

School / Facility Radon Testing Report Form

School Year: **24-25**

Facility:	Colonel Zadok Magruder High School		
Address:	5939 Muncaster Mill Rd.		
	Derwood, MD 20855		
Reason for Testing:	Scheduled Re-Testing - <input type="checkbox"/> 2-year or <input checked="" 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 type="checkbox"/> Active Mitigation (2-year regular schedule) <input checked="" 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 (≥ 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	104	Lowest Value (pCi/L)	<0.3
Number of Rooms (≥ 4.0 -pCi/L)	0	Highest Value (pCi/L)	1.9

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

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

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

Attachment 2 – Laboratory Report(s)

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

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
Shakia Dawkins		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	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	3/3/2025
<input type="checkbox"/> Long-Term				3/6/2025
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 ¹	93	0	11	0	104
Duplicates ²	10	0	0	0	10
Field Blanks ³	4	0	0	0	4
Grand Total					118

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 ¹	Not applicable		10
Trip Blanks ²	1	0	1
Office Blanks ^{3, 4}	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
Round of Testing	Initial Follow-Up
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 ¹ , 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 ¹ , Relative Percent Difference(s) (RPD) ² are less than the Warning Level ³ ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No <input checked="" type="checkbox"/> No
For all Duplicate Samples ¹ , Relative Percent Difference(s) (RPD) ² are less than the Control Level ³ ?	<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
≥ 4.0 -pCi/L	28% RPD	36% RPD

Summary of Test Results¹ and Determination of Valid Measurements²

Round of Testing	Ground-Contact		Upper-Level(s)		Total
	Initial	Follow-Up	Initial	Follow-Up	
Number of test locations:	93	0	11	0	104
Number of locations ≥ 8.0 -pCi/L:	0	0	0	0	0
Number of locations ≥ 4.0 and ≤ 8 -pCi/L:	0	0	0	0	0
Number of locations ≥ 2.7 and < 4 -pCi/L:	0	0	0	0	0
Number of locations ≥ 2.0 and < 2.7 -pCi/L:	0	0	0	0	0
Number of missing required test locations ³ :	10	0	0	0	10
Number of failed duplicate control locations:	0	0	0	0	0
Percentage of missing test locations for the facility ^{4,5} :	10.7%	0	0	0	10.7%

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

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

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

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

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

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

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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Were valid measurements obtained in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If Yes to both above – then Testing Status – ‘No Further Testing Needed’ mark ‘NA’ below and complete Conclusions section		
If No to either above, were all results obtained under 4.0-pCi/L and were sufficient valid measurements obtained?^{1,2} If Yes, then - ‘No Further Testing Needed’ complete Conclusion section on first page. If No, then - ‘Follow-up Testing Required’ continue below.	<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 ≥ 4.0-pCi/L	Deploy two Short-term follow-up tests and required blanks and duplicates; Average the results of the two tests	≥4.0	Mitigation Required
Failed QC checks		≥2.0 and <4.0	Consider Mitigation
		<2.0	Mitigation Not Required

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

Attachment 1:

Summary Data Tables

Table 1- Radon Testing Results		
Col. Zadok Magruder High School		
Test Period: 3/3/2025 - 3/6/2025		
Kit Number	Room / Area	Result
11887037	A100	< 0.3
11887052	A100	< 0.3
11887001	A100 OFFICE	< 0.3
11887047	A102	< 0.3
11887055	A102 OFFICE	< 0.3
11887053	A103	0.8
11887054	A104	< 0.3
11887031	A104 OFFICE	< 0.3
11887006	A105	< 0.3
11887003	A106	< 0.3
11887014	A107	< 0.3
11887016	A107	< 0.3
11887007	A108	< 0.3
11887004	A108 OFFICE	< 0.3
11887005	A108 OFFICE	< 0.3
11887025	A109	< 0.3
11887033	A205	< 0.3
11887041	A210	< 0.3
11887027	A215	< 0.3
11887119	ADMIN SECRETARY	< 0.3
11887117	AP 1	< 0.3
11887111	AP 2	< 0.3
11887110	AP 3	< 0.3
11887106	AP 4	< 0.3
11887092	ATHLETIC SPECIALIST	Missing Kit
11887095	ATTENDANCE	< 0.3
11887051	AUDITORIUM	1.9
11887081	AUDITORIUM	0.6
11887009	AUX GYM	1.6
11887068	B110	< 0.3
11887075	B110	< 0.3
11887059	B111	1.1
11887088	B113	< 0.3
11887050	B114	< 0.3
11887048	B115	< 0.3
11887042	B220	< 0.3
11887028	B229	< 0.3
11887012	B230	< 0.3

Table 1- Radon Testing Results		
Col. Zadok Magruder High School		
Test Period: 3/3/2025 - 3/6/2025		
11887026	B233	0.7
11887020	B234	< 0.3
11887018	BOYS LOCKER ROOM	0.7
11887036	BOYS LOCKER ROOM OFFICE	< 0.3
11887011	BS OFFICE	< 0.3
11887065	C116	< 0.3
11887066	C116	< 0.3
11887035	C117	< 0.3
11887083	C117	< 0.3
11887067	C118	< 0.3
11887063	C118 OFFICE	< 0.3
11887024	C119	< 0.3
11887010	C119A	< 0.3
11887021	C120	< 0.3
11887002	C120 OFFICE	< 0.3
11887079	C120 OFFICE	< 0.3
11887022	C121	< 0.3
11887064	C122	< 0.3
11887030	C123	< 0.3
11887069	C124	< 0.3
11887070	C125	< 0.3
11887078	C126	Missing Kit
11887008	C249	< 0.3
11887015	C251	< 0.3
11887019	C251	< 0.3
11887043	CAFETERIA	< 0.3
11887061	CAFETERIA	< 0.3
11887090	CAREER CENTER	< 0.3
11887100	CAREER CENTER	< 0.3
11887097	CONFERENCE	< 0.3
11887101	CONFERENCE	0.9
11887113	CONFERENCE	< 0.3
11887115	COUNSELING	< 0.3
11887089	COUNSELING 1	0.8
11887121	COUNSELING 2	< 0.3
11887091	COUNSELING 3	< 0.3
11887109	COUNSELING 4	< 0.3
11887105	COUNSELING 5	< 0.3

Table 1- Radon Testing Results		
Col. Zadok Magruder High School		
Test Period: 3/3/2025 - 3/6/2025		
11887114	COUNSELING 5	< 0.3
11887103	COUNSELING 6	< 0.3
11887104	COUNSELING 6	< 0.3
11887099	COUNSELING 7	< 0.3
11887120	COUNSELING 8	< 0.3
11887102	COUNSELING 9	< 0.3
11887107	COUNSELING REGISTRAR	< 0.3
11887118	COUNSELING WORKROOM	< 0.3
11887023	D127	< 0.3
11887039	D128	< 0.3
11887058	D128	< 0.3
11887084	D129	< 0.3
11887032	D130	< 0.3
11887034	D131	< 0.3
11887072	D132	< 0.3
11887040	D133	< 0.3
11887017	D134	< 0.3
11887060	D135	< 0.3
11887071	D136	< 0.3
11887077	D136	< 0.3
11887029	D137	< 0.3
11887073	DRESSING ROOM	1.3
11887049	GYM	< 0.3
11887082	GYM	< 0.3
11887085	GYM 2	< 0.3
11887086	GYM 2	< 0.3
11887038	HEALTH	< 0.3
11887087	HEALTH	< 0.3
11887045	HEALTH OFFICE	< 0.3
11887062	KITCHEN OFFICE	< 0.3
11887116	MAILROOM	< 0.3
11887122	MAIN OFFICE	< 0.3
11887056	MAKEUP ROOM	0.8
11887013	MUSIC OFFICE	1.2
11887046	PE OFFICE	< 0.3
11887125	PRINCIPAL	< 0.3
11887080	SECURITY	< 0.3
11887076	SECURITY 2	< 0.3
11887044	STAFF LOUNGE	< 0.3

Table 1- Radon Testing Results		
Col. Zadok Magruder High School		
Test Period: 3/3/2025 - 3/6/2025		
11887057	STAGE	< 0.3
11887093	WORKROOM	< 0.3
11887112	WORKROOM	< 0.3

[illegible]

Table 3 - QC Radon Testing Results			
Col. Zadok Magruder High School			
Test Period: 3/3/2025 - 3/6/2025			
Kit Number	QC Type	Room / Area	Result
11887052	D	A100	< 0.3
11887016	FB	A107	< 0.3
11887004	D	A108 Office	< 0.3
11887068	D	B110	< 0.3
11887066	D	C116	< 0.3
11887079	D	C120 Office	< 0.3
11887015	D	C251	< 0.3
11887043	D	Cafeteria	< 0.3
11887090	D	Career Center	< 0.3
11887114	D	Counseling 5	< 0.3
11887104	FB	Counseling 6	< 0.3
11887058	D	D128	< 0.3
11887077	FB	D136	< 0.3
11887038	FB	Health	< 0.3
11886966	OB	OFFICE BLANK	< 0.3
11886999	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation											
Zadok Col. Magruder High School											
Test Period: 3/3/2025 - 3/6/2025											
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	
11887052	11887037	A100	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
11887004	11887005	A108 Office	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
11887068	11887075	B110	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
11887066	11887065	C116	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
11887079	11887002	C120 Office	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
11887015	11887019	C251	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
11887043	11887061	Cafeteria	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
11887090	11887100	Career Center	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
11887114	11887105	Counseling 5	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
11887058	11887039	D128	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓	
NOTES: QC Check #1 - Data Entry QC Check #2 - Higher duplicate concentration is < or = to 2x the Lower QC Check #3 - Meets RPD Limits, by average duplicate concentration - enter 2 if RPD is BELOW warning and control levels, AND passes QC Check 1 and 2 - enter 1 if RPD is ABOVE warning and BELOW control levels, AND passes QC Check 1 and 2 - enter 0 if RPD is ABOVE control level, or 'FAILS' QC Check 1 or 2							Average (pCi/L)		Warning Level		Control Level
							< 2.0		1-pCi/L		NA
							Between 2.0 and 3.9		50% RPD		67% RPD
							≥ 4.0		28% RPD		36% RPD

