School / Facility Radon Testing Report Form

School Year: **24-25**

Facility:	Cold Spring Elementary School
Address:	9201 Falls Chapel Way
	Potomac, MD 20854
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	31	Lowest Value (pCi/L)	<0.3
Number of Rooms (≥4.0-pCi/L)	0	Highest Value (pCi/L)	1.0

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
Shannon King	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]	31	0	0	0	31
Duplicates[2]	4	0	0	0	4
Field Blanks[3]	2	0	0	0	2
				Grand Total	37

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	0
Office Blanks[3, 4]	1	0	0
			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:	31	0	0	0	31
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		
Cold Springs Elementary School		
Test Period: 1/28/2025 - 1/31/2025		
Kit Number	Room / Area	Result
11919882	1	0.6
11919883	1	0.6
11919884	1	< 0.3
11919880	3	0.9
11919881	5	< 0.3
11919876	6	0.8
11919872	8	0.7
11919873	9	0.5
11919874	10	0.8
11919878	11	0.6
11919879	11	< 0.3
11919877	13	< 0.3
11919855	14	< 0.3
11919861	15	0.6
11919856	15	0.8
11919848	17	0.6
11919863	18	< 0.3
11919857	20	< 0.3
11919868	21	0.7
11919858	22	0.5
11919864	24	< 0.3
11919862	AP LEGARRETA	< 0.3
11919854	APR	< 0.3
11919853	COUNSELOR	0.6
11919869	GYM	0.5
11919870	GYM	0.6
11919851	HEALTH	0.7
11919847	MAIN OFFICE	0.5
11919865	MEDIA CENTER	1.0
11919866	MEDIA CENTER	< 0.3
11919871	MEDIA CENTER OFFICE	< 0.3
11919846	PRINCIPAL	0.7
11919867	SDT	0.5
11919859	SPEECH	0.6
11919875	STAFF LOUNGE	< 0.3
11919860	STAGE	0.8
11919852	WORK ROOM	< 0.3

Table 2 - Summary Testing Results ≥2.0 pCi/L							
Cold Springs 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			
Cold Springs Elementary School			
Test Period: 1/28/2025 - 1/31/2025			
Kit Number	**QC Type**	**Room / Area**	**Result**
11919883	D	1	0.6
11919884	FB	1	< 0.3
11919879	D	11	< 0.3
11919856	D	15	0.8
11919870	D	Gym	0.6
11919866	FB	Media Center	< 0.3
11906899	OB	OFFICE BLANK	< 0.3
11926699	TB	TRAVEL BLANK	< 0.3

Table 3a - Duplicate Worksheet / Data Validation

Cold Spring 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
11919861	11919856	15	0.8	0.6	✓	1.2	PASS	0.7	<1-pCi/L	✓
11919869	11919870	Gym	0.6	0.5	✓	1.0	PASS	0.6	<1-pCi/L	✓
11919878	11919879	11	0.6	0.3	✓	0.6	PASS	0.5	<1-pCi/L	✓
11919882	11919883	1	0.6	0.6	✓	1.2	PASS	0.6	<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		
Cold Springs 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:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11919884	1	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919883	1	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	0.6 ± 0.3	2025-02-04
11919882	1	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	0.6 ± 0.4	2025-02-04
11919874	10	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	0.8 ± 0.4	2025-02-04
11919879	11	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919878	11	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	0.6 ± 0.4	2025-02-04
11919877	13	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919855	14	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919856	15	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.8 ± 0.3	2025-02-04
11919861	15	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.6 ± 0.3	2025-02-04
11919848	17	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.6 ± 0.3	2025-02-04
11919863	18	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919857	20	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919868	21	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.7 ± 0.3	2025-02-04
11919858	22	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.5 ± 0.3	2025-02-04
11919864	24	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919880	3	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	0.9 ± 0.4	2025-02-04
11919881	5	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919876	6	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	0.8 ± 0.3	2025-02-04
11919872	8	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	0.7 ± 0.3	2025-02-04
11919873	9	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	0.5 ± 0.3	2025-02-04
11919862	AP LEGARRETA	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919854	APR	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919853	COUNSELOR	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.6 ± 0.3	2025-02-04
11919869	GYM	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.5 ± 0.3	2025-02-04
11919870	GYM	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.6 ± 0.3	2025-02-04
11919851	HEALTH	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.7 ± 0.3	2025-02-04
11919847	MAIN OFFICE	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.5 ± 0.3	2025-02-04
11919866	MEDIA CENTER	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919865	MEDIA CENTER	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	1.0 ± 0.4	2025-02-04
11919871	MEDIA CENTER OFFICE	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919846	PRINCIPAL	2025-01-28 @ 12:00 pm	2025-01-31 @ 11:00 am	0.7 ± 0.3	2025-02-04
11919867	SDT	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.5 ± 0.3	2025-02-04
11919859	SPEECH	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.6 ± 0.3	2025-02-04
11919875	STAFF LOUNGE	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	< 0.3	2025-02-04
11919860	STAGE	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 am	0.8 ± 0.4	2025-02-04
11919852	WORK ROOM	2025-01-28 @ 11:00 am	2025-01-31 @ 11:00 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

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MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Cold Spring Elementary School
Date of Test Report	1/25/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	36
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.0 pCi/L

Project Status:

1. 2 Year retesting completed.

