

## School / Facility Radon Testing Report Form

School Year: **24-25**

Facility:	Watkins Mill High School		
Address:	10301 Apple Ridge Rd.		
	Gaithersburg, MD 20879		
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 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	74	Lowest Value (pCi/L)	<0.3
Number of Rooms ( $\geq 4.0$ -pCi/L)	0	Highest Value (pCi/L)	1.7

**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)
Other—Specify here:		
Detector/Device Name:	Air Chek – Radon Test Kits	
Manufacturer:	Radon Labs	
Person(s) Deploying or Retrieving Test Devices and certification number		Organization/Company
Shannon King		KCI Technologies, Inc.
If noncertified individuals, the qualified measurement professional providing oversight -		
Tyler McCleaf, CSP Cert. # 111004-RMP		KCI Technologies, Inc.

### Testing

<input checked="" type="checkbox"/> Short-Term <input type="checkbox"/> Long-Term	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	3/10/2025
				3/13/2025
Does the test period include weekends, school breaks or holidays?				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If “Yes” please explain/detail in the space below:				
Was HVAC operating under occupied conditions?				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
If “No” please explain/detail in the space below:				

**Testing** (continued)

Round of Testing	Detectors Deployed				
	Ground-Contact		Upper-Level(s)		Total
	Initial	Follow-Up	Initial	Follow-Up	
Test Locations <sup>1</sup>	65	0	9	0	74
Duplicates <sup>2</sup>	6	0	2	0	8
Field Blanks <sup>3</sup>	2	0	2	0	4
Grand Total					86

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		10
Trip Blanks <sup>2</sup>	1	0	1
Office Blanks <sup>3, 4</sup>	1	0	1
			12

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"/> No
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"/> No
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"/> No
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"/> No

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:	65	0	9	0	74
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> :	1	0	0	0	1
Number of failed duplicate control locations:	0	0	0	0	0
Percentage of missing test locations for the facility <sup>4,5</sup> :	1.5%	0	0	0	1.5%

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 type="checkbox"/> Yes <input checked="" 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.</i> <i>If No, then - ‘Follow-up Testing Required’ continue below.</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input 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 $\geq 4.0$ -pCi/L	Deploy two Short-term follow-up tests and required blanks and duplicates; Average the results of the two tests	$\geq 4.0$	Mitigation Required
Failed QC checks		$\geq 2.0$ 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**

Table 1- Radon Testing Results		
Watkins Mill High School		
Test Period: 3/10/2025 - 3/13/2025		
Kit Number	Room / Area	Result
11892559	A001	< 0.3
11892560	A001	< 0.3
11892558	A006	0.6
11892533	A100A	< 0.3
11892414	A208	< 0.3
11892581	AST PRINCIPAL 1	< 0.3
11892582	AST PRINCIPAL 2	< 0.3
11892561	B001	< 0.3
11892566	B015	< 0.3
11892565	B017	< 0.3
11892585	B101	< 0.3
11892586	B103	< 0.3
11892589	B105	< 0.3
11892587	B112	0.5
11892588	B112	0.6
11892590	B129	0.7
11892591	B129	< 0.3
11892415	B208	< 0.3
11892530	C002	< 0.3
11892534	C004	1.7
11892535	C006	1.6
11892532	C009	1.1
11892549	C010	1.2
11892547	C012	1.5
11892546	C021	0.6
11892598	C119	0.5
11892599	C119	< 0.3
11892593	C121	< 0.3
11892596	C123	0.5
11892408	C200	< 0.3
11892403	C208	< 0.3
11892409	C208	< 0.3
11892577	CAFE	< 0.3
11892575	CONFERENCE	0.5
11892573	COUNSELOR JIRON	0.5
11892568	COUNSELOR OFFICE	0.5
11892571	COUNSELOR OFFICE	< 0.3

Table 1- Radon Testing Results		
Watkins Mill High School		
Test Period: 3/10/2025 - 3/13/2025		
Kit Number	Room / Area	Result
11892572	COUNSELOR OFFICE	< 0.3
11892564	COUNSELOR WORKROOM	< 0.3
11892570	COUNSELOR WORKROOM	< 0.3
11892550	D001	< 0.3
11892551	D001	< 0.3
11892552	D002	< 0.3
11892548	D002	< 0.3
11892555	D003	< 0.3
11892554	D004A	0.8
11892553	D004B	< 0.3
11892556	D006	0.9
11892557	D008	1.3
11892600	D101	< 0.3
11892405	D104A	< 0.3
11892406	D104B	< 0.3
11892407	D104C	< 0.3
11892401	D106D	< 0.3
11892402	D106E	< 0.3
11892404	D106F	< 0.3
11892413	D203	< 0.3
11892594	DANCE STUDIO	< 0.3
11892537	E001	< 0.3
11892538	E001B	< 0.3
11892539	E001C	< 0.3
11892540	E001C	< 0.3
11892536	E002	< 0.3
11892542	E003	< 0.3
11892541	E004	< 0.3
11892543	E006	< 0.3
11892545	E008	< 0.3
11892544	E010	< 0.3
11892592	E100	< 0.3
11892410	E202	< 0.3
11892411	E202	< 0.3
11892569	FELDBLUM OFFICE	0.6
11892563	FETZER OFFICE	0.5
11892597	G103	< 0.3

Table 1- Radon Testing Results		
Watkins Mill High School		
Test Period: 3/10/2025 - 3/13/2025		
Kit Number	Room / Area	Result
11892595	MAIN GYM	< 0.3
11892528	MAIN OFFICE	< 0.3
11892576	MCCARRON OFFICE	< 0.3
11892416	MEDIA CENTER	0.5
11892562	MOHAN OFFICE	0.6
11892579	OFFICE IN MAIN OFFICE	< 0.3
11892580	OFFICE IN MAIN OFFICE	< 0.3
11892584	OFFICE IN MAIN OFFICE	< 0.3
11892578	PRINCIPAL	< 0.3
11892567	SALOMON OFFICE	0.7
11892583	SOLANO OFFICE	< 0.3
11892574	TAFFO OFFICE	< 0.3

[illegible]

Table 3 - QC Radon Testing Results			
Watkins Mill High School			
Test Period: 3/10/2025 - 3/13/2025			
Kit Number	QC Type	Room / Area	Result
11892560	D	A001	<0.3
11892588	D	B112	0.6
11892591	FB	B129	<0.3
11892599	D	C119	<0.3
11892409	D	C208	<0.3
11892570	D	Counselor Workroom	<0.3
11892572	FB	Counselors Office	<0.3
11892551	D	D001	<0.3
11892548	FB	D002	<0.3
11892540	D	E001c	<0.3
11892411	FB	E202	<0.3
11892580	D	Office In Main Office	<0.3
11892446	OB	OFFICE BLANK	< 0.3
11892444	TB	TRAVEL BLANK	< 0.3



Table 3a - Duplicate Worksheet / Data Validation										
Watkins Mill High School										
Test Period: 3/10/2025 - 3/13/2025										
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
11892560	11892559	A001	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11892588	11892587	B112	0.6	0.5	✓	1.0	PASS	0.6	<1-pCi/L	✓
11892599	11892598	C119	0.5	0.3	✓	0.6	PASS	0.4	<1-pCi/L	✓
11892409	11892403	C208	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11892570	11892564	Counselor Workroom	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11892551	11892550	D001	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11892540	11892539	E001c	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11892580	11892579	Office In Main Office	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
<b>NOTES:</b> 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

[illegible]

# **Attachment 2:**

## **Laboratory Reports**

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892552	.D002	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892560	A001	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892559	A001	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892558	A006	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	0.6 ± 0.3	2025-03-17
11892533	A100A	2025-03-10 @ 8:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892414	A208	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892582	AST PRINCIPAL	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892581	AST PRINCIPAL	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892561	B001	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892566	B015	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892565	B017	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892585	B101	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892586	B103	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892589	B105	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892587	B112	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	0.5 ± 0.3	2025-03-17
11892588	B112	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	0.6 ± 0.3	2025-03-17
11892590	B129	2025-03-10 @ 10:00 am	2025-03-13 @ 10:00 am	0.7 ± 0.4	2025-03-17
11892591	B129	2025-03-10 @ 10:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892415	B208	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892530	C002	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892534	C004	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	1.7 ± 0.4	2025-03-17
11892535	C006	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	1.6 ± 0.4	2025-03-17
11892532	C009	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	1.1 ± 0.3	2025-03-17
11892549	C010	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	1.2 ± 0.4	2025-03-17
11892547	C012	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	1.5 ± 0.4	2025-03-17
11892546	C021	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	0.6 ± 0.3	2025-03-17
11892599	C119	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892598	C119	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	0.5 ± 0.3	2025-03-17
11892593	C121	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892596	C123	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	0.5 ± 0.3	2025-03-17
11892408	C200	2025-03-10 @ 10:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892403	C208	2025-03-10 @ 10:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892409	C208	2025-03-10 @ 10:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892577	CAFE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892575	CONFERENCE	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	0.5 ± 0.3	2025-03-17
11892573	COUNSELOR JIRON	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	0.5 ± 0.3	2025-03-17
11892571	COUNSELOR OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892572	COUNSELOR OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892568	COUNSELOR OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	0.5 ± 0.3	2025-03-17
11892570	COUNSELOR WORKROOM	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892564	COUNSELOR WORKROOM	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892551	D001	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892550	D001	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892548	D002	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892555	D003	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892554	D004A	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	0.8 ± 0.3	2025-03-17
11892553	D004B	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892556	D006	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	0.9 ± 0.3	2025-03-17
11892557	D008	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	1.3 ± 0.4	2025-03-17
11892600	D101	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892405	D104A	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892406	D104B	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892407	D104C	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892401	D106D	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892402	D106E	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892404	D106F	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892413	D203	2025-03-10 @ 10:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892594	DANCE STUDIO	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892537	E001	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892538	E001B	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892539	E001C	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892540	E001C	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892536	E002	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892542	E003	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892541	E004	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892543	E006	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892545	E008	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892544	E010	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892592	E100	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892410	E202	2025-03-10 @ 10:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892411	E202	2025-03-10 @ 10:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892569	FELDBLUM OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	0.6 ± 0.3	2025-03-17
11892563	FETZER OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	0.5 ± 0.3	2025-03-17
11892597	G103	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17

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March 18, 2025

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

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Radon test result report for:

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892595	MAIN GYM	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892528	MAIN OFFICE	2025-03-10 @ 8:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892576	MCCARRON OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17
11892416	MEDIA CENTER	2025-03-10 @ 10:00 am	2025-03-13 @ 11:00 am	0.5 ± 0.3	2025-03-17
11892562	MOHAN OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	0.6 ± 0.3	2025-03-17
11892580	OFFICE IN MAIN OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892584	OFFICE IN MAIN OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892579	OFFICE IN MAIN OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892578	PRINCIPAL	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892567	SALOMON OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	0.7 ± 0.3	2025-03-17
11892583	SOLANO OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17
11892574	TAFFO OFFICE	2025-03-10 @ 9:00 am	2025-03-13 @ 10:00 am	< 0.3	2025-03-17

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March 17, 2025

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

Radon test result report for:

**OFFICE  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892446	OB	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	< 0.3	2025-03-17
11886599	OB	2025-03-10 @ 11:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17

March 17, 2025

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

Radon test result report for:

**TRAVEL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892444	TB	2025-03-11 @ 11:00 am	2025-03-14 @ 11:00 am	< 0.3	2025-03-17
11886600	TB	2025-03-10 @ 11:00 am	2025-03-13 @ 11:00 am	< 0.3	2025-03-17



# 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

December 23, 2024

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

Radon test result report for:

**SK  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 20002919

NOMINAL Conditions: Radon Conc 7.0 pCi/L Rel. Hum 51.4 % Temp. 70.7 F

Date Start: 3/7/25 Date Stop: 3/10/25 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0832 Time Stop: 0832 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (7) CHAR BAGS Device No.'s: \_\_\_\_\_

11886401 thru 11886406,

11886410

G3 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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March 19, 2025

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

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Radon test result report for:

**QC**  
**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>
11886401	SK1	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.8 ± 1.1	2025-03-19
11886405	SK2	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.1 ± 1.1	2025-03-19
11886406	SK3	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.7 ± 1.1	2025-03-19
11886403	SK4	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.9 ± 1.2	2025-03-19
11886404	SK5	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.6 ± 1.2	2025-03-19
11886410	SK6	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	7.0 ± 1.1	2025-03-19
11886402	SK7	2025-03-07 @ 9:00 am	2025-03-10 @ 9:00 am	8.6 ± 1.2	2025-03-19

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Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

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## Radon Test Kit Chain of Custody

**Project Name:** MCPS Radon – Testing March 4<sup>th</sup> – March 7<sup>th</sup>, 2025

**Name of Schools:**

1. Hallie Wells MS
2. Snowden Farms ES
3. Watkins Mill HS
4. Whestone ES
5. Woodfield ES

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	Date	Initials
Radon Test Kits Deployed	3/10/2025	<i>[Signature]</i>
Radon Test Kits Collected	3/13/2025	<i>[Signature]</i>
Radon Test Kits Shipped to Lab*	3/13/2025	<i>[Signature]</i>
Radon Test Kits Received by Lab*	3/15/2025	<i>[Signature]</i>

