MCPS DEM SUSTAINABILITY & COMPLIANCE

School / Facility Radon Testing Report Form

School Year: **24-25**

Facility:	William H. Farquhar Middle School
Address:	17017 Batchellors Forest Road
	Olney, MD 20832
Reason for Testing:	Scheduled Re-Testing - ☐ 2-year or ☒ 5-year schedule ☐ Clearance Testing (Post-Mitigation) ☒ Building Envelope or HVAC Upgrades ☐ New Construction – Addition or Facility
Current Radon Status:	☐ Active Mitigation (2-year regular schedule) ☒ No Active Mitigation (5-year regular schedule) ☐ Not Previously Tested (New Facility)
Round of Testing:	☐ Initial Testing **-or-** ☒ Follow-up Testing
Testing Status:	☒ No Further Testing Needed **-or-** ☐ Follow-Up Testing Required

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

Mitigation -	**Facility Radon Status:**		
☒ Not Required ☐ Required (≥4.0-pCi/L) Rooms:	☒ No Change in Status ☐ Active Mitigation (2-year regular schedule) ☐ No Active Mitigation (5-year regular schedule)		
Number of Rooms Tested	48	Lowest Value (pCi/L)	< 0.3
Number of Rooms (≥4.0-pCi/L)	0	Highest Value (pCi/L)	1.4

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.

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Detector and Deployment

Detector/Device Type:	☒ Passive ☐ Continuous	☒ Charcoal Absorption (CAD) ☐ Alpha Track (ATD) ☐ Other ☐ Electret ion Chamber (EIC) ☐ Electronic Integration (EID)
	Other–Specify here:	
Detector/Device Name:	Air Chek – Radon Test Kits	
Manufacturer:	Radon Lab	

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

☒ Short-Term ☐ Long-Term	Length of Test (days):	3	Date of Deployment and Retrieval (mm/dd/yy):	12/03/24 12/06/24	03/11/25 03/14/25
Does the test period include weekends, school breaks or holidays?				☐ Yes ☒ No	
*If "**Yes**" please explain/detail in the space below:*					
Was HVAC operating under occupied conditions?				☒ Yes ☐ No	
*If "**No**" please explain/detail in the space below:*					

Testing (continued)

	Detectors Deployed				
	Ground-Contact		Upper-Level(s)		Total
Round of Testing	Initial	Follow-Up	Initial	Follow-Up	
Test Locations[1]	43	0	3	2	48
Duplicates[2]	5	0	0	1	6
Field Blanks[3]	2	0	0	1	3
				Grand Total	57

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.

	QA/QC Samples		Total
Round of Testing	Initial	Follow-Up	
Spikes[1]	Not applicable		10
Trip Blanks[2]	1	1	2
Office Blanks[3, 4]	1	1	2
			14

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 ± 25% of the chamber's reference value?	☒ Yes ☐ No	
Quality Control measurements comply with QA/QC requirements in the submitted testing organization's/company's QA plan?	☒ Yes ☐ No	
Round of Testing	**Initial**	**Follow-Up**
All Field, Trip and Office Blanks are **≤** (less than or equal to) to the Method Detection Limit?	☒ Yes ☐ No	☒ Yes ☐ No
For all Duplicate Samples[1], the higher value is **≤ 2x** the lower value?	☒ Yes ☐ No	☒ Yes ☐ No
For all Duplicate Samples[1], Relative Percent Difference(s) (RPD)[2] are less than the Warning Level[3]?	☒ Yes ☐ No	☒ Yes ☐ No
For all Duplicate Samples[1], Relative Percent Difference(s) (RPD)[2] are less than the Control Level[3]?	☒ Yes ☐ No	☒ Yes ☐ 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

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Summary of Test Results[1] and Determination of Valid Measurements[2]

	Ground-Contact		Upper-Level(s)		Total
Round of Testing	**Initial**	**Follow-Up**	**Initial**	**Follow-Up**	
Number of test locations:	43	0	3	2	48
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]:	2	0	2	0	0
Number of failed duplicate control locations:	0	0	0	0	0
Percentage of missing test locations for the facility[4,5]:	4.65%	0	66.7%	0	0

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

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

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

4 – if all valid measurements are <4.0-pCi/L and the total number of test locations are ≥18, there is an allowance of ≤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 ≤25% of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023.