KCI TECHNOLOGIES

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

January 25, 2023

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

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

Location: Cold Spring Elementary School
9201 Falls Chapel Way
Potomac, MD 20854

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 Cold Spring Elementary School, located at 9201 Falls Chapel Way Potomac, MD 20854 (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 19, 2022 and deployed forty-two (42) 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 22, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Accustar Labs - MA. for analysis by gamma-ray spectroscopy.

Accustar Labs - MA is a NRSB certified analytical laboratory for radon analysis (certification #ARL0017) located at 2 Saber Way, Ward Hill, MA 01835.

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 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 temperatures ranged from 23°F to 55°F. Maximum sustained winds ranged from 0-18 miles per hour. Average humidity was around 75% with 0.0 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 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		
Cold Spring ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11287828	1	1.0
11287830	1	< 0.3
11287823	2	1.1
11287827	2	1.5
11287851	3	1.6
11287848	6	1.2
11287837	7	0.6
11287838	8	1.0
11287843	8	0.9
11287845	9	< 0.3
11287849	10	1.3
11287844	12	1.1
11287842	13	1.3
11287864	14	1.0
11287863	17	1.1
11287876	17	1.6
11287855	18	1.7
11287857	18	< 0.3
11287867	21	0.7
11287858	22	1.3
11287856	24	1.1
11287859	24	0.7
11287866	15/16	0.9
11287841	19/20	1.0
11287846	4/5	1.0
11287861	APR	1.2
11287862	APR	1.5
11287839	ASP	1.2
11287874	BUILDING SERVICES	1.1
11287873	COUNSELOR	1.5
11287836	GYM	1.0
11287847	GYM	< 0.3
11287840	GYM OFFICE	0.9
11287860	HEALTH	1.6
11287869	MAIN OFFICE	2.0
11287865	MEDIA	0.6
11287853	MEDIA OFFICE	1.7
11287882	PRINCIPAL	1.3
11287868	READING	0.9
11287870	SPEECH	1.7
11287854	STAFF LOUNGE	0.7
11287881	WORKROOM	1.0

Table 2- Radon Testing Results			
Cold Spring ES			
Test Period: 12/19/22 - 12/22/22			
Kit Number	QC Type	Room / Area	Result
11287830	FB	1	< 0.3
11287827	D	2	1.5
11287843	D	8	0.9
11287863	D	17	1.1
11287857	FB	18	< 0.3
11287859	D	24	0.7
11288518	OB	OFFICE BLANK	< 0.3
11287685	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Cold Spring ES		
Test Period: 12/19/22 - 12/22/22		
Kit Number	Room/Area	Result
	N/A	

Summary of Missing, Compromised and >/= 4 piC/L Tests		
Cold Spring ES		
Test Period: 12/19/22 - 12/22/22		
Kit Number	Room/Area	Result
	N/A	

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

December 28, 2022 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
COLD SPRING ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11287828	1	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	1.0 ± 0.6	2022-12-28
11287830	1	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11287849	10	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.3 ± 0.6	2022-12-28
11287844	12	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.1 ± 0.6	2022-12-28
11287842	13	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.3 ± 0.6	2022-12-28
11287864	14	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.0 ± 0.6	2022-12-28
11287866	15/16	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	0.9 ± 0.6	2022-12-28
11287876	17	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.6 ± 0.6	2022-12-28
11287863	17	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.1 ± 0.6	2022-12-28
11287857	18	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11287855	18	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.7 ± 0.6	2022-12-28
11287841	19/20	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.0 ± 0.5	2022-12-28
11287827	2	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	1.5 ± 0.6	2022-12-28
11287823	2	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	1.1 ± 0.6	2022-12-28
11287867	21	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	0.7 ± 0.5	2022-12-28
11287858	22	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.3 ± 0.6	2022-12-28
11287856	24	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.1 ± 0.6	2022-12-28
11287859	24	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	0.7 ± 0.5	2022-12-28
11287851	3	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	1.6 ± 0.6	2022-12-28
11287846	4/5	2022-12-19 @ 12:00 pm	2022-12-22 @ 11:00 am	1.0 ± 0.6	2022-12-28
11287848	6	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.2 ± 0.6	2022-12-28
11287837	7	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	0.6 ± 0.5	2022-12-28
11287843	8	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	0.9 ± 0.5	2022-12-28
11287838	8	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.0 ± 0.5	2022-12-28
11287845	9	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11287861	APR	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.2 ± 0.6	2022-12-28
11287862	APR	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.5 ± 0.6	2022-12-28
11287839	ASP	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.2 ± 0.5	2022-12-28
11287874	BUILDING SERVICES	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.1 ± 0.6	2022-12-28
11287873	COUNSELOR	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.5 ± 0.6	2022-12-28
11287836	GYM	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.0 ± 0.5	2022-12-28
11287847	GYM	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	< 0.3	2022-12-28
11287840	GYM OFFICE	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	0.9 ± 0.5	2022-12-28
11287860	HEALTH	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.6 ± 0.6	2022-12-28
11287869	MAIN OFFICE	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	2.0 ± 0.6	2022-12-28
11287865	MEDIA	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	0.6 ± 0.5	2022-12-28
11287853	MEDIA OFFICE	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	1.7 ± 0.6	2022-12-28

