



## 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  $\geq 2.0$ -pCi/L;  $\geq 2.7$ -pCi/L;  $\geq 4.0$ -pCi/L; and  $\geq 8.0$ -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:	Blair G. Ewing Center at Avery Road
Address:	1405 Avery Road
	Rockville, MD 20853

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 <b>-or-</b> <input type="checkbox"/> Follow-up Testing
Testing Status:	<input checked="" type="checkbox"/> No Further Testing Needed <b>-or-</b> <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 ( $\geq 4.0$ -pCi/L) <input type="checkbox"/> Consider ( $\geq 2.0$ & $<4.0$ -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 <sup>1</sup>	68	5	73
Duplicates <sup>2</sup>	8	0	8
Field Blanks <sup>3</sup>	4	0	4
Grand Total			85

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 <sup>1</sup>	6	Trip Blank(s) <sup>2</sup>	2	Office Blank(s) <sup>3,4</sup>	2
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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 Results<sup>1</sup> and Determination of Valid Measurements<sup>2</sup>**

	<b>Ground-Contact</b>	<b>Upper-Level(s)</b>	<b>Total</b>
Number of test locations:	68	5	73
Number of locations $\geq 8.0$ -pCi/L:	0	0	0
Number of locations $\geq 4.0$ and $\leq 8$ -pCi/L:	0	0	0
Number of locations $\geq 2.7$ and $\leq 4$ -pCi/L:	0	0	0
Number of locations $\geq 2.0$ and $\leq 4$ -pCi/L:	0	0	0
Number of missing required test locations <sup>3</sup> :	5	0	5
Percentage of missing test locations for the facility <sup>4,5</sup> :	7.3%	0	7.3%

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  $\geq 18$ , 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  $\geq 4.0$ -pCi/L and the total number of test locations are  $\geq 20$ , 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 Results<sup>1</sup> and Determination of Valid Measurements<sup>2</sup> (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 type="checkbox"/> Yes <input checked="" 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>	
<b>If No to either above</b> , were all results obtained under 4.0-pCi/L <b>and</b> were there sufficient valid measurements obtained? <sup>1,2</sup> <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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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**

<b>Table 1- Radon Testing Results</b>		
<b>Blair G. Ewing Center</b>		
<b>Test Period: 02/13/2024 - 02/16/2024</b>		
Kit Number	Room / Area	Result
11478164	17B	< 0.3
11478390	A1	< 0.3
11478170	A10	< 0.3
11478168	A11	< 0.3
11478162	A15	< 0.3
11478156	A16	< 0.3
11478163	A16	< 0.3
11478166	A16	< 0.3
11478394	A17A	< 0.3
11478387	A18	< 0.3
11478399	A19	< 0.3
11478391	A20	< 0.3
11478392	A3	< 0.3
11478393	A3	< 0.3
11478171	A4	< 0.3
11478169	A5	< 0.3
11478384	A6	1.1
11478167	A7	0.7
11469572	AB1	< 0.3
11285584	AB2	< 0.3
11285563	AB3	< 0.3
11285597	AB6	< 0.3
11478379	AB6	< 0.3
11478380	AB6	< 0.3
11477806	COMMUNITY CONFERENCE ROOM	< 0.3
11478385	CONFERENCE	< 0.3
11478389	CONFERENCE ROOM. A	< 0.3
11285582	COPY ROOM	0.7
11477804	DINING ROOM	0.9
11469589	GYM	< 0.3
11477810	GYM	0.7
11469571	I-70	N/A
11478386	KITCHEN OFFICE	0.8
11469574	L10	< 0.3
11469593	L11	< 0.3
11469581	L12	< 0.3
11285585	L12 OFFICE	< 0.3
11285590	L13	< 0.3

<b>Table 1- Radon Testing Results</b>		
<b>Blair G. Ewing Center</b>		
<b>Test Period: 02/13/2024 - 02/16/2024</b>		
Kit Number	Room / Area	Result
11285529	L14	< 0.3
11469590	L15	< 0.3
11469595	L17	< 0.3
11478397	L2	< 0.3
11478395	L4	< 0.3
11469600	L5	< 0.3
11469596	L7	< 0.3
11478396	L8	< 0.3
11469594	L9	< 0.3
11478442	MAIN OFFICE	< 0.3
11469588	MEDIA CENTER	< 0.3
11469591	MEDIA CENTER	< 0.3
11469584	MEN'S LOCKER ROOM	0.6
11477811	MEN'S OFFICE	< 0.3
11477803	MPR	1.5
11478007	PHONE ROOM MAIN OFFICE	< 0.3
11478456	PHONE ROOM MAIN OFFICE	< 0.3
11478388	PRINCIPAL	< 0.3
11285570	RC 13	0.7
11469587	RC10	0.5
11469592	RC7	< 0.3
11469597	SECURITY	< 0.3
11469598	SECURITY	< 0.3
11469599	SECURITY	< 0.3
11478154	STAFF LOUNGE	1.0
11285580	U1	0.5
11477805	U10	1.0
11477801	U12	0.7
11477807	U12 OFFICE	< 0.3
11478398	U3	N/A
11464075	U3	< 0.3
11469586	U4	N/A
11478064	U4	0.5
11478066	U4	0.7
11478096	U4	< 0.3
11285595	U5	0.9
11469800	U5 OFFICE	0.7
11285586	U6	N/A



<b>Table 1- Radon Testing Results</b>		
<b>Blair G. Ewing Center</b>		
<b>Test Period: 02/13/2024 - 02/16/2024</b>		
Kit Number	Room / Area	Result
11285522	U6	N/A
11478091	U6	< 0.3
11478195	U6	< 0.3
11478172	U7	1.0
11478364	U7	0.8
11469571	U7A	0.8
11477802	U8	1.4
11478161	U8 OFFICE	0.8
11477809	WOMEN'S LOCKER ROOM	< 0.3



<b>Table 3 - QC Radon Testing Results</b>			
<b>Blair G. Ewing Center @ Avery Road</b>			
<b>Test Period: 02/13/2024 - 02/16/2024</b>			
<b>Kit Number</b>	<b>QC Type</b>	<b>Room / Area</b>	<b>Result</b>
11478166	D	A16	< 0.3
11478156	FB	A16	< 0.3
11478393	D	A3	< 0.3
11478379	D	Ab6	< 0.3
11478380	FB	Ab6	< 0.3
11478007	D	Phone Room - Main Office	< 0.3
11469597	D	Security	< 0.3
11469598	FB	Security	< 0.3
11478096	FB	U4	< 0.3
11478066	D	U4	0.7
11285522	D	U6	N/A
11478364	D	U7	0.8
11284674	OB	OFFICE BLANK	< 0.3
11285521	TB	TRAVEL BLANK	< 0.3



**Attachment 2:**  
**Laboratory Reports**

Radon test result report for:**BLAIR G EWING  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11478164	17B	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478390	A1	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478170	A10	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478168	A11	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478162	A15	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478163	A16	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478166	A16	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478156	A16	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478394	A17A	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478387	A18	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478399	A19	2024-02-13 @ 10:00 am	2024-02-16 @ 9:00 am	< 0.3	2024-02-20
11478391	A20	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478393	A3	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478392	A3	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478171	A4	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478169	A5	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478384	A6	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	1.1 ± 0.3	2024-02-20
11478167	A7	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	0.7 ± 0.3	2024-02-20
11469572	AB1	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11285584	AB2	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11285563	AB3	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11285597	AB6	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478380	AB6	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478379	AB6	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11477806	COMMUNITY CONFERENCE ROOM	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478385	CONFERENCE	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478389	CONFERENCE ROOM. A	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11285582	COPY ROOM	2024-02-13 @ 12:00 pm	2024-02-16 @ 9:00 am	0.7 ± 0.4	2024-02-20
11477804	DINING ROOM	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.9 ± 0.3	2024-02-20
11477810	GYM	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.7 ± 0.3	2024-02-20
11469589	GYM	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478386	KITCHEN OFFICE	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	0.8 ± 0.3	2024-02-20
11469574	L10	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469593	L11	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469581	L12	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11285585	L12 OFFICE	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11285590	L13	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20

Radon test result report for:  
**BLAIR G EWING**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285529	L14	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469590	L15	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469595	L17	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478397	L2	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478395	L4	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469600	L5	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469596	L7	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478396	L8	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469594	L9	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478442	MAIN OFFICE	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469591	MEDIA CENTER	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469588	MEDIA CENTER	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469584	MEN'S LOCKER ROOM	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.6 ± 0.3	2024-02-20
11477811	MEN'S OFFICE	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11477803	MPR	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	1.5 ± 0.4	2024-02-20
11478007	PHONE ROOM MAIN OFFICE	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478456	PHONE ROOM MAIN OFFICE	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478388	PRINCIPAL	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11285570	RC 13	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	0.7 ± 0.4	2024-02-20
11469587	RC10	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	0.5 ± 0.3	2024-02-20
11469592	RC7	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469598	SECURITY	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469597	SECURITY	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11469599	SECURITY	2024-02-13 @ 12:00 pm	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11478154	STAFF LOUNGE	2024-02-13 @ 10:00 am	2024-02-16 @ 8:00 am	1.0 ± 0.3	2024-02-20
11285580	U1	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.5 ± 0.4	2024-02-20
11477805	U10	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	1.0 ± 0.3	2024-02-20
11477801	U12	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.7 ± 0.3	2024-02-20
11477807	U12 OFFICE	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20
11285595	U5	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.9 ± 0.3	2024-02-20
11469800	U5 OFFICE	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.7 ± 0.3	2024-02-20
11478364	U7	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.8 ± 0.3	2024-02-20
11478172	U7	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	1.0 ± 0.4	2024-02-20
11469571	U7A	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.8 ± 0.3	2024-02-20
11477802	U8	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	1.4 ± 0.4	2024-02-20
11478161	U8 OFFICE	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	0.8 ± 0.3	2024-02-20
11477809	WOMEN'S LOCKER ROOM	2024-02-13 @ 11:00 am	2024-02-16 @ 8:00 am	< 0.3	2024-02-20

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March 4, 2024

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

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Radon test result report for:

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11464075	U3	2024-02-26 @ 11:00 am	2024-02-29 @ 10:00 am	< 0.3	2024-03-04
11478064	U4	2024-02-26 @ 11:00 am	2024-02-29 @ 10:00 am	0.5 ± 0.3	2024-03-04
11478066	U4	2024-02-26 @ 11:00 am	2024-02-29 @ 10:00 am	0.7 ± 0.3	2024-03-04
11478096	U4	2024-02-26 @ 11:00 am	2024-02-29 @ 10:00 am	< 0.3	2024-03-04
11478091	U6	2024-02-26 @ 11:00 am	2024-02-29 @ 10:00 am	< 0.3	2024-03-04
11478195	U6	2024-02-26 @ 11:00 am	2024-02-29 @ 10:00 am	< 0.3	2024-03-04

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



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March 6, 2024

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

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Radon test result report for:

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11482754	1014	2024-02-27 @ 9:00 am	2024-03-01 @ 1:00 pm	< 0.3	2024-03-05
11482762	1209	2024-02-27 @ 9:00 am	2024-03-01 @ 1:00 pm	< 0.3	2024-03-05
11482768	2013	2024-02-27 @ 9:00 am	2024-03-01 @ 1:00 pm	< 0.3	2024-03-05
11463994	APR	2024-02-27 @ 9:00 am	2024-03-01 @ 1:00 pm	< 0.3	2024-03-05
11478067	APR	2024-02-27 @ 9:00 am	2024-03-01 @ 1:00 pm	< 0.3	2024-03-05
11477989	GYM	2024-02-27 @ 8:00 am	2024-03-01 @ 1:00 pm	< 0.3	2024-03-05
11478179	GYM	2024-02-27 @ 8:00 am	2024-03-01 @ 1:00 pm	< 0.3	2024-03-05
11478184	GYM	2024-02-27 @ 8:00 am	2024-03-01 @ 1:00 pm	< 0.3	2024-03-05
11478198	GYM	2024-02-27 @ 8:00 am	2024-03-01 @ 1:00 pm	< 0.3	2024-03-05

---

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

---

March 5, 2024

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

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Radon test result report for:

**KCI  
MAIN**

---

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11284001	OB	2024-02-26 @ 8:00 am	2024-02-29 @ 1:00 pm	< 0.3	2024-03-04
11482791	TB	2024-02-26 @ 8:00 am	2024-02-29 @ 1:00 pm	< 0.3	2024-03-04

---

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

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February 20, 2024

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

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Radon test result report for:  
**OFFICE BLANK**  
**MAIN**

---

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
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

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February 20, 2024

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

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Radon test result report for:  
**TRAVEL BLANK**  
**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>
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

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

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January 29, 2024

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

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Radon test result report for:  
**STORAGE**  
**KCI**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
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 µR/h Elevation = 820 ft**

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March 1, 2024

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

---

Radon test result report for:

**FEB SK**

**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>
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 13<sup>th</sup> – February 16<sup>th</sup> 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





### Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing January 26<sup>th</sup> – February 29<sup>th</sup> 2024

Name of Schools:

1. Blair G. Ewing Center
2. Radnor Center
3. Rosa M. Parks MS
4. Cabin Branch ES
5. Westbrook ES
6. Clopper Mill ES

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	Date	Initials
Radon Test Kits Deployed	02/26/2024	<i>PM</i>
Radon Test Kits Collected	02/29/2024	<i>PM</i>
Radon Test Kits Shipped to Lab*	02/29/2024	<i>PM</i>
Radon Test Kits Received by Lab*	03/4/2024	<i>PM</i>

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

**Attachment 3:**  
**Sampling Location Map**



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Blair G. Ewing Center
Date of Test Report	4/6/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	58
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.5 pCi/L

Project Status:  
Initial testing completed; no further action needed.



