

School Year: **24-25**

Facility:	Newport Mill Middle School		
Address:	11311 Newport Mill Road		
	Kensington, MD 20895		
Reason for Testing:	Scheduled Re-Testing - <input checked="" type="checkbox"/> 2-year or <input type="checkbox"/> 5-year schedule <input type="checkbox"/> Clearance Testing (Post-Mitigation) <input checked="" type="checkbox"/> Building Envelope or HVAC Upgrades <input type="checkbox"/> New Construction – Addition or 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 (New Facility)		
Round of Testing:	<input checked="" type="checkbox"/> Initial Testing -or- <input type="checkbox"/> Follow-up Testing		
Testing Status:	<input checked="" type="checkbox"/> No Further Testing Needed -or- <input type="checkbox"/> Follow-Up Testing Required		

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

Mitigation -	Facility Radon Status:		
<input checked="" type="checkbox"/> Not Required <input type="checkbox"/> Required ( $\geq 4.0$ -pCi/L) Rooms:	<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)		
Number of Rooms Tested	70	Lowest Value (pCi/L)	< 0.3
Number of Rooms ( $\geq 4.0$ -pCi/L)	0	Highest Value (pCi/L)	1.9

**Instructions:** Submit one testing report form per-facility. 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.

**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
Shannon King		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):	12/17/2024
<input type="checkbox"/> Long-Term				12/20/2024
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)

Round of Testing	Detectors Deployed				Total
	Ground-Contact		Upper-Level(s)		
	Initial	Follow-Up	Initial	Follow-Up	
Test Locations <sup>1</sup>	68	0	2	0	70
Duplicates <sup>2</sup>	7	0	1	0	8
Field Blanks <sup>3</sup>	4	0	0	0	4
Grand Total					82

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.

Round of Testing	QA/QC Samples		Total
	Initial	Follow-Up	
Spikes <sup>1</sup>	Not applicable		3
Trip Blanks <sup>2</sup>	1	0	1
Office Blanks <sup>3, 4</sup>	1	0	1
			5

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.

**Quality Assurance / Quality Control** (continued)

Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ 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 submitted testing organization's/company's QA plan?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	<b>Round of Testing</b>
	<b>Initial</b>
	<b>Follow-Up</b>
All Field, Trip and Office Blanks are $\leq$ (less than or equal to) to the Method Detection Limit?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
For all Duplicate Samples <sup>1</sup> , the higher value is $\leq 2x$ the lower value?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
For all Duplicate Samples <sup>1</sup> , Relative Percent Difference(s) (RPD) <sup>2</sup> are less than the Warning Level <sup>3</sup> ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
For all Duplicate Samples <sup>1</sup> , Relative Percent Difference(s) (RPD) <sup>2</sup> are less than the Control Level <sup>3</sup> ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes

1 – Duplicate Control – a “NO” response constitute a control failure and the space/location represented by the duplicate sample becomes an invalid measurement location and should be listed in the “Invalid Measurement Locations” Table attached to this report.

2 - The objective of duplicate tests is to assess the precision error of the measurement method or, how well two side-by-side measurements agree or disagree. Precision involving duplicates is calculated by using Relative Percent Difference (RPD). RPD is equal to the difference between the higher test result minus the lower value test result divided by the average of the two duplicate test results, multiplied by 100. The RPD result is then compared to the warning and control limits.

3 - The Warning Level is set at the deviation from ideal performance that would be expected to occur by chance only 5% of the time, and Control Limits are set at that deviation from ideal performance that would be expected to occur by chance only 1% of the time. The Warning Level indicates a potential problem, which should be investigated. The Control Level indicates that the measurement system should be subject to corrective action.

The control and warning levels for duplicates, based on the averaged duplicate test result, are -

Average concentration of the two duplicate test results	Warning Level	Control Level
< 2.0-pCi/L	1-pCi/L	Not applicable
Between 2.0 and 3.9-pCi/L	50% RPD	67% RPD
$\geq 4.0$ -pCi/L	28% RPD	36% RPD

Summary of Test Results<sup>1</sup> and Determination of Valid Measurements<sup>2</sup>

Round of Testing	Ground-Contact		Upper-Level(s)		Total
	Initial	Follow-Up	Initial	Follow-Up	
Number of test locations:	68	0	2	0	70
Number of locations $\geq 8.0$ -pCi/L:	0	0	0	0	0
Number of locations $\geq 4.0$ and $\leq 8$ -pCi/L:	0	0	0	0	0
Number of locations $\geq 2.7$ and $< 4$ -pCi/L:	0	0	0	0	0
Number of locations $\geq 2.0$ and $< 2.7$ -pCi/L:	0	0	0	0	0
Number of missing required test locations <sup>3</sup> :	0	0	0	0	0
Number of failed duplicate control locations:	0	0	0	0	0
Percentage of missing test locations for the facility <sup>4,5</sup> :	0%	0%	0%	0%	0%

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

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

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

4 – if all valid measurements are  $< 4.0$ -pCi/L and the total number of test locations are  $\geq 18$ , 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)

	Round of Testing	Initial	Follow-Up
Were test devices deployed in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<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	<input type="checkbox"/> Yes <input checked="" 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, were all results obtained under 4.0-pCi/L and were sufficient valid measurements obtained?<sup>1,2</sup></b> <i>If Yes, then - ‘No Further Testing Needed’ complete Conclusion section on first page. If No, then - ‘Follow-up Testing Required’ continue below.</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

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

Follow-Up Testing

Required –

- If an insufficient number (greater than the allowance provided above) of valid measurements were obtained during the initial round of testing (the “missing required test locations” in the table above);
- Any location test results ≥ 4.0-pCi/L;
- Any location where duplicates fail QC checks; and or
- At the discretion of MCPS IAQ Staff

Reason for Follow-Up Testing	Testing Procedure	Follow-up Result	Conclusion
Insufficient Number of Measurements	Follow same procedures as Initial Testing	Not Applicable	Follow Initial Testing procedures
Results ≥ 4.0-pCi/L	Deploy two Short-term follow-up tests and required blanks and duplicates; Average the results of the two tests	≥4.0	Mitigation Required
Failed QC checks		≥2.0 and <4.0	Consider Mitigation
		<2.0	Mitigation Not Required

➤ *If follow-up testing identifies additional spaces requiring additional testing it will be performed as part of the ongoing follow-testing round.*

**Attachment 1:**  
**Summary Data Tables**

<b>Table 1- Radon Testing Results</b>		
<b>Newport Mill Middle School</b>		
<b>Test Period: 12/17/2024 - 12/20/2024</b>		
Kit Number	Room / Area	Result
11919208	100	< 0.3
11919207	102	< 0.3
11919393	103	0.5
11919394	103	< 0.3
11919201	104	0.6
11919203	104	0.7
11919387	105	0.8
11919388	107	< 0.3
11919386	115	0.6
11919397	116	< 0.3
11919400	118	0.7
11919398	119	0.5
11919395	120	0.6
11919392	123	< 0.3
11919383	200	< 0.3
11919384	200	< 0.3
11919385	200	< 0.3
11919382	201	< 0.3
11919381	202	0.5
11919377	204	< 0.3
11919380	207	< 0.3
11919376	209	< 0.3
11919211	210	< 0.3
11919213	212	< 0.3
11919214	216	< 0.3
11919212	217	< 0.3
11919220	218	< 0.3
11919221	218	< 0.3
11919215	219	< 0.3
11919222	220	< 0.3
11919216	221	< 0.3
11919223	223	< 0.3
11919219	302	0.7
11919231	304	0.7
11919227	305	0.5
11919235	306	0.6
11919209	307	0.7

<b>Table 1- Radon Testing Results</b>		
<b>Newport Mill Middle School</b>		
<b>Test Period: 12/17/2024 - 12/20/2024</b>		
Kit Number	Room / Area	Result
11919210	307	0.7
11919224	307	< 0.3
11919232	308	0.7
11919236	309	0.8
11919234	400	1.2
11919226	402	1.2
11919233	407	0.8
11919217	409	0.6
11919239	411	0.6
11919243	411	< 0.3
11919225	412	0.7
11919240	412	0.7
11919237	413	1.4
11919238	414	1.2
11919244	1204	< 0.3
11919245	1221	< 0.3
11919246	1221	< 0.3
11919247	1221	< 0.3
11919368	101C	1.1
11919371	101D	0.9
11919367	101E	0.5
11919204	104A	0.5
11919205	104A	0.7
11919206	104A	< 0.3
11919389	107A	< 0.3
11919378	204A	< 0.3
11919379	209A	0.5
11919375	211C	0.7
11919372	211D	< 0.3
11919374	211D	0.5
11919370	211E	< 0.3
11919228	304B	1.9
11919218	412D	< 0.3
11919366	ASSISTANT PRINCIPAL	0.8
11919390	BLR	0.8
11919362	COUNCELING	< 0.3
11919365	MAIN OFFICE	0.6

<b>Table 1- Radon Testing Results</b>		
<b>Newport Mill Middle School</b>		
<b>Test Period: 12/17/2024 - 12/20/2024</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
11919202	MEDIA CENTER	0.8
11919229	MEDIA CENTER OFFICE	1.1
11919399	PPW	< 0.3
11919391	STAGE	0.7
11919396	STAGE	1.0
11919369	WORK ROOM IN COUNSELING	0.6
11919373	WORK ROOM IN COUNSELING	0.8
11919230	WORK ROOM IN MEDIA CENTER	0.8



<b>Table 3 - QC Radon Testing Results</b>			
<b>Newport Mill Middle School</b>			
<b>Test Period: 12/17/2024 - 12/20/2024</b>			
<b>Kit Number</b>	<b>QC Type</b>	<b>Room / Area</b>	<b>Result</b>
11919384	D	200	< 0.3
11919385	FB	200	< 0.3
11919221	D	218	< 0.3
11919210	D	307	0.7
11919224	FB	307	< 0.3
11919243	D	411	< 0.3
11919246	D	1221	< 0.3
11919247	FB	1221	< 0.3
11919205	D	104a	0.7
11919206	FB	104a	< 0.3
11919374	D	211d	0.5
11919396	D	Stage	1.0
11907208	OB	OFFICE BLANK	< 0.3
11907209	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation

Newport Mill Middle School

Test Period: 12/17/2024 - 12/20/2024

Sample ID			Duplicate Concentrations (pCi/L) and OC Checks							
Kit Numbers		Room / Area	Higher	Lower	Check #1 (Pass/Fail)	2x the Lower	Check #2 (Pass/Fail)	Average	Relative Percent Difference (RPD)	Check #3
11919372	11919374	211D	0.5	0.3	✓	0.6	PASS	0.4	<1-pCi/L	✓
11919383	11919384	200	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11919391	11919396	Stage	1.0	0.7	✓	1.4	PASS	0.9	<1-pCi/L	✓
11919204	11919205	104A	0.7	0.5	✓	1.0	PASS	0.6	<1-pCi/L	✓
11919220	11919221	218	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11919209	11919210	307	0.7	0.7	✓	1.4	PASS	0.7	<1-pCi/L	✓
11919239	11919243	411	0.6	0.3	✓	0.6	PASS	0.5	<1-pCi/L	✓
11919245	11919246	1221	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓

**NOTES:**

QC Check #1 - Data Entry

QC Check #2 - Higher duplicate concentration is < or = to 2x the Lower

QC Check #3 - Meets RPD Limits, by average duplicate concentration

- enter 2 if RPD is BELOW warning and control levels, AND passes QC Check 1 and 2
- enter 1 if RPD is ABOVE warning and BELOW control levels, AND passes QC Check 1 and 2
- enter 0 if RPD is ABOVE control level, or 'FAILS' QC Check 1 or 2