[illegible]

Attachment 2:

Laboratory Reports

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11887052	A100	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887037	A100	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887001	A100 OFFICE	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887047	A102	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887055	A102 OFFICE	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887053	A103	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	0.8 ± 0.3	2025-03-10
11887054	A104	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887031	A104 OFFICE	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887006	A105	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887003	A106	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887014	A107	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887016	A107	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887007	A108	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887004	A108 OFFICE	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887005	A108 OFFICE	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887025	A109	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887033	A205	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887041	A210	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887027	A215	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887119	ADMIN SECRETARY	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887117	AP 1	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887111	AP 2	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887110	AP 3	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887106	AP 4	2025-03-03 @ 11:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887095	ATTENDANCE	2025-03-03 @ 11:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887051	AUDITORIUM	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	1.9 ± 0.4	2025-03-10
11887081	AUDITORIUM	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	0.6 ± 0.3	2025-03-10
11887009	AUX GYM	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	1.6 ± 0.4	2025-03-10
11887068	B110	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887075	B110	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887059	B111	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	1.1 ± 0.4	2025-03-10
11887088	B113	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887050	B114	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887048	B115	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887042	B220	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887028	B229	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887012	B230	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11887026	B233	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	0.7 ± 0.3	2025-03-10
11887020	B234	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887018	BOYS LOCKER ROOM	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	0.7 ± 0.3	2025-03-10
11887036	BOYS LOCKER ROOM OFFICE	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887011	BS OFFICE	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887065	C116	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887066	C116	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887035	C117	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887083	C117	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887067	C118	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887063	C118 OFFICE	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887024	C119	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887010	C119A	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887021	C120	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887079	C120 OFFICE	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887002	C120 OFFICE	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887022	C121	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887064	C122	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887030	C123	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887069	C124	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887070	C125	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887008	C249	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887019	C251	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887015	C251	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887061	CAFETERIA	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887043	CAFETERIA	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887100	CAREER CENTER	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887090	CAREER CENTER	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887097	CONFERENCE	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887113	CONFERENCE	2025-03-03 @ 11:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887101	CONFERENCE	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	0.9 ± 0.3	2025-03-10
11887115	COUNSELING	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887089	COUNSELING 1	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	0.8 ± 0.3	2025-03-10
11887121	COUNSELING 2	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887091	COUNSELING 3	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887109	COUNSELING 4	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887114	COUNSELING 5	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11887105	COUNSELING 5	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887104	COUNSELING 6	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887103	COUNSELING 6	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887099	COUNSELING 7	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887120	COUNSELING 8	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887102	COUNSELING 9	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887107	COUNSELING REGISTRAR	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887118	COUNSELING WORKROOM	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887023	D127	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887039	D128	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887058	D128	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887084	D129	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887032	D130	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887034	D131	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887072	D132	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887040	D133	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887017	D134	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887060	D135	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887077	D136	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887071	D136	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887029	D137	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887073	DRESSING ROOM	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	1.3 ± 0.4	2025-03-10
11887082	GYM	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887049	GYM	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887085	GYM 2	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887086	GYM 2	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887087	HEALTH	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887038	HEALTH	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887045	HEALTH OFFICE	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887062	KITCHEN OFFICE	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887116	MAILROOM	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887122	MAIN OFFICE	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887056	MAKEUP ROOM	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	0.8 ± 0.3	2025-03-10
11887013	MUSIC OFFICE	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	1.2 ± 0.3	2025-03-10
11887046	PE OFFICE	2025-03-03 @ 7:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887125	PRINCIPAL	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887080	SECURITY	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10

March 12, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11887076	SECURITY 2	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887044	STAFF LOUNGE	2025-03-03 @ 9:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887057	STAGE	2025-03-03 @ 8:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887093	WORKROOM	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10
11887112	WORKROOM	2025-03-03 @ 10:00 am	2025-03-06 @ 9:00 am	< 0.3	2025-03-10

March 10, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**OFFICE
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11886966	OB	2025-03-03 @ 11:00 am	2025-03-06 @ 11:00 am	< 0.3	2025-03-10

March 10, 2025

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**TRAVEL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11886999	TB	2025-03-03 @ 11:00 am	2025-03-06 @ 11:00 am	< 0.3	2025-03-10

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 μ 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 μ R/h Elevation = 820 ft

March 19, 2025

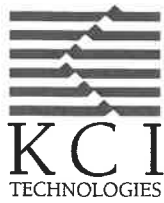
**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

QC
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing March 3rd – March 6th, 2025

Name of Schools:

1. Col. Zadok Magruder HS
2. S. Christa McAuliffe ES
3. Ronald McNair ES
4. Montgomery Village MS
5. Neelsville MS

	Date	Initials
Radon Test Kits Deployed	3/3/2025	DM
Radon Test Kits Collected	3/6/2025	AM
Radon Test Kits Shipped to Lab*	3/6/2025	AM
Radon Test Kits Received by Lab*	3/8/2025	DM

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

MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Magruder High School
Date of Report	2/28/2020
Round of Testing	Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	6
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	<0.3 pCi/L

Project Status

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

2/28/2020

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

Re: Radon Testing Services

KCI Job #12146341.126

Location: Magruder High School

5939 Muncastor Mill Road
Rockville, Maryland 20855

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 Magruder High School, located at 5939 Muncastor Mill Road in Rockville, Maryland 20855 (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 #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on 2/11/2020 and deployed seven (7) 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 missing test kits from the December 2019 testing period (i.e. test kit was deployed but not recovered),

-
2. Rooms with invalidated test kits from the December 2019 testing period (e.g. an open window in the room or disturbed test kit),
 3. Rooms which were locked/inaccessible during the December 2019 testing period,
 4. Rooms with elevated December 2019 results (i.e. ≥ 3.5 pCi/L),
 5. Rooms previously tested for radon but not tested in December 2019, and
 6. Additional rooms that require testing (if applicable.)

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 2/14/2020 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a 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 mid-20s to the upper-40s; and high temperatures ranged from the lower-40s to the upper-50s. Maximum sustained winds ranged from 14-24 miles per hour. Average humidity was approximately 74%. A total of 1.32 inches of rain were recorded during the testing period. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

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). Follow-up 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	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 410-316-7800.

Sincerely,

Mr. Tyler P. McCleaf
Radon Measurement Provider
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

Floor Plan Legend

X-Sample Location (in red)

X- Previous Sample Location

1- Not Samled; No Ground Contact

2- Not Samled; Unoccupied (e.g. Storage, Mechanical)

3- Not Samled; High Humidity/Moisture

4- Not Samled; Bathroom/Hallway

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		
Magruder High School		
Test Period: 02/11/20-02/14/20		
Kit Number	Room / Area	Result
9348547	BOYS LOCKER ROOM	< 0.3
9348561	D130	< 0.3
9348562	B231	< 0.3
9348563	AP3	< 0.3
9348565	D133	< 0.3
9348566	BS 138	< 0.3
9348502	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Magruder High School			
Test Period: 02/11/20-02/14/20			
Kit Number	QC Type	Room / Area	Result
9348522	TRANSIT BLANK	NA	0.7
9341735	TRANSIT BLANK	NA	<0.3

ATTACHMENT C

Laboratory Analytical Results

February 25, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MAGRUDER HS RT

1

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9348563	AP3	2020-02-11 @ 12:00 pm	2020-02-14 @ 12:00 pm	< 0.3	2020-02-18
9348562	B231	2020-02-11 @ 12:00 pm	2020-02-14 @ 12:00 pm	< 0.3	2020-02-18
9348547	BOYS LOCKER ROOM	2020-02-11 @ 12:00 pm	2020-02-14 @ 12:00 pm	< 0.3	2020-02-18
9348566	BS 138	2020-02-11 @ 12:00 pm	2020-02-14 @ 12:00 pm	< 0.3	2020-02-18
9348561	D130	2020-02-11 @ 12:00 pm	2020-02-14 @ 12:00 pm	< 0.3	2020-02-18
9348565	D133	2020-02-11 @ 12:00 pm	2020-02-14 @ 12:00 pm	< 0.3	2020-02-18

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 194523

NOMINAL Conditions: Radon Conc 25.8 pCi/L Rel. Hum 49.8 % Temp. 70.2 F

Date Start: 2/21/20 Date Stop: 2/24/20 Date Start: _____ Date Stop: _____

Time Start: 0745 Time Stop: 0745 Time Start: _____ Time Stop: _____

Device No.'s: (9) Char Bags - Device No.'s: _____

9341725 thru 9341733 _____

52 Left

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

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

Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____

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

Device No.'s: _____ Device No.'s: _____

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

February 28, 2020

**** LABORATORY ANALYSIS REPORT ****

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
9341725	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.9 \pm 1.6	2020-02-26
9341730	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.1 \pm 1.6	2020-02-26
9341728	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.9 \pm 1.6	2020-02-26
9341726	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.8 \pm 1.5	2020-02-26
9341731	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.1 \pm 1.5	2020-02-26
9341729	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.2 \pm 1.6	2020-02-26
9341727	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.2 \pm 1.6	2020-02-26
9341732	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.3 \pm 1.6	2020-02-26

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS
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 2

Name of Schools:

- | | |
|-----------------------|-------------------|
| 1. Argyle M.S. | 6. Fallsmead E.S. |
| 2. Banneker M.S. | 7. Farquhar M.S. |
| 3. Bel Pre E.S. | 8. Kennedy H.S. |
| 4. Blake H.S. | 9. Magruder H.S. |
| 5. Briggs Chaney M.S. | 10. Wheaton H.S. |

	Date	Initials
Radon Test Kits Deployed	2/11/20	DM
Radon Test Kits Collected	2/14/20	DM
Radon Test Kits Shipped to Lab*	2/14/20	DM
Radon Test Kits Received by Lab*	2/17/20	DM

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

MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Colonel Zadok Magruder High School
Date of Report	2/3/2020
Round of Testing	Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	103
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.3 pCi/L

Project Status

Current Project Status at this time: Testing Complete; missed locations and missing/compromised tests to be sampled.