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



### **MCPS RADON TESTING – EXECUTIVE SUMMARY**

Site Name	Watkins Mill High School
Date of Test Report	05/27/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	14
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.1 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: Watkins Mill High School  
10301 Apple Ridge Rd.  
Montgomery Village, MD 20879

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 Watkins Mill High School, located at 10301 Apple Ridge Rd. Montgomery Village, MD 20879 (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 29, 2022 and deployed sixteen (16) 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 April 01, 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		
Watkins Mill HS RT		
Test Period: 03/29/2022 - 04/01/2022		
Kit Number	Room / Area	Result
11139839	A104	< 0.3
11139827	B015 MOHAN	1.1
11139835	B118	0.8
11139838	B229	< 0.3
11139846	C106	< 0.3
11139843	C116	< 0.3
11139842	C202	< 0.3
11139848	D002	0.6
11139851	D101	< 0.3
11139849	D104	< 0.3
11139850	D104	0.5
11139831	E002	< 0.3
11139847	E002	< 0.3
11139844	G101	< 0.3
11139845	G101	< 0.3
11139840	G116	< 0.3

Table 2- Radon Testing Results			
Watkins Mill HS RT			
Test Period: 03/29/2022 - 04/01/2022			
Kit Number	QC Type	Room / Area	Result
11139847	FB	E002	< 0.3
11139850	D	D104	0.5
11139883	OB	OFFICE BLANK	< 0.3
11139841	TB	TRAVEL BLANK	< 0.3



## ATTACHMENT C

### Laboratory Analytical Results



April 4, 2022

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

Radon test result report for:  
**WATKINS MILL HS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139839	A104	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139827	B015 MOHAN	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	1.1 ± 0.3	2022-04-04
11139835	B118	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	0.8 ± 0.3	2022-04-04
11139838	B229	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139846	C106	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139843	C116	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139842	C202	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139848	D002	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	0.6 ± 0.3	2022-04-04
11139851	D101	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139849	D104	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139850	D104	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	0.5 ± 0.3	2022-04-04
11139831	E002	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139847	E002	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139844	G101	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139845	G101	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04
11139840	G116	2022-03-29 @ 9:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04

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April 4, 2022

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

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Radon test result report for:

**WATKINS MILL HS RT  
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>
11139852	C121	2022-03-29 @ 8:00 am	2022-04-01 @ 8:00 am	< 0.3	2022-04-04

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# 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 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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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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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS  
Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

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## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Watkins Mill HS
2. Cresthaven ES
3. East Silver Spring ES
4. Fairland Center
5. Francis Scott Key MS
6. Greencastle ES
7. Roscoe Nix ES
8. West Farm Transportation Depot
9. Wheaton HS
10. White Oak MS
11. William Tyler Page ES
12. Bel Pre ES
13. Fairland ES
14. Highland ES
15. Rolling Terrace ES
16. Takoma Park MS
17. Viers Mill ES
18. Poolesville ES

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	Date	Initials
Radon Test Kits Deployed	03/29/2022	BMM
Radon Test Kits Collected	04/01/2022	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	Watkins Mill High 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	138
# Rooms $\geq 4.0$ pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.6 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: Watkins Mill High School  
10301 Apple Ridge Rd.  
Montgomery Village, MD 20886

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 Watkins Mill HS, located at 10301 Apple Ridge Rd. Montgomery Village, MD 20886 (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 one hundred and fifty three (153) 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 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		
Watkins Mill HS		
Test Period: 02/28/2022 - 03/03/2022		
Kit Number	Room / Area	Result
11133433	A001	< 0.3
11133440	A006 LAB	1.0
11133406	B001	0.7
11133419	B001	< 0.3
11133403	B010	0.5
11133409	B010	0.6
11133405	B017	1.4
11133407	B017 OFFICE	1.4
11133224	B100	< 0.3
11133233	B101	< 0.3
11133228	B102	< 0.3
11133232	B103	< 0.3
11133227	B104	< 0.3
11133235	B105	0.9
11133229	B108	0.7
11133241	B110	< 0.3
11133242	B112	0.9
11133243	B114	0.7
11133244	B116	< 0.3
11133245	B119	0.7
11133239	B120	< 0.3
11133240	B120A	0.6
11133230	B121	< 0.3
11133236	B121 THERAPY	0.7
11133247	B122	< 0.3
11133231	B123	0.6
11133237	B123	0.8
11133238	B123	< 0.3
11133250	B127	0.9
11133248	B129	0.6
11133454	B222	< 0.3
11133460	B222	< 0.3
11133461	B222	< 0.3
11133437	C010	< 0.3
11133457	C012	< 0.3
11133452	C021	0.9
11133456	C021	1.2
11133446	C023	2.3
11133246	C100	0.7
11133249	C100	0.6
11133257	C101	< 0.3
11133252	C102	< 0.3

Table 1- Radon Testing Results		
Watkins Mill HS		
Test Period: 02/28/2022 - 03/03/2022		
Kit Number	Room / Area	Result
11133253	C103	< 0.3
11133258	C104	0.5
11133255	C105	< 0.3
11133266	C110	< 0.3
11133254	C112	< 0.3
11133256	C114	< 0.3
11133265	C119	0.5
11133260	C121	0.8
11133267	C121	< 0.3
11133268	C123	0.8
11133459	C203	0.6
11133411	COUNSELOR	1.2
11133415	COUNSELOR	1.3
11133416	COUNSELOR BLANKINSHIP	0.8
11133425	COUNSELOR FORMAN	1.6
11133432	COUNSELOR HORKAN	1.4
11133418	COUNSELOR LULU	1.0
11133431	COUNSELOR MCCARRON	1.2
11133417	COUNSELOR SALOMON	1.4
11133412	COUNSELOR TAFFO	0.9
11133410	COUNSELOR VALVERDE	1.0
11133408	COUNSELOR WOJTYNA	1.6
11133423	COUNSELOR WORKRRO	1.1
11133422	D001	< 0.3
11133441	D003	< 0.3
11133421	D004A	0.9
11133428	D004B	1.0
11133414	D006	1.1
11133413	D008	1.4
11133439	D008	1.8
11133290	D103	0.6
11133291	D103	< 0.3
11133269	D104	0.7
11133280	D104A	< 0.3
11133282	D104B	0.6
11133283	D104B	0.7
11133277	D104C	0.7
11133276	D104G	0.9
11133271	D104H	0.8
11133263	D104J	0.7
11133270	D104J	0.6
11133272	D104L	< 0.3

Table 1- Radon Testing Results		
Watkins Mill HS		
Test Period: 02/28/2022 - 03/03/2022		
Kit Number	Room / Area	Result
11133274	D104M	< 0.3
11133275	D104N	0.5
11133279	D104O	< 0.3
11133281	D104P	0.8
11133278	D104Q	0.6
11133284	D104Q	< 0.3
11133287	D106	0.7
11133286	D106E	0.6
11133285	D106F	0.7
11133289	D107	0.8
11133288	D109	0.7
11133429	E001	< 0.3
11133448	E001A CONFERENCE	< 0.3
11133443	E001B	< 0.3
11133444	E001B	< 0.3
11133447	E001B	0.7
11133449	E001C	< 0.3
11133438	E003C	< 0.3
11133430	E004	0.8
11133436	E006	< 0.3
11133450	E008	< 0.3
11133455	E010	0.7
11133294	E100	< 0.3
11133293	E101	< 0.3
11133299	E102	< 0.3
11133298	E103	< 0.3
11133297	E104	< 0.3
11133300	E105	0.7
11133295	E106	< 0.3
11133296	E107	< 0.3
11133401	E107	< 0.3
11133402	E107	< 0.3
11133404	E108	< 0.3
11133213	FINANCE CONFERENCE ROOM	< 0.3
11133214	FINANCE FILE ROOM	0.6
11133219	FINANCE OFFICE	< 0.3
11133220	FINANCE STAFF ROOM	0.6
11133451	G003	0.9
11133458	G005	1.2
11133453	G006	0.8
11133445	G007	1.4
11133273	G103	0.5

Table 1- Radon Testing Results		
Watkins Mill HS		
Test Period: 02/28/2022 - 03/03/2022		
Kit Number	Room / Area	Result
11133226	IB	0.6
11122837	MAIN OFFICE	< 0.3
11133201	MAIN OFFICE	0.6
11133202	MAIN OFFICE	< 0.3
11133207	MAIN OFFICE ALEMAN	0.8
11133215	MAIN OFFICE BACKROOM	< 0.3
11133212	MAIN OFFICE BROYLES	0.6
11133218	MAIN OFFICE BROYLES	< 0.3
11133210	MAIN OFFICE GODDARD	< 0.3
11133206	MAIN OFFICE GRAVES	< 0.3
11133209	MAIN OFFICE MAIL ROOM	< 0.3
11133205	MAIN OFFICE MARTELL	0.5
11133204	MAIN OFFICE PRINCIPAL	0.8
11133217	MAIN OFFICE TORRES	0.6
11133208	MAIN OFFICE VANCE	0.6
11133203	MAN OFFICE ALBERTI	< 0.3
11133211	MAN OFFICE JOHNSON	< 0.3
11133225	SPECIAL ED	0.8
11133221	SPECIAL ED 03	0.6
11133223	SPECIAL ED 03	< 0.3
11133216	SPECIAL ED 92	< 0.3
11133420	T002	1.8
11133426	T006	2.6
11133427	T006 OFFICE	1.8
11133222	TRANSITION	0.7



Table 2- Radon Testing Results			
Watkins Mill HS			
Test Period: 02/28/2022 - 03/03/2022			
Kit Number	QC Type	Room / Area	Result
11133201	D	Main Office	0.6
11133202	FB	Main Office	< 0.3
11133218	D	Main Office Broyles	< 0.3
11133221	D	Special Ed 03	0.6
52281181	FB	Special Ed 03	< 0.3
11133227	D	B104	< 0.3
11133237	D	B123	0.8
11133238	FB	B123	< 0.3
11133246	D	C100	0.7
11133261	D	C121	NA
11133267	FB	C121	< 0.3
11133270	D	D104J	0.6
11133283	D	D104B	0.7
11133284	FB	D104Q	< 0.3
11133291	D	D103	< 0.3
11133401	D	E107	< 0.3
11133402	FB	E107	< 0.3
11133409	D	B010	0.6
11133415	D	Counselor	1.3
11133419	FB	B001	< 0.3
11133413	D	D008	1.4
11133443	D	E001B	< 0.3
11133444	FB	E001B	< 0.3
11133456	D	C021	1.2
11133454	D	B222	< 0.3
11133461	FB	B222	< 0.3
11130811	OB	OFFICE BLANK	< 0.3
11130816	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:

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11133434	A006	2022-02-28 @ 1:00 pm	2022-03-03 @ 3:00 pm	0.7 ± 0.3	2022-03-08
11133435	A006 OFFICE	2022-02-28 @ 1:00 pm	2022-03-03 @ 3:00 pm	0.9 ± 0.4	2022-03-08

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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:  
**WATKINS MILL HS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11133433	A001	2022-02-28 @ 1:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-07
11133440	A006 LAB	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	1.0 ± 0.3	2022-03-07
11133406	B001	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	0.7 ± 0.3	2022-03-07
11133419	B001	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-08
11133403	B010	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	0.5 ± 0.3	2022-03-07
11133409	B010	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	0.6 ± 0.3	2022-03-07
11133405	B017	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.4 ± 0.4	2022-03-08
11133407	B017 OFFICE	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.4 ± 0.4	2022-03-08
11133224	B100	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133233	B101	2022-02-28 @ 10:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133228	B102	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133232	B103	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133227	B104	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133235	B105	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.9 ± 0.3	2022-03-07
11133229	B108	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.7 ± 0.3	2022-03-07
11133241	B110	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133242	B112	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.9 ± 0.3	2022-03-07
11133243	B114	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.7 ± 0.3	2022-03-07
11133244	B116	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133245	B119	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.7 ± 0.3	2022-03-07
11133239	B120	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-08
11133240	B120A	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.6 ± 0.3	2022-03-07
11133230	B121	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133236	B121 THERAPY	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.7 ± 0.3	2022-03-07
11133247	B122	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133238	B123	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133231	B123	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.6 ± 0.3	2022-03-07
11133237	B123	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.8 ± 0.3	2022-03-07
11133250	B127	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.9 ± 0.3	2022-03-07
11133248	B129	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.6 ± 0.3	2022-03-07
11133460	B222	2022-02-28 @ 3:00 pm	2022-03-03 @ 4:00 pm	< 0.3	2022-03-08
11133454	B222	2022-02-28 @ 3:00 pm	2022-03-03 @ 4:00 pm	< 0.3	2022-03-08
11133461	B222	2022-02-28 @ 3:00 pm	2022-03-03 @ 4:00 pm	< 0.3	2022-03-08
11133437	C010	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133457	C012	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133452	C021	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	0.9 ± 0.4	2022-03-08
11133456	C021	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	1.2 ± 0.4	2022-03-08

