

INDUSTRIAL HYGIENE REPORT

Willamette Education Service District Marion Center

Report to: Robert Archer, Director of Facilities

by: Kathy Ellis Senior Industrial Hygiene Consultant and
DeEtta Burrows, MSPH, CIH Wise Steps, Inc.

On-site: November 28 – December 1, 2016

Report: December 6, 2016

PURPOSE

Radon monitoring was done to measure the background levels in the Marion Center consulting rooms and staff work rooms that are in contact with the ground as required by the Oregon Revised Statute (ORS) 332.166-167. All testing must be completed on or before January 1, 2021. The statute also requires districts to submit test data to the Oregon Health Authority (OHA) and to share test results with the district's community.

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.

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 November 28 to Thursday December 1 during normal and routine operation of the school.

OHA RADON GUIDELINES

The OHA has set an action level of 4 pCi/L (picoCuries per liter) for schools. If classrooms or buildings have radon levels at 4 pCi/L EPA recommends that school administrators take action to reduce the level. These actions include:

Step 1 If your result is 4 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:

If the initial tests find radon levels less than 2.0 pCi/L, OHA and the ORS 332.166-167 only requires retesting every 10 years.

RESULTS and RECOMMENDATION

No test locations in the Marion Center were above the OHA or EPA's action level of 4 pCi/L nor were any locations above the 2 pCi/L. Testing is only required again in 10 years or in 2026.

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. The Oregon Legislature through passage of ORS 332.166-167 also have the same target level of 4 pCi/L before mandatory mitigation controls must be installed to reduce the exposure to radon gas.

CONTROL OF RADON LEVELS IN SCHOOLS

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

Sample Data Attached

December 5, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**WESD
MARION CENTER**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7127010	AUDIOLOGY RM	2016-11-28 @ 9:00 am	2016-12-01 @ 9:00 am	< 0.3	2016-12-05
7137638	CRAB	2016-11-28 @ 1:00 pm	2016-12-01 @ 10:00 am	< 0.3	2016-12-05
7127007	DOLPHIN RN	2016-11-28 @ 9:00 am	2016-12-01 @ 9:00 am	< 0.3	2016-12-05
7127009	MOULDING ROOM	2016-11-28 @ 9:00 am	2016-12-01 @ 9:00 am	< 0.3	2016-12-05
7137635	SPECIAL ED EAST	2016-11-28 @ 10:00 am	2016-12-01 @ 9:00 am	0.7 ± 0.3	2016-12-05
7137636	SPECIAL ED WEST	2016-11-28 @ 10:00 am	2016-12-01 @ 9:00 am	0.7 ± 0.3	2016-12-05
7127006	STARFISH	2016-11-28 @ 9:00 am	2016-12-01 @ 9:00 am	< 0.3	2016-12-05
7137637	TURTLE	2016-11-28 @ 10:00 am	2016-12-01 @ 10:00 am	< 0.3	2016-12-05
7127008	ZEBRA	2016-11-28 @ 9:00 am	2016-12-01 @ 10:00 am	< 0.3	2016-12-05

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