



March 15, 2024

Leo Rodriguez
Risk Management
Portland Public Schools

Via email: lrodriguez@pps.net

Regarding: Electronic Radon Monitor Results
Marysville Elementary School
7733 SE Raymond Street
Portland, Oregon
PBS Project 25000.241

Mr. Rodriguez:

In February 2024, PBS performed short-term radon monitoring at Marysville Elementary School at the request of Portland Public Schools. Results of short-term testing did not identify any locations above the guideline limit, but found several locations slightly below the limit. Additionally, radon has historically been found in some parts of the school and a radon mitigation system is in use for some areas. In March 2024, PBS performed follow-up testing in those areas with electronic Continuous Radon Monitors (CRMs) to determine hour-by-hour radon concentrations and provide additional information. Results are presented below.

METHODOLOGY

The Environmental Protection Agency (EPA) recommends, and the Oregon Health Authority (OHA) requires, that school buildings be tested for radon, and that any radon concentrations be maintained below 4.0 picocuries per liter (pCi/L) of air. PBS used Sun Nuclear 1028 CRMs to monitor in select areas and identify the dynamics of radon concentration over time.

Testing was conducted near the end of the winter heating season and during the school week when building uses and operations were normal. Occupied hours were considered to be 6:00 AM to 6:00 PM and unoccupied hours were 6:00 PM to 6:00 AM.

RESULTS

The following table lists the results of radon concentrations at all tested locations.

Table 1: CRM Data Summary

Location	Test Dates	Overall Average Radon Level*	Average Radon Level During Occupied Hours*	Average Radon Level During Unoccupied Hours*	Average Identified During February 2024 Short-Term Testing*
Room 159 (Lounge)	3/11 – 3/15	2.1	2.3	1.9	3.7
Room 150	3/11 – 3/15	1.3	1.3	1.3	2.5
Kitchen	3/11 – 3/15	4.1	1.7	6.9	3.3
Library	3/11 – 3/15	1.7	0.5	3.1	3.7

* - units are pCi/L

Overall, concentrations were found to be lower than during initial testing, except in the kitchen. Average concentrations in the kitchen was found to be over the EPA action limit of 4.0 pCi/L. Results were below the limit in other tested areas. Ordinarily, EPA guidelines would not recommend testing areas like kitchens, bathrooms, storage rooms, and hallways, as they are not continually occupied by students or staff. However, as the kitchen here is used as a permanent office/desk area by kitchen staff, testing was conducted there as it is continually occupied by staff during the work day. Radon was found to fluctuate quite a bit in the kitchen over the course of a typical day, increasing during unoccupied hours and decreasing quickly during occupied hours. The average concentration of radon during occupied hours in the kitchen was well below the EPA action limit. This is commonly observed in buildings, as the building’s HVAC system turns on in the morning and introduces fresh makeup air and changes the building’s relative air pressure.

See the attached CRM printouts for additional information on each test.

LIMITATIONS OF SCOPE

This study was limited to the tests and locations as previously indicated. The site as a whole may have other environmental concerns that will not be characterized by this study. PBS is not able to represent conditions on the site or adjoining sites beyond those detected or observed by PBS.

Please feel free to contact me at 503.515.7489 or james.mastanduno@pbsusa.com with any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'J. Mastanduno', with a stylized, looping flourish at the end.

James Mastanduno
Project Manager

Attachment: Individual Summary Reports

Radon Inspection Report

Test Location:

Marysville Elementary School
7733 SE Raymond Street
Portland, OR 97205

Test For:

Type: Screening

Inspected By:

James Mastanduno, PBS Engineering
YOUR ADDRESS1, YOUR ADDRESS2
YOUR CITY, YOUR STATE YOUR ZIP
123-456-7890

Bldg. Type: Educational

Test Result: Fail

Overall Average:

4.1 pCi/l

EPA Average:

4.3 pCi/l

Test Device Details:

Serial Number: 238738012
Model Number: 1028XP
Last Calibration: 11/29/2023
Next Calibration: 11/29/2024
Cal-Factors: 2.89
Motion Error: Yes

Test Site Condition:

Condition: Recent Rainfall

Test Summary:

<u>CRM Location:</u>	<u>Start:</u>	<u>Stop:</u>	<u>Interval:</u>	<u>Duration:</u>
Kitchen	03/11/2024 06:27 AM	03/15/2024 05:27 AM	1 hr	95 hr
*First 4 hrs of data excluded	<u>Min:</u>	<u>Max:</u>	<u>Average:</u>	<u>Measurement Units:</u>
Radon Concentration:	0.0	11.4	4.3	pCi/l