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

December 28, 2022 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
COLD SPRING ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11287882	PRINCIPAL	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.3 ± 0.6	2022-12-28
11287868	READING	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	0.9 ± 0.5	2022-12-28
11287870	SPEECH	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.7 ± 0.6	2022-12-28
11287854	STAFF LOUNGE	2022-12-19 @ 11:00 am	2022-12-22 @ 11:00 am	0.7 ± 0.6	2022-12-28
11287881	WORKROOM	2022-12-19 @ 11:00 am	2022-12-22 @ 10:00 am	1.0 ± 0.5	2022-12-28

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
MAIN

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

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 – Week 3 December Schools

Name of Schools:

1. Clopper Mill ES
2. Cold Spring ES
3. Fox Chapel ES
4. Gaithersburg HS
5. Longview School
6. North Lake Center
7. Ronald McNair ES
8. Rosemont ES
9. S. Christa McAuliffe ES
10. Spark M. Matsunaga ES
11. William B. Gibbs, JR. ES

	Date	Initials
Radon Test Kits Deployed	12/19/2022	BMM
Radon Test Kits Collected	12/22/2022	BMM
Radon Test Kits Shipped to Lab*	12/22/2022	BMM
Radon Test Kits Received by Lab*	12/28/2022	BMM

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

MONTGOMERY COUNTY PUBLIC SCHOOLS
RADON TESTING

Executive Summary:
Cold Spring Elementary School

9201 Falls Chapel Way
Potomac, MD 20854

Date of Test Report:	3/15/2019
Round of Testing:	Initial **Follow-up** Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	2
# of Rooms ≥ 4.0 pCi/L:	0
Low Value:	1.0
High Value:	1.4

Project Status

Retesting completed: No further action at this time.

March 15, 2019

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

Re: Radon Testing Services

Location: Cold Spring Elementary School
9201 Falls Chapel Way
Potomac, MD 20854

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Cold Spring Elementary School, located at 9201 Falls Chapel Way Potomac, MD 20854 (subject site).

Scope of Services:

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

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

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

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages ≤ 65°F.

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D -Duplicate Sample

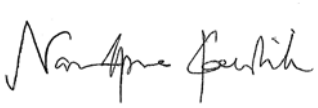
The office blank and lab transit blanks had test results of less than the laboratory detection limit of 0.4 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within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

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

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

Respectfully Submitted,

INTERTEK - PSI



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

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

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Cold Spring Elementary School		
Testing period: 2/26/19 - 3/01/19		
Kit Number	**Room / Area**	**Result (pCi/L)**
3923501	IMC	1.0
3923502	15	1.4

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

AccuStar
Professional Radon Laboratory Services Since 1984

Radon in Air

NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

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

Property Tested: Project # 04481387-1

MCPS Radon Survey Cold Spring ES
9201 Falls Chapel Way
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
3220623	3923501	02/26/2019	10:56 am	03/01/2019	9:21 am	Floor 1 Room IMC	1.0
3220624	3923502	02/26/2019	10:58 am	03/01/2019	9:22 am	Floor 1 Room 15	1.4

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

Distributed by: Intertek-PSI (VA)

Date Received: 03/04/2019 Date Logged: 03/04/2019 Date Analyzed: 03/05/2019 Date Reported: 03/05/2019

Report Reviewed By: _____ Report Approved By: _____

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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

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

MONTGOMERY COUNTY PUBLIC SCHOOLS
RADON TESTING

Executive Summary:
Cold Spring Elementary School

9201 Falls Chapel Way
Potomac, MD 20854

Date of Test Report:	12/28/2018
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:	39
# of Rooms ≥ 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	2.9

Project Status

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

December 28, 2018

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

Re: Radon Testing Services

Location: Cold Spring Elementary School
9201 Falls Chapel Way
Potomac, MD 20854

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Cold Spring Elementary School, located at 9201 Falls Chapel Way Potomac, MD 20854 (subject site).

Scope of Services:

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

PSI visited the site on November 12, 2018 and deployed fifty (50) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on November 15, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

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

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages ≤ 65°F.

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D -Duplicate Sample

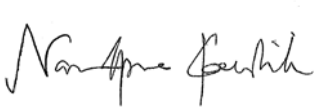
The office blank and lab transit blanks had test results of less than the laboratory detection limit of 0.4 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is operating within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

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

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

Respectfully Submitted,

INTERTEK-PSI



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

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

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Cold Spring Elementary School		
Testing period: 11/12/18 - 11/15/18		
Kit Number	**Room / Area**	**Result (pCi/L)**
3916050	1	<0.4
3916047	2	0.5
3916126	3	0.5
3916112	4	1.9
3916123	5	<0.4
3916125	6	<0.4
3916124	7	0.4
3916115	8	0.5
3916900	9	<0.4
3916121	10	0.8
3916822	11	1.8
3916895	12	<0.4
3916069	13	0.9
3916893	14	<0.4
3916066	15	0.5
3916114	17	0.6
3916138	18	2.0
3916131	19	0.5
3916135	20	<0.4
3916048	21	<0.4
3916127	22	<0.4
3916136	23	<0.4
3916049	24	1.7
3916129	29	<0.4
3916647	Building Services	0.4
3881289	Cafeteria	0.6
3881285	Cafeteria	1.0
3916133	Counselor	<0.4
3881275	Gym	<0.4
3881280	Gym	0.4
3916137	Health	<0.4
3916046	IMC (MISSING)	--
3916650	IMC Office	2.9
3916896	Kitchen	<0.4
3916656	Staff Lounge	0.7
3916070	Main Office	<0.4
3916113	Principal's office	<0.4
3916134	Reading	<0.4
3916826	RSC	1.1
3916139	SP	<0.4
3916140	Work Room	2.0