Summary of Test Results[1] and Determination of Valid Measurements[2] (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?	☐ Yes ☒ No	☒ Yes ☐ 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?	☐ Yes ☒ No	☒ Yes ☐ 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.*	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☒ 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		
William H. Faruhar Middle School		
Test Period: 12/03/2024 - 12/06/2024		
Kit Number	Room / Area	Result
11903723	1	< 0.3
11903721	3	< 0.3
11903728	4	< 0.3
11903712	6	< 0.3
11903733	7	< 0.3
11903719	9	< 0.3
11903726	10	0.8
11903720	11	< 0.3
11903727	11	0.5
11903724	12	0.5
11903718	15	< 0.3
11903711	16	0.6
11903716	18	< 0.3
11903717	20	0.6
11903730	29	< 0.3
11903708	30	< 0.3
11903734	30	< 0.3
11903704	33	0.8
11903706	33	1.0
11903757	100	< 0.3
11903753	136	1.4
11903756	137	1.2
11903741	142	< 0.3
11903750	149	< 0.3
11903749	150	< 0.3
11903764	210	< 0.3
11903763	217	< 0.3
11903748	222	< 0.3
11903725	015 OFFICE	< 0.3
11903729	029A	< 0.3
11903732	100A	< 0.3
11903705	100B	0.5
11903731	100B	< 0.3
11903709	100D	< 0.3
11903701	100E	< 0.3
11903714	100F	< 0.3
11903715	100G	< 0.3
11903713	100H	< 0.3
11903710	100I	< 0.3
11903739	100N	< 0.3
11903746	138A	0.9

Table 1- Radon Testing Results		
William H. Faruhar Middle School		
Test Period: 12/03/2024 - 12/06/2024		
Kit Number	Room / Area	Result
11903752	138A	0.5
11903755	139E	< 0.3
11903738	141B	< 0.3
11903747	141B	< 0.3
11903737	143B	< 0.3
11903744	143B	< 0.3
11903742	BOYS LOCKER ROOM	< 0.3
11903735	CAFETERIA	< 0.3
11903740	CAFETERIA	< 0.3
11903736	GIRLS LOCKER ROOM	< 0.3
11903751	GYM	< 0.3
11903743	STAGE	< 0.3

Table 2 - Summary Testing Results ≥2.0 pCi/L							
William H. Farquhar Middle School							
Test Period: 12/03/2024 - 12/06/2024							
≥2.0 and <2.7 pCi/L		≥2.7 and <4.0 pCi/L		≥4.0 and <8.0 pCi/l		≥8.0 pCi/L	
Room / Area	**Result**	**Room / Area**	**Result**	**Room / Area**	**Result**	**Room / Area**	**Result**
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3 - QC Radon Testing Results			
William H. Farquhar Middle School			
Test Period: 12/03/2024 - 12/06/2024			
Kit Number	**QC Type**	**Room / Area**	**Result**
11903720	D	11	< 0.3
11903734	FB	30	< 0.3
11903706	D	33	1.0
11903731	D	100B	< 0.3
11903752	D	138A	0.5
11903747	D	141B	< 0.3
11903744	FB	143B	< 0.3
11904291	OB	OFFICE BLANK	< 0.3
11904272	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation

William H. Farquhar Middle School

Test Period: 12/03/2024 - 12/06/2024

Sample ID			Duplicate Concentrations (pCi/L) and QC 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
11903720	11903727	11	0.5	0.3	✓	0.6	PASS	0.4	<1-pCi/L	✓
19878881	11903706	33	1.0	0.8	✓	1.6	PASS	0.9	<1-pCi/L	✓
11903731	11903705	100B	0.5	0.3	✓	0.6	PASS	0.4	<1-pCi/L	✓
11903747	11903738	141B	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11903746	11903752	138A	0.9	0.5	✓	1.0	PASS	0.7	<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