Average (pCi/L)	Warning Level	Control Level
< 2.0	1-pCi/L	NA
Between 2.0 and 3.9	50% RPD	67% RPD
≥ 4.0	28% RPD	36% RPD



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

Radon test result report for:  
**NEWPORT MILL MS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11919208	100	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919368	101C	2024-12-17 @ 8:00 am	2024-12-20 @ 8:00 am	1.1 ± 0.3	2024-12-23
11919371	101D	2024-12-17 @ 8:00 am	2024-12-20 @ 8:00 am	0.9 ± 0.3	2024-12-23
11919367	101E	2024-12-17 @ 8:00 am	2024-12-20 @ 8:00 am	0.5 ± 0.3	2024-12-23
11919207	102	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919394	103	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919393	103	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	0.5 ± 0.3	2024-12-23
11919203	104	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	0.7 ± 0.3	2024-12-23
11919201	104	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	0.6 ± 0.3	2024-12-23
11919204	104A	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	0.5 ± 0.3	2024-12-23
11919205	104A DUPLICATE	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	0.7 ± 0.3	2024-12-23
11919387	105	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	0.8 ± 0.3	2024-12-23
11919388	107 GLR	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919389	107A	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919386	115	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	0.6 ± 0.3	2024-12-23
11919397	116	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919400	118	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	0.7 ± 0.3	2024-12-23
11919398	119	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	0.5 ± 0.3	2024-12-23
11919395	120	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	0.6 ± 0.3	2024-12-23
11919244	1204	2024-12-17 @ 11:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919246	1221	2024-12-17 @ 11:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919245	1221	2024-12-17 @ 11:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919392	123	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919383	200	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919384	200	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919382	201	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919381	202	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	0.5 ± 0.3	2024-12-23
11919377	204	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919378	204A	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919380	207	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919376	209	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919379	209A	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	0.5 ± 0.3	2024-12-23
11919211	210	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919375	211C	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	0.7 ± 0.3	2024-12-23
11919372	211D	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919374	211D DUPLICATE	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	0.5 ± 0.3	2024-12-23
11919370	211E	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23

Radon test result report for:  
**NEWPORT MILL MS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11919213	212	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919214	216	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919212	217	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919221	218	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919220	218	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919215	219	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919222	220	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919216	221	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919223	223	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919219	302	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.7 ± 0.3	2024-12-23
11919231	304	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.7 ± 0.3	2024-12-23
11919228	304B	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	1.9 ± 0.3	2024-12-23
11919227	305	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.5 ± 0.3	2024-12-23
11919235	306	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	0.6 ± 0.3	2024-12-23
11919209	307	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.7 ± 0.3	2024-12-23
11919210	307	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.7 ± 0.3	2024-12-23
11919232	308	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.7 ± 0.3	2024-12-23
11919236	309	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.8 ± 0.3	2024-12-23
11919234	400	2024-12-17 @ 11:00 am	2024-12-20 @ 8:00 am	1.2 ± 0.3	2024-12-23
11919226	402	2024-12-17 @ 11:00 am	2024-12-20 @ 8:00 am	1.2 ± 0.3	2024-12-23
11919233	407	2024-12-17 @ 11:00 am	2024-12-20 @ 8:00 am	0.8 ± 0.3	2024-12-23
11919217	409	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.6 ± 0.3	2024-12-23
11919239	411	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.6 ± 0.3	2024-12-23
11919243	411	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919240	412	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.7 ± 0.3	2024-12-23
11919225	412	2024-12-17 @ 11:00 am	2024-12-20 @ 8:00 am	0.7 ± 0.3	2024-12-23
11919218	412D	2024-12-17 @ 11:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919237	413	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	1.4 ± 0.3	2024-12-23
11919238	414	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	1.2 ± 0.3	2024-12-23
11919366	ASSISTANT PRINCIPAL	2024-12-17 @ 8:00 am	2024-12-20 @ 8:00 am	0.8 ± 0.3	2024-12-23
11919390	BLR	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	0.8 ± 0.3	2024-12-23
11919362	COUNCELING	2024-12-17 @ 8:00 am	2024-12-20 @ 8:00 am	< 0.3	2024-12-23
11919247	FIELD BLANK	2024-12-17 @ 11:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919224	FIELD BLANK	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919206	FIELD BLANK	2024-12-17 @ 10:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919385	FIELD BLANK	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919365	MAIN OFFICE	2024-12-17 @ 8:00 am	2024-12-20 @ 8:00 am	0.6 ± 0.3	2024-12-23

December 23, 2024

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

Radon test result report for:  
**NEWPORT MILL MS**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11919202	MEDIA CENTER	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.8 ± 0.3	2024-12-23
11919229	MEDIA CENTER OFFICE	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	1.1 ± 0.3	2024-12-23
11919399	PPW	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	< 0.3	2024-12-23
11919391	STAGE	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	0.7 ± 0.3	2024-12-23
11919396	STAGE DUPLICATE	2024-12-17 @ 9:00 am	2024-12-20 @ 9:00 am	1.0 ± 0.3	2024-12-23
11919369	WORK ROOM IN COUNSELING	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	0.6 ± 0.3	2024-12-23
11919373	WORK ROOM IN COUNSELING	2024-12-17 @ 9:00 am	2024-12-20 @ 8:00 am	0.8 ± 0.3	2024-12-23
11919230	WORK ROOM IN MEDIA CENTER	2024-12-17 @ 10:00 am	2024-12-20 @ 8:00 am	0.8 ± 0.3	2024-12-23

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

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December 23, 2024

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

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Radon test result report for:

**OFFICE  
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>
11482799	O	2024-12-16 @ 10:00 am	2024-12-19 @ 1:00 pm	< 0.3	2024-12-23
11907208	O	2024-12-17 @ 10:00 am	2024-12-20 @ 1:00 pm	< 0.3	2024-12-23

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December 23, 2024

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

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Radon test result report for:

**TRAVEL**

**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>
11482800	T	2024-12-16 @ 10:00 am	2024-12-19 @ 1:00 pm	< 0.3	2024-12-23
11907209	T	2024-12-17 @ 10:00 am	2024-12-20 @ 1:00 pm	< 0.3	2024-12-23

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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 20001560

NOMINAL Conditions: Radon Conc 50.6 pCi/L Rel. Hum 50.6% Temp. 70.8 F

Date Start: 12/14/24 Date Stop: 12/17/24 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0815 Time Stop: 0815 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (3) CHAR BAGS Device No.'s: \_\_\_\_\_

11477880, 11477883, 11477896

B4 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**

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December 23, 2024

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

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Radon test result report for:

**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>
11477880	SK1	2024-12-14 @ 8:00 am	2024-12-17 @ 8:00 am	52.0 ± 4.2	2024-12-23
11477883	SK2	2024-12-14 @ 8:00 am	2024-12-17 @ 8:00 am	54.6 ± 4.4	2024-12-23
11477896	SK3	2024-12-14 @ 8:00 am	2024-12-17 @ 8:00 am	45.5 ± 3.6	2024-12-23

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



### Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing December 17<sup>th</sup> – December 20<sup>th</sup>, 2024

Name of Schools:

1. Newport Mill MS
2. Rolling Terrace ES
3. Silver Spring International MS
4. Spring Mill Center

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	Date	Initials
Radon Test Kits Deployed	12/17/2024	Bmy
Radon Test Kits Collected	12/20/2024	Bmy
Radon Test Kits Shipped to Lab*	12/20/2024	Bmy
Radon Test Kits Received by Lab*	12/24/2024	Bmy

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



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Newport Mill Middle School
Date of Test Report	05/27/2022
Round of Testing	Initial <u>Follow-up</u> Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	1
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	<0.3 pCi/L

**Project Status**

Current Project Status at this time: Testing completed; no further action needed



May 27, 2022

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

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

Location: Newport Mill Middle School  
11311 Newport Mill Rd.  
Kensington, MD 20895

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 Newport Mill Middle School, located at 11311 Newport Mill Rd. Kensington, MD 20895 (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 March 28, 2022 and deployed four (4) 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.

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

1. Rooms with missing test kits from the Radon 2022 testing period (i.e. test kit was deployed but not recovered),
2. Rooms with invalidated test kits from the Radon 2022 testing period (e.g. an open window in the room or disturbed test kit),
3. Rooms which were locked/inaccessible during the Radon 2022 testing period,
4. Rooms with elevated radon results (i.e.  $\geq 3.5$  pCi/L),
5. Rooms previously tested for radon but not tested in Radon 2022, and
6. Additional rooms that require testing (if applicable.)

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 March 31, 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 initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

KCI recorded observations of the following conditions in each room 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 mid 20°Fs and high temperatures ranged from the low 50°Fs to the mid 70°Fs. Maximum sustained winds ranged from 0-33 miles per hour. Average humidity was around 47% with 0.23 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:

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

Quality Control Samples	
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		
Newport Mill MS RT		
Test Period: 03/28/2022 - 03/31/2022		
Kit Number	Room / Area	Result
11131790	GYM	< 0.3
11131797	GYM	< 0.3
11131798	GYM	< 0.3
11131799	GYM	< 0.3

Table 2- Radon Testing Results			
Newport Mill MS RT			
Test Period: 03/28/2022 - 03/31/2022			
Kit Number	QC Type	Room / Area	Result
11131790	D	Gym	< 0.3
11131799	FB	Gym	< 0.3
11139883	OB	OFFICE BLANK	< 0.3
11139841	TB	TRAVEL BLANK	< 0.3



# ATTACHMENT C

## Laboratory Analytical Results

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April 4, 2022

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

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Radon test result report for:  
**NEWPORT MILLS MS**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11131790	GYM	2022-03-28 @ 10:00 am	2022-03-31 @ 10:00 am	< 0.3	2022-04-04
11131797	GYM	2022-03-28 @ 10:00 am	2022-03-31 @ 10:00 am	< 0.3	2022-04-04
11131798	GYM	2022-03-28 @ 10:00 am	2022-03-31 @ 10:00 am	< 0.3	2022-04-04
11131799	GYM	2022-03-28 @ 10:00 am	2022-03-31 @ 10:00 am	< 0.3	2022-04-04

---

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 204620

NOMINAL Conditions: Radon Conc 27.0 pCi/L Rel. Hum 50.1 % Temp. 70.0 F

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0705 Time Stop: 0705 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (5) Char Bags - Device No.'s: \_\_\_\_\_

11139367, 11139368, 11139371, \_\_\_\_\_

11139710, 11139717 \_\_\_\_\_

E3 light

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

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March 30, 2022

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

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Radon test result report for:

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

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11139367	SK1	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.9 $\pm$ 2.1	2022-03-30
11139368	SK2	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	23.9 $\pm$ 2.0	2022-03-30
11139371	SK3	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.7 $\pm$ 2.1	2022-03-30
11139710	SK4	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	26.4 $\pm$ 2.1	2022-03-30
11139717	SK5	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	24.6 $\pm$ 2.0	2022-03-30

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



### Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Rock Terrace School
2. S. Christa McAuliffe ES
3. Cedar Grove ES
4. DuFief ES
5. Emory Grove Center
6. Gaithersburg ES
7. Gaithersburg MS
8. Jones Lane ES
9. Rachel Carson ES
10. Rosemont ES
11. Shady Grove MS
12. Summit Hall ES
13. Albert Einstein HS
14. Eastern MS
15. Montgomery Blair HS
16. Newport Mill MS
17. Strawberry Knoll ES

