @ 9:00 am	1.0 ± 0.2	2016-04-05

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