



September 15, 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  
Hallinan Elementary School  
16800 Hawthorne Drive  
Lake Oswego, Oregon 97034  
PBS Project 21600.051

Dear Mr. Paul:

From March 15 to March 18, 2022, PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing at Hallinan Elementary School located at 16800 Hawthorne Drive 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 Hallinan Elementary School 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 do 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.

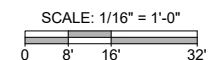
Sincerely,

Bob Kleckner  
Sr. Project Manager

Attachment: Floor Plan RA11  
Radonova Laboratory Analysis Radon Monitoring Report

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

## ● RK109 RADON TEST AND KIT NUMBER



**PBS Engineering and  
Environmental Inc.**  
4412 SW Corbett Avenue  
Portland, OR 97239  
503.248.1939  
[pbsusa.com](http://pbsusa.com)



16800 HAWTHORNE DRIVE, PORTLAND, OREGON

[illegible]

**SHEET DRAWING NO:**

RA11

SHEET **11** OF **18**

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. **03/22/2022**.  
They were measured **03/22/2022**.

*Test data have been given by S. Eckes*

### Property data and address

MEASURE SITE ADDRESS  
*Hallinan ES*

BUILDING ID  
*21600.051*

### Test results

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK109231 [QuickScreen]	03/15/2022 02:15 PM – 03/18/2022 07:03 AM	below bookshelf, Principals office A103	First	0.5 pCi/L
RK110351 [QuickScreen]	03/15/2022 02:17 PM – 03/18/2022 07:03 AM	under monitors, "Main office, admin desk"	First	< 0.7 pCi/L
RK110370 [QuickScreen]	03/15/2022 02:18 PM – 03/18/2022 07:05 AM	on PC, Health room A105	First	< 0.6 pCi/L
RK110363 [QuickScreen]	03/15/2022 02:20 PM – 03/18/2022 07:05 AM	paper towel holder, Staff room	First	< 0.7 pCi/L
RK110315 [QuickScreen]	03/15/2022 02:21 PM – 03/18/2022 07:06 AM	next to paper cutter, Work room by office	First	< 0.7 pCi/L
RK110297 [QuickScreen]	03/15/2022 02:23 PM – 03/18/2022 07:12 AM	desk / Flipped during testing, Kitchen office	First	< 0.8 pCi/L
RK110298 [QuickScreen]	03/15/2022 02:23 PM – 03/18/2022 07:12 AM	DUP, Kitchen office	First	0.9 pCi/L

### Comment to the results

This report replaces 6349916:2. Reason: Added RK110320

#### Trygve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

This report may only be reproduced in full, unless issuing laboratory has given prior written approval.

#### DISCLAIMER

Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

#### RADONOVA INC.

1 EAST 22nd STREET, SUITE 200  
LOMBARD, IL 60148  
331.814.2200, help@radonova.com

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. **03/22/2022**.  
They were measured **03/22/2022**.

*Test data have been given by S. Eckes*

### Property data and address

MEASURE SITE ADDRESS  
*Hallinan ES*

BUILDING ID  
*21600.051*

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK109233 [QuickScreen]	03/15/2022 02:23 PM – 03/18/2022 07:12 AM	paper towel holder, Kitchen	First	< 0.8 pCi/L
RK110302 [QuickScreen]	03/15/2022 02:33 PM – 03/18/2022 06:20 AM	by printer, Engineer office	First	< 0.7 pCi/L
RK110359 [QuickScreen]	03/15/2022 02:34 PM – 03/18/2022 07:08 AM	computer monitor, B103 music	First	0.6 pCi/L
RK110813 [QuickScreen]	03/15/2022 02:35 PM – 03/18/2022 07:10 AM	top of PC, B120	First	0.7 pCi/L
RK109192 [QuickScreen]	03/15/2022 02:35 PM – 03/18/2022 07:10 AM	on desk under shelf, B118 PE office	First	0.8 pCi/L
RK109186 [QuickScreen]	03/15/2022 02:37 PM – 03/18/2022 07:10 AM	top of bleachers, "Gym, east"	First	< 0.6 pCi/L
RK110821 [QuickScreen]	03/15/2022 02:37 PM – 03/18/2022 07:10 AM	top of bleachers, "Gym, west"	First	< 0.7 pCi/L
RK110845 [QuickScreen]	03/15/2022 02:38 PM – 03/18/2022 06:30 AM	behind paper cutter, A154 work room	First	< 0.6 pCi/L

### Comment to the results

This report replaces 6349916:2. Reason: Added RK110320

#### Trygve Rönnqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

This report may only be reproduced in full, unless issuing laboratory has given prior written approval.

