



**MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Grosvenor Center
Date of Report	2/3/2020
Round of Testing	Initial Follow-up Post Remediation <b>2 year testing</b> 5 year testing HVAC Upgrade Window Replacement <b>New Addition</b> New Facility
# of Rooms Tested	36
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.1 pCi/L

**Project Status**

Current Project Status at this time: Testing Complete; no further action.



2/3/2020

Mr. Richard Cox, MS  
Environmental Team Leader  
Montgomery County Public Schools  
Division of Maintenance  
Gaithersburg, Maryland 20879

Re: Radon Testing Services

KCI Job #12146341126

**Location: Grosvenor Center**  
**5701 Grosvenor Lane**  
Bethesda, Maryland 20814

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Grosvenor Center, located at 5701 Grosvenor Lane in Bethesda, Maryland 20814 (subject site).

#### **SCOPE OF SERVICES**

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Proficiency Program (NRPP) Radon Measurement Provider (certification #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from <https://www.montgomeryschoolsmd.org/departments/facilities/maintenance/default.aspx?id=458858> or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on 12/17/2019 and deployed forty-four (44) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

A floor plan map of the building with the test locations is included as Appendix A of this report.

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As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted sixty (60) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on 12/20/2019 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a National Radon Safety Board (NRSB) radon measurement provider and is a certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

### **EVALUATION OF TESTING CONDITIONS**

These tests represent:

- 2-Year Follow-up Evaluation for Existing Building.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

According to AARST, *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*, ideal testing conditions would be when the building is fully occupied and the heating system is active. For this test, the facility's HVAC system was operating in heating mode; therefore, KCI concludes that this test was conducted during ideal testing conditions.

KCI recorded observations of the following conditions in each room at the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the lower-20s and high temperatures were in the lower-40s. Maximum sustained winds ranged from 12-26 miles per hour. Average humidity was around 67%. 0.54 inches of precipitation (rain and snow) was recorded during the testing period.

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## **RESULTS**

The sampling locations and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). Sampling locations and associated test kit identification numbers and relevant field observations are listed on Table 3 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
≥4.0 pCi/L	None	N/A
≤4.0 pCi/L	See Attachment B	See Attachment B

<b>Quality Control Samples</b>	
Results of Blank Canisters:	The office blanks, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L.
Adequate Laboratory Precision?	Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved.
Spike Sample Analysis:	The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at 410-316-7800.

Sincerely,

Mr. Tyler P. McCleaf  
Radon Measurement Provider  
111004 RT

KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

# ATTACHMENT A

## Floor Plan With Test Locations



# ATTACHMENT B

## Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control



Table 1- Radon Testing Results		
Grosvenor Center		
Test Period: 12/17/2019-12/20/2019		
Kit Number	Room / Area	Result
9340606	1	1
9340607	3	< 0.3
9340608	3	0.8
9340609	4	< 0.3
9340610	2	0.6
9340611	5	< 0.3
9340612	LOUNGE	1.4
9340613	MAIN OFFICE	< 0.3
9340614	WORK ROOM	0.5
9340615	HEALTH	0.5
9340616	PRINCIPAL	0.9
9340617	ASSISTANT PRINCIPAL	0.8
9340618	ASSISTANT PRINCIPAL	0.7
9340619	STAGE	0.5
9340620	COUNSELOR	< 0.3
9340621	COUNSELOR	< 0.3
9340622	COUNSELOR OFFICE	2.1
9340623	APR	0.7
9340624	APR	0.8
9340625	7	0.8
9340626	8	1.3
9340627	BUILDING SERVICES	0.5
9340628	BUILDING SERVICES	< 0.3
9340629	BACK OFFICE	0.7
9340630	BACK OFFICE	< 0.3
9340631	9	MISSING
9340632	10	0.7
9340633	13	0.7
9340634	11	< 0.3
9340635	12	0.6
9340636	14	0.9
9340637	SPEECH	0.9
9340638	SPEECH	0.8
9340639	IMC	1.6
9340640	IMC OFFICE	1.3
9340641	IMC ANNEX	0.7
9340642	IMC ANNEX OFFICE	1
9340643	16	< 0.3
9340644	15	< 0.3
9340645	17	1.2
9340646	18	< 0.3
9340647	20	< 0.3
9340648	20	0.6
9340649	19	0.7
9341389	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Grosvenor Center			
Test Period: 12/16/2019-12/19/2019			
Kit Number	QC Type	Room / Area	Result
9340608	D	3	0.8
9340618	D	ASSISTANT PRINCIPAL	0.7
9340620	FB	COUNSELOR	<0.3
9340628	D	BUILDING SERVICES	<0.3
9340630	FB	BACK OFFICE	<0.3
9340638	D	SPEECH	0.8
9340648	D	20	0.6
9341377	TRANSIT BLANK	NA	0.5
9341379	TRANSIT BLANK	NA	< 0.3
9341380	TRANSIT BLANK	NA	< 0.3
9341398	TRANSIT BLANK	NA	< 0.3