April 6, 2022

Brian T. Croyle, PG, CHMM  
Environmental Specialist  
Montgomery County Public Schools  
Gaithersburg, MD 20879

Re: **Radon Testing Services**  
KCI Job # 122108316

Location: Blair G. Ewing Center  
14501 Avery Rd.  
Rockville, MD 20853

Dear Mr. Croyle:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Blair G. Ewing Center, located at 14501 Avery Rd. Rockville, MD 20853 (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 Specialist (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> or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on February 7, 2022 and deployed sixty seven (67) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all 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 also included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted 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 February 10, 2022 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:**

These tests represent:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

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 during 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 30s and high temperatures ranged from the mid 30s to the mid 50s Fahrenheit. Maximum sustained winds ranged from 3-12 miles per hour. Average humidity was around 23% with 0.1 inches of precipitation (rain) was recorded during testing period.

**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	

<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) 891-1769.

Sincerely,



Tyler P. McCleaf  
Radon Measurement Provider  
#111004 RT  
KCI Technologies, Inc.

Attachments:     A- Floor Plan with Test Locations  
                      B- Table 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 Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Blair G. Ewing Center		
Test Period: 02/7/2022 - 02/10/2022		
Kit Number	Room / Area	Result
11114547	A1	0.8
11114537	A10	0.7
11114535	A11	0.9
11114548	A12	0.8
11114546	A14	0.9
11114534	A14A COMPUTER	0.8
11114561	A15	< 0.3
11114550	A16	0.9
11114551	A17	< 0.3
11114552	A17A	0.8
11114553	A17B	0.7
11114554	A18	0.8
11114560	A19	0.9
11114538	A2	1.3
11114555	A20	0.6
11114539	A3	< 0.3
11114541	A5	1.6
11114542	A5	2.5
11114540	A6	0.7
11114545	A7	1.1
11114575	AB1	< 0.3
11114591	AB1 STAGE	< 0.3
11114590	AB2	< 0.3
11114599	BS HEALTH ROOM	< 0.3
11114595	BS NURSE OFFICE	< 0.3
11114598	BS NURSE OFFICE	< 0.3
11114585	BS OFFICE RC10	0.7
11114549	COMMUNITY CONFERENCE ROOM	0.6
11114536	CONFERENCE ROOM A	< 0.3
11114559	CONFERENCE ROOM C	0.6
11114544	DINING ROOM	1.0
11114593	GYM	< 0.3
11114594	GYM	0.5
11114600	GYM OFFICE	< 0.3
11114533	KITCHEN OFFICE	1.7
11114563	L10	< 0.3
11114584	L11	< 0.3
11114583	L11 OFFICE	< 0.3
11114562	L12	0.9
11114568	L12 OFFICE	0.7
11114573	L13 HEALTH	0.6
11114574	L13 MED ROOM	< 0.3

Table 1- Radon Testing Results		
Blair G. Ewing Center		
Test Period: 02/7/2022 - 02/10/2022		
Kit Number	Room / Area	Result
11114570	L14	< 0.3
11114588	L15	< 0.3
11114571	L16 COPY	< 0.3
11114572	L16 COPY	< 0.3
11114569	L16 MAIN OFFICE	0.7
11114581	L17	< 0.3
11114580	L17A	0.5
11114578	L3	< 0.3
11114566	L4	< 0.3
11114579	L5	0.6
11114567	L6	< 0.3
11114589	L7	0.7
11114587	L7 OFFICE	0.6
11114564	L8	< 0.3
11114565	L8 OFFICE	< 0.3
11114582	L9	< 0.3
11114586	MEDIA BREAK ROOM RC8	0.7
11114576	MEDIA CENTER	0.6
11114577	MEDIA CENTER	0.5
11114592	MEDIA CENTER OFFICE RC7	< 0.3
11114543	MULTIPURPOSE ROOM	0.9
11114556	MULTIPURPOSE ROOM	0.7
11114557	PRINCIPALS OFFICE	< 0.3
11114558	PRINCIPALS OFFICE	1.1
11114532	STAFF LOUNGE	0.9

Table 2- Radon Testing Results			
Blair G. Ewing Center			
Test Period: 02/7/2022 - 02/10/2022			
Kit Number	QC Type	Room / Area	Result
11114539	D	A3	< 0.3
11114558	D	Principals Office	1.1
11114557	FB	Principals Office	< 0.3
11114556	D	Multipurpose Room	0.7
11114571	D	L16 Copy	< 0.3
11114572	FB	L16 Copy	< 0.3
11114581	D	L17	< 0.3
11114599	D	BS Health Room	< 0.3
11114598	FB	BS Nurse Office	< 0.3
11113481	OB	OFFICE BLANK	< 0.3
11113483	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Blair G. Ewing Center		
Test Period: 02/7/22 - 02/10/22		
Kit Number	Room/Area	Result
	NA	

Summary of Missing, Compromised and $\geq 4$ piC/L Tests		
Blair G. Ewing Center		
Test Period: 02/7/22 - 02/10/22		
Kit Number	Room/Area	Result
	NA	

Table Note:  
\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

- Radon test result report for:

**BLAIR G. EWING CENTER**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11114547	A1	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	0.8 ± 0.4	2022-02-14
11114537	A10	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	0.7 ± 0.3	2022-02-14
11114535	A11	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	0.9 ± 0.3	2022-02-14
11114548	A12	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	0.8 ± 0.4	2022-02-15
11114546	A14	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	0.9 ± 0.3	2022-02-14
11114534	A14A COMPUTER	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	0.8 ± 0.4	2022-02-14
11114561	A15	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114550	A16	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	0.9 ± 0.4	2022-02-14
11114551	A17	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114552	A17A	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	0.8 ± 0.3	2022-02-14
11114553	A17B	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	0.7 ± 0.4	2022-02-14
11114554	A18	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	0.8 ± 0.3	2022-02-14
11114560	A19	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	0.9 ± 0.3	2022-02-14
11114538	A2	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	1.3 ± 0.4	2022-02-14
11114555	A20	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	0.6 ± 0.3	2022-02-14
11114539	A3	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	< 0.3	2022-02-15
11114542	A5	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	2.5 ± 0.4	2022-02-14
11114541	A5	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	1.6 ± 0.4	2022-02-15
11114540	A6	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	0.7 ± 0.4	2022-02-14
11114545	A7	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	1.1 ± 0.3	2022-02-14
11114575	AB1	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114591	AB1 STAGE	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	< 0.3	2022-02-15
11114590	AB2	2022-02-07 @ 1:00 pm	2022-02-10 @ 11:00 am	< 0.3	2022-02-14
11114599	BS HEALTH ROOM	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114595	BS NURSE OFFICE	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114598	BS NURSE OFFICE	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114585	BS OFFICE RC10	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	0.7 ± 0.4	2022-02-14
11114549	COMMUNITY CONFERENCE ROOM	2022-02-07 @ 11:00 am	2022-02-10 @ 9:00 am	0.6 ± 0.3	2022-02-14
11114536	CONFERENCE ROOM A	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114559	CONFERENCE ROOM C	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	0.6 ± 0.3	2022-02-14
11114544	DINING ROOM	2022-02-07 @ 11:00 am	2022-02-10 @ 9:00 am	1.0 ± 0.4	2022-02-14
11114593	GYM	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114594	GYM	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	0.5 ± 0.3	2022-02-14
11114600	GYM OFFICE	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114533	KITCHEN OFFICE	2022-02-07 @ 10:00 am	2022-02-10 @ 10:00 am	1.7 ± 0.4	2022-02-14
11114563	L10	2022-02-07 @ 12:00 pm	2022-02-10 @ 11:00 am	< 0.3	2022-02-14
11114584	L11	2022-02-07 @ 12:00 pm	2022-02-10 @ 11:00 am	< 0.3	2022-02-14

Radon test result report for:**BLAIR G. EWING CENTER**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11114583	L11 OFFICE	2022-02-07 @ 12:00 pm	2022-02-10 @ 11:00 am	< 0.3	2022-02-15
11114562	L12	2022-02-07 @ 12:00 pm	2022-02-10 @ 11:00 am	0.9 ± 0.4	2022-02-14
11114568	L12 OFFICE	2022-02-07 @ 12:00 pm	2022-02-10 @ 11:00 am	0.7 ± 0.3	2022-02-14
11114573	L13 HEALTH	2022-02-07 @ 12:00 pm	2022-02-10 @ 9:00 am	0.6 ± 0.3	2022-02-14
11114574	L13 MED ROOM	2022-02-07 @ 12:00 pm	2022-02-10 @ 9:00 am	< 0.3	2022-02-14
11114570	L14	2022-02-07 @ 12:00 pm	2022-02-10 @ 11:00 am	< 0.3	2022-02-14
11114588	L15	2022-02-07 @ 12:00 pm	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114571	L16 COPY	2022-02-07 @ 12:00 pm	2022-02-10 @ 9:00 am	< 0.3	2022-02-14
11114572	L16 COPY	2022-02-07 @ 12:00 pm	2022-02-10 @ 9:00 am	< 0.3	2022-02-14
11114569	L16 MAIN OFFICE	2022-02-07 @ 12:00 pm	2022-02-10 @ 9:00 am	0.7 ± 0.3	2022-02-14
11114581	L17	2022-02-07 @ 12:00 pm	2022-02-10 @ 11:00 am	< 0.3	2022-02-14
11114580	L17A	2022-02-07 @ 12:00 pm	2022-02-10 @ 10:00 am	0.5 ± 0.3	2022-02-14
11114578	L3	2022-02-07 @ 12:00 pm	2022-02-10 @ 11:00 am	< 0.3	2022-02-14
11114566	L4	2022-02-07 @ 11:00 am	2022-02-10 @ 11:00 am	< 0.3	2022-02-14
11114579	L5	2022-02-07 @ 12:00 pm	2022-02-10 @ 10:00 am	0.6 ± 0.4	2022-02-14
11114567	L6	2022-02-07 @ 11:00 am	2022-02-10 @ 11:00 am	< 0.3	2022-02-14
11114589	L7	2022-02-07 @ 12:00 pm	2022-02-10 @ 10:00 am	0.7 ± 0.3	2022-02-14
11114587	L7 OFFICE	2022-02-07 @ 12:00 pm	2022-02-10 @ 10:00 am	0.6 ± 0.3	2022-02-14
11114564	L8	2022-02-07 @ 11:00 am	2022-02-10 @ 11:00 am	< 0.3	2022-02-14
11114565	L8 OFFICE	2022-02-07 @ 11:00 am	2022-02-10 @ 11:00 am	< 0.3	2022-02-15
11114582	L9	2022-02-07 @ 12:00 pm	2022-02-10 @ 11:00 am	< 0.3	2022-02-14
11114586	MEDIA BREAK ROOM RC8	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	0.7 ± 0.3	2022-02-14
11114577	MEDIA CENTER	2022-02-07 @ 12:00 pm	2022-02-10 @ 10:00 am	0.5 ± 0.3	2022-02-14
11114576	MEDIA CENTER	2022-02-07 @ 12:00 pm	2022-02-10 @ 10:00 am	0.6 ± 0.3	2022-02-14
11114592	MEDIA CENTER OFFICE RC7	2022-02-07 @ 1:00 pm	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114543	MULTIPURPOSE ROOM	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	0.9 ± 0.4	2022-02-14
11114556	MULTIPURPOSE ROOM	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	0.7 ± 0.3	2022-02-15
11114557	PRINCIPALS OFFICE	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	< 0.3	2022-02-14
11114558	PRINCIPALS OFFICE	2022-02-07 @ 11:00 am	2022-02-10 @ 10:00 am	1.1 ± 0.4	2022-02-15
11114532	STAFF LOUNGE	2022-02-07 @ 10:00 am	2022-02-10 @ 9:00 am	0.9 ± 0.3	2022-02-14



**EXPOSURE IN BOWSER-MORNER RADON CHAMBER**

CLIENT KCI Technologies, Inc. Job Number 204186

NOMINAL Conditions: Radon Conc 25.8 pCi/L Rel. Hum 50.1 % Temp. 70.9 F

Date Start: 2/18/22 Date Stop: 2/21/22 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0911 Time Stop: 0911 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (3) Char Bags -  
11113484, 1112998, 20107126 Device No.'s: \_\_\_\_\_

23 Right

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**

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 Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
11113484	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK1		1	27.9
11122998	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK2		1	26.0
20107126	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK3		1	27.6

---



## Radon Test Kit Chain of Custody

**Project Name:** MCPS Radon – February 2022 Schools

**Name of Schools:**

1. Lincoln Center
2. Wootton HS
3. Rockville HS
4. Richard Montgomery HS
5. Rocking Horse Rd. Center
6. Blair G. Ewing Center
7. Twinbrook ES
8. Rock Creek Valley ES
9. Luxmanor ES
10. Tilden MS

---

	Date	Initials
Radon Test Kits Deployed	02/07/2022	
Radon Test Kits Collected	02/10/2022	
Radon Test Kits Shipped to Lab*	02/10/2022	
Radon Test Kits Received by Lab*	02/14/2022	

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



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

**Executive Summary:**  
**Blair G. Ewing Center**  
14501 Avery Road,  
Rockville, MD 20853

Date of Test Report:	1/15/2019
Round of Testing:	Initial Follow-up <b>Post Remediation</b> 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	99
# of Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	1.8

