School / Facility Radon Testing Report Form

School Year: **24-25**

Facility:	Fallsmead Elementary School
Address:	1800 Greenplace Terr.
	Rockville, MD 20850
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	59	Lowest Value (pCi/L)	<0.3
Number of Rooms (≥4.0-pCi/L)	0	Highest Value (pCi/L)	1.3

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.

MCPS DEM SUSTAINABILITY & COMPLIANCE

School / Facility Radon Testing Report Form

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 Labs	

Person(s) Deploying or Retrieving Test Devices and certification number	Organization/Company
Brittany Maas	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):	1/28/2025 1/31/2025
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]	59	0	0	0	59
Duplicates[2]	6	0	0	0	6
Field Blanks[3]	3	0	0	0	3
				Grand Total	68

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	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 ± 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

MCPS DEM SUSTAINABILITY & COMPLIANCE

School / Facility Radon Testing Report Form

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:	59	0	0	0	59
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]:	0	0	0	0	0
Number of failed duplicate control locations:	0	0	0	0	0
Percentage of missing test locations for the facility[4,5]:	0	0	0	0	0

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

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

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

4 – if all valid measurements are <4.0-pCi/L and the total number of test locations are ≥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		
Fallsmead Elementary School		
Test Period: 1/28/2025 - 1/31/2025		
Kit Number	Room / Area	Result
11926604	ADMIN SECRETARY	< 0.3
11926668	APR	< 0.3
11926673	APR	< 0.3
11926676	APR	< 0.3
11926603	ASSISTANT PRINCIPAL	< 0.3
11926662	B1	< 0.3
11926661	B2	< 0.3
11926660	B3	< 0.3
11926659	B4	< 0.3
11926653	B5	< 0.3
11926654	B6	< 0.3
11926667	B7	< 0.3
11926635	BUILDING SERVICE	0.7
11926608	COUNSELOR	< 0.3
11926657	G1	< 0.3
11926658	G2	0.6
11926601	G3	0.8
11926605	G4	< 0.3
11926631	G5	0.8
11926632	G5	0.9
11926640	G6	0.7
11926650	G7	0.6
11926648	GYM	< 0.3
11926675	GYM	< 0.3
11926669	GYM OFFICE	< 0.3
11926606	HEALTH ROOM	< 0.3
11926666	KITCHEN OFFICE	< 0.3
11926674	KITCHEN OFFICE	< 0.3
11926612	MAIN OFFICE	< 0.3
11926639	MEDIA CENTER	< 0.3
11926646	MEDIA CENTER	< 0.3
11926651	MEDIA CENTER	< 0.3
11926652	MEDIA CENTER	< 0.3
11926649	MEDIA CENTER WORKROOM	0.5
11926642	N13	0.7
11926641	N14	0.6
11926625	N14	0.9

Table 1- Radon Testing Results		
Fallsmead Elementary School		
Test Period: 1/28/2025 - 1/31/2025		
Kit Number	Room / Area	Result
11926626	N14	< 0.3
11926627	N17	< 0.3
11926610	N19	< 0.3
11926620	N2	0.9
11926637	N21	0.5
11926643	N22	0.7
11926638	N24	0.8
11926613	N25	0.8
11926645	N25	0.8
11926644	N27	1.3
11926619	N4	0.7
11926636	N4	< 0.3
11926602	PRINCIPAL	< 0.3
11926607	STAFF LOUNGE	< 0.3
11926665	STAGE	< 0.3
11926614	T1	< 0.3
11926615	T2	< 0.3
11926616	T3	0.5
11926621	T4	< 0.3
11926622	T5	< 0.3
11926623	T6	< 0.3
11926629	T7	< 0.3
11926630	TV STUDIO	< 0.3
11926611	WORK ROOM	< 0.3
11926609	Y1	< 0.3
11926624	Y2	< 0.3
11926628	Y2	< 0.3
11926633	Y3	< 0.3
11926634	Y4	< 0.3
11926617	Y5	0.6
11926618	Y8	< 0.3

Table 2 - Summary Testing Results ≥2.0 pCi/L							
Fallsmead Elementary School							
Test Period: 1/28/2025 - 1/31/2025							
≥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			
Fallsmead Elementary School			
Test Period: 1/28/2025 - 1/31/2025			
Kit Number	**QC Type**	**Room / Area**	**Result**
11926668	D	APR	< 0.3
11926632	D	G5	0.9
11926674	FB	Kitchen Office	< 0.3
11926652	D	Media Center	< 0.3
11926651	FB	Media Center	< 0.3
11926641	D	N14	0.6
11926626	FB	N14	< 0.3
11926613	D	N25	0.8
11926628	D	Y2	< 0.3
11906899	OB	OFFICE BLANK	< 0.3
11926699	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation

Fallsmead Elementary School

Test Period: 01/28/2025 - 01/31/2025

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
11926624	11926628	Y2	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11926625	11926641	N14	0.9	0.6	✓	1.2	PASS	0.8	<1-pCi/L	✓
11926645	11926613	N25	0.8	0.8	✓	1.6	PASS	0.8	<1-pCi/L	✓
11926646	11926652	Media Center	0.3	0.3	✓	0.6	PASS	0.3	<1-pCi/L	✓
11926631	11926631	G5	0.9	0.8	✓	1.6	PASS	0.9	<1-pCi/L	✓
11926673	11926668	APR	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		
Fallsmead Elementary School		
Test Period: 1/28/25 - 1/31/25		
Kit Number	**Room/Area**	**Reason**
N/A	N/A	N/A

Attachment 2:

Laboratory Reports

February 4, 2025

** LABORATORY ANALYSIS REPORT **

Radon test result report for:
FALLSMEAD ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11926604	ADMIN SECRETARY	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926668	APR	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926673	APR	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926676	APR	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926603	ASSISTANT PRINCIPAL	2025-01-28 @ 8:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926662	B1	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926661	B2	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926660	B3	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926659	B4	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926653	B5	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926654	B6	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926667	B7	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926635	BUILDING SERVICE	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	0.7 ± 0.4	2025-02-04
11926608	COUNSELOR	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926657	G1	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926658	G2	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.6 ± 0.4	2025-02-04
11926601	G3	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.8 ± 0.3	2025-02-04
11926605	G4	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926632	G5	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.9 ± 0.4	2025-02-04
11926631	G5	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.8 ± 0.4	2025-02-04
11926640	G6	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.7 ± 0.4	2025-02-04
11926650	G7	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.6 ± 0.4	2025-02-04
11926648	GYM	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926675	GYM	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926669	GYM OFFICE	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926606	HEALTH ROOM	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926674	KITCHEN OFFICE	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926666	KITCHEN OFFICE	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926612	MAIN OFFICE	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926646	MEDIA CENTER	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926639	MEDIA CENTER	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926652	MEDIA CENTER	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926651	MEDIA CENTER	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926649	MEDIA CENTER WORKROOM	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.5 ± 0.3	2025-02-04
11926642	N13	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.7 ± 0.4	2025-02-04
11926641	N14	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	0.6 ± 0.4	2025-02-04
11926626	N14	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04