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:  
**GROSVENOR CENTER**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340606	1	2019-12-17 @ 12:00 pm	2019-12-20 @ 11:00 am	1.0 ± 0.3	2019-12-24
9340632	10	2019-12-17 @ 2:00 pm	2019-12-20 @ 11:00 am	0.7 ± 0.3	2019-12-24
9340634	11	2019-12-17 @ 2:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9340635	12	2019-12-17 @ 2:00 pm	2019-12-20 @ 11:00 am	0.6 ± 0.3	2019-12-24
9340633	13	2019-12-17 @ 2:00 pm	2019-12-20 @ 11:00 am	0.7 ± 0.3	2019-12-24
9340636	14	2019-12-17 @ 2:00 pm	2019-12-20 @ 11:00 am	0.9 ± 0.3	2019-12-24
9340644	15	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9340643	16	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9340645	17	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.2 ± 0.4	2019-12-24
9340646	18	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9340649	19	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.7 ± 0.4	2019-12-24
9340610	2	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.6 ± 0.4	2019-12-24
9340647	20	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9340648	20	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.6 ± 0.3	2019-12-24
9340608	3	2019-12-17 @ 12:00 pm	2019-12-20 @ 11:00 am	0.8 ± 0.4	2019-12-24
9340607	3	2019-12-17 @ 12:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9340609	4	2019-12-17 @ 12:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9340611	5	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9340625	7	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.8 ± 0.4	2019-12-24
9340626	8	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	1.3 ± 0.3	2019-12-24
9340623	APR	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	0.7 ± 0.4	2019-12-24
9340624	APR	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.8 ± 0.4	2019-12-24
9340618	ASSISTANT PRINCIPAL	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.7 ± 0.4	2019-12-24
9340617	ASSISTANT PRINCIPAL	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.8 ± 0.4	2019-12-24
9340629	BACK OFFICE	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.7 ± 0.3	2019-12-24
9340630	BACK OFFICE	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9340628	BUILDING SERVICES	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9340627	BUILDING SERVICES	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.5 ± 0.3	2019-12-24
9340621	COUNSELOR	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9340620	COUNSELOR	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9340622	COUNSELOR OFFICE	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	2.1 ± 0.4	2019-12-24
9340615	HEALTH	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.5 ± 0.4	2019-12-24
9340639	IMC	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.6 ± 0.3	2019-12-24
9340641	IMC ANNEX	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.7 ± 0.3	2019-12-24
9340642	IMC ANNEX OFFICE	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.0 ± 0.4	2019-12-24
9340640	IMC OFFICE	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.3 ± 0.4	2019-12-24
9340612	LOUNGE	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	1.4 ± 0.4	2019-12-24

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December 24, 2019

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

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Radon test result report for:  
**GROSVENOR 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>
9340613	MAIN OFFICE	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9340616	PRINCIPAL	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.9 ± 0.4	2019-12-24
9340637	SPEECH	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.9 ± 0.3	2019-12-24
9340638	SPEECH	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.8 ± 0.4	2019-12-24
9340619	STAGE	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.5 ± 0.4	2019-12-24
9340614	WORK ROOM	2019-12-17 @ 1:00 pm	2019-12-20 @ 11:00 am	0.5 ± 0.3	2019-12-24

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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 193598

NOMINAL Conditions: Radon Conc \_\_\_\_\_ pCi/L Rel. Hum \_\_\_\_\_ % Temp. \_\_\_\_\_ F

Temp °F 70.1  
RH % 50.1  
Avg pCi/L 25.4

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0815 Time Stop: 0815

(Group 1)  
Device No.'s: (20) Char. Bags-

9340001 thru 9340020

55

Temp °F 70.1  
RH % 50.1  
Avg pCi/L 25.4

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0829 Time Stop: 0820

(Group 2)  
Device No.'s: (20) Char. Bags-

9340021 thru 9340040

54

Temp °F 70.1  
RH % 50.1  
Avg pCi/L 25.4

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0825 Time Stop: 0825

(Group 3)  
Device No.'s: (20) Char. Bags-

9340041 thru 9340060

53

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)  
Background = 7 µR/h Elevation = 820 ft

Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within  $\pm 25\%$  of the chamber's reference value (25.7 pCi/L).

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340067	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9340035	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	22.5 $\pm$ 2.3 D	2020-01-03
9340003	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 $\pm$ 2.4 D	2020-01-03
9340089	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	23.3 $\pm$ 2.3 D	2020-01-03
9340072	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	18.3 $\pm$ 2.0 D	2020-01-03
9340040	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 $\pm$ 2.6 D	2020-01-03
9340008	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.8 $\pm$ 2.5 D	2020-01-03
9340094	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.7 $\pm$ 2.5 D	2020-01-03
9340099	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.5 $\pm$ 2.6 D	2020-01-03
9340077	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.2 $\pm$ 2.5 D	2020-01-03
9340045	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.7 $\pm$ 2.4 D	2020-01-03
9340013	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.9 $\pm$ 2.6 D	2020-01-03
9340018	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	29.1 $\pm$ 2.8 D	2020-01-03
9341704	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9340050	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.2 $\pm$ 2.6 D	2020-01-03
9340023	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.2 $\pm$ 2.7 D	2020-01-03
9341709	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.5 $\pm$ 2.4 D	2020-01-03
9340055	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.8 $\pm$ 2.6 D	2020-01-03
9340060	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 $\pm$ 2.5 D	2020-01-03
9340028	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.9 $\pm$ 2.3 D	2020-01-03
9341714	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.3 $\pm$ 2.7 D	2020-01-03
9340082	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.4 $\pm$ 2.6 D	2020-01-03
9340065	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.2 $\pm$ 2.4 D	2020-01-03
9340033	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.2 $\pm$ 2.5 D	2020-01-03
9341719	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.7 $\pm$ 2.5 D	2020-01-03
9340001	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.3 $\pm$ 2.5 D	2020-01-03
9340087	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.8 $\pm$ 2.4 D	2020-01-03
9340070	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	19.5 $\pm$ 2.4 D	2020-01-03
9340038	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.7 $\pm$ 2.3 D	2020-01-03
9340006	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 $\pm$ 2.4 D	2020-01-03
9340092	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	31.4 $\pm$ 2.8 D	2020-01-03
9340097	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.7 $\pm$ 2.5 D	2020-01-03
9340075	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	29.6 $\pm$ 2.6 D	2020-01-03
9340043	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.1 $\pm$ 2.6 D	2020-01-03
9340011	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.8 $\pm$ 2.5 D	2020-01-03
9340016	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.2 $\pm$ 2.4 D	2020-01-03
9341702	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 $\pm$ 2.5 D	2020-01-03