Radon test result report for:  
**WATKINS MILL HS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11133446	C023	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	2.3 ± 0.4	2022-03-08
11133249	C100	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.6 ± 0.3	2022-03-07
11133246	C100	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	0.7 ± 0.3	2022-03-07
11133257	C101	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133252	C102	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133253	C103	2022-02-28 @ 10:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133258	C104	2022-02-28 @ 11:00 am	2022-03-03 @ 12:00 pm	0.5 ± 0.3	2022-03-07
11133255	C105	2022-02-28 @ 11:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133266	C110	2022-02-28 @ 11:00 am	2022-03-03 @ 12:00 pm	< 0.3	2022-03-07
11133254	C112	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	< 0.3	2022-03-07
11133256	C114	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	< 0.3	2022-03-07
11133265	C119	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.5 ± 0.3	2022-03-07
11133267	C121	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	< 0.3	2022-03-07
11133260	C121	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.8 ± 0.3	2022-03-07
11133268	C123	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.8 ± 0.3	2022-03-07
11133459	C203	2022-02-28 @ 3:00 pm	2022-03-03 @ 4:00 pm	0.6 ± 0.4	2022-03-08
11133415	COUNSELOR	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.3 ± 0.3	2022-03-07
11133411	COUNSELOR	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.2 ± 0.3	2022-03-07
11133416	COUNSELOR BLANKINSHIP	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	0.8 ± 0.3	2022-03-07
11133425	COUNSELOR FORMAN	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.6 ± 0.4	2022-03-07
11133432	COUNSELOR HORKAN	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.4 ± 0.4	2022-03-08
11133418	COUNSELOR LULU	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.0 ± 0.3	2022-03-07
11133431	COUNSELOR MCCARRON	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.2 ± 0.4	2022-03-08
11133417	COUNSELOR SALOMON	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.4 ± 0.4	2022-03-08
11133412	COUNSELOR TAFFO	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	0.9 ± 0.4	2022-03-08
11133410	COUNSELOR VALVERDE	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.0 ± 0.4	2022-03-08
11133408	COUNSELOR WOJTYNA	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.6 ± 0.4	2022-03-07
11133423	COUNSELOR WORKRRO	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.1 ± 0.4	2022-03-08
11133422	D001	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133441	D003	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133421	D004A	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	0.9 ± 0.3	2022-03-08
11133428	D004B	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	1.0 ± 0.3	2022-03-07
11133414	D006	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	1.1 ± 0.3	2022-03-08
11133413	D008	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	1.4 ± 0.4	2022-03-08
11133439	D008	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	1.8 ± 0.4	2022-03-08
11133291	D103	2022-02-28 @ 12:00 pm	2022-03-03 @ 1:00 pm	< 0.3	2022-03-07
11133290	D103	2022-02-28 @ 12:00 pm	2022-03-03 @ 1:00 pm	0.6 ± 0.3	2022-03-07

Radon test result report for:  
**WATKINS MILL HS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11133269	D104	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.7 ± 0.3	2022-03-07
11133280	D104A	2022-02-28 @ 12:00 pm	2022-03-03 @ 1:00 pm	< 0.3	2022-03-07
11133282	D104B	2022-02-28 @ 11:00 am	2022-03-03 @ 2:00 pm	0.6 ± 0.3	2022-03-07
11133283	D104B	2022-02-28 @ 11:00 am	2022-03-03 @ 2:00 pm	0.7 ± 0.3	2022-03-07
11133277	D104C	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.7 ± 0.3	2022-03-07
11133276	D104G	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.9 ± 0.3	2022-03-07
11133271	D104H	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.8 ± 0.3	2022-03-07
11133270	D104J	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.6 ± 0.3	2022-03-07
11133263	D104J	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.7 ± 0.3	2022-03-07
11133272	D104L	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	< 0.3	2022-03-07
11133274	D104M	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	< 0.3	2022-03-07
11133275	D104N	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.5 ± 0.3	2022-03-07
11133279	D104O	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	< 0.3	2022-03-07
11133281	D104P	2022-02-28 @ 11:00 am	2022-03-03 @ 2:00 pm	0.8 ± 0.3	2022-03-07
11133278	D104Q	2022-02-28 @ 12:00 pm	2022-03-03 @ 1:00 pm	0.6 ± 0.3	2022-03-07
11133284	D104Q	2022-02-28 @ 12:00 pm	2022-03-03 @ 1:00 pm	< 0.3	2022-03-07
11133287	D106	2022-02-28 @ 12:00 pm	2022-03-03 @ 1:00 pm	0.7 ± 0.3	2022-03-07
11133286	D106E	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	0.6 ± 0.3	2022-03-07
11133285	D106F	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	0.7 ± 0.3	2022-03-07
11133289	D107	2022-02-28 @ 12:00 pm	2022-03-03 @ 1:00 pm	0.8 ± 0.3	2022-03-07
11133288	D109	2022-02-28 @ 12:00 pm	2022-03-03 @ 1:00 pm	0.7 ± 0.3	2022-03-07
11133429	E001	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-07
11133448	E001A CONFERENCE	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133444	E001B	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-07
11133447	E001B	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	0.7 ± 0.3	2022-03-07
11133443	E001B	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133449	E001C	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133438	E003C	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133430	E004	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	0.8 ± 0.4	2022-03-08
11133436	E006	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133450	E008	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	< 0.3	2022-03-08
11133455	E010	2022-02-28 @ 2:00 pm	2022-03-03 @ 3:00 pm	0.7 ± 0.3	2022-03-07
11133294	E100	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-07
11133293	E101	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-07
11133299	E102	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-07
11133298	E103	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-07
11133297	E104	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-08

Radon test result report for:  
**WATKINS MILL HS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11133300	E105	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	0.7 ± 0.3	2022-03-07
11133295	E106	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-07
11133402	E107	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-07
11133401	E107	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-07
11133296	E107	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-07
11133404	E108	2022-02-28 @ 12:00 pm	2022-03-03 @ 2:00 pm	< 0.3	2022-03-07
11133213	FINANCE CONFERENCE ROOM	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133214	FINANCE FILE ROOM	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.6 ± 0.3	2022-03-07
11133219	FINANCE OFFICE	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133220	FINANCE STAFF ROOM	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.6 ± 0.4	2022-03-08
11133451	G003	2022-02-28 @ 3:00 pm	2022-03-03 @ 3:00 pm	0.9 ± 0.3	2022-03-07
11133458	G005	2022-02-28 @ 3:00 pm	2022-03-03 @ 3:00 pm	1.2 ± 0.3	2022-03-07
11133453	G006	2022-02-28 @ 3:00 pm	2022-03-03 @ 3:00 pm	0.8 ± 0.4	2022-03-08
11133445	G007	2022-02-28 @ 3:00 pm	2022-03-03 @ 3:00 pm	1.4 ± 0.3	2022-03-07
11133273	G103	2022-02-28 @ 11:00 am	2022-03-03 @ 1:00 pm	0.5 ± 0.3	2022-03-07
11133226	IB	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.6 ± 0.4	2022-03-08
11133202	MAIN OFFICE	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133201	MAIN OFFICE	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.6 ± 0.3	2022-03-07
11122837	MAIN OFFICE	2022-02-28 @ 8:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133207	MAIN OFFICE ALEMAN	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.8 ± 0.3	2022-03-07
11133215	MAIN OFFICE BACKROOM	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133212	MAIN OFFICE BROYLES	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.6 ± 0.3	2022-03-07
11133218	MAIN OFFICE BROYLES	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133210	MAIN OFFICE GODDARD	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133206	MAIN OFFICE GRAVES	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133209	MAIN OFFICE MAIL ROOM	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133205	MAIN OFFICE MARTELL	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.5 ± 0.3	2022-03-07
11133204	MAIN OFFICE PRINCIPAL	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.8 ± 0.3	2022-03-07
11133217	MAIN OFFICE TORRES	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.6 ± 0.3	2022-03-07
11133208	MAIN OFFICE VANCE	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.6 ± 0.3	2022-03-07
11133203	MAN OFFICE ALBERTI	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133211	MAN OFFICE JOHNSON	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133225	SPECIAL ED	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.8 ± 0.4	2022-03-08
11133221	SPECIAL ED 03	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	0.6 ± 0.4	2022-03-08
11133223	SPECIAL ED 03	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-08
11133216	SPECIAL ED 92	2022-02-28 @ 9:00 am	2022-03-03 @ 11:00 am	< 0.3	2022-03-07
11133420	T002	2022-02-28 @ 1:00 pm	2022-03-03 @ 2:00 pm	1.8 ± 0.3	2022-03-07



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March 8, 2022

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

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Radon test result report for:  
**WATKINS MILL HS**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11133426	T006	2022-02-28 @ 1:00 pm	2022-03-03 @ 3:00 pm	2.6 ± 0.4	2022-03-08
11133427	T006 OFFICE	2022-02-28 @ 1:00 pm	2022-03-03 @ 3:00 pm	1.8 ± 0.4	2022-03-08
11133222	TRANSITION	2022-02-28 @ 10:00 am	2022-03-03 @ 11:00 am	0.7 ± 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

# 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 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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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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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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

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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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Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

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## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools

Name of Schools:

1. Marshall, Thurgood ES
2. Ridgeview MS
3. Travilah ES
4. Flower Hill ES
5. Resnik, Judith A. ES
6. Strawberry Knolls ES
7. Whetstone ES
8. Laytonsville ES
9. Stedwick ES
10. Watkins Mill ES
11. Watkins Mill HS
12. Einstein, Albert E. HS

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	Date	Initials
Radon Test Kits Deployed	02/28/2022	PM
Radon Test Kits Collected	03/03/2022	PM
Radon Test Kits Shipped to Lab*	03/3/2022	PM
Radon Test Kits Received by Lab*	03/5/2022	PM

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

**MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Watkins Mill High School
Date of Report	1/28/2020
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	103
# Rooms $\geq 4.0$ pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.1 pCi/L

**Project Status**

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



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1/28/2020

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: Watkins Mill High School**

10301 Apple Ridge Road  
Gaithersburg, Maryland 20879

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 Watkins Mill High School, located at 10301 Apple Ridge Road in Gaithersburg, Maryland 20879 (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/departments/facilities/maintenance/default.aspx?id=458858> or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on 12/10/2019 and deployed one-hundred and twenty-eight (128) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on 12/13/2019 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a 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 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-30s and high temperatures ranged from the upper-30s to the mid-50s. Maximum sustained winds ranged from 7-21 miles per hour. Average humidity was around 75%. 0.52 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>
$\geq 4.0$ 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 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		
Watkins Mill High School		
Test Period: 12/10/2019-12/13/2019		
Kit Number	Room / Area	Result
9334980	OFFICE BLANK	< 0.3
9335450	B229	0.5
9335458	B229	< 0.3
9335461	G101	< 0.3
9335462	G101	< 0.3
9335463	C121	0.6
9335464	C123	< 0.3
9335465	G101	< 0.3
9335466	C121	< 0.3
9335467	C121	< 0.3
9335468	C119	0.5
9335469	D104J	0.6
9335470	D104I	0.7
9335471	D104H	< 0.3
9335472	D104L	0.5
9335473	D106	0.5
9335474	AUDITORIUM	0.9
9335475	B101	0.6
9335476	B103	0.5
9335477	ITSS	< 0.3
9335478	AP4	< 0.3
9335479	SCHOOL PSYCHOLOGIST	< 0.3
9335480	BUSINESS ADMIN	< 0.3
9335481	BUSINESS ADMIN	< 0.3
9335482	AP3	< 0.3
9335483	D104O	< 0.3
9335484	D104C	< 0.3
9335485	D104B	< 0.3
9335486	D104A	0.6
9335487	AP2	0.6
9335488	AP1	< 0.3
9335489	D106F	< 0.3
9335490	D106E	< 0.3
9335492	AUDITORIUM	0.7
9335493	D106	< 0.3
9335494	B105	0.9
9335495	D105M	0.7
9335496	D104G	< 0.3
9335497	D104N	< 0.3
9335498	D104Q	0.6
9335499	D104Q	< 0.3
9335500	D104P	0.7
9335529	G004	1
9335530	G006	0.8
9335531	G TEAM ROOM 2	1.2
9335532	G TEAM ROOM 1	0.7
9335533	B TEAM ROOM 1	1.4
9335534	B TEAM ROOM 2	1.8
9335535	D002	< 0.3
9335536	E001	< 0.3

9335537	D003	0.7
9335538	D006	1
9335539	G007	0.9
9335540	G003	0.6
9335541	G003	0.6
9335542	G003	< 0.3
9335543	E004	< 0.3
9335544	E008	< 0.3
9335545	C023	1.4
9335546	E002 OFFICE	< 0.3
9335547	B008 OFFICE	< 0.3
9335548	COUNSELOR 4	1.8
9335549	E010	< 0.3
9335550	E003	< 0.3
9335551	E006	< 0.3
9335552	E002	< 0.3
9335553	B019	1
9335554	C006	1.2
9335555	C009	< 0.3
9335556	C009	0.5
9335557	C004	1.8
9335558	G005	0.7
9335559	C012	< 0.3
9335560	C021	1
9335561	A001 OFFICE	< 0.3
9335562	REGISTRAR OFFICE	0.8
9335563	COUNSELOR 5	1.2
9335564	B010	< 0.3
9335565	COUNSELOR 1	2
9335566	COUNSELOR 1	1.8
9335567	COUNSELOR 7	2.1
9335568	C009	0.5
9335569	COUNSELOR 2	1.4
9335570	WR 1	1.8
9335571	B017	1.1
9335572	B017 OFFICE	1.8
9335573	B017 OFFICE	1.5
9335574	COUNSELOR 6	1.2
9335575	AUDITORIUM	1.2
9335576	BACKSTAGE	< 0.3
9335577	T002B	1.5
9335578	B001	0.6
9335579	B013	1.3
9335580	COUNSELOR 1	< 0.3
9335581	COUNSELOR 3	1.8
9335582	B015	2
9335583	AUDITORIUM	0.7
9335584	T006	1.5
9335585	C010	1
9335586	COUNSELOR 8	2.1
9335587	B010	0.8
9335588	C002	0.7
9335589	BACKSTAGE	0.7
9335590	BSO	< 0.3
9335591	BSO2	< 0.3