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2/3/2020

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

Re: Radon Testing Services

KCI Job #12146341126

Location: Colonel Zadok Magruder High School

5939 Muncastor Mill Road
Rockville, Maryland 20855

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 Colonel Zadok Magruder High School, located at 5939 Muncastor Mill Road in Rockville, Maryland 20855 (subject site).

SCOPE OF SERVICES

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

KCI visited the site on 12/17/2019 and deployed one-hundred twenty-six (126) 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 sixty (60) test kits to Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

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

EVALUATION OF TESTING CONDITIONS

These tests represent:

- 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 lower-20s and high temperatures were in the lower-40s. Maximum sustained winds ranged from 12-26 miles per hour. Average humidity was around 67%. 0.54 inches of precipitation (rain and snow) was recorded during the testing period.

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	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 410-316-7800.

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		
Magruder High School		
Test Period: 12/17/2019-12/20/2019		
Kit Number	Room / Area	Result
9339702	FO2	< 0.3
9339703	FO2	0.8
9339707	GUIDANCE OFFICE	0.5
9339708	GCONF	0.8
9339711	REGISTRAR	< 0.3
9339713	GO1	0.9
9339714	GO2	1.3
9339715	AUDITORIUM	< 0.3
9339716	ATTENDANCE OFFICE	< 0.3
9339717	ADMIN CONFERENCE ROOM	< 0.3
9339718	ADMIN CONFERENCE ROOM	< 0.3
9339719	PRINCIPAL OFFICE	< 0.3
9339720	AP2	0.7
9339721	SECURITY	0.5
9339722	CONF2	< 0.3
9339723	AP3	MISSING
9339724	FO1	< 0.3
9339725	B111	0.8
9339726	STAFF LOUNGE	< 0.3
9339728	AUDITORIUM	0.6
9339729	CAREER CENTER	0.5
9339730	FO2	< 0.3
9339731	HEALTH ROOM OFFICE	< 0.3
9339732	STAFF LOUNGE	< 0.3
9339733	ADMIN SECRETARY	< 0.3
9339734	AP1	< 0.3
9339735	A102 OFFICE	< 0.3
9339736	A100	< 0.3
9339737	MAIN OFFICE	< 0.3
9339738	B112	< 0.3
9339739	MAIL ROOM	< 0.3
9339740	WORK ROOM	< 0.3
9339741	A101	0.7
9339742	A101	< 0.3
9339743	DRAMA OFFICE	1.3
9339744	B110	0.8
9339745	ATHLETIC DIRECTOR OFFICE	< 0.3
9339746	B113	< 0.3
9339747	KITCHEN OFFICE	< 0.3
9339748	B114	< 0.3
9339749	A103	0.8
9339750	HEALTH ROOM	0.5
9339751	KITCHEN OFFICE	< 0.3
9339752	CAFETERIA	0.7
9339753	KITCHEN OFFICE	< 0.3
9339754	B115	< 0.3
9339755	STAFF LOUNGE	< 0.3
9339756	ESOL OFFICE	< 0.3
9339757	A107	0.8
9339758	GYM1	1

9339759	GYM1	1.1
9339760	GYM1	0.6
9339761	A102	0.6
9339762	GYM1 OFFICE	< 0.3
9339763	GYM1	1
9339764	A105	0.6
9339765	A106	1.1
9339766	A105 OFFICE	1.1
9339767	GYM1 OFFICE	< 0.3
9339768	A104	0.9
9339769	AUXILIARY GYM	1.1
9339770	CAFETERIA	0.6
9339771	A202	0.6
9339772	A201	< 0.3
9339773	A206	< 0.3
9339774	A205	0.7
9339775	B231	MISSING
9339776	MEDIA CENTER	0.5
9339777	MEDIA CENTER WR	< 0.3
9339778	MC COPY ROOM	0.6
9339787	GWR	0.6
9339788	GO3	0.5
9339789	GO6	1
9339792	G7.5	< 0.3
9339793	GO4	0.6
9339794	GO4	0.7
9339795	GO7	< 0.3
9339796	GO8	< 0.3
9339797	A203	0.8
9339798	A200	< 0.3
9339799	WORLD LANGUAGE	< 0.3
9339800	GO5	0.6
9339802	WEIGHT ROOM	< 0.3
9339803	PE OFFICE 2	0.6
9339804	GYM2	< 0.3
9339806	GYM2	< 0.3
9339809	C126 OFFICE	0.6
9339810	BOYS LOCKER ROOM	MISSING
9339811	A108	< 0.3
9339812	WEIGHT ROOM	0.7
9339817	A108 O1	< 0.3
9339823	WEIGHT ROOM	< 0.3
9339824	BOYS PE OFFICE	0.6
9339868	C123	0.6
9339869	D134	< 0.3
9339870	D134	< 0.3
9339871	D135	< 0.3
9339872	D136	< 0.3
9339873	D128	< 0.3
9339874	D127	< 0.3
9339875	D137	< 0.3
9339876	C126	< 0.3
9339877	C126	< 0.3
9339878	GYM2	< 0.3
9339879	COACH/REFEREE OFFICE	< 0.3

9339880	C122	0.6
9339881	C121	< 0.3
9339882	C120	0.5
9339883	C120 OFFICE	< 0.3
9339884	C119	0.5
9339885	C119	< 0.3
9339886	C119A	< 0.3
9339887	C118	< 0.3
9339888	C11I	< 0.3
9339889	C116	0.7
9339890	D132	< 0.3
9339891	D134	< 0.3
9339892	C124	< 0.3
9339893	D131	< 0.3
9339894	C125 OFFICE	0.6
9339895	C125	< 0.3
9339896	S10	0.7
9339897	D133	MISSING
9339898	D129	< 0.3
9339899	D130	MISSING
9339900	A108 O2	< 0.3
9341375	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Magruder High School			
Test Period: 12/16/2019-12/19/2019			
Kit Number	QC Type	Room / Area	Result
9339884	D	C119	0.5
9339891	FB	D134	<0.3
9339869	D	D134	<0.3
9339877	D	C126	<0.3
9339802	FB	WEIGHT ROOM	<0.3
9339823	D	WEIGHT ROOM	<0.3
9339762	D	GYM1 OFFICE	<0.3
9339751	FB	KITCHEN OFFICE	<0.3
9339753	D	KITCHEN OFFICE	<0.3
9339741	D	A101	0.7
9339726	FB	STAFF LOUNGE	<0.3
9339755	D	STAFF LOUNGE	<0.3
9339717	D	ADMIN CONFERENCE ROOM	<0.3
9339730	FB	FO2	<0.3
9339702	D	FO2	<0.3
9339793	D	GO4	0.6
9341377	TRANSIT BLANK	NA	0.5
9341379	TRANSIT BLANK	NA	< 0.3
9341380	TRANSIT BLANK	NA	< 0.3
9341398	TRANSIT BLANK	NA	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:**MAGRUDER HS
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9339736	A100	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339741	A101	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.7 ± 0.4	2019-12-24
9339742	A101	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339761	A102	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.6 ± 0.4	2019-12-24
9339735	A102 OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339749	A103	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.8 ± 0.4	2019-12-24
9339768	A104	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.9 ± 0.4	2019-12-24
9339764	A105	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	0.6 ± 0.4	2019-12-24
9339766	A105 OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	1.1 ± 0.4	2019-12-24
9339765	A106	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	1.1 ± 0.4	2019-12-24
9339757	A107	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	0.8 ± 0.4	2019-12-24
9339811	A108	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339817	A108 O1	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339900	A108 O2	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339798	A200	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9339772	A201	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9339771	A202	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	0.6 ± 0.4	2019-12-24
9339797	A203	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	0.8 ± 0.4	2019-12-24
9339774	A205	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	0.7 ± 0.4	2019-12-24
9339773	A206	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9339717	ADMIN CONFERENCE ROOM	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339718	ADMIN CONFERENCE ROOM	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339733	ADMIN SECRETARY	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339734	AP1	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339720	AP2	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.7 ± 0.4	2019-12-24
9339745	ATHLETIC DIRECTOR OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339716	ATTENDANCE OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339715	AUDITORIUM	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339728	AUDITORIUM	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.6 ± 0.4	2019-12-24
9339769	AUXILIARY GYM	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	1.1 ± 0.4	2019-12-24
9339744	B110	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.8 ± 0.4	2019-12-24
9339725	B111	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.8 ± 0.4	2019-12-24
9339738	B112	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339746	B113	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339748	B114	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339754	B115	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339824	BOYS PE OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	0.6 ± 0.4	2019-12-24

Radon test result report for:**MAGRUDER HS
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9339889	C116	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	0.7 ± 0.4	2019-12-24
9339887	C118	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339885	C119	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339884	C119	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	0.5 ± 0.4	2019-12-24
9339886	C119A	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339888	C11I	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339882	C120	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	0.5 ± 0.4	2019-12-24
9339883	C120 OFFICE	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339881	C121	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339880	C122	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	0.6 ± 0.4	2019-12-24
9339868	C123	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	0.6 ± 0.4	2019-12-24
9339892	C124	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339895	C125	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339894	C125 OFFICE	2019-12-17 @ 2:00 pm	2019-12-20 @ 8:00 am	0.6 ± 0.4	2019-12-24
9339876	C126	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339877	C126	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339809	C126 OFFICE	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	0.6 ± 0.4	2019-12-24
9339752	CAFETERIA	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.7 ± 0.4	2019-12-24
9339770	CAFETERIA	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.6 ± 0.4	2019-12-24
9339729	CAREER CENTER	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.5 ± 0.4	2019-12-24
9339879	COACH/REFEREE OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339722	CONF2	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339874	D127	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339873	D128	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339898	D129	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339893	D131	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339890	D132	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339891	D134	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339869	D134	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339870	D134	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339871	D135	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339872	D136	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339875	D137	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339743	DRAMA OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	1.3 ± 0.4	2019-12-24
9339756	ESOL OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339724	FO1	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339702	FO2	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24

