



November 12, 2019

Greg Baker
Fern Ridge School District
88834 Territorial Hwy
Elmira, OR 97437

Via email: gbaker@fernridge.k12.or.us

Regarding: Veneta Elementary School – Short-Term Radon Testing
88131 Territorial Hwy
Veneta, OR 97487
PBS Project 52525.000

Dear Mr. Baker:

From October 7, to October 10, 2019 PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing for Veneta Elementary School located at 88131 Territorial Highway in Elmira, 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., 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. **No samples taken by PBS were found to be above the EPA action level of 4.0 pCi/L.**

In addition to the single-use, short-term radon test kits deployed in frequently occupied rooms, one (1) sample blank and six (6) spike samples were analyzed by Air Chek, Inc. in Mills River, North Carolina for quality control (QC) purposes.

The following table presents the results of all tests conducted during this study. Results are listed in pCi/L.

| Kit Number | Start Date | End Date | Room | Floor | Result |
|------------|------------|------------|------|-----------------|--------|
| 9290329 | 10/07/2019 | 10/10/2019 | 1 | 1 st | <0.3 |
| 9290324 | 10/07/2019 | 10/10/2019 | 10 | 1 st | 2.2 |
| 9290328 | 10/07/2019 | 10/10/2019 | 11 | 1 st | 0.6 |
| 9290333 | 10/07/2019 | 10/10/2019 | 12 | 1 st | 1.2 |
| 9290335 | 10/07/2019 | 10/10/2019 | 13 | 1 st | 1.6 |
| 9290337 | 10/07/2019 | 10/10/2019 | 14 | 1 st | 2.6 |
| 9290338 | 10/07/2019 | 10/10/2019 | 15 | 1 st | 3.1 |
| 9290340 | 10/07/2019 | 10/10/2019 | 16 | 1 st | 3.0 |
| 9290341 | 10/07/2019 | 10/10/2019 | 17 | 1 st | 1.1 |
| 9290339 | 10/07/2019 | 10/10/2019 | 18 | 1 st | 2.4 |
| 9290336 | 10/07/2019 | 10/10/2019 | 19 | 1 st | 2.7 |
| 9290330 | 10/07/2019 | 10/10/2019 | 2 | 1 st | <0.3 |
| 9290331 | 10/07/2019 | 10/10/2019 | 20 | 1 st | 1.5 |

| Kit Number | Start Date | End Date | Room | Floor | Result |
|------------|------------|------------|-------------------|-----------------|--------|
| 9290334 | 10/07/2019 | 10/10/2019 | 21 | 1 st | 2.1 |
| 9290316 | 10/07/2019 | 10/10/2019 | 22 | 1 st | 1.5 |
| 9290315 | 10/07/2019 | 10/10/2019 | 23 | 1 st | 1.1 |
| 9290318 | 10/07/2019 | 10/10/2019 | 24 | 1 st | 0.9 |
| 9290312 | 10/07/2019 | 10/10/2019 | 25 | 1 st | 0.9 |
| 9290319 | 10/07/2019 | 10/10/2019 | 3 | 1 st | <0.3 |
| 9290332 | 10/07/2019 | 10/10/2019 | 3 | 1 st | <0.3 |
| 9290325 | 10/07/2019 | 10/10/2019 | 4 | 1 st | 0.5 |
| 9290323 | 10/07/2019 | 10/10/2019 | 5 | 1 st | 1.8 |
| 9290326 | 10/07/2019 | 10/10/2019 | 6 | 1 st | 2.2 |
| 9290322 | 10/07/2019 | 10/10/2019 | 7 | 1 st | 1.4 |
| 9290321 | 10/07/2019 | 10/10/2019 | 8 | 1 st | 1.3 |
| 9290327 | 10/07/2019 | 10/10/2019 | 9 | 1 st | 3.8 |
| 9290310 | 10/07/2019 | 10/10/2019 | Cafeteria E. Wall | 1 st | 1.5 |
| 9290314 | 10/07/2019 | 10/10/2019 | Cafeteria W. Wall | 1 st | 1.2 |
| 9290317 | 10/07/2019 | 10/10/2019 | Gym E. Wall | 1 st | 1.3 |
| 9290320 | 10/07/2019 | 10/10/2019 | Gym W. Wall | 1 st | 0.6 |
| 9290311 | 10/07/2019 | 10/10/2019 | Gym W. Wall | 1 st | 0.7 |
| 9290307 | 10/07/2019 | 10/10/2019 | Health Room | 1 st | 0.9 |
| 9290313 | 10/07/2019 | 10/10/2019 | Library | 1 st | 1.2 |
| 9290308 | 10/07/2019 | 10/10/2019 | Principal | 1 st | 0.6 |
| 7271050 | 10/07/2019 | 10/10/2019 | Reception | 1 st | 0.7 |
| 9290309 | 10/07/2019 | 10/10/2019 | Staff Room | 1 st | 0.8 |
| 7271049 | 10/07/2019 | 10/10/2019 | Work Room | 1 st | 2.1 |

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 541.868.0955 or jeff.heeren@pbsusa.com with any questions or comments.

