



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Spring Mill Center
Date of Test Report	5/11/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	37
# Rooms ≥ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	0.7 pCi/L

Project Status:
Initial testing completed; No further action needed



May 11, 2022

Brian T. Croyle, PG, CHMM
Environmental Specialist
Montgomery County Public Schools
Gaithersburg, MD 20879

Re: **Radon Testing Services**
KCI Job # 122108316

Location: Spring Mill Center
11721 Kemp Mill Rd.
Silver Spring, MD 20902

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 Spring Mill Center, located at 11721 Kemp Mill Rd. Silver Spring, MD 20902 (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 March 15, 2022 and deployed forty-three (43) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on March 18, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a

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

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to post-mitigation biennial testing.

These tests were conducted to:

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

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the low 20s and high temperatures ranged from the mid 70s to the high 50s Fahrenheit. Maximum sustained winds ranged from 0-32 miles per hour. Average humidity was around 61% with 0.1 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Spring Mill Center		
Test Period: 03/15/2022 - 03/18/2022		
Kit Number	Room / Area	Result
11138916	1	< 0.3
11138917	2	< 0.3
11138918	3	< 0.3
11138908	4	< 0.3
11138910	5	< 0.3
11138915	7	< 0.3
11138938	101	< 0.3
11138948	101	< 0.3
11138957	101	< 0.3
11138912	104	< 0.3
11138919	104	< 0.3
11138925	110	< 0.3
11138926	111	< 0.3
11138914	203	< 0.3
11138923	212	< 0.3
11138924	222	< 0.3
11138922	301	< 0.3
11138933	301	< 0.3
11138934	301	< 0.3
11138952	303	< 0.3
11138939	305	< 0.3
11138942	305	< 0.3
11138949	306	< 0.3
11138940	307	< 0.3
11138941	309	< 0.3
11138929	310	< 0.3
11138927	311	< 0.3
11138935	312	< 0.3
11138913	300A	< 0.3
11138928	300B	< 0.3
11138951	303 OFFICE 1	0.7
11138943	303 OFFICE 2	< 0.3
11138944	303 OFFICE 3	< 0.3
11138909	BUILDING SERVICES	< 0.3
11138907	CONFERENCE ROOM A	< 0.3
11138950	COPIER	< 0.3
11138936	DANS OFFICE	< 0.3
11138947	ELDAS OFFICE	< 0.3
11138906	MAIL ROOM	< 0.3
11138904	RECEPTION AREA	< 0.3
11138920	RECEPTION AREA	0.5
11138911	STAFF LOUNGE	< 0.3

Table 1- Radon Testing Results		
Spring Mill Center		
Test Period: 03/15/2022 - 03/18/2022		
Kit Number	Room / Area	Result
11138905	TCR	0.5

Table 2- Radon Testing Results			
Spring Mill Center			
Test Period: 03/15/2022 - 03/18/2022			
Kit Number	QC Type	Room / Area	Result
11138919	D	104	< 0.3
11138922	D	301	< 0.3
11138934	FB	301	< 0.3
11138939	D	305	< 0.3
11138938	D	101	< 0.3
11138948	FB	101	< 0.3
11138953	OB	OFFICE BLANK	< 0.3
11138945	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
SPRING MILL CENTER
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11138916	1	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138957	101	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138948	101	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138938	101	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138919	104	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138912	104	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138925	110	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138926	111	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138917	2	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138914	203	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138923	212	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138924	222	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138918	3	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138913	300A	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138928	300B	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138933	301	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138934	301	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138922	301	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138952	303	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138951	303 OFFICE 1	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	0.7 ± 0.3	2022-03-21
11138943	303 OFFICE 2	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138944	303 OFFICE 3	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138939	305	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138942	305	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138949	306	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138940	307	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138941	309	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138929	310	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138927	311	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138935	312	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138908	4	2022-03-15 @ 11:00 am	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138910	5	2022-03-15 @ 11:00 am	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138915	7	2022-03-15 @ 11:00 am	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138909	BUILDING SERVICES	2022-03-15 @ 11:00 am	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138907	CONFERENCE ROOM A	2022-03-15 @ 11:00 am	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138950	COPIER	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138936	DANS OFFICE	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21

March 22, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**SPRING MILL CENTER
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11138947	ELDAS OFFICE	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138906	MAIL ROOM	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138920	RECEPTION AREA	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	0.5 ± 0.3	2022-03-21
11138904	RECEPTION AREA	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138911	STAFF LOUNGE	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	< 0.3	2022-03-21
11138905	TCR	2022-03-15 @ 12:00 pm	2022-03-18 @ 10:00 am	0.5 ± 0.3	2022-03-21

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

NOMINAL Conditions: Radon Conc 27.0 pCi/L Rel. Hum 50.1 % Temp. 70.0 F

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: _____ Date Stop: _____

Time Start: 0705 Time Stop: 0705 Time Start: _____ Time Stop: _____

Device No.'s: (5) Char Bags - Device No.'s: _____

11139367, 11139368, 11139371, _____

11139710, 11139717 _____

E3 light

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

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

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

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

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

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

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

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value (25.7 pCi/L).

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139367	SK1	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.9 \pm 2.1	2022-03-30
11139368	SK2	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	23.9 \pm 2.0	2022-03-30
11139371	SK3	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	25.7 \pm 2.1	2022-03-30
11139710	SK4	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	26.4 \pm 2.1	2022-03-30
11139717	SK5	2022-03-18 @ 7:00 am	2022-03-21 @ 7:00 am	24.6 \pm 2.0	2022-03-30

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools

Name of Schools:

1. Singer, Flora M. ES
2. Sligo MS
3. Spring Mill Center
4. Fairland ES
5. Bel Pre ES
6. Shriver, Sargent ES
7. Strathmore ES
8. Viers Mill ES
9. Piney Branch ES

	Date	Initials
Radon Test Kits Deployed	03/15/2022	BMM
Radon Test Kits Collected	03/18/2022	BMM
Radon Test Kits Shipped to Lab*	03/18/2022	Bell
Radon Test Kits Received by Lab*	03/20/2022	BMM

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