Radon test result report for:**MAGRUDER HS
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9339730	FO2	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339703	FO2	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.8 ± 0.4	2019-12-24
9339792	G7.5	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339708	GCONF	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.8 ± 0.4	2019-12-24
9339713	GO1	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.9 ± 0.4	2019-12-24
9339714	GO2	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	1.3 ± 0.4	2019-12-24
9339788	GO3	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.5 ± 0.3	2019-12-24
9339794	GO4	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.7 ± 0.4	2019-12-24
9339793	GO4	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.6 ± 0.4	2019-12-24
9339800	GO5	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.6 ± 0.4	2019-12-24
9339789	GO6	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	1.0 ± 0.4	2019-12-24
9339795	GO7	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339796	GO8	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339707	GUIDANCE OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.5 ± 0.4	2019-12-24
9339787	GWR	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.6 ± 0.4	2019-12-24
9339758	GYM1	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	1.0 ± 0.4	2019-12-24
9339763	GYM1	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	1.0 ± 0.4	2019-12-24
9339759	GYM1	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	1.1 ± 0.4	2019-12-24
9339760	GYM1	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	0.6 ± 0.4	2019-12-24
9339762	GYM1 OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339767	GYM1 OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339878	GYM2	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339806	GYM2	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339804	GYM2	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339750	HEALTH ROOM	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.5 ± 0.4	2019-12-24
9339731	HEALTH ROOM OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339751	KITCHEN OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339747	KITCHEN OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339753	KITCHEN OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339739	MAIL ROOM	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339737	MAIN OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339778	MC COPY ROOM	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	0.6 ± 0.4	2019-12-24
9339776	MEDIA CENTER	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	0.5 ± 0.4	2019-12-24
9339777	MEDIA CENTER WR	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9339803	PE OFFICE 2	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	0.6 ± 0.4	2019-12-24
9339719	PRINCIPAL OFFICE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339711	REGISTRAR	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24

December 24, 2019

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**MAGRUDER HS
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9339896	S10	2019-12-17 @ 2:00 pm	2019-12-20 @ 7:00 am	0.7 ± 0.4	2019-12-24
9339721	SECURITY	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	0.5 ± 0.4	2019-12-24
9339726	STAFF LOUNGE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339732	STAFF LOUNGE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339755	STAFF LOUNGE	2019-12-17 @ 3:00 pm	2019-12-20 @ 8:00 am	< 0.3	2019-12-24
9339802	WEIGHT ROOM	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339823	WEIGHT ROOM	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339812	WEIGHT ROOM	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	0.7 ± 0.4	2019-12-24
9339740	WORK ROOM	2019-12-17 @ 3:00 pm	2019-12-20 @ 7:00 am	< 0.3	2019-12-24
9339799	WORLD LANGUAGE	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 193598

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

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

Time Start: 0815 Time Stop: 0815

(Group 1)

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

9340001 thru 9340020

55

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

Time Start: 0829 Time Stop: 0820

(Group 2)

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

9340021 thru 9340040

54

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

Time Start: 0825 Time Stop: 0825

(Group 3)

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

9340041 thru 9340060

53

Note: All times are in 24-hour (military) notation, Eastern Standard Time (EST)

Background = 7 μ 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
9340067	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 \pm 2.4 D	2020-01-03
9340035	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	22.5 \pm 2.3 D	2020-01-03
9340003	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 \pm 2.4 D	2020-01-03
9340089	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	23.3 \pm 2.3 D	2020-01-03
9340072	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	18.3 \pm 2.0 D	2020-01-03
9340040	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 \pm 2.6 D	2020-01-03
9340008	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.8 \pm 2.5 D	2020-01-03
9340094	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.7 \pm 2.5 D	2020-01-03
9340099	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.5 \pm 2.6 D	2020-01-03
9340077	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.2 \pm 2.5 D	2020-01-03
9340045	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.7 \pm 2.4 D	2020-01-03
9340013	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.9 \pm 2.6 D	2020-01-03
9340018	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	29.1 \pm 2.8 D	2020-01-03
9341704	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 \pm 2.4 D	2020-01-03
9340050	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.2 \pm 2.6 D	2020-01-03
9340023	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.2 \pm 2.7 D	2020-01-03
9341709	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.5 \pm 2.4 D	2020-01-03
9340055	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.8 \pm 2.6 D	2020-01-03
9340060	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 \pm 2.5 D	2020-01-03
9340028	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.9 \pm 2.3 D	2020-01-03
9341714	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.3 \pm 2.7 D	2020-01-03
9340082	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.4 \pm 2.6 D	2020-01-03
9340065	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.2 \pm 2.4 D	2020-01-03
9340033	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.2 \pm 2.5 D	2020-01-03
9341719	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.7 \pm 2.5 D	2020-01-03
9340001	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.3 \pm 2.5 D	2020-01-03
9340087	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.8 \pm 2.4 D	2020-01-03
9340070	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	19.5 \pm 2.4 D	2020-01-03
9340038	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.7 \pm 2.3 D	2020-01-03
9340006	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 \pm 2.4 D	2020-01-03
9340092	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	31.4 \pm 2.8 D	2020-01-03
9340097	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.7 \pm 2.5 D	2020-01-03
9340075	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	29.6 \pm 2.6 D	2020-01-03
9340043	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.1 \pm 2.6 D	2020-01-03
9340011	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.8 \pm 2.5 D	2020-01-03
9340016	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.2 \pm 2.4 D	2020-01-03
9341702	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 \pm 2.5 D	2020-01-03

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

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

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

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

January 3, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

S

N/A

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

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






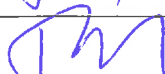
ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS
Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 2

Name of Schools:

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

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

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



MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary:
Magruder High School
5939 Muncaster Mill Road
Derwood, MD 20855

Date of Test Report:	3/15/2019
Round of Testing:	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	2
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	<0.4
High Value:	1.3

Project Status

Retesting completed: No further action at this time.



March 15, 2019

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

Re: Radon Testing Services

Location: Magruder High School
5939 Muncaster Mill Road
Derwood, MD 20855

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Magruder High School, located at 5939 Muncaster Mill Road, Derwood, MD 20855 (subject site).

Scope of Services:

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

PSI visited the site on February 26, 2019 and deployed two (2) activated charcoal (AC) radon test kit. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on March 01, 2019 to retrieve the radon sampling test kit. A floor plan map of the building with the test location is included as Attachment A of this report.

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

Evaluation of Testing Conditions:

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

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



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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:

D -Duplicate Sample

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

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

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

Respectfully Submitted,

INTERTEK - PSI

A handwritten signature in black ink, appearing to read "Nand Kaushik". The signature is fluid and cursive, with the first name "Nand" and last name "Kaushik" clearly distinguishable.

Nand Kaushik, P.E.

Department Manager, Environmental Services

Nand.Kaushik@intertek.com

Attachments:

A – Floor Plan with Test Locations

B – Table 1 – Radon Test Summary Spreadsheet

C – Laboratory Analytical Results

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Magruder High School		
Testing period: 2/26/19 - 3/01/19		
Kit Number	Room / Area	Result (pCi/L)
3923410	Assistant Principapal 3	<0.4
3923420	Boys dressing room	1.3

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

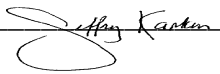
MCPS Radon Survey Magruder HS
5939 Muncaster Mill Road
Derwood MD 20855

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3220811	3923410	02/26/2019 6:44 am 03/01/2019 6:44 am	Floor First Level Room Assistant Principal 3	< 0.4
3220812	3923420	02/26/2019 6:50 am 03/01/2019 6:50 am	Floor First Level Boys Dressing Room	1.3

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

Distributed by: Intertek-PSI (VA)

Date Received: 03/05/2019 Date Logged: 03/05/2019 Date Analyzed: 03/05/2019 Date Reported: 03/06/2019

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

ATTACHMENT B

Radon Test Summary Spreadsheet



MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary:
Magruder High School
5939 Muncaster Mill Road
Derwood, MD 20855

Date of Test Report:	01/15/2019
Round of Testing:	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	121
# of Rooms ≥ 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	1.1

Project Status

Initial testing complete: Missing or compromised samples need re-test.



January 15, 2019

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

Re: Radon Testing Services

Location: Magruder High School
5939 Muncaster Mill Road
Derwood, MD 20855

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Magruder High School, located at 5939 Muncaster Mill Road, Derwood, MD 20855 (subject site).

Scope of Services:

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

PSI visited the site on December 04, 2018 and deployed one hundred-forty-two (142) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on December 07, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

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



Evaluation of Testing Conditions:

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

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:

D -Duplicate Sample

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

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

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



Respectfully Submitted,

INTERTEK-PSI

Nand Kaushik, P.E.
Department Manager, Environmental Services
Nand.Kaushik@intertek.com

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

Radon Testing Results		
Magruder Highschool		
Testing period: 12/04/18 - 12/07/18		
Kit Number	Room / Area	Result (pCi/L)
3928222	A100	1.1
3928223	A100 Office	1.0
3926191	A101	0.7
3928286	A102	0.5
3928287	A102 Office	<0.4
3928288	A103	<0.4
3928221	A103 Dark room	<0.4
3928290	A103 Office	<0.4
3928240	A104	0.7
3928281	A104 Office	<0.4
3926086	A107	<0.4
3926082	A108	<0.4
3926083	A108 Office 1	<0.4
3926084	A108 Office 2	0.5
3926170	A109	0.7
3926087	A203	<0.4
3926089	A216	<0.4
3926088	A217	<0.4
3928255	Administration Office	<0.4
3928301	Assistant Principal- AP1	<0.4
3928302	Assistant Principal- AP2	<0.4
3928308	Assistant Principal- AP3 (MISSING)	--
3926197	Athletic Director	<0.4
3928236	Athletic Training	<0.4
3928224	AUD Drama office	0.7
3928228	AUD Ladies Dressing Room	0.6
3928226	AUD Makeup Rm	<0.4
3928225	AUD Stage	<0.4
3926081	AUX Gym	0.4
3928256	B110	<0.4
3928233	B111	<0.4
3928235	B112	<0.4
3928278	B113	<0.4
3928279	B114	<0.4
3928321	B115	<0.4
3926112	B221	<0.4
3926114	B228	<0.4
3926113	B229	<0.4
3926115	B232	<0.4
3926163	Back Gym	<0.4
3926164	Back Gym	<0.4
3928238	Band	<0.4
--	Boys Dressing Room (INACCESSIBLE)	--

