



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Rock Terrace School
Date of Test Report	3/27/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	45
# Rooms Re-tested	9
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.1 pCi/L

Project Status:

1. Initial testing completed;
2. Missed Rooms need re-test;
3. Retesting Completed 3/14/23 – 3/17/23.
4. 5-Year Testing Completed.



March 27, 2023

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

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

Location: Rock Terrace School
390 Martins Lane
Rockville, MD 20850

Dear Mr. Croyle:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Rock Terrace School, located at 390 Martins Ln. Rockville, MD 20850 (subject site).

Scope of Services:

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

KCI visited the site on January 10, 2023 and deployed fifty-two (52) 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.

KCI returned to the site on January 13, 2023 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.

KCI re-visited the site on March 14, 2023 to deploy eleven (11) activated charcoal (AC) radon test kits for testing of missed rooms or compromised test kits during initial testing.

KCI returned to the site on March 17, 2023 to retrieve the radon re-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.

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.

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 temperatures ranged from the 26°F to the mid 56°F. Maximum sustained winds ranged from 0-21 miles per hour. Average humidity was around 68% with .09 inches of precipitation (rain) was recorded during testing period.

During the re-testing period, weather records indicate low temperatures were in the low-30s°F and high temperatures ranged to the mid-60s°F. Maximum sustained winds ranged from 0-33 miles per hour. Average humidity was around 50% with .10 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	

The results of the radon re-testing 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		
Rock Terrace School		
Test Period: 01/10/2023 - 01/13/2023		
Kit Number	Room / Area	Result
11285124	3	0.7
11285114	5	< 0.3
11285116	6	1.1
11285113	7	< 0.3
11285125	8	1.0
11285129	9	0.5
11285157	10	< 0.3
11285155	11	< 0.3
11285158	12	< 0.3
11285104	13	< 0.3
11285137	13	0.7
11285138	13	< 0.3
11285130	14	< 0.3
11285154	1A	1.2
11285171	1A	1.5
11285111	8 OFFICE	0.7
11285127	CAFE OFFICE	< 0.3
11285117	CAFER	< 0.3
11285118	CAFETERIA	< 0.3
11285146	COPIER ROOM	1.5
11285165	GIRLS PE OFFICE	< 0.3
11285139	GO	< 0.3
11285142	GO	< 0.3
11285141	GO 2	< 0.3
11285150	GO 3	< 0.3
11285149	GO 4	< 0.3
11285147	GO 5	< 0.3
11285163	GYM	< 0.3
11285172	GYM	0.7
11285115	HR	0.8
11285106	IMC	2.0
11285140	IMC	2.1
11285128	KITCHEN OFFICE	< 0.3
11285107	MAIN OFFICE	< 0.3
11285121	MAIN OFFICE	0.8
11285122	MAIN OFFICE	0.9
11285105	MAIN OFFICE 1	0.8
11285173	PADDED ROOM	0.6
11285166	PE OFFICE	0.6
11284859	PRINCIPAL	0.7
11285123	SECURITY	< 0.3
11285148	STAFF LOUNGE	< 0.3

Table 1- Radon Testing Results		
Rock Terrace School		
Test Period: 01/10/2023 - 01/13/2023		
Kit Number	Room / Area	Result
11285164	STAGE	0.6
11285112	WOC	< 0.3
11285126	WOC	1.0
11285156	WOC 2	< 0.3
11285134	WOC 3	0.5
11285133	WOC 4	< 0.3
11285131	WOC 5	0.6
11285132	WOC 6	< 0.3
11285119	WOC DOYLE	< 0.3
11285120	WOC LLOYD	< 0.3

Table 2- Radon Testing Results			
Rock Terrace School			
Test Period: 01/10/23 - 01/13/22			
Kit Number	QC Type	Room / Area	Result
11285137	D	13	0.7
11285138	FB	13	< 0.3
11285171	D	1a	1.5
11285139	D	GO	< 0.3
11285122	D	Main office	0.9
11285107	FB	Main office	< 0.3
11285112	D	WOC	< 0.3
11285162	OB	OFFICE BLANK	< 0.3
11284899	TB	TRAVEL BLANK	< 0.3

Table 1- Radon Testing Results		
Rock Terrace School RT		
Test Period: 03/14/2023 - 03/17/2023		
Kit Number	Room / Area	Result
11634996	2	< 0.3
11634941	4	< 0.3
11634944	CONFERENCE	< 0.3
11634950	HALLWAY OFFICE	< 0.3
11634960	HALLWAY OFFICE	< 0.3
11634967	HALLWAY OFFICE	< 0.3
11633981	TESTING	0.6
11634951	TESTING OFFICE 1	< 0.3
11634989	TESTING OFFICE 2	0.7
11634962	TESTING OFFICE 3	< 0.3
11634997	TESTING OFFICE 4	< 0.3

Table 2- Radon Testing Results			
Rock Terrace School RT			
Test Period: 03/14/23 - 03/17/23			
Kit Number	QC Type	Room / Area	Result
11634950	D	HALLWAY OFFICE	< 0.3
11634960	FB	HALLWAY OFFICE	< 0.3
11634071	OB	OFFICE BLANK	< 0.3
11634072	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