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	Date	Initials
Radon Test Kits Deployed	03/28/2022	BMM
Radon Test Kits Collected	03/31/2022	BMM
Radon Test Kits Shipped to Lab*	04/01/2022	BMM
Radon Test Kits Received by Lab*	04/04/2022	BMM

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



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Newport Mill Middle School
Date of Test Report	4/26/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	65
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.5 pCi/L

Project Status:

Initial testing completed; Missing or compromised samples need re-sampling



April 26, 2022

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

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

Location: Newport Mill Middle School  
11311 Newport Mill Rd.  
Kensington, MD 20895

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 Newport Mill MS, located at 11311 Newport Mill Rd. Kensington, MD 20895 (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 28, 2022 and deployed seventy four (74) 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 March 3, 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 biennial post-mitigation 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 20s and high temperatures ranged from the high 50s to the low 60s Fahrenheit. Maximum sustained winds ranged from 9-17 miles per hour. Average humidity was around 40% with 0 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:

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

Quality Control Samples	
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		
Newport Mill MS		
Test Period: 03/01/2022 - 03/04/2022		
Kit Number	Room / Area	Result
11133351	101	< 0.3
11133352	101	0.8
11133348	102	< 0.3
11133400	105	1.1
11133386	116	1.2
11133395	120	1.5
11133340	200	0.5
11133339	201	< 0.3
11133337	202	< 0.3
11133336	204	< 0.3
11133338	207	0.6
11133327	209	< 0.3
11133335	209	< 0.3
11133350	210	< 0.3
11133357	212	< 0.3
11133349	216	< 0.3
11133358	216	< 0.3
11133323	217	0.6
11133332	217	0.7
11133346	218	0.5
11133331	219	< 0.3
11133344	220	< 0.3
11133347	221	0.5
11133324	223	0.6
11133343	301	0.9
11133345	301	0.5
11133366	301	0.9
11133367	302	1.0
11133361	304	1.2
11133382	304	1.3
11133374	305	< 0.3
11133342	306	0.8
11133353	306	1.0
11133381	307	0.5
11133362	308	1.4
11133375	309	1.4
11133365	400	1.2
11133373	402	0.9
11133356	407	0.7
11133359	409	0.7
11133360	409	< 0.3
11133368	411	0.8

Table 1- Radon Testing Results		
Newport Mill MS		
Test Period: 03/01/2022 - 03/04/2022		
Kit Number	Room / Area	Result
11133355	412	0.8
11133364	412	0.9
11133372	412	0.8
11133363	413	1.1
11133371	414	1.3
11133369	1216	< 0.3
11133376	1217	0.8
11133333	211C	0.7
11133334	211C	0.6
11133330	211D	0.7
11133328	211E	< 0.3
11133354	412D	0.9
11133389	BOYS LOCKER ROOM	1.1
11133388	BOYS LOCKER ROOM OFFICE	0.8
11133391	BOYS LOCKER ROOM OFFICE	1.0
11133341	CAFETERIA	0.7
11133380	CAFETERIA	< 0.3
11133329	COUNSELOR LOUNGE ROOM	0.7
11133377	GIRLS LOCKER ROOM	0.5
11133392	GIRLSLOCKER ROOMOFFICE	< 0.3
11133390	GYM	0.6
11133396	GYM	< 0.3
11133387	HEALTH ROOM	0.9
11133383	KITCHEN	< 0.3
11133384	KITCHEN	< 0.3
11133307	MAIN OFFICE	0.9
11133319	MAIN OFFICE	0.6
11133322	MAIN OFFICE	< 0.3
11133325	MAIN OFFICE	< 0.3
11133326	MAIN OFFICE	1.1
11133370	MAIN OFFICE	< 0.3
11133378	STUDIP	1.0
11133399	WEIGHT ROOM	1.3

Table 2- Radon Testing Results			
Newport Mill MS			
Test Period: 03/01/2022 - 03/04/2022			
Kit Number	QC Type	Room / Area	Result
11133333	D	211C	0.7
11133323	D	217	0.6
11133358	FB	216	< 0.3
11133352	D	101	0.8
11133355	D	412	0.8
11133360	FB	409	< 0.3
11133342	FB	306	0.8
11133384	D	Kitchen	< 0.3
11133388	D	Boys locker room office	0.8
11130861	OB	OFFICE BLANK	< 0.3
11130854	TB	TRAVEL BLANK	< 0.3



# ATTACHMENT C

## Laboratory Analytical Results

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March 8, 2022

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

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Radon test result report for:  
**NEWPORT MILL MS**  
**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>
11133355	412	2022-03-01 @ 9:00 am	2022-03-04 @ 12:00 pm	0.8 ± 0.3	2022-03-07

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

Radon test result report for:  
**NEWPORT MILL MS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11133351	101	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11133352	101	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.8 ± 0.3	2022-03-08
11133348	102	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133400	105	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	1.1 ± 0.3	2022-03-08
11133386	116	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	1.2 ± 0.3	2022-03-07
11133395	120	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	1.5 ± 0.3	2022-03-08
11133369	1216	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133376	1217	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.8 ± 0.3	2022-03-08
11133340	200	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.5 ± 0.3	2022-03-08
11133339	201	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11133337	202	2022-03-01 @ 8:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133336	204	2022-03-01 @ 8:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133338	207	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.6 ± 0.3	2022-03-07
11133327	209	2022-03-01 @ 8:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11133335	209	2022-03-01 @ 8:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133350	210	2022-03-01 @ 9:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-07
11133333	211C	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	0.7 ± 0.3	2022-03-07
11133334	211C	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	0.6 ± 0.3	2022-03-07
11133330	211D	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	0.7 ± 0.3	2022-03-07
11133328	211E	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	< 0.3	2022-03-07
11133357	212	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133349	216	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133358	216	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133332	217	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.7 ± 0.3	2022-03-07
11133323	217	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.6 ± 0.3	2022-03-08
11133346	218	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.5 ± 0.3	2022-03-07
11133331	219	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133344	220	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11133347	221	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.5 ± 0.3	2022-03-08
11133324	223	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.6 ± 0.3	2022-03-07
11133343	301	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.9 ± 0.3	2022-03-07
11133366	301	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.9 ± 0.3	2022-03-07
11133345	301	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.5 ± 0.3	2022-03-08
11133367	302	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.0 ± 0.3	2022-03-07
11133361	304	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.2 ± 0.3	2022-03-07
11133382	304	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.3 ± 0.3	2022-03-08
11133374	305	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08

Radon test result report for:  
**NEWPORT MILL MS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11133342	306	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.8 ± 0.3	2022-03-07
11133353	306	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.0 ± 0.3	2022-03-08
11133381	307	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.5 ± 0.3	2022-03-07
11133362	308	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.4 ± 0.3	2022-03-07
11133375	309	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.4 ± 0.3	2022-03-08
11133365	400	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.2 ± 0.3	2022-03-08
11133373	402	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.9 ± 0.3	2022-03-08
11133356	407	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.7 ± 0.3	2022-03-08
11133360	409	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133359	409	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.7 ± 0.3	2022-03-08
11133368	411	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.8 ± 0.3	2022-03-08
11133364	412	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.9 ± 0.3	2022-03-08
11133372	412	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.8 ± 0.3	2022-03-08
11133354	412D	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	0.9 ± 0.3	2022-03-08
11133363	413	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.1 ± 0.3	2022-03-08
11133371	414	2022-03-01 @ 9:00 am	2022-03-04 @ 9:00 am	1.3 ± 0.3	2022-03-07
11133389	BOYS LOCKER ROOM	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	1.1 ± 0.3	2022-03-08
11133388	BOYS LOCKER ROOM OFFICE	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	0.8 ± 0.3	2022-03-08
11133391	BOYS LOCKER ROOM OFFICE	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	1.0 ± 0.3	2022-03-08
11133341	CAFETERIA	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	0.7 ± 0.3	2022-03-07
11133380	CAFETERIA	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-08
11133329	COUNSELOR LOUNGE ROOM	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	0.7 ± 0.3	2022-03-07
11133377	GIRLS LOCKER ROOM	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	0.5 ± 0.3	2022-03-07
11133392	GIRLSLOCKER ROOMOFFICE	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11133390	GYM	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	0.6 ± 0.3	2022-03-07
11133396	GYM	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	< 0.3	2022-03-08
11133387	HEALTH ROOM	2022-03-01 @ 10:00 am	2022-03-04 @ 10:00 am	0.9 ± 0.3	2022-03-07
11133383	KITCHEN	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11133384	KITCHEN	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	< 0.3	2022-03-07
11133370	MAIN OFFICE	2022-03-01 @ 10:00 am	2022-03-04 @ 8:00 am	< 0.3	2022-03-07
11133326	MAIN OFFICE	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	1.1 ± 0.3	2022-03-08
11133322	MAIN OFFICE	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	< 0.3	2022-03-08
11133319	MAIN OFFICE	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	0.6 ± 0.3	2022-03-08
11133307	MAIN OFFICE	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	0.9 ± 0.3	2022-03-08
11133325	MAIN OFFICE	2022-03-01 @ 8:00 am	2022-03-04 @ 8:00 am	< 0.3	2022-03-08
11133378	STUDIP	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	1.0 ± 0.3	2022-03-08
11133399	WEIGHT ROOM	2022-03-01 @ 10:00 am	2022-03-04 @ 9:00 am	1.3 ± 0.3	2022-03-08

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

NOMINAL Conditions: Radon Conc 27.0 pCi/L Rel. Hum 50.1 % Temp. 70.0 F

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0705 Time Stop: 0705 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (5) Char Bags - Device No.'s: \_\_\_\_\_

11139367, 11139368, 11139371, \_\_\_\_\_

11139710, 11139717 \_\_\_\_\_

E3 light

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

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March 30, 2022

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

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Radon test result report for:

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

---

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
11139367	SK1	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.9 $\pm$ 2.1	2022-03-30
11139368	SK2	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	23.9 $\pm$ 2.0	2022-03-30
11139371	SK3	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.7 $\pm$ 2.1	2022-03-30
11139710	SK4	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	26.4 $\pm$ 2.1	2022-03-30
11139717	SK5	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	24.6 $\pm$ 2.0	2022-03-30

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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 30, 2022

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

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Radon test result report for:

**RSH  
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>
11139726	BASEMENT	2022-03-20 @ 8:00 am	2022-03-23 @ 7:00 am	0.9 ± 0.5	2022-03-30
11139725	DINING	2022-03-20 @ 8:00 am	2022-03-23 @ 7:00 am	< 0.3	2022-03-30

---

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 – March 2022 Schools

**Name of Schools:**

1. Newport Mill MS
2. Rock View ES
3. Eastern MS
4. Blair, Montgomery HS
5. Montgomery Knolls ES
6. Northwood HS
7. Oakview ES
8. Pine Crest ES
9. Arcola ES
10. Glenallen ES

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	Date	Initials
Radon Test Kits Deployed	03/01/2022	PM
Radon Test Kits Collected	03/04/2022	PM
Radon Test Kits Shipped to Lab*	03/04/2022	PM
Radon Test Kits Received by Lab*	03/07/2022	PM

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



**MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Newport Mill Middle School
Date of Report	2/21/2020
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	66
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.9 pCi/L

**Project Status**

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



2/21/2020

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

Re: Radon Testing Services

KCI Job #12146341126

**Location: Newport Mill Middle School**

11311 Newport Mill Road  
Kensington, Maryland 20895

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 Newport Mill Middle School, located at 11311 Newport Mill Road in Kensington, Maryland 20895 (subject site).

