



Cascade Radon, Inc.
Testing, Mitigation,
Systems Design
CCB 180537 / CASCARI927C1

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Radon Survey Analysis Job# 17-C022L

for

Evergreen School District
Orchards Elementary
c/o Susan Steinbrenner

property located at

11405 NE 69th St

Vancouver WA 98662

March 15, 2017



Cascade Radon Inc. is a Woman-Owned Small Business (WOSB)

Introduction

The following report documents a study of radon levels for the property located at 11405 NE 69th St Vancouver WA 98662. The goal of this study is to determine indoor radon levels in all areas in contact with the ground and to sample radon in areas on the floors above.

Analysis assumes that the building tested was maintained under “closed-house” conditions (windows closed and exterior doors shut immediately after entering and exiting) 12 hours prior to the start of testing, as well as normal indoor temperatures, for the duration of the testing period.

Conclusions and Recommendations

Test was a “Short-Term” test, with a duration of 49 hours. See the chart below of areas in building that were tested, and the corresponding levels found. Note that two (2) of 53 locations tested had results above the EPA Action Level of 4.0 pCi/L.

It is recommended that a certified radon mitigation company be contacted to mitigate the elevated radon level bringing them below the EPA Action Level. While the EPA recommends buildings be fixed if the radon level is 4.0 pCi/L or more, because there is no known safe level of exposure to radon, EPA also suggests individuals consider fixing their buildings for radon levels between 2.0 pCi/L and 4.0 pCi/L.

The concentration of radon gas in indoor air can vary widely. It may fluctuate from day to day, week to week, and season to season. Indoor radon levels may be affected by barometric pressure, strong winds, rain-soaked ground, snow cover, heating and A/C systems, house construction, open windows, and the like. For further confirmation of average, long-term radon levels, it is suggested a long-term, Alpha-Track type radon test be performed.

Radon Level Measurements

The building tested was assumed occupied during testing.

The measurement technique used (62) Air Check activated charcoal kits.

Measurements of radon levels were made in the following areas:

Test Kit Number	Test Kit Location	Test End Date/Time	Average Radon Level (pCi/L)
7841391, 7854850	101A – Office	12:00PM, 3/9/17	1.3 ± 0.4
7854893	101C – Principal	12:00PM, 3/9/17	2.2 ± 0.4
7854891	101H – Vice Principal	12:00PM, 3/9/17	2.5 ± 0.3
7854877	101M – Breakroom	12:00PM, 3/9/17	3.0 ± 0.4
7854849	101G	12:00PM, 3/9/17	2.0 ± 0.4
7854879	101E – Health	12:00PM, 3/9/17	2.3 ± 0.4
7854868	109 – Work Room	12:00PM, 3/9/17	2.1 ± 0.4
7854862	105 – Music	12:00PM, 3/9/17	7.3 ± 0.5
7854854	105 – Music Office	12:00PM, 3/9/17	6.4 ± 0.5
7854873, 7854852	107 – Commons	12:00PM, 3/9/17	1.6 ± 0.4
7854900	113 – Gymnasium	12:00PM, 3/9/17	1.2 ± 0.3
7854853	113A – PE Office	12:00PM, 3/9/17	< 0.3
7854856	121 – NW Office	12:00PM, 3/9/17	1.0 ± 0.3
7854885	121 – SE Office	12:00PM, 3/9/17	1.5 ± 0.4
7854899	123	12:00PM, 3/9/17	1.6 ± 0.4
7854867	125	12:00PM, 3/9/17	1.6 ± 0.4