ROCK TERRACE SCHOOL**1**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285157	10	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285155	11	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285158	12	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285104	13	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285138	13	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285137	13	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	0.7 ± 0.3	2023-01-16
11285130	14	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285154	1A	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	1.2 ± 0.3	2023-01-16
11285171	1A	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	1.5 ± 0.3	2023-01-16
11285124	3	2023-01-10 @ 8:00 am	2023-01-13 @ 9:00 am	0.7 ± 0.3	2023-01-16
11285114	5	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285116	6	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	1.1 ± 0.3	2023-01-16
11285113	7	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285125	8	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	1.0 ± 0.3	2023-01-16
11285111	8 OFFICE	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.7 ± 0.3	2023-01-16
11285129	9	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	0.5 ± 0.3	2023-01-16
11285127	CAFE OFFICE	2023-01-10 @ 8:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285117	CAFETERIA	2023-01-10 @ 8:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285118	CAFETERIA	2023-01-10 @ 8:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285146	COPIER ROOM	2023-01-10 @ 10:00 am	2023-01-13 @ 9:00 am	1.5 ± 0.3	2023-01-16
11285165	GIRLS PE OFFICE	2023-01-10 @ 10:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285139	GO	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285142	GO	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285141	GO 2	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285150	GO 3	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285149	GO 4	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285147	GO 5	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285172	GYM	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	0.7 ± 0.3	2023-01-16
11285163	GYM	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	< 0.3	2023-01-16
11285115	HR	2023-01-10 @ 8:00 am	2023-01-13 @ 9:00 am	0.8 ± 0.3	2023-01-16
11285106	IMC	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	2.0 ± 0.3	2023-01-16
11285140	IMC	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	2.1 ± 0.3	2023-01-16
11285128	KITCHEN OFFICE	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285121	MAIN OFFICE	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.8 ± 0.3	2023-01-16
11285107	MAIN OFFICE	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285122	MAIN OFFICE	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.9 ± 0.3	2023-01-16
11285105	MAIN OFFICE 1	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.8 ± 0.3	2023-01-16

Radon test result report for:
ROCK TERRACE SCHOOL
1

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285173	PADDED ROOM	2023-01-10 @ 10:00 am	2023-01-13 @ 8:00 am	0.6 ± 0.3	2023-01-16
11285166	PE OFFICE	2023-01-10 @ 10:00 am	2023-01-13 @ 8:00 am	0.6 ± 0.3	2023-01-16
11284859	PRINCIPAL	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.7 ± 0.3	2023-01-16
11285123	SECURITY	2023-01-10 @ 8:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285148	STAFF LOUNGE	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285164	STAGE	2023-01-10 @ 9:00 am	2023-01-13 @ 8:00 am	0.6 ± 0.3	2023-01-16
11285126	WOC	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	1.0 ± 0.3	2023-01-16
11285112	WOC	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285156	WOC 2	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285134	WOC 3	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.5 ± 0.3	2023-01-16
11285133	WOC 4	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285131	WOC 5	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	0.6 ± 0.3	2023-01-16
11285132	WOC 6	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285119	WOC DOYLE	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16
11285120	WOC LLOYD	2023-01-10 @ 9:00 am	2023-01-13 @ 9:00 am	< 0.3	2023-01-16

March 24, 2023

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**ROCK TERRACE SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11634996	2	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	< 0.3	2023-03-21
11634941	4	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	< 0.3	2023-03-21
11634944	CONFERENCE	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	< 0.3	2023-03-21
11634950	HALLWAY OFFICE	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	< 0.3	2023-03-21
11634960	HALLWAY OFFICE	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	< 0.3	2023-03-21
11634967	HALLWAY OFFICE	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	< 0.3	2023-03-21
11633981	TESTING	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	0.6 ± 0.3	2023-03-21
11634951	TESTING OFFICE 1	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	< 0.3	2023-03-21
11634989	TESTING OFFICE 2	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	0.7 ± 0.3	2023-03-21
11634962	TESTING OFFICE 3	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	< 0.3	2023-03-21
11634997	TESTING OFFICE 4	2023-03-14 @ 8:00 am	2023-03-17 @ 12:00 pm	< 0.3	2023-03-21

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 208802

NOMINAL Conditions: Radon Conc 24.4 pCi/L Rel. Hum 48.6 % Temp. 79.3 F

Date Start: 1/27/23 Date Stop: 1/30/23 Date Start: _____ Date Stop: _____

Time Start: 0816 Time Stop: 0816 Time Start: _____ Time Stop: _____

Device No.'s: (5) CHAR BAGS Device No.'s: _____

11633682, 11633687, 11633688 _____

11633695, 11633696 _____

P3 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**

February 3, 2023

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OFFICE

MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11633696	SK10	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	24.2 ± 1.9	2023-02-03
11633682	SK6	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	26.9 ± 2.1	2023-02-03
11633687	SK7	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	23.8 ± 1.9	2023-02-03
11633688	SK8	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	25.9 ± 2.1	2023-02-03
11633695	SK9	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	27.0 ± 2.2	2023-02-03

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 – Week 1 January Schools

Name of Schools:

1. Woodfield ES
2. Montgomery Village MS
3. Albert Einstein HS
4. Garrett Park Annex
5. Garrett Park ES
6. Kensington-Parkwood ES
7. Silver Creek MS
8. Stephen Knolls School
9. Highland View ES
10. MacDonald Knolls ECC
11. Montgomery Knolls ES
12. Rock Terrace HS