**SCOPE OF SERVICES**

KCI conducted radon testing at the subject site to evaluate indoor radon levels relative to the USEPA's recommended action level of 4.0 picocuries per Liter (pCi/L) - the level at which EPA recommends that schools take action to reduce the level. KCI conducted the radon testing in accordance with American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*. A National Radon Proficiency Program (NRPP) Radon Measurement Provider (certification #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from [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 1/7/2020 and deployed eighty-six (86) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on 1/10/2020 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a National Radon Safety Board (NRSB) radon measurement provider and is a certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

### **EVALUATION OF TESTING CONDITIONS**

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the upper-20s and high temperatures were in the mid-50s. Maximum sustained winds ranged from 10-23 miles per hour. Average humidity was around 64%. 0.32 inches of precipitation (rain) was recorded during the testing period.

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## **RESULTS**

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,

Mr. Tyler P. McCleaf  
Radon Measurement Provider  
111004 RT

KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

# ATTACHMENT A

## Floor Plan With Test Locations

# ATTACHMENT B

## Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Table 1- Radon Testing Results		
Newport Mill MS		
Test Period: 1/7/2020-1/10-2020		
Kit Number	Room / Area	Result
9339995	GIRL LOCKER OFFICE	0.6
9339996	116	1.7
9339999	WEIGHT ROOM	0.9
9340000	WEIGHT ROOM	1.4
9347614	221	< 0.3
9347615	218	< 0.3
9347616	220	< 0.3
9347619	219	< 0.3
9347620	209	< 0.3
9347624	212	< 0.3
9347625	MAIL ROOM	< 0.3
9347626	216	0.6
9347627	305	0.8
9347628	307	0.8
9347629	MAIN OFFICE	0.8
9347630	223	< 0.3
9347631	302	1.1
9347632	407	0.9
9347633	411	< 0.3
9347634	413	1.5
9347635	202	< 0.3
9347636	200	< 0.3
9347637	304	1.5
9347638	308	1.7
9347639	409	0.8
9347640	309	1.2
9347641	204	0.6
9347642	ASSISTANT PRINCIPAL	1.4
9347643	402	1.1
9347644	412D	< 0.3
9347645	412	0.9
9347646	400	1.4
9347647	CONFERENCE ROOM M.O.	0.7
9347648	211D	< 0.3
9347649	PRINCIPAL SECRETARY	< 0.3
9347650	207	< 0.3
9347651	STAFF DEVELOPMENT	0.7
9347652	412C	1.4
9347653	CAFETERIA	0.7
9347654	SECURITY	0.8
9347655	211	0.7
9347656	PRINCIPAL OFFICE	0.6

9347657	217	< 0.3
9347658	NURSE OFFICE	0.7
9347659	MEDIA CENTER	0.8
9347660	KITCHEN OFFICE	< 0.3
9347661	OFFICE	0.8
9347662	211E	< 0.3
9347663	211C	< 0.3
9347664	210	< 0.3
9347665	BOY LOCKER OFFICE	1
9347666	NURSE OFFICE	< 0.3
9347667	210	< 0.3
9347668	104A	0.5
9347669	210	< 0.3
9347670	CAFETERIA	0.7
9347671	CAFETERIA	0.7
9347672	NURSE OFFICE	< 0.3
9347673	102	0.8
9347674	1220	< 0.3
9347675	207	< 0.3
9347676	207	< 0.3
9347677	104A	< 0.3
9347678	CAFETERIA	0.8
9347679	GYM	1.1
9347680	GYM	1
9347681	120	1.3
9347682	306	0.9
9347683	118	1.9
9347684	GYM	1.1
9347685	GYM	1
9347686	105	0.8
9347687	120	1.6
9347688	201	< 0.3
9347689	412C	1.3
9347690	414	1
9347691	MEDIA CENTER OFFICE	0.9
9347692	1207	< 0.3
9347693	MEDIA CENTER	1
9347694	115	0.9
9347695	115	< 0.3
9347696	MEDIA CENTER	1.1
9347697	110	0.9
9347698	MEDIA CENTER WORK ROOM	0.9
9347699	412A	< 0.3
9347700	115	0.9
9348317	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Newport Mill MS			
Test Period: 1/7/2020-1/10-2020			
Kit Number	QC Type	Room / Area	Result
9347650	D	207	<0.3
9347676	FB	207	<0.3
9347664	D	210	<0.3
9347669	FB	210	<0.3
9347670	D	CAFETERIA	0.7
9347668	D	104A	0.5
9347687	D	120	1.6
9347672	D	NURSE OFFICE	<0.3
9347666	FB	NURSE OFFICE	<0.3
9347689	D	412C	1.3
9347700	D	115	0.9
9347695	FB	115	<0.3
9348319	TRANSIT BLANK	NA	<0.3
9348320	TRANSIT BLANK	NA	<0.3
9348313	TRANSIT BLANK	NA	<0.3



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:

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

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

Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value (25.7 pCi/L).
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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340048	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.5 $\pm$ 2.4 D	2020-01-03
9340021	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.7 $\pm$ 2.6 D	2020-01-03
9341707	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.8 $\pm$ 2.4 D	2020-01-03
9340053	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.8 $\pm$ 2.5 D	2020-01-03
9340058	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.5 $\pm$ 2.7 D	2020-01-03
9340026	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.9 $\pm$ 2.4 D	2020-01-03
9341712	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.3 $\pm$ 2.4 D	2020-01-03
9340080	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9340063	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.8 $\pm$ 2.5 D	2020-01-03
9340031	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.9 $\pm$ 2.4 D	2020-01-03
9341717	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.7 $\pm$ 2.4 D	2020-01-03
9340085	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 $\pm$ 2.5 D	2020-01-03
9340068	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.2 $\pm$ 2.5 D	2020-01-03
9340036	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.6 $\pm$ 2.3 D	2020-01-03
9340004	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 $\pm$ 2.6 D	2020-01-03
9340090	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.3 $\pm$ 2.5 D	2020-01-03
9340073	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 $\pm$ 2.5 D	2020-01-03
9340041	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.6 $\pm$ 2.4 D	2020-01-03
9340009	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.1 $\pm$ 2.4 D	2020-01-03
9340095	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.2 $\pm$ 2.5 D	2020-01-03
9340100	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.5 $\pm$ 2.4 D	2020-01-03
9340078	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.0 $\pm$ 2.4 D	2020-01-03
9340046	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.0 $\pm$ 2.6 D	2020-01-03
9340014	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	21.8 $\pm$ 2.8 D	2020-01-03
9340019	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.0 $\pm$ 2.5 D	2020-01-03
9341705	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.8 $\pm$ 2.6 D	2020-01-03
9340051	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.5 $\pm$ 2.4 D	2020-01-03
9340056	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.7 $\pm$ 2.6 D	2020-01-03
9340024	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.3 $\pm$ 2.5 D	2020-01-03
9341710	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.2 $\pm$ 2.3 D	2020-01-03
9340061	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.9 $\pm$ 2.6 D	2020-01-03
9340029	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.0 $\pm$ 2.3 D	2020-01-03
9341715	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.0 $\pm$ 2.5 D	2020-01-03
9340083	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.9 $\pm$ 2.4 D	2020-01-03
9340066	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9340034	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.4 $\pm$ 2.5 D	2020-01-03
9341720	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.3 $\pm$ 2.5 D	2020-01-03

Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value (25.7 pCi/L).
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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340002	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.7 $\pm$ 2.5 D	2020-01-03
9340088	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.4 $\pm$ 2.5 D	2020-01-03
9340071	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.9 $\pm$ 2.4 D	2020-01-03
9340039	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 $\pm$ 2.5 D	2020-01-03
9340007	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 $\pm$ 2.4 D	2020-01-03
9340093	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.5 D	2020-01-03
9340098	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 $\pm$ 2.5 D	2020-01-03
9340076	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.5 D	2020-01-03
9340044	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 $\pm$ 2.5 D	2020-01-03
9340012	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	22.5 $\pm$ 2.2 D	2020-01-03
9340017	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.3 $\pm$ 2.5 D	2020-01-03
9341703	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.0 $\pm$ 2.5 D	2020-01-03
9340049	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.0 $\pm$ 2.5 D	2020-01-03
9340022	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.6 $\pm$ 2.6 D	2020-01-03
9341708	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.8 $\pm$ 2.8 D	2020-01-03
9340054	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.8 $\pm$ 2.5 D	2020-01-03
9340059	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.5 $\pm$ 2.6 D	2020-01-03
9340027	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.6 $\pm$ 2.5 D	2020-01-03
9341713	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 $\pm$ 2.5 D	2020-01-03
9340081	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	18.4 $\pm$ 2.1 D	2020-01-03
9340064	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 $\pm$ 2.5 D	2020-01-03
9340032	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.1 $\pm$ 2.4 D	2020-01-03
9341718	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	23.7 $\pm$ 2.4 D	2020-01-03
9340086	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 $\pm$ 2.6 D	2020-01-03
9340069	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.6 $\pm$ 2.5 D	2020-01-03
9340037	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.4 $\pm$ 2.6 D	2020-01-03
9340005	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	???? DIF1	2020-01-03
9340091	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 $\pm$ 2.5 D	2020-01-03
9340096	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.2 $\pm$ 2.5 D	2020-01-03
9340074	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.7 $\pm$ 2.5 D	2020-01-03
9340042	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.6 $\pm$ 2.5 D	2020-01-03
9340010	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.5 $\pm$ 2.5 D	2020-01-03
9341701	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	22.9 $\pm$ 2.3 D	2020-01-03
9340047	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.7 $\pm$ 2.5 D	2020-01-03
9340015	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.4 $\pm$ 2.5 D	2020-01-03
9340020	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.1 $\pm$ 2.4 D	2020-01-03
9341706	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	31.0 $\pm$ 2.7 D	2020-01-03

Radon test result report for:

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

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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc Job Number 193598