Radon Testing Results		
Magruder Highschool		
Testing period: 12/04/18 - 12/07/18		
Kit Number	Room / Area	Result (pCi/L)
3926166	Boys LR Office	<0.4
3928322	BSO	<0.4
3928259	Business Administration	<0.4
3928325	C116	<0.4
3928329	C117	0.4
3928330	C118	<0.4
3926176	C119	<0.4
3926174	C119A	0.9
3926173	C120	<0.4
3926172	C120 Office	<0.4
3926171	C121	0.4
3928328	C122	<0.4
3928327	C123	<0.4
3928326	C124	0.4
3928323	C125	1.0
3928324	C125A	0.4
3926167	C126	<0.4
3926117	C249	<0.4
3928314	Cafeteria	<0.4
3928315	Cafeteria	<0.4
3928306	Career Center	<0.4
3928239	Choir	<0.4
3926193	Concession A	0.6
3926194	Concession B	<0.4
3928229	CONF-1	<0.4
3928305	CONF-2	<0.4
3928310	Conference	<0.4
3926162	D127	0.7
3928206	D128	<0.4
3926180	D129	0.5
3926178	D130	0.5
3926179	D131	0.6
3928201	D132	0.7
3928202	D132 Office	0.5
3928203	D133	0.6
3928205	D134	<0.4
3928207	D135	0.4
3928208	D136	0.5
3928209	D137	<0.4
3926161	D138	0.5
3926119	D255	<0.4
3926120	D264	0.5
3928234	ESOL	<0.4

Radon Testing Results		
Magruder Highschool		
Testing period: 12/04/18 - 12/07/18		
Kit Number	Room / Area	Result (pCi/L)
3926195	Exterior Concession A	<0.4
3926196	Exterior Concession B	0.7
3928260	Finance Office	<0.4
3928309	Guidance	<0.4
3928291	Guidance 1	0.7
3928292	Guidance 2	<0.4
3928296	Guidance 3	<0.4
3928297	Guidance 4	<0.4
3928298	Guidance 5	<0.4
3928299	Guidance 6	<0.4
3928300	Guidance 7	<0.4
3928311	Guidance 8	<0.4
3928313	Guidance 9	0.4
3888408	Gym	0.9
3888418	Gym	0.9
3928237	Gym Office	0.5
3928257	Health	<0.4
3926165	JROTC Office	0.4
3928318	Kitchen Office	0.4
3928252	M07	<0.4
3928253	Mail Room	<0.4
3928251	Main Office	<0.4
3926111	MC 2	<0.4
3926090	Media Center	<0.4
3928284	Music Office	0.4
3928258	Nurse Office	<0.4
3926169	PE Department Office	0.4
3928282	Practice Room 1	0.4
3928283	Practice Room 2	0.4
3928230	Principal	<0.4
3928293	Registrar	<0.4
3928170	Safe Room	<0.4
3928304	Security Office	<0.4
3926177	SGA Office	0.4
3926168	SM 9	0.5
3928231	Staff Lounge	<0.4
3926116	SU18	<0.4
3928294	Workroom (Guidance)	<0.4
3928254	Workroom (Main Office)	<0.4

Radon Testing Results		
Magruder Highschool		
Testing period: 12/04/18 - 12/07/18		
Kit Number	QC Type	Result (pCi/L)
3926192	A101(D)	0.6
3928289	A103(D)	<0.4
3926085	A108 Office 2(D)	0.8
3928303	Asst. Principal- AP2(D)	<0.4
3928280	B114(D)	<0.4
3926175	C119A(D)	<0.4
3928307	Career Center(D)	<0.4
3928204	D133(D)	0.7
3928210	D137(D)	0.4
3926701	Field Blank	<0.4
3926702	Field Blank	<0.4
3928312	Guidance 8(D)	<0.4
3928319	Kitchen Office(D)	0.5
3928285	Music Office(D)	<0.4
3917559	Office Blank	<0.4
3928232	Staff Lounge(D)	<0.4
3927610	Transit Blank	<0.4
3928295	Workroom- Guidance(D)	<0.4

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3202724	3928290	12/04/2018	7:42 am	12/07/2018	7:18 am	Floor First floor Room A103	< 0.4
3202725	3928286	12/04/2018	7:36 am	12/07/2018	7:14 am	Floor First floor Room A102	0.5
3202726	3928285	12/04/2018	7:34 am	12/07/2018	7:12 am	Floor First floor Room Music Office Duplicate	< 0.4
3202727	3928284	12/04/2018	7:34 am	12/07/2018	7:12 am	Floor First floor Room Music Office	0.4
3202728	3928281	12/04/2018	7:29 am	12/07/2018	7:08 am	Floor First floor Room A104	< 0.4
3202729	3928282	12/04/2018	7:31 am	12/07/2018	7:09 am	Floor First floor Room Practice 1	0.4
3202730	3928283	12/04/2018	7:32 am	12/07/2018	7:10 am	Floor First floor Room Practice 2	0.4
3202731	3928287	12/04/2018	7:38 am	12/07/2018	7:15 am	Floor First floor Room A102 Office	< 0.4
3202732	3928289	12/04/2018	7:40 am	12/07/2018	7:17 am	Floor First floor Room A103 Duplicate	< 0.4
3202733	3927610	12/04/2018	6:00 am	12/07/2018	4:35 pm	Blank	< 0.4
3202734	3928288	12/04/2018	7:40 am	12/07/2018	7:17 am	Floor First floor Room A103	< 0.4

Comment: AMENDED REPORT on 1-9-18 to add corrected stop dates of 12-7-18. Device 3928308 was listed on the datasheet but not received.

Test Performed By: Lian Zadeng

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

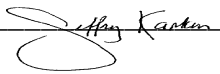
Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3202735	3928251	12/04/2018	6:50 am	12/06/2018	6:32 am	Floor First floor Room Main Office	< 0.4
3202736	3928252	12/04/2018	6:51 am	12/06/2018	6:34 am	Floor First floor Room M07	< 0.4
3202737	3928253	12/04/2018	6:54 am	12/06/2018	6:37 am	Floor First floor Room Mail Room	< 0.4
3202738	3928254	12/04/2018	6:55 am	12/06/2018	6:39 am	Floor First floor Room Workroom	< 0.4
3202739	3928255	12/04/2018	6:57 am	12/06/2018	9:20 am	Floor First floor Room Admin. Office	< 0.4
3202740	3928256	12/04/2018	6:58 am	12/06/2018	6:45 am	Floor First floor Room B110	< 0.4
3202741	3928257	12/04/2018	6:59 am	12/06/2018	6:47 am	Floor First floor Room Health Room	< 0.4
3202742	3928258	12/04/2018	7:00 am	12/06/2018	6:48 am	Floor First floor Room Nurse Office	< 0.4
3202743	3928259	12/04/2018	7:04 am	12/06/2018	6:50 am	Floor First floor Room Business Admin.	< 0.4
3202744	3928260	12/04/2018	7:05 am	12/06/2018	6:52 am	Floor First floor Room Finance Office	< 0.4
3202745	3928170	12/04/2018	7:07 am	12/06/2018	6:53 am	Floor First floor Room Safe Room	< 0.4

Comment: AMENDED REPORT on 1-9-18 to add corrected stop dates of 12-7-18. Device 3928308 was listed on the datasheet but not received.

Test Performed By: Lian Zadeng

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3202746	3928231	12/04/2018	7:10 am	12/06/2018	6:55 am	Floor First floor Room Staff Lounge	< 0.4
3202747	3928232	12/04/2018	7:10 am	12/06/2018	6:55 am	Floor First floor Room Staff Lounge Duplicate	< 0.4
3202748	3928233	12/04/2018	7:11 am	12/06/2018	6:56 am	Floor First floor Room B111	< 0.4
3202749	3928234	12/04/2018	7:13 am	12/06/2018	6:57 am	Floor First floor Room ESOL	< 0.4
3202750	3928235	12/04/2018	7:14 am	12/06/2018	6:58 am	Floor First floor Room B112	< 0.4
3202751	3928236	12/04/2018	7:15 am	12/06/2018	6:59 am	Floor First floor Room Athletic Training	< 0.4
3202752	3928237	12/04/2018	7:17 am	12/06/2018	7:01 am	Floor First floor Room GYM Office	0.5
3202753	3928238	12/04/2018	7:18 am	12/06/2018	7:02 am	Floor First floor Room Band	< 0.4
3202754	3928239	12/04/2018	7:19 am	12/06/2018	7:03 am	Floor First floor Room Choir	< 0.4
3202755	3928240	12/04/2018	7:21 am	12/06/2018	7:05 am	Floor First floor Room A104	0.7
3202756	3928221	12/04/2018	7:43 am	12/06/2018	7:19 am	Floor First floor Room A103	< 0.4


Comment: AMENDED REPORT on 1-9-18 to add corrected stop dates of 12-7-18. Device 3928308 was listed on the datasheet but not received.