9335592	T002	1.9
9335593	T009	1
9335594	E003	0.6
9335595	BLDG SVC LOUNGE	0.7
9335596	T011	0.8
9335597	T006	1.9
9335598	BLDG SVC MANAGER OFFICE	< 0.3
9335599	T013	0.7
9335600	T015	0.9
9335648	D001	< 0.3
9335669	MAIN OFFICE	< 0.3
9335670	A100A	< 0.3
9335671	PRINCIPAL	< 0.3
9335675	MAIN OFFICE	< 0.3
9335677	D001	< 0.3
9335678	D004B	0.9
9335679	D008	1.9
9335683	D004A	< 0.3
9335684	A006	0.9
9335685	A001	< 0.3
9335686	MAIN OFFICE	< 0.3
9335729	WR 2	< 0.3
9335732	ATTENDANCE OFFICE	< 0.3

Table 2- Radon Testing Results			
Watkins Mill High School			
Test Period: 12/10/2019-12/13/2019			
Kit Number	QC Type	Room / Area	Result
9335597	D	T006	1.9
9335565	D	COUNSELOR 1	2
9335580	FB	COUNSELOR 1	<0.3
9335572	D	B017 OFFICE	1.8
9335568	D	C009	0.5
9335555	FB	C009	<0.3
9335550	D	E003	<0.3
9335541	D	G003	0.6
9335542	FB	G003	<0.3
9335648	D	D001	1.8
9335675	D	MAIN OFFICE	<0.3
9335686	FB	MAIN OFFICE	<0.3
9335481	D	BUSINESS ADMIN	<0.3
9335473	D	D106	0.5
9335493	FB	D106	<0.3
9335499	D	D104Q	<0.3
9335467	D	C121	<0.3
9335466	FB	C121	<0.3
9334850	TRANSIT BLANK	NA	< 0.3
9334914	TRANSIT BLANK	NA	< 0.3
9334916	TRANSIT BLANK	NA	< 0.3
9334963	TRANSIT BLANK	NA	< 0.3





# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:  
**WATKINS MILL HS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9335685	A001	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335561	A001 OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	< 0.3	2019-12-17
9335684	A006	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.9 ± 0.4	2019-12-17
9335670	A100A	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335488	AP1	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335487	AP2	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.6 ± 0.4	2019-12-17
9335482	AP3	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335478	AP4	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335732	ATTENDANCE OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335492	AUDITORIUM	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.3	2019-12-16
9335583	AUDITORIUM	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.3	2019-12-16
9335575	AUDITORIUM	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.2 ± 0.3	2019-12-16
9335474	AUDITORIUM	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.9 ± 0.4	2019-12-17
9335533	B TEAM ROOM 1	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.4 ± 0.4	2019-12-17
9335534	B TEAM ROOM 2	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.8 ± 0.4	2019-12-16
9335578	B001	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.6 ± 0.3	2019-12-16
9335547	B008 OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	< 0.3	2019-12-16
9335564	B010	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	< 0.3	2019-12-16
9335587	B010	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	0.8 ± 0.3	2019-12-17
9335579	B013	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.3 ± 0.3	2019-12-16
9335582	B015	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	2.0 ± 0.4	2019-12-16
9335571	B017	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.1 ± 0.4	2019-12-16
9335572	B017 OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.8 ± 0.4	2019-12-16
9335573	B017 OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.5 ± 0.4	2019-12-17
9335553	B019	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.0 ± 0.3	2019-12-16
9335475	B101	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.6 ± 0.3	2019-12-17
9335476	B103	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.5 ± 0.4	2019-12-16
9335494	B105	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.9 ± 0.4	2019-12-17
9335458	B229	2019-12-13 @ 9:00 am	2019-12-16 @ 6:00 am	< 0.3	2019-12-16
9335450	B229	2019-12-10 @ 2:00 pm	2019-12-16 @ 6:00 am	0.5 ± 0.3	2019-12-17
9335576	BACKST9	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335589	BACKSTAGE	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.4	2019-12-16
9335595	BLDG SVC LOUNGE	2019-12-10 @ 1:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.4	2019-12-17
9335598	BLDG SVC MANAGER OFFICE	2019-12-10 @ 1:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335590	BSO	2019-12-10 @ 1:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335591	BSO2	2019-12-10 @ 1:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335480	BUSINESS ADMIN	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16

Radon test result report for:  
**WATKINS MILL HS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9335481	BUSINESS ADMIN	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335588	C002	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.3	2019-12-16
9335557	C004	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.8 ± 0.4	2019-12-16
9335554	C006	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.2 ± 0.4	2019-12-16
9335568	C009	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.5 ± 0.3	2019-12-16
9335555	C009	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335556	C009	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.5 ± 0.3	2019-12-17
9335585	C010	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.0 ± 0.4	2019-12-17
9335559	C012	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335560	C021	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.0 ± 0.4	2019-12-17
9335545	C023	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.4 ± 0.4	2019-12-16
9335468	C119	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.5 ± 0.3	2019-12-16
9335463	C121	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.6 ± 0.3	2019-12-16
9335467	C121	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335466	C121	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335464	C123	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335566	COUNSELOR 1	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.8 ± 0.4	2019-12-16
9335580	COUNSELOR 1	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	< 0.3	2019-12-16
9335565	COUNSELOR 1	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	2.0 ± 0.4	2019-12-17
9335569	COUNSELOR 2	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.4 ± 0.4	2019-12-16
9335581	COUNSELOR 3	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.8 ± 0.4	2019-12-16
9335548	COUNSELOR 4	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.8 ± 0.4	2019-12-16
9335563	COUNSELOR 5	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.2 ± 0.4	2019-12-16
9335574	COUNSELOR 6	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.2 ± 0.3	2019-12-16
9335567	COUNSELOR 7	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	2.1 ± 0.4	2019-12-16
9335586	COUNSELOR 8	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	2.1 ± 0.4	2019-12-17
9335648	D001	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335677	D001	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335535	D002	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335537	D003	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.4	2019-12-17
9335683	D004A	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335678	D004B	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.9 ± 0.4	2019-12-16
9335538	D006	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.0 ± 0.3	2019-12-16
9335679	D008	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.9 ± 0.4	2019-12-16
9335486	D104A	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.6 ± 0.4	2019-12-16
9335485	D104B	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335484	D104C	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16

Radon test result report for:  
**WATKINS MILL HS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9335496	D104G	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335471	D104H	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335470	D104I	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.4	2019-12-17
9335469	D104J	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.6 ± 0.3	2019-12-16
9335472	D104L	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.5 ± 0.3	2019-12-17
9335497	D104N	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335483	D104O	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335500	D104P	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.4	2019-12-17
9335499	D104Q	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335498	D104Q	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.6 ± 0.4	2019-12-17
9335495	D105M	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.4	2019-12-17
9335473	D106	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.5 ± 0.3	2019-12-16
9335493	D106	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335490	D106E	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335489	D106F	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335536	E001	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335552	E002	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335546	E002 OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335550	E003	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335594	E003	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.6 ± 0.3	2019-12-17
9335543	E004	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335551	E006	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335544	E008	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335549	E010	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335532	G TEAM ROOM 1	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.4	2019-12-16
9335531	G TEAM ROOM 2	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.2 ± 0.4	2019-12-16
9335541	G003	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	0.6 ± 0.4	2019-12-16
9335542	G003	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	< 0.3	2019-12-16
9335540	G003	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	0.6 ± 0.3	2019-12-16
9335529	G004	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.0 ± 0.4	2019-12-17
9335558	G005	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.4	2019-12-17
9335530	G006	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.8 ± 0.4	2019-12-16
9335539	G007	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	0.9 ± 0.4	2019-12-16
9335462	G101	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	< 0.3	2019-12-17
9335465	G101	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335461	G101	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335477	ITSS	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17

December 17, 2019

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

Radon test result report for:  
**WATKINS MILL HS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9335686	MAIN OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335669	MAIN OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335675	MAIN OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-17
9335671	PRINCIPAL	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335562	REGISTRAR OFFICE	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	0.8 ± 0.4	2019-12-17
9335479	SCHOOL PSYCHOLOGIST	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16
9335592	T002	2019-12-10 @ 1:00 pm	2019-12-13 @ 8:00 am	1.9 ± 0.4	2019-12-17
9335577	T002B	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.5 ± 0.4	2019-12-16
9335584	T006	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.5 ± 0.4	2019-12-16
9335597	T006	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	1.9 ± 0.4	2019-12-16
9335593	T009	2019-12-10 @ 1:00 pm	2019-12-13 @ 8:00 am	1.0 ± 0.4	2019-12-16
9335596	T011	2019-12-10 @ 1:00 pm	2019-12-13 @ 8:00 am	0.8 ± 0.4	2019-12-17
9335599	T013	2019-12-10 @ 1:00 pm	2019-12-13 @ 8:00 am	0.7 ± 0.3	2019-12-16
9335600	T015	2019-12-10 @ 1:00 pm	2019-12-13 @ 8:00 am	0.9 ± 0.4	2019-12-16
9335570	WR 1	2019-12-10 @ 2:00 pm	2019-12-13 @ 9:00 am	1.8 ± 0.4	2019-12-16
9335729	WR 2	2019-12-10 @ 2:00 pm	2019-12-13 @ 8:00 am	< 0.3	2019-12-16

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 193475

NOMINAL Conditions: Radon Conc 25.7 pCi/L Rel. Hum 74.6 % Temp. 69.9 F

Date Start: 12/13/19 Date Stop: 12/16/19 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_  
 Time Start: 0806 Time Stop: 0806 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_  
 (Group 1)  
 Device No.'s: (20) Char. Bags - Device No.'s: \_\_\_\_\_  
9334502 thru 9334519,  
9334514, 9334516, 9334517,  
9334519, 9334519  
9334522 thru 9334528  
B4

Date Start: 12/13/19 Date Stop: 12/16/19 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_  
0811  
 Time Start: 0806 acm Time Stop: 0811 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_  
 (Group 2)  
 Device No.'s: (20) Char. Bags - Device No.'s: \_\_\_\_\_  
9334529 thru 9334538,  
9334540,  
9334542 thru 9334550  
B3

Date Start: 12/13/19 Date Stop: 12/16/19 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_  
 Time Start: 0816 Time Stop: 0816 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_  
 (Group 3)  
 Device No.'s: (20) Char. Bags - Device No.'s: \_\_\_\_\_  
9334551, 9334552, 9334562,  
9334555 thru 9334559,  
9334569, 9334576, 9334579,  
9334580, 9334583, 9334584,  
9334591, 9334593, 9334594,  
9334597, 9334598, 9334599  
B2

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:

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
9334583	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 $\pm$ 1.4	2019-12-18
9334529	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.3 $\pm$ 1.5	2019-12-18
9334597	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 $\pm$ 1.4	2019-12-18
9334534	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 $\pm$ 1.4	2019-12-18
9334540	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.9 $\pm$ 1.4	2019-12-18
9334546	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.9 $\pm$ 1.5	2019-12-18
9334551	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 $\pm$ 1.4	2019-12-18
9334558	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 $\pm$ 1.4	2019-12-18
9334579	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 $\pm$ 1.4	2019-12-18
9334593	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 $\pm$ 1.4	2019-12-18
9334532	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 $\pm$ 1.4	2019-12-18
9334537	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 $\pm$ 1.4	2019-12-18
9334544	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.5 $\pm$ 1.4	2019-12-18
9334549	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 $\pm$ 1.5	2019-12-18
9334556	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 $\pm$ 1.4	2019-12-18
9334569	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 $\pm$ 1.4	2019-12-18
9334584	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 $\pm$ 1.5	2019-12-18
9334530	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 $\pm$ 1.4	2019-12-18
9334598	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 $\pm$ 1.4	2019-12-18
9334535	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.0 $\pm$ 1.4	2019-12-18
9334542	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 $\pm$ 1.4	2019-12-18
9334547	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	25.2 $\pm$ 1.5	2019-12-18
9334552	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.2 $\pm$ 1.4	2019-12-18
9334559	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 $\pm$ 1.4	2019-12-18
9334580	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 $\pm$ 1.4	2019-12-18
9334594	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 $\pm$ 1.4	2019-12-18
9334533	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.3 $\pm$ 1.5	2019-12-18
9334538	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.6 $\pm$ 1.5	2019-12-18
9334545	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.0 $\pm$ 1.4	2019-12-18
9334550	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 $\pm$ 1.4	2019-12-18
9334557	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.6 $\pm$ 1.5	2019-12-18
9334576	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 $\pm$ 1.4	2019-12-18
9334591	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 $\pm$ 1.4	2019-12-18
9334531	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.3 $\pm$ 1.5	2019-12-18
9334599	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 $\pm$ 1.4	2019-12-18
9334536	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 $\pm$ 1.5	2019-12-18
9334543	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 $\pm$ 1.5	2019-12-18



