



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Northwest High School
Date of Test Report	05/12/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	3
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	0.6 pCi/L

Project Status

Current Project Status at this time: Testing completed; no further action needed



May 12, 2022

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

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

Location: Northwest High School
13501 Richter Farm Rd.
Germantown, MD 20874

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 Northwest High School, located at 13501 Richter Farm Rd. Germantown, MD 20874 (subject site).

Scope of Services:

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

KCI visited the site on March 22, 2022 and deployed six (6) 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 sampled the following locations during this follow-up test:

1. Rooms with missing test kits from the Radon 2022 testing period (i.e. test kit was deployed but not recovered),
2. Rooms with invalidated test kits from the Radon 2022 testing period (e.g. an open window in the room or disturbed test kit),
3. Rooms which were locked/inaccessible during the Radon 2022 testing period,
4. Rooms with elevated radon results (i.e. ≥ 3.5 pCi/L),
5. Rooms previously tested for radon but not tested in Radon 2022, and
6. Additional rooms that require testing (if applicable.)

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

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

KCI returned to the site on March 25, 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 concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the low 40°Fs and high temperatures ranged from the low 50°Fs to the low 70°Fs. Maximum sustained winds ranged from 0-29 miles per hour. Average humidity was around 56% with 0.51 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		
Northwest HS RT		
Test Period: 03/22/2022 - 03/25/2022		
Kit Number	Room / Area	Result
11139201	250	< 0.3
11139905	250	0.6
11139906	250	< 0.3
11139921	105A	< 0.3
11139915	CAFETERIA	< 0.3
11139920	CAFETERIA	< 0.3

Table 2- Radon Testing Results			
Northwest HS RT			
Test Period: 03/22/2022 - 03/25/2022			
Kit Number	QC Type	Room / Area	Result
11139905	D	250	0.6
11139201	FB	250	< 0.3
11139902	OB	OFFICE BLANK	< 0.3
11139928	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Northwest HS RT		
Test Period: 03/22/22 - 03/25/22		
Kit Number	Room/Area	Result
	NA	

Summary of Missing, Compromised and >= 4 piC/L Tests		
Northwest HS RT		
Test Period: 03/22/22 - 03/25/22		
Kit Number	Room/Area	Result
	NA	

Table Note:
 * Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

March 28, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11139921	105A	2022-03-22 @ 2:00 pm	2022-03-25 @ 1:00 pm	< 0.3	2022-03-28
11139201	250	2022-03-22 @ 2:00 pm	2022-03-25 @ 1:00 pm	< 0.3	2022-03-28
11139905	250	2022-03-22 @ 2:00 pm	2022-03-25 @ 1:00 pm	0.6 ± 0.3	2022-03-28
11139906	250	2022-03-22 @ 2:00 pm	2022-03-25 @ 1:00 pm	< 0.3	2022-03-28
11139915	CAFETERIA	2022-03-22 @ 2:00 pm	2022-03-25 @ 1:00 pm	< 0.3	2022-03-28
11139920	CAFETERIA	2022-03-22 @ 2:00 pm	2022-03-25 @ 1:00 pm	< 0.3	2022-03-28

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

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

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

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

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

11139367, 11139368, 11139371, _____

11139710, 11139717 _____

E3 Right

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

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

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

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

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

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

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

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Herbert Hoover MS
2. Parkland MS
3. Redland MS
4. Rock Creek Valley ES
5. Tilden MS
6. Rockville HS
7. Wootton HS
8. Capt. James E. Daly ES
9. Clarksburg HS
10. Clearspring ES
11. Hallie Wells MS
12. Northwest HS
13. Paint Branch HS
14. Rocky Hills MS
15. Seneca Valley HS
16. Sherwood HS
17. Wilson Wims ES

	Date	Initials
Radon Test Kits Deployed	03/22/2022	BMM
Radon Test Kits Collected	03/25/2022	BMM
Radon Test Kits Shipped to Lab*	03/25/2022	BMM
Radon Test Kits Received by Lab*	03/28/2022	BMM

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



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Northwest High School
Date of Test Report	4/6/2022
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	89
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	3.1 pCi/L

Project Status:

Initial testing completed; Missing or compromised kits need re-sampling.