Test Performed By: Lian Zadeng

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

Log Number	Device Number	Test Exposure Duration:		Area Tested		Result pCi/L
3202757	3928222	12/04/2018 7:44 am	12/06/2018 7:20 am	Floor First floor	Room A100	1.1
3202758	3928223	12/04/2018 7:45 am	12/06/2018 7:21 am	Floor First floor	Room A100	1.0
3202759	3928224	12/04/2018 7:46 am	12/06/2018 7:23 am	Floor First floor	Room AUD Drama Office	0.7
3202760	3928225	12/04/2018 7:47 am	12/06/2018 7:24 am	Floor First floor	Room AUD Stage	< 0.4
3202761	3928226	12/04/2018 7:48 am	12/06/2018 7:25 am	Floor First floor	Room AUD Makeup Rm	< 0.4
3202762	3928228	12/04/2018 7:51 am	12/06/2018 7:26 am	Floor First floor	Room AUD Ladies Dressing	0.6
3202763	3928229	12/04/2018 7:52 am	12/06/2018 9:15 am	Floor First floor	Room CONF-1	< 0.4
3202764	3928230	12/04/2018 8:05 am	12/06/2018 9:20 am	Floor First floor	Room Principal office	< 0.4
3202765	3928301	12/04/2018 8:07 am	12/06/2018 9:16 am	Floor First floor	Room Asst. Principal	< 0.4
3202766	3928302	12/04/2018 8:09 am	12/06/2018 9:17 am	Floor First floor	Room Asst. Principal	< 0.4
3202767	3928303	12/04/2018 8:09 am	12/06/2018 9:19 am	Floor First floor	Room Asst. Principal Duplicate	< 0.4

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Distributed by: Intertek-PSI (VA)

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Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

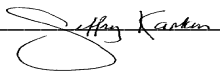
Log Number	Device Number	Test Exposure Duration:		Area Tested		Result pCi/L
3202768	3928304	12/04/2018 8:10 am	12/06/2018 9:21 am	Floor First floor	Room Security Office	< 0.4
3202769	3928305	12/04/2018 8:11 am	12/06/2018 9:22 am	Floor First floor	Room CONF-2	< 0.4
3202770	3928306	12/04/2018 8:12 am	12/06/2018 9:24 am	Floor First floor	Room Career Center	< 0.4
3202771	3928307	12/04/2018 8:12 am	12/06/2018 9:24 am	Floor First floor	Room Career Center Duplicate	< 0.4
3202772	3928309	12/04/2018 8:15 am	12/06/2018 7:30 am	Floor First floor	Room Guidance	< 0.4
3202773	3928310	12/04/2018 8:16 am	12/06/2018 7:36 am	Floor First floor	Room Conference	< 0.4
3202774	3928291	12/04/2018 8:18 am	12/06/2018 7:38 am	Floor First floor	Room Guidance 1	0.7
3202775	3928292	12/04/2018 8:19 am	12/06/2018 7:40 am	Floor First floor	Room Guidance 2	< 0.4
3202776	3928293	12/04/2018 8:20 am	12/06/2018 7:41 am	Floor First floor	Room Registrar	< 0.4
3202777	3928294	12/04/2018 8:22 am	12/06/2018 7:42 am	Floor First floor	Room Workroom	< 0.4
3202778	3928295	12/04/2018 8:22 am	12/06/2018 7:45 am	Floor First floor	Room Workroom	< 0.4

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Test Performed By: Lian Zadeng

Distributed by: Intertek-PSI (VA)

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Report Reviewed By: 

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

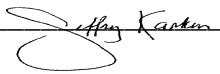
Log Number	Device Number	Test Exposure Duration:				Area Tested		Result pCi/L
3202779	3928296	12/04/2018	8:23 am	12/06/2018	7:45 am	Floor First floor	Room Guidance 3 Duplicate	< 0.4
3202780	3928297	12/04/2018	8:26 am	12/06/2018	7:46 am	Floor First floor	Room Guidance 4	< 0.4
3202781	3928298	12/04/2018	8:27 am	12/06/2018	7:47 am	Floor First floor	Room Guidance 5	< 0.4
3202782	3928299	12/04/2018	8:28 am	12/06/2018	7:48 am	Floor First floor	Room Guidance 6	< 0.4
3202783	3928300	12/04/2018	8:29 am	12/06/2018	7:49 am	Floor First floor	Room Guidance 7	< 0.4
3202784	3928311	12/04/2018	8:30 am	12/06/2018	7:50 am	Floor First floor	Room Guidance 8	< 0.4
3202785	3928312	12/04/2018	8:30 am	12/06/2018	7:50 am	Floor First floor	Room Guidance 8 Duplicate	< 0.4
3202786	3928313	12/04/2018	8:32 am	12/06/2018	7:52 am	Floor First floor	Room Guidance 9	0.4
3202787	3928314	12/04/2018	8:34 am	12/06/2018	8:00 am	Floor First floor	Room Cafeteria	< 0.4
3202788	3928315	12/04/2018	8:35 am	12/06/2018	8:02 am	Floor First floor	Room Cafeteria	< 0.4
3202789	3928318	12/04/2018	8:37 am	12/06/2018	8:05 am	Floor First floor	Room Kitchen Office	0.4

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Test Performed By: Lian Zadeng

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

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Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

Log Number	Device Number	Test Exposure Duration:				Area Tested			Result pCi/L
3202790	3928319	12/04/2018	8:37 am	12/06/2018	8:04 am	Floor First floor	Room Kitchen	Office Duplicate	0.5
3202791	3928278	12/04/2018	8:41 am	12/06/2018	8:05 am	Floor First floor	Room B113		< 0.4
3202792	3928279	12/04/2018	8:43 am	12/06/2018	8:07 am	Floor First floor	Room B114		< 0.4
3202793	3928280	12/04/2018	8:43 am	12/06/2018	8:07 am	Floor First floor	Room B114	Duplicate	< 0.4
3202794	3928321	12/04/2018	8:44 am	12/06/2018	8:08 am	Floor First floor	Room B115		< 0.4
3202795	3928322	12/04/2018	8:46 am	12/06/2018	8:10 am	Floor First floor	Room BSO		< 0.4
3202796	3928323	12/04/2018	8:47 am	12/06/2018	8:15 am	Floor First floor	Room C125		1.0
3202797	3928324	12/04/2018	8:49 am	12/06/2018	8:16 am	Floor First floor	Room C125A		0.4
3202798	3928325	12/04/2018	8:50 am	12/06/2018	8:20 am	Floor First floor	Room C116		< 0.4
3202799	3928326	12/04/2018	8:51 am	12/06/2018	8:21 am	Floor First floor	Room C124		0.4
3202800	3928327	12/04/2018	8:52 am	12/06/2018	8:22 am	Floor First floor	Room C123		< 0.4

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Distributed by: Intertek-PSI (VA)

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Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3202801	3928328	12/04/2018	8:54 am	12/06/2018	8:25 am	Floor First floor Room C122	< 0.4
3202802	3928329	12/04/2018	8:55 am	12/06/2018	8:27 am	Floor First floor Room C117	0.4
3202803	3928330	12/04/2018	8:56 am	12/06/2018	8:29 am	Floor First floor Room C118	< 0.4
3202804	3926171	12/04/2018	8:57 am	12/06/2018	8:30 am	Floor First floor Room C121	0.4
3202805	3926172	12/04/2018	8:59 am	12/06/2018	8:34 am	Floor First floor Room C120	< 0.4
3202806	3926173	12/04/2018	9:00 am	12/06/2018	8:35 am	Floor First floor Room C120	< 0.4
3202807	3926174	12/04/2018	9:01 am	12/06/2018	8:40 am	Floor First floor Room C119A	0.9
3202808	3926175	12/04/2018	9:01 am	12/06/2018	8:40 am	Floor First floor Room C119A Duplicate	< 0.4
3202809	3926176	12/04/2018	9:03 am	12/06/2018	8:41 am	Floor First floor Room C119	< 0.4
3202810	3926177	12/04/2018	9:05 am	12/06/2018	8:43 am	Floor First floor Room SGA Office	0.4
3202811	3926178	12/04/2018	9:07 am	12/06/2018	8:45 am	Floor First floor Room D130	0.5

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Distributed by: Intertek-PSI (VA)

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Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
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Fairfax VA 22031

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

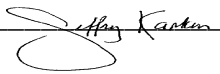
Log Number	Device Number	Test Exposure Duration:		Area Tested		Result pCi/L
3202812	3926179	12/04/2018 9:08 am	12/06/2018 8:46 am	Floor First floor	Room D131	0.6
3202813	3926180	12/04/2018 9:09 am	12/06/2018 8:47 am	Floor First floor	Room D129	0.5
3202814	3928201	12/04/2018 9:10 am	12/06/2018 8:48 am	Floor First floor	Room D132	0.7
3202815	3928202	12/04/2018 9:12 am	12/06/2018 8:49 am	Floor First floor	Room D132	0.5
3202816	3928203	12/04/2018 9:13 am	12/06/2018 8:50 am	Floor First floor	Room D133	0.6
3202817	3928204	12/04/2018 9:13 am	12/06/2018 8:50 am	Floor First floor	Room D133 Duplicate	0.7
3202818	3928205	12/04/2018 9:15 am	12/06/2018 8:52 am	Floor First floor	Room D134	< 0.4
3202819	3928206	12/04/2018 9:17 am	12/06/2018 8:53 am	Floor First floor	Room D128	< 0.4
3202820	3928207	12/04/2018 9:18 am	12/06/2018 8:54 am	Floor First floor	Room D135	0.4
3202821	3928208	12/04/2018 9:19 am	12/06/2018 8:55 am	Floor First floor	Room D136	0.5
3202822	3928209	12/04/2018 9:20 am	12/06/2018 8:56 am	Floor First floor	Room D137	< 0.4

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Test Performed By: Lian Zadeng

Distributed by: Intertek-PSI (VA)

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Laboratory Report for:

Property Tested: Project # 04481387-1

Intertek-PSI (VA)
2930 Eskridge Road
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MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
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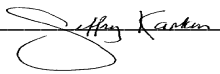
Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3202823	3928210	12/04/2018	9:20 am	12/06/2018	8:56 am	Floor First floor Room D137 Duplicate	0.4
3202824	3926161	12/04/2018	9:22 am	12/06/2018	8:57 am	Floor First floor Room D138	0.5
3202825	3926162	12/04/2018	9:23 am	12/06/2018	8:58 am	Floor First floor Room D127	0.7
3202826	3926163	12/04/2018	9:25 am	12/06/2018	9:02 am	Floor First floor Room Back Gym	< 0.4
3202827	3926164	12/04/2018	9:26 am	12/06/2018	9:03 am	Floor First floor Room Back Gym	< 0.4
3202828	3926165	12/04/2018	9:28 am	12/06/2018	9:05 am	Floor First floor Room JROTC Office	0.4
3202829	3926166	12/04/2018	9:29 am	12/06/2018	9:06 am	Floor First floor Room Boys LR Office	< 0.4
3202830	3926167	12/04/2018	9:30 am	12/06/2018	9:07 am	Floor First floor Room C126	< 0.4
3202831	3926168	12/04/2018	9:32 am	12/06/2018	9:08 am	Floor First floor Room SM 9	0.5
3202832	3926169	12/04/2018	9:33 am	12/06/2018	9:10 am	Floor First floor Room PE dept. office	0.4
3202833	3926170	12/04/2018	9:35 am	12/06/2018	9:11 am	Floor First floor Room A109	0.7