Radon test result report for:**S****N/A**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
9340048	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.5 ± 2.4 D	2020-01-03
9340021	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.7 ± 2.6 D	2020-01-03
9341707	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.8 ± 2.4 D	2020-01-03
9340053	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.8 ± 2.5 D	2020-01-03
9340058	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.5 ± 2.7 D	2020-01-03
9340026	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.9 ± 2.4 D	2020-01-03
9341712	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.3 ± 2.4 D	2020-01-03
9340080	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.4 D	2020-01-03
9340063	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.8 ± 2.5 D	2020-01-03
9340031	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.9 ± 2.4 D	2020-01-03
9341717	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.7 ± 2.4 D	2020-01-03
9340085	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 ± 2.5 D	2020-01-03
9340068	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.2 ± 2.5 D	2020-01-03
9340036	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.6 ± 2.3 D	2020-01-03
9340004	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 ± 2.6 D	2020-01-03
9340090	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.3 ± 2.5 D	2020-01-03
9340073	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 ± 2.5 D	2020-01-03
9340041	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.6 ± 2.4 D	2020-01-03
9340009	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.1 ± 2.4 D	2020-01-03
9340095	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.2 ± 2.5 D	2020-01-03
9340100	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.5 ± 2.4 D	2020-01-03
9340078	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.0 ± 2.4 D	2020-01-03
9340046	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.0 ± 2.6 D	2020-01-03
9340014	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	21.8 ± 2.8 D	2020-01-03
9340019	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.0 ± 2.5 D	2020-01-03
9341705	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.8 ± 2.6 D	2020-01-03
9340051	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.5 ± 2.4 D	2020-01-03
9340056	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.7 ± 2.6 D	2020-01-03
9340024	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.3 ± 2.5 D	2020-01-03
9341710	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.2 ± 2.3 D	2020-01-03
9340061	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.9 ± 2.6 D	2020-01-03
9340029	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.0 ± 2.3 D	2020-01-03
9341715	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.0 ± 2.5 D	2020-01-03
9340083	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.9 ± 2.4 D	2020-01-03
9340066	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.4 D	2020-01-03
9340034	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.4 ± 2.5 D	2020-01-03
9341720	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.3 ± 2.5 D	2020-01-03

Radon test result report for:**S****N/A**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340002	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.7 ± 2.5 D	2020-01-03
9340088	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.4 ± 2.5 D	2020-01-03
9340071	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.9 ± 2.4 D	2020-01-03
9340039	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 ± 2.5 D	2020-01-03
9340007	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 ± 2.4 D	2020-01-03
9340093	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.5 D	2020-01-03
9340098	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 ± 2.5 D	2020-01-03
9340076	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.5 D	2020-01-03
9340044	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 ± 2.5 D	2020-01-03
9340012	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	22.5 ± 2.2 D	2020-01-03
9340017	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.3 ± 2.5 D	2020-01-03
9341703	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.0 ± 2.5 D	2020-01-03
9340049	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.0 ± 2.5 D	2020-01-03
9340022	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.6 ± 2.6 D	2020-01-03
9341708	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.8 ± 2.8 D	2020-01-03
9340054	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.8 ± 2.5 D	2020-01-03
9340059	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.5 ± 2.6 D	2020-01-03
9340027	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.6 ± 2.5 D	2020-01-03
9341713	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 ± 2.5 D	2020-01-03
9340081	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	18.4 ± 2.1 D	2020-01-03
9340064	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 ± 2.5 D	2020-01-03
9340032	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.1 ± 2.4 D	2020-01-03
9341718	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	23.7 ± 2.4 D	2020-01-03
9340086	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 ± 2.6 D	2020-01-03
9340069	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.6 ± 2.5 D	2020-01-03
9340037	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.4 ± 2.6 D	2020-01-03
9340005	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	???? DIF1	2020-01-03
9340091	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 ± 2.5 D	2020-01-03
9340096	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.2 ± 2.5 D	2020-01-03
9340074	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.7 ± 2.5 D	2020-01-03
9340042	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.6 ± 2.5 D	2020-01-03
9340010	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.5 ± 2.5 D	2020-01-03
9341701	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	22.9 ± 2.3 D	2020-01-03
9340047	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.7 ± 2.5 D	2020-01-03
9340015	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.4 ± 2.5 D	2020-01-03
9340020	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.1 ± 2.4 D	2020-01-03
9341706	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	31.0 ± 2.7 D	2020-01-03

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January 3, 2020

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

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Radon test result report for:

**S**

**N/A**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
9340052	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.4 ± 2.6 D	2020-01-03
9340057	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 ± 2.5 D	2020-01-03
9340025	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.1 ± 2.4 D	2020-01-03
9341711	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	22.5 ± 2.2 D	2020-01-03
9340079	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 ± 2.5 D	2020-01-03
9340062	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.6 ± 2.5 D	2020-01-03
9340030	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.0 ± 2.4 D	2020-01-03
9341716	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 ± 2.4 D	2020-01-03
9340084	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.5 ± 2.3 D	2020-01-03

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



### Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 2

Name of Schools:

- |                               |                      |
|-------------------------------|----------------------|
| 1. Argyle M.S.                | 13. Candelwood E.S.  |
| 2. Banneker M.S.              | 14. Drew E.S.        |
| 3. Bel Pre E.S.               | 15. Fallsmead E.S.   |
| 4. Bells Mill E.S.            | 16. Farquhar M.S.    |
| 5. Bethesda Maintenance Depot | 17. Grosvenor Center |
| 6. Beverly Farms E.S.         | 18. Kennedy H.S.     |
| 7. Blake H.S.                 | 19. Magruder H.S.    |
| 8. Dufief E.S.                | 20. Redland M.S.     |
| 9. Briggs Chaney M.S.         | 21. Shriver E.S.     |
| 10. Brookhaven E.S.           | 22. Smith Center     |
| 11. Burtonsville E.S.         | 23. Viers Mill E.S.  |
| 12. Cabin John M.S.           | 24. Wheaton H.S.     |

	Date	Initials
Radon Test Kits Deployed	12/16/19 to 12/17/19	
Radon Test Kits Collected	12/19/19 to 12/20/19	
Radon Test Kits Shipped to Lab*	12/20/19	
Radon Test Kits Received by Lab*	12/23/19	

\*All samples sent to Air Check, Inc., 1936 Butler Bridge Rd, Mills River, NC 28759



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

**Executive Summary:**  
**Luxmanor Elementary School at Grosvenor Center**  
5701 Grosvenor Lane,  
Bethesda, MD 20814

Date of Test Report:	1/8/2019
Round of Testing:	Initial Follow-up Post Remediation 2 Year Testing <b>5 Year Testing</b> HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	35
# of Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	0.7

### Project Status

**Initial testing complete:** No further action at this time



January 8, 2018

Mr. Richard Cox  
Indoor Air Quality Team Leader  
Montgomery County Public Schools  
850 Hungerford Drive  
Rockville, MD 20850

Re: Radon Testing Services

Location: Luxmanor Elementary School at Grosvenor Center  
5701 Grosvenor Lane,  
Bethesda, MD 20814

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Luxmanor Elementary School at Grosvenor Center located at 5701 Grosvenor Lane, Bethesda, MD 2081420871 (subject site).

**Scope of Services:**

PSI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. PSI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS007) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from [www.montgomerycountymd.gov/dep/air/radon](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

PSI visited the site on December 4, 2018 and deployed forty-five (45) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on December 7, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, PSI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, PSI submitted ten (10) test kits to Bowser-Morner Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner Inc. prior to being returned to the laboratory for analysis.

PSI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis located at 929 Mount Zion Road, Lebanon, Pennsylvania (certification # ARL0007) and 2 Saber Way, Haverhill, Massachusetts (certification # ARL0017).



### **Evaluation of Testing Conditions:**

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages  $\leq 65^{\circ}\text{F}$ .

PSI concludes that the test period reasonably represents normal conditions when the building is significantly occupied. Clear characterization of the radon hazard is most likely to be observed under this normal operating condition. Based on the evaluation of test conditions, this test should reasonably characterize radon hazards.

PSI also conducted observations of field conditions which could affect the results of the test and compiled weather data for the testing period. PSI recorded observations of the following conditions in each room at the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

### **Results:**

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
$\geq 4.0$ pCi/L	None	NA
$\leq 4.0$ pCi/L	See Attachment B	

Notes:

D -Duplicate Sample

The office blank and lab transit blanks had test results of less than the laboratory detection limit of 0.4 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C).

Laboratory results and exposure data for the spike samples are also included in Attachment C. Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (703) 698-9300.



Respectfully Submitted,

**INTERTEK-PSI**

A handwritten signature in black ink that reads "Nand Kaushik". The signature is written in a cursive, flowing style.

Nand Kaushik, P.E.  
Department Manager, Environmental Services  
[Nand.Kaushik@intertek.com](mailto:Nand.Kaushik@intertek.com)

Attachments:           A – Floor Plan with Test Locations  
                              B – Table 1 – Radon Test Summary Spreadsheet  
                              C – Laboratory Analytical Results



# **ATTACHMENT B**

Radon Test Summary Spreadsheet

<b>Radon Testing Results</b>		
<b>Grosvenor Center/Luxmanor Elementary School</b>		
<b>Testing period: 12/4/18 - 12/7/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3923032	1	<0.4
3923034	2	<0.4
3923031	3	<0.4
3923033	4	<0.4
3923035	5	<0.4
3923042	6	<0.4
3923045	7	<0.4
3923046	8	0.4
3923049	9	<0.4
3923052	10	<0.4
3923054	11	<0.4
3923055	12	<0.4
3923053	13	<0.4
3923056	14	<0.4
3922963	15	<0.4
3922964	16	<0.4
3922965	17	<0.4
3922966	18	<0.4
3922967	19	<0.4
3922968	20	<0.4
3923057	127	<0.4
3922962	150	<0.4
3888448	APR	<0.4
3888438	APR	0.4
3923050	Building Services	<0.4
3923051	Building Services Office	<0.4
3923043	Conference Room	<0.4
3923044	Conference Room Office	0.7
3923041	Health	<0.4
3923059	IMC	0.4
3923060	IMC	0.6
3922961	IMC Office	<0.4
3923047	Kitchen	0.4
3923036	Lounge	0.5
3923037	Office	<0.4
3923038	Principal	<0.4
3923039	Work Room	<0.4

<b>Radon Testing Results</b>		
<b>Grosvenor Center/Luxmanor Elementary School</b>		
<b>Testing period: 12/4/18 - 12/7/18</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result (pCi/L)</b>
3922969	20 (D)	<0.4
3923058	127 (D)	0.4
3923040	Health (D)	<0.4
3923048	Kitchen (D)	<0.4
3923161	Field Blank	<0.4
3923162	Field Blank	<0.4
3917612	Office Blank	<0.4
3917616	Trip Blank	<0.4