April 6, 2022

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

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

Location: Northwest HS
13501 Richter Farm Rd.
Germantown, MD 20874

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 Northwest HS, located at 13501 Richter Farm Rd. Germantown, MD 20874 (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 February 15, 2022 and deployed ninety seven (97) 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 February 18, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc.

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

Evaluation of Testing Conditions:

These tests represent:

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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 and high temperatures ranged from the high 30s to the high 40s Fahrenheit. Maximum sustained winds ranged from 5-18 miles per hour. Average humidity was around 15% with 1.5 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.
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Sincerely,



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

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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		
Northwest HS		
Test Period: 02/15/2022 - 02/18/2022		
Kit Number	Room / Area	Result
11122901	101	< 0.3
11113480	103	< 0.3
11113496	104	3.1
11113497	105	< 0.3
11122906	107	< 0.3
11122907	110	< 0.3
11122918	112	< 0.3
11122935	112	1.1
11122930	113	< 0.3
11122936	114	< 0.3
11122944	116	< 0.3
11122937	117	< 0.3
11122961	120	< 0.3
11122934	122	< 0.3
11122933	124	2.7
11122946	125	0.6
11122939	126	0.7
11122941	126	< 0.3
11122925	127	< 0.3
11122953	129	< 0.3
11122951	135	< 0.3
11122952	135	< 0.3
11122931	141	< 0.3
11122904	175	< 0.3
11122913	175	< 0.3
11122914	176	< 0.3
11122919	177	< 0.3
11122920	178	< 0.3
11122916	179	< 0.3
11122921	179	< 0.3
11122922	180	< 0.3
11122929	180	< 0.3
11122927	181	< 0.3
11122928	182	< 0.3
11122978	212	< 0.3
11122980	213	< 0.3
11122985	213	< 0.3
11122973	226	< 0.3
11122963	228	1.2
11122969	228	1.2
11122967	234	< 0.3
11122968	234	< 0.3

Table 1- Radon Testing Results		
Northwest HS		
Test Period: 02/15/2022 - 02/18/2022		
Kit Number	Room / Area	Result
11122950	236	< 0.3
11122948	240	< 0.3
11122970	251	0.6
11122975	252	0.6
11122976	252	0.7
11122971	253	1.0
11122977	254	0.8
11122972	255	0.7
11122974	275	< 0.3
11122979	283	< 0.3
11122986	283	< 0.3
11122984	303	< 0.3
11122982	306	< 0.3
11113482	100A	0.6
11113490	101 - 0-ROS	< 0.3
11113494	101B	< 0.3
11113486	101C	< 0.3
11113487	101D	0.6
11113493	101E	< 0.3
11113488	101F	< 0.3
11113479	101G	< 0.3
11113491	101H	< 0.3
11113492	101J	1.0
11113489	101-MS BUNTING	< 0.3
11113485	102A	1.1
11113495	102A	0.8
11113498	104A	1.2
11122905	104A	< 0.3
11122923	117J	< 0.3
11122954	118A	< 0.3
11122917	121H	< 0.3
11122924	125A	< 0.3
11122942	126A	0.7
11122960	131D	< 0.3
11122926	135B	< 0.3
11122915	178A	< 0.3
11122958	228A	1.0
11122965	228B	1.0
11122957	236A	< 0.3
11122955	236B	0.8
11122949	240B	1.1
11122956	AUDITORIUM	1.5

Table 1- Radon Testing Results		
Northwest HS		
Test Period: 02/15/2022 - 02/18/2022		
Kit Number	Room / Area	Result
11122964	AUDITORIUM	1.3
11122903	AUX GYM	< 0.3
11122908	AUX GYM	< 0.3
11122932	BLDG SERV OFFICE	< 0.3
11122959	BLDG SERV OFFICE	< 0.3
11122909	BOYS LR	< 0.3
11122945	CAFE	< 0.3
11122910	GIRLS LR	< 0.3
11122911	GYM	< 0.3
11122912	GYM	< 0.3
11122943	KITCHEN OFFICE	< 0.3
11122947	MEDIA CENTER	0.6
11122940	MEDIA.CENTER	< 0.3