#### DISCLAIMER

Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

#### RADONOVA INC.

1 EAST 22nd STREET, SUITE 200  
LOMBARD, IL 60148  
331.814.2200, help@radonova.com

**S. Eckes**  
Lake Oswego

**OWN ID**  
N/A  
**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. **03/22/2022**.  
They were measured **03/22/2022**.

*Test data have been given by S. Eckes*

### Property data and address

**MEASURE SITE ADDRESS**  
Hallinan ES

**BUILDING ID**  
21600.051

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK109223 [QuickScreen]	03/15/2022 02:42 PM – 03/18/2022 06:28 AM	Top of bookshelf above sink, CR14	First	< 0.7 pCi/L
RK110307 [QuickScreen]	03/15/2022 02:42 PM – 03/18/2022 06:28 AM	top of cabinet above sink, CR15	First	0.8 pCi/L
RK110368 [QuickScreen]	03/15/2022 02:44 PM – 03/18/2022 06:30 AM	computer monitor, A152	First	1.0 pCi/L
RK109184 [QuickScreen]	03/15/2022 02:45 PM – 03/18/2022 06:30 AM	top of clock, A153	First	< 0.8 pCi/L
RK110367 [QuickScreen]	03/15/2022 02:45 PM – 03/18/2022 06:30 AM	top of clock / DUP, A153	First	< 0.6 pCi/L
RK110796 [QuickScreen]	03/15/2022 02:47 PM – 03/18/2022 06:33 AM	shelf above sink, CR17	First	< 0.9 pCi/L
RK110280 [QuickScreen]	03/15/2022 02:48 PM – 03/18/2022 06:33 AM	shelf above sink, CR18	First	< 0.7 pCi/L
RK109183 [QuickScreen]	03/15/2022 02:48 PM – 03/18/2022 06:34 AM	by white desk, "A163, northeast corner"	First	< 0.5 pCi/L

### Comment to the results

This report replaces 6349916:2. Reason: Added RK110320

#### Tryggve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

This report may only be reproduced in full, unless issuing laboratory has given prior written approval.

#### DISCLAIMER

Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

#### RADONOVA INC.

1 EAST 22nd STREET, SUITE 200  
LOMBARD, IL 60148  
331.814.2200, help@radonova.com

**S. Eckes**  
Lake Oswego

**OWN ID**  
N/A  
**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. **03/22/2022**.  
They were measured **03/22/2022**.

*Test data have been given by S. Eckes*

### Property data and address

**MEASURE SITE ADDRESS**  
Hallinan ES

**BUILDING ID**  
21600.051

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK110276 [QuickScreen]	03/15/2022 02:49 PM – 03/18/2022 06:35 AM	paper towel holder, CR19	First	< 0.6 pCi/L
RK110811 [QuickScreen]	03/15/2022 02:50 PM – 03/18/2022 06:37 AM	shelf above sink, CR20	First	< 0.8 pCi/L
RK109256 [QuickScreen]	03/15/2022 02:51 PM – 03/18/2022 06:37 AM	Black PC on north wall, CR21	First	< 0.6 pCi/L
RK109208 [QuickScreen]	03/15/2022 02:54 PM – 03/18/2022 06:38 AM	paper towel holder, CR22	First	< 0.7 pCi/L
RK109210 [QuickScreen]	03/15/2022 02:54 PM – 03/18/2022 06:38 AM	next to paper cutter, "A167, work room"	First	0.6 pCi/L
RK110861 [QuickScreen]	03/15/2022 02:57 PM – 03/18/2022 06:39 AM	circle shelf, "Library, west side"	First	< 0.7 pCi/L
RK110827 [QuickScreen]	03/15/2022 02:58 PM – 03/18/2022 06:25 AM	top of wall along ramp, "Library, east side"	First	0.9 pCi/L
RK109227 [QuickScreen]	03/15/2022 03:00 PM – 03/18/2022 06:41 AM	on ledge between ck and timeout roo, CR1	First	0.8 pCi/L

### Comment to the results

This report replaces 6349916:2. Reason: Added RK110320

#### Tryggve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

This report may only be reproduced in full, unless issuing laboratory has given prior written approval.