Radon Testing Results		
Cold Spring Elementary School		
Testing period: 11/12/18 - 11/15/18		
Kit Number	**QC Type**	**Result (pCi/L)**
3916898	6 (D)	0.4
3916649	15 (D) (MISSING)	--
3916132	20 (D)	<0.4
3916083	Building Services (D)	<0.4
3916045	IMC (D)	0.5
3918039	Office Blank	<0.4
3918040	Trip Blank	<0.4
3918036	Field Blank	<0.4
3918045	Field Blank	<0.4

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

AccuStar
Professional Radon Laboratory Services Since 1984

Radon in Air

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

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

Property Tested: Project # 04481387-1

MCPS Radon Survey
Cold Spring Elementary School
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2393861	3916070	11/12/2018 5:21 pm	11/15/2018 12:20 pm	Flr 1 Rm Main Office	< 0.4
2393864	3916113	11/12/2018 5:24 pm	11/15/2018 12:20 pm	Flr 1 Rm Principal's office	< 0.4
2393865	3916139	11/12/2018 5:25 pm	11/15/2018 12:22 pm	Flr 1 Rm SP	< 0.4
2393866	3916140	11/12/2018 5:26 pm	11/15/2018 12:20 pm	Flr 1 Rm Work Rm	2.0
2393867	3916137	11/12/2018 5:27 pm	11/15/2018 12:21 pm	Flr 1 Rm Health	< 0.4
2393868	3916138	11/12/2018 5:31 pm	11/15/2018 12:33 pm	Flr 1 Rm 18	2.0
2393869	3916133	11/12/2018 5:32 pm	11/15/2018 12:33 pm	Flr 1 Rm Counselor	< 0.4
2393870	3916134	11/12/2018 5:33 pm	11/15/2018 12:34 pm	Flr 1 Rm Reading	< 0.4
2393871	3916131	11/12/2018 5:35 pm	11/15/2018 12:25 pm	Flr 1 Rm 19	0.5
2393872	3916132	11/12/2018 5:36 pm	11/15/2018 12:05 pm	Flr 1 Rm 20	< 0.4
2393873	3916135	11/12/2018 5:36 pm	11/15/2018 12:05 pm	Flr 1 Rm 20	< 0.4

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

Distributed by: Intertek-PSI (VA)

Date Received: 11/19/2018 Date Logged: 11/19/2018 Date Analyzed: 11/19/2018 Date Reported: 12/20/2018

Report Reviewed By: _____ Report Approved By: _____

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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

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

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

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

Property Tested: Project # 04481387-1

MCPS Radon Survey
Cold Spring Elementary School
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2393874	3916049	11/12/2018 5:54 pm	11/15/2018 12:05 pm	Flr 1 Rm 24	1.7
2393875	3916136	11/12/2018 5:39 pm	11/15/2018 12:26 pm	Flr 1 Rm 23	< 0.4
2393876	3916127	11/12/2018 5:52 pm	11/15/2018 12:26 pm	Flr 1 Rm 22	< 0.4
2393877	3916048	11/12/2018 5:41 pm	11/15/2018 12:27 pm	Rm 21	< 0.4
2393878	3916129	11/12/2018 5:49 pm	11/15/2018 12:28 pm	Flr 1 Rm 29	< 0.4
2393879	3916656	11/12/2018 5:57 pm	11/15/2018 12:32 pm	Flr 1 Rm Lounge	0.7
2393880	3916045	11/12/2018 6:00 pm	11/15/2018 12:30 pm	Flr 1 Rm IMC	0.5
2393881	3916069	11/12/2018 6:01 pm	11/15/2018 12:34 pm	Flr 1 Rm 13	0.9
2393882	3916895	11/12/2018 6:03 pm	11/15/2018 12:33 pm	Flr 1 Rm 12	< 0.4
2393883	3916822	11/12/2018 6:04 pm	11/15/2018 12:34 pm	Flr 1 Rm 11	1.8
2393884	3916121	11/12/2018 6:05 pm	11/15/2018 12:35 pm	Flr 1 Rm 10	0.8

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

Distributed by: Intertek-PSI (VA)

Date Received: 11/19/2018 Date Logged: 11/19/2018 Date Analyzed: 11/19/2018 Date Reported: 12/20/2018