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

February 4, 2025 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FALLSMEAD ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11926625	N14	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	0.9 ± 0.4	2025-02-04
11926627	N17	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926610	N19	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926620	N2	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	0.9 ± 0.4	2025-02-04
11926637	N21	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.5 ± 0.4	2025-02-04
11926643	N22	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.7 ± 0.3	2025-02-04
11926638	N24	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.8 ± 0.4	2025-02-04
11926613	N25	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.8 ± 0.4	2025-02-04
11926645	N25	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.8 ± 0.4	2025-02-04
11926644	N27	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	1.3 ± 0.4	2025-02-04
11926619	N4	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	0.7 ± 0.4	2025-02-04
11926636	N4	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926602	PRINCIPAL	2025-01-28 @ 8:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926607	STAFF LOUNGE	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926665	STAGE	2025-01-28 @ 9:00 am	2025-01-31 @ 10:00 am	< 0.3	2025-02-04
11926614	T1	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926615	T2	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926616	T3	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	0.5 ± 0.3	2025-02-04
11926621	T4	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926622	T5	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926623	T6	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926629	T7	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926630	TV STUDIO	2025-01-28 @ 9:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926611	WORK ROOM	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926609	Y1	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926628	Y2	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926624	Y2	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926633	Y3	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926634	Y4	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04
11926617	Y5	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	0.6 ± 0.4	2025-02-04
11926618	Y8	2025-01-28 @ 8:00 am	2025-01-31 @ 9:00 am	< 0.3	2025-02-04

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

February 4, 2025 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
OFFICE
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11906885	O	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11906899	O	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04

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February 4, 2025 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRAVEL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11906900	T	2025-01-27 @ 11:00 am	2025-01-30 @ 11:00 am	< 0.3	2025-02-04
11926699	T	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04

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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

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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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 – Testing January 28th – January 31st, 2024

Name of Schools:

1. Carderock Springs ES
2. Cold Springs ES
3. Concord Center
4. DuFief ES
5. Thomas Edison HS
6. Fallsmead ES
7. Farmland ES

	Date	Initials
Radon Test Kits Deployed	01/28/2025	
Radon Test Kits Collected	01/31/2025	
Radon Test Kits Shipped to Lab*	01/31/2025	
Radon Test Kits Received by Lab*	02/03/2025	

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

KCI TECHNOLOGIES

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

MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Fallsmead Elementary School
Date of Test Report	1/04/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	57
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.0 pCi/L

Project Status:

1. 2-Year retesting completed.

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January 4, 2023

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

Re: **Radon Testing Services**
KCI Job # 122210551

Location: Fallsmead Elementary School
1800 Green Place Terrace
Rockville, MD 20850

Dear Mr. Croyle:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools (MCPS) pursuant to completing a "short-term" 3 day radon test for the Fallsmead Elementary School, located at 1800 Green Place Terrace Rockville, Maryland 20850 (subject site).

Scope of Services:

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

KCI visited the site on December 6, 2022 and deployed sixty-eight (68) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on December 9, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc.

is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to post mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).
- Evaluate radon concentration levels due to Addition/HVAC Upgrades/Replacement.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 20s°F and high temperatures ranged to the mid-50s°F. Maximum sustained winds ranged from 0-12 miles per hour. Average humidity was around 75% with .04 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

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

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

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 891-1769.

Sincerely,

Tyler McCleaf

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

Attachments: A- Floor Plan with Test Locations
B- Table 1-3, Radon Test Summary Spreadsheets
C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal
ACI- Air Check, Inc.
D- Duplicate
FB- Field Blank
KCI- KCI Technologies, Inc.
OB- Office Blank
PM- Project Manager
QC- Quality Control

Table 1- Radon Testing Results		
Fallsmead ES		
Test Period: 12/06/2022 - 12/09/2022		
Kit Number	Room / Area	Result
11287625	APR	< 0.3
11287627	APR	< 0.3
11287628	APR	< 0.3
11287608	ASSISTANT PRINCIPAL	< 0.3
11287643	B1	< 0.3
11287641	B2	< 0.3
11287642	B3	< 0.3
11287636	B4	< 0.3
11287635	B5	< 0.3
11287606	B6	< 0.3
11287621	B7	< 0.3
11287634	B7	< 0.3
11287658	BUILDING SERVICES	< 0.3
11287660	COUNSELOR	< 0.3
11287609	FINANCIAL	< 0.3
11287624	G1	0.6
11287623	G2	< 0.3
11287619	G3	< 0.3
11287612	G4	< 0.3
11287611	G5	< 0.3
11287620	G6	0.6
11287626	G7	< 0.3
11287613	GYM	< 0.3
11287629	GYM OFFICE	< 0.3
11287614	GYM.	< 0.3
11287602	HEALTH	< 0.3
11287622	KITCHEN OFFICE	< 0.3
11287633	KITCHEN OFFICE	< 0.3
11287603	MAIL	< 0.3
11287604	MAIN OFFICE	< 0.3
11287616	MEDIA	0.7
11287617	MEDIA	< 0.3
11287607	MEDIA WORKROOM	< 0.3
11287639	N13	< 0.3
11287665	N14	0.6
11287640	N17	0.5
11287645	N19	0.7
11287637	N2	0.6
11287646	N21	0.8
11287666	N22	< 0.3
11287647	N24	0.5
11287655	N25	< 0.3

Table 1- Radon Testing Results		
Fallsmead ES		
Test Period: 12/06/2022 - 12/09/2022		
Kit Number	Room / Area	Result
11287648	N27	1.0
11287632	N4	0.6
11287638	N4	< 0.3
11287657	N5	< 0.3
11287615	PRICIPAL	< 0.3
11287610	STAFF LOUNGE	0.5
11287653	T1	< 0.3
11287654	T1	0.7
11287656	T2	< 0.3
11287667	T2	< 0.3
11287663	T3	< 0.3
11287672	T4	< 0.3
11287671	T5	< 0.3
11287664	T6	< 0.3
11287673	T7	< 0.3
11287601	TV	< 0.3
11287605	WORKROOM	< 0.3
11287618	WORKROOM	< 0.3
11287651	Y1	< 0.3
11287630	Y3	< 0.3
11287644	Y3	< 0.3
11287649	Y4	< 0.3
11287650	Y5	0.5
11287631	Y8	< 0.3
11287652	YSM	0.8
11287659	YSM	< 0.3

Table 2- Radon Testing Results			
Fallsmead ES			
Test Period: 12/06/22 - 12/09/22			
Kit Number	QC Type	Room / Area	Result
11287625	D	Apr	< 0.3
11287634	D	B7	< 0.3
11287633	FB	Kitchen office	< 0.3
11287632	D	N4	0.6
11287654	D	T1	0.7
11287667	FB	T2	< 0.3
11287618	D	Workroom	< 0.3
11287630	FB	Y3	< 0.3
11287659	D	YSM	< 0.3
11287676	OB	OFFICE BLANK	< 0.3
11287288	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Fallsmead ES		
Test Period: 12/06/22 - 12/09/22		
Kit Number	Room/Area	Result
	N/A	

Summary of Missing, Compromised and >/= 4 piC/L Tests		
Fallsmead ES		
Test Period: 12/06/22 - 12/09/22		
Kit Number	Room/Area	Result
	N/A	