### Project Status

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



January 15, 2019

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

Re: Radon Testing Services

Location: Blair G. Ewing Center  
14501 Avery Road,  
Rockville, MD 20853

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 Blair G. Ewing Center, located at 14501 Avery Road, Rockville, MD 20853 (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 3, 2018 and deployed one hundred and seventeen (117) 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 6, 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>Ewing Center</b>		
<b>Testing period: 12/3/18 - 12/6/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3919147	A1	<0.4
3919267	A10	<0.4
3919265	A11	<0.4
3919266	A12	<0.4
3919210	A14A	<0.4
3919268	A14A	<0.4
3919212	A14B	<0.4
3919269	A15	<0.4
3919211	A16	<0.4
3919213	A17A	<0.4
3919214	A17A	<0.4
3919145	A18	<0.4
3919144	A19	<0.4
3919148	A2	0.8
3919143	A20	<0.4
3919150	A3	<0.4
3919261	A4	<0.4
3919262	A5	0.4
3919263	A6	<0.4
3919264	A7	0.5
3919227	AB1	<0.4
3919228	AB2	<0.4
3919229	AB3	<0.4
3919271	AB4	<0.4
3919172	AB6	<0.4
3919173	AB6 Office	<0.4
3919217	BR Lock	0.4
3919219	Community Conference Room	<0.4
3919142	Conference Room	0.5
3919146	Conference Room A	<0.4
3919220	Dining Room2	0.7
3919049	Gym	0.4
3919048	Gym	0.5
3919225	Health	<0.4
3919226	Health Office	<0.4
3919216	Kitchen	<0.4
3919112	Kitchen Office	<0.4
3919285	L Copy Room	<0.4
3919288	L10	<0.4
3919289	L10 Office	<0.4
3919273	L11	<0.4
3919287	L12	0.6
3919274	L13	<0.4

<b>Radon Testing Results</b>		
<b>Ewing Center</b>		
<b>Testing period: 12/3/18 - 12/6/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3919286	L14	Unable to Report
3919237	L15	<0.4
3919281	L16	<0.4
3919272	L17	<0.4
3919233	L2	<0.4
3919234	L3	<0.4
3919232	L4	<0.4
3919235	L5	<0.4
3919236	L5 Office	<0.4
3919284	L6	<0.4
3919238	L7	<0.4
3919231	L8	<0.4
3919239	L9	<0.4
3919171	L9 Office	<0.4
3919251	M10	<0.4
3919252	M10 Office	<0.4
3919045	M11	<0.4
3919279	M12	<0.4
3919047	M13	1.8
3919277	M14	<0.4
3919278	M14 Office	0.4
3919046	M15	<0.4
3919275	M16	0.6
3919276	M16 Office	0.7
3919253	M17	0.4
3919257	M2	<0.4
3919258	M3	0.5
3919256	M4	0.6
3919259	M5	0.4
3919041	M5 Office	<0.4
3919255	M6	<0.4
3919042	M7	<0.4
3919254	M8	<0.4
3919043	M9	<0.4
3919044	M9 Office	<0.4
3919282	Main Office	<0.4
3919221	Men's Office	0.4
3919111	Multi-Purpose Room	0.8
3919223	Pool	0.5
3919222	Pool	<0.4
3919141	Principal	0.4
3919224	RC10	0.4
3919175	RC10	<0.4

<b>Radon Testing Results</b>		
<b>Ewing Center</b>		
<b>Testing period: 12/3/18 - 12/6/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result (pCi/L)</b>
3919176	RC3	0.4
3919174	RC7A	<0.4
3919283	Security	0.4
3919215	Staff Lounge	<0.4
3919177	U1	<0.4
3919245	U10	0.7
3919246	U10 Office	0.9
3919247	U12	0.6
3919179	U3	<0.4
3919241	U3 Office	<0.4
3919249	U4	<0.4
3919242	U5	<0.4
3919244	U6	<0.4
3919243	U7A	0.6
3919248	U7B	<0.4
3919178	U8	<0.4

<b>Radon Testing Results</b>		
<b>Ewing Center</b>		
<b>Testing period: 12/3/18 - 12/6/18</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result (pCi/L)</b>
3919270	A15 (D)	<0.4
3919149	A2 (D)	0.5
3919230	AB3 (D)	Unable to Report
3919218	Community Conference Room (D)	<0.4
3923175	Field Blank	<0.4
3919290	L10 Office (D)	<0.4
3919240	L9 (D)	<0.4
3919280	M12 (D)	<0.4
3919260	M5 Office (D)	<0.4
3919050	Men's Office (D)	0.4
3922995	Office Blank	<0.4
3922996	Trip Blank	<0.4
3919180	U3 (D)	<0.4
3919250	U4 (D)	<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  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:		Area Tested		Result pCi/L
2404062	3919281	12/03/2018 11:27 am	12/06/2018 10:05 am	Bldg Ewing Center Flr 1 Room L16		< 0.4
2404063	3919282	12/03/2018 11:28 am	12/06/2018 10:05 am	Bldg Ewing Center Floor 1 Room Main Office		< 0.4
2404064	3919283	12/03/2018 11:30 am	12/06/2018 10:06 am	Bldg Ewing Center Floor 1 Room Security		0.4
2404065	3919284	12/03/2018 11:32 am	12/06/2018 10:10 am	Bldg Ewing Center Floor 1 Room L6		< 0.4
2404066	3919285	12/03/2018 11:34 am	12/06/2018 10:05 am	Bldg Ewing Center Floor 1 Room L Copy Room		< 0.4
2404067	3919286	12/03/2018 11:36 am	12/06/2018 10:06 am	Bldg Ewing Center Floor 1 Room L14		
2404068	3919287	12/03/2018 11:37 am	12/06/2018 10:07 am	Bldg Ewing Center Floor 1 Room L12		0.6
2404069	3919288	12/03/2018 11:38 am	12/06/2018 10:08 am	Bldg Ewing Center Floor 1 Room L10		< 0.4
2404070	3919289	12/03/2018 11:40 am	12/06/2018 10:09 am	Bldg Ewing Center Floor 1 Room L10 Office		< 0.4
2404071	3919290	12/03/2018 11:40 am	12/06/2018 10:11 am	Bldg Ewing Center Floor 1 Room L10 Office		< 0.4
2404072	3919231	12/03/2018 11:42 am	12/06/2018 10:12 am	Bldg Ewing Center Floor 1 Room L8		< 0.4

**Comment:** Unable to acquire Rn result for result 3919286. 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: 12/08/2018    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  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:				Area Tested			Result pCi/L
2404073	3919232	12/03/2018	11:44 am	12/06/2018	10:13 am	Bldg Ewing Center	Floor 1	Room L4	< 0.4
2404074	3919233	12/03/2018	11:46 am	12/06/2018	10:14 am	Bldg Ewing Center	Floor 1	Room L2	< 0.4
2404075	3919234	12/03/2018	11:47 am	12/06/2018	10:15 am	Bldg Ewing Center	Floor 1	Room L3	< 0.4
2404076	3919235	12/03/2018	11:47 am	12/06/2018	10:15 am	Bldg Ewing Center	Floor 1	Room L5	< 0.4
2404078	3919237	12/03/2018	11:50 am	12/06/2018	10:16 am	Bldg Ewing Center	Floor 1	Room L15	< 0.4
2404079	3919238	12/03/2018	11:51 am	12/06/2018	10:17 am	Bldg Ewing Center	Floor 1	Room L7	< 0.4
2404080	3919239	12/03/2018	11:52 am	12/06/2018	10:18 am	Bldg Ewing Center	Floor 1	Room L9	< 0.4
2404081	3919240	12/03/2018	11:52 am	12/06/2018	10:18 am	Bldg Ewing Center	Floor 1	Room L9	< 0.4
2404082	3919171	12/03/2018	11:55 am	12/06/2018	10:09 am	Bldg Ewing Center	Floor 1	Room L9 Office	< 0.4
2404083	3919272	12/03/2018	11:56 am	12/06/2018	10:09 am	Bldg Ewing Center	Floor 1	Room L17	< 0.4
2404084	3919273	12/03/2018	11:06 am	12/06/2018	10:00 am	Bldg Ewing Center	Floor 1	Room L11	< 0.4

**Comment:** Unable to acquire Rn result for result 3919286. 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: 12/08/2018    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  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404085	3919274	12/03/2018 11:57 am	12/06/2018 11:30 am	Bldg Ewing Center Floor 1 Room L13	< 0.4
2404086	3919275	12/03/2018 12:11 pm	12/06/2018 10:21 am	Bldg Ewing Center Floor 1 Room M16	0.6
2404087	3919276	12/03/2018 12:13 pm	12/06/2018 10:22 am	Bldg Ewing Center Floor 1 Room M16 Office	0.7
2404088	3919277	12/03/2018 12:13 pm	12/06/2018 10:22 am	Bldg Ewing Center Floor 1 Room M14	< 0.4
2404089	3919278	12/03/2018 12:14 pm	12/06/2018	Bldg Ewing Center Floor 1 Room M14 Office	0.4
2404090	3919279	12/03/2018 12:14 pm	12/06/2018 10:24 am	Bldg Ewing Center Floor 1 Room M12	< 0.4
2404091	3919280	12/03/2018 12:14 pm	12/06/2018 10:24 am	Bldg Ewing Center Floor 1 Room M12	< 0.4
2404092	3919251	12/03/2018 12:16 pm	12/06/2018 10:25 am	Bldg Ewing Center Floor 1 Room M10	< 0.4
2404093	3919252	12/03/2018 12:16 pm	12/06/2018 10:26 am	Bldg Ewing Center Floor 1 Room M10 Office	< 0.4
2404094	3919253	12/03/2018 12:17 pm	12/06/2018 10:27 am	Bldg Ewing Center Floor 1 Room M17	0.4
2404095	3919254	12/03/2018 12:18 pm	12/06/2018 10:28 am	Bldg Ewing Center Floor 1 Room M8	< 0.4

**Comment:** Unable to acquire Rn result for result 3919286. 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: 12/08/2018 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  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:		Area Tested			Result pCi/L
2404096	3919255	12/03/2018 12:18 pm	12/06/2018 10:09 am	Bldg Ewing Center	Floor 1	Room M6	< 0.4
2404097	3919256	12/03/2018 12:20 pm	12/06/2018 10:30 am	Bldg Ewing Center	Floor 1	Room M4	0.6
2404098	3919257	12/03/2018 12:20 pm	12/06/2018 10:31 am	Bldg Ewing Center	Floor 1	Room M2	< 0.4
2404099	3919258	12/03/2018 12:21 pm	12/06/2018 10:40 am	Bldg Ewing Center	Floor 1	Room M3	0.5
2404100	3919259	12/03/2018 12:22 pm	12/06/2018 10:33 am	Bldg Ewing Center	Floor 1	Room M5	0.4
2404101	3919260	12/03/2018 12:22 pm	12/06/2018 10:33 am	Bldg Ewing Center	Floor 1	Room M5 Office	< 0.4
2404102	3919041	12/03/2018 12:22 pm	12/06/2018 10:33 am	Bldg Ewing Center	Floor 1	Room M5 Office	< 0.4
2404103	3919042	12/03/2018 12:24 pm	12/06/2018 10:34 am	Bldg Ewing Center	Floor 1	Room M7	< 0.4
2404104	3919043	12/03/2018 12:25 pm	12/06/2018 10:34 am	Bldg Ewing Center	Floor 1	Room M9	< 0.4
2404105	3919044	12/03/2018 12:26 pm	12/06/2018 10:35 am	Bldg Ewing Center	Floor 1	Room M9 Office	< 0.4
2404106	3919045	12/03/2018 12:27 pm	12/06/2018 10:35 am	Bldg Ewing Center	Floor 1	Room M11	< 0.4

**Comment:** Unable to acquire Rn result for result 3919286. A copy of this report was emailed to Intertek-PSI (VA).

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

Report Reviewed By: 

Report Approved By: 

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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  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404107	3919046	12/03/2018 12:28 pm	12/06/2018 10:36 am	Bldg Ewing Center Floor 1 Room M15	< 0.4
2404108	3919047	12/03/2018 12:29 pm	12/06/2018 10:36 am	Bldg Ewing Center Floor 1 Room M13	1.8
2404109	3919048	12/03/2018 12:32 pm	12/06/2018 10:07 am	Bldg Ewing Center Floor 1 Room Gym	0.5
2404110	3919049	12/03/2018 12:34 pm	12/06/2018 10:39 am	Bldg Ewing Center Floor 1 Room Gym	0.4
2404111	3919050	12/03/2018 12:34 pm	12/06/2018 10:40 am	Bldg Ewing Center Floor 1 Room Men's Office	0.4
2404112	3919221	12/03/2018 12:40 pm	12/06/2018 10:40 am	Bldg Ewing Center Floor 1 Room Men's Office	0.4
2404113	3919222	12/03/2018 12:40 pm	12/06/2018 10:50 am	Bldg Ewing Center Floor 1 Room Pool	< 0.4
2404114	3919223	12/03/2018 12:44 pm	12/06/2018 10:50 am	Bldg Ewing Center Floor 1 Room Pool	0.5
2404115	3919224	12/03/2018 12:25 pm	12/06/2018 10:42 am	Bldg Ewing Center Floor 1 Room RC10	0.4
2404116	3919225	12/03/2018 12:46 pm	12/06/2018 10:43 am	Bldg Ewing Center Floor 1 Room Health Room	< 0.4
2404117	3919226	12/03/2018 12:47 pm	12/06/2018 10:44 am	Bldg Ewing Center Flr 1 Rm Health Rm Office	< 0.4

**Comment:** Unable to acquire Rn result for result 3919286. 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: 12/08/2018    Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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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  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404118	3919227	12/03/2018 12:49 pm	12/06/2018 10:48 am	Bldg Ewing Center Floor 1 Room AB1	< 0.4
2404119	3919228	12/03/2018 12:50 pm	12/06/2018 10:50 am	Bldg Ewing Center Floor 1 Room AB2	< 0.4
2404120	3919229	12/03/2018 12:50 pm	12/06/2018 10:51 am	Bldg Ewing Center Floor 1 Room AB3	< 0.4
2404121	3919230	12/03/2018 12:50 pm	12/06/2018 10:51 am	Bldg Ewing Center Floor 1 Room AB3	Invalid
2404122	3919271	12/03/2018 12:53 pm	12/06/2018 10:52 am	Bldg Ewing Center Floor 1 Room AB4	< 0.4
2404123	3919172	12/03/2018 12:55 pm	12/06/2018 10:52 am	Bldg Ewing Center Floor 1 Room AB6	< 0.4
2404124	3919173	12/03/2018 12:55 pm	12/06/2018 10:52 am	Bldg Ewing Center Floor 1 Room AB6 Office	< 0.4
2404125	3919174	12/03/2018 1:10 pm	12/06/2018 11:05 am	Bldg Ewing Center Floor 2 Room RC7A	< 0.4
2404126	3919175	12/03/2018 1:13 pm	12/06/2018 11:05 am	Bldg Ewing Center Floor 2 Room RC10	< 0.4
2404127	3919176	12/03/2018 1:14 pm	12/06/2018 11:06 am	Bldg Ewing Center Floor 2 Room RC3	0.4
2404128	3919177	12/03/2018 1:15 pm	12/06/2018 10:53 am	Bldg Ewing Center Floor 1 Room U1	< 0.4