**Table Notes:**

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

# **ATTACHMENT C**

Laboratory Analytical Results

NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031


MCPS Radon Survey  
Luxmanor Elementary School at Grosvenor Center  
MD 20814 USA


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2405427	3923031	12/04/2018 12:10 pm	12/07/2018 10:08 am	Bldg Grosvenor Center Floor 1 Room 3	< 0.4
2405428	3923032	12/04/2018 12:10 pm	12/07/2018 10:08 am	Bldg Grosvenor Center Floor 1 Room 1	< 0.4
2405429	3923033	12/04/2018 12:11 pm	12/07/2018 10:09 am	Bldg Grosvenor Center Floor 1 Room 4	< 0.4
2405430	3923034	12/04/2018 12:11 pm	12/07/2018 10:09 am	Bldg Grosvenor Center Floor 1 Room 2	< 0.4
2405431	3923035	12/04/2018 12:12 pm	12/07/2018 10:10 am	Bldg Grosvenor Center Floor 1 Room 5	< 0.4
2405432	3923036	12/04/2018 12:13 pm	12/07/2018 10:11 am	Bldg Grosvenor Center Floor 1 Room Lounge	0.5
2405433	3923037	12/04/2018 12:13 pm	12/07/2018 10:01 am	Bldg Grosvenor Center Floor 1 Room Office	< 0.4
2405434	3923038	12/04/2018 12:14 pm	12/07/2018 10:34 am	Bldg Grosvenor Center Floor 1 Room Principal	< 0.4
2405435	3923039	12/04/2018 12:15 pm	12/07/2018 10:12 am	Bldg Grosvenor Center Floor 1 Room Work Room	< 0.4
2405436	3923040	12/04/2018 12:15 pm	12/07/2018 10:12 am	Bldg Grosvenor Center Floor 1 Room Health	< 0.4
2405437	3923041	12/04/2018 12:17 pm	12/07/2018 10:13 am	Bldg Grosvenor Center Floor 1 Room Health	< 0.4

**Comment:** A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018    Date Logged:    Date Analyzed: 12/09/2018    Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

This report may only be transferred to a third party in its entirety. Analytical results relate to the samples AS RECEIVED BY THE LABORATORY. Results shown on this report represent levels of radon gas measured between the dates shown in the room or area of the site identified above as "Property Tested". Incorrect information will affect results. The results may not be construed as either predictive or supportive of measurements conducted in any area of this structure at any other time. AccuStar Labs, its employees and agents are not responsible for the consequences of any action taken or not taken based upon the results reported or any verbal or written interpretation of the results.

NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031


MCPS Radon Survey  
Luxmanor Elementary School at Grosvenor Center  
MD 20814 USA


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2405438	3923042	12/04/2018 12:18 pm	12/07/2018 10:13 am	Bldg Grosvenor Center Floor 1 Room 6	< 0.4
2405439	3923043	12/04/2018 12:19 pm	12/07/2018 10:14 am	Bldg Grosvenor Center Flr 1 Rm Conference Rm	< 0.4
2405440	3923044	12/04/2018 12:20 pm	12/07/2018 10:15 am	Bldg Grosvenor Center Flr 1 Rm Conference Rm	0.7
2405441	3923045	12/04/2018 12:21 pm	12/07/2018 10:15 am	Bldg Grosvenor Center Floor 1 Room 7	< 0.4
2405442	3923046	12/04/2018 12:22 pm	12/07/2018 10:18 am	Bldg Grosvenor Center Floor 1 Room 8	0.4
2405443	3923047	12/04/2018 12:25 pm	12/07/2018 10:16 am	Bldg Grosvenor Center Floor 1 Room Kitchen	0.4
2405444	3923048	12/04/2018 12:28 pm	12/07/2018 10:17 am	Bldg Grosvenor Center Floor 1 Room Kitchen	< 0.4
2405445	3923049	12/04/2018 12:28 pm	12/07/2018 10:19 am	Bldg Grosvenor Center Floor 1 Room 9	< 0.4
2405446	3923050	12/04/2018 12:28 pm	12/07/2018 10:20 am	Bldg Grosvenor Center Flr 1 Rm Building Service	< 0.4
2405447	3923051	12/04/2018 12:29 pm	12/07/2018 10:21 am	Bldg Grosvenor Center Flr 1 Rm Building Service	< 0.4
2405448	3923052	12/04/2018 12:30 pm	12/07/2018 10:21 am	Bldg Grosvenor Center Floor 1 Room 10	< 0.4

**Comment:** A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018    Date Logged:    Date Analyzed: 12/09/2018    Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031


MCPS Radon Survey  
Luxmanor Elementary School at Grosvenor Center  
MD 20814 USA


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2405449	3923053	12/04/2018 12:31 pm	12/07/2018 10:21 am	Bldg Grosvenor Center Floor 1 Room 13	< 0.4
2405450	3923054	12/04/2018 12:32 pm	12/07/2018 10:22 am	Bldg Grosvenor Center Floor 1 Room 11	< 0.4
2405451	3923055	12/04/2018 12:33 pm	12/07/2018 10:22 am	Bldg Grosvenor Center Floor 1 Room 12	< 0.4
2405452	3923056	12/04/2018 12:34 pm	12/07/2018 10:25 am	Bldg Grosvenor Center Floor 1 Room 14	< 0.4
2405453	3923057	12/04/2018 12:34 pm	12/07/2018 10:25 am	Bldg Grosvenor Center Floor 1 Room 127	< 0.4
2405454	3923058	12/04/2018 12:34 pm	12/07/2018 10:25 am	Bldg Grosvenor Center Floor 1 Room 127	0.4
2405455	3923059	12/04/2018 12:37 pm	12/07/2018 10:07 am	Bldg Grosvenor Center Floor 1 Room IMC	0.4
2405456	3923060	12/04/2018 12:38 pm	12/07/2018 10:27 am	Bldg Grosvenor Center Floor 1 Room IMC	0.6
2405457	3922961	12/04/2018 12:38 pm	12/07/2018 10:28 am	Bldg Grosvenor Center Floor 1 Room IMC Office	< 0.4
2405458	3922962	12/04/2018 12:38 pm	12/07/2018 10:28 am	Bldg Grosvenor Center Floor 1 Room 150	< 0.4
2405459	3922963	12/04/2018 12:39 pm	12/07/2018 10:29 am	Bldg Grosvenor Center Floor 1 Room 15	< 0.4