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

December 14, 2022 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FALLSMEAD ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11287625	APR	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287628	APR	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287627	APR	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287608	ASSISTANT PRINCIPAL	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287643	B1	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287641	B2	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287642	B3	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287636	B4	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287635	B5	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287606	B6	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287621	B7	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287634	B7	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287658	BUILDING SERVICES	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287660	COUNSELOR	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287609	FINANCIAL	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287624	G1	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-13
11287623	G2	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287619	G3	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287612	G4	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287611	G5	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287620	G6	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-13
11287626	G7	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287613	GYM	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287629	GYM OFFICE	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287614	GYM.	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287602	HEALTH	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287622	KITCHEN OFFICE	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287633	KITCHEN OFFICE	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287603	MAIL	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287604	MAIN OFFICE	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287616	MEDIA	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	0.7 ± 0.3	2022-12-13
11287617	MEDIA	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287607	MEDIA WORKROOM	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287639	N13	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287665	N14	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-13
11287640	N17	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.5 ± 0.3	2022-12-13
11287645	N19	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.7 ± 0.3	2022-12-13

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

December 14, 2022 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FALLSMEAD ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11287637	N2	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-13
11287646	N21	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-13
11287666	N22	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287647	N24	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.5 ± 0.3	2022-12-13
11287655	N25	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287648	N27	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	1.0 ± 0.3	2022-12-13
11287632	N4	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-13
11287638	N4	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287657	N5	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287615	PRICIPAL	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287610	STAFF LOUNGE	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	0.5 ± 0.3	2022-12-13
11287653	T1	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287654	T1	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.7 ± 0.3	2022-12-13
11287667	T2	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287656	T2	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287663	T3	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287672	T4	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287671	T5	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287664	T6	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287673	T7	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287601	TV	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287618	WORKROOM	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287605	WORKROOM	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287651	Y1	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287630	Y3	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287644	Y3	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287649	Y4	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287650	Y5	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.5 ± 0.3	2022-12-13
11287631	Y8	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13
11287652	YSM	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-13
11287659	YSM	2022-12-06 @ 12:00 pm	2022-12-09 @ 10:00 am	< 0.3	2022-12-13

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 KC I TECHNOLOGIES, INC Job Number 208343

NOMINAL Conditions: Radon Conc 34.7 pCi/L Rel. Hum 49.4 % Temp. 69.6 F

Date Start: 12/24/22 Date Stop: 12/27/22	Date Start: _____ Date Stop: _____
Time Start: 0810 Time Stop: 0810	Time Start: _____ Time Stop: _____
Device No.'s: (5) CHAR BAGS -	Device No.'s: _____
11285109, 11285110, 11285101	_____
THRU 11285103	_____
BY CRF	_____
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 29, 2022 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OFFICE
MA

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within ± 25% of the chamber's reference value (34.7 pCi/L).

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285110	SK1	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	31.7 ± 2.5	2022-12-29
11285101	SK2	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	30.1 ± 2.4	2022-12-29
11285103	SK3	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	34.0 ± 2.7	2022-12-29
11285102	SK4	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	30.9 ± 2.5	2022-12-29
11285109	SK5	2022-12-24 @ 8:00 am	2022-12-27 @ 8:00 am	32.0 ± 2.6	2022-12-29

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 – April 2022 Schools – Retesting

Name of Schools:

1. Olney ES
2. Greenwood ES
3. John Poole MS
4. Monocacy ES
5. Beall ES
6. Fallsmead ES
7. Lakewood ES

	Date	Initials
Radon Test Kits Deployed	12/06/2022	BMM
Radon Test Kits Collected	12/09/2022	BMM
Radon Test Kits Shipped to Lab*	12/09/2022	BMM
Radon Test Kits Received by Lab*	12/13/2022	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	Fallsmead Elementary 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; no further action

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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: Fallsmead Elementary School
1800 Green place Terrace
Rockville, Maryland 20850

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 Fallsmead Elementary School, located at 1800 Green place Terrace in Rockville, Maryland 20850 (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 3 (3) 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		
Fallsmead Elementary School		
Test Period: 02/11/20-02/14/20		
Kit Number	Room / Area	Result
9348548	GYM	< 0.3
9348550	GYM	< 0.3
9348502	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Fallsmead Elementary 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:
FALLSMEAD ES RT 233

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9348548	GYM	2020-02-11 @ 11:00 am	2020-02-14 @ 11:00 am	< 0.3	2020-02-18
9348550	GYM	2020-02-11 @ 11:00 am	2020-02-14 @ 11:00 am	< 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 Cell	
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	Fallsmead Elementary 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	56
# Rooms ≥4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.3 pCi/L

Project Status

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

KCI TECHNOLOGIES
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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: Fallsmead Elementary School
1800 Green place Terrace
Rockville, Maryland 20850

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 Fallsmead Elementary School, located at 1800 Green place Terrace in Rockville, Maryland 20850 (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-one (71) 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		
Fallsmead Elementary School		
Test Period: 12/17/2019-12/20/2019		
Kit Number	Room / Area	Result
9339550	G1	2.3
9339552	G2	1.7
9339553	G2	1.9
9339554	G3	1.6
9339555	G4	1.7
9339556	Y5	2
9339557	GYM OFFICE	0.5
9339558	CAFETERIA	0.6
9339559	CAFETERIA	0.5
9339560	COUNSELOR	1
9339561	Y1	1.7
9339562	Y1	1.5
9339563	B6	< 0.3
9339564	Y2	1.5
9339565	Y3	1.4
9339566	Y4	1.1
9339567	CAFETERIA	< 0.3
9339568	G5	2
9339569	CAFETERIA	0.9
9339570	G6	1.9
9339571	KITCHEN OFFICE	0.9
9339572	B3	0.7
9339573	B2	< 0.3
9339574	B1	0.6
9339575	B4	0.6
9339576	B5	0.7
9339577	G7	1.4
9339578	B7	< 0.3
9339579	Y6	1.3
9339580	N21	0.6
9339581	N14	0.9
9339582	N24	0.6
9339583	GYM	0.8
9339584	T1	0.6
9339585	CAFETERIA	0.5
9339586	N17	< 0.3
9339587	N4	0.8
9339588	Y8	1.3
9339589	N25	1.2
9339590	N27	1.1
9339591	N19	0.8
9339592	N5	1.3
9339593	Y8	< 0.3
9339594	N22	< 0.3
9339595	N14	< 0.3
9339596	N2	< 0.3
9339597	N13	0.5
9339598	GYM	< 0.3
9339599	GYM	MISSING
9339600	Y8	0.9

