



School / Facility Radon Testing Report Form

Instructions: Submit one testing report form per-facility per-round of testing. Include the following as attachments:

Attachment 1- Summary Data Tables – containing the following: (see attached samples tables)

- Testing Results – lab/detector Identification, by room number/name (alpha-numeric order) as depicted on facility map/floor plan provided by the facility/school at the time of test device deployment;
- Summary Results – list of rooms by test result ≥ 2.0 -pCi/L; ≥ 2.7 -pCi/L; ≥ 4.0 -pCi/L; and ≥ 8.0 -pCi/L;
- QA/QC Results - (field blanks and duplicates) indicating location collected; trip and office blanks; and spike sample results;
- Invalid Measurement Locations – missed locations, missing and or damaged/compromised testing devices.

Attachment 2 – Laboratory Report(s)

Attachment 3 – Sampling Location Map(s) – indicating approximate location of samples, duplicates and blanks.

School Year: **23-24**

Facility:	Grosvenor Center
Address:	5701 Grosvenor Lane
	Bethesda, MD 20814

Reason for Testing:	<input checked="" type="checkbox"/> Scheduled Re-Testing (2 or 5-year schedule) <input type="checkbox"/> Clearance Testing (Post-Mitigation) <input type="checkbox"/> System(s) Performance Testing (Post-Mitigation) <input type="checkbox"/> New Construction/Facility
Facility Current Radon Status:	<input checked="" type="checkbox"/> Active Mitigation (2-year regular schedule) <input type="checkbox"/> No Active Mitigation (5-year regular schedule) <input type="checkbox"/> Not Previously Tested
Round of Testing:	<input checked="" type="checkbox"/> Initial Testing -or- <input type="checkbox"/> Follow-up Testing
Testing Status:	<input checked="" type="checkbox"/> No Further Testing Needed -or- <input type="checkbox"/> Follow-Up Testing Required

Conclusion (When Testing Status is - No Further Testing Needed)

Mitigation -	Facility Radon Status:
<input checked="" type="checkbox"/> Not Required or Considered <input type="checkbox"/> Required (>8.0 -pCi/L) <input type="checkbox"/> Required (≥ 4.0 -pCi/L) <input type="checkbox"/> Consider (≥ 2.0 & <4.0 -pCi/L)	<input checked="" type="checkbox"/> No Change in Status <input type="checkbox"/> Active Mitigation (2-year regular schedule) <input type="checkbox"/> No Active Mitigation (5-year regular schedule)

Detector and Deployment

Detector/Device Type:	<input checked="" type="checkbox"/> Passive	<input checked="" type="checkbox"/> Charcoal Absorption (CAD)	<input type="checkbox"/> Alpha Track (ATD)	<input type="checkbox"/> Other
	<input type="checkbox"/> Continuous	<input type="checkbox"/> Electret ion Chamber (EIC)	<input type="checkbox"/> Electronic Integration (EID)	
<i>Other—Specify here:</i>				
Detector/Device Name:	Air Chek – Radon Test Kits			
Manufacturer:	Radon Lab			
Person(s) Deploying or Retrieving Test Devices and certification number			Organization/Company	
Brittany Maas			KCI Technologies, Inc.	
<i>If noncertified individuals, the qualified measurement professional providing oversight -</i>				
Tyler McCleaf, CSP – Cert. #111004-RMP			KCI Technologies, Inc.	

Testing

<input checked="" type="checkbox"/> Short-Term	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	02/13/2024
<input type="checkbox"/> Long-Term				02/16/2024
Does the test period include weekends, school breaks or holidays?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>If “Yes” please explain/detail in the space below:</i>				
Was HVAC operating under occupied conditions?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<i>If “No” please explain/detail in the space below:</i>				

Testing (continued)

	Detectors Deployed		
	Ground-Contact	Upper-Level(s)	Total
Test Locations ¹	36	0	36
Duplicates ²	5	0	5
Field Blanks ³	2	0	2
Grand Total			43

1 – include all detectors deployed (duplicates, field blanks); 1 detector per occupied (or intended to be occupied) ground-contact space ≤ 2,000-square feet; large spaces ≥ 2,000-square feet - 1 detector per 2,000-square feet or part thereof); and upper floors - 10% of all occupied or intended to be occupied rooms per floor (these are in addition to ground contact locations)

2 - 10% of all locations tested, per floor

3 – 5% of all locations tested, per floor

Quality Assurance / Quality Control (QA/QC)

A Quality Assurance plan that is consistent with ANSI/AARST MS-QA (Radon Measurement Systems Quality Assurance) was submitted under separate cover, and is available to review at the MCPS Radon Testing and Mitigation Program website. The following number of QA/QC samples are associated this facility.

