

RADON INSPECTION
The Oakridge Elementary School
48119 E. 1st Street
Oakridge, Oregon
97463

Prepared For:

Reta Doland, Superintendent
Oakridge SD 76
47997 W. 1st Street
Oakridge, Oregon 97463

EIS Job No. 2020061. Oakridge Elementary Radon Report

Prepared By:

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Charles A. Spear, Environmental Professional

November 2, 2020



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1.0 EXECUTIVE SUMMARY

November 2, 2020

EIS JOB No. 2020061.Oakridge SD 76 Elementary School radon

Reta Doland, Superintendent
Oakridge SD 76
47997 W. 1st Street
Oakridge, Oregon 97463

RE: Short term radon testing of The Oakridge Elementary School at
48119 E. 1st Street in Oakridge, Oregon 97463

Dear Reta Doland,

This letter summarizes the finding of a short term (48-72 hour) radon sampling test episode conducted at the subject property known as the Oakridge Elementary School located at 48119 E. 1st Street in Oakridge, Oregon 97463 between Friday, October 16, 2020 and Monday, October 19, 2020. The twenty-three (23) radon samplers were received by PRO-LAB on Thursday, October 22, 2019, analyzed by PRO-LAB laboratory on Friday, October 23, 2020, and results were reported to EIS on Monday, October 26, 2020. The radon sampling episode was conducted by Charles A. Spear, field representative of Environmental Inspection Services (EIS) with no custodian escort through the entire Oakridge Elementary School building. Elevated radon considerations were noted in two samples for the Oakridge Elementary School building based on the short term simultaneous test results of the twenty-three (23) measured detached samplers.

All but two accountable radon measurements were below the action limit of 4 pCi/L and seventeen (17) radon measurements were also below 2.0 pCi/L. A total of three (3) radon tester concentrations were above 3.0 pCi/L. The very low radon concentration measurements for the school varied between 0.1 pCi/L and a single accountable higher measurement of 1.9 pCi/L.

Slightly elevated radon concentration concerns were noted at the section of the elementary school building between classroom No.s 9 and 14 based on these short term analytical test results. In the opinion of EIS the entire classroom wing should be retested based on these analytical test results for the section of the building.

The following analytical test results of this section of the building are summarized as follows;

Serial No.	Location	Analytical Result
4962291	class 10	1.6 pCi/L
4960583	class 11	2.6 pCi/L
4945121	class 12	4.4 pCi/L
4960855	class 13	3.2 pCi/L
4960648	class 14	4.9 pCi/L
4930347	class 15	0.7 pCi/L

The radon test results for the Oakridge Elementary School building with the exception of classroom No.s 12, 13, and 14 are acceptable based on these satisfactory short term simultaneous test results. The subject school improvement is referred to as the Oakridge Elementary School Building located at 48119 E. 1st Street in Oakridge, Oregon, 97463.

Elevated radon considerations were noted for the Oakridge Elementary School building section based on the short term simultaneous test results of the twenty-three (23) measured radon samplers. Most samplers placed throughout the Oakridge Elementary School building were acceptable. The average building radon concentration level is 1.65 pCi/L. The EPA notes there is no safe level of radon. If there are questions concerning the radon testing at the district please initially contact the Oakridge School District Facilities and Maintenance Office at (541) 782-2813.


Charles Arthur Spear
Environmental Professional

2.0 RADON ENVIRONMENTAL RISK

The U.S. Environmental Protection Agency (EPA) and other major national and international scientific organizations have concluded that radon is a human carcinogen and poses a serious environmental health problem. The EPA recommends that schools take action to reduce the level of radon concentration if radon concentration levels are 4 pCi/L or higher.

The U.S. Surgeon General has warned about the health risk from the exposure to radon in indoor air. The surgeon general has urged Americans to test their homes because radon is the leading cause of lung cancer for non-smokers in the United States and breathing in radon over prolonged periods can present a significant health risk. The USEPA has estimated that approximately 21,000 lung cancer-related deaths occur annually with an estimated 275 lung cancer deaths annually in Oregon.

The US EPA has states that "Any exposure has some risk of causing lung cancer. The lower the radon risk level in your home, the lower your family's risk of lung cancer." The EPA has noted that depending on your geographic location the radon levels of air you breathe outside the home may be as High as 0.74 pCi./L. The national average of outside radon levels are 0.4 pCi/L and it has been estimated by The National Academy of Sciences that outdoor radon levels cause approximately 800 of the 21,000 radon induced lung cancer deaths in the US each year.

Radon Act 51 passed by Congress set the national outdoor level of radon gas (0.4pCi/L) as the target radon level for indoor radon levels. Unfortunately, two-thirds of all homes exceeded this level. The USEPA was tasked with setting practical guidelines and recommendations for the nation. The USEPA thereby set a practical level of 4pCi/L as an action level for radon.

3.0 RADON HEALTH EFFECTS

Radon is a known human carcinogen. The prolonged exposure to elevated radon concentrations does cause an increased risk of lung cancer. The precise magnitude of radon health risks are uncertain and research continues regarding these health risks. The EPA has estimated that radon may cause nearly 14,000 lung cancer deaths in the United States each year. However,, this number could range from nearly 7,000 to 30,000 deaths per year. The U.S. Surgeon general has warned that radon is the second-leading cause of lung cancer deaths. The individual risks from radon exposure have been attributed to three factors; the level of radon, the duration of radon exposure, and the individual smoking habits. The risk of death from lung cancer has been determined to be much higher for smokers than non-smokers.

The EPA has noted that the home is to be the most likely significant source of radon exposure. Additionally, the EPA has also noted that the second largest potential contributor to radon exposure is likely to be schools. The EPA has recommended that school buildings be tested for radon. In 1989 and 1990, the EPA conducted the School Protocol Development Study as a nationwide effort to further examine how best to conduct radon measurements in schools.

4.0 RADON DESCRIPTION

Radon is a gas and the radon decay products are referred to as solid particles (progeny). The radon particles may become suspended in the air when they are formed. Some particles "plate-out" (attach) to surfaces as aerosols, dust, and/or smoke particle in air. The inhalation of the particles has attributed to lung tissue damage and may affect DNA.

Radon gas is an extremely toxic, chemically inert, odorless, colorless, and tasteless naturally-occurring radioactive element having the symbol Rn. Radon has the atomic number 86; an atomic weight of 222; a melting point of -71 degrees Celsius; a boiling point of -62 degrees; and 18 radioactive isotopes. It is derived from the radioactive decay of radium and is used in cancer treatment; as a tracer in leak detection; and in radiology.

5.0 RADON CHARACTERISTICS

The concentrations of radon in a building are dependent on factors to include the concentration of uranium and radium in the soil; the type of underlying geology; soil permeability; available migration pathways such as subsurface utilities; foundation openings; air temperature and pressure differentials and building ventilation.

Radon may migrate into a study area by either a pressure driven transport or no pressure differentials. The subject North Douglas High School Buildings were built on concrete foundation and slab on slab foundations. Radon may migrate through foundations by the availability of expansion joints and cracks in the foundation. Radon may also migrate into a building through basements, utility trenches, pipe runs, HVAC systems, and other building ventilation systems. Radon contributions from building materials off-gassing are not often the source of measurable radon.