#### DISCLAIMER

Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

#### RADONOVA INC.

1 EAST 22nd STREET, SUITE 200  
LOMBARD, IL 60148  
331.814.2200, help@radonova.com

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. **03/22/2022**.  
They were measured **03/22/2022**.

Test data have been given by S. Eckes

### Property data and address

MEASURE SITE ADDRESS  
Hallinan ES

BUILDING ID  
21600.051

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK109174 [QuickScreen]	03/15/2022 03:01 PM – 03/18/2022 06:42 AM	on shelf next to door, CR2	First	< 0.6 pCi/L
RK110847 [QuickScreen]	03/15/2022 03:03 PM – 03/18/2022 06:42 AM	white desk, Kindergarten main area	First	< 0.7 pCi/L
RK109247 [QuickScreen]	03/15/2022 03:08 PM – 03/18/2022 06:44 AM	on paper towel holder, A141	First	< 0.6 pCi/L
RK109198 [QuickScreen]	03/15/2022 03:08 PM – 03/18/2022 06:44 AM	on paper towel holder / DUP, A141	First	0.7 pCi/L
RK109199 [QuickScreen]	03/15/2022 03:09 PM – 03/18/2022 06:45 AM	filing cabinet, A142	First	< 0.6 pCi/L
RK109218 [QuickScreen]	03/15/2022 03:10 PM – 03/18/2022 06:46 AM	shelf by phone, A143	First	1.1 pCi/L
RK109178 [QuickScreen]	03/15/2022 03:11 PM – 03/18/2022 06:46 AM	filing cabinet behind door, A144	First	< 0.5 pCi/L
RK110812 [QuickScreen]	03/15/2022 03:12 PM – 03/18/2022 06:48 AM	above microwave on shelf, CR12	First	< 0.6 pCi/L

### Comment to the results

This report replaces 6349916:2. Reason: Added RK110320

#### Trygve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

This report may only be reproduced in full, unless issuing laboratory has given prior written approval.

#### DISCLAIMER

Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

#### RADONOVA INC.

1 EAST 22nd STREET, SUITE 200  
LOMBARD, IL 60148  
331.814.2200, help@radonova.com

**S. Eckes**  
Lake Oswego

**OWN ID**  
N/A  
**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. **03/22/2022**.  
They were measured **03/22/2022**.

*Test data have been given by S. Eckes*

### Property data and address

**MEASURE SITE ADDRESS**  
Hallinan ES

**BUILDING ID**  
21600.051

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK109195 [QuickScreen]	03/15/2022 03:14 PM – 03/18/2022 06:48 AM	paper towel holder, CR13	First	0.8 pCi/L
RK110805 [QuickScreen]	03/15/2022 03:14 PM – 03/18/2022 06:48 AM	next to paper cutter, A138	First	1.0 pCi/L
RK110829 [QuickScreen]	03/15/2022 03:15 PM – 03/18/2022 06:51 AM	filing cabinet, CR3	First	< 0.7 pCi/L
RK110794 [QuickScreen]	03/15/2022 03:16 PM – 03/18/2022 06:53 AM	shelf above sink, CR4	First	< 0.8 pCi/L
RK110304 [QuickScreen]	03/15/2022 03:17 PM – 03/18/2022 06:53 AM	next to paper cutter, "A134, workroom"	First	< 0.6 pCi/L
RK110838 [QuickScreen]	03/15/2022 03:18 PM – 03/18/2022 06:54 AM	paper towel holder, CR11	First	< 0.5 pCi/L
RK108432 [QuickScreen]	03/15/2022 03:19 PM – 03/18/2022 06:54 AM	shelf above sink, CR5	First	< 0.6 pCi/L
RK110795 [QuickScreen]	03/15/2022 03:20 PM – 03/18/2022 06:55 AM	desk, A135	First	< 0.8 pCi/L

### Comment to the results

This report replaces 6349916:2. Reason: Added RK110320

#### Tryggve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

This report may only be reproduced in full, unless issuing laboratory has given prior written approval.