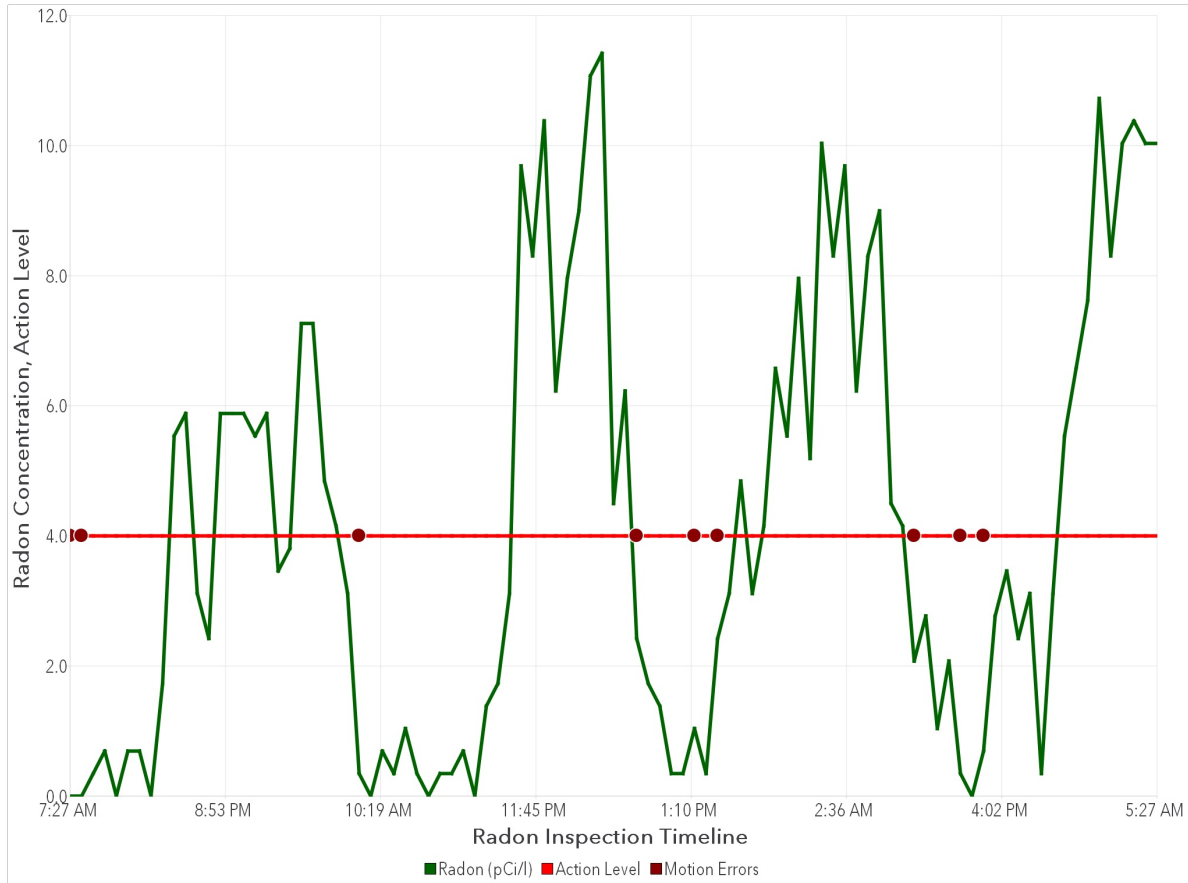
Comments:

Lic/Cert Signature

Test device manufactured by SunRADON, LLC

Inspection Report Date: 03/15/2024

Radon Inspection Chart



Test Result: Fail

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Checklist

- ☒ The location of the detector was selected so the detector was not to be disturbed during testing.
- ☒ The detector was not located near drafts caused by HVAC vents, windows and doors.
- ☒ The detector was not placed near areas of excessive heat, such as a fireplace or in direct sunlight.
- ☒ The detector was placed within the breathing zone of at least 20 inches to 6 feet above the floor and at least 1 foot below the ceiling if suspended.
- ☒ The detector was not placed within 1 foot of outside walls of the home or within 3 feet of any windows or doors to the exterior of the home.

Test Result: Fail

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/11/24 07:27 AM	0.0	M
03/11/24 08:27 AM	0.0	M
03/11/24 09:27 AM	0.3	-
03/11/24 10:27 AM	0.7	-
03/11/24 11:27 AM	0.0	-
03/11/24 12:27 PM	0.7	-
03/11/24 01:27 PM	0.7	-
03/11/24 02:27 PM	0.0	-
03/11/24 03:27 PM	1.7	-
03/11/24 04:27 PM	5.5	-
03/11/24 05:27 PM	5.9	-
03/11/24 06:27 PM	3.1	-
03/11/24 07:27 PM	2.4	-
03/11/24 08:27 PM	5.9	-
03/11/24 09:27 PM	5.9	-
03/11/24 10:27 PM	5.9	-
03/11/24 11:27 PM	5.5	-
03/12/24 12:27 AM	5.9	-
03/12/24 01:27 AM	3.5	-
03/12/24 02:27 AM	3.8	-
03/12/24 03:27 AM	7.3	-
03/12/24 04:27 AM	7.3	-
03/12/24 05:27 AM	4.8	-
03/12/24 06:27 AM	4.2	-
03/12/24 07:27 AM	3.1	-
03/12/24 08:27 AM	0.3	M
03/12/24 09:27 AM	0.0	-
03/12/24 10:27 AM	0.7	-
03/12/24 11:27 AM	0.3	-
03/12/24 12:27 PM	1.0	-
03/12/24 01:27 PM	0.3	-
03/12/24 02:27 PM	0.0	-
03/12/24 03:27 PM	0.3	-
03/12/24 04:27 PM	0.3	-
03/12/24 05:27 PM	0.7	-
03/12/24 06:27 PM	0.0	-
03/12/24 07:27 PM	1.4	-
03/12/24 08:27 PM	1.7	-
03/12/24 09:27 PM	3.1	-
03/12/24 10:27 PM	9.7	-
03/12/24 11:27 PM	8.3	-
03/13/24 12:27 AM	10.4	-
03/13/24 01:27 AM	6.2	-
03/13/24 02:27 AM	8.0	-

Test Result: Fail

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/13/24 03:27 AM	9.0	-
03/13/24 04:27 AM	11.1	-
03/13/24 05:27 AM	11.4	-
03/13/24 06:27 AM	4.5	-
03/13/24 07:27 AM	6.2	-
03/13/24 08:27 AM	2.4	M
03/13/24 09:27 AM	1.7	-
03/13/24 10:27 AM	1.4	-
03/13/24 11:27 AM	0.3	-
03/13/24 12:27 PM	0.3	-
03/13/24 01:27 PM	1.0	M
03/13/24 02:27 PM	0.3	-
03/13/24 03:27 PM	2.4	M
03/13/24 04:27 PM	3.1	-
03/13/24 05:27 PM	4.8	-
03/13/24 06:27 PM	3.1	-
03/13/24 07:27 PM	4.2	-
03/13/24 08:27 PM	6.6	-
03/13/24 09:27 PM	5.5	-
03/13/24 10:27 PM	8.0	-
03/13/24 11:27 PM	5.2	-
03/14/24 12:27 AM	10.0	-
03/14/24 01:27 AM	8.3	-
03/14/24 02:27 AM	9.7	-
03/14/24 03:27 AM	6.2	-
03/14/24 04:27 AM	8.3	-
03/14/24 05:27 AM	9.0	-
03/14/24 06:27 AM	4.5	-
03/14/24 07:27 AM	4.2	-
03/14/24 08:27 AM	2.1	M
03/14/24 09:27 AM	2.8	-
03/14/24 10:27 AM	1.0	-
03/14/24 11:27 AM	2.1	-
03/14/24 12:27 PM	0.3	M
03/14/24 01:27 PM	0.0	-
03/14/24 02:27 PM	0.7	M
03/14/24 03:27 PM	2.8	-
03/14/24 04:27 PM	3.5	-
03/14/24 05:27 PM	2.4	-
03/14/24 06:27 PM	3.1	-
03/14/24 07:27 PM	0.3	-
03/14/24 08:27 PM	3.1	-
03/14/24 09:27 PM	5.5	-
03/14/24 10:27 PM	6.6	-