Report Reviewed By: _____ Report Approved By: _____

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

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

Property Tested: Project # 04481387-1

MCPS Radon Survey
Cold Spring Elementary School
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2393885	3916900	11/12/2018 6:08 pm	11/15/2018 12:35 pm	Flr 1 Rm 9	< 0.4
2393886	3916115	11/12/2018 6:09 pm	11/15/2018 12:36 pm	Flr 1 Rm 8	0.5
2393887	3916124	11/12/2018 6:10 pm	11/15/2018 12:06 pm	Flr 1 Rm 7	0.4
2393888	3916125	11/12/2018 6:12 pm	11/15/2018 12:07 pm	Flr 1 Rm 6	< 0.4
2393889	3916898	11/12/2018 6:12 pm	11/15/2018 12:37 pm	Flr 1 Rm 6	0.4
2393890	3916123	11/12/2018 6:15 pm	11/15/2018 12:38 pm	Flr 1 Rm 5	< 0.4
2393891	3916112	11/12/2018 6:17 pm	11/15/2018 12:38 pm	Flr 1 Rm 4	1.9
2393892	3916126	11/12/2018 6:18 pm	11/15/2018 12:09 pm	Flr 1 Rm 3	0.5
2393893	3916047	11/12/2018 6:19 pm	11/15/2018 12:40 pm	Flr 1 Rm 2	0.5
2393894	3916050	11/12/2018 6:20 pm	11/15/2018 12:40 pm	Flr 1 Rm 1	< 0.4
2393895	3916650	11/12/2018 6:23 pm	11/15/2018 12:32 pm	Flr 1 Rm IMC Office	2.9

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

Distributed by: Intertek-PSI (VA)

Date Received: 11/19/2018 Date Logged: 11/19/2018 Date Analyzed: 11/19/2018 Date Reported: 12/20/2018

Report Reviewed By: _____ Report Approved By: _____

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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

Laboratory Report for:

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

Property Tested: Project # 04481387-1

MCPS Radon Survey
Cold Spring Elementary School
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2393896	3916826	11/12/2018 6:25 pm	11/15/2018 12:42 pm	Flr 1 Rm RSC	1.1
2393897	3916114	11/12/2018 6:27 pm	11/15/2018 12:43 pm	Flr 1 Rm 17	0.6
2393898	3916066	11/12/2018 6:28 pm	11/15/2018 12:43 pm	Flr 1 Rm 15	0.5
2393899	3916893	11/12/2018 6:33 pm	11/15/2018 12:44 pm	Flr 1 Rm 14	< 0.4
2393900	3916896	11/12/2018 6:40 pm	11/15/2018 12:44 pm	Flr 1 Rm Kitchen	< 0.4
2393901	3916647	11/12/2018 6:41 pm	11/15/2018 12:46 pm	Flr 1 Rm Building Services	0.4
2393902	3916083	11/12/2018 6:41 pm	11/15/2018 12:46 pm	Flr 1 Rm Building Services	< 0.4
2393903	3918036	11/12/2018 5:21 pm	11/15/2018 12:47 pm	Flr 1	< 0.4
2393904	3918045	11/12/2018 5:21 pm	11/15/2018 12:47 pm	Fl 1	< 0.4
2393905	3918039	11/12/2018 6:00 am	11/15/2018 12:47 pm	Flr 1	< 0.4
2393906	3918040	11/12/2018 6:00 am	11/15/2018 12:47 pm	Flr 1	< 0.4

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

Distributed by: Intertek-PSI (VA)

Date Received: 11/19/2018 Date Logged: 11/19/2018 Date Analyzed: 11/19/2018 Date Reported: 12/20/2018

Report Reviewed By: _____ Report Approved By: _____

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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AccuStar
Professional Radon Laboratory Services Since 1984

Radon in Air

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

EPA Method #402-R-92-004
Liquid Scintillation
NRPP Device Code 8088
NRSB Device Code 12193

Laboratory Report for:

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

Property Tested: Project # 04481387-1

MCPS Radon Survey
Cold Spring Elementary School
Potomac MD 20854

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
2393068	3881275	11/12/2018	5:47 pm	11/15/2018	12:28 pm	Bldg. Cold Spring Elementary School First Floor G	<0.4
2393069	3881280	11/12/2018	5:47 pm	11/15/2018	12:28 pm	Bldg. Cold Spring Elementary School First Floor G	0.4
2393070	3881285	11/12/2018	6:43 pm	11/15/2018	12:47 pm	Bldg. Cold Spring Elementary School First Floor C	1
2393071	3881289	11/12/2018	6:43 pm	11/15/2018	12:47 pm	Bldg. Cold Spring Elementary School First Floor C	0.6

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

Distributed by: Intertek-PSI (VA)

Date Received: 11/18/2018 Date Logged: 11/18/2018 Date Analyzed: 11/19/2018 Date Reported: 12/17/2018

Report Reviewed By: _____ Report Approved By: _____

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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AccuStar
Professional Radon Laboratory Services Since 1984

Radon in Air

NRPP 105011 AL
NRSB ARL0007
Ohio RL41

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

Laboratory Report for:

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

Property Tested:

MCPS Radon Survey
4514 Taylorsville Road
Dayton OH 45424

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

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

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: _____ Report Approved By: _____

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI Job Number 187732

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

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

Time Start: 0947 Time Stop: 0947

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

3926831 thru 3926840

G2 Left

Date Start: ______ Date Stop: ______

Time Start: ______ Time Stop: ______

Device No.'s: ______

Date Start: ______ Date Stop: ______

Time Start: ______ Time Stop: ______

Device No.'s: ______

Date Start: ______ Date Stop: ______

Time Start: ______ Time Stop: ______

Device No.'s: ______

Date Start: ______ Date Stop: ______

Time Start: ______ Time Stop: ______

Device No.'s: ______

Date Start: ______ Date Stop: ______

Time Start: ______ Time Stop: ______

Device No.'s: ______

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

intertek
psi

Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

1. Arcola ES
2. Glen Haven ES
3. Jackson Road
4. Cashell ES
5. Frost MS
6. Meadow Hall ES
7. North Lake Center
8. Barnsley ES
9. Bayard Rustin ES
10. Julius West MS
11. Rock Terrace HS
12. Churchill HS
13. Cold Spring ES
14. Hoover MS
15. Wayside ES
16. English Manor