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December 18, 2019

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

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Radon test result report for:

**N/A**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
9334548	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.0 ± 1.4	2019-12-18
9334555	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.4 ± 1.4	2019-12-18
9334562	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.5 ± 1.4	2019-12-18

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

December 18, 2019

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

Radon test result report for:

**S**

**N/A**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9334505	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.5 ± 1.5	2019-12-18
9334510	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.4 ± 1.5	2019-12-18
9334522	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.9 ± 1.4	2019-12-18
9334527	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	22.6 ± 1.4	2019-12-18
9334503	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 ± 1.4	2019-12-18
9334508	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.7 ± 1.5	2019-12-18
9334517	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.5 ± 1.4	2019-12-18
9334525	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 ± 1.4	2019-12-18
9334506	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.3 ± 1.5	2019-12-18
9334514	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.5 ± 1.5	2019-12-18
9334523	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.6 ± 1.4	2019-12-18
9334528	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 ± 1.4	2019-12-18
9334504	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.8 ± 1.4	2019-12-18
9334509	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.5 ± 1.4	2019-12-18
9334519	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.1 ± 1.4	2019-12-18
9334526	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.3 ± 1.4	2019-12-18
9334502	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	23.7 ± 1.4	2019-12-18
9334507	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.7 ± 1.5	2019-12-18
9334516	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	22.2 ± 1.3	2019-12-18
9334524	N/A	2019-12-13 @ 8:00 am	2019-12-16 @ 8:00 am	24.6 ± 1.5	2019-12-18



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Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

## Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 1

Name of Schools:

- |                             |                         |
|-----------------------------|-------------------------|
| 1. Baker M.S.               | 13. Jones Lane E.S.     |
| 2. Belmont E.S.             | 14. Lake Seneca E.S.    |
| 3. Clarksburg E.S.          | 15. McAuliffe E.S.      |
| 4. Clarksburg H.S.          | 16. Quince Orchard H.S. |
| 5. Clearspring E.S.         | 17. Rosa Parks M.S.     |
| 6. Damascus E.S.            | 18. Snowden Farm E.S.   |
| 7. Damascus H.S.            | 19. South Lake E.S.     |
| 8. Dufief E.S.              | 20. Stone Mill E.S.     |
| 9. Fields Road E.S.         | 21. Travilah E.S.       |
| 10. Gaithersburg E.S.       | 22. Watkins Mill E.S.   |
| 11. Germantown E.S.         | 23. Watkins Mill H.S.   |
| 12. Great Seneca Creek E.S. | 24. Whitman H.S.        |

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	Date	Initials
Radon Test Kits Deployed	12/09/19 to 12/10/19	JM
Radon Test Kits Collected	12/12/19 to 12/13/19	JM
Radon Test Kits Shipped to Lab*	12/13/19	JM
Radon Test Kits Received by Lab*	12/16/19	JM

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

## RADON SCREENING SURVEY – FOLLOW-UP WATKINS MILL HIGH SCHOOL

10301 Apple Ridge Rd., Gaithersburg, Maryland 20879

### EXECUTIVE SUMMARY

Date of Test Report:	3/28/18
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	4
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	1.6
High Value:	2.5
Confirmed Rooms $\geq$ 4.0 pCi/L US EPA Action Level	0

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

Room	Result (pCi/L) 2/2/18	Result (pCi/L) 3/14/18	Result (pCi/L) 3/28/18	Average Result (pCi/L)
T006	Not Tested	5.0	2.5	3.8
T002 Office	Not Tested	4.4	2.5	3.5
Counseling	Not Tested	4.3	1.6	3.0
Counseling G	Not Tested	4.0	2.1	3.1

**MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Watkins Mill High School
Date of Report	March 28, 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	4
# Rooms $\geq 4.0$ pCi/L	0
Lowest Value	1.6 pCi/L
Highest Value	2.5 pCi/L

**Project Status**

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



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936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

March 28, 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: Watkins Mill High School**

10301 Apple Ridge Rd.  
Gaithersburg, Maryland 20879

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 Watkins Mill High School, located at 10301 Apple Ridge Rd. in Gaithersburg, Maryland 20879 (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 March 19, 2018 and deployed four (4) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

1. Rooms with elevated February 2018 results.

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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 March 22, 2018 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

### **EVALUATION OF TESTING CONDITIONS**

These tests represent:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the upper-20s and high temperatures ranged from the mid-30s to the low-60s. Maximum sustained winds ranged from 9-16 miles per hour. Average humidity was around 74%. 1.04 Inches of precipitation including rain and snow, were recorded during the testing period. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

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## **RESULTS**

The sampling locations and analytical results are listed on Table 1 (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 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

Radon Testing Results		
Watkins Mill High School		
Test Period: 03/19/18-03/22/18		
Kit Number	Room / Area	Result
7986526	COUNSELING	1.6
7986516	COUNSELING G	2.1
7979480	T002B	2.5
7984109	T006	2.5

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

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March 26, 2018

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

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Radon test result report for:

**WATKINS MILL HIGH 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>
7986526	COUNSELING	2018-03-19 @ 12:00 pm	2018-03-22 @ 10:00 am	1.6 ± 0.4	2018-03-26
7986516	COUNSELING G	2018-03-19 @ 12:00 pm	2018-03-22 @ 10:00 am	2.1 ± 0.4	2018-03-26
7979480	T002B	2018-03-19 @ 12:00 pm	2018-03-22 @ 10:00 am	2.5 ± 0.4	2018-03-26
7984109	T006	2018-03-19 @ 12:00 pm	2018-03-22 @ 10:00 am	2.5 ± 0.4	2018-03-26

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



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

1. Clearspring Elementary School
2. Maryvale Elementary School
3. Watkins Mill High School
4. Westbrook Elementary School

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	Date	Initials
Radon Test Kits Deployed	3/19/18	JM
Radon Test Kits Collected	3/22/18	JM
Radon Test Kits Shipped to Lab*	3/23/18	JM
Radon Test Kits Received by Lab*	3/26/18	JM

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

February 27, 2018

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

Radon test result report for:

**OFFICE BLANKS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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

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February 27, 2018

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

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

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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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Air Chek, Inc. 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498



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February 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).**

---

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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: 2/16/18 Date Stop: 2/19/18 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 1052 Time Stop: 1052 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

7984181, 7986621, 7985683 \_\_\_\_\_

7984168, 7986618, 7984169 \_\_\_\_\_

G3 Middle \_\_\_\_\_

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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

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

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

\_\_\_\_\_

\_\_\_\_\_

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

### **MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Watkins Mill High School
Date of Report	March 14, 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	36
# Rooms $\geq 4.0$ pCi/L	4
Lowest Value	<0.3 pCi/L
Highest Value	5.0 pCi/L

### **Project Status**

Rooms with results  $\geq 4.0$  pCi/L: T006 (5.0 pCi/L), T002 Office (4.4 pCi/L), Counseling (4.3 pCi/L), Counseling G (4.0 pCi/L)

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

March 14, 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: Watkins Mill High School**

10301 Apple Ridge Rd.  
Gaithersburg, Maryland 20879

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 Watkins Mill High School, located at 10301 Apple Ridge Rd. in Gaithersburg, Maryland 20879 (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 forty-eight (48) 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>
≥4.0 pCi/L	T006	5.0
≥4.0 pCi/L	T002 Office	4.4
≥4.0 pCi/L	Counseling	4.3
≥4.0 pCi/L	Counseling G	4.0
≤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.

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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

Table 1 - Radon Testing Results		
Watkins Mill High School		
Test Period: 02/12/18-02/15/18		
Kit Number	Room / Area	Result
7193888	A006	< 0.3
7193866	A201	< 0.3
7984128	A204	0.6
7193880	B008	1.2
7193882	B013 CONFERENCE	3.4
7193897	B105	1.3
7984106	C119	0.9
7984105	C121	0.7
7193898	C123	0.8
7193887	COUNSELING	4.3
7984115	COUNSELING A	3.4
7193886	COUNSELING B	3.8
7193885	COUNSELING C	3.2
7193865	COUNSELING D	2.5
7984113	COUNSELING E	2.9
7984114	COUNSELING F	3.5
7193858	COUNSELING G	4.0
7193891	D003	< 0.3
7984116	D104	< 0.3
7984103	D104G	< 0.3
7984107	D104H	< 0.3
7984108	D104I	0.7
7984104	D104M	0.7
7193896	D106E	0.5
7984111	D106F	< 0.3
7984122	* E101 (Missing)	-
7984123	E106	< 0.3
7984120	E200	1.1
7984101	FACULTY LOUNGE	0.8
7984112	G003	0.5
7193889	G005	0.6
7193900	GYM 2	< 0.3
7193899	GYM 2	0.9
7193883	GYM 2	0.7
7193884	T002	2.6
7193892	T002 OFFICE	4.4
7193847	T006	5.0
7193894	THEATER	0.7
7193893	THEATER	0.6
7193895	THEATER	0.8
7984102	THEATER	0.7

Table Note:

\* Missing or Compromised Sample

Table 2 - Radon Testing Results		
Watkins Mill High School		
Test Period: 02/12/18-02/15/18		
Kit Number	QC Type	Result
7193879	D (B013 CONFERENCE)	3.5
7193867	D (C119)	0.8
7984119	D (D104I)	< 0.3
7984121	D (E200)	< 0.3
7193890	D (G005)	0.7
7193881	FB (B013 CONFERENCE)	< 0.3
7984124	FB (E200)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:**WATKINS MILL HIGH SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7193888	A006	2018-02-12 @ 2:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7193866	A201	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7193880	B008	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	1.2 ± 0.4	2018-02-19
7193881	B013 CONFERENCE	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	< 0.3	2018-02-19
7193882	B013 CONFERENCE	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	3.4 ± 0.5	2018-02-19
7193879	B013 CONFERENCE	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	3.5 ± 0.5	2018-02-19
7193897	B105	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	1.3 ± 0.4	2018-02-19
7984106	C119	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.9 ± 0.3	2018-02-19
7193867	C119	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.8 ± 0.3	2018-02-19
7193898	C123	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.8 ± 0.4	2018-02-19
7193887	COUNSELING	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	4.3 ± 0.5	2018-02-19
7984115	COUNSELING A	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	3.4 ± 0.5	2018-02-19
7193886	COUNSELING B	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	3.8 ± 0.5	2018-02-19
7193885	COUNSELING C	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	3.2 ± 0.5	2018-02-19
7984113	COUNSELING E	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	2.9 ± 0.5	2018-02-19
7984114	COUNSELING F	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	3.5 ± 0.4	2018-02-19
7193858	COUNSELING G	2018-02-12 @ 2:00 pm	2018-02-15 @ 11:00 am	4.0 ± 0.5	2018-02-19
7984116	D104	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7984103	D104G	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7984107	D104H	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7984108	D104I	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	0.7 ± 0.3	2018-02-19
7984119	D104I	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7984104	D104M	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.7 ± 0.3	2018-02-19
7193896	D106E	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.5 ± 0.4	2018-02-19
7984111	D106F	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7984122	E101	@	@		
7984123	E106	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7984121	E200	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7984124	E200	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19
7984120	E200	2018-02-12 @ 4:00 pm	2018-02-15 @ 12:00 pm	1.1 ± 0.4	2018-02-19
7984101	FACILITY LOUNGE	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.8 ± 0.4	2018-02-19
7984112	G003	2018-02-12 @ 2:00 pm	2018-02-15 @ 12:00 pm	0.5 ± 0.4	2018-02-19
7193889	G005	2018-02-12 @ 2:00 pm	2018-02-15 @ 12:00 pm	0.6 ± 0.4	2018-02-19
7193890	G005	2018-02-12 @ 2:00 pm	2018-02-15 @ 12:00 pm	0.7 ± 0.3	2018-02-19
7193899	GYM 2	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.9 ± 0.3	2018-02-19
7193883	GYM 2	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.7 ± 0.3	2018-02-19
7193900	GYM 2	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	< 0.3	2018-02-19

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February 28, 2018

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

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Radon test result report for:

**WATKINS MILL HIGH SCHOOL  
MAIN**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7193884	T002	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	2.6 ± 0.4	2018-02-19
7193892	T002 OFFICE	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	4.4 ± 0.5	2018-02-19
7193847	T006	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	5.0 ± 0.5	2018-02-19
7193893	THEATER	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.6 ± 0.4	2018-02-19
7984102	THEATER	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.7 ± 0.3	2018-02-19
7193894	THEATER	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.7 ± 0.4	2018-02-19
7193895	THEATER	2018-02-12 @ 3:00 pm	2018-02-15 @ 12:00 pm	0.8 ± 0.4	2018-02-19

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



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon

Names of Schools:

- |                                        |                                      |
|----------------------------------------|--------------------------------------|
| 1. Highland Elementary School          | 20. Bethesda Trans. and Maint. Depot |
| 2. Stephen Knolls Elementary School    | 21. Sequoyah Elementary School       |
| 3. Silver Creek Middle School          | 22. Gaithersburg Middle School       |
| 4. Woodlin Elementary School           | 23. Wayside Elementary School        |
| 5. Sligo Creek Elementary School       | 24. Travilah Elementary School       |
| 6. Francis Scott Key Middle School     | 25. Damascus High School             |
| 7. John T. Baker Middle School         | 26. Jones Lane Elementary School     |
| 8. Cedar Grove Elementary School       | 27. Greencastle Elementary School    |
| 9. Clarksburg Elementary School        | 28. Spring Brook High School         |
| 10. Clarksburg Elementary School Annex | 29. Montgomery Blair High School     |
| 11. Fields Road Elementary School      | 30. Watkins Mill High 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         |                                      |

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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

February 27, 2018

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

Radon test result report for:

**OFFICE BLANKS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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

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



February 27, 2018

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

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

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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

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

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February 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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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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  $\mu$ R/h Elevation = 820 ft

**MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Watkins Mill High 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	80
# Rooms $\geq 4.0$ pCi/L	0
Lowest Value	< 0.3 pCi/L
Highest Value	2.9 pCi/L

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

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: Watkins Mill High School**

10301 Apple Ridge Rd.  
Gaithersburg, Maryland 20879

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 Watkins Mill High School, located at 10301 Apple Ridge Rd. in Gaithersburg, Maryland 20879 (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 5, 2017 and deployed one-hundred three (103) 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 8, 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 low-30s to mid-40s and high temperatures ranged from the upper-30s to mid-50s. Maximum sustained winds ranged from 4-17 miles per hour. Average humidity was around 60%. 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 (Appendix B). The laboratory analytical results are also attached (Appendix C). Laboratory results and exposure data for the spike samples are also included in Appendix C.