Spike Samples ¹	6	Trip Blank(s) ²	1	Office Blank(s) ^{3,4}	1
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1 - 3% of EIC detectors; and 3% from each LOT of CAD and ATD detectors; a maximum of 6-spiked measurements per month for both EIC detectors and each LOT of CAD and ATD detectors.

2 – One per shipping container from start of detector deployment

3 – One per facility tested as devices are removed/allocated from the storage location for deployment;

4 - One additional blank, analyzed prior to deployment, for storage locations that have not been evaluated or monitored, for detectors that have been stored for more than 30-day durations.

Spike Sample Lab Results. Measured values are satisfactory, i.e., within ± 25% of the chamber's reference value.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Quality Control measurements comply with QA/QC requirements in the QA plan previously submitted?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Quality Assurance / Quality Control (QA/QC) (continued)

If “No” to either, please describe any QC measurements that were missing or outside of control tolerances established in the QAP here:

Summary of Test Results¹ and Determination of Valid Measurements²

	Ground-Contact	Upper-Level(s)	Total
Number of test locations:	36	0	36
Number of locations ≥ 8.0 -pCi/L:	0	0	0
Number of locations ≥ 4.0 and ≤ 8 -pCi/L:	0	0	0
Number of locations ≥ 2.7 and ≤ 4 -pCi/L:	0	0	0
Number of locations ≥ 2.0 and ≤ 4 -pCi/L:	0	0	0
Number of missing required test locations ³ :	0	0	0
Percentage of missing test locations for the facility ^{4,5} :	0	0	0

1 – for locations with multiple test results, report consistent with Section 7.2(When Two Test Results Disagree) and 8.1.2 (Averaging) of ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings;

2 - the allowance is to be calculated individually for Ground-Contact and Upper-Level(s) Test Locations;

3 – includes missed or inaccessible locations upon deployment or retrieval, damaged (not able to analyze) and missing detectors upon retrieval;

4 – if all valid measurements are < 4.0 -pCi/L and the total number of test locations are ≥ 18 , there is an allowance of $\leq 33\%$. If less than 18 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023;

5 – if any valid measurements are ≥ 4.0 -pCi/L and the total number of test locations are ≥ 20 , there is an allowance of $\leq 25\%$ of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023.

Summary of Test Results¹ and Determination of Valid Measurements² (continued)

Were test devices deployed in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Were valid measurements obtained in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<i>If Yes to both above – then Testing Status – ‘No Further Testing Needed’ mark ‘NA’ below and complete Conclusions section</i>	
If No to either above , were all results obtained under 4.0-pCi/L and were there sufficient valid measurements obtained? ^{1,2} <i>If Yes – then Testing Status - ‘No Further Testing Needed’ complete Conclusion section</i> <i>If No, then Testing Status - ‘Follow-up Testing Required’ continue below</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

1 – if all valid measurements are <4.0-pCi/L and the total number of test locations are ≥18, there is an allowance of ≤33%. If less than 18 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the allowance;
 2 – if any valid measurements are ≥4.0-pCi/L and the total number of test locations are ≥20, there is an allowance of ≤25% of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the number the allowance.