Test Kit Number	Test Kit Location	Test End Date/Time	Average Radon Level (pCi/L)
7854898	127A	12:00PM, 3/9/17	1.2 ± 0.4
7854890	127B	12:00PM, 3/9/17	1.2 ± 0.3
7854897, 7854888	129A	12:00PM, 3/9/17	1.7 ± 0.4
7854882	129B	12:00PM, 3/9/17	0.9 ± 0.3
7854878	131	12:00PM, 3/9/17	1.8 ± 0.4
7854869	132	12:00PM, 3/9/17	0.5 ± 0.3
7854892	130C	12:00PM, 3/9/17	0.9 ± 0.3
7854884	133	12:00PM, 3/9/17	1.1 ± 0.3
7854861	134	12:00PM, 3/9/17	0.8 ± 0.4
7854857	130	12:00PM, 3/9/17	0.9 ± 0.3
7854870	135	12:00PM, 3/9/17	1.0 ± 0.4
7854876	136	12:00PM, 3/9/17	0.8 ± 0.3
7854894	146	12:00PM, 3/9/17	1.2 ± 0.4
7854875	145	12:00PM, 3/9/17	1.5 ± 0.3
7854883	144	12:00PM, 3/9/17	0.7 ± 0.3
7854851	143	12:00PM, 3/9/17	0.8 ± 0.4
7854895	142	12:00PM, 3/9/17	1.3 ± 0.4
7854859	141	12:00PM, 3/9/17	1.3 ± 0.4
7854860	231	12:00PM, 3/9/17	< 0.3
7854855	241	12:00PM, 3/9/17	< 0.3
7854887, 7854886	140	12:00PM, 3/9/17	1.0 ± 0.3
7854896	128	12:00PM, 3/9/17	1.8 ± 0.4
7854881	124	1:00PM, 3/9/17	1.2 ± 0.4
7854874	124A	1:00PM, 3/9/17	1.4 ± 0.4
7854880	124C	1:00PM, 3/9/17	1.1 ± 0.3
7854872	122	1:00PM, 3/9/17	2.2 ± 0.4
7854889	137	1:00PM, 3/9/17	1.2 ± 0.3
7854871	Custodian Office	1:00PM, 3/9/17	1.6 ± 0.3
7877712	P335	9:00AM, 3/10/17	< 0.3
7877706	P336	9:00AM, 3/10/17	< 0.3
7877702, 7877703	P333	9:00AM, 3/10/17	< 0.3
7877704	P334	9:00AM, 3/10/17	< 0.3
7877701	Early Learning 151	9:00AM, 3/10/17	1.0 ± 0.3
7877710	Early Learning 154	9:00AM, 3/10/17	1.1 ± 0.3
7877711	Early Learning 154 -Office	9:00AM, 3/10/17	1.1 ± 0.3
7877705	Early Learning 153	9:00AM, 3/10/17	1.5 ± 0.3
7854866	Early Learning Work Room	10:00AM, 3/10/17	0.9 ± 0.3
7854865	Early Learning 152	10:00AM, 3/10/17	1.1 ± 0.3
7854863	BLANK – 132	12:00PM, 3/9/17	< 0.3
7854858	BLANK – 146	12:00PM, 3/9/17	< 0.3
7877709	BLANK – P336	9:00AM, 3/10/17	< 0.3

Blanks (unexposed kits) and Duplicate tests (two kits laid side by side) were deployed for QA/QC as per EPA protocol

Key:

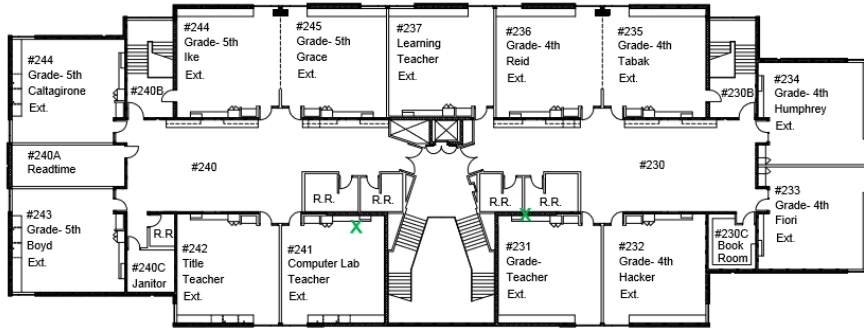
pCi/L: Picocuries per liter – units of radon concentration.