Sincerely,

Jeff Heeren
Senior Project Manager

Attachment: AirChek, Inc., Laboratory Analysis Report
AirChek, Inc., Laboratory Analysis Report – QC Samples

Radon test result report for:
VENETA ELEMENTARY
ELEMENTARY

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------------------|-----------------------|----------------------|-----------|------------|
| 9290329 | 1 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | < 0.3 | 2019-10-11 |
| 9290324 | 10 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 2.2 ± 0.3 | 2019-10-11 |
| 9290328 | 11 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 0.6 ± 0.3 | 2019-10-11 |
| 9290333 | 12 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 1.2 ± 0.3 | 2019-10-11 |
| 9290335 | 13 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 1.6 ± 0.3 | 2019-10-11 |
| 9290337 | 14 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 2.6 ± 0.3 | 2019-10-11 |
| 9290338 | 15 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 3.1 ± 0.3 | 2019-10-11 |
| 9290340 | 16 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 3.0 ± 0.3 | 2019-10-11 |
| 9290341 | 17 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 1.1 ± 0.3 | 2019-10-11 |
| 9290339 | 18 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 2.4 ± 0.3 | 2019-10-11 |
| 9290336 | 19 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 2.7 ± 0.3 | 2019-10-11 |
| 9290330 | 2 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | < 0.3 | 2019-10-11 |
| 9290331 | 20 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 1.5 ± 0.3 | 2019-10-11 |
| 9290334 | 21 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 2.1 ± 0.3 | 2019-10-11 |
| 9290316 | 22 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 1.5 ± 0.3 | 2019-10-11 |
| 9290315 | 23 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 1.1 ± 0.3 | 2019-10-11 |
| 9290318 | 24 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 0.9 ± 0.3 | 2019-10-11 |
| 9290312 | 25 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 0.9 ± 0.3 | 2019-10-11 |
| 9290319 | 3 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | < 0.3 | 2019-10-11 |
| 9290332 | 3 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | < 0.3 | 2019-10-11 |
| 9290325 | 4 | 2019-10-07 @ 10:00 am | 2019-10-10 @ 1:00 pm | 0.5 ± 0.3 | 2019-10-11 |
| 9290323 | 5 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 1.8 ± 0.3 | 2019-10-11 |
| 9290326 | 6 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 2.2 ± 0.3 | 2019-10-11 |
| 9290322 | 7 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 1.4 ± 0.3 | 2019-10-11 |
| 9290321 | 8 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 1.3 ± 0.3 | 2019-10-11 |
| 9290327 | 9 | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 3.8 ± 0.3 | 2019-10-11 |
| 9290310 | CAFETERIA EAST WALL | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 1.5 ± 0.3 | 2019-10-11 |
| 9290314 | CAFETERIA WEST WALL | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 1.2 ± 0.3 | 2019-10-11 |
| 9290317 | GYM EAST WALL | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 1.3 ± 0.3 | 2019-10-11 |
| 9290320 | GYM WEST WALL | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 0.6 ± 0.3 | 2019-10-11 |
| 9290311 | GYM WEST WALL | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 0.7 ± 0.3 | 2019-10-11 |
| 9290307 | HEALTH ROOM | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 0.9 ± 0.3 | 2019-10-11 |
| 9290313 | LIBRARY | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 1.2 ± 0.3 | 2019-10-11 |
| 9290308 | PRINCIPAL | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 0.6 ± 0.3 | 2019-10-11 |
| 7271050 | RECEPTION | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 0.7 ± 0.3 | 2019-10-11 |
| 9290309 | STAFF ROOM | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 0.8 ± 0.3 | 2019-10-11 |
| 7271049 | WORK ROOM | 2019-10-07 @ 9:00 am | 2019-10-10 @ 1:00 pm | 2.1 ± 0.3 | 2019-10-11 |

October 14, 2019

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
VENETA ELEMENTARY
ELEMENTARY

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7271055 | B | 2019-10-07 @ 7:00 am | 2019-10-10 @ 4:00 pm | < 0.3 | 2019-10-11 |

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

October 14, 2019

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
ELMIRA HIGH SCHOOL
ELMIRA HIGH SCHOOL

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7271054 | B | 2019-10-07 @ 7:00 am | 2019-10-10 @ 4:00 pm | < 0.3 | 2019-10-11 |
| 7271057 | B | 2019-10-07 @ 7:00 am | 2019-10-10 @ 4:00 pm | < 0.3 | 2019-10-11 |
| 9290303 | SP | 2019-10-06 @ 7:00 am | 2019-10-09 @ 7:00 am | 31.1 ± 1.9 | 2019-10-11 |
| 9290301 | SP | 2019-10-06 @ 7:00 am | 2019-10-09 @ 7:00 am | 25.9 ± 1.6 | 2019-10-11 |
| 9290306 | SP | 2019-10-06 @ 7:00 am | 2019-10-09 @ 7:00 am | 28.2 ± 1.7 | 2019-10-11 |
| 9290304 | SP | 2019-10-06 @ 7:00 am | 2019-10-09 @ 7:00 am | 29.2 ± 1.8 | 2019-10-11 |
| 9290302 | SP | 2019-10-06 @ 7:00 am | 2019-10-09 @ 7:00 am | 27.2 ± 1.6 | 2019-10-11 |
| 9290305 | SP | 2019-10-06 @ 7:00 am | 2019-10-09 @ 7:00 am | 27.7 ± 1.7 | 2019-10-11 |

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