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Distributed by: Intertek-PSI (VA)

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Report Approved By: 

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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  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2404129	3919178	12/03/2018 1:19 pm - 12/06/2018 10:54 am	Bldg Ewing Center Floor 1 Room U8	< 0.4
2404130	3919179	12/03/2018 1:20 pm - 12/06/2018 10:55 am	Bldg Ewing Center Floor 1 Room U3	< 0.4
2404131	3919180	12/03/2018 1:20 pm - 12/06/2018 10:55 am	Bldg Ewing Center Floor 1 Room U3	< 0.4
2404132	3919241	12/03/2018 1:24 pm - 12/06/2018 10:56 am	Bldg Ewing Center Floor 1 Room U3 Office	< 0.4
2404133	3919242	12/03/2018 1:25 pm - 12/06/2018 10:57 am	Bldg Ewing Center Floor 1 Room U5	< 0.4
2404134	3919243	12/03/2018 1:26 pm - 12/06/2018 10:57 am	Bldg Ewing Center Floor 1 Room U7A	0.6
2404135	3919244	12/03/2018 1:27 pm - 12/06/2018 10:58 am	Bldg Ewing Center Floor 1 Room U6	< 0.4
2404136	3919245	12/03/2018 1:27 pm - 12/06/2018 10:58 am	Bldg Ewing Center Floor 1 Room U10	0.7
2404137	3919246	12/03/2018 1:28 pm - 12/06/2018 10:58 am	Bldg Ewing Center Floor 1 Room U10 Office	0.9
2404138	3919247	12/03/2018 1:29 pm - 12/06/2018 10:59 am	Bldg Ewing Center Floor 1 Room U12	0.6
2404139	3919248	12/03/2018 1:30 pm - 12/06/2018 10:59 am	Bldg Ewing Center Floor 1 Room U7B	< 0.4

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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  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test	Exposure	Duration:	Area Tested	Result pCi/L
2404140	3919249	12/03/2018	1:30 pm	12/06/2018 11:00 am	Bldg Ewing Center Floor 1 Room U4	< 0.4
2404141	3919250	12/03/2018	1:36 pm	12/06/2018 11:01 am	Bldg Ewing Center Floor 1 Room U4	< 0.4
2404142	3919210	12/03/2018	1:38 pm	12/06/2018 11:09 am	Bldg Ewing Center Floor Lower Level Room A14A	< 0.4
2404143	3919141	12/03/2018	1:38 pm	12/06/2018 11:19 am	Bldg Ewing Center Flr Lower Level Rm Principal	0.4
2404144	3919142	12/03/2018	1:39 pm	12/06/2018 11:19 am	Bldg Ewing Center Flr Lower Level Rm Conferenc	0.5
2404145	3919143	12/03/2018	1:40 pm	12/06/2018 11:20 am	Bldg Ewing Center Floor Lower Level Room A20	< 0.4
2404146	3919144	12/03/2018	1:40 pm	12/06/2018 11:20 am	Bldg Ewing Center Floor Lower Level Room A19	< 0.4
2404147	3919145	12/03/2018	1:43 pm	12/06/2018 11:17 am	Bldg Ewing Center Floor Lower Level Room A18	< 0.4
2404148	3919146	12/03/2018	1:43 pm	12/06/2018 11:22 am	Bldg Ewing Center Flr Lower Level Rm Conferenc	< 0.4
2404149	3919147	12/03/2018	1:44 pm	12/06/2018 11:23 am	Bldg Ewing Center Floor Lower Level Room A1	< 0.4
2404150	3919148	12/03/2018	1:44 pm	12/06/2018 11:24 am	Bldg Ewing Center Floor Lower Level Room A2	0.8

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

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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  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2404151	3919149	12/03/2018 1:44 pm - 12/06/2018 11:24 am	Bldg Ewing Center Floor Lower Level Room A2	0.5
2404152	3919150	12/03/2018 1:45 pm - 12/06/2018 11:23 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404153	3919261	12/03/2018 1:46 pm - 12/06/2018 11:23 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404154	3919262	12/03/2018 1:46 pm - 12/06/2018 11:24 am	Bldg Ewing Center Floor Lower Level	0.4
2404155	3919263	12/03/2018 1:47 pm - 12/06/2018 11:24 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404156	3919264	12/03/2018 1:48 pm - 12/06/2018 11:22 am	Bldg Ewing Center Floor Lower Level	0.5
2404157	3919265	12/03/2018 1:49 pm - 12/06/2018 11:22 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404158	3919266	12/03/2018 1:50 pm - 12/06/2018 11:14 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404159	3919268	12/03/2018 1:52 pm - 12/06/2018 11:12 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404160	3919269	12/03/2018 1:53 pm - 12/06/2018 11:18 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404161	3919270	12/03/2018 1:53 pm - 12/06/2018 11:19 am	Bldg Ewing Center Floor Lower Level	< 0.4

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Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)  
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MCPS Radon Survey  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2404162	3919211	12/03/2018 1:54 pm	12/06/2018 11:15 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404163	3919212	12/03/2018 1:55 pm	12/06/2018 11:16 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404164	3919213	12/03/2018 1:56 pm	12/06/2018 11:16 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404165	3919214	12/03/2018 1:57 pm	12/06/2018 11:19 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404166	3919215	12/03/2018 1:59 pm	12/06/2018 11:11 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404167	3919216	12/03/2018 2:02 pm	12/06/2018 11:11 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404168	3919217	12/03/2018 2:04 pm	12/06/2018 11:11 am	Bldg Ewing Center Floor Lower Level	0.4
2404169	3919218	12/03/2018 2:06 pm	12/06/2018 11:12 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404170	3919219	12/03/2018 2:07 pm	12/06/2018 11:03 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404171	3919220	12/03/2018 2:08 pm	12/06/2018 11:14 am	Bldg Ewing Center Floor Lower Level	0.7
2404172	3919111	12/03/2018 2:15 pm	12/06/2018 11:15 am	Bldg Ewing Center Floor Lower Level	0.8

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Laboratory Report for:

Property Tested: Project # 04481387-1

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


MCPS Radon Survey  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test	Exposure	Duration:	Area Tested	Result pCi/L
2404173	3919112	12/03/2018	2:15 pm	12/06/2018 11:12 am	Bldg Ewing Center Floor Lower Level	< 0.4
2404174	3923175	12/03/2018	11:27 am	12/06/2018 11:30 am	Bldg Ewing Center Floor NA Room Blank	< 0.4
2404175	3922995	12/03/2018	6:00 am	12/06/2018 11:30 am	Bldg Ewing Center Floor NA Room Blank	< 0.4
2404176	3922996	12/03/2018	6:00 am	12/06/2018 11:30 am	Bldg Ewing Center Floor NA Room Blank	< 0.4

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NELAC NY 11769  
NRPP 103216 AL  
NRSB ARL0017

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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


MCPS Radon Survey  
Ewing Center  
MD 20853 USA


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2404077	3919236	12/03/2018 11:48 am 12/06/2018 10:16 am	Bldg Ewing Center Floor 1 Room L5 Office	< 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: 12/12/2018 Date Analyzed: 12/13/2018 Date Reported: 01/02/2019

Report Reviewed By: 

Report Approved By: 

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Laboratory Report for:

Property Tested: Project # 04481387-1

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2930 Eskridge Road  
Fairfax VA 22031


MCPS Radon Survey  
Ewing Center  
Maryland 20853 USA


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2391563	3919267	12/03/2018 1:51 pm 12/06/2018 11:21 am	Bldg Ewing Center Floor Lower Level	< 0.4

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

Distributed by: Intertek-PSI (VA)

Date Received: 12/12/2018 Date Logged: 12/12/2018 Date Analyzed: 12/13/2018 Date Reported: 01/02/2019

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.

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  $\mu$ R/h Elevation = 820 ft



## Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

- |  |                                |
|--|--------------------------------|
| 1. Ewing Center                            | 13. Garrett Park ES Annex      |
| 2. Department of Food & Nutrition Services | 14. Goshen ES                  |
| 3. Damascus HS                             | 15. Kingsley Wilderness Center |
| 4. Edison HS                               | 16. Kensington Parkwood ES     |
| 5. Emory Grove Center                      | 17. Monocacy ES                |
| 6. John Poole MS                           | 18. Lakewood ES                |
| 7. Lakelands Park MS                       | 19. Little Bennett ES          |
| 8. Laytonsville ES                         | 20. Lois P. Rockwell ES        |
| 9. Gaithersburg HS                         | 21. Olney ES                   |
| 10. Neelsville MS                          | 22. North Chevy Chase ES       |
| 11. Sequoyah ES                            | 23. Woodfield ES               |
| 12. Clarksburg ES Annex                    | 24. Wootton HS                 |

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	Date	Initials
Radon Test Kits Deployed	12/03/2018	ML
Radon Test Kits Sampled	12/06/2018	ML
Radon Test Kits Shipped to Lab*	12/06/2018	ML
Radon Test Kits Received by Lab*	12/07/2018; 12/08/2018	ML

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

**RADON SCREENING SURVEY – FOLLOW-UP BLAIR G. EWING CENTER**

14501 Avery Rd., Rockville, Maryland 20853

**EXECUTIVE SUMMARY**

Date of Test Report:	3/7/18
Round of Testing:	Initial <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">Follow-up</span> Post Remediation
# Rooms Tested	21
# Rooms $\geq$ 4.0 pCi/L:	4
Low Value:	0.6
High Value:	7.1
Confirmed Rooms $\geq$ 4.0 pCi/L US EPA Action Level	6

**Summary of Sampling Events  $\geq$  4.0 pCi/L**

Room	Result (pCi/L) 2/8/18	Result (pCi/L) 3/7/18	Average Result (pCi/L)
M13	7.0	4.7	5.9
M11	6.3	4.5	5.4
L13	5.0	7.1	6.1
M9	5.0	4.0	4.5
SERVER ROOM	5.0	2.9	4.0
M16	4.5	3.7	4.1
A3	4.1	2.0	3.1
M5	4.1	3.3	3.7



**MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Blair G. Ewing Center
Date of Report	March 7, 2018
Round of Testing	Initial <b>Follow-up</b> Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	21
# Rooms $\geq 4.0$ pCi/L	4
Lowest Value	0.6 pCi/L
Highest Value	7.1 pCi/L

**Project Status**

Rooms with results  $\geq 4.0$  pCi/L:

L13 (7.1 pCi/L), M13 (4.7 pCi/L), M11 (4.5 pCi/L), M9 (4.0)

Current Project Status at this time: Retesting completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.





March 7, 2018

Mr. Richard Cox, MS  
Team Leader  
Montgomery County Public Schools  
Division of Maintenance  
Rockville, Maryland 20855

Re: Radon Testing Services

KCI Job #1214634188

**Location: Blair G. Ewing Center**

14501 Avery Rd.  
Rockville, Maryland 20853

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 Blair G. Ewing Center, located at 14501 Avery Rd. in Rockville, Maryland 20853 (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 February 6, 2018 and deployed twenty-three (23) 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.

KCI sampled the following locations during this follow-up test:

1. Rooms not successfully tested,
2. Rooms with elevated November 2017 results (i.e.  $\geq 3.5$  pCi/L).

---

A floor plan map of the building with the test locations is included as Appendix 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, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on February 9, 2018 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 NRSB 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:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

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 teens and 20s and high temperatures ranged from the mid-30s to low-40s. Maximum sustained winds ranged from 10-17 miles per hour. Average humidity was around 75%. 0.41 Inches of precipitation was recorded during the testing period.

---

## **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). 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	L13	7.1
≥4.0 pCi/L	M13	4.7
≥4.0 pCi/L	M11	4.5
≥4.0 pCi/L	M9	4.0
≤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,



Radon Measurement Specialist  
KCI Technologies, Inc.