6.0 RADON TESTING ACTIVITY

The EPA has shown that radon concentration levels may vary from room to room in schools in the same building. It is also known that radon measurements for a particular room are not always precise indicators of radon measurements in adjacent rooms. ORS 332.166-167 has therefore required that radon measurement teams measure radon in schools with initial radon measurements conducted in all frequently occupied rooms in contact with the soil or above a basement crawlspace.

The OHA requires a simultaneous initial test of all frequently occupied rooms to include such rooms as offices, classrooms, a Boone Center, a commons area, conference rooms, gymnasiums, auditoriums, common rooms / cafeterias, and break rooms. The OHA requires a minimum of one detector per every 2,000 square feet of open floor space or a portion of the room as required. The EPA has also noted that radon levels in upper floors are not likely to exceed the levels of lower rooms. The EPA has determined that testing the ground level floors is sufficient for initial radon concentration determinations.

EPA recommends that initial measurements be performed by the utilization of short term testers placed in the lowest section of the subject buildings and performed under closed door conditions. An initial short term test ensures that school students and workers may be informed quickly if radon measurements reveal elevated radon test levels. If the short term measurement is greater than 4 picoCuries per liter (pCi/L) or 0.02 working levels (WL), a followup measurement is recommended. The purpose of the follow up measurement is to determine whether or not radon mitigation is necessary for the measurement area.

A total of twenty-three (23) short term radon test units were placed throughout the Oakridge Elementary School building frequently occupied areas to include offices, classrooms, gymnasium, and a multi-purpose/cafeteria. All radon measurements varied between one (1) low radon concentration measurement of 0.1 pCi/L and one higher radon concentration measurement of 4.9 pCi/L. Two (2) radon measurements were elevated and one (1) radon concentration measurement approached 4 pCi/L. All radon concentration sampler test results are summarized in Appendix 1.0.

The radon samplers were opened on Friday, October 16, 2020 and capped on Saturday, October 26, 2019. The capped radon samplers were packaged; logged on a chain of custody form; and shipped to ProLab Laboratories. Radon test results were reported to EIS on Monday, November 4, 2019. Most radon measurement levels were at low concentrations varying between twenty-one (21) low measurements between 0.1 pCi/L and 3.2 pCi/L. Two (2) elevated radon concentrations were confirmed at Oakridge Elementary School in classroom No.s 12 and 14. One (1) radon concentration measurements approached 4.0 pCi/L with a radon concentration measurement of 3.2 pCi/L in the nearby classroom No. 13.

7.0 RADON TEST RESULTS SUMMARY TABLE

A total of twenty-three (23) measured short term radon test units were placed throughout the Oakridge Elementary School building frequently occupied areas to include the offices, classrooms, multi-purpose/cafeteria, and gymnasium. The radon samplers were opened on Friday, October 16, 2020 and capped on Monday, October 19, 2020. Radon test results were reported to EIS on Monday, October 26, 2020. A total of twenty-three (23) radon measurements were conducted varying between low radon concentrations of 0.1 pCi/L to the single high measurement of 4.9 pCi/L. A total of two (2) radon concentrations approached or exceeded a radon concentration of 4 pCi/L.

The following radon concentration table summarizes the overall favorable analytical test results;

<u>Tester Total</u>	<u>radon concentration measurement</u>
---------------------	--

1	0.1 pCi/L
1	0.5 pCi/L
1	0.6 pCi/L
1	0.7 pCi/L
3	0.8 pCi/L
1	0.9 pCi/L
1	1.0 pCi/L
1	1.1 pCi/L
3	1.3 pCi/L
1	1.5 pCi/L
1	1.6 pCi/L
1	1.7 pCi/L
1	1.9 pCi/L
1	2.1 pCi/L
1	2.6 pCi/L
1	2.8 pCi/L
1	3.2 pCi/L
1	4.4 pCi/L
1	4.9 pCi/L

Total - 23 testers

The highest ten (10) radon concentration measurements varied between 1.5 pCi/L and 4.9 pCi/L. Two (2) radon concentration measurements exceeded 4.0 pCi/L. All other radon sampler concentration measurements were below the EPA action limit of 4.0 pCi/L.

The four (4) highest radon concentration measurements of the Oakridge Elementary School varied between 2.8 pCi/L and 4.9 pCi/L and are summarized as follows

<u>SERIAL NO.</u>	<u>LOCATION</u>	<u>ANALYTICAL RESULT</u>
4945121	class 12	4.4 pCi/L
4960855	class 13	3.2 pCi/L
4960648	class 14	4.9 pCi/L
4945110	Office	2.8 pCi/L

No elevated radon concentration concerns were noted for the remaining nineteen (19) School measurements. The lowest radon concentration measurements of 0.2 pCi/L were confirmed in thirty-three (33) radon tester samplers. All low radon concentration measurements are non-problematic for the purposes of this report and are summarized in the Analytical spread sheet attached in Appendix 1.0.

No elevated radon considerations were noted for the radon test results for the North Douglas High School building based on these short term simultaneous test results. Radon concentration levels have been noted to vary from room to room. All frequently occupied rooms in contact with the ground require testing and were tested.

This radon sampling episode noted the following;

Total number of measured testers	- twenty-three (23)
High readings (3.0 pCi/L -4.9 pCi/L)	- three(3)
Low readings (at or below 1.0 pCi/L)	- nine (9)
Average reading	- 1.65 pCi/L

8.0 RADON MEASUREMENT RISK ASSESSMENT

The average Oakridge Elementary School building reading was 1.65 pCi/L with moderate analytical test results variances between 0.1 pCi/L and 4.9 pCi/L. Additional short term test radon testing is recommended for the Oakridge Elementary school wing as noted below:

The following analytical test results of this section of the building are summarized as follows;

Serial No.	Location	Analytical Result
4962291	class 10	1.6 pCi/L
4960583	class 11	2.6 pCi/L
4945121	class 12	4.4 pCi/L
4960855	class 13	3.2 pCi/L
4960648	class 14	4.9 pCi/L
4930347	class 15	0.7 pCi/L

The U.S surgeon general has warned about the health risk from the exposure to radon in indoor air. The surgeon general has urged Americans to test their homes because radon is the leading cause of lung cancer for non-smokers in the United States and breathing in radon over prolonged periods can present a significant health risk. The USEPA has estimated that approximately 21,000 lung cancer-related deaths occur annually with an estimated 275 lung cancer deaths annually in Oregon.

9.0 RADON LABORATORY ANALYSIS

The radon in test samplers was measured at the Pro-Lab Laboratory located at 1675 North Commerce Parkway in Weston, Florida using the liquid scintillation Method (EPA 402-R-92-004). The selected radon sampler devices utilized at the North Douglas High School building are described as passive activated charcoal adsorption devices (AC).