Table 2- Radon Testing Results			
Northwest HS			
Test Period: 02/15/2022 - 02/18/2022			
Kit Number	QC Type	Room / Area	Result
20107128	D	101D	NA
11113495	D	102A	0.8
11122905	FB	104a	< 0.3
11122904	D	175	< 0.3
11122916	FB	179	< 0.3
11122929	D	180	< 0.3
11122935	D	112	1.1
11122952	FB	135	< 0.3
11122959	D	Bldg serv office	< 0.3
11122941	D	126	< 0.3
11122968	FB	234	< 0.3
11122963	D	228	1.2
11122975	D	252	0.6
11122986	D	283	< 0.3
11122985	FB	213	< 0.3
11131660	OB	OFFICE BLANK	< 0.3
11131661	TB	TRAVEL BLANK	< 0.3

Summary of Missed Locations		
Northwest HS		
Test Period: 02/15/22 - 02/18/22		
Kit Number	Room/Area	Result
	NA	

Summary of Missing, Compromised and \geq 4 pC/L Tests		
Northwest HS		
Test Period: 02/15/22 - 02/18/22		
Kit Number	Room/Area	Result
11122966	250	Missing
11122938	Café	Missing

Table Note:
* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
NORTHWEST HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11113482	100A	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	0.6 ± 0.3	2022-02-22
11122901	101	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113490	101 - 0-ROS	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113489	101-MS BUNTING	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113494	101B	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113486	101C	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113487	101D	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	0.6 ± 0.3	2022-02-22
11113493	101E	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113488	101F	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113479	101G	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113491	101H	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113492	101J	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	1.0 ± 0.3	2022-02-22
11113485	102A	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	1.1 ± 0.3	2022-02-22
11113495	102A	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	0.8 ± 0.3	2022-02-22
11113480	103	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113496	104	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	3.1 ± 0.4	2022-02-22
11113498	104A	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	1.2 ± 0.3	2022-02-22
11122905	104A	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11113497	105	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122906	107	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122907	110	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122918	112	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122935	112	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	1.1 ± 0.3	2022-02-22
11122930	113	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122936	114	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122944	116	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122937	117	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122923	117J	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122954	118A	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122961	120	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122917	121H	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122934	122	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122933	124	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	2.7 ± 0.4	2022-02-22
11122946	125	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	0.6 ± 0.3	2022-02-22
11122924	125A	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122941	126	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122939	126	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	0.7 ± 0.3	2022-02-22

Radon test result report for:
NORTHWEST HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11122942	126A	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	0.7 ± 0.3	2022-02-22
11122925	127	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122953	129	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122960	131D	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122951	135	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122952	135	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122926	135B	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122931	141	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122913	175	2022-02-15 @ 9:00 am	2022-02-18 @ 12:00 pm	< 0.3	2022-02-22
11122904	175	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122914	176	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122919	177	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122920	178	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122915	178A	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122921	179	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122916	179	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122922	180	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122929	180	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122927	181	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122928	182	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122978	212	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122980	213	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122985	213	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122973	226	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122969	228	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	1.2 ± 0.3	2022-02-22
11122963	228	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	1.2 ± 0.4	2022-02-22
11122958	228A	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	1.0 ± 0.4	2022-02-22
11122965	228B	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	1.0 ± 0.3	2022-02-22
11122968	234	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122967	234	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122950	236	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122957	236A	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122955	236B	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	0.8 ± 0.3	2022-02-22
11122948	240	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122949	240B	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	1.1 ± 0.4	2022-02-22
11122970	251	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	0.6 ± 0.3	2022-02-22
11122975	252	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	0.6 ± 0.3	2022-02-22

Radon test result report for:
NORTHWEST HS
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11122976	252	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	0.7 ± 0.3	2022-02-22
11122971	253	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	1.0 ± 0.3	2022-02-22
11122977	254	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	0.8 ± 0.3	2022-02-22
11122972	255	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	0.7 ± 0.3	2022-02-22
11122974	275	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122986	283	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122979	283	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122984	303	2022-02-15 @ 11:00 am	2022-02-18 @ 12:00 pm	< 0.3	2022-02-22
11122982	306	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22
11122956	AUDITORIUM	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	1.5 ± 0.4	2022-02-22
11122964	AUDITORIUM	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	1.3 ± 0.4	2022-02-22
11122908	AUX GYM	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122903	AUX GYM	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122932	BLDG SERV OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122959	BLDG SERV OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122909	BOYS LR	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122945	CAFE	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122910	GIRLS LR	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122911	GYM	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122912	GYM	2022-02-15 @ 9:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122943	KITCHEN OFFICE	2022-02-15 @ 10:00 am	2022-02-18 @ 10:00 am	< 0.3	2022-02-22
11122947	MEDIA CENTER	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	0.6 ± 0.3	2022-02-22
11122940	MEDIA.CENTER	2022-02-15 @ 11:00 am	2022-02-18 @ 9:00 am	< 0.3	2022-02-22