---

Attachments:

B - Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

# 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>Table 1- Radon Testing Results</b>		
<b>Blair Ewing Center</b>		
<b>Test Period: 02/06/18-02/09/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7193869	A3	2.0
7193861	A5	0.9
7193862	A6 MACHINE SHOP	1.8
7193859	AB6	0.6
7193846	E22	1.7
7193868	KITCHEN	0.8
7193877	KITCHEN OFFICE	0.9
7193872	L13	7.1
7193851	M11	4.5
7193874	M13	4.7
7193855	M16	3.7
7193876	M17 OFFICE	1.7
7983817	M5	3.3
7193873	M9	4.0
7193860	RC10A	1.9
7193864	RC10B	1.6
7193871	RC8	1.3
7193857	SERVER ROOM	2.9
7193863	U1	2.4
7193870	U6	1.5
7193856	U7B	2.1

Table Note:

\* Missing or Compromised Sample

<b>Table 2- Radon Testing Results</b>		
<b>Blair Ewing Center</b>		
<b>Test Period: 02/06/18-02/09/18</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7983882	D (E22)	1.2
7193875	D (M17 OFFICE)	2.3

Table Note:

\* Missing or Compromised Sample



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:  
**BLAIR EWING CENTER**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7193869	A3	2018-02-06 @ 12:00 pm	2018-02-09 @ 11:00 am	2.0 ± 0.4	2018-02-12
7193861	A5	2018-02-06 @ 2:00 pm	2018-02-09 @ 10:00 am	0.9 ± 0.3	2018-02-12
7193862	A6 MACHINE SHOP	2018-02-06 @ 2:00 pm	2018-02-09 @ 10:00 am	1.8 ± 0.4	2018-02-12
7193859	AB6	2018-02-06 @ 2:00 pm	2018-02-09 @ 10:00 am	0.6 ± 0.3	2018-02-12
7983882	E22	2018-02-06 @ 2:00 pm	2018-02-09 @ 11:00 am	1.2 ± 0.3	2018-02-12
7193846	E22	2018-02-06 @ 2:00 pm	2018-02-09 @ 11:00 am	1.7 ± 0.4	2018-02-12
7193868	KITCHEN	2018-02-06 @ 3:00 pm	2018-02-09 @ 11:00 am	0.8 ± 0.3	2018-02-12
7193877	KITCHEN OFFICE	2018-02-06 @ 3:00 pm	2018-02-09 @ 11:00 am	0.9 ± 0.3	2018-02-12
7193872	L13	2018-02-06 @ 12:00 pm	2018-02-09 @ 11:00 am	7.1 ± 0.6	2018-02-12
7193851	M11	2018-02-06 @ 12:00 pm	2018-02-09 @ 11:00 am	4.5 ± 0.5	2018-02-12
7193874	M13	2018-02-06 @ 12:00 pm	2018-02-09 @ 11:00 am	4.7 ± 0.4	2018-02-12
7193855	M16	2018-02-06 @ 1:00 pm	2018-02-09 @ 11:00 am	3.7 ± 0.5	2018-02-12
7193875	M17 OFFICE	2018-02-06 @ 3:00 pm	2018-02-09 @ 10:00 am	2.3 ± 0.4	2018-02-12
7193876	M17 OFFICE	2018-02-06 @ 3:00 pm	2018-02-09 @ 10:00 am	1.7 ± 0.4	2018-02-12
7983817	M5	2018-02-06 @ 12:00 pm	2018-02-09 @ 11:00 am	3.3 ± 0.4	2018-02-12
7193873	M9	2018-02-06 @ 12:00 pm	2018-02-09 @ 11:00 am	4.0 ± 0.5	2018-02-12
7193860	RC10A	2018-02-06 @ 2:00 pm	2018-02-09 @ 11:00 am	1.9 ± 0.4	2018-02-12
7193864	RC10B	2018-02-06 @ 3:00 pm	2018-02-09 @ 11:00 am	1.6 ± 0.4	2018-02-12
7193871	RC8	2018-02-06 @ 3:00 pm	2018-02-09 @ 11:00 am	1.3 ± 0.3	2018-02-12
7193857	SERVER ROOM	2018-02-06 @ 1:00 pm	2018-02-09 @ 10:00 am	2.9 ± 0.4	2018-02-12
7193863	U1	2018-02-06 @ 3:00 pm	2018-02-09 @ 10:00 am	2.4 ± 0.4	2018-02-12
7193870	U6	2018-02-06 @ 3:00 pm	2018-02-09 @ 10:00 am	1.5 ± 0.4	2018-02-12
7193856	U7B	2018-02-06 @ 1:00 pm	2018-02-09 @ 10:00 am	2.1 ± 0.4	2018-02-12



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon

Names of Schools:

1. English Manor
2. Forest Oak Middle School
3. Robert Frost Middle
4. Damascus Elementary School
5. Quince Orchard High School
6. Blair G. Ewing Center

---

	Date	Initials
Radon Test Kits Deployed	02/06/18	JM
Radon Test Kits Collected	02/09/18	JM
Radon Test Kits Shipped to Lab*	02/09/18	JM
Radon Test Kits Received by Lab*	02/12/18	JM

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

Radon test result report for:  
**OFFICE BLANKS**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7979482	1	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986991	10	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985684	11	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986987	12	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986993	13	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986990	14	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7979485	2	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985686	3	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986995	4	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986989	5	2018-02-13 @ 1:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986998	6	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986986	7	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986985	8	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986997	9	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20

Radon test result report for:  
**TRANSIT BLANKS**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7984188	1	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7984044	10	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986582	11	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986999	12	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7987000	13	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7984196	14	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986996	2	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986994	3	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7986992	4	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985680	5	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985698	6	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985699	7	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985700	8	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20
7985872	9	2018-02-13 @ 2:00 pm	2018-02-16 @ 2:00 pm	< 0.3	2018-02-20

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February 28, 2018

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

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Radon test result report for:

**MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within  $\pm 25\%$  of the chamber's reference value (20.9 pCi/L).**

---

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7984181	1	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.7 $\pm$ 0.8	2018-02-21
7986621	2	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.4 $\pm$ 0.8	2018-02-21
7985683	3	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.5 $\pm$ 0.8	2018-02-21
7984168	4	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	20.5 $\pm$ 0.8	2018-02-21
7986618	5	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	19.9 $\pm$ 0.8	2018-02-21
7984169	6	2018-02-16 @ 11:00 am	2018-02-19 @ 11:00 am	20.4 $\pm$ 0.8	2018-02-21

---

Air Chek, Inc. 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 183530

NOMINAL Conditions: Radon Conc 20.9 pCi/L Rel. Hum 49.8 % Temp. 79.1 F

Date Start: 2/16/18 Date Stop: 2/19/18 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_  
 Time Start: 1052 Time Stop: 1052 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_  
 Device No.'s: (6) Char. Bags Device No.'s: \_\_\_\_\_  
7984181, 7986621, 7985683 \_\_\_\_\_  
7984168, 7986618, 7984169 \_\_\_\_\_  
G3 Middle

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 µR/h Elevation = 820 ft



**MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Blair G. Ewing Center
Date of Report	February 8, 2018
Round of Testing	Initial Follow-up Post Remediation <b>2 year testing</b> 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	89
# Rooms $\geq 4.0$ pCi/L	8
Lowest Value	< 0.3 pCi/L
Highest Value	7.0 pCi/L

Rooms with results  $\geq 4.0$  pCi/L:

M13 (7.0 pCi/L), M11 (6.3 pCi/L), L13 (5.0 pCi/L), M9 (5.0), SERVER ROOM (5.0), M16 (4.5), A3 (4.1), M5 (4.1)

Current Project Status at this time: Testing Completed; retesting needed for results  $\geq 4.0$  pCi/L.

Missing or compromised samples need re-test.





February 8, 2018

Mr. Richard Cox, MS  
Team Leader  
Montgomery County Public Schools  
Division of Maintenance  
Rockville, Maryland 20855

Re: Radon Testing Services

KCI Job #1214694182

**Location: Blair G. Ewing Center**

14501 Avery Rd.  
Rockville, Maryland 20853

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 Blair G. Ewing Center, located at 14501 Avery Rd. in Rockville, Maryland 20853 (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 November 28, 2017 and deployed one-hundred-four (104) 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.

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, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on December 1, 2017 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 NRSB 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:

- Post-mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

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 30s and high temperatures ranged from the low-50s to mid-60s. Maximum sustained winds ranged from 8-15 miles per hour. Average humidity was around 65%. 0.02 Inches of precipitation was recorded during the testing period.

A magnitude 4.1 earthquake was reported on Thursday, November 30 near Dover, Delaware approximately 95 miles east of Gaithersburg, Maryland. The earthquake occurred during or just after the radon testing period for this facility. In general, enhanced radon emissions have been observed prior to earthquakes and this has been recorded all over the world, according to the research article entitled *Radon-222: A Potential Short-Term Earthquake Precursor*, published June 30, 2015 in the Journal of Earth Science and Climate

Change. The nearby earthquake, which occurred during or prior to the testing period, may have resulted in higher-than-normal radon test results for this facility.

## **RESULTS**

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Appendix B). Missing/compromised tests, missed rooms, and locked rooms are listed on Table 3 (Appendix 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	M13	7.0
≥4.0 pCi/L	M11	6.3
≥4.0 pCi/L	L13	5.0
≥4.0 pCi/L	M9	5.0
≥4.0 pCi/L	SERVER ROOM	5.0
≥4.0 pCi/L	M16	4.5
≥4.0 pCi/L	A3	4.1
≥4.0 pCi/L	M5	4.1
≤4.0 pCi/L	See Attachment B	See Attachment B

<b>Quality Control Samples</b>	
Results of Blank Canisters:	The field blanks, 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,

A handwritten signature in blue ink that reads "James Mouldale". The signature is written in a cursive style with a large initial "J" and "M".

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

**Attachments:**

B - Tables 1-3, Radon Test Summary Spreadsheets

C - Laboratory Analytical Results

# 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>Blair Ewing Center</b>		
<b>Test Period: 11/28/17-12/01/17</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7977113	A1	2.4
7977122	A10	2.0
7977108	A11	2.1
7977112	A13	1.8
7977117	A14	1.6
7977145	A16	1.6
7977127	A17	1.1
7977139	A17A	1.6
7977106	A17B	1.9
7977107	A18	1.8
7977124	A19	1.8
7977104	A2	3.1
7977123	A20	1.5
7977110	A3	4.1
7977103	A4	3.1
7977102	A5	3.1
7977109	A6	2.3
7977101	A7	2.5
7978223	AB1	2.5
7978211	AB2	3.6
7978210	AB3	2.4
7978212	AB4	2.3
7977111	COMM CONF RM	0.7
7977128	CONF A1	1.6
7977180	CONF C	1.5
7978240	D27	2.5
7977142	D35	1.5
7978244	D7	3.8
7977121	DINNING1	1.3
7978216	DINNING2	1.6
7977156	E10	1.1
7977140	E2	1.3
7977149	* E22 (Missing)	-
7977137	E31	1.4
7977135	E39	1.7
7978208	GYM	1.0
7978225	HEALTH ROOM	2.0
7977105	KIT OFFICE	1.9
7977134	L10	1.7
7977133	L11	1.6
7977148	L12	1.4
7977152	L13	5.0
7977153	L14	1.9
7977132	L15	1.6
7977155	L16	3.6
7977154	L16 OFFICE	3.1

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Blair Ewing Center</b>		
<b>Test Period: 11/28/17-12/01/17</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7977150	L17A	1.4
7977151	L17B	1.4
7977136	L3	1.3
7977120	L4	1.4
7977158	L5	1.0
7977116	L6	1.6
7977119	L8	2.2
7977157	L9	1.1
7977159	M10	1.8
7978251	M11	6.3
7977175	M12	2.3
7978233	M13	7.0
7978241	M14	3.9
7978242	M15	1.5
7978247	M16	4.5
7978236	M17	2.9
7977130	M2	2.7
7978231	M3	3.6
7978243	M5	4.1
7977141	M6	3.7
7978234	M7	3.8
7977143	M8	2.5
7978245	M9	5.0
7978253	NURSE OFFICE	1.8
7977126	P1	1.0
7978207	PE OFFICE1	1.1
7978254	RC1	2.2
7978217	RC13	1.1
7978230	RC2	1.9
7978224	RC3	1.3
7978204	RC6	1.3
7978218	RC7	1.4
7978252	SERVER ROOM	5.0
7977114	STAFF LOUNGE	1.6
7977138	SWITCHBOARD	2.2
7978248	U10	2.2
7978232	U12	1.6
7978222	U3	1.7
7978255	U4	1.7
7978237	U5	1.9
7978221	U7A	3.4
7978256	* U7B (Tampered)	2.1
7978229	U8	1.9

Table Note:

\* Missing or Compromised Sample



<b>Radon Testing Results</b>		
<b>Blair Ewing Center</b>		
<b>Test Period: 11/28/17-12/01/17</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7977147	D (A16)	1.7
7977125	D (CONF A1)	1.9
7978209	D (GYM)	< 0.3
7977131	D (L15)	1.2
7977146	D (L16)	3.0
7977115	D (L4)	1.7
7977129	D (M12)	2.0
7978235	D (M7)	3.5
7978258	D (RC6)	1.0
7978228	D (U8)	2.2
7978205	FB (GYM)	< 0.3
7977118	FB (L4)	< 0.3
7978257	FB (M12)	< 0.3
7978072	OB (OB)	< 0.3
7978073	OB (OB)	< 0.3

Table Note:

\* Missing or Compromised Sample



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:  
**BLAIR EWING CENTER**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7977113	A1	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	2.4 ± 0.4	2017-12-05
7977122	A10	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	2.0 ± 0.3	2017-12-04
7977108	A11	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	2.1 ± 0.3	2017-12-04
7977112	A13	2017-11-28 @ 1:00 pm	2017-12-01 @ 8:00 am	1.8 ± 0.3	2017-12-05
7977117	A14	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.6 ± 0.3	2017-12-04
7977145	A16	2017-11-28 @ 1:00 pm	2017-12-01 @ 10:00 am	1.6 ± 0.3	2017-12-04
7977147	A16	2017-11-28 @ 1:00 pm	2017-12-01 @ 8:00 am	1.7 ± 0.3	2017-12-05
7977127	A17	2017-11-28 @ 1:00 pm	2017-12-01 @ 8:00 am	1.1 ± 0.3	2017-12-05
7977139	A17A	2017-11-28 @ 1:00 pm	2017-12-01 @ 8:00 am	1.6 ± 0.3	2017-12-04
7977106	A17B	2017-11-28 @ 8:00 am	2017-12-01 @ 8:00 am	1.9 ± 0.3	2017-12-05
7977107	A18	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	1.8 ± 0.3	2017-12-05
7977124	A19	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	1.8 ± 0.3	2017-12-04
7977104	A2	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	3.1 ± 0.4	2017-12-04
7977123	A20	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	1.5 ± 0.3	2017-12-04
7977110	A3	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	4.1 ± 0.4	2017-12-05
7977103	A4	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	3.1 ± 0.4	2017-12-04
7977102	A5	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	3.1 ± 0.4	2017-12-05
7977109	A6	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	2.3 ± 0.3	2017-12-05
7977101	A7	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	2.5 ± 0.3	2017-12-04
7978223	AB1	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	2.5 ± 0.4	2017-12-05
7978211	AB2	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	3.6 ± 0.4	2017-12-04
7978210	AB3	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	2.4 ± 0.3	2017-12-04
7978212	AB4	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	2.3 ± 0.3	2017-12-04
7977111	COMM CONF RM	2017-11-28 @ 2:00 pm	2017-12-01 @ 8:00 am	0.7 ± 0.3	2017-12-04
7977128	CONF A1	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	1.6 ± 0.3	2017-12-04
7977125	CONF A1	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	1.9 ± 0.3	2017-12-04
7977180	CONF C	2017-11-28 @ 1:00 pm	2017-12-01 @ 8:00 am	1.5 ± 0.3	2017-12-05
7978240	D27	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	2.5 ± 0.4	2017-12-04
7977142	D35	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	1.5 ± 0.3	2017-12-04
7978244	D7	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	3.8 ± 0.4	2017-12-05
7977121	DINNING1	2017-11-28 @ 2:00 pm	2017-12-01 @ 8:00 am	1.3 ± 0.3	2017-12-04
7978216	DINNING2	2017-11-28 @ 7:00 pm	2017-12-01 @ 8:00 am	1.6 ± 0.4	2017-12-05
7977156	E10	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	1.1 ± 0.3	2017-12-05
7977140	E2	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	1.3 ± 0.3	2017-12-04
7977137	E31	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	1.4 ± 0.3	2017-12-05
7977135	E39	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	1.7 ± 0.3	2017-12-04
7978205	GYM	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	< 0.3	2017-12-05

Radon test result report for:  
**BLAIR EWING CENTER**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7978208	GYM	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	1.0 ± 0.3	2017-12-05
7978209	GYM	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	< 0.3	2017-12-05
7978225	HEALTH ROOM	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	2.0 ± 0.4	2017-12-05
7977105	KIT OFFICE	2017-11-28 @ 1:00 pm	2017-12-01 @ 8:00 am	1.9 ± 0.3	2017-12-04
7977134	L10	2017-11-28 @ 9:00 am	2017-12-01 @ 9:00 am	1.7 ± 0.3	2017-12-05
7977133	L11	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	1.6 ± 0.3	2017-12-04
7977148	L12	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	1.4 ± 0.3	2017-12-04
7977152	L13	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	5.0 ± 0.4	2017-12-05
7977153	L14	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	1.9 ± 0.3	2017-12-05
7977132	L15	2017-11-28 @ 9:00 am	2017-12-01 @ 9:00 am	1.6 ± 0.3	2017-12-04
7977131	L15	2017-11-28 @ 9:00 am	2017-12-01 @ 9:00 am	1.2 ± 0.3	2017-12-05
7977155	L16	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	3.6 ± 0.4	2017-12-04
7977146	L16	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	3.0 ± 0.4	2017-12-05
7977154	L16 OFFICE	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	3.1 ± 0.4	2017-12-04
7977150	L17A	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	1.4 ± 0.3	2017-12-05
7977151	L17B	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	1.4 ± 0.3	2017-12-05
7977136	L3	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	1.3 ± 0.3	2017-12-05
7977115	L4	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	1.7 ± 0.3	2017-12-04
7977118	L4	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	< 0.3	2017-12-04
7977120	L4	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	1.4 ± 0.3	2017-12-05
7977158	L5	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	1.0 ± 0.3	2017-12-05
7977116	L6	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	1.6 ± 0.3	2017-12-04
7977119	L8	2017-11-28 @ 2:00 pm	2017-12-01 @ 9:00 am	2.2 ± 0.3	2017-12-04
7977157	L9	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	1.1 ± 0.3	2017-12-05
7977159	M10	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	1.8 ± 0.3	2017-12-05
7978251	M11	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	6.3 ± 0.5	2017-12-04
7977175	M12	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	2.3 ± 0.3	2017-12-04
7978257	M12	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	< 0.3	2017-12-05
7977129	M12	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	2.0 ± 0.3	2017-12-05
7978233	M13	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	7.0 ± 0.5	2017-12-05
7978241	M14	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	3.9 ± 0.4	2017-12-04
7978242	M15	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	1.5 ± 0.3	2017-12-04
7978247	M16	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	4.5 ± 0.4	2017-12-04
7978236	M17	2017-11-28 @ 5:00 pm	2017-12-01 @ 9:00 am	2.9 ± 0.4	2017-12-05
7977130	M2	2017-11-28 @ 9:00 am	2017-12-01 @ 9:00 am	2.7 ± 0.3	2017-12-04
7978231	M3	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	3.6 ± 0.4	2017-12-05
7978243	M5	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	4.1 ± 0.4	2017-12-04

Radon test result report for:  
**BLAIR EWING CENTER**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7977141	M6	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	3.7 ± 0.4	2017-12-04
7978234	M7	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	3.8 ± 0.4	2017-12-05
7978235	M7	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	3.5 ± 0.4	2017-12-05
7977143	M8	2017-11-28 @ 3:00 pm	2017-12-01 @ 9:00 am	2.5 ± 0.4	2017-12-05
7978245	M9	2017-11-28 @ 4:00 pm	2017-12-01 @ 9:00 am	5.0 ± 0.4	2017-12-04
7978253	NURSE OFFICE	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	1.8 ± 0.3	2017-12-04
7978072	OB	2017-11-28 @ 1:00 pm	2017-12-01 @ 1:00 pm	< 0.3	2017-12-05
7978073	OB	2017-11-28 @ 1:00 pm	2017-12-01 @ 1:00 pm	< 0.3	2017-12-05
7977126	P1	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	1.0 ± 0.3	2017-12-05
7978207	PE OFFICE1	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	1.1 ± 0.3	2017-12-05
7978254	RC1	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	2.2 ± 0.4	2017-12-04
7978217	RC13	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	1.1 ± 0.3	2017-12-04
7978230	RC2	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	1.9 ± 0.4	2017-12-04
7978224	RC3	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	1.3 ± 0.3	2017-12-04
7978258	RC6	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	1.0 ± 0.3	2017-12-04
7978204	RC6	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	1.3 ± 0.3	2017-12-04
7978218	RC7	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	1.4 ± 0.3	2017-12-04
7978252	SERVER ROOM	2017-11-28 @ 6:00 pm	2017-12-01 @ 10:00 am	5.0 ± 0.4	2017-12-04
7977114	STAFF LOUNGE	2017-11-28 @ 1:00 pm	2017-12-01 @ 8:00 am	1.6 ± 0.3	2017-12-04
7977138	SWITCHBOARD	2017-11-28 @ 12:00 pm	2017-12-01 @ 8:00 am	2.2 ± 0.3	2017-12-04
7978248	U10	2017-11-28 @ 10:00 am	2017-12-01 @ 10:00 am	2.2 ± 0.3	2017-12-04
7978232	U12	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	1.6 ± 0.3	2017-12-04
7978222	U3	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	1.7 ± 0.3	2017-12-04
7978255	U4	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	1.7 ± 0.4	2017-12-05
7978237	U5	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	1.9 ± 0.4	2017-12-05
7978221	U7A	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	3.4 ± 0.4	2017-12-05
7978256	U7B	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	2.1 ± 0.3	2017-12-04
7978229	U8	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	1.9 ± 0.3	2017-12-04
7978228	U8	2017-11-28 @ 5:00 pm	2017-12-01 @ 10:00 am	2.2 ± 0.3	2017-12-05

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December 21, 2017

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

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Radon test result report for:  
**BLAIR EWING 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>
7977149	E22	@	@		

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Air Chek, Inc. 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 Phase

Names of Schools:

1. Chevy Chase Elementary School
2. Greencastle Elementary School
3. English Manor
4. Rock View Elementary School
5. Wheaton Woods Elementary School
6. Sequoyah Elementary School
7. Fallsmead Elementary School
8. Beall Elementary School
9. Stephen Knolls School
10. Maryvale Elementary School
11. Redland Middle School
12. Walt Whitman High School
13. Springbrook High School
14. Blair G. Ewing Center
15. Viers Mill Elementary School
16. Albert Einstein High School
17. Wayside Elementary School
18. Thomas S. Wootton High School
19. Highland Elementary School
20. Bethesda Transportation Depot
21. Bethesda Maintenance Depot
22. Travilah Elementary School
23. Lathrop E. Smith Center

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	Date	Initials
Radon Test Kits Deployed	11/28/17	JM
Radon Test Kits Collected	12/01/17	JM
Radon Test Kits Shipped to Lab*	12/01/17	JM
Radon Test Kits Received by Lab*	12/05/17	JM

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



Radon test result report for:**TRANSIT 1****NONE**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7978062	TRANSIT 1	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975804	TRANSIT 10	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7977990	TRANSIT 11	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978201	TRANSIT 12	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978203	TRANSIT 13	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978206	TRANSIT 14	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978246	TRANSIT 15	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978239	TRANSIT 16	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978226	TRANSIT 17	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7975078	TRANSIT 18	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7975077	TRANSIT 19	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978074	TRANSIT 2	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975076	TRANSIT 20	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975684	TRANSIT 21	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975683	TRANSIT 22	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975601	TRANSIT 23	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978011	TRANSIT 24	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978012	TRANSIT 25	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978094	TRANSIT 26	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7975624	TRANSIT 27	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7834562	TRANSIT 28	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7977995	TRANSIT 29	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978098	TRANSIT 3	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7977992	TRANSIT 30	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978719	TRANSIT 4	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-05
7978732	TRANSIT 5	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7978731	TRANSIT 6	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975806	TRANSIT 7	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975815	TRANSIT 8	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04
7975805	TRANSIT 9	2017-11-27 @ 4:00 pm	2017-11-30 @ 4:00 pm	< 0.3	2017-12-04

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December 19, 2017

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

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Radon test result report for:

**MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within  $\pm 25\%$  of the chamber's reference value (27.7 pCi/L).**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7975075	S1	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	25.6 $\pm$ 0.7	2017-12-07
7975064	S2	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	27.4 $\pm$ 0.8	2017-12-07
7975063	S3	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	26.3 $\pm$ 0.7	2017-12-07
7975065	S4	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	23.0 $\pm$ 0.7	2017-12-07
7975069	S5	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	25.6 $\pm$ 0.7	2017-12-07
7975070	S6	2017-12-01 @ 11:00 am	2017-12-04 @ 11:00 am	23.0 $\pm$ 0.7	2017-12-07

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Air Chek, Inc. 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 182393

NOMINAL Conditions: Radon Conc 27.7 pCi/L Rel. Hum 49.1 % Temp. 70.1 F

Date Start: 12/1/17 Date Stop: 12/4/17 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 1049 Time Stop: 1049 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

7975075, 7975064, 7975063, \_\_\_\_\_

7975065, 7975069, 7975070 \_\_\_\_\_

F4 Right

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



## MCPS RADON TESTING

### Executive Summary: Blair G. Ewing Center

Date of Test Report:	11/28/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	2
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	1.3
High Value:	1.5

### Project Status:

Post remediation testing completed; No further action at this time.



November 28, 2016

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

Re: **Radon Testing Services**  
KCI Job # 12146341.60

Location: Blair G. Ewing Center  
14501 Avery Road  
Rockville, MD 20853

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 Blair G. Ewing Center, located at 14501 Avery Road in Rockville, Maryland 20853 (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 November 15, 2016 and deployed two (2) 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 three (3) 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 November 18, 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:**

These tests represent:

- Post-mitigation testing for radon mitigation systems installed recently

These tests were conducted to:

- Confirm the success of the mitigation system(s)

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 30s and high temperatures ranged from 60-70. Maximum sustained winds ranged from 8-14 miles per hour. Average humidity was around 65%. No precipitation was recorded during the testing period.

**Results:**

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	

Notes:

D- Duplicate sample

The office blank and lab transit blank 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

<b>Radon Testing Results</b>		
<b>Blair G Ewing Center</b>		
<b>Test Period: 11/15/16-11/18/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7826514	BOYS LOCKER	1.3
7826513	GYM OFFICE	1.5

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

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November 22, 2016

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

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Radon test result report for:  
**EWING 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>
7826514	BOYS LOCKER	2016-11-15 @ 10:00 am	2016-11-18 @ 10:00 am	1.3 ± 0.3	2016-11-21
7826513	GYM OFFICE	2016-11-15 @ 10:00 am	2016-11-18 @ 10:00 am	1.5 ± 0.3	2016-11-21

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

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November 22, 2016

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

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Radon test result report for:

**MCPS Radon**

**Phase 19 BLANKS**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7802909	OFFICE	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	< 0.3	2016-11-16
7802910	TRANSIT	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	< 0.3	2016-11-16

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

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November 22, 2016

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

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Radon test result report for:  
**MCPS Radon  
Spike Sample Results**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7802912	1	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	23.5 ± 0.8	2016-11-16
7802913	2	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	23.0 ± 0.8	2016-11-16
7802911	3	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	25.6 ± 0.9	2016-11-16

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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 KCI Technologies Inc. Job Number 177376

NOMINAL Conditions: Radon Conc 26.3 pCi/L Rel. Hum 59.1 % Temp. 29.0 F

Date Start: 11/11/16 Date Stop: 11/14/16 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0958 Time Stop: 0958 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (3) Char. Bags - Device No.'s: \_\_\_\_\_

7802911 thro 7802913

GS Middle

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**



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 19

Names of Schools:

1. Wood Acres Elementary School
2. Walt Whitman High School
3. East Silver Spring Elementary School

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	Date	Initials
Radon Test Kits Deployed	11/14/16	JM
Radon Test Kits Collected	11/17/16	JM
Radon Test Kits Shipped to Lab*	11/18/16	JM
Radon Test Kits Received by Lab*	11/21/16	JM

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





## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 19

Names of Schools:

1. Montgomery Blair High School
2. Springbrook High School
3. Sligo Middle School
4. Einstein High School
5. John F. Kennedy High School
6. Blair Ewing Center
7. Rock Terrace School
8. Thomas Wootton High School
9. Fields Road Elementary School

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	Date	Initials
Radon Test Kits Deployed	11/15/16	JM
Radon Test Kits Collected	11/18/16	JM
Radon Test Kits Shipped to Lab*	11/18/16	JM
Radon Test Kits Received by Lab*	11/21/16	JM

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



### MCPS RADON TESTING

Executive Summary: Blair G. Ewing Center

Date of Test Report:	10/19/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	2
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	1.1
High Value:	12.4

Rooms with results  $\geq$  4.0 pCi/L:  
Gym Office (12.4 pCi/L)

**Project Status:**

Post remediation testing completed; Gym Office requires additional remedial action.



