



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Monocacy Elementary School
Date of Test Report	1/04/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	35
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.2 pCi/L

Project Status:

1. 5-Year retesting completed.



January 4, 2023

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

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

Location: Monocacy Elementary School
18801 Barnesville Rd.
Dickerson, MD 20842

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 Monocacy Elementary School, located at 18801 Barnesville Rd. Dickerson, MD 20842 (subject site).

Scope of Services:

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

KCI visited the site on December 6, 2022 and deployed forty-one (41) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

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

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

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentration levels at the facility.

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

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

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

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

Results:

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

The results of the radon test analysis indicated the following:

Radon Concentration	Room	Result
≥4.0 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		
Monocacy ES		
Test Period: 12/06/2022 - 12/09/2022		
Kit Number	Room / Area	Result
11132140	101	0.7
11132137	102	< 0.3
11139500	103	0.6
11132139	104	< 0.3
11139498	106	< 0.3
11139431	110	0.7
11139493	111	0.6
11139486	112	< 0.3
11139490	112	< 0.3
11139465	113	< 0.3
11139489	114	< 0.3
11139492	114	< 0.3
11139495	218	< 0.3
11139496	219	< 0.3
11139487	220	< 0.3
11139485	204 HEALTH	1.0
11139484	207 MAIN	< 0.3
11139463	APR	0.8
11139468	APR	0.6
11139438	ART	< 0.3
11139470	BS OFFICE	< 0.3
11139460	COMMUNICATIONS	< 0.3
11139461	CONFERENCE	0.8
11139462	COUNSELOR	1.0
11132142	GYM	< 0.3
11139441	GYM	< 0.3
11139497	GYM	0.7
11132141	GYM OFFICE	< 0.3
11139469	KITCHEN OFFICE	0.5
11132131	MEDIA CENTER	< 0.3
11132132	MEDIA CENTER	< 0.3
11132138	MEDIA WORKROOM	< 0.3
11139424	PARA	< 0.3
11139499	PARA	< 0.3
11139478	PRINCIPAL	1.2
11139467	RD 222	< 0.3
11139494	RS 221	< 0.3
11139479	STAFF LOUNGE	< 0.3
11139476	STAGE	0.9
11139471	TELEPHONE	1.0
11139477	WORKROOM	1.0

Table 2- Radon Testing Results			
Monocacy ES			
Test Period: 12/06/22 - 12/09/22			
Kit Number	QC Type	Room / Area	Result
11139490	FB	112	< 0.3
11139492	D	114	< 0.3
11139463	D	APR	< 0.3
11139441	D	Gym	< 0.3
11132142	FB	Gym	< 0.3
11132132	D	Media Center	< 0.3
11287676	OB	OFFICE BLANK	< 0.3
11287288	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139500	103	2022-12-06 @ 12:00 pm	2022-12-09 @ 8:00 am	0.6 ± 0.3	2022-12-13
11139498	106	2022-12-06 @ 12:00 pm	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139431	110	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	0.7 ± 0.3	2022-12-13
11139493	111	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	0.6 ± 0.3	2022-12-13
11139490	112	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139486	112	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139465	113	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139492	114	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139489	114	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139485	204 HEALTH	2022-12-06 @ 11:00 am	2022-12-09 @ 7:00 am	1.0 ± 0.4	2022-12-13
11139484	207 MAIN	2022-12-06 @ 11:00 am	2022-12-09 @ 7:00 am	< 0.3	2022-12-13
11139495	218	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139496	219	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139487	220	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139463	APR	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	0.8 ± 0.3	2022-12-13
11139468	APR	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	0.6 ± 0.3	2022-12-13
11139438	ART	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139470	BS OFFICE	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139460	COMMUNICATIONS	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139461	CONFERENCE	2022-12-06 @ 11:00 am	2022-12-09 @ 7:00 am	0.8 ± 0.3	2022-12-13
11139462	COUNSELOR	2022-12-06 @ 11:00 am	2022-12-09 @ 7:00 am	1.0 ± 0.4	2022-12-13
11139497	GYM	2022-12-06 @ 12:00 pm	2022-12-09 @ 8:00 am	0.7 ± 0.3	2022-12-13
11139441	GYM	2022-12-06 @ 12:00 pm	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139469	KITCHEN OFFICE	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	0.5 ± 0.3	2022-12-13
11139499	PARA	2022-12-06 @ 12:00 pm	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139424	PARA	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139478	PRINCIPAL	2022-12-06 @ 11:00 am	2022-12-09 @ 7:00 am	1.2 ± 0.4	2022-12-13
11139467	RD 222	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139494	RS 221	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139479	STAFF LOUNGE	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11139476	STAGE	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	0.9 ± 0.4	2022-12-13
11139471	TELEPHONE	2022-12-06 @ 11:00 am	2022-12-09 @ 7:00 am	1.0 ± 0.4	2022-12-13
11139477	WORKROOM	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	1.0 ± 0.3	2022-12-13