Test Result: Fail

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/14/24 11:27 PM	7.6	-
03/15/24 12:27 AM	10.7	-
03/15/24 01:27 AM	8.3	-
03/15/24 02:27 AM	10.0	-
03/15/24 03:27 AM	10.4	-
03/15/24 04:27 AM	10.0	-
03/15/24 05:27 AM	10.0	-

Test Result: Fail

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Radon Test Information

Radon Risk Information

Radon causes lung cancer by means of the decay of its daughter products after breathing in air contaminated with higher levels of Radon. The World Health Organization (WHO) estimates that 15% of lung cancers worldwide are caused by exposure to elevated indoor levels of Radon. Overall, radon is the second leading cause of lung cancer responsible for about 21,000 lung cancer deaths every year in the US alone. Radon gas is the number one cause of lung cancer among non-smokers. The U.S. Environmental Protection Agency (EPA), the U.S. Surgeon General, and the Center for Disease Control and Prevention (CDC) strongly recommend that ALL homebuyers have an indoor radon test performed prior to purchase or taking occupancy and recommend having the radon levels professionally mitigated if elevated radon concentrations are found.

Understanding Radon Test Results

Recommended Action Levels vary by country and typically range from 3 pCi/l (100 Bq/m³) to 8 pCi/l (300 Bq/m³). Recommendations below are based on test results by a Continuous Radon Monitor (CRM) Test of at least 48h duration and are based on recommendations by the EPA.

Measured Average Radon Level:

- At or above 4.0 pCi/l (148 Bq/m³): Corrective measures to reduce exposure to radon gas is strongly recommended (ANSI MAH2014)
- Between 2-4 pCi/l (74-148 Bq/m³): Consider mitigation or periodic retest as indoor Radon levels vary by season and weather conditions
- Below 2 pCi/l (74 Bq/m³): Consider bi-annual retest or whenever significant changes to the home structure or mechanical systems occurred

Test Result: Fail

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Radon Inspection Report

Test Location:

Marysville Elementary School
7733 SE Raymond Street
Portland, OR 97205

Test For:

Type: Screening

Inspected By:

James Mastanduno, PBS Engineering
YOUR ADDRESS1, YOUR ADDRESS2
YOUR CITY, YOUR STATE YOUR ZIP
503 916 3204

Bldg. Type: Educational

Test Result: Pass

Overall Average:

1.7 pCi/l

EPA Average:

1.8 pCi/l

Test Device Details:

Serial Number: 235811015
Model Number: 1028XP
Last Calibration: 10/18/2023
Next Calibration: 10/18/2024
Cal-Factors: 2.63
Motion Error: Yes

Test Site Condition:

Condition: Recent Rainfall

Test Summary:

<u>CRM Location:</u>	<u>Start:</u>	<u>Stop:</u>	<u>Interval:</u>	<u>Duration:</u>
Library	03/11/2024 06:36 AM	03/15/2024 05:36 AM	1 hr	95 hr
*First 4 hrs of data excluded	<u>Min:</u>	<u>Max:</u>	<u>Average:</u>	<u>Measurement Units:</u>
Radon Concentration:	0.0	8.4	1.8	pCi/l

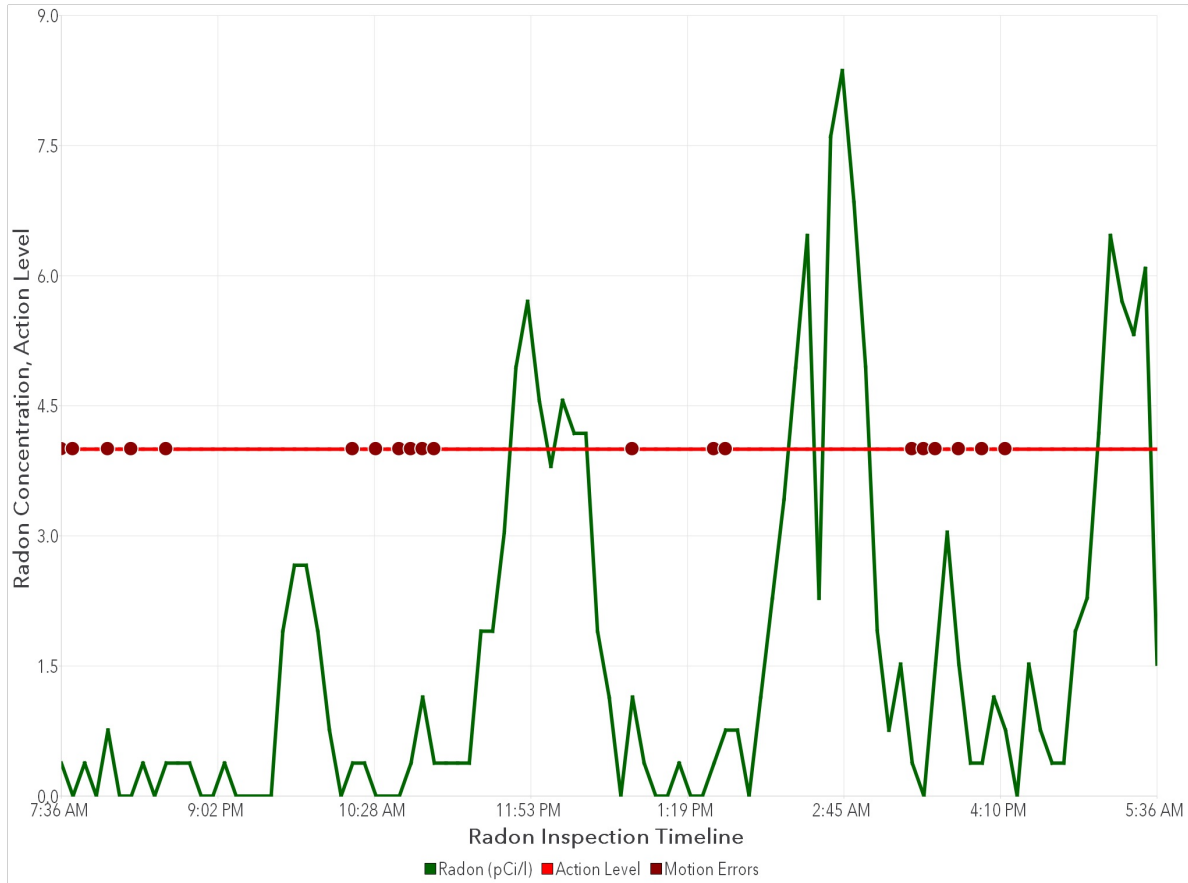
Comments:

Lic/Cert Signature

Test device manufactured by SunRADON, LLC

Inspection Report Date: 03/15/2024

Radon Inspection Chart



Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Checklist

- ☒ The location of the detector was selected so the detector was not to be disturbed during testing.
- ☒ The monitor was not placed in an area of high humidity such as: Kitchen, laundry room, cellar, spa room, garage, crawl space or sump area.
- ☒ The detector was not located near drafts caused by HVAC vents, windows and doors.
- ☒ The detector was not placed near areas of excessive heat, such as a fireplace or in direct sunlight.
- ☒ The detector was placed within the breathing zone of at least 20 inches to 6 feet above the floor and at least 1 foot below the ceiling if suspended.
- ☒ The detector was not placed within 1 foot of outside walls of the home or within 3 feet of any windows or doors to the exterior of the home.

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/11/24 07:36 AM	0.4	M
03/11/24 08:36 AM	0.0	M
03/11/24 09:36 AM	0.4	-
03/11/24 10:36 AM	0.0	-
03/11/24 11:36 AM	0.8	M
03/11/24 12:36 PM	0.0	-
03/11/24 01:36 PM	0.0	M
03/11/24 02:36 PM	0.4	-
03/11/24 03:36 PM	0.0	-
03/11/24 04:36 PM	0.4	M
03/11/24 05:36 PM	0.4	-
03/11/24 06:36 PM	0.4	-
03/11/24 07:36 PM	0.0	-
03/11/24 08:36 PM	0.0	-
03/11/24 09:36 PM	0.4	-
03/11/24 10:36 PM	0.0	-
03/11/24 11:36 PM	0.0	-
03/12/24 12:36 AM	0.0	-
03/12/24 01:36 AM	0.0	-
03/12/24 02:36 AM	1.9	-
03/12/24 03:36 AM	2.7	-
03/12/24 04:36 AM	2.7	-
03/12/24 05:36 AM	1.9	-
03/12/24 06:36 AM	0.8	-
03/12/24 07:36 AM	0.0	-
03/12/24 08:36 AM	0.4	M
03/12/24 09:36 AM	0.4	-
03/12/24 10:36 AM	0.0	M
03/12/24 11:36 AM	0.0	-
03/12/24 12:36 PM	0.0	M
03/12/24 01:36 PM	0.4	M
03/12/24 02:36 PM	1.1	M
03/12/24 03:36 PM	0.4	M
03/12/24 04:36 PM	0.4	-
03/12/24 05:36 PM	0.4	-
03/12/24 06:36 PM	0.4	-
03/12/24 07:36 PM	1.9	-
03/12/24 08:36 PM	1.9	-
03/12/24 09:36 PM	3.0	-
03/12/24 10:36 PM	4.9	-
03/12/24 11:36 PM	5.7	-
03/13/24 12:36 AM	4.6	-
03/13/24 01:36 AM	3.8	-
03/13/24 02:36 AM	4.6	-

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/13/24 03:36 AM	4.2	-
03/13/24 04:36 AM	4.2	-
03/13/24 05:36 AM	1.9	-
03/13/24 06:36 AM	1.1	-
03/13/24 07:36 AM	0.0	-
03/13/24 08:36 AM	1.1	M
03/13/24 09:36 AM	0.4	-
03/13/24 10:36 AM	0.0	-
03/13/24 11:36 AM	0.0	-
03/13/24 12:36 PM	0.4	-
03/13/24 01:36 PM	0.0	-
03/13/24 02:36 PM	0.0	-
03/13/24 03:36 PM	0.4	M
03/13/24 04:36 PM	0.8	M
03/13/24 05:36 PM	0.8	-
03/13/24 06:36 PM	0.0	-
03/13/24 07:36 PM	1.1	-
03/13/24 08:36 PM	2.3	-
03/13/24 09:36 PM	3.4	-
03/13/24 10:36 PM	4.9	-
03/13/24 11:36 PM	6.5	-
03/14/24 12:36 AM	2.3	-
03/14/24 01:36 AM	7.6	-
03/14/24 02:36 AM	8.4	-
03/14/24 03:36 AM	6.8	-
03/14/24 04:36 AM	4.9	-
03/14/24 05:36 AM	1.9	-
03/14/24 06:36 AM	0.8	-
03/14/24 07:36 AM	1.5	-
03/14/24 08:36 AM	0.4	M
03/14/24 09:36 AM	0.0	M
03/14/24 10:36 AM	1.5	M
03/14/24 11:36 AM	3.0	-
03/14/24 12:36 PM	1.5	M
03/14/24 01:36 PM	0.4	-
03/14/24 02:36 PM	0.4	M
03/14/24 03:36 PM	1.1	-
03/14/24 04:36 PM	0.8	M
03/14/24 05:36 PM	0.0	-
03/14/24 06:36 PM	1.5	-
03/14/24 07:36 PM	0.8	-
03/14/24 08:36 PM	0.4	-
03/14/24 09:36 PM	0.4	-
03/14/24 10:36 PM	1.9	-