The short term testers utilize activated carbon to absorb the radon gas in the air. The test unit has activated carbon with a perforation screen to filter out radon decay products. The absorber is resealed by EIS and shipped to Pro-Lab for processing and evaluation. The selected passive radon tester devices do not uniformly adsorb radon during the testing episode and are not described as integrating devices.

The total of twenty-three (23) radon test units supplied by a certified laboratory known as Pro-Lab were utilized at the Oakridge Elementary School building. The testers were placed within functional frequently occupied Oakridge Elementary School building areas such as classrooms, offices, gymnasium, and a multi-purpose/cafeterias, between Friday, October 16, 2020 and Monday, October 19, 2020. The total of twenty-three (23) short term samplers were capped and submitted to Pro-lab laboratories for radon analysis and analyzed by the Pro-Lab laboratories on Friday, October 23, 2020. Radon test results were reported to EIS on Monday, October 26, 2020. Elevated radon concentrations were detected in two samplers.

10.0 QUALITY ASSURANCE / QUALITY CONTROL

Quality Assurance measurements were conducted during the initial testing episode. Minimum acceptable standards of precision and accuracy were maintained during the entire course of the radon testing period. The Quality Assurance protocol included the inclusion of side by side detectors (duplicates) and unexposed control detectors (Blanks).

The "blanks" are defined as tester measurements by analyzing unexposed (closed) radon detectors that accompany exposed detectors to the field. The school district may utilize blanks in order to assess any change in analysis caused by anything outside the immediate room conditions. Background levels may be due to leakage of radon into the tester, detector response to gamma radiation or other causes.

The duplicates were placed as pairs of detectors deployed in the same location side by side during the identical testing periods. Duplicate placements were at least ten percent of the measurement locations. The duplicates were placed, shipped, and manifested with chains of custody to Pro-lab for analysis in the same manner as the other devices so that processing at the laboratory could not distinguish the testers.

The duplicate and blank samplers are listed as follows;

<u>Sample serial No.</u>	<u>Sample location</u>	<u>Sample test result</u>
4955174	Library - dup	0.9 pCi/L
4962366	Gymnasium - dup	0.6 pCi/L
4945209	Gymnasium - blank	0.1 pCi/L

Spike samples are handled and spiked by the PRO-LAB laboratory and results remain as internal tests and confidential per regulation. Spike samples are routinely conducted per the laboratory proficiency requirements.

An independent company, Bowser Morner located at 4514 Taylorsville Road (phone No. 937-236-8805) conducts routine controls for proLab. Bowser Morner participated in spike testing using liquid scintillation charcoal devices (NRPP device Code # 7084). None of the values of absolute individual Relative Error of the reported measurements was greater than 25%; therefore, the lab passed the performance test. The letter was signed by Rebecca J. Turek Manager of the Radon Reference laboratory of Bowser-Morner, Inc. A copy of the results of the performance test are attached as Appendix 1.0.

11.0 RECOMMENDATIONS & CONCLUSIONS

Radon measurement levels were generally low with average concentrations of 1.65 pCi/L with very minimal concentration variances between 0.1 pCi/L and 1.5 pCi/L. Two (2) elevated radon concentrations were detected in the short term radon samplers.

All but two accountable radon measurements were below the action limit of 4 pCi/L and seventeen (17) radon measurements were also below 2.0 pCi/L. A total of three (3) radon tester concentrations were above 3.0 pCi/L. The very low radon concentration measurements for the school varied between 0.1 pCi/L and a single accountable higher measurement of 1.9 pCi/L.

Slightly elevated radon concentration concerns were noted at the section of the elementary school building between classroom No.s 9 and 14 based on these short term analytical test results. In the opinion of EIS the entire classroom wing should be retested based on these analytical test results for the section of the building. The following analytical test results of this section of the building are summarized as follows;

Serial No.	Location	Analytical Result
4962291	class 10	1.6 pCi/L
4960583	class 11	2.6 pCi/L
4945121	class 12	4.4 pCi/L
4960855	class 13	3.2 pCi/L
4960648	class 14	4.9 pCi/L
4930347	class 15	0.7 pCi/L

The radon test results for the Oakridge Elementary School building with the exception of classroom No.s 12, 13, and 14 are acceptable based on these satisfactory short term simultaneous test results. The subject school improvement is referred to as the Oakridge Elementary School Building located at 48119 E. 1st Street in Oakridge, Oregon, 97463.

In the opinion of EIS, additional focused short term radon retesting is required at the Oakridge Elementary School Building in the above wing as noted. In the opinion of EIS, the satisfactory radon test results are generally indicative of generally satisfactory radon conditions in the remaining functional classroom, office, cafeteria/ multi-purpose rooms, and gymnasium as frequently occupied rooms.

Additional short-term radon testing is required at the Oak Ridge Elementary School Building based on these radon measurement test results at this time. The sample analytical position and result tables are listed in Appendix 1.0 of this report.

In the opinion of EIS, no significant data gaps remain concerning radon risk at the subject property based on current analytical radon test results. Actual radon analytical test results are included as listed in Appendix 1.0 of this report.

In the opinion of EIS, based on actual extensive passive radon testing at the subject building additional focused limited short term radon retesting is recommended at the one wing of the school building at this time. In the opinion of EIS, the satisfactory radon test results are generally indicative of satisfactory radon conditions at most of the School Building. If there are questions concerning the radon testing at the district please initially contact the Oakridge School District facilities and Maintenance at (541)-782-2813.

Respectfully,



Charles A. Spear
Environmental Professional

2.0 PUBLIC AWARENESS

ORS 332.166-167 requires that school districts make all test results available: to the district school board; the Oregon Health Authority with a post to the website and to parents, guardians, students, school employees, school volunteers, administrators, and community representatives at the school or district office or website.

The EPA,OHA Oregon Radon Awareness Program and numerous non-governmental groups recommend that the school district take action to reduce the radon level in those rooms where the average of the initial and follow-up short-term test kit results or the results of the long-term test kit used in the followup is 4.0 pCi/L or higher.

Although not required of school districts under ORS 332.166-167 , it is recommended that school administration direct appropriate staff to adjust the building's HVAC system and then re-test if elevated radon concentration measurements are submitted for a target school. If the HVAC adjustment doesn't reduce the radon concentration measurement levels below 4 pCi/l then radon mitigation performed by a radon mitigation professional is recommended.