December 14, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11132140	101	2022-12-06 @ 12:00 pm	2022-12-09 @ 8:00 am	0.7 ± 0.3	2022-12-13
11132137	102	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11132139	104	2022-12-06 @ 12:00 pm	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11132142	GYM	2022-12-06 @ 12:00 pm	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11132141	GYM OFFICE	2022-12-06 @ 12:00 pm	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11132131	MEDIA CENTER	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11132132	MEDIA CENTER	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13
11132138	MEDIA WORKROOM	2022-12-06 @ 11:00 am	2022-12-09 @ 8:00 am	< 0.3	2022-12-13

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KC1 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 LEFT

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

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

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

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

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

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

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

December 29, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OFFICE

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

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

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 – April 2022 Schools – Retesting

Name of Schools:

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

	Date	Initials
Radon Test Kits Deployed	12/06/2022	BMM
Radon Test Kits Collected	12/09/2022	BMM
Radon Test Kits Shipped to Lab*	12/09/2022	BMM
Radon Test Kits Received by Lab*	12/13/2022	BMM

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



**MONTGOMERY COUNTY PUBLIC SCHOOLS
RADON TESTING**

Executive Summary:
Monocacy Elementary School
18801 Barnesville Road
Dickerson MD 20842

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:	34
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	1.5

Project Status

Initial testing complete: No further action at this time



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: Monocacy Elementary School
18801 Barnesville Road
Dickerson, MD 20842

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 Monocacy Elementary School, located at 18801 Barnesville Road, Dickerson, MD 20842 (subject site).

Scope of Services:

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

PSI visited the site on December 3, 2018 and deployed forty-five (45) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on December 6, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

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



Evaluation of Testing Conditions:

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

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:

D -Duplicate Sample

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

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

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



Respectfully Submitted,

INTERTEK-PSI

A handwritten signature in black ink that reads "Nand Kaushik". The signature is written in a cursive, flowing style.

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 A

Floor Plan with Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Monocacy Elementary School		
Testing period: 12/03/18 - 12/06/18		
Kit Number	Room / Area	Result (pCi/L)
3926944	101	0.4
3926945	102	< 0.4
3926943	Room Between 101 and 103	0.6
3926941	103	< 0.4
3926942	104	< 0.4
3926960	106	< 0.4
3926808	110	< 0.4
3926804	111	< 0.4
3926806	112	< 0.4
3926466	113	< 0.4
3926803	114	< 0.4
3926811	203	0.4
3926948	204	0.9
3926950	205	0.9
3926946	207	0.8
3926953	208	0.9
3926951	209	< 0.4
3926955	210	< 0.4
3926956	211	< 0.4
3926957	211	< 0.4
3926810	216	0.5
3926809	217	< 0.4
3926807	218	< 0.4
3926805	219	< 0.4
3926801	220	< 0.4
3926468	221	< 0.4
3926467	222	< 0.4
3926469	223	< 0.4
3926463	APR	0.6
3926464	APR	0.8
3926465	APR Stage	0.4
3926954	Conference	0.8
3926958	Gym	0.4
3926959	Gym	< 0.4
3926461	Kitchen	0.5
3926470	Music Storage	1.5
3926949	Workroom	1.2

Radon Testing Results		
Monocacy Elementary School		
Testing period: 12/03/18 - 12/06/18		
Kit Number	QC Type	Result (pCi/L)
3926947	207 (D)	0.9
3926952	209 (D)	< 0.4
3926802	220 (D)	< 0.4
3926462	Kitchen (D)	0.5
3918042	Office Blank	< 0.4
3918284	Transit Blank	< 0.4
3919448	Field Blank	< 0.4
3923153	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

NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Monocacy ES
Not Indicated
Comus MD 20842