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/14/24 11:36 PM	2.3	-
03/15/24 12:36 AM	4.2	-
03/15/24 01:36 AM	6.5	-
03/15/24 02:36 AM	5.7	-
03/15/24 03:36 AM	5.3	-
03/15/24 04:36 AM	6.1	-
03/15/24 05:36 AM	1.5	-

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Radon Test Information

Radon Risk Information

Radon causes lung cancer by means of the decay of its daughter products after breathing in air contaminated with higher levels of Radon. The World Health Organization (WHO) estimates that 15% of lung cancers worldwide are caused by exposure to elevated indoor levels of Radon. Overall, radon is the second leading cause of lung cancer responsible for about 21,000 lung cancer deaths every year in the US alone. Radon gas is the number one cause of lung cancer among non-smokers. The U.S. Environmental Protection Agency (EPA), the U.S. Surgeon General, and the Center for Disease Control and Prevention (CDC) strongly recommend that ALL homebuyers have an indoor radon test performed prior to purchase or taking occupancy and recommend having the radon levels professionally mitigated if elevated radon concentrations are found.

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Measured Average Radon Level:

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- Between 2-4 pCi/l (74-148 Bq/m³): Consider mitigation or periodic retest as indoor Radon levels vary by season and weather conditions
- Below 2 pCi/l (74 Bq/m³): Consider bi-annual retest or whenever significant changes to the home structure or mechanical systems occurred

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Radon Inspection Report

Test Location:

Marysville Elementary School
7733 SE Raymond Street
Portland, OR 97206

Test For:

Type: Screening

Inspected By:

James Mastanduno, PBS Engineering
YOUR ADDRESS1, YOUR ADDRESS2
YOUR CITY, YOUR STATE YOUR ZIP
123-456-7890

Bldg. Type: Educational

Test Result: Pass

Overall Average:

1.3 pCi/l

EPA Average:

1.3 pCi/l

Test Device Details:

Serial Number: 238738036
Model Number: 1028XP
Last Calibration: 11/29/2023
Next Calibration: 11/29/2024
Cal-Factors: 2.84
Motion Error: Yes

Test Site Condition:

Condition: Recent Rainfall

Test Summary:

<u>CRM Location:</u>	<u>Start:</u>	<u>Stop:</u>	<u>Interval:</u>	<u>Duration:</u>
Room 150	03/11/2024 06:25 AM	03/15/2024 05:25 AM	1 hr	95 hr
*First 4 hrs of data excluded	<u>Min:</u>	<u>Max:</u>	<u>Average:</u>	<u>Measurement Units:</u>
Radon Concentration:	0.0	3.9	1.3	pCi/l

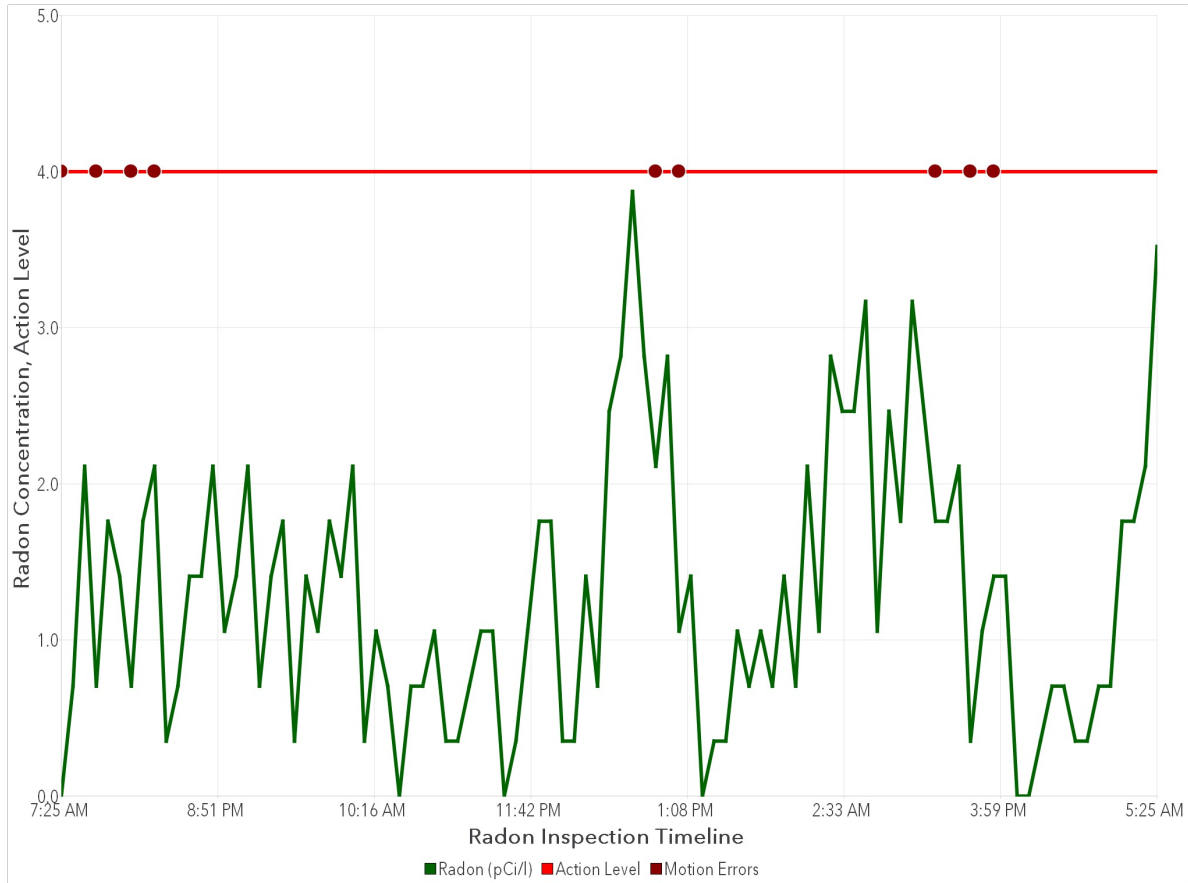
Comments:

Lic/Cert Signature

Test device manufactured by SunRADON, LLC

Inspection Report Date: 03/15/2024

Radon Inspection Chart



Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97206

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Checklist

- ☒ The location of the detector was selected so the detector was not to be disturbed during testing.
- ☒ The monitor was not placed in an area of high humidity such as: Kitchen, laundry room, cellar, spa room, garage, crawl space or sump area.
- ☒ The detector was not located near drafts caused by HVAC vents, windows and doors.
- ☒ The detector was not placed near areas of excessive heat, such as a fireplace or in direct sunlight.
- ☒ The detector was placed within the breathing zone of at least 20 inches to 6 feet above the floor and at least 1 foot below the ceiling if suspended.
- ☒ The detector was not placed within 1 foot of outside walls of the home or within 3 feet of any windows or doors to the exterior of the home.

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97206

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/11/24 07:25 AM	0.0	M
03/11/24 08:25 AM	0.7	-
03/11/24 09:25 AM	2.1	-
03/11/24 10:25 AM	0.7	M
03/11/24 11:25 AM	1.8	-
03/11/24 12:25 PM	1.4	-
03/11/24 01:25 PM	0.7	M
03/11/24 02:25 PM	1.8	-
03/11/24 03:25 PM	2.1	M
03/11/24 04:25 PM	0.4	-
03/11/24 05:25 PM	0.7	-
03/11/24 06:25 PM	1.4	-
03/11/24 07:25 PM	1.4	-
03/11/24 08:25 PM	2.1	-
03/11/24 09:25 PM	1.1	-
03/11/24 10:25 PM	1.4	-
03/11/24 11:25 PM	2.1	-
03/12/24 12:25 AM	0.7	-
03/12/24 01:25 AM	1.4	-
03/12/24 02:25 AM	1.8	-
03/12/24 03:25 AM	0.4	-
03/12/24 04:25 AM	1.4	-
03/12/24 05:25 AM	1.1	-
03/12/24 06:25 AM	1.8	-
03/12/24 07:25 AM	1.4	-
03/12/24 08:25 AM	2.1	-
03/12/24 09:25 AM	0.4	-
03/12/24 10:25 AM	1.1	-
03/12/24 11:25 AM	0.7	-
03/12/24 12:25 PM	0.0	-
03/12/24 01:25 PM	0.7	-
03/12/24 02:25 PM	0.7	-
03/12/24 03:25 PM	1.1	-
03/12/24 04:25 PM	0.4	-
03/12/24 05:25 PM	0.4	-
03/12/24 06:25 PM	0.7	-
03/12/24 07:25 PM	1.1	-
03/12/24 08:25 PM	1.1	-
03/12/24 09:25 PM	0.0	-
03/12/24 10:25 PM	0.4	-
03/12/24 11:25 PM	1.1	-
03/13/24 12:25 AM	1.8	-
03/13/24 01:25 AM	1.8	-
03/13/24 02:25 AM	0.4	-

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97206

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/13/24 03:25 AM	0.4	-
03/13/24 04:25 AM	1.4	-
03/13/24 05:25 AM	0.7	-
03/13/24 06:25 AM	2.5	-
03/13/24 07:25 AM	2.8	-
03/13/24 08:25 AM	3.9	-
03/13/24 09:25 AM	2.8	-
03/13/24 10:25 AM	2.1	M
03/13/24 11:25 AM	2.8	-
03/13/24 12:25 PM	1.1	M
03/13/24 01:25 PM	1.4	-
03/13/24 02:25 PM	0.0	-
03/13/24 03:25 PM	0.4	-
03/13/24 04:25 PM	0.4	-
03/13/24 05:25 PM	1.1	-
03/13/24 06:25 PM	0.7	-
03/13/24 07:25 PM	1.1	-
03/13/24 08:25 PM	0.7	-
03/13/24 09:25 PM	1.4	-
03/13/24 10:25 PM	0.7	-
03/13/24 11:25 PM	2.1	-
03/14/24 12:25 AM	1.1	-
03/14/24 01:25 AM	2.8	-
03/14/24 02:25 AM	2.5	-
03/14/24 03:25 AM	2.5	-
03/14/24 04:25 AM	3.2	-
03/14/24 05:25 AM	1.1	-
03/14/24 06:25 AM	2.5	-
03/14/24 07:25 AM	1.8	-
03/14/24 08:25 AM	3.2	-
03/14/24 09:25 AM	2.5	-
03/14/24 10:25 AM	1.8	M
03/14/24 11:25 AM	1.8	-
03/14/24 12:25 PM	2.1	-
03/14/24 01:25 PM	0.4	M
03/14/24 02:25 PM	1.1	-
03/14/24 03:25 PM	1.4	M
03/14/24 04:25 PM	1.4	-
03/14/24 05:25 PM	0.0	-
03/14/24 06:25 PM	0.0	-
03/14/24 07:25 PM	0.4	-
03/14/24 08:25 PM	0.7	-
03/14/24 09:25 PM	0.7	-
03/14/24 10:25 PM	0.4	-

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97206

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/14/24 11:25 PM	0.4	-
03/15/24 12:25 AM	0.7	-
03/15/24 01:25 AM	0.7	-
03/15/24 02:25 AM	1.8	-
03/15/24 03:25 AM	1.8	-
03/15/24 04:25 AM	2.1	-
03/15/24 05:25 AM	3.5	-