**Comment:** A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018    Date Logged:    Date Analyzed: 12/09/2018    Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

The uncertainty of this radon measurement is ~+/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031


MCPS Radon Survey  
Luxmanor Elementary School at Grosvenor Center  
MD 20814 USA


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2405460	3922964	12/04/2018 12:39 pm 12/07/2018 10:29 am	Bldg Grosvenor Center Floor 1 Room 16	< 0.4
2405461	3922965	12/04/2018 12:40 pm 12/07/2018 10:30 am	Bldg Grosvenor Center Floor 1 Room 17	< 0.4
2405462	3922966	12/04/2018 12:40 pm 12/07/2018 10:30 am	Bldg Grosvenor Center Floor 1 Room 18	< 0.4
2405463	3922967	12/04/2018 12:41 pm 12/07/2018 10:31 am	Bldg Grosvenor Center Floor 1 Room 19	< 0.4
2405464	3922968	12/04/2018 12:42 pm 12/07/2018 10:31 am	Bldg Grosvenor Center Floor 1 Room 20	< 0.4
2405465	3922969	12/04/2018 12:42 pm 12/07/2018 10:31 am	Bldg Grosvenor Center Floor 1 Room 20	< 0.4
2405466	3923161	12/04/2018 12:10 pm 12/07/2018 10:31 am	Bldg Grosvenor Center Floor NA Room NA	< 0.4
2405467	3923162	12/04/2018 12:10 pm 12/07/2018 10:31 am	Bldg Grosvenor Center Floor NA Room NA	< 0.4
2405468	3917612	12/04/2018 6:00 am 12/07/2018 10:31 am	Bldg Grosvenor Center Floor NA Room NA	< 0.4
2405469	3917616	12/04/2018 6:00 am 12/07/2018 10:31 am	Bldg Grosvenor Center Floor NA Room NA	< 0.4

**Comment:** A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: Date Analyzed: 12/09/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

**Disclaimer:**

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031


MCPS Radon Survey  
Luxmanor Elementary School at Grosvenor Center  
Maryland 20814 USA


Log Number	Device Number	Test Date	Exposure Duration	Area Tested	Result pCi/L
2405393	3888438	12/04/2018	12:22 pm 12/07/2018 10:16 am	Bldg Grosvenor Center Floor 1 Room APR	0.4
2405394	3888448	12/04/2018	12:25 pm 12/07/2018 10:17 am	Bldg Grosvenor Center Floor 1 Room APR	< 0.4

**Comment:** A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018    Date Logged:    Date Analyzed: 12/11/2018    Date Reported: 01/02/2019

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

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NRPP 105011 AL  
NRSB ARL0007  
Ohio RL41

EPA Method #402-R-92-004  
Charcoal Canister  
NRPP Device Code 6048  
NRSB Device Code 10317

Laboratory Report for:

Property Tested:

Intertek-PSI (VA)  
2930 Eskridge Road  
Fairfax VA 22031

MCPS Radon Survey  
4514 Taylorsville Road  
Dayton OH 45424

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3204125	3926831	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	36.1
3204126	3926832	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.8
3204127	3926833	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.7
3204128	3926834	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	35.8
3204129	3926835	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	35.0
3204130	3926836	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.5
3204131	3926837	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.6
3204132	3926838	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.3
3204133	3926839	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.2
3204134	3926840	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.0

**Comment:** A copy of this report was e-mailed to Intertek-PSI (VA)

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

Date Received: 12/12/2018    Date Logged: 12/12/2018    Date Analyzed: 12/12/2018    Date Reported: 12/13/2018

Report Reviewed By: 

Report Approved By: 

**Disclaimer:**

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI

Job Number 187732

NOMINAL Conditions: Radon Conc 32.6 pCi/L Rel. Hum 49.1 % Temp. 70.1 F

Date Start: 12/7/18 Date Stop: 12/10/18

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0947 Time Stop: 0947

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (10) Char. Cans-

Device No.'s: \_\_\_\_\_

3926831 thru 3926840

G2 left

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_

Device No.'s: \_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_

Device No.'s: \_\_\_\_\_

**Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)  
Background = 7  $\mu$ R/h Elevation = 820 ft**



## Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

1. Grosvenor Center (Luxmanor ES)
2. Montrose Center
3. Gibbs ES
4. Westbrook ES
5. Hadley Farms (Resnik ES)
6. Kingsview MS
7. Longview School
8. Lynnbrook Center
9. Magruder HS
10. McAuliffe ES
11. McNair ES
12. Mill Creek Towne ES
13. Martin Luther King MS
14. Montgomery Village MS
15. Great Seneca Creek ES
16. Quince Orchard HS
17. Redland MS
18. North Bethesda MS
19. Spark Matsunaga ES
20. Whetstone ES
21. Wood Acres ES

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	Date	Initials
Radon Test Kits Deployed	12/04/2018	ML
Radon Test Kits Sampled	12/07/2018	ML
Radon Test Kits Shipped to Lab*	12/07/2018	ML
Radon Test Kits Received by Lab*	12/08/2018; 12/09/2018	ML

\*All samples sent to AccuStar Laboratories, 929 Mount Zion Road, Lebanon, PA 17046 and 2 Saber Way, Haverhill, MA 01835



### MCPS RADON TESTING

Executive Summary: Wayside Elementary School at Grosvenor Center

Date of Test Report:	2/19/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	49
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.1

Project Status:

Initial testing completed; no further action at this time.