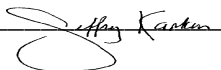
Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
3201716	3926461	12/03/2018 3:10 pm	12/06/2018 2:15 pm	Floor First Room Kitchen	0.5
3201717	3926462	12/03/2018 3:10 pm	12/06/2018 2:15 pm	Floor First Room Kitchen Duplicate	0.5
3201718	3926463	12/03/2018 3:14 pm	12/06/2018 2:17 pm	Floor First Room APR	0.6
3201719	3926464	12/03/2018 3:14 pm	12/06/2018 2:17 pm	Floor First Room APR	0.8
3201720	3926465	12/03/2018 3:16 pm	12/06/2018 2:18 pm	Floor First Room APR Stage	0.4
3201721	3926466	12/03/2018 3:18 pm	12/06/2018 2:19 pm	Floor First Room 113	< 0.4
3201722	3926467	12/03/2018 3:20 pm	12/06/2018 2:20 pm	Floor First Room 222	< 0.4
3201723	3926468	12/03/2018 3:22 pm	12/06/2018 2:21 pm	Floor First Room 221	< 0.4
3201724	3926469	12/03/2018 3:24 pm	12/06/2018 2:22 pm	Floor First Room 223	< 0.4
3201725	3926470	12/03/2018 3:26 pm	12/06/2018 2:23 pm	Floor First Room Music Storage	1.5
3201726	3926801	12/03/2018 3:30 pm	12/06/2018 2:24 pm	Floor First Room 220	< 0.4


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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/07/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

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.

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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

NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Monocacy ES
Not Indicated
Comus MD 20842

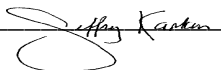
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
3201727	3926802	12/03/2018 3:30 pm	12/06/2018 2:24 pm	Floor First Room 220 Duplicate	< 0.4
3201728	3926804	12/03/2018 3:32 pm	12/06/2018 2:26 pm	Floor First Room 114	< 0.4
3201729	3926803	12/03/2018 3:34 pm	12/06/2018 2:27 pm	Floor First Room 111	< 0.4
3201730	3926805	12/03/2018 3:36 pm	12/06/2018 2:28 pm	Floor First Room 219	< 0.4
3201731	3926806	12/03/2018 3:38 pm	12/06/2018 2:29 pm	Floor First Room 112	< 0.4
3201732	3926807	12/03/2018 3:40 pm	12/06/2018 2:30 pm	Floor First Room 218	< 0.4
3201733	3926808	12/03/2018 3:42 pm	12/06/2018 2:31 pm	Floor First Room 110	< 0.4
3201734	3926809	12/03/2018 3:44 pm	12/06/2018 2:32 pm	Floor First Room 217	< 0.4
3201735	3926810	12/03/2018 3:46 pm	12/06/2018 2:33 pm	Floor First Room 216	0.5
3201736	3926951	12/03/2018 3:50 pm	12/06/2018 2:34 pm	Floor First Room 209	< 0.4
3201737	3926952	12/03/2018 3:50 pm	12/06/2018 2:34 pm	Floor First Room 209 Duplicate	< 0.4


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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/07/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Monocacy ES
Not Indicated
Comus MD 20842

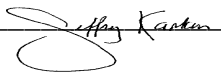
Log Number	Device Number	Test	Exposure	Duration:	Area Tested	Result pCi/L
3201738	3926955	12/03/2018	3:52 pm	12/06/2018 2:36 pm	Floor First Room 210	< 0.4
3201739	3926956	12/03/2018	3:54 pm	12/06/2018 2:37 pm	Floor First Room 211	< 0.4
3201740	3926957	12/03/2018	3:56 pm	12/06/2018 2:38 pm	Floor First Room 211	< 0.4
3201741	3926958	12/03/2018	3:58 pm	12/06/2018 2:39 pm	Floor First Room Gym	0.4
3201742	3926959	12/03/2018	4:00 pm	12/06/2018 2:40 pm	Floor First Room Gym	< 0.4
3201743	3926960	12/03/2018	4:02 pm	12/06/2018 2:41 pm	Floor First Room 106	< 0.4
3201744	3926941	12/03/2018	4:04 pm	12/06/2018 2:42 pm	Floor First Room 103	< 0.4
3201745	3926942	12/03/2018	4:06 pm	12/06/2018 2:43 pm	Floor First Room 104	< 0.4
3201746	3926943	12/03/2018	4:08 pm	12/06/2018 2:44 pm	Floor First Room Between 101 and 103	0.6
3201747	3926944	12/03/2018	4:10 pm	12/06/2018 2:45 pm	Floor First Room 101	0.4
3201748	3926945	12/03/2018	4:12 pm	12/06/2018 2:46 pm	Floor First Room 102	< 0.4


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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/07/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Monocacy ES
Not Indicated
Comus MD 20842