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

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

Time Start: 0830 Time Stop: 0830

(Group 4)  
Device No.'s: (20) Char. Bags -

9340061 thru 9340080

Temp of \_\_\_\_\_  
RH % \_\_\_\_\_  
Avg pCi/L \_\_\_\_\_  
70.0  
50.1  
25.5

52

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

Time Start: 0835 Time Stop: 0835

(Group 5)  
Device No.'s: (20) Char. Bags -

9340081 thru 9340100

Temp of \_\_\_\_\_  
RH % \_\_\_\_\_  
Avg pCi/L \_\_\_\_\_  
70.0  
50.1  
25.5

25

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

Time Start: 0840 Time Stop: 0840

(Group 6)  
Device No.'s: (20) Char. Bags -

9341701 thru 9341720

Temp of \_\_\_\_\_  
RH % \_\_\_\_\_  
Avg pCi/L \_\_\_\_\_  
70.0  
50.1  
25.5

25

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

Radon test result report for:  
**NEWPORT MILL MS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9347673	102	2020-01-07 @ 10:00 am	2020-01-10 @ 9:00 am	0.8 ± 0.4	2020-01-14
9347668	104A	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	0.5 ± 0.4	2020-01-14
9347677	104A	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	< 0.3	2020-01-14
9347686	105	2020-01-07 @ 10:00 am	2020-01-10 @ 8:00 am	0.8 ± 0.4	2020-01-14
9347697	110	2020-01-07 @ 12:00 pm	2020-01-10 @ 8:00 am	0.9 ± 0.4	2020-01-14
9347695	115	2020-01-07 @ 12:00 pm	2020-01-10 @ 9:00 am	< 0.3	2020-01-14
9347700	115	2020-01-07 @ 12:00 pm	2020-01-10 @ 9:00 am	0.9 ± 0.3	2020-01-14
9347694	115	2020-01-07 @ 12:00 pm	2020-01-10 @ 9:00 am	0.9 ± 0.4	2020-01-14
9339996	116	2020-01-07 @ 12:00 pm	2020-01-10 @ 8:00 am	1.7 ± 0.4	2020-01-14
9347683	118	2020-01-07 @ 12:00 pm	2020-01-10 @ 8:00 am	1.9 ± 0.4	2020-01-14
9347681	120	2020-01-07 @ 9:00 am	2020-01-10 @ 9:00 am	1.3 ± 0.4	2020-01-14
9347687	120	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	1.6 ± 0.4	2020-01-14
9347692	1207	2020-01-07 @ 11:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347674	1220	2020-01-07 @ 11:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347636	200	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	< 0.3	2020-01-14
9347688	201	2020-01-07 @ 10:00 am	2020-01-10 @ 8:00 am	< 0.3	2020-01-14
9347635	202	2020-01-07 @ 8:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347641	204	2020-01-07 @ 9:00 am	2020-01-10 @ 7:00 am	0.6 ± 0.3	2020-01-14
9347676	207	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	< 0.3	2020-01-14
9347650	207	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	< 0.3	2020-01-14
9347675	207	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	< 0.3	2020-01-14
9347620	209	2020-01-07 @ 7:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347664	210	2020-01-07 @ 9:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347669	210	2020-01-07 @ 9:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347667	210	2020-01-07 @ 9:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347655	211	2020-01-07 @ 9:00 am	2020-01-10 @ 7:00 am	0.7 ± 0.4	2020-01-14
9347663	211C	2020-01-07 @ 9:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347648	211D	2020-01-07 @ 9:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347662	211E	2020-01-07 @ 9:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347624	212	2020-01-07 @ 8:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347626	216	2020-01-07 @ 8:00 am	2020-01-10 @ 7:00 am	0.6 ± 0.4	2020-01-14
9347657	217	2020-01-07 @ 10:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347615	218	2020-01-07 @ 8:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347619	219	2020-01-07 @ 8:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347616	220	2020-01-07 @ 8:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347614	221	2020-01-07 @ 8:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347630	223	2020-01-07 @ 8:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14

Radon test result report for:  
**NEWPORT MILL MS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9347631	302	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	1.1 ± 0.4	2020-01-14
9347637	304	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	1.5 ± 0.4	2020-01-14
9347627	305	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	0.8 ± 0.3	2020-01-14
9347682	306	2020-01-07 @ 12:00 pm	2020-01-10 @ 9:00 am	0.9 ± 0.4	2020-01-14
9347628	307	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	0.8 ± 0.3	2020-01-14
9347638	308	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	1.7 ± 0.4	2020-01-14
9347640	309	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	1.2 ± 0.4	2020-01-14
9347646	400	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	1.4 ± 0.3	2020-01-14
9347643	402	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	1.1 ± 0.4	2020-01-14
9347632	407	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	0.9 ± 0.4	2020-01-14
9347639	409	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	0.8 ± 0.4	2020-01-14
9347633	411	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	< 0.3	2020-01-14
9347645	412	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	0.9 ± 0.4	2020-01-14
9347699	412A	2020-01-07 @ 12:00 pm	2020-01-10 @ 9:00 am	< 0.3	2020-01-14
9347652	412C	2020-01-07 @ 12:00 pm	2020-01-10 @ 9:00 am	1.4 ± 0.4	2020-01-14
9347689	412C	2020-01-07 @ 12:00 pm	2020-01-10 @ 9:00 am	1.3 ± 0.4	2020-01-14
9347644	412D	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	< 0.3	2020-01-14
9347634	413	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	1.5 ± 0.4	2020-01-14
9347690	414	2020-01-07 @ 11:00 am	2020-01-10 @ 8:00 am	1.0 ± 0.4	2020-01-14
9347642	ASSISTANT PRINCIPAL GLASPIE	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	1.4 ± 0.4	2020-01-14
9347665	BOY LOCKER OFFICE	2020-01-07 @ 10:00 am	2020-01-10 @ 9:00 am	1.0 ± 0.4	2020-01-14
9347653	CAFETERIA	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	0.7 ± 0.3	2020-01-14
9347678	CAFETERIA	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	0.8 ± 0.4	2020-01-14
9347671	CAFETERIA	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	0.7 ± 0.4	2020-01-14
9347670	CAFETERIA	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	0.7 ± 0.4	2020-01-14
9347647	CONFERENCE ROOM M.O.	2020-01-07 @ 8:00 am	2020-01-10 @ 8:00 am	0.7 ± 0.4	2020-01-14
9339995	GIRL LOCKER OFFICE	2020-01-07 @ 12:00 pm	2020-01-10 @ 8:00 am	0.6 ± 0.3	2020-01-14
9347685	GYM	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	1.0 ± 0.4	2020-01-14
9347679	GYM	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	1.1 ± 0.4	2020-01-14
9347684	GYM	2020-01-07 @ 10:00 am	2020-01-10 @ 8:00 am	1.1 ± 0.4	2020-01-14
9347680	GYM	2020-01-07 @ 10:00 am	2020-01-10 @ 8:00 am	1.0 ± 0.4	2020-01-14
9347660	KITCHEN OFFICE	2020-01-07 @ 9:00 am	2020-01-10 @ 8:00 am	< 0.3	2020-01-14
9347625	MAIL ROOM	2020-01-07 @ 7:00 am	2020-01-10 @ 7:00 am	< 0.3	2020-01-14
9347629	MAIN OFFICE	2020-01-07 @ 7:00 am	2020-01-10 @ 8:00 am	0.8 ± 0.4	2020-01-14
9347693	MEDIA CENTER	2020-01-07 @ 12:00 pm	2020-01-10 @ 8:00 am	1.0 ± 0.4	2020-01-14
9347659	MEDIA CENTER	2020-01-07 @ 12:00 pm	2020-01-10 @ 8:00 am	0.8 ± 0.4	2020-01-14
9347696	MEDIA CENTER	2020-01-07 @ 12:00 pm	2020-01-10 @ 8:00 am	1.1 ± 0.4	2020-01-14

Radon test result report for:  
**NEWPORT MILL MS  
MAIN**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
9347691	MEDIA CENTER OFFICE	2020-01-07 @ 12:00 pm	2020-01-10 @ 8:00 am	0.9 ± 0.4	2020-01-14
9347698	MEDIA CENTER WORK ROOM	2020-01-07 @ 12:00 pm	2020-01-10 @ 8:00 am	0.9 ± 0.3	2020-01-14
9347658	NURSE OFFICE	2020-01-07 @ 10:00 am	2020-01-10 @ 9:00 am	0.7 ± 0.4	2020-01-14
9347666	NURSE OFFICE	2020-01-07 @ 10:00 am	2020-01-10 @ 9:00 am	< 0.3	2020-01-14
9347672	NURSE OFFICE	2020-01-07 @ 10:00 am	2020-01-10 @ 9:00 am	< 0.3	2020-01-14
9347661	OFFICE M.O.	2020-01-07 @ 8:00 am	2020-01-10 @ 9:00 am	0.8 ± 0.4	2020-01-14
9347656	PRINCIPAL OFFICE	2020-01-07 @ 9:00 am	2020-01-10 @ 9:00 am	0.6 ± 0.4	2020-01-14
9347649	PRINCIPAL SECRETARY	2020-01-07 @ 8:00 am	2020-01-10 @ 9:00 am	< 0.3	2020-01-14
9347654	SECURITY	2020-01-07 @ 9:00 am	2020-01-10 @ 9:00 am	0.8 ± 0.4	2020-01-14
9347651	STAFF DEVELOPMENT	2020-01-07 @ 11:00 am	2020-01-10 @ 8:00 am	0.7 ± 0.3	2020-01-14
9339999	WEIGHT ROOM	2020-01-07 @ 1:00 pm	2020-01-10 @ 9:00 am	0.9 ± 0.4	2020-01-14
9340000	WEIGHT ROOM	2020-01-07 @ 1:00 pm	2020-01-10 @ 9:00 am	1.4 ± 0.4	2020-01-14



### Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 3

Name of Schools:

- |                              |                            |
|------------------------------|----------------------------|
| 1. Bannockburn E.S.          | 12. Montgomery Knolls E.S. |
| 2. Bethesda E.S.             | 13. Newport Mills M.S.     |
| 3. Bethesda-Chevy Chase H.S. | 14. Oak View E.S.          |
| 4. Bradley Hill E.S.         | 15. Rock View E.S.         |
| 5. Burning Tree E.S.         | 16. Roscoe Nix E.S.        |
| 6. Burnt Mills E.S.          | 17. Sligo M.S.             |
| 7. East Silver Springs E.S.  | 18. Spring Mill Center     |
| 8. Einstein H.S.             | 19. Springbrook H.S.       |
| 9. Flora Singer E.S.         | 20. Westland M.S.          |
| 10. Key M.S.                 | 21. Woodlin M.S.           |
| 11. Montgomery Blair H.S.    |                            |

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	Date	Initials
Radon Test Kits Deployed	1/6/20 to 1/7/20	JM
Radon Test Kits Collected	1/9/20 to 1/10/20	JM
Radon Test Kits Shipped to Lab*	1/10/20	JM
Radon Test Kits Received by Lab*	1/13/202	JM

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



**MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Newport Mill Middle School
Date of Report	March 13, 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	20
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	3.2 pCi/L

**Project Status**

Current Project Status at this time: Retesting completed; no further action at this time.



March 13, 2018

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

Re: Radon Testing Services

KCI Job #1214634188

**Location: Newport Mill Middle School**

11311 Newport Mill Rd.  
Kensington, Maryland 20895

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 Newport Mill Middle School, located at 11311 Newport Mill Rd. in Kensington, Maryland 20895 (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 12, 2018 and deployed twenty-six (26) 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).

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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 15, 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 ranged from the mid-20s to upper 40s and high temperatures ranged from the high-30s to the high-60s. Maximum sustained winds ranged from 10-15 miles per hour. Average humidity was around 69%. 0.05 Inches of precipitation was recorded during the testing period.