9339671	T2	< 0.3
9339672	MAIL ROOM	0.6
9339673	T5	0.6
9339674	MAIN OFFICE	0.5
9339678	T4	0.8
9339679	T3	0.7
9339681	ASSISTANT PRINCIPAL	0.6
9339682	T2	< 0.3
9339685	ADMINISTRATIVE SECRETARY	0.7
9339686	WORKROOM	0.8
9339687	MEDIA CENTER	0.8
9339689	MEDIA CENTER	0.5
9339690	TV STUDIO	0.8
9339691	T6	< 0.3
9339692	PRINCIPAL	< 0.3
9339693	WORKROOM	< 0.3
9339694	T7	< 0.3
9339695	T2	< 0.3
9339696	MEDIA WORKROOM	0.6
9339697	STAFF LOUNGE	0.6
9339698	HEALTH ROOM	< 0.3
9340660	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Fallsmead Elementary School			
Test Period: 12/16/2019-12/19/2019			
Kit Number	QC Type	Room / Area	Result
9339686	D	WORKROOM	0.8
9339671	D	T2	<0.3
9339682	FB	T2	<0.3
9339595	D	N14	<0.3
9339588	D	Y8	1.3
9339593	FB	Y8	<0.3
9339561	D	Y1	1.7
9339569	D	CAFETERIA	0.9
9339567	FB	CAFETERIA	<0.3
9339552	D	G2	1.7
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		
Fallsmead Elementary School		
Test Period: 12/17/2019 - 12/20/2019		
Kit Number	Room/Area	Result
	NA	

Summary of Missing, Compromised and >/= 4 piC/L Tests		
Fallsmead Elementary School		
Test Period: 12/17/2019-12/20/2019		
Kit Number	Room/Area	Result
9339599	*Gym	Missing

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

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

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9339685	ADMINISTRATIVE SECRETARY	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.7 ± 0.4	2019-12-24
9339681	ASSISTANT PRINCIPAL	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.6 ± 0.4	2019-12-24
9339574	B1	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	0.6 ± 0.4	2019-12-24
9339573	B2	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	< 0.3	2019-12-24
9339572	B3	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	0.7 ± 0.4	2019-12-24
9339575	B4	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	0.6 ± 0.4	2019-12-24
9339576	B5	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	0.7 ± 0.3	2019-12-24
9339563	B6	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	< 0.3	2019-12-24
9339578	B7	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	< 0.3	2019-12-24
9339567	CAFETERIA	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9339585	CAFETERIA	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.5 ± 0.4	2019-12-24
9339558	CAFETERIA	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.6 ± 0.4	2019-12-24
9339559	CAFETERIA	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.5 ± 0.3	2019-12-24
9339569	CAFETERIA	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.9 ± 0.4	2019-12-24
9339560	COUNSELOR	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	1.0 ± 0.4	2019-12-24
9339550	G1	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	2.3 ± 0.4	2019-12-24
9339552	G2	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.7 ± 0.4	2019-12-24
9339553	G2	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.9 ± 0.4	2019-12-24
9339554	G3	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.6 ± 0.3	2019-12-24
9339555	G4	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.7 ± 0.4	2019-12-24
9339568	G5	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	2.0 ± 0.4	2019-12-24
9339570	G6	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.9 ± 0.4	2019-12-24
9339577	G7	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	1.4 ± 0.4	2019-12-24
9339583	GYM	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	0.8 ± 0.4	2019-12-24
9339598	GYM	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	< 0.3	2019-12-24
9339557	GYM OFFICE	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	0.5 ± 0.4	2019-12-24
9339698	HEALTH ROOM	2019-12-17 @ 12:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9339571	KITCHEN OFFICE	2019-12-17 @ 2:00 pm	2019-12-20 @ 12:00 pm	0.9 ± 0.4	2019-12-24
9339672	MAIL ROOM	2019-12-17 @ 12:00 pm	2019-12-20 @ 11:00 am	0.6 ± 0.4	2019-12-24
9339674	MAIN OFFICE	2019-12-17 @ 12:00 pm	2019-12-20 @ 11:00 am	0.5 ± 0.4	2019-12-24
9339689	MEDIA CENTER	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.5 ± 0.3	2019-12-24
9339687	MEDIA CENTER	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.8 ± 0.4	2019-12-24
9339696	MEDIA WORKROOM	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.6 ± 0.3	2019-12-24
9339597	N13	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	0.5 ± 0.4	2019-12-24
9339595	N14	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9339581	N14	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	0.9 ± 0.4	2019-12-24
9339586	N17	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24

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

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9339591	N19	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	0.8 ± 0.4	2019-12-24
9339596	N2	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	< 0.3	2019-12-24
9339580	N21	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	0.6 ± 0.4	2019-12-24
9339594	N22	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9339582	N24	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	0.6 ± 0.3	2019-12-24
9339589	N25	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	1.2 ± 0.4	2019-12-24
9339590	N27	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	1.1 ± 0.3	2019-12-24
9339587	N4	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	0.8 ± 0.4	2019-12-24
9339592	N5	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	1.3 ± 0.4	2019-12-24
9339692	PRINCIPAL	2019-12-17 @ 12:00 pm	2019-12-20 @ 11:00 am	< 0.3	2019-12-24
9339697	STAFF LOUNGE	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.6 ± 0.4	2019-12-24
9339584	T1	2019-12-17 @ 1:00 pm	2019-12-20 @ 12:00 pm	0.6 ± 0.4	2019-12-24
9339682	T2	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9339695	T2	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9339671	T2	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9339679	T3	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.7 ± 0.4	2019-12-24
9339678	T4	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.8 ± 0.4	2019-12-24
9339673	T5	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.6 ± 0.4	2019-12-24
9339691	T6	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9339694	T7	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9339690	TV STUDIO	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.8 ± 0.3	2019-12-24
9339686	WORKROOM	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	0.8 ± 0.3	2019-12-24
9339693	WORKROOM	2019-12-17 @ 12:00 pm	2019-12-20 @ 12:00 pm	< 0.3	2019-12-24
9339562	Y1	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	1.5 ± 0.4	2019-12-24
9339561	Y1	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	1.7 ± 0.4	2019-12-24
9339564	Y2	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	1.5 ± 0.4	2019-12-24
9339565	Y3	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	1.4 ± 0.4	2019-12-24
9339566	Y4	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	1.1 ± 0.4	2019-12-24
9339556	Y5	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	2.0 ± 0.4	2019-12-24
9339579	Y6	2019-12-17 @ 2:00 pm	2019-12-20 @ 1:00 pm	1.3 ± 0.4	2019-12-24
9339600	Y8	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	0.9 ± 0.4	2019-12-24
9339588	Y8	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	1.3 ± 0.4	2019-12-24
9339593	Y8	2019-12-17 @ 1:00 pm	2019-12-20 @ 1:00 pm	< 0.3	2019-12-24

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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

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

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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
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

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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

RADON SCREENING SURVEY – FOLLOW-UP FALLSMEAD ELEMENTARY SCHOOL

1800 Greenplace Terr., Rockville, Maryland 20850

EXECUTIVE SUMMARY

Date of Test Report:	3/7/18
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	11
# Rooms ≥ 4.0 pCi/L:	0
Low Value:	<0.3
High Value:	2.5
Confirmed Rooms ≥ 4.0 pCi/L US EPA Action Level	0

Summary of Sampling Events ≥ 4.0 pCi/L

Room	Result (pCi/L) 1/31/18	Result (pCi/L) 3/7/18	Average Result (pCi/L)
Y6	4.7	2.5	3.6

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MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Fallsmead Elementary School
Date of Report	March 7, 2018
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	11
# Rooms ≥4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.5 pCi/L

Project Status

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

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March 7, 2018

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

Re: Radon Testing Services

KCI Job #1214634188

Location: Fallsmead Elementary School
1800 Greenplace Terr.
Rockville, Maryland 20850

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 Fallsmead Elementary School, located at 1800 Greenplace Terr. in Rockville, Maryland 20850 (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 February 12, 2018 and deployed fourteen (14) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

1. Rooms not successfully tested,
2. Rooms with elevated November 2017 results (i.e. ≥3.5 piC/L).

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

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

KCI returned to the site on February 15, 2018 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures ranged from the mid-20s to upper 40s and high temperatures ranged from the high-30s to the high-60s. Maximum sustained winds ranged from 10-15 miles per hour. Average humidity was around 69%. 0.05 Inches of precipitation was recorded during the testing period.