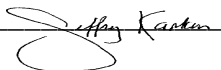
Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
3201749	3926946	12/03/2018 4:14 pm	12/06/2018 2:47 pm	Floor First Room 207	0.8
3201750	3926947	12/03/2018 4:14 pm	12/06/2018 2:47 pm	Floor First Room 207 Duplicate	0.9
3201751	3926948	12/03/2018 4:18 pm	12/06/2018 2:49 pm	Floor First Room 204	0.9
3201752	3926949	12/03/2018 4:20 pm	12/06/2018 2:50 pm	Floor First Room Workroom	1.2
3201753	3926950	12/03/2018 4:22 pm	12/06/2018 2:51 pm	Floor First Room 205	0.9
3201754	3926954	12/03/2018 4:24 pm	12/06/2018 2:52 pm	Floor First Room Conference	0.8
3201755	3926953	12/03/2018 4:26 pm	12/06/2018 2:53 pm	Floor First Room 208	0.9
3201756	3926811	12/03/2018 4:28 pm	12/06/2018 2:54 pm	Floor First Room 203	0.4
3201757	3918042	12/03/2018 6:00 am	12/06/2018 6:00 pm	Floor NA Room Office Blank	< 0.4
3201758	3918284	12/03/2018 6:00 am	12/06/2018 6:00 pm	Floor NA Room Transit Blank	< 0.4
3201759	3919448	12/03/2018 3:10 pm	12/06/2018 2:54 am	Floor NA Room Field Blank	< 0.4


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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/07/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Monocacy ES
Not Indicated
Comus MD 20842

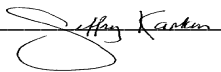
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3201760	3923153	12/03/2018 3:10 pm 12/06/2018 2:54 am	Floor NA Room Field Blank	< 0.4

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

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/07/2018 Date Logged: 12/07/2018 Date Analyzed: 12/07/2018 Date Reported: 12/19/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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NRPP 105011 AL
NRSB ARL0007
Ohio RL41

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

Laboratory Report for:

Property Tested:

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

MCPS Radon Survey
4514 Taylorsville Road
Dayton OH 45424

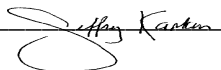
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3204125	3926831	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	36.1
3204126	3926832	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.8
3204127	3926833	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.7
3204128	3926834	12/07/2018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


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

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI

Job Number 187732

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

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

Time Start: 0947 Time Stop: 0947 Time Start: _____ Time Stop: _____

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

3926831 thru 3926840 _____

G2 left

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

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

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

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

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

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

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



Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

- | | |
|--|--------------------------------|
| 1. Ewing Center | 13. Garrett Park ES Annex |
| 2. Department of Food & Nutrition Services | 14. Goshen ES |
| 3. Damascus HS | 15. Kingsley Wilderness Center |
| 4. Edison HS | 16. Kensington Parkwood ES |
| 5. Emory Grove Center | 17. Monocacy ES |
| 6. John Poole MS | 18. Lakewood ES |
| 7. Lakelands Park MS | 19. Little Bennett ES |
| 8. Laytonsville ES | 20. Lois P. Rockwell ES |
| 9. Gaithersburg HS | 21. Olney ES |
| 10. Neelsville MS | 22. North Chevy Chase ES |
| 11. Sequoyah ES | 23. Woodfield ES |
| 12. Clarksburg ES Annex | 24. Wootton HS |

	Date	Initials
Radon Test Kits Deployed	12/03/2018	ML
Radon Test Kits Sampled	12/06/2018	ML
Radon Test Kits Shipped to Lab*	12/06/2018	ML
Radon Test Kits Received by Lab*	12/07/2018; 12/08/2018	ML

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



MCPS RADON TESTING

Executive Summary: Monocacy Elementary School

Date of Test Report:	3/11/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	30
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.1

Project Status:

Initial testing completed; missing or compromised samples need re-test.



March 11, 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: Monocacy Elementary School
18801 Barnesville Road
Dickerson, MD 20842

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 Monocacy Elementary School, located at 18801 Barnesville Road in Dickerson, Maryland 20842 (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-two (42) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