October 19, 2016

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

Re: **Radon Testing Services**  
KCI Job # 12146341.54

Location: Blair G. Ewing Center  
14501 Avery Road  
Rockville, MD 20853

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 Blair G. Ewing Center, located at 14501 Avery Road in Rockville, Maryland 20853 (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 September 26, 2016 and deployed four (4) 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 September 29, 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:**

These tests represent:

- Post-mitigation testing for radon mitigation systems installed recently

To expedite the testing, tests were conducted in September as soon as students and staff returned to:

- Confirm the success of the mitigation system(s)

Future periodic testing should be conducted during the heating season in ideal conditions as described below. 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 cooling mode; therefore, KCI concludes that this test was not 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 50s and high temperatures in the mid-60s to mid-70s. Maximum sustained winds ranged from 3-15 miles per hour. Average humidity ranged from 71 to 89 percent. Rain (1.83 inches in Gaithersburg, MD) was recorded on 9/29/16. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

**Results:**

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
≥4.0 pCi/L	Gym Office	12.4
<4.0 pCi/L	See Attachment B	

Notes:

D- Duplicate sample

The field blank, office blanks, 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

<b>Radon Testing Results</b>		
<b>Blair G Ewing Center</b>		
<b>Test Period: 09/27/16-09/30/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7802577	GYM OFFICE	12.4
7802576	HEALTH ROOM	1.1

Table Note:

\* Missing or Compromised Sample



<b>Radon Testing Results</b>		
<b>Blair G Ewing Center</b>		
<b>Test Period: 09/27/16-09/30/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7802585	D (HEALTH ROOM)	1.3
7802578	FB (GYM OFFICE)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

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October 7, 2016

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

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Radon test result report for:

**BLAIR G EWING 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>
7802577	GYM OFFICE	2016-09-27 @ 11:00 am	2016-09-30 @ 9:00 am	12.4 ± 0.5	2016-10-03
7802578	GYM OFFICE	2016-09-27 @ 11:00 am	2016-09-30 @ 9:00 am	< 0.3	2016-10-03
7802576	HEALTH ROOM	2016-09-27 @ 11:00 am	2016-09-30 @ 9:00 am	1.1 ± 0.2	2016-10-03
7802585	HEALTH ROOM	2016-09-27 @ 11:00 am	2016-09-30 @ 9:00 am	1.3 ± 0.3	2016-10-03

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

October 7, 2016

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

Radon test result report for:

**MCPS Radon**

**Phase 18 Office Blanks**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7802697	1	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7801899	10	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802932	11	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802935	12	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802915	13	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802941	2	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802942	3	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802919	4	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802918	5	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802917	6	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802916	7	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802952	8	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802928	9	2016-09-26 @ 11:00 am	2016-09-29 @ 11:00 am	< 0.3	2016-10-03

Radon test result report for:**MCPS Radon****Phase 18 Transit Blanks**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7714274	1	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802962	10	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714295	11	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714299	12	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714273	13	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714270	14	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802965	2	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802696	3	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802690	4	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714275	5	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7714298	6	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802990	7	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802974	8	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03
7802694	9	2016-09-26 @ 10:00 am	2016-09-29 @ 10:00 am	< 0.3	2016-10-03

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October 12, 2016

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

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Radon test result report for:  
**MCPS Radon  
Spike Sample Results**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7769880	101	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	22.9 ± 1.0	2016-09-28
7769884	102	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	22.4 ± 1.0	2016-09-28
7769885	103	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	23.0 ± 1.0	2016-09-28
7769890	104	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	22.3 ± 1.0	2016-09-28
7769891	105	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	26.8 ± 1.2	2016-09-28
7769899	106	2016-09-24 @ 8:00 am	2016-09-26 @ 8:00 am	24.1 ± 1.1	2016-09-28

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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 KCI Technologies Inc. Job Number 176788

NOMINAL Conditions: Radon Conc 26.1 pCi/L Rel. Hum 49.6 % Temp. 70.0 F

Date Start: 9/24/16 Date Stop: 9/26/16 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0758 Time Stop: 0758 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

7769899, 7769884, 7769885, \_\_\_\_\_

7769889, 7769890, 7769891 \_\_\_\_\_

F3 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**



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

1. Wood Acres Elementary School
2. Walt Whitman High School
3. Burning Tree Elementary School
4. Ashburton Elementary School
5. Bethesda Maintenance
6. Bethesda Transportation
7. Herbert Hoover Middle School
8. Cold Spring Elementary School
9. Garret Park Elementary School
10. Rock View Elementary School
11. Francis Scott Key Middle School
12. Montgomery Blair High School
13. Stephen Knolls School
14. Lourie Center
15. Shriver Elementary School
16. Viers Mill Elementary School
17. Highland Elementary School
18. Newport Middle School
19. Albert Einstein High School
20. Sligo Middle School
21. East Silver Spring Elementary School
22. Oak View Elementary School
23. Roscoe Nix Elementary School
24. Northwood High School
25. Springbrook High School
26. John F. Kennedy High School

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	Date	Initials
Radon Test Kits Deployed	9/26/16	JM
Radon Test Kits Collected	9/29/16	JM
Radon Test Kits Shipped to Lab*	9/30/16	JM
Radon Test Kits Received by Lab*	10/03/16	JM

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





## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

1. Damascus High School
2. Cedar Grove Elementary School
3. Hallie Wells Middle School
4. Clarksburg Elementary School
5. Clarksburg High School
6. Woodlin Elementary School
7. Flora Singer Elementary School
8. Spring Mill Center
9. Dr. Charles Drew Elementary School
10. William Farquah Middle School
11. Rosa Parks Middle School
12. Blair Ewing Center
13. Lathrop Smith Environmental Center
14. Sequoyah Elementary School
15. Shady Grove Middle School
16. Captain James Daly Elementary School
17. Watkins Mills High School
18. Forest Oak Middle School
19. Gaithersburg Middle School
20. Emory Grove
21. Fields Road Elementary School
22. Beall Elementary School
23. Julius West Middle School
24. Thomas Wootton High School
25. Robert Frost High School
26. Travilah Elementary School
27. Jones Lane Elementary School
28. Longview School
29. Rock Terrace High School
30. Germantown Elementary School
31. Lake Seneca Elementary School

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	Date	Initials
Radon Test Kits Deployed	9/27/16	JM
Radon Test Kits Collected	9/30/16	JM
Radon Test Kits Shipped to Lab*	9/30/16	JM
Radon Test Kits Received by Lab*	10/03/16	JM

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

# RADON SCREENING SURVEY – FOLLOW-UP BLAIR G. EWING CENTER

14501 Avery Rd, Rockville, Maryland 20853

## EXECUTIVE SUMMARY

Date of Test Report:	3/3/16
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	3
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	0.9
High Value:	12.1
Confirmed Rooms $\geq$ 4.0 pCi/L US EPA Action Level	1

### Summary of Sampling Events $\geq$ 4.0 pCi/L

Room	Result (pCi/L) 2/23/16	Result (pCi/L) 3/3/16	Average Result (pCi/L)
Gym Office	9.8	12.1	11.0
Health Room	4.8	2.2	3.5
L8	1.2 (tampered)	0.9	1.1



### MCPS RADON TESTING

Executive Summary: Blair G. Ewing Center

Date of Test Report:	3/3/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	3
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	0.9
High Value:	12.1

Rooms with results  $\geq$  4.0 pCi/L:  
Gym Office (12.1 pCi/L)

Project Status:

Retesting completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.



March 3, 2016

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

Re: **Radon Testing Services**  
KCI Job # 12146341.28

Location: Blair G. Ewing Center  
14501 Avery Road  
Rockville, MD 20853

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 Blair G. Ewing Center, located at 14501 Avery Road in Rockville, Maryland 20853 (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 February 8, 2016 and deployed five (5) 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 February 11, 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	Gym Office	12.1
$< 4.0$ pCi/L	See Attachment B	

Notes:  
D- Duplicate sample

All field blanks, office blanks, 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

\*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 8 testing. Office blanks were not submitted under each school individually.

<b>Radon Testing Results</b>		
<b>Blair G Ewing Center</b>		
<b>Test Period: 02/08/16-02/11/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7730193	GYM OFFICE	12.1
7730190	HEALTH ROOM	2.2
7730189	L8	0.9

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Blair G Ewing Center</b>		
<b>Test Period: 02/08/16-02/11/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7730191	D (HEALTH ROOM)	1.9
7730192	FB (HEALTH ROOM)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

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February  
25,  
2016

**LABORATORY ANALYSIS  
REPORT \*\***

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Radon test result report for:

**BLAIR G EWING 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>
7730193	GYM OFFICE	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	12.1 ± 0.8	2016-02-15
7730190	HEALTH ROOM	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	2.2 ± 0.4	2016-02-15
7730191	HEALTH ROOM	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	1.9 ± 0.4	2016-02-15
7730192	HEALTH ROOM	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	< 0.3	2016-02-15
7730189	L8	2016-02-08 @ 2:00 pm	2016-02-11 @ 11:00 am	0.9 ± 0.3	2016-02-15

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

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February 25, 2016 **\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

**MCPS RADON  
PHASE 8  
OFFICE BLANKS**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7729754	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15
7729757	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15
7729758	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15

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February 23, 2016  
**LABORATORY ANALYSIS REPORT**

Radon test result report for:  
**TRANSIT- PHASE 7, 8, 9**  
**NONE**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7734937	1	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734946	10	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734955	11	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734956	12	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734959	13	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734930	14	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734953	15	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734954	16	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734940	17	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734949	18	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734948	19	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734939	2	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734942	20	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734929	21	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734933	22	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734934	23	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734936	24	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734943	25	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734944	26	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734935	27	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734928	28	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734952	29	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734947	3	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734931	30	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734932	31	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718520	32	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718523	33	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718522	34	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718521	35	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734945	4	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734960	5	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734958	6	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734951	7	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734957	8	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734938	9	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23

February  
15,  
2016

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

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
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



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 8

Name of Schools:

- |                          |                          |
|--------------------------|--------------------------|
| 1. Blair G. Ewing Center | 12. Jackson Road ES      |
| 2. Cedar Grove ES        | 13. Jones Lane ES        |
| 3. Clarksburg ES         | 14. Lake Seneca ES       |
| 4. Cloverly ES           | 15. Laytonsville ES      |
| 5. Cold Spring ES        | 16. Montgomery Knolls ES |
| 6. Damascus ES           | 17. North Chevy Chase ES |
| 7. Dufief ES             | 18. Oakview ES           |
| 8. East Silver Spring    | 19. Randolph Maint       |
| 9. Georgian Forest ES    | 20. Robert Frost MS      |
| 10. Germantown ES        | 21. Shady Grove Maint    |
| 11. Glenallen ES         | 22. Viers Mill ES        |

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	Date	Initials
Radon Test Kits Deployed	2/8/16	JM
Radon Test Kits Collected	2/11/16	JM
Radon Test Kits Shipped to Lab*	12/11/16	JM
Radon Test Kits Received by Lab*	12/15/16	JM

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



### MCPS RADON TESTING

Executive Summary: Blair G. Ewing Center

Date of Test Report:	2/23/2016 (Rev 2)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	94
# Rooms $\geq$ 4.0 pCi/L:	2
Low Value:	< 0.3
High Value:	9.8

Rooms with results  $\geq$  4.0 pCi/L:  
Gym office (9.8 pCi/L), Health Room (4.8 pCi/L)

Project Status:

Initial testing completed; re-test needed for results  $\geq$  4.0 pCi/L.  
Initial testing completed; missing or compromised samples need re-test.