Average: Cumulative average of the entire period since the test started.

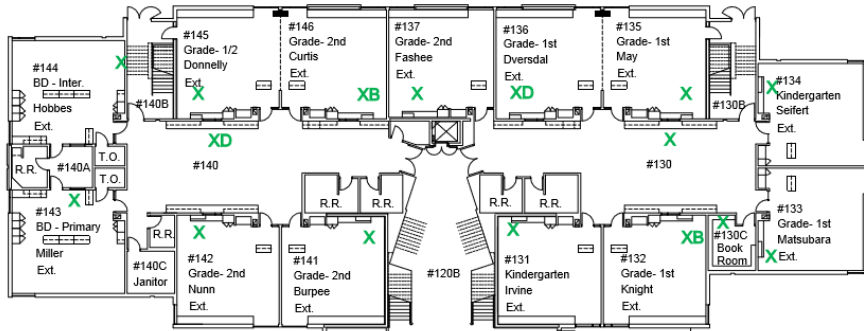
Please contact me if you have any questions.

Thank you,

Tamara Linde
NRPP 108246 RT

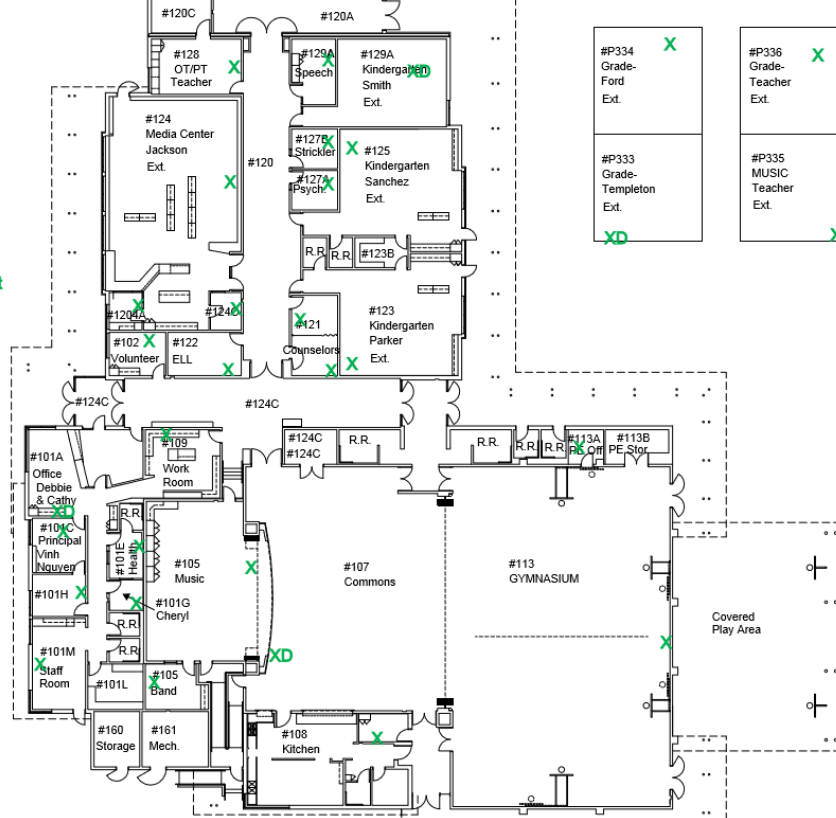


ORCHARDS ELEMENTARY – SECOND FLOOR



Key:
 X - Test Kit Placement
 D - Duplicate Test Kit
 B - Blank Test Kit

#P334 Grade-Ford Ext. XD	#P336 Grade- Teacher Ext. X
#P333 Grade- Templeton Ext. XD	#P335 MUSIC Teacher Ext. X



FIRST FLOOR
 ORCHARDS ELEMENTARY