February 23, 2016 (Rev 1)

Mr. Richard Cox  
Indoor Air Quality Team Leader  
Montgomery County Public Schools  
850 Hungerford Drive  
Rockville, MD 20850

Re: **Radon Testing Services**  
KCI Job # 12146341.25

Location: Wayside Elementary School at Grosvenor Center  
10011 Glen Road  
Potomac, MD 20854

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Wayside Elementary School at Grosvenor Center, located at 10011 Glen Road in Potomac, Maryland 20854 (subject site).

**Scope of Services:**

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Safety Board (NRSB) Radon Measurement Specialist (certification #14SS056) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from [www.montgomerycountymd.gov/dep/air/radon](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on January 19, 2016 and deployed sixty-one (61) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner prior to being returned to the laboratory for analysis.

KCI returned to the site on January 22, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

**Evaluation of Testing Conditions:**

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages  $\leq 65^{\circ}$  F.

KCI concludes that the test period reasonably represents normal conditions when the building is significantly occupied. Clear characterization of the radon hazard is most likely to be observed under this normal operating condition. Based on the evaluation of test conditions, this test should reasonably characterize radon hazards.

KCI also conducted observations of field conditions which could affect the results of the test and compiled weather data for the testing period. KCI recorded observations of the following conditions in each room at the time of deployment and collection of the radon test kits:

- Indoor temperature,
- HVAC Operation,
- Dehumidifier operation,
- Humidifier operation,
- Ceiling fan operation, and
- Open windows or doors.

**Results:**

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
$\geq 4.0$ pCi/L	none	n/a
$< 4.0$ pCi/L	See Attachment B	

Notes:  
D- Duplicate sample

The field blanks, office blank, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within statistical control limits.

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C). Laboratory results and exposure data for the spike samples are also included in Attachment C.

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 316-7800.



Sincerely,



James M. Mouldale  
Radon Measurement Specialist  
KCI Technologies, Inc.

Attachments:      A- Floor Plan with Test Locations  
                          B- Table 1-Radon Test Summary Spreadsheet  
                          C- Laboratory Analytical Results

# ATTACHMENT A

## Floor Plan With Test Locations

# ATTACHMENT B

## Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

<b>Radon Testing Results</b>		
<b>Wayside Elementary School</b>		
<b>Test Period: 01/19/16-01/22/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7727162	1	0.8
7727164	2	< 0.3
7727159	3	< 0.3
7727154	5	< 0.3
7727152	6.5	2.1
7727145	7	1.4
7727141	8	1.0
7727200	9	< 0.3
7727137	10	< 0.3
7727199	11	0.7
7727187	12	< 0.3
7727143	13	< 0.3
7727191	14	< 0.3
7727130	15	< 0.3
7727155	16	< 0.3
7727138	17	1.0
7727161	17	1.1
7727133	18	< 0.3
7727195	20	0.8
7727136	127	0.6
7727198	133	0.7
7727194	134	1.1
7727139	148	1.1
7727149	150	0.9
7727168	4Q	0.6
7727140	APR	0.7
7727144	APR	< 0.3
7727148	CONFERENCE	< 0.3
7727146	HEALTH	< 0.3
7727134	IMC	1.2
7727151	MAIN OFFICE	0.5
7727184	P1	< 0.3
7727175	P10	< 0.3
7727172	P11	< 0.3
7727171	P12	< 0.3
7727167	P13	< 0.3
7727170	P14	< 0.3
7727177	P15	< 0.3
7727173	P16	< 0.3
7727176	P17	< 0.3
7727186	P2	< 0.3
7727180	P3	< 0.3
7727178	P4	< 0.3
7727182	P5	< 0.3
7727183	P6	< 0.3
7727190	P7	< 0.3

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Wayside Elementary School</b>		
<b>Test Period: 01/19/16-01/22/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7727197	P8	< 0.3
7727193	P9	< 0.3
7727150	PRINCIPLE	< 0.3
7727156	STAFFLOUNGEA	0.8
7727147	WORKROOM	0.6

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Wayside Elementary School</b>		
<b>Test Period: 01/19/16-01/22/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7727163	D (1)	0.7
7727192	D (12)	< 0.3
7727153	D (5)	< 0.3
7727142	D (7)	1.6
7727196	D (9)	0.6
7727135	D (IMC)	1.4
7727129	FB (10)	< 0.3
7727158	FB (3)	< 0.3
7727157	FB (STAFF LOUNGE)	< 0.3
7726703	OB (0)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results