- **If ‘No Further Testing Needed’** complete conclusions section on first page.
- **If ‘Follow-up Testing Required’** – complete Follow-up Testing described below and the conclusion section on the first page for only the valid measurements/results obtained

Follow-Up Testing (if required)

Required if –

- 1- Not enough valid results were obtained from a facility (table above);
- 2- Any results ≥ 4.0 – pCi/L; and
- 3- At the discretion of MCPS IAQ Staff

Follow-up Testing:

- 1- If an insufficient number of valid measurements obtained during initial round:
 - return to facility to test locations that require valid measurements
- 2- Follow-up Testing for valid measurements ≥ 4.0-pCi/L

Initial Result(s)	Procedure	Follow-up Result	Conclusion
≥ 4.0-pCi/L	1- Short-term follow-up test 2- Average the results of the two tests	≥4.0	Mitigation Required
		<4.0 but >2.0	Consider Mitigation
		<2.0	Not Required or Considered

- **Complete second School/Facility Radon Testing Report Form for only Follow-up Testing locations.**

Attachment 1:
Summary Data Tables

Table 1- Radon Testing Results		
Grosvenor Center		
Test Period: 02/13/2024 - 02/16/2024		
Kit Number	Room / Area	Result
11478071	1	0.8
11478078	2	< 0.3
11478075	4	0.6
11478073	5	< 0.3
11478072	6	< 0.3
11478074	6	< 0.3
11478082	7	0.6
11478089	8	0.7
11464000	9	< 0.3
11463995	10	0.6
11478180	11	< 0.3
11478175	12	< 0.3
11478500	13	< 0.3
11478176	14	< 0.3
11478469	15	< 0.3
11478497	16	< 0.3
11478487	17	< 0.3
11478479	18	< 0.3
11478480	18	< 0.3
11478470	19	< 0.3
11478477	20	< 0.3
11478086	7A	< 0.3
11478080	7B	< 0.3
11478079	APR	0.9
11478081	APR	< 0.3
11463494	BSO 1	< 0.3
11463472	BSO2	< 0.3
11478174	BSO2	< 0.3
11478478	BSO2	< 0.3
11478084	HEALTH	0.5
11478100	IMC	< 0.3
11463471	IMC OFFICE	0.7
11463998	KITCHEN. OFFICE	< 0.3
11478083	MAIN OFFICE	< 0.3
11478177	MEDIA CENTER ANEX OFFICE	< 0.3
11478472	MEDIA CENTER ANNEX	< 0.3
11478093	OT/PT	< 0.3
11478457	OT/PT	< 0.3
11478458	OT/PT	< 0.3
11478085	PRINCIPAL	< 0.3
11478077	STAFF LOUNGE	1.1
11478092	STAGE	0.6
11478076	WORK ROOM	< 0.3

Table 3 - QC Radon Testing Results			
Grosvenor Center			
Test Period: 02/13/2024 - 02/16/2024			
Kit Number	QC Type	Room / Area	Result
11478074	D	6	< 0.3
11478479	D	18	< 0.3
11478174	D	BSO2	< 0.3
11463472	FB	BSO2	< 0.3
11478093	D	OT/PT	< 0.3
11478457	FB	OT/PT	< 0.3
11284674	OB	OFFICE BLANK	< 0.3
11285521	TB	TRAVEL BLANK	< 0.3

Attachment 2:
Laboratory Reports

Radon test result report for:
GROSVENOR CENTER
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11478071	1	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	0.8 ± 0.3	2024-02-20
11463995	10	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	0.6 ± 0.3	2024-02-20
11478180	11	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478175	12	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478500	13	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478176	14	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478469	15	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478497	16	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478487	17	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478480	18	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478479	18	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478470	19	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478078	2	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11478477	20	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478075	4	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	0.6 ± 0.3	2024-02-20
11478073	5	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11478072	6	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11478074	6	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11478082	7	2024-02-13 @ 2:00 pm	2024-02-16 @ 10:00 am	0.6 ± 0.3	2024-02-20
11478086	7A	2024-02-13 @ 2:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11478080	7B	2024-02-13 @ 2:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11478089	8	2024-02-13 @ 2:00 pm	2024-02-16 @ 10:00 am	0.7 ± 0.3	2024-02-20
11464000	9	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478079	APR	2024-02-13 @ 2:00 pm	2024-02-16 @ 10:00 am	0.9 ± 0.3	2024-02-20
11478081	APR	2024-02-13 @ 2:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11463494	BSO 1	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11463472	BSO2	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478174	BSO2	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478478	BSO2	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478084	HEALTH	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	0.5 ± 0.3	2024-02-20
11478100	IMC	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11463471	IMC OFFICE	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	0.7 ± 0.3	2024-02-20
11463998	KITCHEN. OFFICE	2024-02-13 @ 2:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11478083	MAIN OFFICE	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11478177	MEDIA CENTER ANEX OFFICE	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478472	MEDIA CENTER ANNEX	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478458	OT/PT	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20