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

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

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

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D- Duplicate sample

The 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. Mouldale
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		
Monocacy ES		
Test Period: 12/28/15-12/31/15		
Kit Number	Room / Area	Result
7708952	102	< 0.3
7708940	103	< 0.3
7708938	104	< 0.3
7708935	105	0.8
7708941	106	< 0.3
7708939	107	< 0.3
7708960	108	< 0.3
7708953	109	< 0.3
7708959	110	< 0.3
7708956	111	< 0.3
7708958	112	< 0.3
7708957	113	0.6
7708943	114	1.5
7708944	114	2.0
7708945	114	< 0.3
7708948	118	1.2
7708950	119	< 0.3
7708942	120	< 0.3
7708930	122	1.5
7708934	123	2.1
7708929	124	1.2
7708926	125	1.1
7708924	126	0.7
7708931	127	1.1
7708954	128	< 0.3
7708932	143	< 0.3
7708955	111-A	1.1
7708946	* 115 (tampered)	< 0.3
7708947	* 115 (tampered)	< 0.3
7708949	* 118 (tampered)	0.8
7708951	* 129 (tampered)	0.8
7708962	* 130 (tampered)	< 0.3
7708922	MAIN OFFICE	1.2
7708961	RPC	0.6

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Monocacy ES		
Test Period: 12/28/15-12/31/15		
Kit Number	QC Type	Result
7708933	D (122)	1.2
7708937	D (123)	2.0
7708925	D (126)	1.3
7708936	D (127)	0.9
7708923	D (MAIN OFFICE)	2.0
7708928	FB (124)	< 0.3
7708927	FB (125)	< 0.3
7708965	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:
MONOCACY ES MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708965	0	2015-12-28 @ 12:00 pm	2015-12-31 @ 1:00 pm	< 0.3	2016-01-05
7708952	102	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708947	115	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708940	103	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708938	104	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708935	105	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	0.8 ± 0.4	2016-01-05
7708941	106	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708939	107	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708960	108	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708953	109	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-04
7708959	110	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708956	111	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708955	111-A	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	1.1 ± 0.4	2016-01-05
7708958	112	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708957	113	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	0.6 ± 0.3	2016-01-04
7708943	114	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	1.5 ± 0.4	2016-01-05
7708944	114	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	2.0 ± 0.4	2016-01-05
7708946	115	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708948	118	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	1.2 ± 0.4	2016-01-05
7708949	118	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	0.8 ± 0.4	2016-01-05
7708950	119	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708942	120	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708930	122	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.5 ± 0.4	2016-01-05
7708933	122	2015-12-28 @ 3:00 pm	2015-12-31 @ 12:00 pm	1.2 ± 0.4	2016-01-05
7708934	123	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	2.1 ± 0.5	2016-01-05
7708937	123	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	2.0 ± 0.4	2016-01-05
7708928	124	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708929	124	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	1.2 ± 0.4	2016-01-05
7708926	125	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	1.1 ± 0.3	2016-01-04
7708927	125	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708924	126	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	0.7 ± 0.4	2016-01-05
7708925	126	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	1.3 ± 0.4	2016-01-05
7708931	127	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	1.1 ± 0.4	2016-01-04
7708936	127	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	0.9 ± 0.4	2016-01-05
7708954	128	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708951	129	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	0.8 ± 0.4	2016-01-05
7708962	130	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05

January* **LABORATORY ANALYSIS**
16, **REPORT ****
2016

Radon test result report for:

MONOCACY ES
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708945	114	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708932	143	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	< 0.3	2016-01-05
7708922	MAIN OFFICE	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	1.2 ± 0.3	2016-01-04
7708923	MAIN OFFICE	2015-12-28 @ 3:00 pm	2015-12-31 @ 11:00 am	2.0 ± 0.5	2016-01-05
7708961	RPC	2015-12-28 @ 4:00 pm	2015-12-31 @ 11:00 am	0.6 ± 0.3	2016-01-04

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

December
23,
2015

**LABORATORY ANALYSIS
REPORT ****

Spike Sample Laboratory Results

Radon test result report for:
MCPS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7706380	101	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	25.2	2015-12-23
7706381	102	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	26.5	2015-12-23
7706208	103	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	27.7	2015-12-23
7705132	104	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	28.6	2015-12-23
7706366	105	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	26.5	2015-12-23
7706211	106	2015-12-18 @ 9:00 am	2015-12-21 @ 9:00 am	26.1	2015-12-23

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 173224

NOMINAL Conditions: Radon Conc 26.9 pCi/L Rel. Hum 49.6 % Temp. 69.9 F

Date Start: 12/18/15 Date Stop: 12/21/15 Date Start: _____ Date Stop: _____

Time Start: 0929 Time Stop: 0929 Time Start: _____ Time Stop: _____

Device No.'s: 7705132, 7706208, Device No.'s: _____

7706211, 7706366, _____

7706380, 7706381 _____

F3 Left

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

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

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

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

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

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

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



Chain of Custody

Project Name: MCPS Radon Phase III

Name of Schools:

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

	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