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204186

NOMINAL Conditions: Radon Conc 25.8 pCi/L Rel. Hum 50.1 % Temp. 70.9 F

Date Start: 2/18/22 Date Stop: 2/21/22 Date Start: _____ Date Stop: _____

Time Start: 0911 Time Stop: 0911 Time Start: _____ Time Stop: _____

Device No.'s: (3) Char Bags -
11113484, 1112998, 20107126 Device No.'s: _____

23 Right

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

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

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

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

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

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

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

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

Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
11113484	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK1		1	27.9
11122998	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK2		1	26.0
20107126	2022-02-18	9:00 am	2022-02-21	9:00 am	71	OFFICE	MAIN	SK3		1	27.6



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – February 2022 Schools

Name of Schools:

1. Damascus HS
2. Germantown ES
3. Great Seneca Creek ES
4. Lake Seneca ES
5. S. Christa McAuliffe ES
6. Northwest HS
7. Waters Landing ES
8. Seneca Valley HS
9. Cedar Grove ES
10. Capt. James E. Daly ES
11. Neelsville MS
12. Dr. Sally K. Ride ES

	Date	Initials
Radon Test Kits Deployed	02/15/2022	DM
Radon Test Kits Collected	02/18/2022	DM
Radon Test Kits Shipped to Lab*	02/18/2022	DM
Radon Test Kits Received by Lab*	02/21/2022	DM

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

RADON SCREENING SURVEY – FOLLOW-UP NORTHWEST HIGH SCHOOL

13501 Richter Farm Rd, Germantown, Maryland 20874

EXECUTIVE SUMMARY

Date of Test Report:	3/31/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	18
# Rooms \geq 4.0 pCi/L:	0
Low Value:	<0.3
High Value:	0.9
Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level	0

Summary of Sampling Events \geq 4.0 pCi/L

Room	Result (pCi/L) 2/18/16 Initial	Result (pCi/L) 3/31/16 Follow-Up	Average Result (pCi/L)
100	--- Missing	<0.3	<0.3
100A	--- Missing	<0.3	<0.3
104	--- Missing	<0.3	<0.3
203	--- Missing	0.9	0.9
228B	--- Missing	No access	n/a
229	--- Missing	<0.3	<0.3
251	--- Missing	0.6	0.6
252	--- Missing	<0.3	<0.3
254	--- Missing	0.5	0.5
260	--- Missing	0.6	0.6
261A	--- Missing	0.6	0.6
262	--- Missing	--- Missing	n/a
310	--- Missing	<0.3	<0.3
101D	--- Missing	<0.3	<0.3
103	--- Missing	0.6	0.6
175	--- Missing	Damaged	n/a



MCPS RADON TESTING

Executive Summary: Northwest High School

Date of Test Report:	3/31/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	18
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.9

Retesting completed; no further action at this time.



March 31, 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 # 12146341.31

Location: Northwest High School
13501 Richter Farm Road
Germantown, MD 20874

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 Northwest High School, located at 13501 Richter Farm Road in Germantown, Maryland 20874 (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 March 7, 2016 and deployed twenty-three (23) 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 March 10, 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. 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 11 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Northwest High School		
Test Period: 03/07/16-03/10/16		
Kit Number	Room / Area	Result
7735222	100	< 0.3
7735193	103	0.6
7735254	104	< 0.3
7735251	203	0.8
7735255	203	0.9
7735252	229	< 0.3
7735266	251	0.6
7735235	252	< 0.3
7735239	254	0.5
7735258	260	0.6
7735265	261	< 0.3
7735253	310	< 0.3
7735226	100A	< 0.3
7716794	101D	< 0.3
7735192	* 104 (Missing)	-
7716787	* 175 (Damaged: Void by Lab)	-
7735250	236A	< 0.3
7735269	236B	0.6
7735256	261A	0.6
7731800	* 262 (Missing)	-