	Date	Initials
Radon Test Kits Deployed	01/10/2023	BMM
Radon Test Kits Collected	01/13/2023	BMM
Radon Test Kits Shipped to Lab*	01/13/2023	BMM
Radon Test Kits Received by Lab*	01/17/2023	BMM

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Rock Terrace School RT

Name of Schools:

1. Rock Terrace School RT

	Date	Initials
Radon Test Kits Deployed	03/14/2023	BMM
Radon Test Kits Collected	03/17/2023	BMM
Radon Test Kits Shipped to Lab*	03/17/2023	BMM
Radon Test Kits Received by Lab*	03/21/2023	BMM

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



MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary:
Rock Terrance High School
390 Martins Lane,
Rockville, MD 20850

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:	5
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	<0.4
High Value:	2.2

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: Rock Terrace High School
390 Martins Lane,
Rockville, MD 20850

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 Rock Terrace High School, located at 390 Martins Lane, Rockville, MD 20850 (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 five (5) 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 # ARLO007).

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.

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Rock Terrace High School		
Testing period: 2/26/19 - 3/01/19		
Kit Number	Room / Area	Result (pCi/L)
3923517	Gym	<0.4
3923539	IMC	2.2
3923535	Security Office	<0.4
3923534	Staff Lounge	<0.4
3923540	WOC 3	<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 # 0448138-1

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

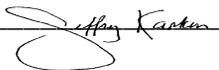
MCPS Radon Survey Rock Terrace HS
390 Martins Lane
Rockville MD 20850

Log Number	Device Number	Test Date	Exposure Start	Exposure End	Area Tested	Result pCi/L
3220674	3923540	02/26/2019	10:20 am	03/01/2019 10:15 am	Floor Main Room WOC 3	< 0.4
3220675	3923535	02/26/2019	10:23 am	03/01/2019 10:16 am	Floor Main Room Security Office	< 0.4
3220676	3923534	02/26/2019	10:26 am	03/01/2019 10:17 am	Floor Main Room Staff Lounge	< 0.4
3220677	3923539	02/26/2019	10:30 am	03/01/2019 10:18 am	Floor Main Room IMC	2.2
3220678	3923517	02/26/2019	10:35 am	03/01/2019 10:19 am	Floor Main Room Gym	< 0.4

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: 

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

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MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary:
Rock Terrance High School
390 Martins Lane,
Rockville, MD 20850

Date of Test Report:	02/21/2019
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:	57
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	1.9

Project Status

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



February 21, 2019

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

Re: Radon Testing Services

Location: Rock Terrace High School
390 Martins Lane,
Rockville, MD 20850

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 Rock Terrace High School, located at 390 Martins Lane, Rockville, MD 20850 (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 sixty-nine (69) 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 $\leq 65^{\circ}\text{F}$.

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 B

Radon Test Summary Spreadsheet

Radon Testing Results		
Rock Terrace High School		
Testing period: 11/12/18 - 11/15/18		
Kit Number	Room / Area	Result (pCi/L)
3917212	Assistant Principal	<0.4
3917222	Bistro	0.7
3917225	Building Services	<0.4
3917201	Cafeteria	<0.4
3917401	Cafeteria	<0.4
3917224	E Wing Conference Room	0.5
3917227	ESOL	<0.4
3917205	Finance #5	<0.4
3917242	Gym	0.6
3917282	Gym (MISSING)	--
3917214	Gym Office	<0.4
3917238	Health Room	<0.4
3917284	IMC	1.2
3917235	IMC (MISSING)	--
3917290	Kitchen	<0.4
3917234	Kitchen	<0.4
3917240	Main Office	<0.4
3917210	Office 1	<0.4
3917218	Office 2	<0.4
3917204	Office 3	<0.4
3917211	Office 4	<0.4
3917215	Office 5	<0.4
3917206	Office 6	<0.4
3917228	OT	0.4
3917239	Principal	<0.4
3917286	Room 10	<0.4
3917232	Room 11	<0.4
3917288	Room 12	<0.4
3917202	Room 13	<0.4
3917289	Room 14	<0.4
3917258	Room 1A	0.5
3917259	Room 1B	0.8
3917221	Room 2	<0.4
3917207	Room 3	<0.4
3917229	Room 4	<0.4
3917281	Room 5	<0.4
3917209	Room 6	0.6
3917220	Room 7	<0.4
3917231	Room 8	<0.4
3917285	Room 9	<0.4
--	Security Office (MISSED)	--
3917216	SOC#4	<0.4
--	Staff Lounge (MISSED)	--

Radon Testing Results		
Rock Terrace High School		
Testing period: 11/12/18 - 11/15/18		
Kit Number	Room / Area	Result (pCi/L)
3917287	Stage	1.9
3917236	WOC1	<0.4
3917203	WOC2	<0.4
3917208	WOC3 (MISSING)	--
3917256	Wood Shop	<0.4
3917223	WS Office 1	0.9
3917254	WS Office 2	0.9
3917252	WS office 3	1.1
3917226	WS Office 4	0.4

Radon Testing Results		
Rock Terrace High School		
Testing period: 11/12/18 - 11/15/18		
Kit Number	QC Type	Result (pCi/L)
3917217	PE office (D)	<0.4
3917233	Room 14 (D)	<0.4
3917230	Room 4 (D)	<0.4
3917213	Room 7 (D)	<0.4
3917237	Room 8 (D)	<0.4
3917297	Field Blank	<0.4
3917298	Field Blank	<0.4
3917295	Office Blank	<0.4
3917296	Transit Blank	Unable to Report

