June 3, 2022

Brent Paul, Director of Facility Operations
Lake Oswego School District
2455 Country Club Road
Lake Oswego, Oregon 97034

Via email: paulb@loswego.k12.or.us

Regarding: Radon Testing
Tech Building
2477 Country Club Road
Lake Oswego, Oregon 97034
PBS Project 21600.051

Dear Mr. Paul:

From March 14 to March 16, 2022, PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing at the tech building located at 2477 Country Club Road in Lake Oswego, 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 Radonova brand activated charcoal adsorption detector 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 crawl spaces. The test kits were shipped under chain-of-custody to Alpha Energy Laboratories (National Radon Proficiency Program ID: 101132 AL) for analysis.

Laboratory results indicated that all short-term radon tests at the tech building were below 4.0 pCi/L.

See the attached laboratory analysis report for sample locations and additional 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 503.417.7607 or bob.kleckner@pbsusa.com with any questions or comments.

Sincerely,

Digitally signed by Bob Kleckner
Date: 2022.06.03 11:48:10 -07'00'

Bob Kleckner
Sr. Project Manager

Attachment: Radonova Laboratory Analysis Radon Monitoring Report
Floor Plan

SE:BK

radonova
The global leader in radon measurement

REPORT NUMBER
6349919:2

REPORT DATE
04/05/2022

REPORT PAGE
1 of 5

PRINT DATE
04/05/2022

OWN ID
N/A

S. Eckes
Lake Oswego

BY
PBS Engineering & Environmental

REPORT RECEIVER(S)
alex.johnson@pbsusa.com;lindsey.peterson@pbsusa.com
S. Eckes

RADON MONITORING REPORT

Description of the measurement

The measurement was performed with an Activated Charcoal Adsorption detector (QuickScreen) and was analyzed by Alpha Energy Laboratories (NRPP ID: 101132 AL).

The detector(s) arrived to Alpha Energy Laboratories, Inc. **03/21/2022**.
They were measured **03/21/2022**.

No person has signed the record card and verified that the instructions have been followed.

Property data and address

MEASURE SITE ADDRESS
Tech building

BUILDING ID
21600.051

Test results

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK109580 [QuickScreen]	*03/14/2022 07:58 AM – 03/16/2022 02:35 PM*	*top of tall tan locker, "CNS office, north"*	*First*	< 0.7 pCi/L
RK109591 [QuickScreen]	*03/14/2022 07:58 AM – 03/16/2022 02:35 PM*	*table next to desk by door, "CNS office, south"*	*First*	< 0.9 pCi/L
RK109596 [QuickScreen]	*03/14/2022 07:58 AM – 03/16/2022 02:37 PM*	*top of gray PC, "CTP office, south"*	*First*	< 0.6 pCi/L

Comment to the results

This report replaces 6349919:1. Reason: new or corrected measurement information has been received.

Tryggve Rönnqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

RADONOVA INC.
900 Oakmont Lane Suite 207
Westmont IL 60559
331.814.2200, help@radonova.com

radonova
The global leader in radon measurement

S. Eckes
Lake Oswego

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DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK110403 [QuickScreen]	*03/14/2022 07:58 AM – 03/16/2022 02:37 PM*	*"black south wall, Dr. Wilson", "CTP office, north"*	*First*	1.1 pCi/L
RK109575 [QuickScreen]	*03/14/2022 07:58 AM – 03/16/2022 02:38 PM*	*desk next to printer, CTP CR north*	*First*	0.9 pCi/L
RK109574 [QuickScreen]	*03/14/2022 07:58 AM – 03/16/2022 02:38 PM*	*top of fridge, CTP CR south*	*First*	1.3 pCi/L
RK109614 [QuickScreen]	*03/14/2022 07:58 AM – 03/16/2022 02:38 PM*	*top of fridge / DUP, CTP CR south*	*First*	1.0 pCi/L

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DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK109578 [QuickScreen]	*03/14/2022 07:58 AM – 03/16/2022 02:39 PM*	*north wall on top of microwave / Fl, Comm/staff/dev. room*	*First*	< 0.9 pCi/L
RK109647 [QuickScreen]	*03/14/2022 08:05 AM – 03/16/2022 02:39 PM*	*south wall top of FC, Comm/staff/dev. room*	*First*	< 0.8 pCi/L
RK109658 [QuickScreen]	*03/14/2022 08:09 AM – 03/16/2022 02:39 PM*	*east wall table, Office north of comm/staff/dev. roo*	*First*	2.3 pCi/L

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Tech building

BUILDING ID
21600.051

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK110447 [QuickScreen]	*03/14/2022 08:12 AM – 03/16/2022 02:42 PM*	*top of microwave north wall, Robotics room*	*First*	< 1.1 pCi/L
RK110467 [QuickScreen]	*03/14/2022 08:12 AM – 03/16/2022 02:42 PM*	*north wall west side bathrooms, Robotics room*	*First*	< 0.8 pCi/L

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Tryggve Rönnqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

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Measurement method: Activated Charcoal Adsorption

For this method using the QuickScreen detector, the airtight container with activated charcoal is opened in the area to be sampled and radon in the air adsorbs onto the charcoal granules. At the end of the sampling period, the container is sealed and may be sent to a laboratory for analysis. The gamma decay from the radon adsorbed to the charcoal is counted on a scintillation detector and a calculation based on calibration information is used to calculate the radon concentration at the sample site.

Measured radon concentrations

For each detector, the measured value of the radon concentration is provided. For each value an uncertainty associated with the measurement to a 95% confidence level is also provided. For example a measurement result of 4.0 ± 0.5 pCi/L means that the radon concentration is most likely contained in the range 3.5 - 4.5 pCi/L. If the start or end date of the measurement has not been provided, the radon concentration cannot be calculated. In such cases, the total exposure in pCi*days/L will be reported. The reported measured values are related to the detectors as received by Radonova Laboratories. Detector deployment is not performed by Radonova Laboratories. Measurement information such as monitoring period (dates) and placement location is provided to Radonova Laboratories by the end user.