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
$\geq 4.0$ pCi/L	None	N/A
$\leq 4.0$ pCi/L	See Attachment B	See Attachment B

Quality Control Samples	
Results of Blank Canisters:	The field blanks, office blank, 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.

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 Moulds, CHMM  
Radon Measurement Specialist  
KCI Technologies, Inc.

Attachments:

B- Table 1-Radon Test Summary Spreadsheet

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

Radon Testing Results		
Watkins Mill High School		
Test Period: 12/05/17-12/08/17		
Kit Number	Room / Area	Result
7979334	A001	< 0.3
7979322	A001	0.6
7979325	* A006 (Missing)	-
7979084	A006 WORKSHOP	< 0.3
7979052	A100A	1.3
7979321	* A204 (Missing)	-
7979013	ASSISTANT PRIN	0.5
7979008	ASSISTANT PRIN 2	0.6
7979016	ASSISTANT PRIN 3	< 0.3
7979014	ATTENDANCE	0.7
7979357	B001	0.6
7979358	B001	0.6
7979333	* B008 OFFICE (Open Door)	0.8
7979348	B010	0.5
7979349	B010	0.8
7979350	B010	0.8
7979347	B010	1.1
7979097	B015	2.1
7979338	B015A	2.1
7979344	B015B	2.9
7979339	B015B	2.0
7979337	B015C	1.7
7979341	* B015D (Tampered)	-
7979340	B015E	1.6
7979336	B015F	1.6
7979345	B015G	1.9
7979342	B015H	1.2
7979346	B015I	1.5
7979090	B017	1.7
7979318	B019	1.2
7979005	B100	< 0.3
7979326	B101	0.8
7979314	B103	0.7
7979007	B105	0.7
7979319	B123	0.6
7979351	B204	1.0
7979368	C002	< 0.3
7979369	C002 OFFICE	0.6
7979370	C004	0.8
7979366	C006	0.8
7979362	C009	0.9
7979308	C010	0.9
7979315	C012	< 0.3
7979305	C021	< 0.3
7979312	C106	0.5
7979310	D001	< 0.3

Table Note:

\* Missing or Compromised Sample

Radon Testing Results		
Watkins Mill High School		
Test Period: 12/05/17-12/08/17		
Kit Number	Room / Area	Result
7979306	D002	< 0.3
7979324	D004A	0.7
7979323	D004B	1.2
7979331	D006	1.2
7979332	D008	1.6
7979024	D104A	0.6
7979030	D104B	< 0.3
7979032	D104C	< 0.3
7979372	* D104G (Missing)	-
7979303	* D104H (Missing)	-
7979313	D104J	< 0.3
7979371	D104L	< 0.3
7979061	D104N	< 0.3
7979054	D104O	0.6
7979031	D104P	< 0.3
7979029	D104Q	< 0.3
7979100	D106	< 0.3
7979022	D106D	0.6
7979023	* D106F (Missing - Room Locked at Pickup)	< 0.3
7979001	D201	0.5
7979088	D208	0.8
7979365	E001	< 0.3
7979307	E002	< 0.3
7979375	E003	< 0.3
7979301	E004	< 0.3
7979083	E006	0.6
7979376	E008	< 0.3
7979373	E010	< 0.3
7979311	* E101 (Missing)	-
7979352	* E106 (Missing)	-
7979037	* E200 (Missing)	-
7979302	G004	1.9
7979089	* G005 (Missing)	-
7979316	G006	1.3
7979309	G007	1.2
7979304	G101	1.0
7979062	G101	1.1
7979354	G101	0.8
7979053	ITSS	0.6
7979046	MAIN OFFICE	0.7
7979087	PRINCIPAL	< 0.3
7979051	SBA	0.5

Table Note:

\* Missing or Compromised Sample

Radon Testing Results		
Watkins Mill High School		
Test Period: 12/05/17-12/08/17		
Kit Number	QC Type	Result
7979015	D (ATTENDANCE)	< 0.3
7979343	D (B015A)	1.7
7979353	D (B019)	0.6
7979067	D (B204)	1.1
7979360	D (C002)	< 0.3
7979068	D (D104J)	0.6
7979045	D (D106)	< 0.3
7979361	D (E008)	< 0.3
7979317	* D (G005:Missing)	-
7979320	* FB (A201:Missing)	-
7979006	FB (B101)	< 0.3
7979367	FB (C002)	< 0.3
7979021	FB (D106)	< 0.3
7193832	OB (OFFICE BLANK)	< 0.3
7193834	OB (OFFICE BLANK)	< 0.3

Table Note:

\* Missing or Compromised Sample



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:**WATKINS MILL HIGH SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7979334	A001	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-11
7979322	A001	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	0.6 ± 0.3	2017-12-11
7979325	A006	@	@		
7979084	A006 WORKSHOP	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7979052	A100A	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	1.3 ± 0.3	2017-12-11
7979320	A201	@	@		
7979321	A204	@	@		
7979013	ASSISTANT PRIN	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	0.5 ± 0.2	2017-12-11
7979008	ASSISTANT PRIN 2	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	0.6 ± 0.3	2017-12-11
7979016	ASSISTANT PRIN 3	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979015	ATTENDANCE	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979014	ATTENDANCE	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	0.7 ± 0.3	2017-12-12
7979357	B001	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	0.6 ± 0.3	2017-12-12
7979358	B001	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	0.6 ± 0.3	2017-12-12
7979333	B008 OFFICE	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	0.8 ± 0.3	2017-12-11
7979349	B010	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	0.8 ± 0.3	2017-12-11
7979350	B010	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	0.8 ± 0.2	2017-12-11
7979348	B010	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	0.5 ± 0.3	2017-12-11
7979347	B010	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	1.1 ± 0.3	2017-12-12
7979097	B015	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	2.1 ± 0.3	2017-12-12
7979338	B015A	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	2.1 ± 0.3	2017-12-11
7979343	B015A	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	1.7 ± 0.3	2017-12-12
7979339	B015B	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	2.0 ± 0.3	2017-12-11
7979344	B015B	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	2.9 ± 0.4	2017-12-12
7979337	B015C	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	1.7 ± 0.3	2017-12-12
7979341	B015D	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	???? UI	2017-12-12
7979340	B015E	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	1.6 ± 0.3	2017-12-11
7979336	B015F	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	1.6 ± 0.3	2017-12-12
7979345	B015G	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	1.9 ± 0.3	2017-12-12
7979342	B015H	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	1.2 ± 0.3	2017-12-12
7979346	B015I	2017-12-05 @ 9:00 am	2017-12-08 @ 8:00 am	1.5 ± 0.3	2017-12-12
7979090	B017	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	1.7 ± 0.3	2017-12-12
7979318	B019	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	1.2 ± 0.3	2017-12-11
7979353	B019	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	0.6 ± 0.3	2017-12-11
7979005	B100	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979006	B101	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979326	B101	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	0.8 ± 0.3	2017-12-12

Radon test result report for:**WATKINS MILL HIGH SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7979314	B103	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	0.7 ± 0.3	2017-12-12
7979007	B105	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	0.7 ± 0.3	2017-12-11
7979319	B123	2017-12-05 @ 11:00 am	2017-12-08 @ 9:00 am	0.6 ± 0.3	2017-12-12
7979351	B204	2017-12-05 @ 11:00 am	2017-12-08 @ 9:00 am	1.0 ± 0.3	2017-12-11
7979067	B204	2017-12-05 @ 11:00 am	2017-12-08 @ 9:00 am	1.1 ± 0.3	2017-12-12
7979368	C002	2017-12-05 @ 7:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-11
7979367	C002	2017-12-05 @ 7:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7979360	C002	2017-12-05 @ 7:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7979369	C002 OFFICE	2017-12-05 @ 7:00 am	2017-12-08 @ 8:00 am	0.6 ± 0.3	2017-12-12
7979370	C004	2017-12-05 @ 7:00 am	2017-12-08 @ 8:00 am	0.8 ± 0.3	2017-12-12
7979366	C006	2017-12-05 @ 7:00 am	2017-12-08 @ 8:00 am	0.8 ± 0.3	2017-12-12
7979362	C009	2017-12-05 @ 7:00 am	2017-12-08 @ 9:00 am	0.9 ± 0.3	2017-12-12
7979308	C010	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	0.9 ± 0.3	2017-12-11
7979315	C012	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-11
7979305	C021	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-11
7979312	C106	2017-12-05 @ 11:00 am	2017-12-08 @ 9:00 am	0.5 ± 0.3	2017-12-11
7979310	D001	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-11
7979306	D002	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-11
7979324	D004A	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	0.7 ± 0.3	2017-12-11
7979323	D004B	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	1.2 ± 0.3	2017-12-12
7979331	D006	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	1.2 ± 0.3	2017-12-12
7979332	D008	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	1.6 ± 0.3	2017-12-11
7979024	D104A	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	0.6 ± 0.3	2017-12-12
7979030	D104B	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-12
7979032	D104C	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-12
7979372	D104G	@	@		
7979303	D104H	@	@		
7979313	D104J	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979068	D104J	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	0.6 ± 0.3	2017-12-11
7979371	D104L	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-12
7979061	D104N	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979054	D104O	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	0.6 ± 0.3	2017-12-12
7979031	D104P	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-12
7979029	D104Q	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-12
7979045	D106	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979100	D106	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979021	D106	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11



Radon test result report for:**WATKINS MILL HIGH SCHOOL  
MAIN**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7979022	D106D	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	0.6 ± 0.3	2017-12-12
7979023	D106F	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979001	D201	2017-12-05 @ 11:00 am	2017-12-08 @ 9:00 am	0.5 ± 0.3	2017-12-11
7979088	D208	2017-12-05 @ 11:00 am	2017-12-08 @ 9:00 am	0.8 ± 0.3	2017-12-11
7979365	E001	2017-12-05 @ 7:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-11
7979307	E002	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-11
7979375	E003	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7979301	E004	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7979083	E006	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	0.6 ± 0.3	2017-12-12
7979376	E008	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7979361	E008	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7979373	E010	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	< 0.3	2017-12-12
7979311	E101	@	@		
7979352	E106	@	@		
7979037	E200	@	@		
7979302	G004	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	1.9 ± 0.3	2017-12-12
7979089	G005	@	@		
7979317	G005	@	@		
7979316	G006	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	1.3 ± 0.3	2017-12-12
7979309	G007	2017-12-05 @ 8:00 am	2017-12-08 @ 8:00 am	1.2 ± 0.3	2017-12-12
7979062	G101	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	1.1 ± 0.3	2017-12-11
7979354	G101	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	0.8 ± 0.3	2017-12-12
7979304	G101	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	1.0 ± 0.3	2017-12-12
7979053	ITSS	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	0.6 ± 0.3	2017-12-11
7979046	MAIN OFFICE	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	0.7 ± 0.3	2017-12-11
7193834	OFFICE BLANK	2017-12-05 @ 12:00 pm	2017-12-08 @ 12:00 pm	< 0.3	2017-12-11
7193832	OFFICE BLANK	2017-12-05 @ 12:00 pm	2017-12-08 @ 12:00 pm	< 0.3	2017-12-11
7979087	PRINCIPAL	2017-12-05 @ 9:00 am	2017-12-08 @ 9:00 am	< 0.3	2017-12-11
7979051	SBA	2017-12-05 @ 10:00 am	2017-12-08 @ 9:00 am	0.5 ± 0.3	2017-12-11



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

- |                                          |                                 |
|------------------------------------------|---------------------------------|
| 1. John T. Baker Middle School           | 15. Whetstone Elementary School |
| 2. Cedar Grove Elementary School         |                                 |
| 3. Clarksburg Elementary School          |                                 |
| 4. Clarksburg Elementary School Annex    |                                 |
| 5. Clarksburg High School                |                                 |
| 6. Clearspring Elementary School         |                                 |
| 7. Damascus Elementary School            |                                 |
| 8. Damascus High School                  |                                 |
| 9. Dr. Charles R. Drew Elementary School |                                 |
| 10. Facilities Maintenance Depot - Shop  |                                 |
| 11. Lake Seneca Elementary School        |                                 |
| 12. Laytonville Elementary School        |                                 |
| 13. Watkins Mill Elementary School       |                                 |
| 14. Watkins Mill High School             |                                 |

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	Date	Initials
Radon Test Kits Deployed	12/05/17	JM
Radon Test Kits Collected	12/08/17	JM
Radon Test Kits Shipped to Lab*	12/08/17	JM
Radon Test Kits Received by Lab*	12/13/17	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).**

---

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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

---

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: Watkins Mill High School

Date of Test Report:	10/20/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	15
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.5

### Project Status:

Post remediation testing and Follow-up testing after HVAC update completed;  
no further action at this time.