	Date	Initials
Radon Test Kits Deployed	11/12/2018	NL
Radon Test Kits Sampled	11/15/2018	NL
Radon Test Kits Shipped to Lab*	11/15/2018	NL
Radon Test Kits Received by Lab*	11/17/2018; 11/18/2018	NL

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

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: Cold Spring Elementary School

Date of Test Report:	10/18/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	6
# Rooms ≥ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.8

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

KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

October 18, 2016

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

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

Location: Cold Spring Elementary School
9201 Falls Chapel Way
Potomac, MD 20854

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 Cold Spring Elementary School, located at 9201 Falls Chapel Way in Potomac, Maryland 20854 (subject site).

Scope of Services:

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

KCI visited the site on September 26, 2016 and deployed nine (9) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on September 29, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

These tests represent:

- Post-mitigation testing for radon mitigation systems installed recently

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

- Confirm the success of the mitigation system(s)

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

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D- Duplicate sample

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

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

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

Sincerely,

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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Cold Spring Elementary School		
Test Period: 09/26/16-09/29/16		
Kit Number	**Room / Area**	**Result**
7801999	1	0.8
7801886	20	0.8
7801888	21	< 0.3
7801885	22	0.6
7801884	GYM	< 0.3
7801887	GYM	0.6
7801883	PE OFFICE	< 0.3

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Cold Spring Elementary School		
Test Period: 09/26/16-09/29/16		
Kit Number	**QC Type**	**Result**
7802253	D (21)	< 0.3
7802254	FB (21)	< 0.3

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

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

Radon test result report for:
COLD SPRING ELEMENTARY SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7801999	1	2016-09-26 @ 3:00 pm	2016-09-29 @ 12:00 pm	0.8 ± 0.3	2016-10-03
7801886	20	2016-09-26 @ 3:00 pm	2016-09-29 @ 12:00 pm	0.8 ± 0.3	2016-10-03
7801888	21	2016-09-26 @ 3:00 pm	2016-09-29 @ 12:00 pm	< 0.3	2016-10-03
7802253	21	2016-09-26 @ 3:00 pm	2016-09-29 @ 12:00 pm	< 0.3	2016-10-03
7802254	21	2016-09-26 @ 3:00 pm	2016-09-29 @ 12:00 pm	< 0.3	2016-10-03
7801885	22	2016-09-26 @ 3:00 pm	2016-09-29 @ 12:00 pm	0.6 ± 0.3	2016-10-03
7801887	GYM	2016-09-26 @ 3:00 pm	2016-09-29 @ 12:00 pm	0.6 ± 0.3	2016-10-03
7801884	GYM	2016-09-26 @ 3:00 pm	2016-09-29 @ 12:00 pm	< 0.3	2016-10-03
7801883	PE OFFICE	2016-09-26 @ 3:00 pm	2016-09-29 @ 12:00 pm	< 0.3	2016-10-03

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

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

Radon test result report for:

MCPS Radon
Phase 18 Office Blanks

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

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

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

Radon test result report for:

MCPS Radon
Phase 18 Transit Blanks

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

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

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

Radon test result report for:
MCPS Radon
Spike Sample Results

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 176788

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

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

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

KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

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

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

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

KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

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

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

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

RADON SCREENING SURVEY – FOLLOW-UP COLD SPRING ES ELEMENTARY SCHOOL

9201 Falls Chapel Way, Potomac, Maryland 20854

EXECUTIVE SUMMARY

Date of Test Report:	3/4/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	2
# Rooms ≥ 4.0 pCi/L:	1
Low Value:	2.9
High Value:	4.4
Confirmed Rooms ≥ 4.0 pCi/L US EPA Action Level	2

Summary of Sampling Events ≥ 4.0 pCi/L

Room	Result (pCi/L) 3/10/16 (Rev 1 Initial)	Result (pCi/L) 3/4/16 Follow-Up	Average Result (pCi/L)
Gym	5.0	2.9	4.0
Classroom 21	5.0	4.4	4.7

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MCPS RADON TESTING

Executive Summary: Cold Spring Elementary School

Date of Test Report:	3/4/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	2
# Rooms ≥ 4.0 pCi/L:	1
Low Value:	2.9
High Value:	4.4

Rooms with results ≥ 4.0 pCi/L:
Room 21 (4.4 pCi/L)

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

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March 4, 2016

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

Re: **Radon Testing Services**
KCI Job # 12146341.28

Location: Cold Spring Elementary School
9201 Falls Chapel Way
Potomac, MD 20854

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 Cold Spring Elementary School, located at 9201 Falls Chapel Way in Potomac, Maryland 20854 (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 8, 2016 and deployed four (4) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on February 11, 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	21	4.4
<4.0 piC/L	See Attachment B	

Notes:
D- Duplicate sample

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

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

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

Sincerely,

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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank*

PM- Project Manager

QC- Quality Control

*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 8 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Cold Spring Elementary School		
Test Period: 02/08/16-02/11/16		
Kit Number	**Room / Area**	**Result**
7730194	21	4.4
7730195	GYM	2.9