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical 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
Rock Terrace HS
390 Martine Lane
Rockville MD 20850

Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
2393490	3917230	11/12/2018 8:05 pm	11/15/2018 1:58 pm	Main Level Room 4	< 0.4
2393491	3917236	11/12/2018 6:27 pm	11/15/2018 2:05 pm	Main Level Room WOC1	< 0.4
2393492	3917298	11/12/2018 6:27 pm	11/15/2018 3:20 pm	Field Blank	< 0.4
2393493	3917203	11/12/2018 6:28 pm	11/15/2018 2:06 pm	Main Level Room WOC2	< 0.4
2393494	3917256	11/12/2018 8:18 pm	11/15/2018 3:13 pm	Main Level Room Ind Services	< 0.4
2393496	3917212	11/12/2018 7:34 pm	11/15/2018 2:34 pm	Main Level Assiatant Principal	0.5
2393497	3917231	11/12/2018 6:32 pm	11/15/2018 2:08 pm	Main Level Room 8	< 0.4
2393498	3917237	11/12/2018 6:32 pm	11/15/2018 2:08 pm	Main Level Room 8	< 0.4
2393499	3917223	11/12/2018 8:22 pm	11/15/2018 3:16 pm	Main Level Room WS Off 1	0.9
2393500	3917209	11/12/2018 6:34 pm	11/15/2018 2:10 pm	Main Level Room 6	0.6
2393501	3917229	11/12/2018 8:05 pm	11/15/2018 2:28 pm	Main Level Room 4	< 0.4

Comment: AMENDED REPORT for 3917296 on 2/7/19. Device 3917296 was not analyzed. Intertek-PSI (VA) was emailed a copy of this report.

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

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.

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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
Rock Terrace HS
390 Martine Lane
Rockville MD 20850

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2393502	3917228	11/12/2018 8:08 pm 11/15/2018 3:04 pm	Main Level Room OT	0.4
2393503	3917238	11/12/2018 6:36 pm 11/15/2018 2:15 pm	Main Level Health Room	< 0.4
2393504	3917207	11/12/2018 6:38 pm 11/15/2018 2:17 pm	Main Level Room 3	< 0.4
2393505	3917295	11/12/2018 6:00 pm 11/15/2018 6:00 pm	Main Level Office Blank	< 0.4
2393506	3917225	11/12/2018 8:16 pm 11/15/2018 3:12 pm	Main Level BSM	< 0.4
2393507	3917239	11/12/2018 6:42 pm 11/15/2018 2:19 pm	Main Level Principal	< 0.4
2393508	3917221	11/12/2018 8:12 pm 11/15/2018 3:08 pm	Main Level Room 2	< 0.4
2393509	3917259	11/12/2018 7:32 pm 11/15/2018 2:42 pm	Main Level Room 1B	0.8
2393510	3917240	11/12/2018 6:44 pm 11/15/2018 2:20 pm	Main Level Room Main Off	< 0.4
2393511	3917210	11/12/2018 6:52 pm 11/15/2018 2:21 pm	Main Level Office 1	< 0.4
2393512	3917222	11/12/2018 8:14 pm 11/15/2018 3:10 pm	Main Level Bistro	0.7

Comment: AMENDED REPORT for 3917296 on 2/7/19. Device 3917296 was not analyzed. Intertek-PSI (VA) was emailed a copy of this report.

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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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
Rock Terrace HS
390 Martine Lane
Rockville MD 20850

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2393513	3917254	11/12/2018 8:24 pm - 11/15/2018 3:17 pm	Main Level WS Off 2	0.9
2393514	3917211	11/12/2018 6:54 pm - 11/15/2018 2:22 pm	Main Level Office 4	< 0.4
2393515	3917215	11/12/2018 6:56 pm - 11/15/2018 2:23 pm	Main Level Office 5	< 0.4
2393516	3917297	11/12/2018 6:27 pm - 11/15/2018 3:20 pm	Field Blank	< 0.4
2393517	3917226	11/12/2018 8:28 pm - 11/15/2018 3:20 pm	Main Level WS Off 4	0.4
2393518	3917206	11/12/2018 6:57 pm - 11/15/2018 2:25 pm	Main Level Office 6	< 0.4
2393519	3917218	11/12/2018 7:02 pm - 11/15/2018 2:27 pm	Main Level Room SDT#2	< 0.4
2393520	3917224	11/12/2018 8:07 pm - 11/15/2018 3:00 pm	Main Level Confrence Room	0.5
2393521	3917252	11/12/2018 8:26 am - 11/15/2018 3:20 pm	Main Level Room WS off 3	1.1
2393522	3917204	11/12/2018 7:04 pm - 11/15/2018 2:28 pm	Main Level Room SD#3	< 0.4
2393523	3917227	11/12/2018 8:10 pm - 11/15/2018 3:06 pm	Main Level ESOL	< 0.4

Comment: AMENDED REPORT for 3917296 on 2/7/19. Device 3917296 was not analyzed. Intertek-PSI (VA) was emailed a copy of this report.

