INDUSTRIAL HYGIENE REPORT

RADON TESTING REPORT

Highland Elementary

Report to: Vonnie B. Good, EHS Salem-Keizer Public Schools
By: Kathy Ellis, Senior Industrial Hygiene Consultant
Reviewed By: DeEtta Burrows, MSPH, CIH – Wise Steps, Inc.

On-site: November 29 -December 2, 2022
Report: December 8, 2022

PURPOSE

Radon retesting was done at the Highland Elementary to determine if there have been any changes in the background radon levels in the classrooms, offices and other rooms that are in contact with the ground since the 2013 tests.

This testing is a requirement in ORS 332 Healthy and Safe Schools Plan rules.

CONCLUSION and RECOMMENDATIONS

All spaces had levels of radon below the EPA Action Level.

TESTING

Radon testing was conducted using protocols recommended by the Oregon Health Authority per ORS 332.166-167. Radon Air-Chek short-term test devices were used in the rooms by suspending the device in each room. The testing occurred from November 29, 2022 to December 2, 2022 during normal and routine building ventilation system operation. Weather conditions during the weeks prior of testing had been wet with cold temperatures.

Quality assurance (QA) testing was also conducted by utilizing laboratory spiked test devices, (QCS), blank (QCB) test devices, and duplicate samples per the recommendations found in ORS 332.166-167. The laboratory analysis of the QA samples were found to be within the expected range of analytical accuracy recommended by the Oregon Health Authority.

EPA RADON GUILDELINES

The EPA has set an Action Level of 4.0 pCi/L (picoCuries per liter) for schools. If classrooms, offices 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.

The World Health Organization has set their action level at 2.7 pCi/L. Salem-Keizer Public Schools has determined that 2.7 pCi/L is a target level where retesting should be done.

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.

December 5, 2022 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
HIGHLAND
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11118409	CAFETERIA S	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	< 0.3	2022-12-05
11118413	CUSTODIAN OFFICE	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	< 0.3	2022-12-05
11118411	FOOD SERV OFFICE	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	0.6 ± 0.3	2022-12-05
11118421	GYM N	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	0.8 ± 0.3	2022-12-05
11118420	GYM S	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	0.8 ± 0.3	2022-12-05
11118410	KITCHEN	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	0.6 ± 0.3	2022-12-05
11118423	PE OFFICE	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	0.6 ± 0.3	2022-12-05
11118424	QCB1	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	< 0.3	2022-12-05
9604581	QCS	2022-11-26 @ 8:00 am	2022-11-29 @ 8:00 am	25.8 ± 2.1	2022-12-05
11118412	RM 2 N	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	< 0.3	2022-12-05
11118414	RM 2 W	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	0.6 ± 0.3	2022-12-05
11118416	RM 3	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	< 0.3	2022-12-05
11118415	RM 4	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	< 0.3	2022-12-05
11118417	RM 5 N	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	1.6 ± 0.3	2022-12-05
11118418	RM 5 S	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	1.6 ± 0.3	2022-12-05
11118419	RM 6	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	0.7 ± 0.3	2022-12-05
11118407	RM1	2022-11-29 @ 8:00 am	2022-12-02 @ 11:00 am	< 0.3	2022-12-05

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

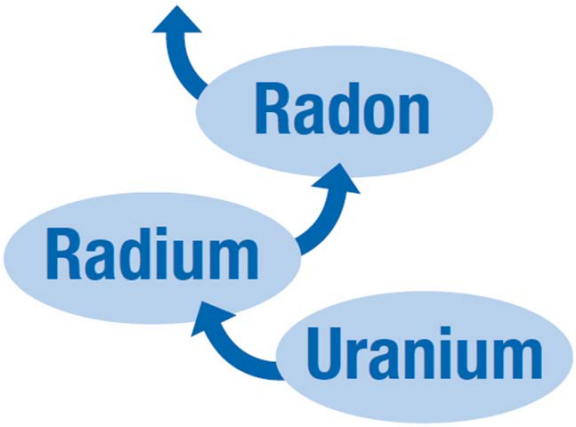
Note: QCS is the laboratory spiked sample. Spiked measurements are exposed in a radon chamber to a known amount of radon and then returned to the laboratory without the laboratory's knowledge. This does NOT represent a space in the building. It is part of the Quality Control/Quality Assurance for reporting.

Radon in schools

Fact Sheet on Radon Exposure for Students and Staff

What is radon?

Radon is a radioactive gas you can't see, smell or taste. It is a decay product of uranium and is found all over the world. Uranium and its decay products are naturally found in the soil and rocks beneath buildings. Our school image (right) shows how uranium naturally decays into radium that further breaks down into radon gas. Radon moves up through the soil and enters buildings in contact.



Why is radon a problem in Oregon schools?

Radon is the 2nd leading cause of lung cancer, after smoking. The Environmental Protection Agency (EPA) estimates around 21,000 radon-related lung cancer deaths occur each year. Breathing high levels of radon in combination with smoking is even more dangerous and increases your risk by ten times.

Home is likely the most significant source for breathing radon. According to the EPA, 1 out of 15 homes has high radon levels. School is likely the second largest source of radon exposure for students and staff. The only way to know your radon levels is to test. The EPA recommends that **all** homes and schools be tested for radon.

EPA ACTION LEVEL **4.0** **Picocuries / Liter of air**

Testing at Home

Radon testing at home can be simple and inexpensive. You can find do-it-yourself test kits at most local hardware stores and online from the American Lung Association. Oregon Health Authority (OHA) Radon Program also offers FREE test kits to those living in areas where little data is available. To find out if you are eligible, contact radon.program@state.or.us.

Testing in Oregon Schools

By law (ORS 332.341-345), all Oregon schools are required to test for radon before January 1, 2021.

School radon testing involves the placement of small testing devices in all frequently occupied rooms on the lowest level of the building. Initial testing is short-term and lasts between 2 and 7 days. Test devices are not dangerous in any way.

Rooms that test at or above 4.0 picocuries per liter of air (pCi/L) (EPA recommended action level) are subject to longer confirmation testing and radon reduction systems.

*Test results for your school can be found at: http://salkeiz.k12.or.us/parents/safe-schools/radon-testing/

For more information about radon, visit www.healthoregon.org/radon.

If you have other questions or concerns about radon testing at your school, contact Vonnie Good, Environmental Health Specialist at 503-399-3071 or Good_Vonnie@salkiez.k12.or.us.

LEARNING FOR A LIFETIME
SALEM•KEIZER PUBLIC SCHOOLS

Oregon Health Authority