12.1 - Radon related questions and concerns should be forwarded to your state radon office. The following web sites, hotlines, and publications are submitted for reference:

12.2 - world wide web sites:

<http://www.epa.gov/radon> - EPA's primary radon web site

<http://www.epa.gov/iaq/whereyoulive.html>. - information for state web sites

<http://www.epa.gov/iaq/radon/pubs/index.html> - Full text versions of the most popular radon publications

<http://www.epa.gov/iaq> - EPA air quality risk documents

<http://www.epa.gov/safewater/radon.html>

12.3 - Toll free radon information hotlines :

- 1-800-SOS-RADON (767-7236) - Radon test kit services
- 1-800-55RADON (557-2366) - Radon questions & answers
- 1-800-644-6999 - Radon reduction information for homes
- 1-866-528-3187 - Linea Directa de Informacion sobre Radon en Espanol.
- 1-800-426-4791 - Safe Drinking Water Hotline

12.4 - Printed documents:

- Home Buyers and Sellers Guide to Radon
(EPA 402/K-09/002, January 2009)
- State radon offices;
see <http://www.epa.gov/iaq/whereyoulive.html>
- National Service center for Environmental Publications
(NSCEP) at 1-800-490-9198, <http://www.epa.gov/nscep/> or
via email at nscep@bbs-lmit.com

13.0 LIMITATIONS

This report was prepared in accordance with generally accepted ASTM standards of environmental practice at the time this investigation was performed. Evaluations of the conditions at the site for the purpose of this investigation are made from a limited number of observation and sample points and may be subjective in some cases. The client is solely responsible for providing any notices or disclosures to concerned public agencies or to the public.

Environmental Inspection Services has prepared this report based on information collected from available analytical test results. The scope of this investigation is limited and did include a limited number of radon testers and no subsurface or sub-slab radon screening of soil and groundwater. No radon mitigation was performed on the subject property.

This report is not a substitution for a formal radon mitigation and/or radon mitigation effort. The findings and conclusions are not to be regarded as scientific certainties. Findings are based on professional judgement concerning independent laboratory data significance. This report is an expression of professional opinion and is not a warranty expressed or implied. .

APPENDIX 1.0
RADON ANALYTICAL TEST RESULTS

ENVIRONMENTAL INSPECTION SERVICE, INC.

11981 Fargo Rd NE
Aurora, OR 97002
503-680-6398

Charles_a_spear@yahoo.com

OES
48119 E 1ST ST, OAKRIDGE, OR, 97463

Vial #	Location	Start Date	Start Time	End Date	End Time	Radon Concentration (pCi/L)
4929765	5	10/16/2020	03:04 PM	10/19/2020	12:00 PM	1.5
4962088	4	10/16/2020	03:04 PM	10/19/2020	12:00 PM	2.1
4942252	3	10/16/2020	03:05 PM	10/19/2020	12:00 PM	1.9
4945348	6	10/16/2020	03:06 PM	10/19/2020	12:01 PM	1.3
4945475	2	10/16/2020	03:07 PM	10/19/2020	12:02 PM	0.5
4960807	7	10/16/2020	03:07 PM	10/19/2020	12:03 PM	1.1
4960652	8	10/16/2020	03:08 PM	10/19/2020	12:04 PM	1.3
4945250	LIONS DEN	10/16/2020	03:14 PM	10/19/2020	12:05 PM	1.7
4945110	OFFICE	10/16/2020	03:16 PM	10/19/2020	12:05 PM	2.8
4960474	LIBRARY	10/16/2020	03:17 PM	10/19/2020	12:05 PM	1.0
4960532	LIBRARY	10/16/2020	03:18 PM	10/19/2020	12:05 PM	1.3
4955174	LIBRARY DUP	10/16/2020	03:18 PM	10/19/2020	12:07 PM	0.9
4930347	15	10/16/2020	03:18 PM	10/19/2020	12:06 PM	0.7
4960648	14	10/16/2020	03:19 PM	10/19/2020	12:07 PM	4.9 —
4960855	13	10/16/2020	03:19 PM	10/19/2020	12:06 PM	3.2
4962291	10	10/16/2020	03:19 PM	10/19/2020	12:07 PM	1.6
4945121	12	10/16/2020	03:20 PM	10/19/2020	12:06 PM	4.4 —
4960583	11	10/16/2020	03:20 PM	10/19/2020	12:06 PM	2.6
4945396	SPEECH	10/16/2020	03:28 PM	10/19/2020	12:09 PM	0.8
4962360	GYM	10/16/2020	03:29 PM	10/19/2020	12:10 PM	0.8
4945552	GYM	10/16/2020	03:29 PM	10/19/2020	12:10 PM	0.8
4962366	GYM DUP	10/16/2020	03:30 PM	10/19/2020	12:10 PM	0.6
4945209	GYM BLANK	10/16/2020	03:30 PM	10/19/2020	12:10 PM	0.1

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST ID NUMBER: 1318798
DATE RECEIVED: 10/22/2020
REPORT DATE: 10/26/2020

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

This is a confidential report of the radon samples that were submitted to our laboratory for measurements of radon-222 levels. The results represent the amount of radon that was present in the air during the time of sampling. The radon is measured in our laboratory using the liquid scintillation method (EPA 402-R-92-004). This report will not be released to anyone without your permission except as required by individual state laws and guidelines.

HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4960532	1ST FLOOR LIBRARY	Oct 16, 2020 3:18 PM	Oct 19, 2020 12:05 PM	Oct 23, 2020 9:58 AM	1.3 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (PC/L) OR HIGHER

Please read the EPA Citizen's Guide to Radon at www.epa.gov/radon/pubs/citguide.html. Residents of New Jersey should read "Radon Testing and Mitigation: The Basics" at <http://njradon.org/download/mitbas.pdf>. Radon levels less than 4 pCi/L still pose a risk. You may want to take additional measurements because radon levels can vary with the seasons. You may also want to consider doing a long term test to determine the average radon concentrations over a longer period of time. If the radon level is 4.0 pCi/L or higher you should perform either a long-term test or a second short-term test. If the radon level is higher than 10 pCi/L, you should perform a second short-term test immediately. If you would like to learn how to lower your radon levels, or have other questions, please contact your state radon office at (800) 648-0394.

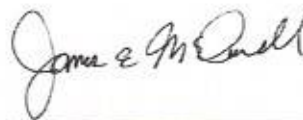
LIMITATIONS OF DATA AND PRODUCT LIABILITY

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Jose Figueroa, RMS
NRPP CERT # 109347 RI
NRSB CERT # 18SS007

PRO-LAB NRSB # ARI.0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST ID NUMBER: 1318745
DATE RECEIVED: 10/22/2020
REPORT DATE: 10/26/2020

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

This is a confidential report of the radon samples that were submitted to our laboratory for measurements of radon-222 levels. The results represent the amount of radon that was present in the air during the time of sampling. The radon is measured in our laboratory using the liquid scintillation method (EPA 402-R-92-004). This report will not be released to anyone without your permission except as required by individual state laws and guidelines.

HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4929765	1ST FLOOR 5	Oct 16, 2020 3:04 PM	Oct 19, 2020 12:00 PM	Oct 23, 2020 11:42 AM	1.5 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (pCi/L) OR HIGHER

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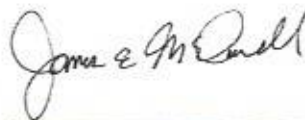
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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318746
DATE RECEIVED: 10/22/2020
REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

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HERE ARE YOUR TEST RESULTS

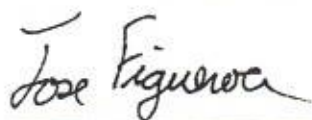
<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4962088	1ST FLOOR 4	Oct 16, 2020 3:04 PM	Oct 19, 2020 12:00 PM	Oct 23, 2020 12:35 PM	2.1 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (PCi/L) OR HIGHER

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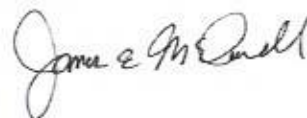
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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318748

DATE RECEIVED: 10/22/2020

REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

This is a confidential report of the radon samples that were submitted to our laboratory for measurements of radon-222 levels. The results represent the amount of radon that was present in the air during the time of sampling. The radon is measured in our laboratory using the liquid scintillation method (EPA 402-R-92-004). This report will not be released to anyone without your permission except as required by individual state laws and guidelines.

HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4942252	1ST FLOOR 3	Oct 16, 2020 3:05 PM	Oct 19, 2020 12:00 PM	Oct 23, 2020 10:59 AM	1.9 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (pCi/L) OR HIGHER

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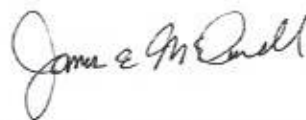
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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318750

DATE RECEIVED: 10/22/2020

REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION
47997 W 1ST ST
OAKRIDGE, OR 97463

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HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4962123	BASEMENT FLOOR	Oct 16, 2020 2:06 PM	Oct 19, 2020 11:35 AM	Oct 23, 2020 6:42 AM	0.3 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (PCi/L) OR HIGHER

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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARI.0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318749

DATE RECEIVED: 10/22/2020

REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

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HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4945348	1ST FLOOR 6	Oct 16, 2020 3:06 PM	Oct 19, 2020 12:01 PM	Oct 23, 2020 11:09 AM	1.3 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (PC/L) OR HIGHER

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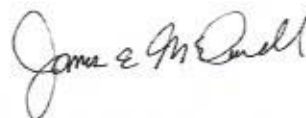
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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318749
DATE RECEIVED: 10/22/2020
REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

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HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4945348	1ST FLOOR 6	Oct 16, 2020 3:06 PM	Oct 19, 2020 12:01 PM	Oct 23, 2020 11:09 AM	1.3 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (PCi/L) OR HIGHER

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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318751

DATE RECEIVED: 10/22/2020

REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

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HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4945475	1ST FLOOR 2	Oct 16, 2020 3:07 PM	Oct 19, 2020 12:02 PM	Oct 23, 2020 11:52 AM	0.5 pCi/L

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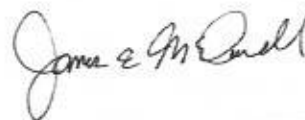
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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318753
DATE RECEIVED: 10/22/2020
REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

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HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4960807	1ST FLOOR 7	Oct 16, 2020 3:07 PM	Oct 19, 2020 12:03 PM	Oct 23, 2020 12:03 PM	1.1 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (PCi/L) OR HIGHER

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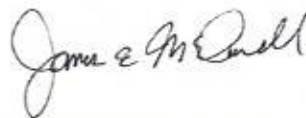
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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318760
DATE RECEIVED: 10/22/2020
REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

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HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4945110	1ST FLOOR OFFICE	Oct 16, 2020 3:16 PM	Oct 19, 2020 12:05 PM	Oct 23, 2020 12:57 PM	2.8 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (pCi/L) OR HIGHER

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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318758

DATE RECEIVED: 10/22/2020

REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

This is a confidential report of the radon samples that were submitted to our laboratory for measurements of radon-222 levels. The results represent the amount of radon that was present in the air during the time of sampling. The radon is measured in our laboratory using the liquid scintillation method (EPA 402-R-92-004). This report will not be released to anyone without your permission except as required by individual state laws and guidelines.

HERE ARE YOUR TEST RESULTS

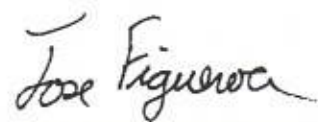
<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4945250	1ST FLOOR LIONS DEN	Oct 16, 2020 3:14 PM	Oct 19, 2020 12:05 PM	Oct 23, 2020 12:25 PM	1.7 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (PCi/L) OR HIGHER

Please read the EPA Citizen's Guide to Radon at www.epa.gov/radon/pubs/citguide.html. Residents of New Jersey should read "Radon Testing and Mitigation: The Basics" at <http://njradon.org/download/mitbas.pdf>. Radon levels less than 4 pCi/L still pose a risk. You may want to take additional measurements because radon levels can vary with the seasons. You may also want to consider doing a long term test to determine the average radon concentrations over a longer period of time. If the radon level is 4.0 pCi/L or higher you should perform either a long-term test or a second short-term test. If the radon level is higher than 10 pCi/L, you should perform a second short-term test immediately. If you would like to learn how to lower your radon levels, or have other questions, please contact your state radon office at (800) 648-0394.

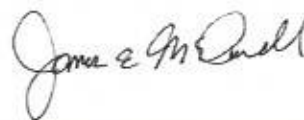
LIMITATIONS OF DATA AND PRODUCT LIABILITY

PRO-LAB expressly disclaims any and all liability for any special, incidental, or consequential damages resulting directly or indirectly from the improper use of or improper interpretation of the radon product or its results. Any delays in receipt of the test sample by PRO-LAB shall be the sole responsibility of the purchaser and their legal remedy shall be limited to recourse with their chosen carrier. Additionally, PRO-LAB shall not be responsible for the improper placement of the test canister nor shall PRO-LAB be liable for results derived directly or indirectly from the improper placement of said test canister. PRO-LAB, its agents, its retailers, its distributors, and the manufacturers' sole liability are limited to the cost for the replacement of the test canister itself only.



Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318756

DATE RECEIVED: 10/22/2020

REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

OES
48119 E 1ST ST
OAKRIDGE, OR 97463

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HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4960652	1ST FLOOR 8	Oct 16, 2020 3:08 PM	Oct 19, 2020 12:04 PM	Oct 23, 2020 12:46 PM	1.3 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (PCi/L) OR HIGHER

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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

TEST ID NUMBER: 1318755

DATE RECEIVED: 10/22/2020

REPORT DATE: 10/26/2020

ENVIRONMENTAL INSPECTION SERVICE, INC.
11981 FARGO ROAD NORTHEAST,
AURORA, OR 97002

TEST LOCATION

48119 E 1ST ST
OAKRIDGE, OR 97463

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HERE ARE YOUR TEST RESULTS

<u>VIAL #</u>	<u>ROOM TESTED</u>	<u>DATE OPENED</u>	<u>DATE CAPPED</u>	<u>DATE ANALYZED</u>	<u>RADON LEVEL</u>
4962375	1ST FLOOR 1	Oct 16, 2020 3:08 PM	Oct 19, 2020 12:04 PM	Oct 23, 2020 12:14 PM	1.0 pCi/L