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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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
Rock Terrace HS
390 Martine Lane
Rockville MD 20850

Log Number	Device Number	Test Exposure Duration:			Area Tested	Result pCi/L
2393524	3917216	11/12/2018	7:06 pm	11/15/2018 2:30 pm	Main Level Room SOC#4	< 0.4
2393525	3917205	11/12/2018	7:08 pm	11/15/2018 2:32 pm	Main Level Room Finance #5	< 0.4
2393527	3917258	11/12/2018	8:19 pm	11/15/2018 3:14 pm	Main Level Room 1A	0.5
2393528	3917285	11/12/2018	7:12 pm	11/15/2018 2:33 pm	Main Level Room 9	< 0.4
2393529	3917286	11/12/2018	7:16 pm	11/15/2018 2:35 pm	Main Level Room 10	< 0.4
2393530	3917232	11/12/2018	7:18 pm	11/15/2018 2:36 pm	Main Level Room 11	< 0.4
2393531	3917288	11/12/2018	7:20 pm	11/15/2018 2:37 pm	Main Level Room 12	< 0.4
2393532	3917202	11/12/2018	7:22 pm	11/15/2018 2:38 pm	Main Level Room 13	< 0.4
2393533	3917289	11/12/2018	7:24 pm	11/15/2018 2:40 pm	Main Level Room 14	< 0.4
2393534	3917233	11/12/2018	7:24 pm	11/15/2018 2:40 pm	Main Level Room 14	< 0.4
2393535	3917242	11/12/2018	7:28 pm	11/15/2018 2:41 pm	Main Level Gym	0.6

Comment: AMENDED REPORT for 3917296 on 2/7/19. Device 3917296 was not analyzed. Intertek-PSI (VA) was emailed a copy of this report.

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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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
Rock Terrace HS
390 Martine Lane
Rockville MD 20850

Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result pCi/L
2393536	3917287	11/12/2018 7:32 pm	11/15/2018 2:42 pm	Main Level Stage	1.9
2393537	3917214	11/12/2018 7:34 pm	11/15/2018 2:43 pm	Main Level PE Office	< 0.4
2393538	3917217	11/12/2018 6:40 pm	11/15/2018 2:18 pm	Main Level PE Office	< 0.4
2393539	3917284	11/12/2018 7:40 pm	11/15/2018 2:46 pm	Main Level IMC	1.2
2393540	3917201	11/12/2018 7:32 pm	11/15/2018 2:48 pm	Main Level Café	< 0.4
2393541	3917401	11/12/2018 7:44 pm	11/15/2018 2:50 pm	Main Level Café	< 0.4
2393542	3917290	11/12/2018 7:45 pm	11/15/2018 2:52 pm	Main Level Kitchen	< 0.4
2393543	3917234	11/12/2018 7:46 pm	11/15/2018 2:54 pm	Main Level Kitchen	< 0.4
2393544	3917220	11/12/2018 7:48 pm	11/15/2018 2:56 pm	Main Level Room 7	< 0.4
2393545	3917213	11/12/2018 7:48 pm	11/15/2018 2:56 pm	Main Level Room 7	< 0.4
2393546	3917281	11/12/2018 7:50 pm	11/15/2018 2:57 pm	Main Level Room 5	< 0.4

Comment: AMENDED REPORT for 3917296 on 2/7/19. Device 3917296 was not analyzed. Intertek-PSI (VA) was emailed a copy of this report.

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

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

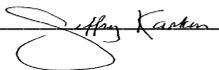
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3204125	3926831	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	36.1
3204126	3926832	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.8
3204127	3926833	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.7
3204128	3926834	12/07/2018 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:

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.

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

	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



MCPS RADON TESTING

Executive Summary: Rock Terrace School

Date of Test Report:	11/28/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	2
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	< 0.3

Project Status:

Post remediation testing completed; No further action at this time.



November 28, 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 # 12146341.60

Location: Rock Terrace School
390 Martins Lane
Rockville, MD 20850

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Rock Terrace School, located at 390 Martins Lane in Rockville, Maryland 20850 (subject site).

Scope of Services:

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

KCI visited the site on November 15, 2016 and deployed two (2) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. 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 three (3) 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 November 18, 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

These tests were conducted to:

- Confirm the success of the mitigation system(s)

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the 30s and high temperatures ranged from 60-70. Maximum sustained winds ranged from 8-14 miles per hour. Average humidity was around 65%. No precipitation was recorded during the testing period.

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 office blank and lab transit blank 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

Radon Testing Results		
Rock Terrace School		
Test Period: 11/15/16-11/18/16		
Kit Number	Room / Area	Result
7826516	OFFICE 2	< 0.3
7826515	OFFICE 5	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

November 22, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**ROCK TERRACE SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7826516	OFFICE 2	2016-11-15 @ 11:00 am	2016-11-18 @ 10:00 am	< 0.3	2016-11-21
7826515	OFFICE 5	2016-11-15 @ 11:00 am	2016-11-18 @ 10:00 am	< 0.3	2016-11-21

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

November 22, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS Radon

Phase 19 BLANKS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802909	OFFICE	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	< 0.3	2016-11-16
7802910	TRANSIT	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	< 0.3	2016-11-16

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

November 22, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**MCPS Radon
Spike Sample Results**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7802912	1	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	23.5 ± 0.8	2016-11-16
7802913	2	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	23.0 ± 0.8	2016-11-16
7802911	3	2016-11-11 @ 10:00 am	2016-11-14 @ 10:00 am	25.6 ± 0.9	2016-11-16