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Distributed by: Intertek-PSI (VA)

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Laboratory Report for:

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2930 Eskridge Road
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MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3202834	3926081	12/04/2018	9:37 am	12/06/2018	9:13 am	Floor First floor Room AUX Gym	0.4
3202835	3926082	12/04/2018	9:39 am	12/06/2018	9:15 am	Floor First floor Room A108	< 0.4
3202836	3926083	12/04/2018	9:39 am	12/06/2018	9:17 am	Floor First floor Room A108 Office 1	< 0.4
3202837	3926084	12/04/2018	9:40 am	12/06/2018	9:18 am	Floor First floor Room A108 Office 2	0.5
3202838	3926085	12/04/2018	9:40 am	12/06/2018	9:19 am	Floor First floor Room A108 Office 2 Duplicate	0.8
3202839	3926086	12/04/2018	9:41 am	12/06/2018	9:20 am	Floor First floor Room A107	< 0.4
3202840	3926087	12/04/2018	9:46 am	12/06/2018	9:24 am	Floor Second Floor Room A203	< 0.4
3202841	3926088	12/04/2018	9:47 am	12/06/2018	9:25 am	Floor Second Floor Room A217	< 0.4
3202842	3926089	12/04/2018	9:48 am	12/06/2018	9:26 am	Floor Second Floor Room A216	< 0.4
3202843	3926090	12/04/2018	9:50 am	12/06/2018	9:28 am	Floor Second Floor Room Media Center	< 0.4
3202844	3926111	12/04/2018	9:51 am	12/06/2018	9:29 am	Floor Second Floor Room MC 2	< 0.4


Comment: AMENDED REPORT on 1-9-18 to add corrected stop dates of 12-7-18. Device 3928308 was listed on the datasheet but not received.

Test Performed By: Lian Zadeng

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

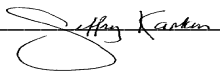
Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3202845	3926112	12/04/2018	9:53 am	12/06/2018	9:30 am	Floor Second Floor Room B221	< 0.4
3202846	3926113	12/04/2018	9:54 am	12/06/2018	9:32 am	Floor Second Floor Room B229	< 0.4
3202847	3926114	12/04/2018	9:55 am	12/06/2018	9:33 am	Floor Second Floor Room B228	< 0.4
3202848	3926115	12/04/2018	9:57 am	12/06/2018	9:35 am	Floor Second Floor Room B232	< 0.4
3202849	3926116	12/04/2018	10:00 am	12/06/2018	9:37 am	Floor Second Floor Room SU18	< 0.4
3202850	3926117	12/04/2018	10:01 am	12/06/2018	9:40 am	Floor Second Floor Room C249	< 0.4
3202851	3926119	12/04/2018	10:06 am	12/06/2018	9:41 am	Floor Second Floor Room D255	< 0.4
3202852	3926120	12/04/2018	10:08 am	12/06/2018	9:42 am	Floor Second Floor Room D264	0.5
3202853	3926191	12/04/2018	10:15 am	12/06/2018	9:29 am	Floor First floor Room A101	1.0
3202854	3926192	12/04/2018	10:15 am	12/06/2018	9:29 am	Floor First floor Room A101 Duplicate	0.7
3202855	3926193	12/04/2018	10:33 am	12/06/2018	9:30 am	Floor First floor Room Concession	0.6

Comment: AMENDED REPORT on 1-9-18 to add corrected stop dates of 12-7-18. Device 3928308 was listed on the datasheet but not received.

Test Performed By: Lian Zadeng

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Magruder HS
5939 Muncaster Mill Rd
Derwood MD 02855

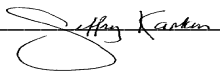
Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3202856	3926194	12/04/2018	10:33 am	12/06/2018	9:31 am	Floor First floor Room Concession	< 0.4
3202857	3926195	12/04/2018	10:26 am	12/06/2018	9:38 am	Floor First floor Room Ext. concession	< 0.4
3202858	3926196	12/04/2018	10:26 am	12/06/2018	9:39 am	Floor First floor Room Ext. concession	0.7
3202859	3926197	12/04/2018	10:40 am	12/06/2018	9:33 am	Floor First floor Room Athletic Director	< 0.4
3202860	3917559	12/04/2018	6:00 am	12/06/2018	4:35 pm	Blank	< 0.4
3202861	3926701	12/04/2018	6:50 am	12/06/2018	9:42 am	Blank	< 0.4
3202862	3926702	12/04/2018	6:50 am	12/06/2018	9:42 am	Blank	< 0.4

Comment: AMENDED REPORT on 1-9-18 to add corrected stop dates of 12-7-18. Device 3928308 was listed on the datasheet but not received.

Test Performed By: Lian Zadeng

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: 12/08/2018 Date Analyzed: 12/08/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey
5939 Muncaster Mill Rd
Derwood MD 02855


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2405271	3888408	12/04/2018 7:25 am 12/06/2018 7:06 am	Floor First floor Room GYM	0.9
2405272	3888418	12/04/2018 7:26 am 12/06/2018 7:07 am	Floor First floor Room GYM	0.9

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

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged:

Date Analyzed: 12/10/2018 Date Reported: 01/02/2019

Report Reviewed By: 

Report Approved By: 

Disclaimer:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL
NRSB ARL0007
Ohio RL41

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

Laboratory Report for:

Property Tested:

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

MCPS Radon Survey
4514 Taylorsville Road
Dayton OH 45424

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

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

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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Shawn Price, Director of Laboratory Operations, AccuStar Labs

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EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI

Job Number 187732

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

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

Date Start: _____ Date Stop: _____

Time Start: 0947 Time Stop: 0947

Time Start: _____ Time Stop: _____

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

Device No.'s: _____

3926831 thru 3926840

G2 Left

Date Start: _____ Date Stop: _____

Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____

Time Start: _____ Time Stop: _____

Device No.'s: _____

Device No.'s: _____

Date Start: _____ Date Stop: _____

Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____

Time Start: _____ Time Stop: _____

Device No.'s: _____

Device No.'s: _____

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



Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

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

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

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



MCPS RADON TESTING

Executive Summary: Magruder High School

Date of Test Report:	1/21/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	121
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	1.2

Project Status:

Initial testing 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

January 21, 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 # 12146341.21

Location: Magruder High School
5939 Muncaster Mill Road
Rockville, MD 20855

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 Magruder High School, located at 5939 Muncaster Mill Road in Rockville, Maryland 20855 (subject site).

Scope of Services:

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

KCI visited the site on December 28, 2015 and deployed one hundred forty-one (141) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on December 31, 2015 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

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

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:

Radon Concentration	Room	Result
≥ 4.0 pCi/L	None	n/a
< 4.0 pCi/L	See Attachment B	

Notes:

D- Duplicate sample

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

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

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

Sincerely,



James M. 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 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		
Magruder HS		
Test Period: 12/28/15-12/31/15		
Kit Number	Room / Area	Result
7707756	A100	< 0.3
7710186	A101	< 0.3
7711888	A101	< 0.3
7707761	A102	< 0.3
7707710	A103	0.7
7707763	A104	< 0.3
7713973	A105	< 0.3
7711806	A106	< 0.3
7707719	A107	< 0.3
7707720	A107A	< 0.3
7707736	A108	< 0.3
7707705	A108A	< 0.3
7707702	ADMIN SECRETARY	< 0.3
7707721	ASSIST PRINC	< 0.3
7707722	ASSIST PRINC DAV	< 0.3
7707725	ASSIST PRINC SHE	< 0.3
7711894	ATHLETIC DIRECTOR	< 0.3
7707726	ATTENDANCE	< 0.3
7711805	AUDITORIUM	0.7
7713904	AUDITORIUM	< 0.3
7707752	B110	0.6
7707755	B110	< 0.3
7707716	B111	< 0.3
7707718	B111A	< 0.3
7707703	B112	< 0.3
7707798	B114	< 0.3
7707797	B115	< 0.3
7711886	B221	< 0.3
7713812	B222	< 0.3
7713815	B2234	< 0.3
7710192	B225	< 0.3
7711810	B226	< 0.3
7711809	B227	< 0.3
7713826	B229	< 0.3
7713827	B230	< 0.3
7713909	B233	< 0.3
7711830	B234	< 0.3
7707741	BACK GYM	< 0.3
7707748	BACK GYM	< 0.3
7711804	BOYS DEP OFFICE	< 0.3
7707784	C116	< 0.3
7707782	C117	< 0.3
7707781	C117A	< 0.3
7707783	C118	< 0.3
7707794	C118A	< 0.3
7707789	C119	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Magruder HS		
Test Period: 12/28/15-12/31/15		
Kit Number	Room / Area	Result
7707791	C119A	< 0.3
7707779	C120	< 0.3
7707777	C121	< 0.3
7707785	C122	< 0.3
7707786	C123	< 0.3
7707776	C124	< 0.3
7707775	C125	< 0.3
7707772	C125A	0.6
7707704	C126	< 0.3
7707792	CAFETERIA	< 0.3
7707795	CAFETERIA	< 0.3
7707735	CAREER CENTER	< 0.3
7707750	CONF RM GUIDANCE	< 0.3
7707733	CONF ROOM PRIN	< 0.3
7707724	CONFERENCE ROOM	< 0.3
7707740	D127	< 0.3
7707765	D128	< 0.3
7707773	D129	< 0.3
7707774	D130	< 0.3
7707768	D131	< 0.3
7707769	D132	1.1
7707770	D133	< 0.3
7707767	D134	< 0.3
7707728	D135	< 0.3
7707729	D136	< 0.3
7707730	D137	< 0.3
7707732	D138	1.2
7707711	DARK ROOM	1.2
7707734	FINANCE 2	< 0.3
7707737	FINANCE OFFICE	< 0.3
7707754	GUIDANCE	< 0.3
7707799	GYM	0.9
7707800	GYM	1
7711887	HEAD COACH RM	0.7
7711897	HEAD COACH RM	< 0.3
7707712	HEALTH OFFICE	< 0.3
7707707	HEALTH ROOM	< 0.3
7707793	KITCHEN	< 0.3
7711866	KITCHEN	< 0.3
7713911	KITCHEN	< 0.3
7707616	KITCHEN OFFICE	< 0.3
7711862	KITCHEN OFFICE	< 0.3
7707615	MAIN OFFICE	< 0.3
7707723	MAIN OFFICE	< 0.3
7711832	MAKEUPNROOM	0.8
7707753	OFFICE 1	0.7
7707758	OFFICE 2	< 0.3
7707745	OFFICE 3	< 0.3
7707749	OFFICE 4	< 0.3
7713917	OFFICE 4	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Magruder HS		
Test Period: 12/28/15-12/31/15		
Kit Number	Room / Area	Result
7707742	OFFICE 5	< 0.3
7707743	OFFICE 6	< 0.3
7707746	OFFICE 7	< 0.3
7707744	OFFICE 8	< 0.3
7707747	OFFICE 8	< 0.3
7707738	OFFICE 9 GU9	< 0.3
7707613	PE OFFICE	< 0.3
7713818	PRACTICE ROOM 1	< 0.3
7707701	PRINCIPAL	< 0.3
7707757	REGISTRAR	< 0.3
7707731	SECURITY	< 0.3
7707790	SGA OFFICE	< 0.3
7707739	SM11	< 0.3
7707778	SM14	< 0.3
7707788	SM15	< 0.3
7707717	SM3	< 0.3
7707759	SM5 ART	< 0.3
7707762	SM6	< 0.3
7707764	SM7 ART	< 0.3
7711828	SM8	< 0.3
7713816	SPEC ED OFFICE	< 0.3
7707715	STAFF LOUNGE	< 0.3
7710187	SU9	< 0.3
7707708	WORK ROOM GUID	< 0.3
7707727	WORKROOM OFFICE	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Magruder Hs		
Test Period: 12/28/15-12/31/15		
Kit Number	QC Type	Result
7707760	D (A102)	< 0.3
7707709	D (A103)	1.1
7711868	D (A105)	< 0.3
7711876	D (AUDITORIUM)	< 0.3
7707780	D (C121)	< 0.3
7707796	D (CAFETERIA)	< 0.3
7707771	D (D131)	< 0.3
7707706	D (D135)	< 0.3
7707714	D (HEALTH ROOM)	< 0.3
7710191	D (KITCHEN)	< 0.3
7707751	D (OFFICE 1)	< 0.3
7707612	D (PE OFF.)	< 0.3
7713912	D (SM8)	< 0.3
7711890	FB (B111)	< 0.3
7711889	FB (B112)	< 0.3
7707766	FB (D128)	< 0.3
7707787	FB (SM15)	< 0.3
7707713	FB (SM3)	< 0.3
7707603	OB (0)	< 0.3
7707637	OB (0)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