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

October 20, 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: Watkins Mill High School  
10301 Apple Ridge Road  
Gaithersburg, MD 20879

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 Watkins Mill High School, located at 10301 Apple Ridge Road in Gaithersburg, Maryland 20879 (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 27, 2016 and deployed eighteen (18) 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 30, 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, and
- Follow-up sampling of a school that had HVAC modifications over the summer.

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), and
- Determine if the HVAC project changed previously detected radon levels.

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 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

Radon Testing Results		
Watkins Mill High School		
Test Period: 09/27/16-09/30/16		
Kit Number	Room / Area	Result
7802659	A002	< 0.3
7802663	A208	< 0.3
7802658	B203	< 0.3
7802665	B212	< 0.3
7802662	B214	< 0.3
7802656	B220	< 0.3
7802648	B221	< 0.3
7802655	CONTROL RM	< 0.3
7802661	D006	< 0.3
7802669	D008	0.5
7802650	D202	< 0.3
7802668	IMC	< 0.3
7802677	IMC	< 0.3
7802664	IMC OFF	< 0.3
7802670	IMC PREVIEW	< 0.3
7802676	IMC WORK PREP	< 0.3

Table Note:

\* Missing or Compromised Sample

Radon Testing Results		
Watkins Mill High School		
Test Period: 09/27/16-09/30/16		
Kit Number	QC Type	Result
7802671	D (CONTROL RM)	< 0.3
7802667	D (IMC PREVIEW)	< 0.3

Table Note:

\* Missing or Compromised Sample

## ATTACHMENT C

### Laboratory Analytical Results

October 7, 2016

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

Radon test result report for:

**WATKINS MILL HIGH SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802659	A002	2016-09-27 @ 12:00 pm	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802663	A208	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802658	B203	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802665	B212	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802662	B214	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802656	B220	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802648	B221	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802655	CONTROL RM	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802671	CONTROL RM	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802661	D006	2016-09-27 @ 12:00 pm	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802669	D008	2016-09-27 @ 12:00 pm	2016-09-30 @ 10:00 am	0.5 ± 0.2	2016-10-03
7802650	D202	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802677	IMC	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802668	IMC	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802664	IMC OFF	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802670	IMC PREVIEW	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802667	IMC PREVIEW	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03
7802676	IMC WORK PREP	2016-09-27 @ 11:00 am	2016-09-30 @ 10:00 am	< 0.3	2016-10-03

# RADON SCREENING SURVEY – FOLLOW-UP WATKINS MILL HIGH SCHOOL

10301 Apple Ridge Road, Gaithersburg, Maryland 20879

## EXECUTIVE SUMMARY

Date of Test Report:	3/11/16 (Follow-Up)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	8
# Rooms $\geq$ 4.0 pCi/L:	1
Low Value:	<0.3
High Value:	13.4
Confirmed Rooms $\geq$ 4.0 pCi/L US EPA Action Level	1

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

Room	Result (pCi/L) 3/16/16 (Rev. 1 Initial)	Result (pCi/L) 3/11/16 (Follow-Up)	Average Result (pCi/L)
D008	6.8	13.4	10.1
A001	<0.3 Tampered	0.7	0.5
B002 B	--- Missing	0.5	0.5
CAFÉ	0.9 Tampered	<0.3 Tampered	0.6
D003	0.6 Tampered	1.1	0.9
D202	0.7 Open Window	0.9	0.8
D202	0.8 Open Window	Not Tested	0.8
GYM	--- Missing	--- Missing	---
GYM	<0.3 Open Door	--- Missing	0.3
GYM	1.0 Open Door	Not Tested	1.0
GYM	0.7 Open Door	Not Tested	0.7
Counseling	--- Missing	1.5	1.5





## MCPS RADON TESTING

### Executive Summary: Watkins Mill High School

Date of Test Report:	3/11/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	8
# Rooms $\geq 4.0$ pCi/L:	1
Low Value:	< 0.3
High Value:	13.4

Rooms with results  $\geq 4.0$  pCi/L:  
D008 (13.4 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; missing or compromised samples need re-test.



March 11, 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: Watkins Mill High School  
10301 Apple Ridge Road  
Gaithersburg, Maryland 20879

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 Watkins Mill High School, located at 10301 Apple Ridge Road, Gaithersburg, Maryland 20879 (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 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 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>	D008	13.4
<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. Moulds  
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.

Radon Testing Results		
Watkins Mill HS		
Test Period: 02/22/16-02/25/16		
Kit Number	Room / Area	Result
7735202	A001	0.7
7735205	B002 B	0.5
7735203	* CAFE (Missing)	-
7735206	* CAFE (tampered)	< 0.3
7731650	COUNSELING	1.5
7735209	D003	1.1
7735201	D008	13.4
7735214	D202	0.9
7735207	GYM	1.6
7726769	* GYM (Missing)	-
7735215	* GYM (Missing)	-

Table Note:

\* Missing or Compromised Sample



Radon Testing Results		
Watkins Mill HS		
Test Period: 02/22/16-02/25/16		
Kit Number	QC Type	Result
7735210	D (D003)	0.7
7735211	FB (D003)	< 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:  
**WATKINS MILL HS  
MAIN**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7735202	A001	2016-02-22 @ 4:00 pm	2016-02-25 @ 1:00 pm	0.7 ± 0.3	2016-02-29
7735205	B002 B	2016-02-22 @ 4:00 pm	2016-02-25 @ 1:00 pm	0.5 ± 0.3	2016-02-29
7735203	CAFE	@	@		
7735206	CAFE	2016-02-22 @ 4:00 pm	2016-02-25 @ 12:00 pm	< 0.3	2016-02-29
7735209	D003	2016-02-22 @ 4:00 pm	2016-02-25 @ 1:00 pm	1.1 ± 0.3	2016-02-29
7735210	D003	2016-02-22 @ 4:00 pm	2016-02-25 @ 1:00 pm	0.7 ± 0.3	2016-02-29
7735211	D003	2016-02-22 @ 4:00 pm	2016-02-25 @ 1:00 pm	< 0.3	2016-02-29
7735201	D008	2016-02-22 @ 4:00 pm	2016-02-25 @ 1:00 pm	13.4 ± 0.7	2016-02-29
7735214	D202	2016-02-22 @ 5:00 pm	2016-02-25 @ 1:00 pm	0.9 ± 0.3	2016-02-29
7726769	GYM	@	@		
7735215	GYM	@	@		
7735207	GYM	2016-02-22 @ 5:00 pm	2016-02-25 @ 12:00 pm	1.6 ± 0.3	2016-02-29
7731650	Counseling	2016-02-22 @ 5:00 pm	2016-02-25 @ 12:00 pm	1.5 ± 0.3	2016-02-29

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March 9, 2016

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

---

Radon test result report for:

**MCPS**

**Phase 9 Office Blanks**

---

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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 \*\***

---

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

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**

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

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

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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

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

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

Time Start: 0926 Time Stop: 0926

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

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

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

7718281, 7718282, 7718291,

7718288, 7718289, 7718273

3 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 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   |                        |

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	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



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Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

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## 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          |                         |

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	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: Watkins Mill High School

Date of Test Report:	3/16/2016 (Rev 1)
Round of Testing:	<u>Initial</u> Follow-up Post Remediation
# Rooms Tested:	109
# Rooms $\geq 4.0$ pCi/L:	1
Low Value:	< 0.3
High Value:	6.8

Rooms with results  $\geq 4.0$  pCi/L:  
Room D008 (6.8 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.



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

March 16, 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 # 12146341.23

Location: Watkins Mill High School  
10301 Apple Ridge Road  
Gaithersburg, MD 20879

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 Watkins Mill High School, located at 10301 Apple Ridge Road in Gaithersburg, Maryland 20879 (subject site).

**Scope of Services:**

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

KCI visited the site on January 4, 2016 and deployed one hundred fifty (150) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on January 7, 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  $\leq 65^{\circ}\text{F}$ .

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

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

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

### **Results:**

The results of the radon test analysis indicated the following:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
$\geq 4.0 \text{ pCi/L}$	D008	6.8
$< 4.0 \text{ pCi/L}$	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  $0.3 \text{ pCi/L}$ . 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. Moulds  
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		
Watkins Mill HS		
Test Period: 01/04/16-01/07/16		
Kit Number	Room / Area	Result
7713113	A001	< 0.3
7713123	* A001 (Tampered)	< 0.3
7713134	A006	0.7
7710897	A200	0.8
7710887	A201	0.6
7710899	A202	0.6
7710867	A203	< 0.3
7710864	A205	< 0.3
7719977	ATTENDANCE	< 0.3
7713106	B001	0.5
7713114	B001	< 0.3
7713119	B002 OFFICE A	0.6
7713132	* B002 OFFICE B (Missing)	-
7713143	B002 OFFICE C	0.8
7713111	B008	0.9
7713112	B008	0.8
7713107	B008 OFFICE	0.7
7713166	B015	0.8
7713155	B015 CONF	1.0
7713177	B015 COPY	0.5
7713175	B015A	1.3
7713174	B015B	1.2
7713195	B017	0.7
7713173	B017 OFFICE	0.7
7719980	B100	0.7
7719976	B100A	0.7
7719966	B101	0.5
7719970	B102	0.7
7719999	B103	0.6
7719995	B104	0.8
7719959	B105L	< 0.3
7719974	B105R	< 0.3
7713162	C002	0.8
7713164	C002 OFFICE	0.9
7713147	C004	0.7
7713146	C006	0.6
7713165	C009	0.7
7713157	C010	0.8
7713182	C012	0.8
7713159	C021	0.7
7713181	C023	< 0.3
7719991	C119	< 0.3
7710871	C121	0.6
7719965	C123	0.6
7713163	CAFE	1.2
7713167	CAFE	0.9

Table Note:

\* Missing or Compromised Sample

Radon Testing Results		
Watkins Mill HS		
Test Period: 01/04/16-01/07/16		
Kit Number	Room / Area	Result
7713170	CAFE	1.1
7713161	* CAFE (Tampered)	0.9
7713142	COUNCELING B	1.2
7713153	* COUNSELING (Missing)	-
7713171	COUNSELING A	1.3
7713144	COUNSELING C	1.2
7713154	COUNSELING D	1.8
7713150	COUNSELING E	1.1
7713149	COUNSELING F	1.0
7713178	COUNSELING G	0.9
7713104	D001	< 0.3
7713190	D002	0.6
7713133	* D003 (Tampered)	0.6
7713131	D004A	1.6
7713137	D004B	1.6
7713105	D006	3.1
7713108	D008	6.8
7719993	D104	0.6
7719996	D104A	< 0.3
7719968	D104B	0.7
7719992	D104C	0.6
7719994	D104G	0.7
7719964	D104H	< 0.3
7719986	D104I	< 0.3
7719987	D104J	< 0.3
7710863	D104L	0.7
7710874	D104M	0.9
7719969	D104N	< 0.3
7719983	D104O	0.7
7710898	D104P	< 0.3
7719973	D104Q	0.6
7719981	D106	0.6
7719982	D106D	0.9
7710879	D106E	0.7
7710880	D106F	0.9
7710890	* D202 (Open Window)	0.8
7710900	D203	0.8
7719988	D204	0.6
7720000	D208	0.7
7713148	E001	< 0.3
7713187	E002	0.8
7713160	E003	< 0.3
7713151	E004	< 0.3
7713116	E006	< 0.3
7713115	E008	< 0.3
7713186	E010	0.6
7713102	FACULTY LOUNGE	0.8
7713198	G003	0.6
7713194	G004	0.5
7713197	G006	< 0.3

Table Note:

\* Missing or Compromised Sample

Radon Testing Results		
Watkins Mill HS		
Test Period: 01/04/16-01/07/16		
Kit Number	Room / Area	Result
7713199	G007	< 0.3
7710872	* GYM (Missing)	-
7710884	* GYM (Open Door)	< 0.3
7719967	* GYM (Open Door)	1.0
7719971	* GYM (Open Door)	0.7
7710875	GYM2	1.1
7710876	GYM2	0.8
7710878	GYM2	0.6
7719960	GYM2	0.7
7710877	MAIL	< 0.3
7719998	OFFICE	0.6
7710885	OFFICE A	0.7
7719951	OFFICE B	< 0.3
7719953	OFFICE C	0.7
7719979	OFFICE D	< 0.3
7719958	OFFICE E	0.9
7719975	PRINCIPAL	< 0.3
7719952	SPECIAL ED 01	< 0.3
7719957	SPECIAL ED 02	< 0.3
7719961	SPECIAL ED 03	0.6
7713121	T002	1.6
7713145	T002	1.6
7713138	T002 OFFICE	1.4
7713127	T006	2.8
7713130	T006	3.1
7719954	TECH ROOM	0.7
7719955	THEATER	0.8
7719962	THEATER	1.4
7719985	THEATER	1.0
7719990	THEATER	0.9