Codes on non-reportable detectors

DNR Not Reported – Detector Not Returned
ERR Not Reported – See comment

Radon measurements in Multifamily Buildings, Schools and Large Buildings

The United States Environmental Protection Agency (EPA) recommends remediation if the results of one long-term test or the average of two short-term tests conducted in an occupied room are 4.0 pCi/L or higher. The average yearly residential indoor radon level in the US is estimated to be around 1.3 pCi/L. Long-term tests are conducted for more than 90 days. Short-term tests are conducted between 2 and 90 days and should be performed under closed building conditions.
If an initial short-term test result is less than 4 pCi/L, a follow-up measurement is probably not needed.
If an initial short-term test result is between 4 pCi/L and 8 pCi/L, a long-term or a short-term follow-up measurement is recommended.
If an initial short-term test result is greater than 8 pCi/L, a short term follow-up measurement is recommended in order to get a fast result.

More information about radon measurements and mitigation can be found in the AARST and EPA publications:

- ANSI/AARST Protocol for Conducting Measurements of Radon and Radon-Decay Products in Schools and Large Buildings.
- ANSI/AARST Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings.
- ANSI/AARST Radon Mitigation Standards for Schools and Large Buildings.
- ANSI/AARST Radon Mitigation Standards for Multifamily Buildings.
- EPA Radon Measurements in Schools, EPA 402-R-92-014, July 1993.

For more information about the interpretation of your test results or about other radon related issues we suggest contacting your state radon office.

Signature on the report

With the signature on the report, the Measurement specialist at Radonova Laboratories certifies that the quality control procedures follows the guidance in accordance with EPA 402-R-95-012. Measurement information displayed in italics on report has been provided by the customer.

Certification no:

101132-AL, 107830-RT, NY ELAP ID: 11430

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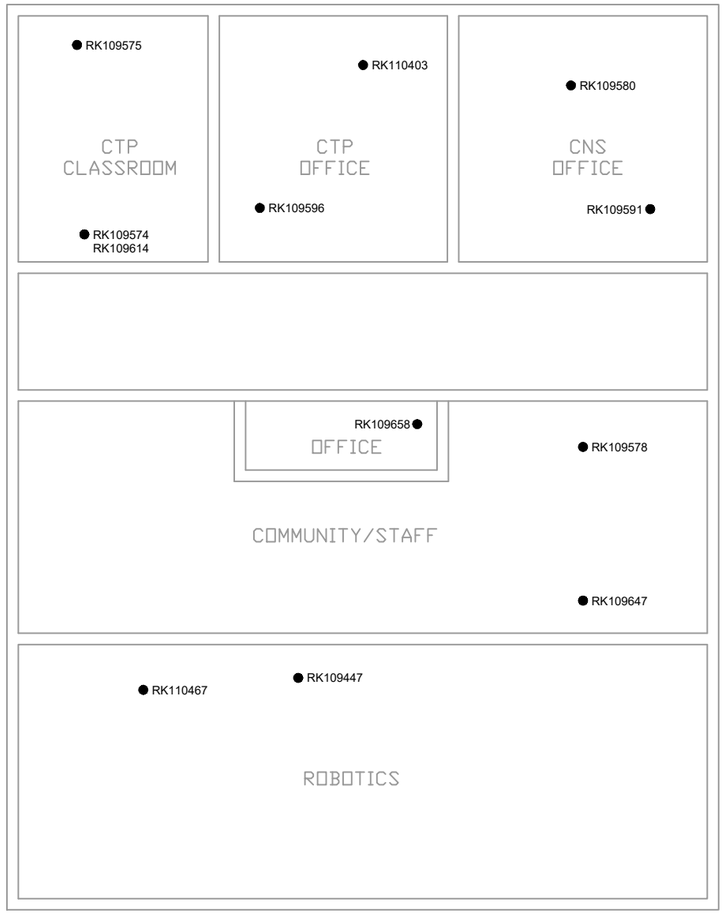
GENERAL NOTES

1. THIS DRAWING IS DIAGRAMMATIC. IT IS FOR GENERAL INFORMATION AND SAMPLE LOCATIONS.

LEGEND

● RK-# RADON TEST AND KIT NUMBER



FIRST FLOOR

NOT TO SCALE

PREPARED FOR: LAKE OSWEGO SCHOOL DISTRICT #73

FULL SIZE SHEET FORMAT IS 24X36; IF PRINTED SIZE IS NOT 24X36, THEN THIS SHEET FORMAT HAS BEEN MODIFIED & INDICATED DRAWING SCALE IS NOT ACCURATE.

PBS Engineering and Environmental Inc.
4412 SW Corbett Avenue
Portland, OR 97239
503.248.1939
pbsusa.com

RADON SAMPLING PLAN

TECH BUILDING

2477 COUNTRY CLUB ROAD, LAKE OSWEGO, OREGON

NO	REVISION	DATE	BY	APPD

DRAWN BY: JAB
CHECKED: BK
DATE: MAY 2022
PROJECT NUMBER: 21600.051
SHEET DRAWING NO: RA17
SHEET 17 OF 18

Filename: \\pbsenv.ian\LIProjects\21000\21600-21699\21600_LakeOswegoSchoolDistrict\21600.051_DistrictWideRadonSampling\Report DWGs\RA17-TECHBLDG\21600.051_RA17.dwg Layout Tab: 11X17 User: Jim Blanco CAD Plot Date/Time: 5/26/2022 9:06:43 AM