RESULTS

The sampling locations and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

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

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

Sincerely,

Radon Measurement Specialist
KCI Technologies, Inc.

Attachments:

B - Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Table 1- Radon Testing Results		
Fallsmeade Elementary School		
Test Period: 02/12/18-02/15/18		
Kit Number	**Room / Area**	**Result**
7984238	APR	1.2
7984248	APR	1.5
7984243	B4	1.4
7984249	BS/Y6	2.5
7984236	G4	2.5
7984247	* GYM (Missing)	-
7984244	KITCHEN	1.3
7984246	KITCHEN OFFICE	1.3
7984245	MAIL	0.9
7984239	SECRETARY	0.9
7984240	T4	0.7

Table Note:
* Missing or Compromised Sample

Table 2- Radon Testing Results		
Fallsmeade Elementary School		
Test Period: 02/12/18-02/15/18		
Kit Number	**QC Type**	**Result**
7984242	D (BS/Y6)	2.5
7984241	D (T4)	0.8
7984237	FB (G4)	< 0.3

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 28, 2018 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FALLSMEADE ELEMENTARY SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7984238	APR	2018-02-12 @ 9:00 am	2018-02-15 @ 10:00 am	1.2 ± 0.4	2018-02-19
7984248	APR	2018-02-12 @ 9:00 am	2018-02-15 @ 10:00 am	1.5 ± 0.4	2018-02-19
7984243	B4	2018-02-12 @ 9:00 am	2018-02-15 @ 10:00 am	1.4 ± 0.4	2018-02-19
7984249	BS/Y6	2018-02-12 @ 9:00 am	2018-02-15 @ 10:00 am	2.5 ± 0.4	2018-02-19
7984242	BS/Y6	2018-02-12 @ 9:00 am	2018-02-15 @ 10:00 am	2.5 ± 0.4	2018-02-19
7984236	G4	2018-02-12 @ 10:00 am	2018-02-15 @ 10:00 am	2.5 ± 0.4	2018-02-19
7984237	G4	2018-02-12 @ 10:00 am	2018-02-15 @ 10:00 am	< 0.3	2018-02-19
7984247	GYM	@	@		
7984244	KITCHEN	2018-02-12 @ 9:00 am	2018-02-15 @ 10:00 am	1.3 ± 0.4	2018-02-19
7984246	KITCHEN OFFICE	2018-02-12 @ 9:00 am	2018-02-15 @ 10:00 am	1.3 ± 0.4	2018-02-19
7984245	MAIL	2018-02-12 @ 9:00 am	2018-02-15 @ 10:00 am	0.9 ± 0.4	2018-02-19
7984239	SECRETARY	2018-02-12 @ 9:00 am	2018-02-15 @ 10:00 am	0.9 ± 0.4	2018-02-19
7984240	T4	2018-02-12 @ 10:00 am	2018-02-15 @ 10:00 am	0.7 ± 0.3	2018-02-19
7984241	T4	2018-02-12 @ 10:00 am	2018-02-15 @ 10:00 am	0.8 ± 0.4	2018-02-19

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

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Radon Test Kit Chain of Custody

Project Name: MCPS Radon

Names of Schools:

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

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

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

February 27, 2018 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
OFFICE BLANKS

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

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February 27, 2018 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRANSIT BLANKS

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

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February 28, 2018 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 183530

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

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

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

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MCPS RADON TESTING - EXECUTIVE SUMMARY

Site Name	Fallsmead Elementary School
Date of Report	January 31, 2018
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	55
# Rooms ≥4.0 pCi/L	1
Lowest Value	< 0.3 pCi/L
Highest Value	4.7 pCi/L

Rooms with results ≥ 4.0 pCi/L: Y6 (4.7 pCi/L)

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

Missing or compromised samples to be sampled.

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January 31, 2018

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

Re: Radon Testing Services

KCI Job #1214694182

Location: Fallsmead Elementary School
1800 Greenplace Terr.
Rockville, Maryland 20850

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 Fallsmead Elementary School, located at 1800 Greenplace Terr. in Rockville, Maryland 20850 (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 November 28, 2017 and deployed sixty-seven (67) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Appendix A of this report.

As a quality control measure, KCI included duplicate samples, field blanks, lab transit blanks, and office blanks in accordance with AARST recommendations. In addition, KCI submitted six (6) test kits to

Bowser-Morner, Inc. as spike samples. The spiked tests were exposed to a known radon concentration by Bowser-Morner, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on December 1, 2017 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 30s and high temperatures ranged from the low-50s to mid-60s. Maximum sustained winds ranged from 8-15 miles per hour. Average humidity was around 65%. 0.02 Inches of precipitation was recorded during the testing period.

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

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

RESULTS

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The quality control sample locations and analytical results are listed on Table 2 (Attachment B). Missing/ compromised tests, missed rooms, and locked rooms are listed on Table 3 (Attachment B). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 piC/L	Y6	4.7
≤4.0 piC/L	See Attachment B	See Attachment B

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

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 Moulsdale, CHMM
Radon Measurement Specialist
KCI Technologies, Inc.

Attachments:

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Radon Testing Results		
Fallsmead Elementary School		
Test Period: 11/28/17-12/01/17		
Kit Number	**Room / Area**	**Result**
7978333	AP	0.9
7976866	* APR (Missing)	-
7978306	* APR (Tampered)	0.7
7976889	B1	0.8
7976900	B2	0.6
7976887	B3	0.7
7978329	* B4 (Tampered)	0.5
7978335	B5	0.7
7978334	B6	0.9
7976888	B7	0.6
7976893	COUNSEL	1.2
7978304	G1	1.4
7978326	G2	1.7
7978328	G3	2.3
7978305	* G4 (Tampered)	1.8
7978307	G5	1.7
7978308	G6	1.4
7978309	G7	1.2
7976881	GYM	0.9
7976896	* GYM (Tampered)	0.6
7976883	GYM OFFICE	0.7
7978337	HEALTH	0.6
7978332	LOUNGE	0.7
7978325	* MAIL (Missing)	-
7978324	MAIN OFFICE	0.5
7978338	MEDIA	0.9
7978339	MEDIA	0.7
7978302	MEDIA BACK	1.2
7978301	MEDIA VIDEO	0.8
7978303	MI	0.6
7976878	N13	1.0
7976891	N14	0.7
7976884	N17	0.9
7976886	N19	0.8
7976882	N2	1.3
7976854	N21	0.9
7976853	N22	1.0
7976852	N24	1.4
7976847	N25	1.8
7976851	N27	1.6
7976899	N4	1.0
7976897	N5	1.0
7978327	PRINCIPAL	0.8
7978331	* SECRETARY (Tampered)	< 0.3
7976846	T1	0.6
7978311	T2	< 0.3