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97206

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Radon Test Information

Radon Risk Information

Radon causes lung cancer by means of the decay of its daughter products after breathing in air contaminated with higher levels of Radon. The World Health Organization (WHO) estimates that 15% of lung cancers worldwide are caused by exposure to elevated indoor levels of Radon. Overall, radon is the second leading cause of lung cancer responsible for about 21,000 lung cancer deaths every year in the US alone. Radon gas is the number one cause of lung cancer among non-smokers. The U.S. Environmental Protection Agency (EPA), the U.S. Surgeon General, and the Center for Disease Control and Prevention (CDC) strongly recommend that ALL homebuyers have an indoor radon test performed prior to purchase or taking occupancy and recommend having the radon levels professionally mitigated if elevated radon concentrations are found.

Understanding Radon Test Results

Recommended Action Levels vary by country and typically range from 3 pCi/l (100 Bq/m³) to 8 pCi/l (300 Bq/m³). Recommendations below are based on test results by a Continuous Radon Monitor (CRM) Test of at least 48h duration and are based on recommendations by the EPA.

Measured Average Radon Level:

- At or above 4.0 pCi/l (148 Bq/m³): Corrective measures to reduce exposure to radon gas is strongly recommended (ANSI MAH2014)
- Between 2-4 pCi/l (74-148 Bq/m³): Consider mitigation or periodic retest as indoor Radon levels vary by season and weather conditions
- Below 2 pCi/l (74 Bq/m³): Consider bi-annual retest or whenever significant changes to the home structure or mechanical systems occurred

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97206

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Radon Inspection Report

Test Location:

Marysville Elementary School
7733 SE Raymond Street
Portland, OR 97205

Test For:

Type: Screening

Inspected By:

James Mastanduno, PBS Engineering
YOUR ADDRESS1, YOUR ADDRESS2
YOUR CITY, YOUR STATE YOUR ZIP
123-456-7890

Bldg. Type: Educational

Test Result: Pass

Overall Average:

2.1 pCi/l

EPA Average:

2.2 pCi/l

Test Device Details:

Serial Number: 238348024
Model Number: 1028XP
Last Calibration: 10/18/2023
Next Calibration: 10/18/2024
Cal-Factors: 2.55
Motion Error: Yes

Test Site Condition:

Condition: Recent Rainfall

Test Summary:

<u>CRM Location:</u>	<u>Start:</u>	<u>Stop:</u>	<u>Interval:</u>	<u>Duration:</u>
Room 159 (Lounge)	03/11/2024 06:20 AM	03/15/2024 06:20 AM	1 hr	96 hr
*First 4 hrs of data excluded	<u>Min:</u>	<u>Max:</u>	<u>Average:</u>	<u>Measurement Units:</u>
Radon Concentration:	0.0	7.1	2.2	pCi/l

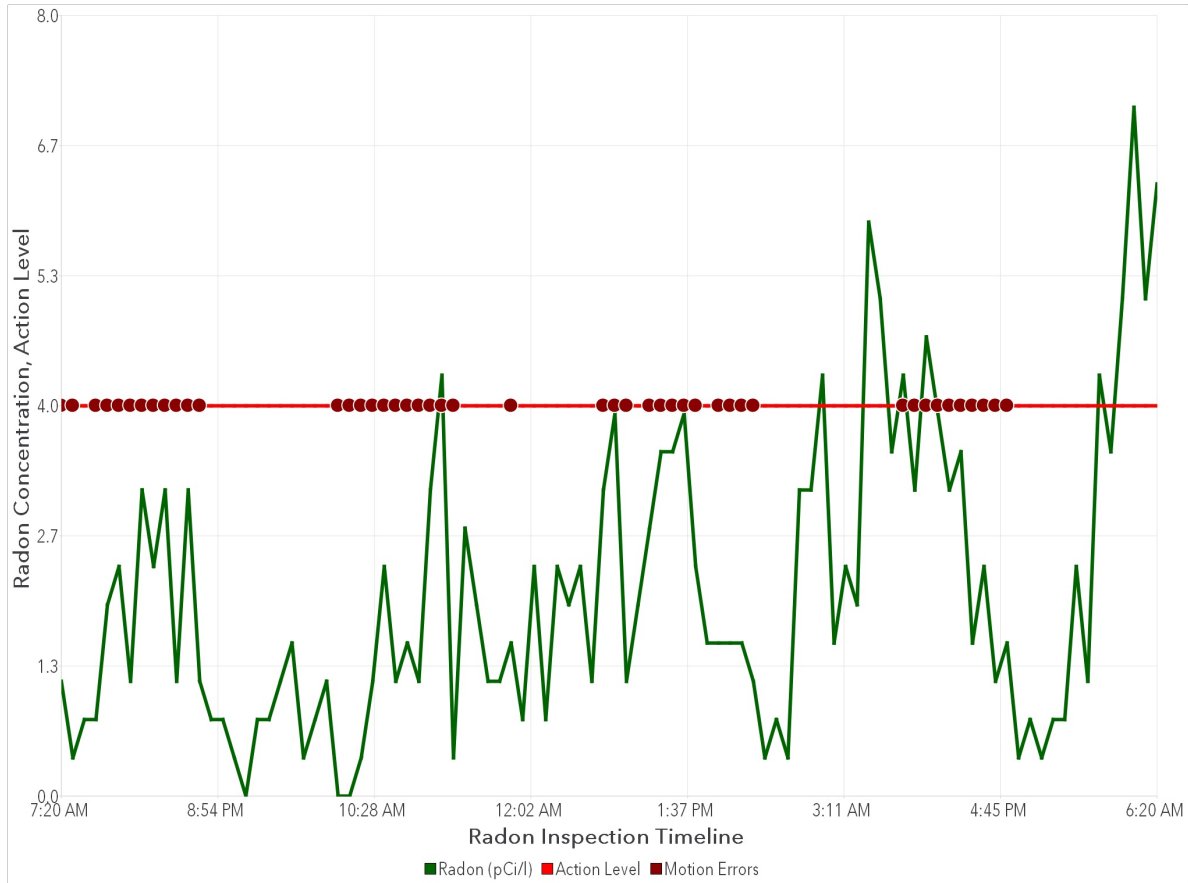
Comments:

Lic/Cert Signature

Test device manufactured by SunRADON, LLC

Inspection Report Date: 03/15/2024

Radon Inspection Chart



Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Checklist

- ☒ The location of the detector was selected so the detector was not to be disturbed during testing.
- ☒ The monitor was not placed in an area of high humidity such as: Kitchen, laundry room, cellar, spa room, garage, crawl space or sump area.
- ☒ The detector was not located near drafts caused by HVAC vents, windows and doors.
- ☒ The detector was not placed near areas of excessive heat, such as a fireplace or in direct sunlight.
- ☒ The detector was placed within the breathing zone of at least 20 inches to 6 feet above the floor and at least 1 foot below the ceiling if suspended.
- ☒ The detector was not placed within 1 foot of outside walls of the home or within 3 feet of any windows or doors to the exterior of the home.

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/11/24 07:20 AM	1.2	M
03/11/24 08:20 AM	0.4	M
03/11/24 09:20 AM	0.8	-
03/11/24 10:20 AM	0.8	M
03/11/24 11:20 AM	2.0	M
03/11/24 12:20 PM	2.4	M
03/11/24 01:20 PM	1.2	M
03/11/24 02:20 PM	3.1	M
03/11/24 03:20 PM	2.4	M
03/11/24 04:20 PM	3.1	M
03/11/24 05:20 PM	1.2	M
03/11/24 06:20 PM	3.1	M
03/11/24 07:20 PM	1.2	M
03/11/24 08:20 PM	0.8	-
03/11/24 09:20 PM	0.8	-
03/11/24 10:20 PM	0.4	-
03/11/24 11:20 PM	0.0	-
03/12/24 12:20 AM	0.8	-
03/12/24 01:20 AM	0.8	-
03/12/24 02:20 AM	1.2	-
03/12/24 03:20 AM	1.6	-
03/12/24 04:20 AM	0.4	-
03/12/24 05:20 AM	0.8	-
03/12/24 06:20 AM	1.2	-
03/12/24 07:20 AM	0.0	M
03/12/24 08:20 AM	0.0	M
03/12/24 09:20 AM	0.4	M
03/12/24 10:20 AM	1.2	M
03/12/24 11:20 AM	2.4	M
03/12/24 12:20 PM	1.2	M
03/12/24 01:20 PM	1.6	M
03/12/24 02:20 PM	1.2	M
03/12/24 03:20 PM	3.1	M
03/12/24 04:20 PM	4.3	M
03/12/24 05:20 PM	0.4	M
03/12/24 06:20 PM	2.7	-
03/12/24 07:20 PM	2.0	-
03/12/24 08:20 PM	1.2	-
03/12/24 09:20 PM	1.2	-
03/12/24 10:20 PM	1.6	M
03/12/24 11:20 PM	0.8	-
03/13/24 12:20 AM	2.4	-
03/13/24 01:20 AM	0.8	-
03/13/24 02:20 AM	2.4	-

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

* Data from first 4 hours excluded from EPA calculations

<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/13/24 03:20 AM	2.0	-
03/13/24 04:20 AM	2.4	-
03/13/24 05:20 AM	1.2	-
03/13/24 06:20 AM	3.1	M
03/13/24 07:20 AM	3.9	M
03/13/24 08:20 AM	1.2	M
03/13/24 09:20 AM	2.0	-
03/13/24 10:20 AM	2.7	M
03/13/24 11:20 AM	3.5	M
03/13/24 12:20 PM	3.5	M
03/13/24 01:20 PM	3.9	M
03/13/24 02:20 PM	2.4	M
03/13/24 03:20 PM	1.6	-
03/13/24 04:20 PM	1.6	M
03/13/24 05:20 PM	1.6	M
03/13/24 06:20 PM	1.6	M
03/13/24 07:20 PM	1.2	M
03/13/24 08:20 PM	0.4	-
03/13/24 09:20 PM	0.8	-
03/13/24 10:20 PM	0.4	-
03/13/24 11:20 PM	3.1	-
03/14/24 12:20 AM	3.1	-
03/14/24 01:20 AM	4.3	-
03/14/24 02:20 AM	1.6	-
03/14/24 03:20 AM	2.4	-
03/14/24 04:20 AM	2.0	-
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03/14/24 01:20 PM	3.5	M
03/14/24 02:20 PM	1.6	M
03/14/24 03:20 PM	2.4	M
03/14/24 04:20 PM	1.2	M
03/14/24 05:20 PM	1.6	M
03/14/24 06:20 PM	0.4	-
03/14/24 07:20 PM	0.8	-
03/14/24 08:20 PM	0.4	-
03/14/24 09:20 PM	0.8	-
03/14/24 10:20 PM	0.8	-

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Test Table

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<u>Date/Time</u>	<u>Radon(pCi/l)</u>	<u>Flags</u>
03/14/24 11:20 PM	2.4	-
03/15/24 12:20 AM	1.2	-
03/15/24 01:20 AM	4.3	-
03/15/24 02:20 AM	3.5	-
03/15/24 03:20 AM	5.1	-
03/15/24 04:20 AM	7.1	-
03/15/24 05:20 AM	5.1	-
03/15/24 06:20 AM	6.3	-

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC

Radon Test Information

Radon Risk Information

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- Below 2 pCi/l (74 Bq/m³): Consider bi-annual retest or whenever significant changes to the home structure or mechanical systems occurred

Test Result: Pass

Test Location: 7733 SE Raymond Street Portland, OR 97205

Inspection Report Date: 03/15/2024

Test device manufactured by SunRADON, LLC