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 177376

NOMINAL Conditions: Radon Conc 26.3 pCi/L Rel. Hum 59.1 % Temp. 29.0 F

Date Start: 11/11/16 Date Stop: 11/14/16 Date Start: _____ Date Stop: _____

Time Start: 0958 Time Stop: 0958 Time Start: _____ Time Stop: _____

Device No.'s: (3) Char. Bags - Device No.'s: _____

7802911 thro 7802913

GS Middle

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

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

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

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

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 19

Names of Schools:

1. Wood Acres Elementary School
2. Walt Whitman High School
3. East Silver Spring Elementary School

	Date	Initials
Radon Test Kits Deployed	11/14/16	JM
Radon Test Kits Collected	11/17/16	JM
Radon Test Kits Shipped to Lab*	11/18/16	JM
Radon Test Kits Received by Lab*	11/21/16	JM

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 19

Names of Schools:

1. Montgomery Blair High School
2. Springbrook High School
3. Sligo Middle School
4. Einstein High School
5. John F. Kennedy High School
6. Blair Ewing Center
7. Rock Terrace School
8. Thomas Wootton High School
9. Fields Road Elementary School

	Date	Initials
Radon Test Kits Deployed	11/15/16	JM
Radon Test Kits Collected	11/18/16	JM
Radon Test Kits Shipped to Lab*	11/18/16	JM
Radon Test Kits Received by Lab*	11/21/16	JM

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

RADON SCREENING SURVEY – FOLLOW-UP ROCK TERRACE SCHOOL

390 Martins Lane, Rockville, Maryland 20850

EXECUTIVE SUMMARY

Date of Test Report:	3/15/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	6
# Rooms \geq 4.0 pCi/L:	0
Low Value:	0.8
High Value:	3.8
Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level	2

Summary of Sampling Events \geq 4.0 pCi/L

Room	Result (pCi/L) 1/25/16 (Initial)	Result (pCi/L) 3/15/16 Follow-Up	Average Result (pCi/L)
Office 5	7.1	3.8	5.5
Gym Office	5.3	2.8	4.1
Bistro	2.4 Tampered	0.8	1.6
Alt Ed	3.3	0.8	2.1
CAFÉ Off	3.7	2.3	3.0
14	3.5	1.3	2.4



MCPS RADON TESTING

Executive Summary: Rock Terrace School

Date of Test Report:	3/15/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	6
# Rooms \geq 4.0 pCi/L:	0
Low Value:	0.8
High Value:	3.8

Project Status:

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



March 15, 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 # 12146341.29

Location: Rock Terrace School
390 Martins Lane
Rockville, MD 20850

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Rock Terrace School, located at 390 Martins Lane in Rockville, Maryland 20850 (subject site).

Scope of Services:

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

KCI visited the site on February 22, 2016 and deployed eight (8) 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 25, 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 $\leq 65^{\circ}$ 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. Note that strong storms and heavy rainfall were recorded during the test period. The unusual weather conditions may have resulted in atypical radon test results for this facility.

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 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. 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

*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 9 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Rock Terrace School		
Test Period: 02/22/16-02/25/16		
Kit Number	Room / Area	Result
7712579	ALT ED	0.8
7712581	BISTRO	0.8
7712548	CAFE OFF	2.3
7712592	GYM OFF	2.8
7712571	OFF 5	3.8
7712578	RM 14	1.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Rock Terrace School		
Test Period: 02/22/16-02/25/16		
Kit Number	QC Type	Result
7712569	D (GYM OFF)	3.0
7712600	FB (GYM OFF)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

March 8, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**ROCK TERRACE SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7712579	ALT ED	2016-02-22 @ 12:00 pm	2016-02-25 @ 1:00 pm	0.8 ± 0.3	2016-02-29
7712581	BISTRO	2016-02-22 @ 12:00 pm	2016-02-25 @ 1:00 pm	0.8 ± 0.3	2016-02-29
7712548	CAFE OFF	2016-02-22 @ 12:00 pm	2016-02-25 @ 1:00 pm	2.3 ± 0.4	2016-02-29
7712569	GYM OFF	2016-02-22 @ 12:00 pm	2016-02-25 @ 1:00 pm	3.0 ± 0.4	2016-02-29
7712592	GYM OFF	2016-02-22 @ 12:00 pm	2016-02-25 @ 1:00 pm	2.8 ± 0.4	2016-02-29
7712600	GYM OFF	2016-02-22 @ 12:00 pm	2016-02-25 @ 1:00 pm	< 0.3	2016-02-29
7712571	OFF 5	2016-02-22 @ 12:00 pm	2016-02-25 @ 1:00 pm	3.8 ± 0.4	2016-02-29
7712578	RM 14	2016-02-22 @ 12:00 pm	2016-02-25 @ 1:00 pm	1.3 ± 0.3	2016-02-29

March 9, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS
Phase 9 Office Blanks

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7712568	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7712584	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719460	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719481	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719497	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29
7719498	0	2016-02-22 @ 6:00 pm	2016-02-25 @ 3:00 pm	< 0.3	2016-02-29

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

March 9, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS
Phase 9 Office Blanks

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7731626	0	2016-02-23 @ 2:00 pm	2016-02-26 @ 3:00 pm	< 0.3	2016-03-01
7731633	0	2016-02-23 @ 2:00 pm	2016-02-26 @ 3:00 pm	< 0.3	2016-03-01
7735204	0	2016-02-23 @ 2:00 pm	2016-02-26 @ 3:00 pm	< 0.3	2016-03-01