Table Note:

\* Missing or Compromised Sample

Radon Testing Results		
Watkins Mill HS		
Test Period: 01/04/16-01/07/16		
Kit Number	QC Type	Result
7713135	D (A006)	0.6
7710882	D (A205)	< 0.3
7713109	D (B001)	< 0.3
7713136	D (B002 OFFICE C)	0.6
7713169	D (B017)	0.8
7713168	* D (C002 OFFICE:Tampered)	< 0.3
7713185	D (C021)	0.9
7713176	D (COUNSELING G)	1.1
7719978	D (D104N)	0.6
7710886	D (D104P)	0.8
7710881	* D (D202:Open Window)	0.7
7713191	D (FACULTY LOUNGE)	1.0
7710883	* D (GYM:Damaged -Voided by Lab/Open Door)	-
7719963	D (GYM2)	1.0
7719956	D (OFFICE E)	< 0.3
7719972	D (THEATRE)	1.1
7713172	FB (COUNSELING G)	< 0.3
7713120	FB (D001)	< 0.3
7710894	FB (D104B)	< 0.3
7713184	FB (E002)	< 0.3
7713122	FB (FACULTY LOUNGE)	< 0.3
7710868	FB (GYM2)	< 0.3
7719989	OB (0)	< 0.3
7719997	OB (0)	< 0.3

Table Note:

\* Missing or Compromised Sample

## ATTACHMENT C

### Laboratory Analytical Results

Radon test result report for:  
**WATKINS MILL HS  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719989	00	2016-01-04 @ 5:00 pm	2016-01-07 @ 3:00 pm	< 0.3	2016-01-11
7719997	00	2016-01-04 @ 5:00 pm	2016-01-07 @ 3:00 pm	< 0.3	2016-01-11
7713113	A001	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	< 0.3	2016-01-11
7713123	A001	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	< 0.3	2016-01-11
7713134	A006	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	0.7 ± 0.3	2016-01-11
7713135	A006	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	0.6 ± 0.3	2016-01-11
7710897	A200	2016-01-04 @ 2:00 pm	2016-01-07 @ 10:00 am	0.8 ± 0.3	2016-01-11
7710887	A201	2016-01-04 @ 2:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7710899	A202	2016-01-04 @ 2:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7710867	A203	2016-01-04 @ 2:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7710864	A205	2016-01-04 @ 2:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7710882	A205	2016-01-04 @ 2:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719977	ATTENDANCE	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7713106	B001	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.5 ± 0.3	2016-01-11
7713109	B001	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713114	B001	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713119	B002 OFFICE A	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.3	2016-01-11
7713132	B002 OFFICE B	@	@		
7713136	B002 OFFICE C	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.3	2016-01-11
7713143	B002 OFFICE C	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7713111	B008	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	0.9 ± 0.3	2016-01-11
7713112	B008	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7713107	B008 OFFICE	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-11
7713166	B015	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7713155	B015 CONF	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.0 ± 0.4	2016-01-12
7713177	B015 COPY	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.5 ± 0.3	2016-01-11
771317	B015A	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.3 ± 0.3	2016-01-11
7713174	B015B	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.2 ± 0.3	2016-01-11
7713169	B017	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7713195	B017	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-12
7713173	B017 OFFICE	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-11
7719980	B100	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7719976	B100A	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7719966	B101	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.5 ± 0.3	2016-01-11
7719970	B102	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7719999	B103	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-11
7719995	B104	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.8 ± 0.3	2016-01-11

January 25, 2016

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

Radon test result report for:  
**WATKINS MILL HS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719959	B105L	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719974	B105R	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7713162	C002	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-12
7713164	C002 OFFICE	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.9 ± 0.3	2016-01-12
7713168	C002 OFFICE	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-12
7713147	C004	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-12
7713146	C006	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.3	2016-01-12
7713165	C009	2016-01-04 @ 2:00 pm	2016-01-07 @ 12:00 pm	0.7 ± 0.3	2016-01-11
7713157	C010	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7713182	C012	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7713159	C021	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.7 ± 0.3	2016-01-11
7713185	C021	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.9 ± 0.3	2016-01-11
7713181	C023	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7719991	C119	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7710871	C121	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7719965	C123	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7713161	CAFE	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.9 ± 0.3	2016-01-11
7713163	CAFE	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	1.2 ± 0.4	2016-01-12
7713167	CAFE	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.9 ± 0.3	2016-01-12
7713170	CAFE	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	1.1 ± 0.4	2016-01-12
7713120	D001	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	< 0.3	2016-01-11
7713104	D001	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	< 0.3	2016-01-11
7713190	D002	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	0.6 ± 0.3	2016-01-11
7713133	D003	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	0.6 ± 0.3	2016-01-11
7713131	D004A	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	1.6 ± 0.3	2016-01-11
7713137	D004B	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	1.6 ± 0.4	2016-01-11
7713105	D006	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	3.1 ± 0.4	2016-01-11
7713108	D008	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	6.8 ± 0.6	2016-01-11
7719993	D104	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-12
7719996	D104A	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7710894	D104B	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719968	D104B	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-11
7719992	D104C	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7719994	D104G	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-11
7719964	D104H	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719986	D104I	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719987	D104J	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11



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

Radon test result report for:  
**WATKINS MILL HS**  
**MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7710863	D104L	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-12
7710874	D104M	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.9 ± 0.3	2016-01-12
7719969	D104N	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719978	D104N	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7719983	D104O	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-12
7710886	D104P	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.8 ± 0.3	2016-01-11
7710898	D104P	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7719973	D104Q	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7719981	D106	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7719982	D106D	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.9 ± 0.4	2016-01-12
7710879	D106E	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-11
7710880	D106F	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.9 ± 0.3	2016-01-11
7710881	D202	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-11
7710890	D202	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.8 ± 0.3	2016-01-11
7710900	D203	2016-01-04 @ 1:00 pm	2016-01-07 @ 12:00 pm	0.8 ± 0.3	2016-01-11
7719988	D204	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7720000	D208	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-11
7713148	E001	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713184	E002	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713187	E002	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7713160	E003	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713151	E004	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713116	E006	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713115	E008	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713186	E010	2016-01-04 @ 2:00 pm	2016-01-07 @ 11:00 am	0.6 ± 0.3	2016-01-11
7719979	OFFICE D	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7713122	FACULTY LOUNGE	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713102	FACULTY LOUNGE	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	0.8 ± 0.3	2016-01-11
7713191	FACULTY LOUNGE	2016-01-04 @ 4:00 pm	2016-01-07 @ 11:00 am	1.0 ± 0.3	2016-01-11
7713198	G003	2016-01-04 @ 2:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7713194	G004	2016-01-04 @ 4:00 pm	2016-01-07 @ 10:00 am	0.5 ± 0.3	2016-01-11
7713197	G006	2016-01-04 @ 4:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7713199	G007	2016-01-04 @ 2:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7713144	COUNSELING C	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.2 ± 0.3	2016-01-11
7710872	GYM	@	@		
7710883	GYM	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	???? IF4	2016-01-11
7710884	GYM	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11

January 25, 2016

**LABORATORY ANALYSIS  
REPORT \*\***

Radon test result report for:  
**WATKINS MILL HS  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719967	GYM	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	1.0 ± 0.3	2016-01-11
7719971	GYM	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-11
7710868	GYM2	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	< 0.3	2016-01-11
7710875	GYM2	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	1.1 ± 0.3	2016-01-11
7710876	GYM2	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.8 ± 0.3	2016-01-11
7710878	GYM2	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.6 ± 0.3	2016-01-11
7719963	GYM2	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	1.0 ± 0.3	2016-01-11
7719960	GYM2	2016-01-04 @ 1:00 pm	2016-01-07 @ 10:00 am	0.7 ± 0.3	2016-01-11
7713154	COUNSELING D	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.8 ± 0.4	2016-01-11
7713150	COUNSELING E	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.1 ± 0.4	2016-01-12
7713172	COUNSELING G	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	< 0.3	2016-01-11
7713176	COUNSELING G	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.1 ± 0.3	2016-01-11
7713178	COUNSELING G	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	0.9 ± 0.3	2016-01-11
7719956	OFFICE E	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719958	OFFICE E	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.9 ± 0.3	2016-01-11
7719953	OFFICE C	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-12
7710877	MAIL	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7713142	COUNSELING B	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.2 ± 0.4	2016-01-12
7719998	OFFICE	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-11
7719951	OFFICE B	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7713149	COUNSELING F	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.0 ± 0.3	2016-01-12
7719975	PRINCIPAL	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7713171	COUNSELING A	2016-01-04 @ 3:00 pm	2016-01-07 @ 11:00 am	1.3 ± 0.4	2016-01-12
7719952	SPECIAL ED 01	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7719957	SPECIAL ED 02	2016-01-04 @ 12:00 pm	2016-01-07 @ 12:00 pm	< 0.3	2016-01-11
7719961	SPECIAL ED 03	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-11
7710885	OFFICE A	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7713121	T002	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	1.6 ± 0.3	2016-01-11
7713145	T002	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	1.6 ± 0.4	2016-01-11
7713138	T002 OFFICE	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	1.4 ± 0.3	2016-01-11
7713127	T006	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	2.8 ± 0.4	2016-01-11
7713130	T006	2016-01-04 @ 3:00 pm	2016-01-07 @ 12:00 pm	3.1 ± 0.5	2016-01-12
7719954	TECH ROOM	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7719972	THEATRE	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	1.1 ± 0.3	2016-01-11
7719990	THEATRE	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.9 ± 0.3	2016-01-11
7719955	THEATRE	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	0.8 ± 0.3	2016-01-11
7719985	THEATRE	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	1.0 ± 0.4	2016-01-12

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January 25, 2016

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

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Radon test result report for:  
**WATKINS MILL HS**  
**MAIN**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719962	THEATRE	2016-01-04 @ 12:00 pm	2016-01-07 @ 9:00 am	1.4 ± 0.4	2016-01-12
7713153	COUNSELING	@	@		

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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:  
**MCPS PHASE 3 & 4**  
**TRANSIT BLANKS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708218	TRANSIT 4	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708200	TRANSIT 1	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708190	TRANSIT 10	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708189	TRANSIT 11	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708191	TRANSIT 12	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708188	TRANSIT 13	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708197	TRANSIT 14	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708186	TRANSIT 15	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708185	TRANSIT 16	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708184	TRANSIT 17	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708182	TRANSIT 18	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708187	TRANSIT 18	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708199	TRANSIT 2	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708181	TRANSIT 20	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708180	TRANSIT 21	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708183	TRANSIT 22	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708178	TRANSIT 23	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708179	TRANSIT 24	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708177	TRANSIT 25	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708176	TRANSIT 26	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708174	TRANSIT 27	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708173	TRANSIT 28	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708175	TRANSIT 29	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708198	TRANSIT 3	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708172	TRANSIT 30	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708194	TRANSIT 5	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708196	TRANSIT 6	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708193	TRANSIT 7	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708192	TRANSIT 8	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23
7708195	TRANSIT 9	2015-12-18 @ 12:00 pm	2015-12-21 @ 12:00 pm	< 0.3	2015-12-23

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



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ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

## Chain of Custody

Project Name: MCPS Radon Phase IV

Name of Schools:

- |                            |                            |                           |
|----------------------------|----------------------------|---------------------------|
| 1. Albert Einstein HS      | 12. Herbert Hoover MS      | 23. Stephen Knolls School |
| 2. Bel Pre ES              | 13. Kohn F. Kennedy HS     | 24. Strathmore ES         |
| 3. Benjamin Banneker MS    | 14. Julius West MS         | 25. Summit Hall ES        |
| 4. Bethesda Chevy Chase HS | 15. Kensington Parkwood ES | 26. Travilah ES           |
| 5. Beverly Farms ES        | 16. Lakewood ES            | 27. Twinbrook ES          |
| 6. Cabin John MS           | 17. Mill Creek ES          | 28. Waters Landing ES     |
| 7. Chevy Chase ES          | 18. Montgomery Blair HS    | 29. Watkins Mill HAS      |
| 8. Farmland ES             | 19. Montgomery Village MS  | 30. Weller Road ES        |
| 9. Forest Oak MS           | 20. Northwood HS           | 31. White Oak MS          |
| 10. Gaithersburg HS        | 21. Paint Branch ES        | 32. Winston Churchill HS  |
| 11. Garrett Park ES        | 22. Rock Creek Forest ES   |                           |
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	Date	Initials
Radon Test Kits Deployed	1/4/16	JM
Radon Test Kits Sampled	1/7/16	JM
Radon Test Kits Shipped to Lab*	1/8/16	JM
Radon Test Kits Received by Lab*	1/11/16	JM

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

Note: tests kits deployed at Montgomery Blair HS 1/4/16 and 1/5/16, test kits sampled at Montgomery Blair HS 1/7/16 and 1/8/16