February 23, 2016 (Rev 2)

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

Re: **Radon Testing Services**  
KCI Job # 12146341.20

Location: Blair G. Ewing Center  
14501 Avery Road  
Rockville, MD 20853

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 Blair G. Ewing Center, located at 14501 Avery Road in Rockville, Maryland 20853 (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 December 21, 2015 and deployed one hundred-twelve (112) 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 December 24, 2015 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>
<b><math>\geq 4.0</math> pCi/L</b>	Gym Office	9.8
	Health Room	4.8
<b><math>&lt; 4.0</math> pCi/L</b>	See Attachment B	

Notes:  
D- Duplicate sample

All field blanks, office blanks, 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

B- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

<b>Radon Testing Results</b>		
<b>Blair G. Ewing Center</b>		
<b>Test Period: 12/21/15-12/24/15</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7707095	A1	1.1
7707038	A10	2.0
7707041	A11	2.0
7707078	A14	1.3
7707075	A14A	0.9
7707089	A15	1.4
7707082	A16	1.0
7707046	A17	1.4
7707045	A17A	2.5
7707049	A17B	1.5
7707036	A19	0.9
7707085	A3	2.2
7707081	A4	1.0
7707064	A5	1.9
7707065	A6	1.4
7707043	A7	1.1
7707051	AB1	2.1
7707057	AB2	1.7
7707050	AB3	2.7
7707025	AB4	0.9
7707077	AB5 OFFICE	0.8
7707040	AB6	1.3
7707090	COMM. CONF RM	< 0.3
7707048	CONFERENCE RM A	0.7
7707087	CONFERENCE RM C	0.8
7707021	COUNSELOR OFFICE	2.5
7707091	FRONT DESK	1.1
7707020	GYM	< 0.3
7707059	GYM	0.8
7707062	GYM OFFICE	9.8
7707060	HEALTH RM	4.8
7707073	HEALTH RM OFFICE	1.4
7707010	L10	0.9
7707108	L11	0.8
7707009	L12	0.9
7707004	L12 OFFICE	0.9
7707098	L13	2.6
7707003	L14	1.4
7707096	L15	0.9
7707001	L16	1.6
7707083	L16 CONFER. RM	1.8
7707107	L17	1.0
7707086	L17 OFFICE	1.2
7707101	L3	0.9
7707076	L4	0.8
7707092	L5	1.0

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Blair G. Ewing Center</b>		
<b>Test Period: 12/21/15-12/24/15</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7707102	L7	0.6
7707111	L7 OFFICE	0.7
7707006	* L8 (tampered)	1.2
7707066	L8 OFFICE	1.7
7707099	L9	1.2
7707053	M10	0.8
7707072	M11	1.7
7707011	M11 OFFICE	0.8
7707007	M12	3.3
7707014	M12 OFFICE	1.5
7707069	M13	1.4
7707054	M14	1.1
7707015	M15	0.8
7707018	M16	1.5
7707042	M17	0.9
7707047	M17 OFFICE	0.9
7707008	M2	0.9
7707074	M3	1.4
7707037	M4	1.1
7707071	M5	1.0
7707013	M5 OFFICE	0.6
7707058	M6	0.8
7707084	M7	1.8
7707019	M8	0.8
7707063	M8 TEACHER RM	1.0
7707005	M9	1.5
7707080	MPR	1.3
7707070	PRINCIPAL OFFICE	0.6
7707105	RC1	0.7
7707056	RC10	1.5
7707112	RC2	0.5
7707109	RC3	0.6
7707110	RC-6	< 0.3
7707106	RC7	< 0.3
7707088	RC8	< 0.3
7707022	SERVER ROOM	3.4
7707031	SM DINNING RM	< 0.3
7707035	STAFF LOUNGE	0.7
7707027	U1	0.9
7707052	U10	2.1
7707030	U10 OFFICE	0.7
7707034	U12	1.3
7707093	U3	2.1
7707033	U3 OFFICE	2.0
7707079	U4	1.8
7707028	U5	2.6
7707067	U6	1.7
7707024	U7A	1.4
7707029	U7B	0.7

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Blair G. Ewing Center</b>		
<b>Test Period: 12/21/15-12/24/15</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7707039	D (A19)	0.8
7707055	D (A7)	0.7
7707023	D (AB3)	2.9
7707002	D (L12 OFFICE)	1.2
7707103	D (L17)	1.0
7707097	D (L9)	1.2
7707012	D (M14)	1.3
7707016	D (M4)	1.1
7707017	D (M8)	0.9
7707061	D (U10 OFFICE)	0.9
7707026	D (U3)	2.4
7707044	FB (A7)	< 0.3
7707104	FB (L17)	< 0.3
7707068	FB (M6)	< 0.3
7707032	FB (U3)	< 0.3
7710502	OB (0)	< 0.3
7710508	OB (0)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

January 12, 2016 **LABORATORY ANALYSIS REPORT \*\***

Radon test result report for:  
**BLAIR G. EWING CENTER  
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707022	Server Room	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	3.4 ± 0.4	2015-12-28
7710502	0	2015-12-21 @ 6:00 pm	2015-12-24 @ 2:00 pm	< 0.3	2015-12-29
7710508	0	2015-12-21 @ 6:00 pm	2015-12-24 @ 2:00 pm	< 0.3	2015-12-29
7707095	A1	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.1 ± 0.4	2015-12-29
7707038	A10	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	2.0 ± 0.3	2015-12-28
7707041	A11	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	2.0 ± 0.4	2015-12-29
7707078	A14	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.3 ± 0.3	2015-12-28
7707075	A14A	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.9 ± 0.3	2015-12-28
7707089	A15	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	1.4 ± 0.3	2015-12-28
7707082	A16	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.0 ± 0.3	2015-12-28
7707046	A17	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	1.4 ± 0.3	2015-12-28
7707045	A17A	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	2.5 ± 0.4	2015-12-28
7707049	A17B	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	1.5 ± 0.3	2015-12-28
7707036	A19	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.9 ± 0.3	2015-12-28
7707039	A19	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.8 ± 0.3	2015-12-28
7707085	A3	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	2.2 ± 0.4	2015-12-28
7707081	A4	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.0 ± 0.3	2015-12-28
7707064	A5	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.9 ± 0.3	2015-12-28
7707065	A6	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.4 ± 0.3	2015-12-28
7707043	A7	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.1 ± 0.3	2015-12-28
7707044	A7	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7707055	A7	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-28
7707051	AB1	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	2.1 ± 0.4	2015-12-28
7707057	AB2	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	1.7 ± 0.3	2015-12-28
7707023	AB3	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	2.9 ± 0.4	2015-12-28
7707050	AB3	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	2.7 ± 0.4	2015-12-28
7707025	AB4	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7707077	AB5 OFFICE	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-28
7707040	AB6	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	1.3 ± 0.3	2015-12-28
7707090	COMM. CONF RM	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7707048	CONFERENCE RM A	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-28
7707087	CONFERENCE RM C	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.8 ± 0.3	2015-12-28
7707021	COUNSELOR OFFICE	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	2.5 ± 0.4	2015-12-28
7707091	FRONT DESK	2015-12-21 @ 10:00 am	2015-12-24 @ 8:00 am	1.1 ± 0.3	2015-12-28
7707059	GYM	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-29
7707020	GYM	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	< 0.3	2015-12-29
7707062	GYM OFFICE	2015-12-21 @ 1:00 pm	2015-12-24 @ 9:00 am	9.8 ± 0.7	2015-12-28

January 12, 2016 **LABORATORY ANALYSIS REPORT \*\***

Radon test result report for:  
**BLAIR G. EWING CENTER**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707060	HEALTH RM	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	4.8 ± 0.5	2015-12-28
7707073	HEALTH RM OFFICE	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	1.4 ± 0.3	2015-12-28
7707010	L10	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-29
7707108	L11	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7707009	L12	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-29
7707002	L12 OFFICE	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7707004	L12 OFFICE	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-29
7707098	L13	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	2.6 ± 0.4	2015-12-28
7707003	L14	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.4 ± 0.3	2015-12-29
7707096	L15	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-28
7707001	L16	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.6 ± 0.3	2015-12-28
7707083	L16 CONFER. RM	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.8 ± 0.3	2015-12-28
7707103	L17	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-29
7707104	L17	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-29
7707107	L17	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-29
7707086	L17 OFFICE	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7707101	L3	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-28
7707076	L4	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7707092	L5	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-29
7707102	L7	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.6 ± 0.3	2015-12-28
7707111	L7 OFFICE	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-29
7707006	L8	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7707066	L8 OFFICE	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.7 ± 0.4	2015-12-29
7707097	L9	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-28
7707099	L9	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.2 ± 0.3	2015-12-29
7707053	M10	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7707072	M11	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.7 ± 0.3	2015-12-28
7707011	M11 OFFICE	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-28
7707007	M12	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	3.3 ± 0.4	2015-12-28
7707014	M12 OFFICE	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.5 ± 0.3	2015-12-28
7707069	M13	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.4 ± 0.3	2015-12-28
7707012	M14	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.3 ± 0.3	2015-12-28
7707054	M14	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.1 ± 0.3	2015-12-29
7707015	M15	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.8 ± 0.3	2015-12-29
7707018	M16	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.5 ± 0.4	2015-12-29
7707042	M17	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.4	2015-12-29
7707047	M17 OFFICE	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.9 ± 0.3	2015-12-28

January 12, 2016 **LABORATORY ANALYSIS REPORT \*\***

Radon test result report for:  
**BLAIR G. EWING CENTER**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707008	M2	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7707074	M3	2015-12-21 @ 4:00 pm	2015-12-24 @ 10:00 am	1.4 ± 0.4	2015-12-29
7707016	M4	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	1.1 ± 0.3	2015-12-28
7707037	M4	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	1.1 ± 0.3	2015-12-28
7707071	M5	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.0 ± 0.3	2015-12-29
7707013	M5 OFFICE	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	0.6 ± 0.3	2015-12-28
7707058	M6	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-28
7707068	M6	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	< 0.3	2015-12-29
7707084	M7	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.8 ± 0.4	2015-12-29
7707017	M8	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-29
7707019	M8	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	0.8 ± 0.3	2015-12-29
7707063	M8 TEACHER RM	2015-12-21 @ 3:00 pm	2015-12-24 @ 9:00 am	1.0 ± 0.3	2015-12-29
7707005	M9	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	1.5 ± 0.3	2015-12-29
7707080	MPR	2015-12-21 @ 12:00 pm	2015-12-24 @ 8:00 am	1.3 ± 0.3	2015-12-28
7707070	PRINCIPAL OFFICE	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.6 ± 0.3	2015-12-28
7707110	RC-6	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-29
7707105	RC1	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.7 ± 0.3	2015-12-29
7707056	RC10	2015-12-21 @ 2:00 pm	2015-12-24 @ 9:00 am	1.5 ± 0.4	2015-12-28
7707112	RC2	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.5 ± 0.3	2015-12-28
7707109	RC3	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	0.6 ± 0.3	2015-12-29
7707106	RC7	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-29
7707088	RC8	2015-12-21 @ 5:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-28
7707031	SM DINNING RM	2015-12-21 @ 12:00 pm	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7707035	STAFF LOUNGE	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-29
7707027	U1	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7707052	U10	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.1 ± 0.4	2015-12-28
7707061	U10 OFFICE	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	0.9 ± 0.3	2015-12-28
7707030	U10 OFFICE	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	0.7 ± 0.3	2015-12-28
7707034	U12	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	1.3 ± 0.4	2015-12-29
7707026	U3	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.4 ± 0.4	2015-12-28
7707032	U3	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	< 0.3	2015-12-28
7707093	U3	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.1 ± 0.4	2015-12-28
7707033	U3 OFFICE	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.0 ± 0.4	2015-12-28
7707079	U4	2015-12-21 @ 12:00 pm	2015-12-24 @ 8:00 am	1.8 ± 0.4	2015-12-28
7707028	U5	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	2.6 ± 0.4	2015-12-28
7707067	U6	2015-12-21 @ 12:00 pm	2015-12-24 @ 8:00 am	1.7 ± 0.3	2015-12-28
7707024	U7A	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	1.4 ± 0.3	2015-12-28



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January 12, 2016  
**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:  
**BLAIR G. EWING CENTER  
MAIN**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707029	U7B	2015-12-21 @ 12:00 pm	2015-12-24 @ 9:00 am	0.7 ± 0.3	2015-12-28

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

December  
29,  
2015

**LABORATORY ANALYSIS  
REPORT \*\***

Radon test result report for:  
**TRANSIT DEC 14 2015**  
**NONE**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7704395	TRANSIT 1	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706508	TRANSIT 10	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706510	TRANSIT 11	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706511	TRANSIT 12	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706505	TRANSIT 13	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704371	TRANSIT 14	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706506	TRANSIT 15	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704381	TRANSIT 16	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704399	TRANSIT 17	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704390	TRANSIT 18	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704396	TRANSIT 2	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704364	TRANSIT 3	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704370	TRANSIT 4	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704368	TRANSIT 5	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706524	TRANSIT 6	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706526	TRANSIT 7	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706518	TRANSIT 8	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706516	TRANSIT 9	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16

December  
23,  
2015

**LABORATORY ANALYSIS  
REPORT \*\***

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7706380	101	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	25.2	2015-12-23
7706381	102	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	26.5	2015-12-23
7706208	103	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	27.7	2015-12-23
7705132	104	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	28.6	2015-12-23
7706366	105	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	26.5	2015-12-23
7706211	106	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	26.1	2015-12-23

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**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 KCI Technologies Inc. Job Number 173224

NOMINAL Conditions: Radon Conc 26.9 pCi/L Rel. Hum 49.6 % Temp. 69.9 F

Date Start: 12/18/15 Date Stop: 12/21/15 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0929 Time Stop: 0929 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: 7705132, 7706208, Device No.'s: \_\_\_\_\_

7706211, 7706366, \_\_\_\_\_

7706380, 7706381 \_\_\_\_\_

F3 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 II

School Names:

- |                           |                             |                           |
|---------------------------|-----------------------------|---------------------------|
| 1. Bannockburn ES         | 11. Sherwood HS             | 21. Fairland ES           |
| 2. Walt Whitman HS        | 12. Hadley Farms            | 22. Cannon Road ES        |
| 3. Walter Johnson HS      | 13. S. Christa McAuliffe ES | 23. Richard Montgomery HS |
| 4. North Chevy Chase ES   | 14. Ronald A. McNair ES     | 24. Brooke Grove ES       |
| 5. Piney Branch ES        | 15. MLK MS                  | 25. Belmont ES            |
| 6. Forest Knolls ES       | 16. Ashburton ES            | 26. Emory Grove           |
| 7. Newport Mill MS        | 17. Bradley Hills ES        | 27. Clarksburg HS         |
| 8. Broad Acres ES         | 18. Flora M. Singer ES      | 28. Clarksburg ES         |
| 9. Briggs Chaney MS       | 19. Woodlin ES              | 29. John T. Baker MS      |
| 10. Blair G. Ewing Center | 20. Montgomery Knolls ES    |                           |

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	Date	Initials
Radon Test Kits Deployed	12/21/2015	JM
Radon Test Kits Collected	12/24/2015	JM
Radon Test Kits Shipped to Lab*	12/24/2015	JM
Radon Test Kits Received by Lab*	12/28/2015	JM

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