THE EPA RECOMMENDS THAT YOU FIX YOUR HOME IF THE RADON LEVEL IS 4 PICOCURIES (PC/L) OR HIGHER

Please read the EPA Citizen's Guide to Radon at www.epa.gov/radon/pubs/citguide.html. Residents of New Jersey should read "Radon Testing and Mitigation: The Basics" at <http://njradon.org/download/mitbas.pdf>. Radon levels less than 4 pCi/L still pose a risk. You may want to take additional measurements because radon levels can vary with the seasons. You may also want to consider doing a long term test to determine the average radon concentrations over a longer period of time. If the radon level is 4.0 pCi/L or higher you should perform either a long-term test or a second short-term test. If the radon level is higher than 10 pCi/L, you should perform a second short-term test immediately. **If you would like to learn how to lower your radon levels, or have other questions, please contact your state radon office at (800) 648-0394.**


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Jose Figueroa, RMS
NRPP CERT # 109347 RT
NRSB CERT # 18SS007

PRO-LAB NRSB # ARL0028
PRO-LAB NEHA ID # 101461AL



James E. McDonnell IV

APPENDIX 2.0
CHAIN'S OF CUSTODY (COC'S)

RADON CHAIN OF CUSTODY

CLIENT ADDRESS

BFS

11981 Fargo Road
Aurora, OR 97001

TEST ADDRESS

OES

48119 E. 1st Street
Oakridge, OR 97463

SERIAL No.	LOCATION	CAP OFF TIME	DATE	CAP ON TIME	DATE	RESULTS
4929765	5	3:04pm	10/16	12:10 pm	10/17/20	
4962088	4	3:04pm		12:00 pm		
4942252	3	3:05pm		12:00 pm		
4945348	6	3:06pm		12:01 pm		
4945975	2	3:07pm		12:02 pm		
4960807	7	3:07pm		12:03 pm		
4962375	1	3:08pm		12:03 pm		
4960652	8	3:09pm		12:04 pm		
4945250	Lions den	3:14		12:05 pm		
4945110	Office	3:15		12:05 pm		
4960474	Library	3:16		12:05 pm		
4960532	↓	3:16		12:05 pm		
4955174	L.b(dup)	3:17		12:05 pm		
4930347	15	3:17		12:05 pm		
4962340	9	3:18		12:07 pm		
4960648	14	3:18		12:06 pm		
4960855	13	3:19		12:06 pm		
4962291	10	3:19		12:07 pm		
4945121	12	3:20		12:06 pm		
4960883	11	3:20	✓	12:06 pm		

RADON CHAIN OF CUSTODY

CLIENT ADDRESS OIS.
11981 Fargo Road
Aviation, AR 57002

TEST ADDRESS OES
48119 B. 1st. Street.
Oakridge, OR. 97463

[illegible]

APPENDIX 3.0
SCHOOL SAMPLING FLOOR PLAN

EVACUATION BUILDING CLEARING



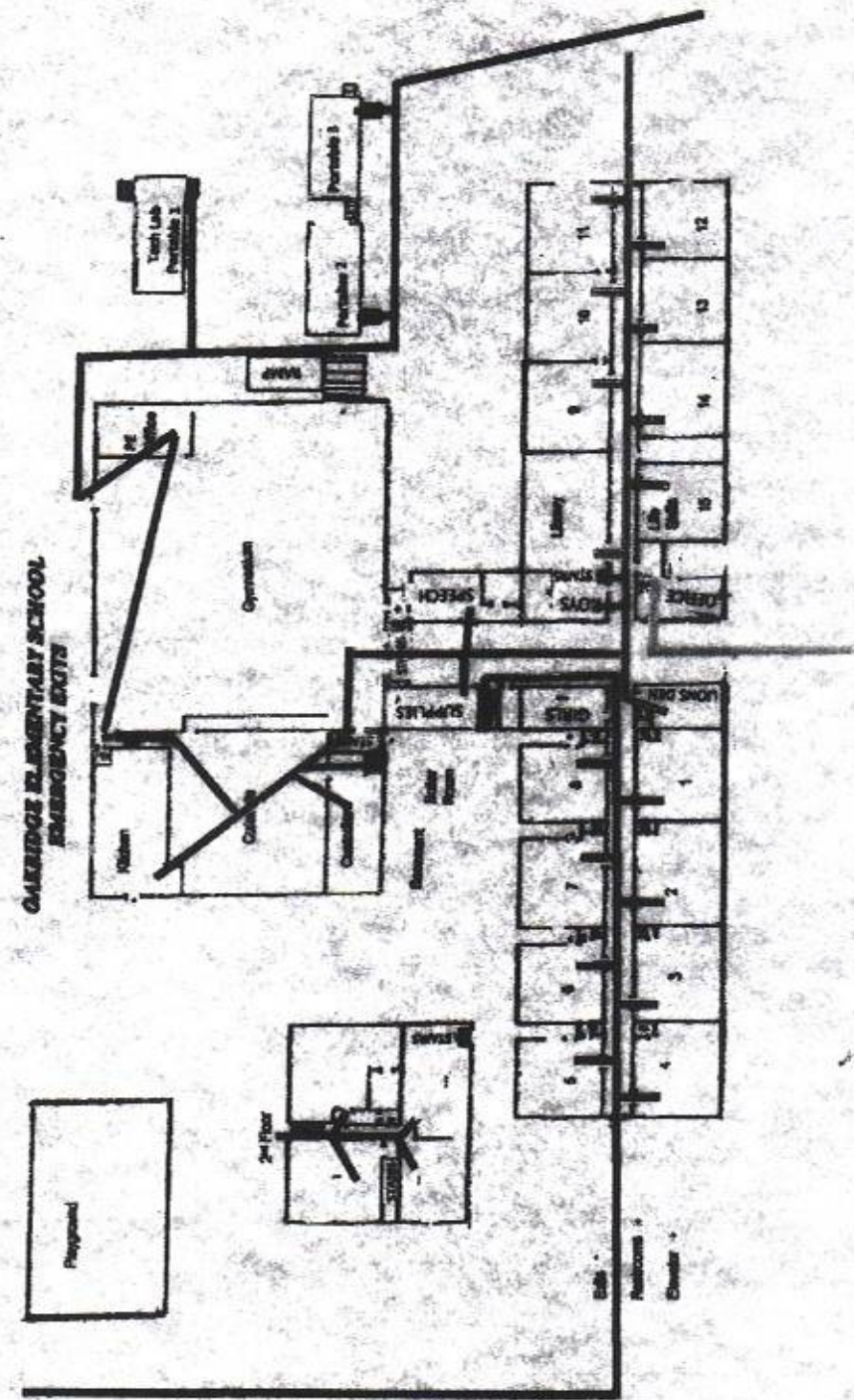
PETER Y



SUSIE



CUSTODIAN



Tony- May 541-915-491P

APPENDIX 4.0
RADON REGULATION

2017 ORS 332.334¹

Tests of schools under plan

- results
- annual statement
- rules

- (1) (a) A school district, education service district or public charter school shall make the results of any testing conducted under a plan described in ORS 332.331 (Healthy and Safe Schools Plan) available to the public no later than 10 business days after receiving the test results. As used in this paragraph, "business day" means a day that is not a Saturday, a legal holiday under ORS 187.010 (Legal holidays) or 187.020 (Additional legal holidays) or a day on which the administrative headquarters for the district or school is closed.
- (b) The district or school shall make the test results available:
- (A) If the district or school maintains a public website, by posting the test results on the website;
 - (B) By sending electronic mail to staff, students and parents of minor students for whom the district or school has electronic mail addresses on file; **and**
 - (C) By making the test results available in printed form at the administrative headquarters for the district or school.
- (2) A school district, education service district or public charter school shall provide an annual statement regarding the plan developed and adopted by the district or school under ORS 332.331 (Healthy and Safe Schools Plan). The district or school shall provide the statement to:
- (a) The governing body for the district or school;
 - (b) The parents of minor students; **and**
 - (c) Any students 18 years of age or older.
- (3) The annual statement under subsection (2) of this section must include, but need not be limited to, the following information:
- (a) Identification of, and contact information for, the position within the administration of the school district, education service district or public charter school having responsibility for maintaining and overseeing performance of the plan;