Table 4 - Summary of Invalid Measurement Locations		
William H. Farquhar Middle School		
Test Period: 12/03/24 - 12/06/24		
Kit Number	**Room/Area**	**Reason**
11903722	027B	Missing Kit
11903758	Gym	Missing Kit

Table 1- Radon Testing Results		
William H. Farquhar Middle School RT		
Test Period: 3/11/2025 - 3/14/2025		
Kit Number	Room / Area	Result
11892356	120	< 0.3
11892357	120	< 0.3
11892358	120	< 0.3
11892359	110	< 0.3

Table 2 - Summary Testing Results ≥2.0 pCi/L							
William H. Farquhar Middle School RT							
Test Period: 3/11/2025 - 3/14/2025							
≥2.0 and <2.7 pCi/L		≥2.7 and <4.0 pCi/L		≥4.0 and <8.0 pCi/l		≥8.0 pCi/L	
Room / Area	**Result**	**Room / Area**	**Result**	**Room / Area**	**Result**	**Room / Area**	**Result**
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3 - QC Radon Testing Results			
William Farquhar Middle School RT			
Test Period: 3/11/2025 - 3/14/2025			
Kit Number	**QC Type**	**Room / Area**	**Result**
11892356	D	120	< 0.3
11892357	FB	120	< 0.3
11886599	OB	OFFICE BLANK	< 0.3
11886600	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation										
William Farquhar Middle School RT										
Test Period: 3/11/2025 - 3/14/2025										
Sample ID			Duplicate Concentrations (pCi/L) and QC 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
11892356	11892358	120	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

Table 4 - Summary of Invalid Measurement Locations		
William H. Farquhar Middle School RT		
Test Period: 3/11/25 - 3/14/25		
Kit Number	**Room/Area**	**Reason**
N/A	N/A	N/A

Attachment 2:

Laboratory Reports

December 12, 2024

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11903723	001	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903721	003	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903728	004	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903712	006	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903733	007	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903719	009	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903726	010	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	0.8 ± 0.4	2024-12-10
11903727	011	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	0.5 ± 0.3	2024-12-10
11903720	011	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903724	012	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	0.5 ± 0.3	2024-12-10
11903718	015	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903725	015 OFFICE	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903711	016	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	0.6 ± 0.4	2024-12-10
11903716	018	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903717	020	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	0.6 ± 0.4	2024-12-10
11903730	029	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903729	029A	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903734	030	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903708	030	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903706	033	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	1.0 ± 0.4	2024-12-10
11903757	100	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903732	100A	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903731	100B	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903705	100B	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	0.5 ± 0.3	2024-12-10
11903709	100D	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903701	100E	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903714	100F	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903715	100G	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903713	100H	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903710	100I	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903739	100N	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903753	136	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	1.4 ± 0.4	2024-12-10
11903756	137	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	1.2 ± 0.4	2024-12-10
11903752	138A	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	0.5 ± 0.3	2024-12-10
11903746	138A	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	0.9 ± 0.4	2024-12-10
11903755	139E	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903738	141B	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10

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

December 12, 2024 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11903747	141B	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903741	142	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903737	143B	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903744	143B	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903750	149	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903749	150	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903764	210	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903763	217	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903748	222	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903742	BOYS LOCKER ROOM	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903735	CAFETERIA	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903740	CAFETERIA	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903736	GIRLS LOCKER ROOM	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903751	GYM	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10
11903743	STAGE	2024-12-03 @ 9:00 am	2024-12-06 @ 7:00 am	< 0.3	2024-12-10

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

December 12, 2024 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
D

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11903704	033	2024-12-03 @ 8:00 am	2024-12-06 @ 7:00 am	0.8 ± 0.4	2024-12-10