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## **RESULTS**

The sampling locations and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). 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>
$\geq 4.0$ pCi/L	None	N/A
$\leq 4.0$ 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,



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>Newport Mills Middle School</b>		
<b>Test Period: 02/12/18-02/15/18</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7986403	100	0.8
7986419	102	1.3
7986434	118	3.2
7986411	210	0.7
7986425	411	1.3
7986422	414	2.5
7986401	101C	1.0
7986402	1202 SD OFFICE	< 0.3
7986432	204A	< 0.3
7986429	209A	1.0
7986409	402C	1.6
7986430	412B	1.6
7986404	AP	2.1
7986428	BOYS LOCKER	2.1
7986427	GIRLS LOCKER	1.0
7986416	ISS	1.0
7986417	KITCHEN	1.3
7986423	KITCHEN	1.0
7986426	KITCHEN OFFICE	0.6
7986420	MAIN OFFICE	0.8
7986418	SCHOOL STORE 110	1.7

Table Note:

\* Missing or Compromised Sample

<b>Table 2 - Radon Testing Results</b>		
<b>Newport Mills Middle School</b>		
<b>Test Period: 02/12/18-02/15/18</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7986424	D (411)	1.9
7986410	D (414)	1.8
7986421	D (MAIN OFFICE)	1.4
7986433	FB (KITCHEN)	< 0.3
7986431	FB (MAIN OFFICE)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:

**NEWPORT MILLS MIDDLE SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7986403	100	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	0.8 ± 0.4	2018-02-19
7986401	101C	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.0 ± 0.4	2018-02-19
7986419	102	2018-02-12 @ 10:00 am	2018-02-15 @ 11:00 am	1.3 ± 0.4	2018-02-19
7986434	118	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	3.2 ± 0.5	2018-02-19
7986402	1202 SD OFFICE	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	< 0.3	2018-02-19
7986432	204A	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	< 0.3	2018-02-19
7986429	209A	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	1.0 ± 0.4	2018-02-19
7986411	210	2018-02-12 @ 10:00 am	2018-02-15 @ 11:00 am	0.7 ± 0.4	2018-02-19
7986409	402C	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	1.6 ± 0.4	2018-02-19
7986424	411	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	1.9 ± 0.4	2018-02-19
7986425	411	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	1.3 ± 0.4	2018-02-19
7986430	412B	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	1.6 ± 0.4	2018-02-19
7986410	414	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	1.8 ± 0.4	2018-02-19
7986422	414	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	2.5 ± 0.5	2018-02-19
7986404	AP	2018-02-12 @ 12:00 pm	2018-02-15 @ 11:00 am	2.1 ± 0.4	2018-02-19
7986428	BOYS LOCKER	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	2.1 ± 0.4	2018-02-19
7986427	GIRLS LOCKER	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.0 ± 0.4	2018-02-19
7986416	ISS	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.0 ± 0.4	2018-02-19
7986433	KITCHEN	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	< 0.3	2018-02-19
7986417	KITCHEN	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.3 ± 0.4	2018-02-19
7986423	KITCHEN	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.0 ± 0.4	2018-02-19
7986426	KITCHEN OFFICE	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	0.6 ± 0.3	2018-02-19
7986420	MAIN OFFICE	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	0.8 ± 0.4	2018-02-19
7986431	MAIN OFFICE	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	< 0.3	2018-02-19
7986421	MAIN OFFICE	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.4 ± 0.4	2018-02-19
7986418	SCHOOL STORE 110	2018-02-12 @ 11:00 am	2018-02-15 @ 11:00 am	1.7 ± 0.4	2018-02-19



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon

Names of Schools:

1. Highland Elementary School
2. Stephen Knolls Elementary School
3. Silver Creek Middle School
4. Woodlin Elementary School
5. Sligo Creek Elementary School
6. Francis Scott Key Middle School
7. John T. Baker Middle School
8. Cedar Grove Elementary School
9. Clarksburg Elementary School
10. Clarksburg Elementary School Annex
11. Fields Road Elementary School
12. Dufief Elementary School
13. Brown Station Elementary School
14. Diamond Elementary School
15. Fallsmeade Elementary School
16. Thomas Whootton High School
17. Lake Seneca Elementary School
18. Redland Middle School
19. Newport Mill Middle School
20. Bethesda Trans. and Maint. Depot
21. Sequoyah Elementary School
22. Gaithersburg Middle School
23. Wayside Elementary School
24. Travilah Elementary School
25. Damascus High School
26. Jones Lane Elementary School
27. Greencastle Elementary School
28. Spring Brook High School
29. Montgomery Blair High School
30. Watkins Mill High School

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	Date	Initials
Radon Test Kits Deployed	2/12/18	JM
Radon Test Kits Collected	2/15/18	JM
Radon Test Kits Shipped to Lab*	2/15/18	JM
Radon Test Kits Received by Lab*	2/19/15	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).**

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<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

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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 183530

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

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

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	Newport Mill Middle School
Date of Report	February 2, 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	52
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	< 0.3 pCi/L
Highest Value	2.2 pCi/L

Current Project Status at this time: Results satisfactory to date; missed locations and missing/compromised tests to be sampled.



February 2, 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: Newport Mill Middle School**

11311 Newport Mill Rd.  
Kensington, Maryland 20895

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 Newport Mill Middle School, located at 11311 Newport Mill Rd. in Kensington, Maryland 20895 (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 4, 2017 and deployed sixty (60) 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 7, 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 high-20s to mid-40s and high temperatures ranged from the low-40s to mid-50s. Maximum sustained winds ranged from 12-17 miles per hour. Average humidity was around 65%. 0.16 Inches of precipitation was recorded during the testing period.

### **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 (Attachment B). Missing/compromised tests, missed rooms, and locked rooms 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>
$\geq 4.0$ pCi/L	None	N/A
$\leq 4.0$ pCi/L	See Attachment B	See Attachment B

<b>Quality Control Samples</b>	
Results of Blank Canisters:	The field blank, office blank, and lab transit blank 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,



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>Newport Mill Middle School</b>		
<b>Test Period: 12/04/17-12/07/17</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7193807	41	1.0
7193985	101	0.5
7193809	103	0.8
7193810	103	1.0
7193816	104	1.1
7193817	104	0.8
7193822	105	1.0
7193811	116	2.2
7193812	120	1.4
7193818	123	1.4
7193992	200	0.7
7193989	201	< 0.3
7193964	202	0.7
7193999	204	0.9
7193974	207	0.6
7193939	209	< 0.3
7193998	211	0.9
7193990	212	0.6
7193983	216	< 0.3
7193820	217	0.9
7193982	218	< 0.3
7193819	219	0.7
7193980	220	< 0.3
7193821	221	0.9
7193996	223	0.7
7193802	301	1.0
7193962	302	1.2
7193963	304	1.1
7193803	305	0.6
7193987	306	1.3
7193991	307	1.4
7193981	308	1.5
7193993	309	1.6
7193806	400	1.4
7193988	402	1.8
7193953	407	1.5
7193995	409	1.0
7193994	412	0.9
7193805	413	1.9
7193825	1201	< 0.3
7193829	1217	< 0.3
7193823	1222	0.6
7193977	101A	2.0
7193979	101B	0.9
7193984	101D	0.9
7193801	101E	1.1

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Newport Mill Middle School</b>		
<b>Test Period: 12/04/17-12/07/17</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7193986	101H	0.6
7193813	104B	0.9
7193814	104B	1.6
7193808	107A	0.6
7193824	125A	1.4
7193975	211C	0.7
7193976	211D	1.0
7193920	211E	0.7
7193804	* 414 (Tampered)	1.4

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Newport Mill Middle School</b>		
<b>Test Period: 12/04/17-12/07/17</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7194000	D (101)	0.9
7193978	D (301)	1.2
7193815	FB (104)	< 0.3
7193997	FB (301)	0.5
7194001	OB (OFFICE BLANK)	< 0.3

Table Note:

\* Missing or Compromised Sample



# ATTACHMENT C

## Laboratory Analytical Results

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December 29, 2017

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

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Radon test result report for:  
**NEWPORT MILL MS**  
**NEWPORT MILL MS**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7193984	101D	2017-12-04 @ 2:00 pm	2017-12-07 @ 2:00 pm	0.9 ± 0.3	2017-12-12
7194001	OFFICE BLANK	2017-12-04 @ 2:00 pm	2017-12-07 @ 2:00 pm	< 0.3	2017-12-11

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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 result report for:  
**NEWPORT MILL MS**  
**NEWPORT MILL MS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7194000	101	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	0.9 ± 0.4	2017-12-12
7193985	101	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	0.5 ± 0.4	2017-12-12
7193977	101A	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	2.0 ± 0.4	2017-12-12
7193979	101B	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	0.9 ± 0.4	2017-12-12
7193801	101E	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	1.1 ± 0.4	2017-12-12
7193986	101H	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	0.6 ± 0.4	2017-12-12
7193809	103	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	0.8 ± 0.3	2017-12-12
7193810	103	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	1.0 ± 0.3	2017-12-12
7193816	104	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	1.1 ± 0.3	2017-12-12
7193817	104	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	0.8 ± 0.3	2017-12-12
7193815	104	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	< 0.3	2017-12-12
7193813	104B	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	0.9 ± 0.4	2017-12-12
7193814	104B	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	1.6 ± 0.4	2017-12-12
7193822	105	2017-12-04 @ 5:00 pm	2017-12-07 @ 1:00 pm	1.0 ± 0.4	2017-12-12
7193808	107A	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	0.6 ± 0.3	2017-12-12
7193811	116	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	2.2 ± 0.4	2017-12-12
7193812	120	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	1.4 ± 0.4	2017-12-12
7193825	1201	2017-12-04 @ 6:00 pm	2017-12-07 @ 1:00 pm	< 0.3	2017-12-12
7193827	1217	@	@		
7193829	1217	2017-12-04 @ 5:00 pm	2017-12-07 @ 1:00 pm	< 0.3	2017-12-12
7193823	1222	2017-12-04 @ 5:00 pm	2017-12-07 @ 1:00 pm	0.6 ± 0.3	2017-12-12
7193818	123	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	1.4 ± 0.4	2017-12-12
7193824	125A	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	1.4 ± 0.4	2017-12-12
7193992	200	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	0.7 ± 0.4	2017-12-12
7193989	201	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	< 0.3	2017-12-12
7193964	202	2017-12-04 @ 3:00 pm	2017-12-07 @ 12:00 pm	0.7 ± 0.3	2017-12-12
7193999	204	2017-12-04 @ 3:00 pm	2017-12-07 @ 12:00 pm	0.9 ± 0.4	2017-12-12
7193974	207	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	0.6 ± 0.3	2017-12-12
7193939	209	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	< 0.3	2017-12-12
7193998	211	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	0.9 ± 0.4	2017-12-12
7193975	211C	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	0.7 ± 0.4	2017-12-12
7193976	211D	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	1.0 ± 0.4	2017-12-12
7193920	211E	2017-12-04 @ 3:00 pm	2017-12-07 @ 11:00 am	0.7 ± 0.3	2017-12-12
7193990	212	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	0.6 ± 0.3	2017-12-12
7193983	216	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	< 0.3	2017-12-12
7193820	217	2017-12-04 @ 5:00 pm	2017-12-07 @ 12:00 pm	0.9 ± 0.4	2017-12-12
7193982	218	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	< 0.3	2017-12-12

Radon test result report for:  
**NEWPORT MILL MS**  
**NEWPORT MILL MS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7193819	219	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	0.7 ± 0.3	2017-12-12
7193980	220	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	< 0.3	2017-12-12
7193821	221	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	0.9 ± 0.3	2017-12-12
7193996	223	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	0.7 ± 0.3	2017-12-12
7193978	301	2017-12-04 @ 3:00 pm	2017-12-07 @ 12:00 pm	1.2 ± 0.4	2017-12-12
7193802	301	2017-12-04 @ 3:00 pm	2017-12-07 @ 12:00 pm	1.0 ± 0.3	2017-12-12
7193997	301	2017-12-04 @ 3:00 pm	2017-12-07 @ 12:00 pm	0.5 ± 0.3	2017-12-12
7193962	302	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.2 ± 0.4	2017-12-12
7193963	304	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.1 ± 0.4	2017-12-12
7193803	305	2017-12-04 @ 3:00 pm	2017-12-07 @ 12:00 pm	0.6 ± 0.4	2017-12-12
7193987	306	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.3 ± 0.3	2017-12-12
7193991	307	2017-12-04 @ 3:00 pm	2017-12-07 @ 12:00 pm	1.4 ± 0.4	2017-12-12
7193981	308	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.5 ± 0.3	2017-12-12
7193993	309	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.6 ± 0.4	2017-12-12
7193806	400	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.4 ± 0.3	2017-12-12
7193988	402	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.8 ± 0.4	2017-12-12
7193953	407	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.5 ± 0.4	2017-12-12
7193995	409	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.0 ± 0.3	2017-12-12
7193807	41	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.0 ± 0.3	2017-12-12
7193994	412	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	0.9 ± 0.4	2017-12-12
7193805	413	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.9 ± 0.4	2017-12-12
7193804	414	2017-12-04 @ 4:00 pm	2017-12-07 @ 12:00 pm	1.4 ± 0.3	2017-12-12