February 11, 2016 **LABORATORY ANALYSIS REPORT** \*\*

Radon test result report for:  
**WAYSIDE ELEMENTARY SCHOOL  
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7726703	0	2016-01-19 @ 3:00 pm	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727162	1	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	0.8 ± 0.3	2016-01-27
7727163	1	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	0.7 ± 0.3	2016-01-27
7727129	10	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-26
7727137	10	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727199	11	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	0.7 ± 0.3	2016-01-27
7727187	12	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727192	12	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727136	127	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	0.6 ± 0.3	2016-01-27
7727143	13	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727198	133	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	0.7 ± 0.3	2016-01-27
7727194	134	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	1.1 ± 0.4	2016-01-27
7727191	14	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727139	148	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	1.1 ± 0.4	2016-01-27
7727130	15	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-26
7727149	150	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	0.9 ± 0.3	2016-01-27
7727155	16	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-26
7727138	17	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	1.0 ± 0.3	2016-01-27
7727161	17	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	1.1 ± 0.3	2016-01-27
7727133	18	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727164	2	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727195	20	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	0.8 ± 0.3	2016-01-27
7727158	3	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727159	3	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727168	4Q	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	0.6 ± 0.3	2016-01-27
7727153	5	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727154	5	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727152	6.5	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	2.1 ± 0.4	2016-01-27
7727142	7	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	1.6 ± 0.4	2016-01-27
7727145	7	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	1.4 ± 0.4	2016-01-27
7727141	8	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	1.0 ± 0.3	2016-01-27
7727196	9	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	0.6 ± 0.3	2016-01-27
7727200	9	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727140	APR	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	0.7 ± 0.3	2016-01-27
7727144	APR	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727148	CONFERENCE	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727146	HEALTH	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27

February 11, 2016  
**LABORATORY ANALYSIS REPORT \*\***

Radon test result report for:  
**WAYSIDE ELEMENTARY SCHOOL  
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7727134	IMC	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	1.2 ± 0.3	2016-01-27
7727135	IMC	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	1.4 ± 0.4	2016-01-27
7727151	MAIN OFFICE	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	0.5 ± 0.3	2016-01-27
7727184	P1	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727175	P10	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727172	P11	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727171	P12	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727167	P13	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727170	P14	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727177	P15	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727173	P16	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727176	P17	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727186	P2	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727180	P3	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727178	P4	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-26
7727182	P5	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727183	P6	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727190	P7	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727197	P8	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-26
7727193	P9	2016-01-19 @ 11:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727150	PRINCIPLE	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727157	STAFF LOUNGE	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	< 0.3	2016-01-27
7727156	STAFFLOUNGEA	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	0.8 ± 0.3	2016-01-27
7727147	WORKROOM	2016-01-19 @ 10:00 am	2016-01-22 @ 8:00 am	0.6 ± 0.3	2016-01-27

February 2, 2016  
**LABORATORY ANALYSIS REPORT**

Radon test result report for:  
**MCPS PHASE 5 & 6 TRANSIT BLANKS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7722194	1	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718494	10	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718475	11	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718495	12	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718496	13	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718497	14	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718498	15	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718499	16	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718500	17	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718296	18	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718295	19	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722195	2	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716789	20	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716785	21	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7716791	22	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716786	23	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716793	24	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718274	25	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716792	26	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718294	27	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718293	28	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718292	29	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722197	3	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718290	30	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722198	4	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722199	5	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722211	6	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718491	7	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718476	8	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7718479	9	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27

February  
15,  
2016

**LABORATORY ANALYSIS  
REPORT \*\***

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718273	101A	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.5 ± 0.6	2016-02-04
7718281	102B	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.4 ± 0.6	2016-02-04
7718282	103C	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.3 ± 0.6	2016-02-04
7718288	104D	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.7 ± 0.6	2016-02-04
7718289	105E	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.6 ± 0.6	2016-02-04
7718291	106F	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.5 ± 0.6	2016-02-04

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

Note: Spike samples are test canisters that are deliberately exposed to a controlled high level of radon in a laboratory. They provide a quality control measure in the testing process and do NOT reflect radon levels in the building being tested.

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

NOMINAL Conditions: Radon Conc 5.9 pCi/L Rel. Hum 45.9 % Temp. 79.0 F

Date Start: 11/30/16 Date Stop: 2/1/16 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0926 Time Stop: 0926 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (6) Char. Bags - Device No.'s: \_\_\_\_\_

7718281, 7718282, 7718291, \_\_\_\_\_

7718288, 7718289, 7718273 \_\_\_\_\_

ε3 Left

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)  
Background = 7  $\mu$ R/h Elevation = 820 ft



## Chain of Custody

Project Name: MCPS Radon Phase VI

Name of Schools:

- |                          |                              |                           |
|--------------------------|------------------------------|---------------------------|
| 1. Francis Scott Key MS  | 12. Little Bennett ES        | 23. Rolling Terrace ES    |
| 2. Gaithersburg ES       | 13. Loiderman MS             | 24. Roscoe Nix ES         |
| 3. Gaithersburg MS       | 14. Longview ES              | 25. Sally K. Ride ES      |
| 4. Galway ES             | 15. Meadow Hall ES           | 26. Spark Matsunaga ES    |
| 5. Great Seneca Creek ES | 16. Neelsville MS            | 27. Tacoma Park ES        |
| 6. Harmony Hills ES      | 17. New Hampshire Estates ES | 28. Thomas Pyle MS        |
| 7. John Poole MS         | 18. North Bethesda MS        | 29. Wayside ES            |
| 8. Judith A. Resnik ES   | 19. Northwest HS             | 30. Westbrook ES (retest) |
| 9. Kemp Mill ES          | 20. Pine Crest ES            | 31. Westland MS (retest)  |
| 10. Kingsview MS         | 21. Radnor Center            | 32. William B. Gibbs ES   |
| 11. Lakelands Park MS    | 22. Ritchie Park ES          | 33. William Tyler Page ES |

	Date	Initials
Radon Test Kits Deployed	1/19/16	JM
Radon Test Kits Sampled	1/22/16	JM
Radon Test Kits Shipped to Lab*	1/22/16	JM
Radon Test Kits Received by Lab*	1/26/16	JM

\*All samples sent to Air Check, Inc., 1936 Butler Bridge Road, Mills River, NC 28758