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P4792 / TYLER MCCLEAF

Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
11892899	2024-12-02	11:00 am	2024-12-05	11:00 am	70	OFFICE	MAIN	O		1	< 0.3
11892900	2024-12-02	11:00 am	2024-12-05	11:00 am	70	TRAVEL	MAIN	T		1	< 0.3
11904003	2024-12-02	10:00 am	2024-12-05	11:00 am	70	JAMES HUBERT BLAKE HS	MAIN	SMALL GYM		1	1.4
11904272	2024-12-03	11:00 am	2024-12-06	11:00 am	70	TRAVEL	MAIN	T		1	< 0.3
11904291	2024-12-03	11:00 am	2024-12-06	11:00 am	70	OFFICE	MAIN	O		1	< 0.3

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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 µR/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

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KCI TECHNOLOGIES

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

Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing December 3rd – December 6th, 2024

Name of Schools:

1. Cannon Road ES
2. Cloverly ES
3. Dr. Charles R. Drew ES
4. East Silver Spring ES
5. Albert Einstein HS
6. Fairland ES
7. William H. Farquhar MS

	Date	Initials
Radon Test Kits Deployed	12/03/2024	BMM
Radon Test Kits Collected	12/06/2024	BMM
Radon Test Kits Shipped to Lab*	12/06/2024	BMM
Radon Test Kits Received by Lab*	12/10/2024	BMM

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

March 17, 2025

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11892359	110	2025-03-11 @ 7:00 am	2025-03-14 @ 7:00 am	< 0.3	2025-03-17
11892356	120	2025-03-11 @ 8:00 am	2025-03-14 @ 7:00 am	< 0.3	2025-03-17
11892357	120	2025-03-11 @ 8:00 am	2025-03-14 @ 7:00 am	< 0.3	2025-03-17
11892358	120	2025-03-11 @ 8:00 am	2025-03-14 @ 7:00 am	< 0.3	2025-03-17

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

March 17, 2025

** LABORATORY ANALYSIS REPORT **

Radon test result report for:
OFFICE
MAIN

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

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March 17, 2025

** LABORATORY ANALYSIS REPORT **

Radon test result report for:
TRAVEL
MAIN

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

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 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 µR/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

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

Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Re-Testing March 11th – March 14th, 2025

Name of Schools:

1. Albert Einstein HS
2. Argyle MS
3. Belmont ES
4. Benjamin Banneker MS
5. Cannon Road ES
6. Dr. Charles R. Drew ES
7. East Silver Spring ES
8. James Hubert Blake HS
9. William Farquhar MS

	Date	Initials
Radon Test Kits Deployed	3/11/2025	BMM
Radon Test Kits Collected	3/14/2025	BMM
Radon Test Kits Shipped to Lab*	3/14/2025	BMM
Radon Test Kits Received by Lab*	3/16/2025	BMM

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

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MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Farquhar Middle 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	1
# 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;

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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: Farquhar Middle School
17017 Batchellors Forest Road
Olney, Maryland 20832

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 Farquhar Middle School, located at 17017 Batchellors Forest Road in Olney, Maryland 20832 (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 two (2) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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 piC/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 piC/L	None	N/A
≤4.0 piC/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		
Farquhar Middle School		
Test Period: 02/11/20-02/14/20		
Kit Number	Room / Area	Result
9348564	29	< 0.3
9348502	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Farquhar Middle 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:
FARQUHAR MS RT
507

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9348564	029	2020-02-11 @ 1:00 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 - 9341725 thru 9341733	Device No.'s: _____
52 Ccpt	
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____

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

February 28, 2020 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within ± 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 ± 1.6	2020-02-26
9341730	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.1 ± 1.6	2020-02-26
9341728	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.9 ± 1.6	2020-02-26
9341726	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.8 ± 1.5	2020-02-26
9341731	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.1 ± 1.5	2020-02-26
9341729	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.2 ± 1.6	2020-02-26
9341727	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.2 ± 1.6	2020-02-26
9341732	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.3 ± 1.6	2020-02-26

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

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

Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 2

Name of Schools:

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

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

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

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MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Farquhar Middle 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	58
# Rooms ≥4.0 pCi/L	1.3
Lowest Value	<0.3 pCi/L
Highest Value	1.3 pCi/L

Project Status

Current Project Status at this time: Testing Complete; 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: Farquhar Middle School
17017 Batchellors Forest Road
Olney, Maryland 20832

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 Farquhar Middle School, located at 17017 Batchellors Forest Road in Olney, Maryland 20832 (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 seventy-two (72) 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 piC/L	None	N/A
≤4.0 piC/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		
Farquhar Elementary School		
Test Period: 12/17/2019-12/20/2019		
Kit Number	Room / Area	Result
9340935	100E	< 0.3
9340936	100F	0.6
9340937	100E	< 0.3
9340938	100N WORKROOM	0.6
9340939	100M	< 0.3
9340940	100B PRINCIPAL	< 0.3
9340941	100D	0.7
9340942	100A ADMIN ASSISTANT	0.6
9340943	100N WORKROOM	0.6
9340944	MAIN OFFICE	< 0.3
9340945	159C	0.5
9340946	159C	< 0.3
9340947	160D	< 0.3
9340948	160C	0.5
9340949	159 HEALTH OFFICE	< 0.3
9340950	100I	< 0.3
9340951	100J	< 0.3
9340952	160E	< 0.3
9340953	100H	< 0.3
9340954	138A	< 0.3
9340955	138A	< 0.3
9340956	135	< 0.3
9340957	115	0.6
9340958	136	0.7
9340959	135	< 0.3
9340960	160F	0.7
9340961	137	1.1
9340962	160G	< 0.3
9340963	135A	< 0.3
9340964	101	< 0.3
9340965	139E	< 0.3
9340966	CAFETERIA	< 0.3
9340967	CAFETERIA	< 0.3
9340968	STAGE	0.6
9340969	129	< 0.3
9340970	141C	0.7
9340971	143C	0.7
9340972	142	< 0.3
9340973	STAGE	< 0.3
9340974	150	0.8
9340975	149	< 0.3
9340976	GYM	< 0.3
9340977	GYM	0.9
9340978	127	< 0.3
9340979	127	< 0.3
9340980	153	< 0.3
9340981	153	< 0.3
9340982	220	< 0.3
9340983	027B	1.3
9340984	30	< 0.3

9340985	33	< 0.3
9340986	15	0.7
9340987	12	< 0.3
9340988	10	0.6
9340989	6	< 0.3
9340990	7	< 0.3
9340991	9	< 0.3
9340992	18	0.5
9340993	29	MISSING
9340994	30	< 0.3
9340995	012A	< 0.3
9340996	11	0.7
9340997	20	0.8
9340998	3	< 0.3
9340999	3	< 0.3
9341000	4	0.6
9341383	18	< 0.3
9341384	029A	0.6
9341385	157	< 0.3
9341387	157	< 0.3
9341399	1	< 0.3
9341400	16	0.5
9341392	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Farquhar Middle School			
Test Period: 12/16/2019-12/19/2019			
Kit Number	QC Type	Room / Area	Result
9340938	D	100N WORKROOM	0.6
9340935	FB	100E	<0.3
9340946	D	159C	<0.3
9340956	D	135	<0.3
9340954	FB	138A	<0.3
9340973	D	STAGE	<0.3
9340979	D	127	<0.3
9340981	FB	153	<0.3
9340994	D	30	<0.3
9340998	FB	3	<0.3
9341383	D	18	<0.3
9341385	D	157	<0.3
9341377	TRANSIT BLANK	NA	0.5
9341379	TRANSIT BLANK	NA	< 0.3
9341380	TRANSIT BLANK	NA	< 0.3
9341398	TRANSIT BLANK	NA	< 0.3

Summary of Missed Locations		
William H. Farquhar Middle School		
Test Period: 12/17/2019 - 12/20/2019		
Kit Number	Room/Area	Result
	NA	