February 20, 2024

**** LABORATORY ANALYSIS REPORT ****

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

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11478457	OT/PT	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478093	OT/PT	2024-02-13 @ 2:00 pm	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478085	PRINCIPAL	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20
11478077	STAFF LOUNGE	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	1.1 ± 0.3	2024-02-20
11478092	STAGE	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	0.6 ± 0.3	2024-02-20
11478076	WORK ROOM	2024-02-13 @ 1:00 pm	2024-02-16 @ 10:00 am	< 0.3	2024-02-20

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

February 20, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
OFFICE BLANK
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11284661	OB	2024-02-12 @ 10:00 am	2024-02-15 @ 11:00 am	< 0.3	2024-02-20
11284674	OB	2024-02-13 @ 10:00 am	2024-02-16 @ 11:00 am	< 0.3	2024-02-20

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

February 20, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRAVEL BLANK
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11284664	TB	2024-02-12 @ 10:00 am	2024-02-15 @ 11:00 am	< 0.3	2024-02-20
11285521	TB	2024-02-13 @ 10:00 am	2024-02-16 @ 11:00 am	< 0.3	2024-02-20

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

January 29, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
STORAGE
KCI

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11635097	Storage	2024-01-07 @ 9:00 am	2024-01-11 @ 9:00 am	< 0.3	2024-01-15

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 213819

NOMINAL Conditions: Radon Conc 50.0 pCi/L Rel. Hum 28.9 % Temp. 69.1 F

Date Start: 2/23/24 Date Stop: 2/26/24 Date Start: _____ Date Stop: _____

Time Start: 0812 Time Stop: 0812 Time Start: _____ Time Stop: _____

Device No.'s: (6) CHAR BAGS Device No.'s: _____

11478400, 11477842, 11477845, _____

11477852, 11477996, 11477999 _____

E3 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 μ R/h Elevation = 820 ft**

March 1, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

FEB SK

MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11477842	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	50.3 ± 4.0	2024-03-01
11477845	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	55.3 ± 4.4	2024-03-01
11477852	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	49.4 ± 4.0	2024-03-01
11477996	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	49.8 ± 4.0	2024-03-01
11477999	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	55.4 ± 4.4	2024-03-01
11478400	NA	2024-02-23 @ 8:00 am	2024-02-26 @ 8:00 am	47.0 ± 3.8	2024-03-01

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 – Testing February 13th – February 16th 2024

Name of Schools:

1. Blair G. Ewing Center (At Avery Rd)
2. Grosvenor Center
3. Emory Grove Center
4. Radnor Center

	Date	Initials
Radon Test Kits Deployed	02/13/2024	JM
Radon Test Kits Collected	02/16/2024	JM
Radon Test Kits Shipped to Lab*	02/16/2024	JM
Radon Test Kits Received by Lab*	02/20/2024	JM

*All samples sent to Air Check, Inc., 2 Saber Way, Ward Hill, MA 01835

Attachment 3:
Sampling Location Map



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 5 Year Testing 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 or 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:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	None	NA
≤ 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

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

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Grosvenor Center/Luxmanor Elementary School		
Testing period: 12/4/18 - 12/7/18		
Kit Number	Room / Area	Result (pCi/L)
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

Radon Testing Results		
Grosvenor Center/Luxmanor Elementary School		
Testing period: 12/4/18 - 12/7/18		
Kit Number	QC Type	Result (pCi/L)
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:

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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

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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 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:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

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.

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 μ 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

	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 or 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:

Radon Concentration	Room	Result
≥ 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

Radon Testing Results		
Wayside Elementary School		
Test Period: 01/19/16-01/22/16		
Kit Number	Room / Area	Result
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

Radon Testing Results		
Wayside Elementary School		
Test Period: 01/19/16-01/22/16		
Kit Number	Room / Area	Result
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

Radon Testing Results		
Wayside Elementary School		
Test Period: 01/19/16-01/22/16		
Kit Number	QC Type	Result
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: 1/30/16 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 μ 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