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Fallsmead Elementary School		
Test Period: 11/28/17-12/01/17		
Kit Number	**Room / Area**	**Result**
7978312	T3	< 0.3
7976836	* T4 (Tampered)	< 0.3
7976845	T5	< 0.3
7976842	T6	0.6
7976619	T7	0.5
7976880	Y	1.3
7976898	Y1	1.6
7976875	Y2	1.6
7976895	Y3	2.0
7976894	Y4	0.9
7976892	Y5	1.0
7978336	Y6	4.7

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Fallsmead Elementary School		
Test Period: 11/28/17-12/01/17		
Kit Number	**QC Type**	**Result**
7978340	D (B7)	0.7
7978310	D (G7)	1.2
7978330	D (MEDIA BACK)	< 0.3
7976885	D (N17)	0.8
7978316	D (T2)	0.6
7976879	D (Y1)	1.5
7976890	FB (COUNSEL)	< 0.3
7978317	FB (T3)	< 0.3
7975637	OB (OB)	< 0.3

Table Note:
* Missing or Compromised Sample

Summary of Missed Locations		
Fallsmead Elementary School		
Test Period: 11/28/17-12/02/17		
Kit Number	**Room / Area**	**Result**
-	BS (Missed location)	-
-	KITCHEN (Missed location)	-
-	KITCHEN OFFICE (Missed location)	-

Summary of Missing, Compromised and ≥4 piC/L Tests			
Fallsmead Elementary School			
Test Period: 11/28/17-12/01/17			
Kit Number		**Room / Area**	**Result**
7976866	*	APR (Missing)	-
7978306	*	APR (Tampered)	0.7
7978329	*	B4 (Tampered)	0.5
7978305	*	G4 (Tampered)	1.8
7976896	*	GYM (Tampered)	0.6
7978325	*	MAIL (Missing)	-
7978331	*	SECRETARY (Tampered)	< 0.3
7976836	*	T4 (Tampered)	< 0.3
7978336		Y6	4.7

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

December 19, 2017 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FALLSMEAD ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7978333	AP	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-04
7978306	APR	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-05
7976889	B1	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-05
7976900	B2	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-05
7976887	B3	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-05
7978329	B4	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.5 ± 0.3	2017-12-05
7978335	B5	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-05
7978334	B6	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-05
7978340	B7	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-05
7976888	B7	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-05
7976893	COUNSEL	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.2 ± 0.3	2017-12-04
7976890	COUNSEL	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978304	G1	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.4 ± 0.3	2017-12-04
7978326	G2	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.7 ± 0.3	2017-12-04
7978328	G3	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	2.3 ± 0.3	2017-12-04
7978305	G4	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.8 ± 0.3	2017-12-05
7978307	G5	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.7 ± 0.3	2017-12-05
7978308	G6	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.4 ± 0.3	2017-12-05
7978310	G7	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.2 ± 0.3	2017-12-04
7978309	G7	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.2 ± 0.3	2017-12-05
7976896	GYM	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7976881	GYM	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-04
7976883	GYM OFFICE	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7978337	HEALTH	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7978332	LOUNGE	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7978324	MAIN OFFICE	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.5 ± 0.3	2017-12-04
7978338	MEDIA	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-04
7978339	MEDIA	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7978330	MEDIA BACK	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978302	MEDIA BACK	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.2 ± 0.3	2017-12-04
7978301	MEDIA VIDEO	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-04
7978303	MI	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7976878	N13	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.0 ± 0.3	2017-12-04
7976891	N14	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.7 ± 0.3	2017-12-04
7976884	N17	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-04
7976885	N17	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-04
7976886	N19	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-04

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

December 19, 2017 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FALLSMEAD ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7976882	N2	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.3 ± 0.3	2017-12-05
7976854	N21	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-05
7976853	N22	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.0 ± 0.3	2017-12-05
7976852	N24	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.4 ± 0.3	2017-12-05
7976847	N25	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.8 ± 0.3	2017-12-05
7976851	N27	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.6 ± 0.3	2017-12-05
7976899	N4	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.0 ± 0.3	2017-12-04
7976897	N5	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.0 ± 0.3	2017-12-04
7975637	OB	2017-11-28 @ 12:00 pm	2017-12-01 @ 12:00 pm	< 0.3	2017-12-04
7978327	PRINCIPAL	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	0.8 ± 0.3	2017-12-04
7978331	SECRETARY	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7976846	T1	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7978316	T2	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-04
7978311	T2	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	< 0.3	2017-12-05
7978317	T3	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7978312	T3	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	< 0.3	2017-12-05
7976836	T4	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	< 0.3	2017-12-04
7976845	T5	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	< 0.3	2017-12-05
7976842	T6	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.6 ± 0.3	2017-12-05
7976619	T7	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.5 ± 0.3	2017-12-04
7976880	Y	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.3 ± 0.3	2017-12-04
7976898	Y1	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.6 ± 0.3	2017-12-04
7976879	Y1	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.5 ± 0.3	2017-12-04
7976875	Y2	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	1.6 ± 0.3	2017-12-04
7976895	Y3	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	2.0 ± 0.3	2017-12-04
7976894	Y4	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	0.9 ± 0.3	2017-12-04
7976892	Y5	2017-11-28 @ 1:00 pm	2017-12-01 @ 11:00 am	1.0 ± 0.3	2017-12-04
7978336	Y6	2017-11-28 @ 2:00 pm	2017-12-01 @ 11:00 am	4.7 ± 0.4	2017-12-05

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

December 21, 2017 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FALLSMEAD ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7976866	APR	@	@		
7978325	MAIL	@	@		

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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

Names of Schools:

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

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

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

December 19, 2017 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRANSIT 1
NONE

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

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

December 19, 2017 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 182393

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

Date Start: 12/1/17 Date Stop: 12/4/17	Date Start: _____ Date Stop: _____
Time Start: 1049 Time Stop: 1049	Time Start: _____ Time Stop: _____
Device No.'s: (6) Chan. Bags.	Device No.'s: _____
7975075, 7975064, 7975063,	_____
7975065, 7975069, 7975070	_____
F4 Right	_____
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____
_____	_____
_____	_____
_____	_____
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____
_____	_____
_____	_____
_____	_____

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

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: Fallsmead Elementary School

Date of Test Report:	2/04/2016 (Rev.2)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	55
# 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.