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Cold Spring Elementary School		
Test Period: 02/08/16-02/11/16		
Kit Number	**QC Type**	**Result**
7730196	D (GYM)	3.1
7730199	FB (21)	< 0.3

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 25, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

COLD SPRING ELEMENTARY SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7730194	21	2016-02-08 @ 3:00 pm	2016-02-11 @ 11:00 am	4.4 ± 0.5	2016-02-15
7730199	21	2016-02-08 @ 3:00 pm	2016-02-11 @ 11:00 am	< 0.3	2016-02-15
7730195	GYM	2016-02-08 @ 3:00 pm	2016-02-11 @ 11:00 am	2.9 ± 0.4	2016-02-15
7730196	GYM	2016-02-08 @ 3:00 pm	2016-02-11 @ 11:00 am	3.1 ± 0.4	2016-02-15

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

February 25, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

MCPS RADON
PHASE 8
OFFICE BLANKS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7729754	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15
7729757	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15
7729758	0	2016-02-08 @ 4:00 pm	2016-02-11 @ 5:00 pm	< 0.3	2016-02-15

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

February 23, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

TRANSIT- PHASE 7, 8, 9
NONE

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7734937	1	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734946	10	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734955	11	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734956	12	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734959	13	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734930	14	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734953	15	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734954	16	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734940	17	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734949	18	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734948	19	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734939	2	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734942	20	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734929	21	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734933	22	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734934	23	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734936	24	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734943	25	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734944	26	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734935	27	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734928	28	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734952	29	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734947	3	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734931	30	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734932	31	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718520	32	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718523	33	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718522	34	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718521	35	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734945	4	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734960	5	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734958	6	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734951	7	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734957	8	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734938	9	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23

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

February 15, 2016

** LABORATORY ANALYSIS REPORT **

Spike Sample Laboratory Results

Radon test result report for:

MCPS

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

Date Start: 1/30/16 Date Stop: 2/1/16	Date Start: _____ Date Stop: _____
Time Start: 0926 Time Stop: 0926	Time Start: _____ Time Stop: _____
Device No.'s: (6) Char. Bags -	Device No.'s: _____
7718281, 7718282, 7718291,	_____
7718288, 7718289, 7718273	_____
E3 Left	_____
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____
_____	_____
_____	_____
_____	_____
Date Start: _____ Date Stop: _____	Date Start: _____ Date Stop: _____
Time Start: _____ Time Stop: _____	Time Start: _____ Time Stop: _____
Device No.'s: _____	Device No.'s: _____
_____	_____
_____	_____
_____	_____

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

KCI TECHNOLOGIES

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 8

Name of Schools:

1. Blair G. Ewing Center
2. Cedar Grove ES
3. Clarksburg ES
4. Cloverly ES
5. Cold Spring ES
6. Damascus ES
7. Dufief ES
8. East Silver Spring
9. Georgian Forest ES
10. Germantown ES
11. Glenallen ES
12. Jackson Road ES
13. Jones Lane ES
14. Lake Seneca ES
15. Laytonsville ES
16. Montgomery Knolls ES
17. North Chevy Chase ES
18. Oakview ES
19. Randolph Maint
20. Robert Frost MS
21. Shady Grove Maint
22. Viers Mill ES

	Date	Initials
Radon Test Kits Deployed	2/8/16	JM
Radon Test Kits Collected	2/11/16	JM
Radon Test Kits Shipped to Lab*	12/11/16	JM
Radon Test Kits Received by Lab*	12/15/16	JM

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

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: Cold Spring Elementary School

Date of Test Report:	3/10/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	38
# Rooms ≥ 4.0 pCi/L:	2
Low Value:	< 0.3
High Value:	5.0

Rooms with results ≥ 4.0 pCi/L:
Gym 28 (5.0 pCi/L), CR 21 (5.0 pCi/L)

Project Status:
Initial testing completed; re-test needed for results ≥ 4.0 pCi/L.

KCI TECHNOLOGIES

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

March 10, 2016 (Rev 1)

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

Re: **Radon Testing Services**
KCI Job # 12146341.22

Location: Cold Spring Elementary School
9201 Falls Chapel Way
Potomac, MD 20854

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 Cold Spring Elementary School, located at 9201 Falls Chapel Way in Potomac, Maryland 20854 (subject site).

Scope of Services:

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

KCI visited the site on December 28, 2015 and deployed forty-nine (49) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

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

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

The operating condition that represents the greatest amount of significantly occupied time for this building is; heating active, with outdoor temperature averages ≤ 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	Gym 28	5.0
	CR 21	5.0
<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,

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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

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		
Cold Spring E.S		
Test Period: 12/28/15-12/31/15		
Kit Number	**Room / Area**	**Result**
7711138	AS	2.6
7712872	BLDG SER	1.4
7711199	CR 1	0.9
7711188	CR 10	1.5
7711167	CR 11	1.2
7711171	CR 12	1.2
7711197	CR 13	1.3
7711190	CR 14	0.7
7711176	CR 15	0.9
7711165	CR 17	1.0
7711193	CR 18	1.4
7711184	CR 19	2.1
7712859	CR 2	0.6
7711163	CR 20	1.6
7711195	CR 21	5.0
7711196	CR 22	3.1
7711192	CR 23	2.5
7711135	CR 24	2.0
7712844	CR 3	0.8
7711200	CR 4	0.7
7711191	CR 5	1.0
7711169	CR 6	1.9
7711168	CR 7	1.4
7711173	CR 8	1.1
7711174	CR 9	0.8
7711181	GYM 28	2.4
7711185	GYM 28	5.0
7711179	HEALTH	1.6
7711141	IMC	1.7
7711186	IMC	1.5
7711180	MAIN OFF	1.1
7711170	ML 714	< 0.3
7712867	MPR	1.4
7712870	MPR	1.8
7711198	PE OFF	1.4
7711182	PRN	1.3
7711194	READ	2.3
7711177	RSC	1.8
7711183	SP	1.3
7712865	STAFF	1.6
7711178	WR	2.3