- (b) Information regarding where copies of the plan are available;
 - (c) A certification that the district or school is in compliance with any testing requirements under the plan;
 - (d) Information about how to obtain the results of any testing conducted under the plan; **and**
 - (e) A summary of major exposure reduction activities conducted under the plan since the preceding annual statement.
- (4) If a school district, education service district or public charter school maintains a publicly available website, the district or school shall post the annual statement described in subsection (3) of this section on the website. The district or school shall make the annual statement available in printed form at the administrative headquarters for the district or school.
- (5) The Department of Education shall adopt, in consultation with the Oregon Health Authority, representatives of school districts, education service districts and public charter schools and other interested stakeholders, rules for carrying out this section. [2017 c.700 §2]

Note: See note under 332.331 (Healthy and Safe Schools Plan).

¹ Legislative Counsel Committee, *CHAPTER 332—Local Administration of Education*, https://www.oregonlegislature.gov/bills_laws/ors/ors332.html (2017) (last accessed Mar. 30, 2018).

News Release

FOR IMMEDIATE RELEASE

Thursday, January 13, 2005

Contact: HHS Press Office
(202) 690-6343

Surgeon General Releases National Health Advisory On Radon

U.S. Surgeon General Richard H. Carmona warned the American public about the risks of breathing indoor radon by issuing a national health advisory today. The advisory is meant to urge Americans to prevent this silent radioactive gas from seeping into their homes and building up to dangerous levels. Dr. Carmona issued the advisory during a two-day Surgeon General's Workshop on Healthy Indoor Environment.

"Indoor radon is the second-leading cause of lung cancer in the United States and breathing it over prolonged periods can present a significant health risk to families all over the country," Dr. Carmona said. "It's important to know that this threat is completely preventable. Radon can be detected with a simple test and fixed through well-established venting techniques."

Radon is an invisible, odorless and tasteless gas, with no immediate health symptoms, that comes from the breakdown of uranium inside the earth. Simple test kits can reveal the amount of radon in any building. Those with high levels can be fixed with simple and affordable venting techniques. According to U.S. Environmental Protection Agency (EPA) estimates, one in every 15 homes nationwide have a high radon level at or above the recommended radon action level of 4 picoCuries (pCi/L) per liter of air.

National Health Advisory on Radon

Radon gas in the indoor air of America's homes poses a serious health risk. More than 20,000 Americans die of radon-related lung cancer every year. Millions of homes have an elevated radon level. If you also smoke, your risk of lung cancer is much higher. Test your home for radon every two years, and retest any time you move, make structural changes to your home, or occupy a previously unused level of a house. If you have a radon level of 4 pCi/L or more, take steps to remedy the problem as soon as possible.

"Americans need to know about the risks of indoor radon and have the information and tools they need to take action. That's why EPA is actively promoting the Surgeon General's advice urging all Americans to get their homes tested for radon. If families do find elevated levels in their homes, they can take inexpensive steps that will reduce exposure to this risk," said Jeffrey R. Holmstead, Assistant Administrator, Office of Air and Radiation, U.S. Environmental Protection Agency (EPA).

"Based on national averages, we can expect that many of the homes owned or financed by federal government programs would have potentially elevated radon levels. The federal government has an opportunity to lead by example on this public health risk. We can accomplish this by using the outreach and awareness avenues we have, such as EPA's Web site, to share information and encourage action on radon to reduce risks," said Edwin Piñero, Federal Environmental Executive, Office of the Federal Environmental Executive (OFEE).

A national Public Service Announcement (PSA) that was released to television stations across America in January, National Radon Action Month, is reinforcing this recently updated health advisory. In the television spot, the camera scans a neighborhood with rooftop banners that remind the occupants of the importance to test their homes for radon. The television PSA can be viewed at: <http://www.epa.gov/radon/rnpa.html>.

For more information about radon go to EPA's Web site www.epa.gov/radon; or call your state radon office; or call a national toll-free hotline at 1-800-SOS-RADON (1-800-767-7236).

The Surgeon General's Workshop on Healthy Indoor Environment is bringing together the best scientific minds in the nation to discuss the continuing problem of unhealthful buildings. Indoor environments are structures including workplaces, schools, offices, houses and apartment buildings, and vehicles. According to a recent study, Americans spend between 85 and 95 percent of their time indoors.

In just the past 25 years, the percentage of health evaluations that the National Institute for Occupational Safety and Health at the Centers for Disease Control and Prevention (CDC) has conducted related to indoor-air quality has increased from 0.5 percent of all evaluations in 1978, to 52 percent of all evaluations since 1990. This means that in those years, the evaluations related to air quality concerns have increased from one of every 200 evaluations to one of every two.

The problem is also adversely affecting our children's health as millions of homes and apartments and one in five schools in America have indoor air quality problems. This can trigger various allergies and asthma. Asthma alone accounts for 14 million missed school days each year. The rate of asthma in young children has risen by 160 percent in the past 15 years, and today one out of every 13 school-age children has asthma. Dr. Carmona is especially focusing on how unhealthy indoor environment affects children, as he promotes 2005 as The Year of the Healthy Child.

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Note: All HHS press releases, fact sheets and other press materials are available at <http://www.hhs.gov/news>.

Last Revised: January 12, 2005

APPENDIX 5.0
CONSULTANT RESUME

RESUME

CHARLES ARTHUR SPEAR

**CENTER FOR ENVIRONMENTAL RESEARCH
& TECHNOLOGY RADON TRAINING**

**CERTIFIED ENVIRONMENTAL CONSULTANT (CEC)
ENVIRONMENTAL ASSESSMENT ASSOCIATION**

**REGISTERED ENVIRONMENTAL ASSESSOR
(Former) REA - 01241**

AHERA INSPECTOR (EPA CERTIFICATION NO. IR-20-2439A

**CERTIFIED ENVIRONMENTAL INSPECTOR
CEI - 10364**

Professional Background

Charles A. Spear, President and founder of Environmental Inspection Services has over 30 years technical experience ranging from facility and school district radon testing to site remediation. Technical employment included food technologist to hazardous waste site remediation at Federal SUPERFUND sites from California to Maryland. Mr. Spear has successfully performed over 3,000 Phase One, Phase Two, and Phase Three Environmental Site Assessment inspections and multiple radon inspections and surveys on properties from California to Alaska and east to Maryland.

