

# INDUSTRIAL HYGIENE REPORT

## RADON TESTING REPORT

### Grant Elementary School

Report to: Vonnie B. Good, EHS Salem-Keizer Public Schools

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Reviewed By: DeEtta Burrows, MSPH, CIH – Wise Steps, Inc.

On-site: November 9 –12, 2021

Report: November 27, 2021

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#### PURPOSE

Radon retesting was done at Grant Elementary School to determine if there have been any changes in the background radon levels in the classrooms, offices and of other rooms that are in contact with the ground. This is a requirement in OAR 332 Healthy and Safe Schools Plan rules. Also, testing in this school in 2019 found levels of radon below the EPA recommended level, however, classrooms 160 and 180 had radon levels above the School District's trigger to retest (2.7 pCi/L).

#### CONCLUSION AND RECOMMENDATION

All classrooms had low to non-detectable levels of radon, including classrooms 160 and 180.

#### TESTING

Radon testing was conducted using protocols recommended by the Oregon Health Authority per OAR 332.341-345. Radon Air-Chek short-term test devices were used in the rooms by suspending the device in each room. The testing occurred from November 9-12, 2021 during normal and routine school ventilation system operations. Weather conditions during the weeks prior of testing had been generally wet with cold to moderate temperatures.

This testing was conducted under COVID-19 recommended precautions of having increased outside air supplied to the building.

Quality assurance testing was also conducted by utilizing blank (QCB) test devices, and duplicate samples per the recommendations found in OAR 332.341-345.

## **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.

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.

**Sample Data Attached**

November 22, 2021

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

Radon test result report for:

**GRANT  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9601935	110	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601936	120	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601937	120 A	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	1.0 ± 0.9	2021-11-22
9601938	140	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601939	160	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	1.5 ± 0.9	2021-11-22
9601941	180 N	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	0.8 ± 0.9	2021-11-22
9601940	180 S	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601950	CAFETERIA E	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601951	CAFETERIA W	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601925	CONF RM	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601954	COUNSELOR	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601923	CSOC	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601931	GYM E	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	1.3 ± 1.0	2021-11-22
9601949	KITCHEN OFFICE	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601957	LRC	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601958	LRC OFFICE 1	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601959	LRC OFFICE 2	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601955	LRC SPEECH	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601956	LRC TESTING	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601924	MAIN OFFICE	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601943	MEDIA E	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601942	MEDIA W	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	1.3 ± 0.9	2021-11-22
9601932	MUSIC	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601930	PE OFFICE	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601922	PRINICIPAL	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601964	QCB 1	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601965	QCB 2	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601953	READING ROOM	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	1.2 ± 0.9	2021-11-22
9601946	RM 1	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601963	RM 10	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601934	RM 12	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601945	RM 2	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601948	RM 3 E	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601947	RM 3 W	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601944	RM 4	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601926	RM 5	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	2.1 ± 1.0	2021-11-22
9601960	RM 6	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22

Radon test result report for:

**GRANT  
MAIN**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
9601927	RM 7	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601962	RM 8 E	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601961	RM 8 W	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601928	RM 9	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	< 0.3	2021-11-22
9601952	STAFF RM	2021-11-09 @ 12:00 pm	2021-11-12 @ 11:00 am	1.4 ± 0.9	2021-11-22

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

Note: QCB1-2 are blank samples and part of the quality control process for radon testing.

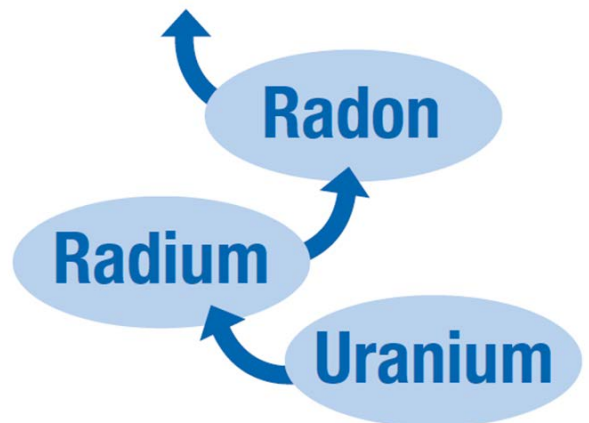
# Radon in schools

## 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](http://www.AmericanLungAssociation.org). 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](mailto:radon.program@state.or.us).

### Testing in Oregon Schools

By law (ORS 332.166-167), 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:

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For more information about radon, visit [www.healthoregon.org/radon](http://www.healthoregon.org/radon).  
If you have other questions or concerns about radon testing at your school, contact \_\_\_\_\_ at \_\_\_\_\_.