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

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: 11/30/16 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 _____

ε3 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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

- | | | |
|--------------------------|---------------------------|------------------------|
| 1. Rocking Horse Road ES | 16. Broad Acres ES | 31. Rosa Parks MS |
| 2. Rockwell ES | 17. Belmont ES | 32. Rosemary Hills ES |
| 3. Oakland Terrace ES | 18. Emory Grove Center | 33. Sequoyah ES |
| 4. Rosemont ES | 19. Forest Knolls ES | 34. Damascus HS |
| 5. Beall ES | 20. Baker MS | 35. Einstein ES |
| 6. Cresthaven ES | 21. MLK MS | 36. Forest Oak MS |
| 7. Quince Orchard HS | 22. Richard Montgomery HS | 37. Hoover MS |
| 8. Smith Center | 23. Sherwood HS | 38. Julius West MS |
| 9. Ashburton ES | 24. Walter Johnson HS | 39. John F. Kennedy HS |
| 10. Bannockburn ES | 25. Diamond ES | 40. Travilah ES |
| 11. Bradley Hills ES | 26. Newport Mill MS | 41. Watkins Mill HS |
| 12. Cannon Road ES | 27. Drew ES | 42. Northwood HS |
| 13. Flora M. Singer ES | 28. Monocacy ES | 43. Lincoln Center |
| 14. Clarksburg HS | 29. Potomac ES | |
| 15. Briggs Chaney MS | 30. Rock Terrace School | |

	Date	Initials
Radon Test Kits Deployed	2/22/16	JM
Radon Test Kits Collected	2/25/16	JM
Radon Test Kits Shipped to Lab*	2/25/16	JM
Radon Test Kits Received by Lab*	2/29/16	JM

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

- | | |
|----------------------------|-------------------------|
| 1. Banneker MS | 10. Maryvale ES |
| 2. Bethesda-Chevy Chase HS | 11. Montgomery Blair HS |
| 3. Burtonsville ES | 12. Poolesville HS |
| 4. Chevy Chase ES | 13. Rachel Carson ES |
| 5. Clopper Mill ES | 14. Stedwick ES |
| 6. Edison HS | 15. Watkins Mill ES |
| 7. Flower Hill ES | 16. Laytonsville ES |
| 8. Flower Valley ES | 17. Lincoln Center |
| 9. Greencastle ES | |

	Date	Initials
Radon Test Kits Deployed	2/23/16	JM
Radon Test Kits Collected	2/26/16	JM
Radon Test Kits Shipped to Lab*	2/26/16	JM
Radon Test Kits Received by Lab*	3/01/16	JM

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



MCPS RADON TESTING

Executive Summary: Rock Terrace School

Date of Test Report:	1/25/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	53
# Rooms \geq 4.0 pCi/L:	2
Low Value:	< 0.3
High Value:	7.1

Rooms with results \geq 4.0 pCi/L:
Office 5 (7.1 pCi/L), Gym Office (5.3 pCi/L)

Project Status:

Initial testing completed; re-test needed for results \geq 4.0 pCi/L.
Initial testing completed; missing or compromised samples need re-test.



January 25, 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 # 12146341.21

Location: Rock Terrace School
390 Martins Lane
Rockville, MD 20850

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Rock Terrace School, located at 390 Martins Lane in Rockville, Maryland 20850 (subject site).

Scope of Services:

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

KCI visited the site on December 28, 2015 and deployed sixty-three (63) 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	Office 5	7.1
	Gym Office	5.3
< 4.0 pCi/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. 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 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		
Rock Terrace HS		
Test Period: 12/28/15-12/31/15		
Kit Number	Room / Area	Result
7712818	ALT ED	3.3
7712836	ASST PRINC OFF	1.5
7712804	* BISTRO (tampered)	2.4
7712802	BLDG SER	1.2
7712803	CAFE	1.6
7712832	CAFE	1.4
7712823	CAFE OFF	3.7
7712819	COPIER RM	< 0.3
7712820	E WING CON	2.4
7712849	GYM	1.8
7712863	GYM	1
7712857	GYM OFF	5.3
7712813	HOPKINS	< 0.3
7712861	HR	1
7712821	IMC	2.8
7712822	IMC	3.1
7712829	KITCH OFF	1.3
7712833	MAIN OFF	1.2
7712816	MS CAPUTO	1.3
7712846	OFF 2 SDT	0.5
7712834	OFF 3 STAF	< 0.3
7712853	OFF 4 SOC	< 0.3
7712848	OFF 5 FIN	7.1
7712817	OT RM	< 0.3
7712830	PRINC OFF	0.7
7712845	RM 10	< 0.3
7712856	RM 11	< 0.3
7712866	RM 12	2.5
7712860	RM 13	1
7712850	RM 14	3.5
7712811	RM 1A	< 0.3
7712807	RM 1B	< 0.3
7712814	RM 2	< 0.3
7712854	RM 3	0.7
7712812	RM 4	< 0.3
7712809	RM 5	< 0.3
7712824	RM 6	2.3
7712828	RM 7	< 0.3
7712858	RM 8	1.2
7712851	RM 9	< 0.3
7712831	SECURITY OFF	2.1
7712827	ST LOUNGE	2
7712815	WESTW CON RM	< 0.3
7712838	WOC	1.2
7712842	WOC 1	1.2
7712835	WOC 2	1