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwest High School		
Test Period: 03/07/16-03/10/16		
Kit Number	QC Type	Result
7735262	D (100)	0.8
7735259	D (104)	0.7
7735219	FB (100)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

March 30, 2016
** LABORATORY ANALYSIS REPORT **

Radon test result report for:
NORTHWEST HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7735219	100	2016-03-07 @ 1:00 pm	2016-03-10 @ 10:00 am	< 0.3	2016-03-14
7735222	100	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	< 0.3	2016-03-14
7735262	100	2016-03-07 @ 1:00 pm	2016-03-10 @ 10:00 am	0.8 ± 0.3	2016-03-14
7735226	100A	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	< 0.3	2016-03-14
7716794	101D	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	< 0.3	2016-03-14
7735193	103	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	0.6 ± 0.3	2016-03-14
7735192	104	@	@		
7735254	104	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	< 0.3	2016-03-14
7735259	104	2016-03-07 @ 1:00 pm	2016-03-10 @ 10:00 am	0.7 ± 0.3	2016-03-14
7716787	175	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	Void-Damaged	2016-03-14
7735251	203	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	0.8 ± 0.3	2016-03-14
7735255	203	2016-03-07 @ 11:00 am	2016-03-10 @ 11:00 am	0.9 ± 0.3	2016-03-14
7735252	229	2016-03-07 @ 10:00 am	2016-03-10 @ 10:00 am	< 0.3	2016-03-14
7735250	236A	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	< 0.3	2016-03-14
7735269	236B	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	0.6 ± 0.3	2016-03-14
7735266	251	2016-03-07 @ 10:00 am	2016-03-10 @ 10:00 am	0.6 ± 0.3	2016-03-14
7735235	252	2016-03-07 @ 10:00 am	2016-03-10 @ 10:00 am	< 0.3	2016-03-14
7735239	254	2016-03-07 @ 10:00 am	2016-03-10 @ 10:00 am	0.5 ± 0.3	2016-03-14
7735258	260	2016-03-07 @ 10:00 am	2016-03-10 @ 10:00 am	0.6 ± 0.3	2016-03-14
7735265	261	2016-03-07 @ 10:00 am	2016-03-10 @ 10:00 am	< 0.3	2016-03-14
7735256	261A	2016-03-07 @ 10:00 am	2016-03-10 @ 10:00 am	0.6 ± 0.3	2016-03-14
7731800	262	@	@		
7735253	310	2016-03-07 @ 11:00 am	2016-03-10 @ 10:00 am	< 0.3	2016-03-14

March 29, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS RADON
Phase 11 Office Blank

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7730694	0	2016-03-07 @ 2:00 pm	2016-03-10 @ 2:00 pm	< 0.3	2016-03-14

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

March 22, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRANSIT - PHASE 10 & 11
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7735300	1	2016-03-18 @ 4:00 pm	2016-03-21 @ 4:00 pm	< 0.3	2016-03-22
7735296	2	2016-03-18 @ 4:00 pm	2016-03-21 @ 4:00 pm	< 0.3	2016-03-22
7735294	3	2016-03-18 @ 4:00 pm	2016-03-21 @ 4:00 pm	< 0.3	2016-03-22

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

March 24, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
MCPS
Spike Sample Results

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7735295	1	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	30.0 ± 2.0	2016-03-24
7735289	2	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	29.9 ± 2.0	2016-03-24
7735274	3	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	25.6 ± 1.7	2016-03-24
7735278	4	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	26.2 ± 1.8	2016-03-24
7735299	5	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	28.3 ± 1.9	2016-03-24
7735293	6	2016-03-18 @ 1:00 pm	2016-03-21 @ 1:00 pm	31.0 ± 2.0	2016-03-24

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 174430

NOMINAL Conditions: Radon Conc 26.1 pCi/L Rel. Hum 48.8 % Temp. 79.1 F

Date Start: 3/18/16 Date Stop: 3/21/16 Date Start: _____ Date Stop: _____

Time Start: 1250 Time Stop: 1250 Time Start: _____ Time Stop: _____

Device No.'s: (6) Char. Cans Device No.'s: _____

3029154 thru 3029157, _____

3029083, 3029086 _____

FS Right

Date Start: 3/18/16 Date Stop: 3/21/16 Date Start: _____ Date Stop: _____

Time Start: 1250 Time Stop: 1250 Time Start: _____ Time Stop: _____

Device No.'s: (6) Char. Bags Device No.'s: _____

7735299, 7735293, 7735295, _____

7735274, 7735278, 7735289 _____

FS Right

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 10

Name of Schools:

1. S. Christa McAuliffe ES
2. Northwest HS
3. Concord Center
4. 45 Gude

	Date	Initials
Radon Test Kits Deployed	3/7/16	JM
Radon Test Kits Collected	3/10/16	JM
Radon Test Kits Shipped to Lab*	3/10/16	JM
Radon Test Kits Received by Lab*	3/14/16	JM

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



MCPS RADON TESTING

Executive Summary: Northwest High School

Date of Test Report:	2/18/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	106
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	1.6

Project Status:

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



February 18, 2016

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

Re: **Radon Testing Services**
KCI Job # 12146341.25

Location: Northwest High School
13501 Richter Farm Road
Germantown, MD 20874

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 Northwest High School, located at 13501 Richter Farm Road in Germantown, Maryland 20874 (subject site).

Scope of Services:

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

KCI visited the site on January 19, 2016 and deployed one hundred-thirty six (136) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on January 22, 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. 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 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

Radon Testing Results		
Northwest High School		
Test Period: 01/19/16-01/22/16		
Kit Number	Room / Area	Result
7718406	101	0.7
7718432	102	< 0.3
7718415	103	< 0.3
7718433	105	< 0.3
7718439	107	< 0.3
7718425	109	< 0.3
7718436	109	< 0.3
7716801	110	< 0.3
7716817	110	< 0.3
7718430	111	< 0.3
7718441	111	< 0.3
7718460	112	< 0.3
7718443	113	< 0.3
7718453	114	< 0.3
7718423	115	< 0.3
7718452	116	0.6
7716808	120	< 0.3
7716805	122	0.7
7718455	123	< 0.3
7718458	123	< 0.3
7716814	124	1.6
7716811	125	< 0.3
7718404	126	0.8
7716803	127	< 0.3
7716809	133	< 0.3
7716810	133	< 0.3
7716813	135	< 0.3
7718427	175	< 0.3
7718440	176	0.6
7718420	177	< 0.3
7718429	178	< 0.3
7718422	179	< 0.3
7718444	180	< 0.3
7718424	181	< 0.3
7718426	182	0.8
7718487	201	0.6
7718489	203	0.6
7716806	216	0.6
7717600	218	< 0.3
7717589	220	< 0.3
7717594	222	< 0.3
7717590	224	< 0.3
7717585	226	< 0.3
7717593	228	0.8
7717588	230	0.6
7717575	231	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwest High School		
Test Period: 01/19/16-01/22/16		
Kit Number	Room / Area	Result
7717596	232	< 0.3
7717587	233	0.9
7717591	234	< 0.3
7718466	250	< 0.3
7718467	253	0.7
7718472	255	0.6
7718481	261	0.7
7717592	263	< 0.3
7718477	263	0.7
7718469	264	< 0.3
7718465	277	< 0.3
7718462	308	< 0.3
7718454	321	< 0.3
7718449	323	0.6
7718418	* 100 (missing)	0
7718431	* 100A (missing)	0
7718407	101A	0.7
7718408	101B	0.7
7718401	101C	0.7
7718409	101D	0.7
7718413	101E	< 0.3
7718411	101F	< 0.3
7718416	101G	0.6
7718403	101H	< 0.3
7718410	101J	0.8
7718412	101K	< 0.3
7718434	102A	< 0.3
7718417	103A	< 0.3
7718438	* 104 (missing)	0
7718437	104A	< 0.3
7718442	105A	< 0.3
7718421	117J	< 0.3
7718456	118A	0.6
7718447	121H	< 0.3
7716804	125A	< 0.3
7718405	126A	0.6
7716807	131D	1
7716815	135B	< 0.3
7718435	177A	< 0.3
7718485	* 203 (missing)	0
7718488	203A	0.6
7718486	203B	0.6
7718492	203C	0.7
7718490	203D	0.6
7716816	218A	< 0.3
7717597	228A	0.9
7717599	* 228B (missing)	0
7717586	* 229 (missing)	0
7717595	231A	< 0.3
7717584	24 OSSI	0.6

