



November 30, 2018

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

Via email: david_callaway@ddsd40.org

Regarding: District-Wide Radon Testing
Ventura Park Elementary School
145 SE 117th Avenue
Portland, Oregon
PBS Project 23179.065, Phase 0001

Dear Mr. Callaway:

From November 6 to 9, 2018, PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing in the multi-purpose room, office area, health room, faculty lunch room, work room, and Room 9 at Ventura Park Elementary School, located at 145 SE 117th Avenue in Portland, Oregon.

This testing was completed after adjustments and modifications had been made to the HVAC system in these areas. An initial retest of these areas in June 2018 showed that all results were below the EPA action level of 4.0 picocuries per liter (pCi/L) of air. Current testing shows that some areas are slightly above 4.0 pCi/L.

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 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.

Test Kits with Radon 4.0 pCi/L or above – November 2018

| Test Kit Number | Sample Location | Radon Level (pCi/L) |
|-----------------|----------------------|---------------------|
| 9122789 | Counseling office | 4.6 |
| 9124136 | Faculty lunch room | 4.3 |
| 9124127 | Main office | 4.5 |
| 9124134 | Multi-purpose room 1 | 4.8 |
| 9122790 | Multi-purpose room 2 | 5.0 |
| 9124135 | Principal's office | 6.5 |

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 503.935.5484 or dale.voeller@pbsusa.com with any questions or comments.

Sincerely,

Dale Voeller, CHMM, CSP
Senior Project Manager

Attachment: AirChek, Inc., Laboratory Analysis Report

DSV:mo

November 12, 2018

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
VENTURA PARK
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|------------------|----------------------|----------------------|--------------|-----------------|
| 9122789 | COUNSELOR OFFICE | 2018-11-06 @ 2:00 pm | 2018-11-09 @ 2:00 pm | 4.6 ± 0.4 | 2018-11-12 |
| 9124136 | FACULTY LUNCH | 2018-11-06 @ 2:00 pm | 2018-11-09 @ 2:00 pm | 4.3 ± 0.4 | 2018-11-12 |
| 9122788 | HEALTH RM. | 2018-11-06 @ 2:00 pm | 2018-11-09 @ 2:00 pm | 3.7 ± 0.4 | 2018-11-12 |
| 9124127 | MAIN OFFICE | 2018-11-06 @ 2:00 pm | 2018-11-09 @ 2:00 pm | 4.5 ± 0.4 | 2018-11-12 |
| 9124134 | MULTI PURPOSE 1 | 2018-11-06 @ 2:00 pm | 2018-11-09 @ 2:00 pm | 4.8 ± 0.4 | 2018-11-12 |
| 9122790 | MULTI PURPOSE 2 | 2018-11-06 @ 2:00 pm | 2018-11-09 @ 2:00 pm | 5.0 ± 0.4 | 2018-11-12 |
| 9124135 | PRINCIPAL OFFICE | 2018-11-06 @ 2:00 pm | 2018-11-09 @ 2:00 pm | 6.5 ± 0.4 | 2018-11-12 |
| 9122791 | ROOM 9 | 2018-11-06 @ 2:00 pm | 2018-11-09 @ 2:00 pm | 2.2 ± 0.3 | 2018-11-12 |
| 9124132 | WORK ROOM | 2018-11-06 @ 2:00 pm | 2018-11-09 @ 2:00 pm | 3.6 ± 0.4 | 2018-11-12 |

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

| Kit Number | Start Date | Start Time | End Date | End Time | Temp. | Facility | Building | Room | Project ID | Floor | Result |
|-------------------|-------------------|-------------------|-----------------|-----------------|--------------|-----------------|-----------------|------------------|-------------------|--------------|---------------|
| 9014593 | 2018-05-29 | 3:00 pm | 2018-06-03 | 1:00 pm | 70 | VENTURA PARK 2 | MAIN | FACULTY LUNCH | DAVID DOUGLAS SD | 1 | 0.9 |
| 9014594 | 2018-05-29 | 2:00 pm | 2018-06-01 | 3:00 pm | 70 | VENTURA PARK 2 | MAIN | WORK ROOM | DAVID DOUGLAS SD | 1 | 1.3 |
| 9014595 | 2018-05-29 | 2:00 pm | 2018-06-01 | 3:00 pm | 70 | VENTURA PARK 2 | MAIN | PRINCIPAL'S OFFI | DAVID DOUGLAS SD | 1 | 1.8 |
| 9014598 | 2018-05-29 | 2:00 pm | 2018-06-01 | 3:00 pm | 70 | VENTURA PARK 2 | MAIN | MAIN OFFICE | DAVID DOUGLAS SD | 1 | 1.3 |
| 9014889 | 2018-05-29 | 3:00 pm | 2018-06-01 | 3:00 pm | 70 | VENTURA PARK 2 | MAIN | COUNSELOR | DAVID DOUGLAS SD | 1 | 1.4 |
| 9014890 | 2018-05-29 | 3:00 pm | 2018-06-01 | 3:00 pm | 70 | VENTURA PARK 2 | MAIN | HEALTH ROOM | DAVID DOUGLAS SD | 1 | 0.9 |
| 9014891 | 2018-05-29 | 3:00 pm | 2018-06-01 | 3:00 pm | 70 | VENTURA PARK 2 | MAIN | MULTI PURPOSE SO | DAVID DOUGLAS SD | 1 | 1.0 |
| 9014892 | 2018-05-29 | 3:00 pm | 2018-06-01 | 3:00 pm | 70 | VENTURA PARK 2 | MAIN | ROOM 9 | DAVID DOUGLAS SD | 1 | 1.1 |
| 9014897 | 2018-05-29 | 3:00 pm | 2018-06-01 | 3:00 pm | 70 | VENTURA PARK 2 | MAIN | MULTI PURPOSE NO | DAVID DOUGLAS SD | 1 | 1.4 |