Summary of Missing, Compromised and >/= 4 piC/L Tests		
William H. Farquhar Middle School		
Test Period: 12/17/2019-12/20/2019		
Kit Number	Room/Area	Result
9340993	*29	Missing

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

December 24, 2019 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FARQUHAR MS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9341399	001	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340998	003	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340999	003	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9341000	004	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	0.6 ± 0.4	2019-12-24
9340989	006	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340990	007	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340991	009	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340988	010	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	0.6 ± 0.4	2019-12-24
9340996	011	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	0.7 ± 0.4	2019-12-24
9340987	012	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340995	012A	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340986	015	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	0.7 ± 0.4	2019-12-24
9341400	016	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	0.5 ± 0.4	2019-12-24
9340992	018	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	0.5 ± 0.4	2019-12-24
9341383	018	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340997	020	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	0.8 ± 0.4	2019-12-24
9340983	027B	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	1.3 ± 0.4	2019-12-24
9341384	029A	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	0.6 ± 0.3	2019-12-24
9340984	030	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340994	030	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340985	033	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340942	100A ADMIN ASSISTANT	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	0.6 ± 0.4	2019-12-24
9340940	100B PRINCIPAL	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340941	100D	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	0.7 ± 0.4	2019-12-24
9340937	100E	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340935	100E	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340936	100F	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	0.6 ± 0.4	2019-12-24
9340953	100H	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340950	100I	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340951	100J	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340939	100M	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340938	100N WORKROOM	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	0.6 ± 0.4	2019-12-24
9340943	100N WORKROOM	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	0.6 ± 0.3	2019-12-24
9340964	101	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340957	115	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	0.6 ± 0.3	2019-12-24
9340979	127	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340978	127	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 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

December 24, 2019 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FARQUHAR MS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340969	129	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340956	135	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340959	135	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340963	135A	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340958	136	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	0.7 ± 0.4	2019-12-24
9340961	137	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	1.1 ± 0.4	2019-12-24
9340955	138A	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340954	138A	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340965	139E	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340970	141C	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	0.7 ± 0.4	2019-12-24
9340972	142	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340971	143C	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	0.7 ± 0.4	2019-12-24
9340975	149	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340974	150	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	0.8 ± 0.4	2019-12-24
9340980	153	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340981	153	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9341385	157	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9341387	157	2019-12-17 @ 3:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340949	159 HEALTH OFFICE	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340945	159C	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	0.5 ± 0.4	2019-12-24
9340946	159C	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340948	160C	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	0.5 ± 0.3	2019-12-24
9340947	160D	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340952	160E	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340960	160F	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	0.7 ± 0.4	2019-12-24
9340962	160G	2019-12-17 @ 2:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340982	220	2019-12-17 @ 3:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340967	CAFETERIA	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340966	CAFETERIA	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340977	GYM	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	0.9 ± 0.4	2019-12-24
9340976	GYM	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	< 0.3	2019-12-24
9340944	MAIN OFFICE	2019-12-17 @ 1:00 pm	2019-12-20 @ 9:00 am	< 0.3	2019-12-24
9340968	STAGE	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 am	0.6 ± 0.3	2019-12-24
9340973	STAGE	2019-12-17 @ 2:00 pm	2019-12-20 @ 10:00 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

Temp °F 70.1 RH % 50.1 Avg pCi/L 25.4

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

Temp °F 70.1 RH % 50.1 Avg pCi/L 25.4

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

Temp °F 70.1 RH % 50.1 Avg pCi/L 25.4

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

Time Start: 0825 Time Stop: 0823

(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 µR/h Elevation = 820 ft

KCI TECHNOLOGIES

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

January 3, 2020

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

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

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January 3, 2020

** LABORATORY ANALYSIS REPORT **

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

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

January 3, 2020

** LABORATORY ANALYSIS REPORT **

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

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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

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KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

MCPS RADON TESTING

Executive Summary: William H. Farquhar Middle School

Date of Test Report:	10/19/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	54
# Rooms ≥ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.1

Project Status:
Initial testing completed; no further action at this time.

KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

October 19, 2016

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

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

Location: William H. Farquhar Middle School
16915 Batchellors Forest Road
Olney, MD 20832

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 William H. Farquhar Middle School, located at 16915 Batchellors Forest Road in Olney, Maryland 20832 (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 September 27, 2016 and deployed sixty-eight (68) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on September 30, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

These tests represent:

- Initial testing of a newly constructed facility.

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

- Determine if the newly constructed facility needs a mitigation system.

Future periodic testing should be conducted during the heating season in ideal conditions as described below.According to AARST, *Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings*, ideal testing conditions would be when the building is fully occupied and the heating system is active. For this test, the facility's HVAC system was operating in cooling mode; therefore, KCI concludes that this test was not conducted during ideal testing conditions.

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 50s and high temperatures in the mid-60s to mid-70s. Maximum sustained winds ranged from 3-15 miles per hour. Average humidity ranged from 71 to 89 percent. Rain (1.83 inches in Gaithersburg, MD) was recorded on 9/29/16. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

Results:

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 piC/L	none	n/a
<4.0 piC/L	See Attachment B	

Notes:
D- Duplicate sample

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

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

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

Sincerely,

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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Farquhar Middle School		
Test Period: 09/27/16-09/30/16		
Kit Number	**Room / Area**	**Result**
7802540	1	< 0.3
7802549	3	< 0.3
7802562	4	0.5
7802559	6	0.5
7802558	7	0.7
7802555	9	0.9
7802554	10	< 0.3
7802553	11	0.8
7802556	12	0.6
7802547	15	0.7
7802548	16	1.8
7802557	18	0.7
7802563	20	0.6
7802568	29	0.9
7802571	30	0.5
7802566	33	0.7
7802508	100	< 0.3
7802544	101	< 0.3
7802543	111	< 0.3
7802404	136	< 0.3
7802575	137	< 0.3
7802434	140	< 0.3
7802479	140	< 0.3
7802452	140	< 0.3
7801872	140	< 0.3
7802496	142	< 0.3
7802474	148	< 0.3
7802501	148	< 0.3
7802546	148	< 0.3
7802473	148	< 0.3
7802545	149	< 0.3
7802539	150	< 0.3
7802565	153	0.6
7802531	157	< 0.3
7802541	159	0.6
7802527	201	< 0.3
7802551	233	< 0.3
7802550	012A	0.5
7802564	027B	0.8
7802561	029A	0.9
7802507	100A	0.8
7802569	100B	0.6
7802570	100D	< 0.3
7802533	100E	< 0.3
7802521	100F	< 0.3
7802528	100G	< 0.3

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Farquhar Middle School		
Test Period: 09/27/16-09/30/16		
Kit Number	**Room / Area**	**Result**
7802522	100H	0.7
7802526	100I	2.1
7802537	100J	0.6
7802530	100M	< 0.3
7802524	100N	< 0.3
7802573	138A	< 0.3
7802572	139E	< 0.3
7802461	141B	< 0.3
7802536	159C	< 0.3
7802523	160C	0.8
7802534	160D	0.7
7802535	160E	< 0.3
7802525	160F	< 0.3
7802529	160G	< 0.3

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Farquhar Middle School		
Test Period: 09/27/16-09/30/16		
Kit Number	**QC Type**	**Result**
7802552	D (012A)	0.6
7802567	D (1)	< 0.3
7802532	D (100H)	1.0
7802560	D (101)	< 0.3
7802403	D (136)	< 0.3
7802538	D (157)	< 0.3
7802542	FB (100J)	< 0.3
7802574	FB (138A)	< 0.3