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwest High School		
Test Period: 01/19/16-01/22/16		
Kit Number	Room / Area	Result
7717581	240 D	< 0.3
7717579	240 E	< 0.3
7717559	240 F	< 0.3
7717578	240 G	< 0.3
7717576	240B	< 0.3
7717557	240C	< 0.3
7717580	240H CONFERENCE	< 0.3
7716812	240J	< 0.3
7718468	* 251 (missing)	0
7718470	* 252 (missing)	0
7718473	* 254 (missing)	0
7718480	* 260 (missing)	0
7718482	* 261A (missing)	0
7718478	* 262 (missing)	0
7718461	* 310 (missing)	0
7718451	321A	< 0.3
7717583	MAIN OFFICE	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Northwest High School		
Test Period: 01/19/16-01/22/16		
Kit Number	QC Type	Result
7718402	* D (104:missing)	0
7718457	D (114)	< 0.3
7716802	D (135)	< 0.3
7718428	D (176)	< 0.3
7718493	D (203C)	1
7717598	D (233)	< 0.3
7717582	D (240H CONFERENCE)	< 0.3
7718446	D (250)	0.7
7718448	D (251)	< 0.3
7718471	D (255)	0.6
7718484	D (260)	< 0.3
7718474	D (261)	0.6
7718463	D (277)	< 0.3
7718450	D (321)	0.6
7718464	D (321A)	0.7
7718414	* FB (101D:missing)	0
7718419	* FB (103:missing)	0
7718445	* FB (175:missing)	0
7718483	FB (260)	< 0.3
7718459	FB (308)	< 0.3
7718629	OB (0)	< 0.3
7718631	OB (0)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 11, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**NORTHWEST HIGH SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7716801	110	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26

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

February 11, 2016 **LABORATORY ANALYSIS REPORT** **

Radon test result report for:
**NORTHWEST HIGH SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718629	0	2016-01-19 @ 9:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-26
7718631	0	2016-01-19 @ 9:00 pm	2016-01-22 @ 12:00 pm	< 0.3	2016-01-27
7718418	100	@	@		
7718431	100A	@	@		
7718406	101	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718407	101A	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718408	101B	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718401	101C	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718414	101D	@	@		
7718409	101D	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718413	101E	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718411	101F	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718416	101G	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-27
7718403	101H	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718410	101J	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	0.8 ± 0.3	2016-01-26
7718412	101K	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718432	102	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718434	102A	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718419	103	@	@		
7718415	103	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718417	103A	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718438	104	@	@		
7718402	104	@	@		
7718437	104A	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718433	105	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718442	105A	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718439	107	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718425	109	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718436	109	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7716817	110	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718441	111	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718430	111	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718460	112	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718443	113	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718453	114	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718457	114	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718423	115	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26

February 11, 2016 **LABORATORY ANALYSIS REPORT** **

Radon test result report for:
NORTHWEST HIGH SCHOOL
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718452	116	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	0.6 ± 0.3	2016-01-27
7718421	117J	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718456	118A	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-27
7716808	120	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718447	121H	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7716805	122	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718455	123	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718458	123	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7716814	124	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	1.6 ± 0.4	2016-01-26
7716811	125	2016-01-19 @ 3:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7716804	125A	2016-01-19 @ 3:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7718404	126	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	0.8 ± 0.3	2016-01-27
7718405	126A	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-26
7716803	127	2016-01-19 @ 3:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-26
7716807	131D	2016-01-19 @ 3:00 pm	2016-01-22 @ 11:00 am	1.0 ± 0.3	2016-01-26
7716809	133	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7716810	133	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7716802	135	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7716813	135	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7716815	135B	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718445	175	@	@		
7718427	175	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718428	176	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718440	176	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	0.6 ± 0.3	2016-01-27
7718420	177	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718435	177A	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718429	178	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718422	179	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718444	180	2016-01-19 @ 4:00 pm	2016-01-22 @ 4:00 pm	< 0.3	2016-01-26
7718424	181	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	< 0.3	2016-01-27
7718426	182	2016-01-19 @ 4:00 pm	2016-01-22 @ 11:00 am	0.8 ± 0.3	2016-01-27
7718487	201	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-26
7718485	203	@	@		
7718489	203	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-27
7718488	203A	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-26
7718486	203B	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-27
7718492	203C	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.7 ± 0.3	2016-01-27

