



December 4, 2017

David Callaway  
David Douglas School District  
11300 NE Halsey Street  
Portland, Oregon 97220

Via email: david\_callaway@ddsd40.org

Regarding: District-Wide Radon Testing  
David Douglas Performing Arts Center  
1400 SE 130th Avenue  
Portland, Oregon 97233  
PBS Project 23179.043, Phase 0002

Dear Mr. Callaway:

From October 30 to November 17, 2017, PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing at the David Douglas Performing Arts Center located at 1400 SE 130th Avenue in Portland, Oregon.

The Environmental Protection Agency (EPA) and Oregon Health Authority (OHA) recommend that buildings be tested for radon and that any radon concentrations be maintained below 4.0 picocuries per liter (pCi/L) of air. PBS used Air Chek, Inc. brand single-use, short-term radon test kits to measure radon levels in frequently-occupied rooms that are in contact with the ground or above unoccupied basements or crawlspaces.

The following table lists all samples in which radon levels were found to be above the EPA action level. Following OHA protocol, samples with results equal to or greater than 8.0 pCi/L were retested. Retest samples include "#2" in the sample location description.

**Test Kits with Radon 4.0 pCi/L or Above**

Test Kit Number	Sample Location	Radon Level (pCi/L)
7956907	Blackbox Theatre	10.7
7956908	Make-up	8.2
7956909	Costume shop-duplicate	9.7
7956912	Costume shop	11.0
7957602	Makeup #2	8.1
7957603	Costume shop #2	11.8
7957604	Blackbox Theatre #2	9.6

See the attached laboratory analysis report for more details.

In addition to the EPA recommendation that radon concentrations not exceed 4.0 pCi/L, OHA recommends that the following steps be conducted based on the results of a room's initial short-term test:

- **If the result is less than 2.0 pCi/L**, school districts are required to test again every 10 years, per Oregon Revised Statute 332.166-167.
- **If the result is between 2.0 pCi/L and 4.0 pCi/L**, consider fixing (i.e., lowering) the radon in that room.
- **If the result is from 4.0 pCi/L to 8.0 pCi/L**, perform a follow-up measurement of that room using a long-term test. This test should be conducted over as much of a nine-month school year as possible, when the room is likely to be occupied. If that result is equal to or greater than 4.0 pCi/L, the radon in the room should be fixed (i.e., lowered).
- **If the initial short-term test result is equal to or greater than 8.0 pCi/L**, conduct a second short-term test and average its result with the initial short-term test result. If the average of the two is equal to or greater than 4.0 pCi/L, radon in the room should be fixed (i.e., lowered).

Note: A great difference in the results of the short-term tests may indicate a flaw in the testing process. Investigate and consider retesting. For situations in which one of the test results is equal to or greater than 4.0 pCi/L, if the higher result is two or more times the lower result, repeat the 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. The findings and conclusions of this work are not scientific certainties, but probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. 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 503.417.7694 or [chris.boyce@pbsusa.com](mailto:chris.boyce@pbsusa.com) with any questions or comments.

Sincerely,



Chris Boyce  
Project Manager

Attachment: AirChek, Inc Laboratory Analysis Report

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Radon test result report for:

**PERFORMING ARTS CENTER  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7956919	AUDIO	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	< 0.3	2017-11-06
7956926	BACKSTAGE	2017-10-30 @ 4:00 pm	2017-11-02 @ 2:00 pm	2.7 ± 0.4	2017-11-06
7956918	BAND	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	0.6 ± 0.3	2017-11-06
7956920	BAND OFFICE	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	0.9 ± 0.3	2017-11-06
7956921	BAND-2	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	1.1 ± 0.3	2017-11-06
7956907	BLACKBOX THEATRE	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	10.7 ± 0.6	2017-11-06
7956910	BLANK	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	< 0.3	2017-11-06
7956916	CHORAL	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	1.0 ± 0.3	2017-11-06
7956917	CHORAL OFFICE	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	< 0.3	2017-11-06
7956911	CONCESSIONS	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	1.2 ± 0.3	2017-11-06
7956912	COSTUME SHOP	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	11.0 ± 0.6	2017-11-06
7956909	COSTUME SHOP-DUP	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	9.7 ± 0.5	2017-11-06
7956908	MAKE-UP	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	8.2 ± 0.5	2017-11-06
7956914	ORCHESTRA	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	< 0.3	2017-11-06
7956922	PRACTICE 1	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	< 0.3	2017-11-06
7956923	PRACTICE 2	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	< 0.3	2017-11-06
7956924	PRACTICE 3	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	< 0.3	2017-11-06
7956925	PRACTICE 4	2017-10-30 @ 3:00 pm	2017-11-02 @ 2:00 pm	< 0.3	2017-11-06

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November 30, 2017

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

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Radon test result report for:

**PERFORMING ARTS CENTER  
MAIN**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7957604	BLACKBOX THTR-#2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	9.6 ± 0.5	2017-11-20
7957603	COSTUME SHOP #2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	11.8 ± 0.6	2017-11-20
7957602	MAKE-UP #2	2017-11-14 @ 10:00 am	2017-11-17 @ 10:00 am	8.1 ± 0.5	2017-11-20

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