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February 4, 2016 (Rev 2)

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

Re: **Radon Testing Services**
KCI Job # 12146341.24

Location: Fallsmead Elementary School
1800 Greenplace Terrace
Rockville, MD 20850

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 Fallsmead Elementary School, located at 1800 Greenplace Terrace in Rockville, Maryland 20850 (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 January 11, 2016 and deployed sixty-nine (69) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on January 14, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages ≤ 65° 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 piC/L	none	n/a
<4.0 piC/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,

H. Allen Bennett
Certified Industrial Hygienist
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		
Fallsmead Elementary School		
Test Period: 01/11/16-01/14/16		
Kit Number	**Room / Area**	**Result**
7722267	AP	< 0.3
7722228	APR	0.9
7722266	APR	1
7722261	B1	< 0.3
7722262	B2	< 0.3
7722229	B3	< 0.3
7722230	B4	0.7
7722231	B5	< 0.3
7722232	B6	< 0.3
7722263	B7	< 0.3
7722281	BS	1.7
7722290	COUNSEL	1.1
7722255	G1	1.7
7722256	G2	1.3
7722258	G3	1.8
7722260	G4	1.9
7722287	G5	2.1
7722259	G6	1.8
7722265	G7	2.1
7722271	GYM	0.8
7722277	GYM	0.9
7722278	GYM	< 0.3
7722273	GYM OFFICE	< 0.3
7722204	HEALTH	< 0.3
7722286	LOUNGE	< 0.3
7722236	MAIL	0.8
7722201	MAIN OFFICE	1.2
7722252	MEDIA	0.9
7722275	MEDIA	0.6
7722279	MEDIA BACK	0.8
7722282	MEDIA VIDEO	< 0.3
7722254	MI	0.8
7722296	N13	0.7
7722268	N14	0.9
7722272	N17	< 0.3
7722300	N19	0.6
7722294	N2	1
7722246	N21	0.8
7722247	N24	0.8
7722270	N25	1.1
7722248	N27	1.8
7722269	N2W	1
7722295	N4	0.7
7722291	N5	0.7
7722237	PRINCIPAL	0.6
7722235	SECRETARY	0.9

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Fallsmead Elementary School		
Test Period: 01/11/16-01/14/16		
Kit Number	**Room / Area**	**Result**
7722249	T1	< 0.3
7722250	T2	0.6
7722280	T3	< 0.3
7722284	T4	< 0.3
7722251	T5	0.6
7722253	T6	< 0.3
7722285	T7	< 0.3
7722293	Y	1.1
7722297	Y1	1.2
7722298	Y2	1.2
7722245	Y3	0.8
7722299	Y4	1
7722289	Y5	0.7

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Fallsmead Elementary School		
Test Period: 01/11/16-01/14/16		
Kit Number	**QC Type**	**Result**
7722233	D (B6)	< 0.3
7722257	D (G3)	1.7
7722205	D (HEALTH)	1
7722283	D (MEDIA)	0.7
7722276	D (N25)	1
7722292	D (N5)	1.3
7722274	D (T7)	< 0.3
7722264	FB (G7)	< 0.3
7722288	FB (N5)	< 0.3
7719079	OB (0)	< 0.3

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 1, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

FALLSMEAD ELEMENTARY SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719079	0	2016-01-11 @ 5:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7722267	AP	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7722266	APR	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	1.0 ± 0.4	2016-01-20
7722228	APR	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	0.9 ± 0.4	2016-01-20
7722261	B1	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722262	B2	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722229	B3	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722230	B4	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	0.7 ± 0.4	2016-01-20
7722231	B5	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722232	B6	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7722233	B6	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7722263	B7	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7722281	BS	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	1.7 ± 0.5	2016-01-20
7722290	COUNSEL	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	1.1 ± 0.5	2016-01-20
7722255	G1	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	1.7 ± 0.3	2016-01-18
7722256	G2	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	1.3 ± 0.3	2016-01-18
7722257	G3	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	1.7 ± 0.5	2016-01-20
7722258	G3	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	1.8 ± 0.5	2016-01-20
7722260	G4	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	1.9 ± 0.5	2016-01-20
7722287	G5	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	2.1 ± 0.5	2016-01-20
7722259	G6	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	1.8 ± 0.5	2016-01-20
7722265	G7	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	2.1 ± 0.4	2016-01-18
7722264	G7	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722271	GTM	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	0.8 ± 0.3	2016-01-18
7722277	GYM	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	0.9 ± 0.3	2016-01-18
7722278	GYM	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7722273	GYM	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722204	HEALTH	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722205	HEALTH	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	1.0 ± 0.5	2016-01-20
7722286	LOUNGE	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722236	MAIL	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	0.8 ± 0.4	2016-01-20
7722201	MAIN OFFICE	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	1.2 ± 0.5	2016-01-20
7722275	MEDIA	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	0.6 ± 0.3	2016-01-18
7722282	MEDIA	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7722283	MEDIA	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	0.7 ± 0.3	2016-01-18
7722279	MEDIA	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	0.8 ± 0.4	2016-01-20
7722252	MEDIA	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	0.9 ± 0.4	2016-01-20

February 1, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

FALLSMEAD ELEMENTARY SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7722254	MI	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	0.8 ± 0.4	2016-01-20
7722296	N13	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.7 ± 0.3	2016-01-18
7722268	N14	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.9 ± 0.4	2016-01-20
7722272	N17	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-20
7722300	N19	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.6 ± 0.4	2016-01-20
7722294	N2	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	1.0 ± 0.4	2016-01-20
7722246	N21	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.8 ± 0.4	2016-01-20
7722247	N24	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.8 ± 0.4	2016-01-20
7722270	N25	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	1.1 ± 0.4	2016-01-20
7722276	N25	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	1.0 ± 0.4	2016-01-20
7722248	N27	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	1.8 ± 0.5	2016-01-20
7722269	N2W	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	1.0 ± 0.5	2016-01-20
7722295	N4	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.7 ± 0.4	2016-01-20
7722291	N5	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.7 ± 0.3	2016-01-18
7722288	N5	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-20
7722292	N5	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	1.3 ± 0.5	2016-01-20
7722237	PRINCIPAL	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	0.6 ± 0.4	2016-01-20
7722235	SECRETARY	2016-01-11 @ 4:00 pm	2016-01-14 @ 11:00 am	0.9 ± 0.4	2016-01-20
7722249	T1	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722250	T2	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	0.6 ± 0.3	2016-01-18
7722280	T3	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722284	T4	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7722251	T5	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	0.6 ± 0.4	2016-01-20
7722253	T6	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7722274	T7	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722285	T7	2016-01-11 @ 3:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-20
7722293	Y	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	1.1 ± 0.5	2016-01-20
7722297	Y1	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	1.2 ± 0.3	2016-01-18
7722298	Y2	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	1.2 ± 0.5	2016-01-20
7722245	Y3	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	0.8 ± 0.5	2016-01-20
7722299	Y4	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	1.0 ± 0.3	2016-01-18
7722289	Y5	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.7 ± 0.4	2016-01-20

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

February 2, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

MCPS PHASE 5 & 6
TRANSIT BLANKS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7722194	1	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718494	10	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718475	11	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718495	12	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718496	13	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718497	14	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718498	15	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718499	16	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718500	17	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718296	18	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718295	19	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722195	2	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716789	20	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716785	21	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7716791	22	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716786	23	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716793	24	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718274	25	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7716792	26	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718294	27	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718293	28	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718292	29	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722197	3	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718290	30	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722198	4	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722199	5	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7722211	6	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718491	7	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718476	8	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7718479	9	2016-01-19 @ 12:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27

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

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, 7706211, 7706366, 7706380, 7706381 F3 Left	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: _____
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

Chain of Custody

Project Name: MCPS Radon Phase V

Name of Schools:

1. Arcola ES
2. Argyle ES
3. Bells Mill ES
4. Bethesda ES
5. Brookhaven ES
6. Burning Tree ES
7. Capt. James Daly ES
8. Carderock Springs ES
9. Cashell ES
10. Clearspring ES
11. Clopper Mill ES
12. College Gardens ES
13. Eastern MS
14. Fallsmead ES
15. Fields Road ES
16. Flower Hill ES
17. Flower Valley ES
18. Fox Chapel ES
19. Glen Haven ES
20. James Hubert Blake HS
21. Parkland Magnet MS
22. Rachel Carson ES
23. Roberto Clemente MS
24. Rock Creek ES
25. Rockview ES
26. Rockville HS
27. Rocky Hill MS
28. Seneca Valley HS
29. Westover ES
30. William Farquar MS

	Date	Initials
Radon Test Kits Deployed	1/11/16	JM
Radon Test Kits Sampled	1/14/16	JM
Radon Test Kits Shipped to Lab*	1/15/16	JM
Radon Test Kits Received by Lab*	1/18/16	JM

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

M. A. CECIL & ASSOCIATES, INC.
4475 Shannon Way, Port Republic, Maryland 20676 (301) 855-7710
INDUSTRIAL HYGIENE AND ENVIRONMENTAL HEALTH

December 9, 2015

Mr. Sean Yarup
Montgomery County Public Schools
16651 Crabbs Branch Way
Rockville, Maryland 20855

Re: Radon Evaluation- Fallsmead Elementary School

Dear Mr. Yarup:

Environmental radon testing (part 2) has been completed at Fallsmead Elementary School.

Twenty-one charcoal canisters were placed in previous sampled rooms (2012). The canisters were placed on December 2, 2015 and retrieved on December 4, 2015.

The detected radon concentrations were less than the EPA recommended level of 4.0 pico curries per liter (pCi/l). Test locations and results are summarized in the attached table.

Should you have any questions concerning this report please do not hesitate to contact us.

Sincerely,

Michael A. Cecil, CIH

Fallsmead Elementary School
Environmental Radon Results
August 2012/December 2015

Room	Detected Radon Concentration (pCi/l) August 2012	Detected Radon Concentration (pCi/l) December 2015
Gym	3.4	1.5
Staff lounge	2.5	2.1
APR	1.9	1.4
Y1	1.9	0.8
Y2	NA	1.5
Y3	1.9	1.5
Y4	0.9	1.0
Y5	1.7	1.3
N2	3.0	1.4
N4	2.9	1.9
N5	0.9	0.7
N17A	3.0	1.7
N17B (Quality control)	NA	1.5
G1A	2.6	1.6
G1B (Quality control)	NA	1.8
G2	3.3	1.4
G3	2.9	1.3
G4	3.1	1.0
G5	3.3	1.2
G6	2.7	1.2
G7	2.6	1.2

M. A. CECIL & ASSOCIATES, INC.

4475 Shannon Way, Port Republic, Maryland 20676 (301) 855-7710
INDUSTRIAL HYGIENE AND ENVIRONMENTAL HEALTH

December 7, 2015

Mr. Sean Yarup
Montgomery County Public Schools
16651 Crabbs Branch Way
Rockville, Maryland 20855

Re: Radon Evaluation- Fallsmead Elementary School

Dear Mr. Yarup:

Environmental radon testing (part 1) has been completed at Fallsmead Elementary School.

Twenty-four charcoal canisters were placed in rooms as a result of a previous survey conducted in 2012. The canisters were placed on November 30, 2015 and retrieved on December 2, 2015.

The detected radon concentrations were less and greater than the EPA recommended level of 4.0 pico curries per liter (pCi/l) during both sampling periods. Averaging the detected concentrations per location, fourteen rooms were above the EPA recommended level. Test locations and results are summarized in the attached table.

Should you have any questions concerning this report please do not hesitate to contact us.

Sincerely,

Michael A. Cecil, CIH

Fallsmead Elementary School
Environmental Radon Results
August 2012/December 2015

Room	Detected Radon Concentration (pCi/l) August 2012	Detected Radon Concentration (pCi/l) December 2015	Average Radon Concentration
B1	3.9	2.2	3.1
B2	3.8	4.0	3.9
B3	4.6	3.4	4.0
B4	3.8	3.5	3.7
B5	4.3	4.1	4.2
B6	3.8	4.1	4.0
B7	Missing at retrieval	3.4	3.4
N14	3.8	3.4	3.6
N19	4.2	4.8	4.5
N21	4.0	3.6	3.8
N22A	5.1	4.4	4.8
N22B (Quality control)	NA	4.3	NA
N24	5.1	4.2	4.6
N25	5.3	4.9	5.2
T1	5.1	5.4	5.3
T2	4.6	4.4	4.5
T3	4.5	3.7	4.1
T4	4.7	3.5	4.1
T5A	4.8	4.1	4.5
T5B (Quality control)	NA	3.8	NA
T6	4.8	4.7	4.8
T7	4.9/4.9 (QC)	3.7	4.3
IMC	4.0	2.8	3.4
Main Office	3.9	3.5	3.7

M. A. CECIL & ASSOCIATES, INC.
4475 Shannon Way, Port Republic, Maryland 20676 (301) 855-7710
INDUSTRIAL HYGIENE AND ENVIRONMENTAL HEALTH

September 28, 2012

Mr. Sean Yarup
Montgomery County Public Schools
16651 Crabbs Branch Way
Rockville, Maryland 20855

Re: Radon Evaluation - Fallsmead Elementary School

Dear Mr. Yarup:

Environmental radon testing has been completed at Fallsmead Elementary School.

Forty-three canisters were placed in various rooms throughout the school. The canisters were placed on August 17, 2012 and retrieved on August 21, 2012. The detected radon concentrations in half of the tested rooms approached or were above the EPA recommended level of 4.0 pico curies per liter (pCi/l) of air. The canister placed in room B-7 was missing at time of retrieval. Testing locations and results are summarized in the attached table.

The school should be inspected for suspect soil gas entry routes and if found remediated as necessary. In addition, the ventilation system(s) for the school should be inspected and room air circulation/ventilation maximized. The school should be re-tested in December.

Should you have any questions concerning this report please do not hesitate to contact us.

Sincerely,

Michael A. Cecil, CIH

Fallsmead Elementary School
Environmental Radon Results
August 17 to August 21, 2012

Location	Detected Radon Concentration (pCi/l)
Main Office	3.9
B1	3.9
B2	3.8
B3	4.6
B4	3.8
B5	4.3
B6	3.8
B7	Missing
APR	1.9
G7	2.6
G6-A	2.7
G6-B	2.0
G5	3.3
G4	3.1
G3	2.9
G2	3.3
G1	2.6
IMC	4.0
Staff Lounge	2.5
Gym	3.4
T1	5.1
T7-A	4.9
T7-B	4.9
T6	4.8
T5	4.8
T4	4.7
T3	4.5
T2	4.6
N17 Art	3.0
N19 Comp. Lab	4.2
N21	4.0
N22	5.1
N25	5.3
N24	5.1
N14 Music	3.8
N4	2.9
N2	3.0
N5	0.9
Y5	1.7
Y4	0.9
Y3-A	1.9
Y3-B	1.4
Y1	1.9