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Rock Terrace HS		
Test Period: 12/28/15-12/31/15		
Kit Number	Room / Area	Result
7712840	WOC 3	< 0.3
7712837	WOC 4	1.3
7712843	WOC 5	< 0.3
7712852	WOC 6	1
7712839	WOC A	1
7712806	WOOD SHOP	1.3
7712808	WOOD SHOP	1

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Rock Terrace HS		
Test Period: 12/28/15-12/31/15		
Kit Number	QC Type	Result
7712805	D (BLDG SER)	1.1
7712862	D (RM 12)	3
7712810	D (RM 4)	< 0.3
7712826	D (RM 7)	< 0.3
7712841	D (WOC 5)	< 0.3
7712801	FB (BLDG SER)	< 0.3
7712855	FB (GYM OFF)	< 0.3
7712825	FB (IMC)	< 0.3
7712847	FB (WOC 5)	< 0.3
7710509	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:
ROCK TERRACE HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7710509	0	2015-12-28 @ 4:00 pm	2015-12-31 @ 1:00 pm	< 0.3	2016-01-05
7712818	ALT ED	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	3.3 ± 0.6	2016-01-05
7712836	ASST PRINC OFF	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	1.5 ± 0.4	2016-01-05
7712804	BISTRO	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	2.4 ± 0.5	2016-01-05
7712801	BLDG SER	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712802	BLDG SER	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	1.2 ± 0.4	2016-01-05
7712805	BLDG SER	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	1.1 ± 0.4	2016-01-05
7712803	CAFE	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	1.6 ± 0.4	2016-01-05
7712832	CAFE	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	1.4 ± 0.4	2016-01-05
7712823	CAFE OFF	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	3.7 ± 0.6	2016-01-05
7712819	COPIER RM	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712820	E WING CON	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	2.4 ± 0.5	2016-01-05
7712849	GYM	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	1.8 ± 0.4	2016-01-05
7712863	GYM	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	1.0 ± 0.4	2016-01-05
7712855	GYM OFF	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712857	GYM OFF	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	5.3 ± 0.7	2016-01-05
7712813	HOPKINS	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712861	HR	2015-12-28 @ 1:00 pm	2015-12-31 @ 11:00 am	1.0 ± 0.4	2016-01-05
7712821	IMC	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	2.8 ± 0.5	2016-01-05
7712822	IMC	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	3.1 ± 0.5	2016-01-05
7712825	IMC	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712829	KITCH OFF	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	1.3 ± 0.4	2016-01-05
7712833	MAIN OFF	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	1.2 ± 0.4	2016-01-05
7712816	MS CAPUTO	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	1.3 ± 0.4	2016-01-05
7712846	OFF 2 SDT	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	0.5 ± 0.4	2016-01-05
7712834	OFF 3 STAF	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712853	OFF 4 SOC	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712848	OFF 5 FIN	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	7.1 ± 0.8	2016-01-05
7712817	OT RM	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712830	PRINC OFF	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	0.7 ± 0.4	2016-01-05
7712845	RM 10	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712856	RM 11	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712862	RM 12	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	3.0 ± 0.5	2016-01-05
7712866	RM 12	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	2.5 ± 0.5	2016-01-05
7712860	RM 13	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	1.0 ± 0.4	2016-01-05
7712850	RM 14	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	3.5 ± 0.6	2016-01-05
7712811	RM 1A	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05

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

Radon test result report for:
**ROCK TERRACE HS
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7712807	RM 1B	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712814	RM 2	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712854	RM 3	2015-12-28 @ 1:00 pm	2015-12-31 @ 11:00 am	0.7 ± 0.4	2016-01-05
7712810	RM 4	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712812	RM 4	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712809	RM 5	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712824	RM 6	2015-12-28 @ 1:00 pm	2015-12-31 @ 11:00 am	2.3 ± 0.5	2016-01-05
7712826	RM 7	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712828	RM 7	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712858	RM 8	2015-12-28 @ 1:00 pm	2015-12-31 @ 11:00 am	1.2 ± 0.4	2016-01-05
7712851	RM 9	2015-12-28 @ 1:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712831	SECURITY OFF	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	2.1 ± 0.5	2016-01-05
7712827	ST LOUNGE	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	2.0 ± 0.5	2016-01-05
7712815	WESTW CON RM	2015-12-28 @ 11:00 am	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712838	WOC	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	1.2 ± 0.4	2016-01-05
7712842	WOC 1	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	1.2 ± 0.4	2016-01-05
7712835	WOC 2	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	1.0 ± 0.4	2016-01-05
7712840	WOC 3	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712837	WOC 4	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	1.3 ± 0.4	2016-01-05
7712841	WOC 5	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712843	WOC 5	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712847	WOC 5	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	< 0.3	2016-01-05
7712852	WOC 6	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	1.0 ± 0.4	2016-01-05
7712839	WOC A	2015-12-28 @ 12:00 pm	2015-12-31 @ 10:00 am	1.0 ± 0.4	2016-01-05
7712806	WOOD SHOP	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	1.3 ± 0.4	2016-01-05
7712808	WOOD SHOP	2015-12-28 @ 10:00 am	2015-12-31 @ 10:00 am	1.0 ± 0.4	2016-01-05

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

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, 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 μ R/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