Table Note:
* Missing or Compromised Sample

Radon Testing Results		
Cold Spring E.S		
Test Period: 12/28/15-12/31/15		
Kit Number	**QC Type**	**Result**
7711164	D (CR 14)	1.0
7711162	D (CR 24)	2.1
7711175	D (CR 8)	1.5
7711172	D (MAIN OFF)	1.1
7711189	FB (CR 15)	< 0.3
7711187	FB (MAIN OFF)	< 0.3
7711166	FB (PE OFF)	< 0.3
7710669	OB (0)	< 0.3

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

January 16, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

COLD SPRING E.S
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7710669	0	2015-12-28 @ 4:00 pm	2015-12-31 @ 1:00 pm	< 0.3	2016-01-05
7711138	AS	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	2.6 ± 0.5	2016-01-05
7712872	BLDG SER	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.4 ± 0.4	2016-01-05
7711199	CR 1	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	0.9 ± 0.4	2016-01-05
7711188	CR 10	2015-12-28 @ 2:00 pm	2015-12-31 @ 12:00 pm	1.5 ± 0.4	2016-01-05
7711167	CR 11	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.2 ± 0.4	2016-01-05
7711171	CR 12	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.2 ± 0.4	2016-01-05
7711197	CR 13	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.3 ± 0.4	2016-01-05
7711190	CR 14	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	0.7 ± 0.4	2016-01-05
7711164	CR 14	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.0 ± 0.4	2016-01-05
7711189	CR 15	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	< 0.3	2016-01-05
7711176	CR 15	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	0.9 ± 0.4	2016-01-05
7711165	CR 17	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.0 ± 0.4	2016-01-05
7711193	CR 18	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	1.4 ± 0.4	2016-01-05
7711184	CR 19	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	2.1 ± 0.5	2016-01-05
7712859	CR 2	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	0.6 ± 0.3	2016-01-05
7711163	CR 20	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	1.6 ± 0.4	2016-01-05
7711195	CR 21	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	5.0 ± 0.6	2016-01-05
7711196	CR 22	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	3.1 ± 0.5	2016-01-05
7711192	CR 23	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	2.5 ± 0.5	2016-01-05
7711186	IMC	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.5 ± 0.4	2016-01-05
7711135	CR 24	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	2.0 ± 0.5	2016-01-05
7711162	CR 24	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	2.1 ± 0.5	2016-01-05
7712844	CR 3	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	0.8 ± 0.4	2016-01-05
7711200	CR 4	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	0.7 ± 0.3	2016-01-05
7711191	CR 5	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.0 ± 0.4	2016-01-05
7711169	CR 6	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.9 ± 0.4	2016-01-05
7711168	CR 7	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.4 ± 0.4	2016-01-05
7711173	CR 8	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.1 ± 0.4	2016-01-05
7711175	CR 8	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.5 ± 0.4	2016-01-05
7711174	CR 9	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	0.8 ± 0.4	2016-01-05
7711181	GYM 28	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	2.4 ± 0.5	2016-01-05
7711185	GYM 28	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	5.0 ± 0.6	2016-01-05
7711179	HEALTH	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	1.6 ± 0.4	2016-01-05
7711141	IMC	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.7 ± 0.4	2016-01-05
7711187	MAIN OFF	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7711172	MAIN OFF	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	1.1 ± 0.4	2016-01-05

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

January 16, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

COLD SPRING E.S
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7711180	MAIN OFF	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	1.1 ± 0.4	2016-01-05
7711170	ML 714	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7712867	MPR	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.4 ± 0.4	2016-01-05
7712870	MPR	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.8 ± 0.4	2016-01-05
7711198	PE OFF	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	1.4 ± 0.4	2016-01-05
7711166	PE OFF	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7711182	PRN	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	1.3 ± 0.4	2016-01-05
7711194	READ	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	2.3 ± 0.5	2016-01-05
7711177	RSC	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.8 ± 0.5	2016-01-05
7711183	SP	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	1.3 ± 0.4	2016-01-05
7712865	STAFF	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.6 ± 0.4	2016-01-05
7711178	WR	2015-12-28 @ 2:00 pm	2015-12-31 @ 11:00 am	2.3 ± 0.5	2016-01-05

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January 15, 2016

** LABORATORY ANALYSIS REPORT **

Radon test result report for:

MCPS PHASE 3 & 4
TRANSIT BLANKS

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

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 III

Name of Schools:

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

	Date	Initials
Radon Test Kits Deployed	12/28/15	JM
Radon Test Kits Sampled	12/31/15	JM
Radon Test Kits Shipped to Lab*	12/31/15	JM
Radon Test Kits Received by Lab*	1/4/16	JM

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