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

- |                                       |                                  |
|---------------------------------------|----------------------------------|
| 1. Brooke Grove Elementary School     | 14. Newport Mill Middle School   |
| 2. Brown Station Elementary School    | 15. Oakview Elementary School    |
| 3. Diamond Elementary School Addition | 16. Quince Orchard High School   |
| 4. Dufief Elementary School           | 17. Robert Frost Middle School   |
| 5. Emory Grove Center                 | 18. Rosa Parks Middle School     |
| 6. Fields Road Elementary School      | 19. South Lake Elementary School |
| 7. Facilities Maintenance Depot       |                                  |
| 8. Forest Oak Middle School           |                                  |
| 9. Francis Scott Key Middle School    |                                  |
| 10. Gaithersburg Elementary School    |                                  |
| 11. Gaithersburg Middle School        |                                  |
| 12. Germantown Elementary School      |                                  |
| 13. Greenwood Elementary School       |                                  |
| 14. Jones Lane Elementary School      |                                  |

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	Date	Initials
Radon Test Kits Deployed	12/04/17	JM
Radon Test Kits Collected	12/07/17	JM
Radon Test Kits Shipped to Lab*	12/07/17	JM
Radon Test Kits Received by Lab*	12/11/17	JM

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

Radon test result report for:**TRANSIT 2  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7193838	TRANSIT 1	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979384	TRANSIT 10	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979385	TRANSIT 11	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7984056	TRANSIT 12	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7983834	TRANSIT 13	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7194097	TRANSIT 14	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7194092	TRANSIT 15	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7193840	TRANSIT 16	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979072	TRANSIT 17	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979071	TRANSIT 18	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979065	TRANSIT 19	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	0.6 ± 0.4	2017-12-13
7978194	TRANSIT 2	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7985660	TRANSIT 20	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7985661	TRANSIT 21	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	0.7 ± 0.4	2017-12-13
7193843	TRANSIT 22	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7984055	TRANSIT 23	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7983813	TRANSIT 24	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7983827	TRANSIT 25	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7978193	TRANSIT 3	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7978189	TRANSIT 4	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	0.5 ± 0.4	2017-12-13
7986187	TRANSIT 5	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7986188	TRANSIT 6	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7986177	TRANSIT 7	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979077	TRANSIT 8	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13
7979386	TRANSIT 9	2017-12-05 @ 2:00 pm	2017-12-08 @ 2:00 pm	< 0.3	2017-12-13

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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: Newport Mill Middle School

Date of Test Report:	10/19/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	11
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.6

#### Project Status:

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



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: Newport Mill Middle School  
11311 Newport Mill Road  
Kensington, MD 20895

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 Newport Mill Middle School, located at 11311 Newport Mill Road in Kensington, Maryland 20895 (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 thirteen (13) 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>
<b>≥4.0 pCi/L</b>	none	n/a
<b>&lt;4.0 pCi/L</b>	See Attachment B	

Notes:

D- Duplicate sample

The field blank, lab transit blanks, and office 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>Newport Mill Middle School</b>		
<b>Test Period: 09/26/16-09/29/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7802511	200	0.6
7802505	201	< 0.3
7802516	202	< 0.3
7802515	207	< 0.3
7802520	209	< 0.3
7802513	212	< 0.3
7802504	216	< 0.3
7802514	217	0.5
7802503	219	< 0.3
7802459	221	< 0.3
-	* 210 (Inaccessible/Locked Room)	-
7802502	* 218 (Open Window/Fan On)	< 0.3

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Newport Mill Middle School</b>		
<b>Test Period: 09/26/16-09/29/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7802512	D (200)	< 0.3
7802506	FB (219)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

October 7, 2016

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

Radon test result report for:

**NEWPORT MILLS MIDDLE SCHOOL  
MAIN**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7802511	200	2016-09-26 @ 3:00 pm	2016-09-29 @ 11:00 am	0.6 ± 0.3	2016-10-03
7802512	200	2016-09-26 @ 3:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802505	201	2016-09-26 @ 3:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802516	202	2016-09-26 @ 3:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802515	207	2016-09-26 @ 3:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802520	209	2016-09-26 @ 4:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802513	212	2016-09-26 @ 4:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802504	216	2016-09-26 @ 4:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802514	217	2016-09-26 @ 4:00 pm	2016-09-29 @ 11:00 am	0.5 ± 0.2	2016-10-03
7802502	218	2016-09-26 @ 4:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802506	219	2016-09-26 @ 4:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802503	219	2016-09-26 @ 4:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03
7802459	221	2016-09-26 @ 4:00 pm	2016-09-29 @ 11:00 am	< 0.3	2016-10-03

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 NEWPORT MILL MIDDLE SCHOOL

11311 Newport Mill Road, Kensington, Maryland 20895

EXECUTIVE SUMMARY

Date of Test Report:	3/16/16 Follow-Up
Round of Testing:	Initial <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">Follow-up</span> Post Remediation
# Rooms Tested	8
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	<0.3
High Value:	6.2
Confirmed Rooms $\geq$ 4.0 pCi/L US EPA Action Level	2

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

Room	Result (pCi/L) 3/3/16 (Rev 1 Initial)	Result (pCi/L) 3/16/16 Follow-Up	Average Result (pCi/L)
207	4.8	Locked	4.8
120	<0.3 Tampered	1.2	0.8
305	1.2 Tampered	0.9	1.1
400	1.5 Tampered	2.4	2.0
407	--- Missing	1.1	1.1
GYM	0.6 Tampered	<0.3	0.5
Kitchen Office	--- Missing	<0.3	<0.3
219	3.5	6.2	4.9
SD Office	0.9 Tampered	1.6	1.3



### MCPS RADON TESTING

#### Executive Summary: Newport Mill Middle School

Date of Test Report:	3/16/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	8
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	< 0.3
High Value:	6.2

Rooms with results  $\geq$  4.0 pCi/L:  
219 (6.2 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.

Retesting completed; locked/inaccessible rooms need testing (207).



March 16, 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 # 12146341.29

Location: Newport Mill Middle School  
11311 Newport Mill Road  
Kensington, MD 20895

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 Newport Mill Middle School, located at 11311 Newport Mill Road in Kensington, Maryland 20895 (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 22, 2016 and deployed ten (10) 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 25, 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. Note that strong storms and heavy rainfall were recorded during the test period. The unusual weather conditions may have resulted in atypical radon test results for this facility.

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>	219	6.2
<b><math>&lt; 4.0</math> pCi/L</b>	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

**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 9 testing. Office blanks were not submitted under each school individually.

<b>Radon Testing Results</b>		
<b>Newport Mill Middle School</b>		
<b>Test Period: 02/22/16-02/25/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7718515	120	1.2
7718516	219	6.2
7718512	305	0.9
7718555	400	2.4
7718549	407	1.1
7718514	GYM	< 0.3
7718547	KITCHEN OFFICE	< 0.3
7718517	SD OFFICE	1.6

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Newport Mill Middle School</b>		
<b>Test Period: 02/22/16-02/25/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7718513	D (305)	1.2
7718557	FB (305)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

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March 8, 2016 **\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:  
**NEWPORT MILL MIDDLE SCHOOL  
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>
7718515	120	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	1.2 ± 0.3	2016-02-29
7718516	219	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	6.2 ± 0.5	2016-02-29
7718512	305	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	0.9 ± 0.3	2016-02-29
7718513	305	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	1.2 ± 0.3	2016-02-29
7718557	305	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	< 0.3	2016-02-29
7718555	400	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	2.4 ± 0.4	2016-02-29
7718549	407	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	1.1 ± 0.3	2016-02-29
7718514	GYM	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	< 0.3	2016-02-29
7718547	KITCHEN OFFICE	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	< 0.3	2016-02-29
7718517	SD OFFICE	2016-02-22 @ 1:00 pm	2016-02-25 @ 9:00 am	1.6 ± 0.3	2016-02-29

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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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March 9, 2016 **\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:  
**MCPS**  
**Phase 9 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>
7712568	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7712584	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719460	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719481	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719497	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719498	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29

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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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March 9, 2016 **\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:  
**MCPS**  
**Phase 9 Office Blanks**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7731626	0	2016-02-23 @ 2:00 pm	2016-02-26 @ 3:00 pm	< 0.3	2016-03-01
7731633	0	2016-02-23 @ 2:00 pm	2016-02-26 @ 3:00 pm	< 0.3	2016-03-01
7735204	0	2016-02-23 @ 2:00 pm	2016-02-26 @ 3:00 pm	< 0.3	2016-03-01

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

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: 1/30/16 Date Stop: 2/1/16 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_  
Time Start: 0926 Time Stop: 0926 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_  
Device No.'s: (6) Char. Bags - Device No.'s: \_\_\_\_\_  
7718281, 7718282, 7718291, \_\_\_\_\_  
7718288, 7718289, 7718273 \_\_\_\_\_  
ε3 left

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_  
Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_  
Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_  
Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_  
Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

- |                          |                           |                        |
|--------------------------|---------------------------|------------------------|
| 1. Rocking Horse Road ES | 16. Broad Acres ES        | 31. Rosa Parks MS      |
| 2. Rockwell ES           | 17. Belmont ES            | 32. Rosemary Hills ES  |
| 3. Oakland Terrace ES    | 18. Emory Grove Center    | 33. Sequoyah ES        |
| 4. Rosemont ES           | 19. Forest Knolls ES      | 34. Damascus HS        |
| 5. Beall ES              | 20. Baker MS              | 35. Einstein ES        |
| 6. Cresthaven ES         | 21. MLK MS                | 36. Forest Oak MS      |
| 7. Quince Orchard HS     | 22. Richard Montgomery HS | 37. Hoover MS          |
| 8. Smith Center          | 23. Sherwood HS           | 38. Julius West MS     |
| 9. Ashburton ES          | 24. Walter Johnson HS     | 39. John F. Kennedy HS |
| 10. Bannockburn ES       | 25. Diamond ES            | 40. Travilah ES        |
| 11. Bradley Hills ES     | 26. Newport Mill MS       | 41. Watkins Mill HS    |
| 12. Cannon Road ES       | 27. Drew ES               | 42. Northwood HS       |
| 13. Flora M. Singer ES   | 28. Monocacy ES           | 43. Lincoln Center     |
| 14. Clarksburg HS        | 29. Potomac ES            |                        |
| 15. Briggs Chaney MS     | 30. Rock Terrace School   |                        |

---

	Date	Initials
Radon Test Kits Deployed	2/22/16	JM
Radon Test Kits Collected	2/25/16	JM
Radon Test Kits Shipped to Lab*	2/25/16	JM
Radon Test Kits Received by Lab*	2/29/16	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 9

Name of Schools:

- |                            |                         |
|----------------------------|-------------------------|
| 1. Banneker MS             | 10. Maryvale ES         |
| 2. Bethesda-Chevy Chase HS | 11. Montgomery Blair HS |
| 3. Burtonsville ES         | 12. Poolesville HS      |
| 4. Chevy Chase ES          | 13. Rachel Carson ES    |
| 5. Clopper Mill ES         | 14. Stedwick ES         |
| 6. Edison HS               | 15. Watkins Mill ES     |
| 7. Flower Hill ES          | 16. Laytonsville ES     |
| 8. Flower Valley ES        | 17. Lincoln Center      |
| 9. Greencastle ES          |                         |

---

	Date	Initials
Radon Test Kits Deployed	2/23/16	JM
Radon Test Kits Collected	2/26/16	JM
Radon Test Kits Shipped to Lab*	2/26/16	JM
Radon Test Kits Received by Lab*	3/01/16	JM

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



### MCPS RADON TESTING

Executive Summary: Newport Mill Middle School

Date of Test Report:	3/3/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	62
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	< 0.3
High Value:	4.8

Rooms with results  $\geq$  4.0 pCi/L:  
Room 207 (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.