#### DISCLAIMER

Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

#### RADONOVA INC.

1 EAST 22nd STREET, SUITE 200  
LOMBARD, IL 60148  
331.814.2200, help@radonova.com

S. Eckes  
Lake Oswego

OWN ID  
N/A  
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. **03/22/2022**.  
They were measured **03/22/2022**.

*Test data have been given by S. Eckes*

### Property data and address

MEASURE SITE ADDRESS  
*Hallinan ES*

BUILDING ID  
*21600.051*

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK109167 [QuickScreen]	03/15/2022 03:20 PM – 03/18/2022 06:57 AM	behind desk 3 hole punch, CR6	First	< 0.7 pCi/L
RK110787 [QuickScreen]	03/15/2022 03:21 PM – 03/18/2022 06:57 AM	Mini fridge by sink, CR7	First	< 0.7 pCi/L
RK110872 [QuickScreen]	03/15/2022 03:21 PM – 03/18/2022 06:57 AM	Mini fridge by sink / DUP, CR7	First	< 0.6 pCi/L
RK110804 [QuickScreen]	03/15/2022 03:22 PM – 03/18/2022 06:59 AM	, CR8	First	< 0.8 pCi/L
RK109170 [QuickScreen]	03/15/2022 03:23 PM – 03/18/2022 07:00 AM	paper towel holder, CR9	First	< 0.8 pCi/L
RK109182 [QuickScreen]	03/15/2022 03:25 PM – 03/18/2022 07:01 AM	clock announcer (top), CR10	First	1.0 pCi/L
RK110803 [QuickScreen]	03/15/2022 03:25 PM – 03/18/2022 07:01 AM	clock announcer (top) / DUP, CR10	First	< 0.7 pCi/L
RK110373 [QuickScreen]	03/15/2022 11:19 PM – 03/18/2022 07:19 AM	, BLANK	First	< 0.6 pCi/L

### Comment to the results

This report replaces 6349916:2. Reason: Added RK110320

#### Trygve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

This report may only be reproduced in full, unless issuing laboratory has given prior written approval.

#### DISCLAIMER

Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

#### RADONOVA INC.

1 EAST 22nd STREET, SUITE 200  
LOMBARD, IL 60148  
331.814.2200, help@radonova.com

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. **03/22/2022**.  
They were measured **03/22/2022**.

*Test data have been given by S. Eckes*

### Property data and address

MEASURE SITE ADDRESS  
*Hallinan ES*

BUILDING ID  
*21600.051*

DETECTOR	MEASUREMENT PERIOD	DESCRIPTION / LOCATION	FLOOR	RADON RESULT
RK110338 [QuickScreen]	03/15/2022 11:19 PM – 03/18/2022 07:19 AM	, BLANK	First	< 0.7 pCi/L
RK110293 [QuickScreen]	03/15/2022 11:19 PM – 03/18/2022 07:19 AM	, BLANK	First	< 0.8 pCi/L
RK110320 [QuickScreen]	03/15/2022 02:43 PM – 03/18/2022 06:29 AM	CR16, top of cabinet above sink	First	< 0.6 pCi/L

### Comment to the results

This report replaces 6349916:2. Reason: Added RK110320

#### Trygve Rönqvist (Electronically signed)

Signature Radonova Laboratories Laboratory Measurement Specialist

This report may only be reproduced in full, unless issuing laboratory has given prior written approval.

#### DISCLAIMER

Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

#### RADONOVA INC.

1 EAST 22nd STREET, SUITE 200  
LOMBARD, IL 60148  
331.814.2200, help@radonova.com

## 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  $4.0 \pm 0.5$  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

<b>DNR</b>	Not Reported – Detector Not Returned
<b>ERR</b>	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

### DISCLAIMER

Radonova Inc. makes no warranty of any kind, express or implied, as regard to the use, operation or analysis of any Radonova Inc. monitor. Radonova Inc. specifically disclaims implied warranties of merchantability and fitness for a particular purpose. Radonova Inc. is not responsible for any damage, including consequential damages, to persons or property resulting from the use of the monitor or the resulting data.

### RADONOVA INC.

1 EAST 22nd STREET, SUITE 200  
LOMBARD, IL 60148  
331.814.2200, help@radonova.com