February 11, 2016
LABORATORY ANALYSIS REPORT **

Radon test result report for:
**NORTHWEST HIGH SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718493	203C	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	1.0 ± 0.4	2016-01-27
7718490	203D	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-26
7716806	216	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-27
7717600	218	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7716816	218A	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7717589	220	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7717594	222	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717590	224	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717585	226	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7717593	228	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.8 ± 0.3	2016-01-27
7717597	228A	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.9 ± 0.3	2016-01-26
7717599	228B	@	@		
7717586	229	@	@		
7717588	230	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-27
7717575	231	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717595	231A	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717596	232	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717587	233	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	0.9 ± 0.3	2016-01-27
7717598	233	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7717591	234	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717584	24 OSSI	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	0.6 ± 0.3	2016-01-26
7717581	240 D	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717579	240 E	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717559	240 F	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717578	240 G	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717576	240B	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7717557	240C	2016-01-19 @ 5:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7717580	240H CONFERENCE	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7717582	240H CONFERENCE	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26
7716812	240J	2016-01-19 @ 3:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718446	250	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-26
7718466	250	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718468	251	@	@		
7718448	251	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718470	252	@	@		
7718467	253	2016-01-19 @ 5:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718473	254	@	@		

February 11, 2016
**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**NORTHWEST HIGH SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718471	255	2016-01-19 @ 5:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-26
7718472	255	2016-01-19 @ 5:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-26
7718480	260	@	@		
7718483	260	2016-01-19 @ 5:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718484	260	2016-01-19 @ 5:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-26
7718474	261	2016-01-19 @ 5:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-26
7718481	261	2016-01-19 @ 5:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718482	261A	@	@		
7718478	262	@	@		
7717592	263	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7718477	263	2016-01-19 @ 5:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718469	264	2016-01-19 @ 5:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718465	277	2016-01-19 @ 4:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7718463	277	2016-01-19 @ 4:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-27
7718459	308	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718462	308	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718461	310	@	@		
7718450	321	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-27
7718454	321	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718451	321A	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	< 0.3	2016-01-27
7718464	321A	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	0.7 ± 0.3	2016-01-27
7718449	323	2016-01-19 @ 4:00 pm	2016-01-22 @ 10:00 am	0.6 ± 0.3	2016-01-27
7717583	MAIN OFFICE	2016-01-19 @ 3:00 pm	2016-01-22 @ 9:00 am	< 0.3	2016-01-26

February 2, 2016
LABORATORY ANALYSIS REPORT

Radon test result report for:
MCPS PHASE 5 & 6 TRANSIT BLANKS

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

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



Chain of Custody

Project Name: MCPS Radon Phase VI

Name of Schools:

- | | | |
|--------------------------|------------------------------|---------------------------|
| 1. Francis Scott Key MS | 12. Little Bennett ES | 23. Rolling Terrace ES |
| 2. Gaithersburg ES | 13. Loiderman MS | 24. Roscoe Nix ES |
| 3. Gaithersburg MS | 14. Longview ES | 25. Sally K. Ride ES |
| 4. Galway ES | 15. Meadow Hall ES | 26. Spark Matsunaga ES |
| 5. Great Seneca Creek ES | 16. Neelsville MS | 27. Tacoma Park ES |
| 6. Harmony Hills ES | 17. New Hampshire Estates ES | 28. Thomas Pyle MS |
| 7. John Poole MS | 18. North Bethesda MS | 29. Wayside ES |
| 8. Judith A. Resnik ES | 19. Northwest HS | 30. Westbrook ES (retest) |
| 9. Kemp Mill ES | 20. Pine Crest ES | 31. Westland MS (retest) |
| 10. Kingsview MS | 21. Radnor Center | 32. William B. Gibbs ES |
| 11. Lakelands Park MS | 22. Ritchie Park ES | 33. William Tyler Page ES |

	Date	Initials
Radon Test Kits Deployed	1/19/16	JM
Radon Test Kits Sampled	1/22/16	JM
Radon Test Kits Shipped to Lab*	1/22/16	JM
Radon Test Kits Received by Lab*	1/26/16	JM

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