March 3, 2016 (Rev 1)

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

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

Location: Newport Mill Middle School  
11311 Newport Mill Road  
Kensington, MD 20895

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 Newport Mill Middle School, located at 11311 Newport Mill Road in Kensington, Maryland 20895 (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 eighty (80) 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 7 duplicate samples (10%), 6 field blanks (3%), and 1 office blank (1%). Prior to sampling, KCI returned 1% of the test batch to the laboratory for analysis as lab transit blanks. 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 during the 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	207	4.8
$< 4.0$ pCi/L	See Attachment B	

Notes:

D- Duplicate sample

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

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

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

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

# ATTACHMENT B

## Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Radon Testing Results		
Newport Mill Ms		
Test Period: 12/21/15-12/24/15		
Kit Number	Room / Area	Result
7713821	100	1.2
7713813	102	2.4
7713869	105	0.8
7713817	116	0.8
7713809	118	< 0.3
7713885	200	1.2
7713877	201	1.6
7713874	202	0.7
7713891	204	0.6
7713873	207	4.8
7713880	209	1.6
7713895	210	2.1
7713876	211	1.7
7713882	212	0.9
7713864	216	1.3
7713859	217	3.2
7713879	218	2.1
7713862	219	3.5
7713888	220	2.6
7713884	221	1.8
7713883	223	1.4
7713898	302	1.5
7713894	304	1.0
7713839	306	1.4
7713896	307	1.3
7713899	308	1.6
7713847	309	2.4
7713840	402	1.9
7713848	409	0.9
7713852	411	1.8
7713861	412	1.1
7713860	413	1.7
7713867	414	2.2
7713814	1201	0.6
7713806	1217	0.7
7713803	1222	< 0.3
7713850	101C	0.9
7713842	101D	0.9
7713846	101E	0.7
7713825	* 120 (tampered)	< 0.3
7713866	204A	0.8
7713881	209A	1.6
7713836	211C	1.3
7713875	211D	1.2
7713872	211E	1.5
7713893	* 305 (tampered)	1.2

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Newport Mill Ms</b>		
<b>Test Period: 12/21/15-12/24/15</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7713851	* 400 (tampered)	1.5
7713853	402C	1.7
7713857	* 407 (missing)	-
7713843	412B	0.6
7713845	AP OFFICE	2.1
7713801	BOYS LOCKER OFF	0.7
7713865	CAFETERIA	< 0.3
7713868	CAFETERIA	< 0.3
7713871	CAFETERIA	< 0.3
7713858	GIRLS LOCKER OFF	0.8
7713830	GYM	0.7
7713802	* GYM (tampered)	0.6
7713841	ISS	1.5
7713837	KITCHEN	< 0.3
7713870	* Kitchen office (missing)	-
7713878	MAIN OFFICE	1.2
7713886	MEDIA	1.6
7713892	MEDIA	2.0
7713810	SCHOOL STORE	< 0.3
7713849	SD OFF	0.9

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Newport Mill MS</b>		
<b>Test Period: 12/21/15-12/24/15</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7713805	D (118)	0.8
7713832	D (1217)	0.7
7713863	D (216)	1.5
7713897	D (306)	1.5
7713854	D (MAIN OFFICE)	1.3
7713887	D (MEDIA)	1.7
7713844	* D (SD OFF:tampered)	0.9
7713819	FB (1217)	< 0.3
7713856	FB (211C)	< 0.3
7713889	FB (216)	< 0.3
7713900	FB (306)	< 0.3
7713890	FB (MEDIA)	< 0.3
7713855	FB (SD OFF)	< 0.3
7713905	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:  
**NEWPORT MILL MS MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7713905	0	2015-12-21 @ 3:00 pm	2015-12-24 @ 10:00 am	< 0.3	2015-12-29
7713821	100	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	1.2 ± 0.4	2015-12-29
7713850	101C	2015-12-21 @ 10:00 am	2015-12-23 @ 3:00 pm	0.9 ± 0.4	2015-12-28
7713842	101D	2015-12-21 @ 10:00 am	2015-12-23 @ 2:00 pm	0.9 ± 0.4	2015-12-29
7713846	101E	2015-12-21 @ 10:00 am	2015-12-23 @ 3:00 pm	0.7 ± 0.4	2015-12-29
7713813	102	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	2.4 ± 0.4	2015-12-29
7713869	105	2015-12-21 @ 11:00 am	2015-12-24 @ 7:00 am	0.8 ± 0.3	2015-12-29
7713817	116	2015-12-21 @ 11:00 am	2015-12-24 @ 7:00 am	0.8 ± 0.4	2015-12-29
7713805	118	2015-12-21 @ 11:00 am	2015-12-23 @ 12:00 pm	0.8 ± 0.4	2015-12-29
7713809	118	2015-12-21 @ 11:00 am	2015-12-23 @ 12:00 pm	< 0.3	2015-12-29
7713825	120	2015-12-21 @ 11:00 am	2015-12-24 @ 7:00 am	< 0.3	2015-12-29
7713814	1201	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.6 ± 0.3	2015-12-29
7713806	1217	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-29
7713819	1217	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-29
7713832	1217	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.7 ± 0.3	2015-12-29
7713803	1222	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-28
7713885	200	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.2 ± 0.4	2015-12-29
7713877	201	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.6 ± 0.4	2015-12-29
7713874	202	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	0.7 ± 0.3	2015-12-29
7713891	204	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	0.6 ± 0.3	2015-12-29
7713866	204A	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	0.8 ± 0.4	2015-12-29
7713873	207	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	4.8 ± 0.6	2015-12-29
7713880	209	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.6 ± 0.3	2015-12-28
7713881	209A	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.6 ± 0.4	2015-12-29
7713895	210	2015-12-21 @ 10:00 am	2015-12-23 @ 2:00 pm	2.1 ± 0.5	2015-12-29
7713876	211	2015-12-21 @ 10:00 am	2015-12-23 @ 3:00 pm	1.7 ± 0.5	2015-12-29
7713856	211C	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	< 0.3	2015-12-29
7713836	211C	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.3 ± 0.4	2015-12-29
7713875	211D	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.2 ± 0.3	2015-12-28
7713872	211E	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.5 ± 0.4	2015-12-29
7713882	212	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	0.9 ± 0.3	2015-12-28
7713889	216	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	< 0.3	2015-12-28
7713863	216	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.5 ± 0.4	2015-12-29
7713864	216	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.3 ± 0.4	2015-12-29
7713859	217	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	3.2 ± 0.5	2015-12-29
7713879	218	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	2.1 ± 0.4	2015-12-28
7713862	219	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	3.5 ± 0.4	2015-12-28

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

Radon test result report for:  
**NEWPORT MILL MS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7713888	220	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	2.6 ± 0.4	2015-12-29
7713884	221	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.8 ± 0.4	2015-12-29
7713883	223	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.4 ± 0.4	2015-12-29
7713898	302	2015-12-21 @ 9:00 am	2015-12-24 @ 7:00 am	1.5 ± 0.4	2015-12-29
7713894	304	2015-12-21 @ 9:00 am	2015-12-24 @ 7:00 am	1.0 ± 0.4	2015-12-29
7713893	305	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.2 ± 0.3	2015-12-28
7713839	306	2015-12-21 @ 9:00 am	2015-12-24 @ 7:00 am	1.4 ± 0.3	2015-12-28
7713897	306	2015-12-21 @ 9:00 am	2015-12-24 @ 7:00 am	1.5 ± 0.4	2015-12-29
7713900	306	2015-12-21 @ 9:00 am	2015-12-24 @ 7:00 am	< 0.3	2015-12-29
7713896	307	2015-12-21 @ 9:00 am	2015-12-24 @ 7:00 am	1.3 ± 0.4	2015-12-29
7713899	308	2015-12-21 @ 9:00 am	2015-12-24 @ 7:00 am	1.6 ± 0.4	2015-12-29
7713847	309	2015-12-21 @ 9:00 am	2015-12-24 @ 7:00 am	2.4 ± 0.4	2015-12-29
7713851	400	2015-12-21 @ 9:00 am	2015-12-24 @ 7:00 am	1.5 ± 0.3	2015-12-28
7713840	402	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	1.9 ± 0.4	2015-12-29
7713853	402C	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	1.7 ± 0.3	2015-12-28
7713857	407	@	@		
7713848	409	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	0.9 ± 0.3	2015-12-28
7713852	411	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	1.8 ± 0.4	2015-12-29
7713861	412	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	1.1 ± 0.4	2015-12-29
7713843	412B	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	0.6 ± 0.4	2015-12-29
7713860	413	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	1.7 ± 0.4	2015-12-29
7713867	414	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	2.2 ± 0.4	2015-12-29
7713845	AP OFFICE	2015-12-21 @ 10:00 am	2015-12-23 @ 2:00 pm	2.1 ± 0.5	2015-12-29
7713801	BOYS LOCKER OFF	2015-12-21 @ 11:00 am	2015-12-24 @ 7:00 am	0.7 ± 0.3	2015-12-29
7713865	CAFETERIA	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	< 0.3	2015-12-29
7713868	CAFETERIA	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	< 0.3	2015-12-29
7713871	CAFETERIA	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	< 0.3	2015-12-29
7713858	GIRLS LOCKER OFF	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	0.8 ± 0.3	2015-12-29
7713802	GYM	2015-12-21 @ 11:00 am	2015-12-24 @ 7:00 am	0.6 ± 0.3	2015-12-29
7713830	GYM	2015-12-21 @ 11:00 am	2015-12-24 @ 7:00 am	0.7 ± 0.3	2015-12-29
7713841	ISS	2015-12-21 @ 10:00 am	2015-12-23 @ 2:00 pm	1.5 ± 0.4	2015-12-29
7713837	KITCHEN	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	< 0.3	2015-12-29
7713870	KITCHEN OFFICE	@	@		
7713854	MAIN OFFICE	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.3 ± 0.4	2015-12-29
7713878	MAIN OFFICE	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.2 ± 0.4	2015-12-29
7713886	MEDIA	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.6 ± 0.3	2015-12-28
7713887	MEDIA	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	1.7 ± 0.3	2015-12-28

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

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Radon test result report for:  
**NEWPORT MILL MS  
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>
7713892	MEDIA	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	2.0 ± 0.3	2015-12-28
7713890	MEDIA	2015-12-21 @ 10:00 am	2015-12-24 @ 7:00 am	< 0.3	2015-12-29
7713810	SCHOOL STORE	2015-12-21 @ 11:00 am	2015-12-24 @ 8:00 am	< 0.3	2015-12-29
7713844	SD OFF	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	0.9 ± 0.3	2015-12-28
7713849	SD OFF	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	0.9 ± 0.3	2015-12-28
7713855	SD OFF	2015-12-21 @ 9:00 am	2015-12-24 @ 6:00 am	< 0.3	2015-12-29

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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**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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

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 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