**MAGRUDER HS
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707603	0	2015-12-28 @ 8:00 pm	2015-12-31 @ 12:00 pm	< 0.3	2016-01-05
7707637	0	2015-12-28 @ 8:00 pm	2015-12-31 @ 12:00 pm	< 0.3	2016-01-05
7707763	1A104	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707756	A100	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7710186	A101	2015-12-28 @ 1:00 pm	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7711888	A101	2015-12-28 @ 1:00 pm	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707760	A102	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707761	A102	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707709	A103	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	1.1 ± 0.4	2016-01-05
7707710	A103	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	0.7 ± 0.3	2016-01-05
7711868	A105	2015-12-28 @ 1:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7713973	A105	2015-12-28 @ 1:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7711806	A106	2015-12-28 @ 1:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707719	A107	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707720	A107A	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707736	A108	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707705	A108A	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707702	ADMIN SECRETARY	2015-12-28 @ 8:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707721	ASSIST PRINC	2015-12-28 @ 8:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707722	ASSIST PRINC DAV	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707725	ASSIST PRINC SHE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7711894	ATHLETIC DIRECTO	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707726	ATTENDANCE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7711805	AUDITORIUM	2015-12-28 @ 1:00 pm	2015-12-31 @ 8:00 am	0.7 ± 0.3	2016-01-05
7711876	AUDITORIUM	2015-12-28 @ 1:00 pm	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7713904	AUDITORIUM	2015-12-28 @ 1:00 pm	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707755	B110	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707752	B110	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	0.6 ± 0.3	2016-01-05
7707716	B111	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7711890	B111	2015-12-28 @ 1:00 pm	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707718	B111A	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707703	B112	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7711889	B112	2015-12-28 @ 1:00 pm	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707798	B114	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707797	B115	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711886	B221	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7713812	B222	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05

January 16, 2016

**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:
**MAGRUDER HS
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7713815	B2234	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7710192	B225	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711810	B226	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711809	B227	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7713826	B229	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7713827	B230	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7713909	B233	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711830	B234	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707741	BACK GYM	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707748	BACK GYM	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7711804	BOYS DEP OFFICE	2015-12-28 @ 2:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707784	C116	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707782	C117	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707781	C117A	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707783	C118	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707794	C118A	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707789	C119	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707791	C119A	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707779	C120	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707777	C121	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707780	C121	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707785	C122	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707786	C123	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707776	C124	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707775	C125	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707772	C125A	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	0.6 ± 0.3	2016-01-05
7707704	C126	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707796	CAFETERIA	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707792	CAFETERIA	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707795	CAFETERIA	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707735	CAREER CENTER	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707750	CONF RM GUIDANCE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707733	CONF ROOM PRIN	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707724	CONFERENCE ROOM	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707740	D127	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707765	D128	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707766	D128	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05

Radon test result report for:

**MAGRUDER HS
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707773	D129	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707774	D130	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707768	D131	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707771	D131	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707769	D132	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	1.1 ± 0.4	2016-01-05
7707770	D133	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707767	D134	2015-12-28 @ 11:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707728	D135	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707706	D135	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707729	D136	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707730	D137	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707732	D138	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	1.2 ± 0.4	2016-01-05
7707711	DARK ROOM	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	1.2 ± 0.4	2016-01-05
7707734	FINANCE 2	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707737	FINANCE OFFICE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707754	GUIDANCE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707799	GYM	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	0.9 ± 0.4	2016-01-05
7707800	GYM	2015-12-28 @ 12:00 pm	2015-12-31 @ 9:00 am	1.0 ± 0.4	2016-01-05
7711887	HEAD COACH RM	2015-12-28 @ 2:00 pm	2015-12-31 @ 9:00 am	0.7 ± 0.4	2016-01-05
7711897	HEAD COACH RM	2015-12-28 @ 2:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707712	HEALTH OFFICE	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707714	HEALTH ROOM	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707707	HEALTH ROOM	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7710191	KITCHEN	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711866	KITCHEN	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7713911	KITCHEN	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707793	KITCHEN	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707616	KITCHEN OFFICE	2015-12-28 @ 2:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7711862	KITCHEN OFFICE	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707723	MAIN OFFICE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707615	MAIN OFFICE	2015-12-28 @ 2:00 pm	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7711832	MAKEUPNROOM	2015-12-28 @ 1:00 pm	2015-12-31 @ 8:00 am	0.8 ± 0.4	2016-01-05
7707751	OFFICE 1	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707753	OFFICE 1	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	0.7 ± 0.3	2016-01-05
7707758	OFFICE 2	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707745	OFFICE 3	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707749	OFFICE 4	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05

January 16, 2016

**LABORATORY ANALYSIS
REPORT ****

Radon test result report for:

**MAGRUDER HS
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7713917	OFFICE 4	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707742	OFFICE 5	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707743	OFFICE 6	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707746	OFFICE 7	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707744	OFFICE 8	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707747	OFFICE 8	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707738	OFFICE 9 GU9	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707612	PE OFF.	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7707613	PE OFFICE	2015-12-28 @ 2:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7713818	PRACTICE ROOM 1	2015-12-28 @ 1:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707701	PRINCIPAL	2015-12-28 @ 8:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707757	REGISTRAR	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707731	SECURITY	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707790	SGA OFFICE	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707739	SM11	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707778	SM14	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707787	SM15	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707788	SM15	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707713	SM3	2015-12-28 @ 10:00 am	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7707717	SM3	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707759	SM5 ART	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707762	SM6	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707764	SM7 ART	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7711828	SM8	2015-12-28 @ 1:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7713912	SM8	2015-12-28 @ 1:00 pm	2015-12-31 @ 9:00 am	< 0.3	2016-01-05
7713816	SPEC ED OFFICE	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707715	STAFF LOUNGE	2015-12-28 @ 10:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7710187	SU9	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7707708	WORK ROOM GUID	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05
7707727	WORKROOM OFFICE	2015-12-28 @ 9:00 am	2015-12-31 @ 8:00 am	< 0.3	2016-01-05

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 μ R/h Elevation = 820 ft



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS
Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

Chain of Custody

Project Name: MCPS Radon Phase III

Name of Schools:

- | | | |
|-----------------------|-----------------------|-----------------------|
| 1. Burnt Mills ES | 13. Georgian Frost ES | 25. Northlake Center |
| 2. Burtonsville ES | 14. Germantown ES | 26. Olney ES |
| 3. Cedar Grove ES | 15. Goshen ES | 27. Rosa Parks MS |
| 4. Cloverly ES | 16. Greencastle ES | 28. Poolesville ES |
| 5. Cold Spring ES | 17. Greenwood ES | 29. Poolesville HS |
| 6. Damascus HS | 18. Lake Seneca ES | 30. Potomac ES |
| 7. Darnestown ES | 19. Laytonsville ES | 31. Rock Terrace HS |
| 8. Diamond ES | 20. Col. E. Brooke MS | 32. Rosemary Hills ES |
| 9. Charles R. Drew ES | 21. Luxmanor ES | 33. Carl Sandburg |
| 10. DuFief ES | 22. Magruder HS | 34. Sequoyah ES |
| 11. Thomas Edison HS | 23. Thur. Marshall ES | 35. Stedwick ES |
| 12. Robert Frost MS | 24. Monocacy ES | 36. Whetstone ES |
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	Date	Initials
Radon Test Kits Deployed	12/28/15	JM
Radon Test Kits Sampled	12/31/15	JM
Radon Test Kits Shipped to Lab*	12/31/15	JM
Radon Test Kits Received by Lab*	1/4/16	JM

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