Mr. Spear has managed such projects as spilled mustard gas and organophosphate demilitarization and remediation as a decontamination sergeant of the U.S. Army Chemical Corps Technical Escort Unit Drill & Transfer Unit at Umatilla Army Depot and removal of leaking solvent underground storage tanks in California and Oregon. Additional experience included supervision as a USARMY NBC Specialist of focused remediation at the Federal Superfund site known as Aberdeen Proving Grounds, Maryland (Michaelsville Landfill). EIS does not conduct or perform geological work. Geologic work is referred to a state registered geologist.

Specifically, Mr. Spear has worked with clients such as: numerous school districts, Housing & Urban Development, the International Fabric Care Industry (IFI), the U.S. Environmental Protection Agency, The U.S. Department of Defense, The Oregon Department of Environmental Quality (ODEQ), The Oregon Department of Forestry, INTEL, Sun Microsystems, IBM, Rohm & Haas, General Electric, AT&T, Texaco, Unocal, BP, Lockheed Missile and Space Center, FMC Corporation, Oregon Department of Fish & Wildlife, Washington Department of Fish & Wildlife, City of Beaverton, City of Hillsboro, City of Corvallis, Housing Authority of Portland, Northwest Oregon Housing Authority, Washington County Department of Housing, Housing & Urban Development, numerous lenders and mortgage companies, many private development and site remedial site projects, and many attorneys and investors.

Mr. Spear managed complex solvent tank farm removals at Xidex Corporation in Sunnyvale, California and was the site cleanup manager at the Rose City Plating Site currently developed as the Oregon Convention Center. Mr. Spear is a certified hazardous waste professional who has coupled military experience as a Nuclear, Biological and Chemical Specialist (U.S. Army MOS 54E20) with experience as a professional industrial and process research engineer in both the corrugated paper and petroleum industries.

Mr. Spear has managed food industry quality control as an inplant food technologist and prepared cost reduction programs as a corrugated boxboard industrial engineer in Dallas, Texas. He is currently registered with the states of California, Washington, and Oregon and is an active member of the national respected Environmental Assessment Association. Due diligence projects have been performed throughout the United States from Fairbanks, Alaska to San Diego, California.

Professional experience includes the following:

Professional Experience

- * Dry Cleaner Inspections
- * Environmental Consultation
- * Waste Reduction Audits
- * Regulatory Compliance Audits
- * Drum Yard Clearances
- * Tank Farm Removals/Replacements
- * Lab Packaging & Supervision
- * Environmental Site Assessments
- * Superfund Site Remediation
- * Hazardous Waste site Project Design & Management
- * Habitat/Wetlands Restoration
- * AHERA asbestos inspections for school districts
- * Landfill Remediation
- * Agricultural assessments
- * Indoor air quality inspections

Professional Employment/Consultation

- * C.F.S. Continental Coffee, Inc., Food technologist, Chicago, Illinois
- * Holiday Industries, Research Engineer, Grand Prairie, Texas
- * Alton Packaging Corporation, Industrial Engineer, Dallas, Texas
- * U.S. Army Chemical Corps., Nuclear, Biological, Chemical Specialist - Special assignment - Umatilla Army Depot (DATS)
Oregon and permanent assignment U.S. Army Chemical Corps. Technical Escort Unit in Edgewood, Maryland
- * Rollins Environmental Services, Remedial Project Manager
- * Crown Environmental Services, Technical Director, Redmond, California
- * Dames & Moore, Remedial design Engineer, Portland, Oregon
- * Pegasus Environmental Management Services, Director of Technical Services
- * Pacific Tank & Construction, Manager of Estimation, Portland, Oregon
- * Enviro-Logic Inc., Director of Environmental Site Assessment Division
- * Environmental Inspection Services Founder / President

Professional Education

- * Environmental Research & Technology radon training
- * American Standard for Testing & Materials ASTM E1527-13 Training
- * Bachelor of Science, Chemistry, Northeastern Illinois University, 1978
- * U.S. Army Chemical School, Ft. McClellan, Alabama, 1983
- * U.S. Army Technical Escort Unit, Accident / Incident Response Training Center 1983
- * Registered Environmental Assessor REA - 01241 (Former classification)
- * Certified environmental Inspector CEI - 10364
- * AHERA Certified Asbestos Inspector IR-19-2439A
- * ODEQ Soil Matrix Assessor & UST Decommission Supervisor ID No. 10305
- * Washington DOE Registered Environmental Assessor
- * Wetland Specialist - Training Wetlands Institute 1997
- * EPA / HUD Lead-Based Paint (LBP) Certified Inspector & Risk Assessor

Additional Education

- * Joint Military Material Packaging & Transportation
- * Asbestos Abatement Seminar attendance 1987
- * Thin Layer Chromatography, 1989
- * Oregon Registered Underground storage Tank Supervisor, 1998
- * Oregon Registered Soil Matrix Assessor, 1998
- * Washington Registered Assessor, 1991
- * Washington Registered Underground Storage Tank Supervisor, 1991
- * Wetland Training Institute Delineation Course Study University of Portland 1997
- * 40-Hour HAZMAT Certified
- * AHERA-Certified Inspector

Special Skills

- * School District radon surveys and radon control planning
- * Facility Environmental Compliance Audits
- * ASTM standard Environmental Site Assessments
- * Computer Programming
- * Organic surfactant chemical synthesis and analysis
- * Hazardous Waste Site remediation/ estimating/ standards development
- * Design of filtration systems, batch and continuous process optimization studies
- * QA/QC Procedures
- * SUPERFUND Site Management
- * Industrial/ Research Engineering
- * Hazardous Waste Site Remediation/ Consultation
- * Wetlands Delineation and Habitat Restoration

Certification

- * U.S. Army MOS 54E20 - U.S. Army Chemical Corps.
- * International Fire Code Institute (IFCI) Certified UST Supervisor
- * International Fire Code Institute (IFCI) Certified Soil Matrix Assessor
- * Certified Hazardous Waste Manager
- * 40-hour OSHA Training
- * 40-hour OSHA Supervisor Training
- * Registered Environmental Assessor (DOE)
- * DEQ Registered UST Supervisor
- * DEQ Registered Soil Matrix Assessor
- * Resolution Trust Corporation (RTC) approved Environmental Assessor
- * California Registered Environmental Assessor (REA-01241)- program discontinued
- * Department of Ecology (DOE) Registered Environmental Assessor
- * Environmental Assessment Association, Certified Environmental Inspector & Transaction Specialist (CEI-10364)
- * Environmental Assessment Association, Certified Environmental Consultant (CEC)
- * AHERA Certified Asbestos Inspector
- * Wetland Delineator Graduate Wetland Training Institute, University of Portland 1997
- * EPA / HUD LBP Inspector & Risk Assessor
- * ASTM Training class, May, 2004