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

October 7, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

FARQUHAR MIDDLE SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802552	012A	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.6 ± 0.2	2016-10-03
7802550	012A	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.5 ± 0.3	2016-10-03
7802564	027B	2016-09-27 @ 6:00 am	2016-09-30 @ 7:00 am	0.8 ± 0.2	2016-10-03
7802561	029A	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.9 ± 0.3	2016-10-03
7802540	1	2016-09-27 @ 6:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802567	1	2016-09-27 @ 6:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802554	10	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802508	100	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802507	100A	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	0.8 ± 0.2	2016-10-03
7802569	100B	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	0.6 ± 0.2	2016-10-03
7802570	100D	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802533	100E	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802521	100F	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802528	100G	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802532	100H	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	1.0 ± 0.3	2016-10-03
7802522	100H	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	0.7 ± 0.2	2016-10-03
7802526	100I	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	2.1 ± 0.3	2016-10-03
7802542	100J	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802537	100J	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	0.6 ± 0.2	2016-10-03
7802530	100M	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802524	100N	2016-09-27 @ 7:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802544	101	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802560	101	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802553	11	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.8 ± 0.2	2016-10-03
7802543	111	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802556	12	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.6 ± 0.2	2016-10-03
7802403	136	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802404	136	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802575	137	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802573	138A	2016-09-27 @ 9:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802574	138A	2016-09-27 @ 9:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802572	139E	2016-09-27 @ 9:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7801872	140	2016-09-27 @ 9:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802479	140	2016-09-27 @ 9:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802434	140	2016-09-27 @ 9:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802452	140	2016-09-27 @ 9:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802461	141B	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03

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

October 7, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS Radon
Phase 18 Office Blanks

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

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October 7, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS Radon
Phase 18 Transit Blanks

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

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October 12, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS Radon
Spike Sample Results

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 176788

NOMINAL Conditions: Radon Conc 26.1 pCi/L Rel. Hum 49.6 % Temp. 79.0 F

Date Start: 9/24/16 Date Stop: 9/26/16	Date Start: _____ Date Stop: _____
Time Start: 0758 Time Stop: 0758	Time Start: _____ Time Stop: _____
Device No.'s: (6) Char. Bags -	Device No.'s: _____
7769899, 7769884, 7769885,	_____
7769889, 7769890, 7769891	_____
F3 Left	_____
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____
_____	_____
_____	_____
_____	_____
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____
_____	_____
_____	_____
_____	_____

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

KCI TECHNOLOGIES

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 Phase 18

Name of Schools:

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

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

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

KCI TECHNOLOGIES

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 Phase 18

Name of Schools:

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

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

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

October 7, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FARQUHAR MIDDLE SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802496	142	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802546	148	2016-09-27 @ 8:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802473	148	2016-09-27 @ 8:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802474	148	2016-09-27 @ 8:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802501	148	2016-09-27 @ 8:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802545	149	2016-09-27 @ 8:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802547	15	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.7 ± 0.2	2016-10-03
7802539	150	2016-09-27 @ 8:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802565	153	2016-09-27 @ 8:00 am	2016-09-30 @ 7:00 am	0.6 ± 0.2	2016-10-03
7802531	157	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802538	157	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802541	159	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	0.6 ± 0.2	2016-10-03
7802536	159C	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802548	16	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	1.8 ± 0.3	2016-10-03
7802523	160C	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	0.8 ± 0.2	2016-10-03
7802534	160D	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	0.7 ± 0.2	2016-10-03
7802535	160E	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802525	160F	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802529	160G	2016-09-27 @ 8:00 am	2016-09-30 @ 8:00 am	< 0.3	2016-10-03
7802557	18	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.7 ± 0.2	2016-10-03
7802563	20	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.6 ± 0.2	2016-10-03
7802527	201	2016-09-27 @ 8:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802551	233	2016-09-27 @ 8:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802568	29	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.9 ± 0.2	2016-10-03
7802549	3	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	< 0.3	2016-10-03
7802571	30	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.5 ± 0.2	2016-10-03
7802566	33	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.7 ± 0.2	2016-10-03
7802562	4	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.5 ± 0.2	2016-10-03
7802559	6	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.5 ± 0.2	2016-10-03
7802558	7	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.7 ± 0.3	2016-10-03
7802555	9	2016-09-27 @ 7:00 am	2016-09-30 @ 7:00 am	0.9 ± 0.3	2016-10-03

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