



**MCPS RADON TESTING - EXECUTIVE SUMMARY**

Site Name	Bethesda-Chevy Chase High School
Date of Report	2/21/2020
Round of Testing	Initial Follow-up Post Remediation 2 year testing <b>5 year testing</b> HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested	68
# Rooms $\geq$ 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.5 pCi/L

**Project Status**

Current Project Status at this time: Testing Complete; no further action.



2/21/2020

Mr. Richard Cox, MS  
Environmental Team Leader  
Montgomery County Public Schools  
Division of Maintenance  
Gaithersburg, Maryland 20879

Re: Radon Testing Services

KCI Job #12146341126

**Location: Bethesda-Chevy Chase High School**

4301 East-West Highway  
Bethesda, Maryland 20814

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Bethesda-Chevy Chase High School, located at 4301 East-West Highway in Bethesda, Maryland 20814 (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 Provider (certification #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from [www.montgomerycountymd.gov/dep/air/radon](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on 1/6/2020 and deployed eighty-six (86) 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 Appendix A of this report.

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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 sixty (60) 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.

KCI returned to the site on 1/9/2020 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a National Radon Safety Board (NRSB) radon measurement provider and is a 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 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 upper-20s and high temperatures were in the mid-50s. Maximum sustained winds ranged from 10-23 miles per hour. Average humidity was around 64%. 0.32 inches of precipitation (rain) was recorded during the testing period.

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## **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:

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

<b>Quality Control Samples</b>	
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 410-316-7800.

Sincerely,

Mr. Tyler P. McCleaf  
Radon Measurement Provider  
111004 RT

KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations

B - Tables 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 Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Table 1- Radon Testing Results		
Bethesda Chevy Chase High School		
Test Period: 1/6/2020-1/9/2020		
Kit Number	Room / Area	Result
9339705	WRESTLING	0.7
9339706	E031	1
9339727	PE BREAKROOM	1.1
9339779	E032	0.7
9339781	PE OFFICE WOMEN	0.8
9339782	E030	0.7
9339783	PE OFFICE MEN	0.8
9339786	E033	0.8
9339791	PE OFFICE WOMEN	1
9340650	F014	< 0.3
9340651	F012	< 0.3
9340652	F010	< 0.3
9340653	F005	< 0.3
9340654	F118	< 0.3
9340655	D003	< 0.3
9340656	F001	< 0.3
9340657	E034	0.8
9340658	E035	1.5
9340659	F007	0.5
9340661	E007	0.6
9340662	E006	< 0.3
9340665	F003	< 0.3
9340666	A030B	< 0.3
9340667	F006	< 0.3
9340668	E008	1
9340669	E006	< 0.3
9340670	B127	< 0.3
9340671	F000	< 0.3
9340672	F016	< 0.3
9340673	B129	< 0.3
9340674	F125	< 0.3
9340676	MAIN GYM	< 0.3
9340677	STAGE	< 0.3
9340678	F111	< 0.3
9340679	AUDITORIUM	< 0.3
9340680	C115	0.6
9340683	STAGE	< 0.3
9340684	D003	< 0.3
9340685	AUDITORIUM	0.6
9340686	F005	< 0.3
9340691	F125	< 0.3
9340692	F100	< 0.3



9340693	F100	< 0.3
9340695	SECOND GYM	< 0.3
9340696	SECOND GYM	< 0.3
9340697	MAIN GYM	0.5
9340698	CONTROL BOOTH	< 0.3
9340699	C108	0.6
9340700	C113	< 0.3
9341201	B126	< 0.3
9341202	CAFETERIA	< 0.3
9341203	CAFETERIA	< 0.3
9341204	CAFETERIA	0.8
9341205	A105	< 0.3
9341206	CYBER CAFE	< 0.3
9341207	A115	< 0.3
9341208	A115	< 0.3
9341209	B118	< 0.3
9341210	B117	< 0.3
9341211	B114	0.7
9341212	B115	< 0.3
9341213	B112	< 0.3
9341214	B112	< 0.3
9341215	B113	< 0.3
9341216	B111	< 0.3
9341217	B109	< 0.3
9341218	B107	< 0.3
9341219	B106	< 0.3
9341220	B105	< 0.3
9341221	B110	< 0.3
9341222	B103	< 0.3
9341223	B101	< 0.3
9341224	B101	< 0.3
9341225	B100	< 0.3
9341226	B136	< 0.3
9341227	B136	< 0.3
9341228	B140	0.7
9341229	MEDIA CENTER	< 0.3
9341230	A222	< 0.3
9341231	A201	< 0.3
9341232	B220	< 0.3
9341233	C206	0.6
9341234	C206	0.9
9341235	B315	< 0.3
9341236	315	< 0.3
9341237	C307	< 0.3
9348308	OFFICE BLANK	< 0.3

Table 2- Radon Testing Results			
Bethesda Chevy Chase High School			
Test Period: 1/6/2020-1/9/2020			
Kit Number	QC Type	Room / Area	Result
9339791	D	PE OFFICE WOMEN	1
9340655	D	D003	<0.3
9340662	FB	E006	<0.3
9340686	D	F005	<0.3
9340691	D	F125	<0.3
9340693	FB	F100	<0.3
9340683	D	STAGE	<0.3
9341204	D	CAFETERIA	0.8
9341208	FB	A115	<0.3
9341214	D	B112	<0.3
9341224	D	B101	<0.3
9341227	FB	B136	<0.3
9341234	D	C206	0.9
9341236	FB	315	<0.3
9348319	TRANSIT BLANK	NA	<0.3
9348320	TRANSIT BLANK	NA	<0.3
9348313	TRANSIT BLANK	NA	<0.3



# ATTACHMENT C

## Laboratory Analytical Results

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
9340067	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9340035	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	22.5 $\pm$ 2.3 D	2020-01-03
9340003	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 $\pm$ 2.4 D	2020-01-03
9340089	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	23.3 $\pm$ 2.3 D	2020-01-03
9340072	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	18.3 $\pm$ 2.0 D	2020-01-03
9340040	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 $\pm$ 2.6 D	2020-01-03
9340008	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.8 $\pm$ 2.5 D	2020-01-03
9340094	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.7 $\pm$ 2.5 D	2020-01-03
9340099	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.5 $\pm$ 2.6 D	2020-01-03
9340077	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.2 $\pm$ 2.5 D	2020-01-03
9340045	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.7 $\pm$ 2.4 D	2020-01-03
9340013	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.9 $\pm$ 2.6 D	2020-01-03
9340018	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	29.1 $\pm$ 2.8 D	2020-01-03
9341704	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9340050	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.2 $\pm$ 2.6 D	2020-01-03
9340023	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.2 $\pm$ 2.7 D	2020-01-03
9341709	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.5 $\pm$ 2.4 D	2020-01-03
9340055	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.8 $\pm$ 2.6 D	2020-01-03
9340060	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 $\pm$ 2.5 D	2020-01-03
9340028	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.9 $\pm$ 2.3 D	2020-01-03
9341714	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.3 $\pm$ 2.7 D	2020-01-03
9340082	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.4 $\pm$ 2.6 D	2020-01-03
9340065	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.2 $\pm$ 2.4 D	2020-01-03
9340033	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.2 $\pm$ 2.5 D	2020-01-03
9341719	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.7 $\pm$ 2.5 D	2020-01-03
9340001	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.3 $\pm$ 2.5 D	2020-01-03
9340087	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.8 $\pm$ 2.4 D	2020-01-03
9340070	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	19.5 $\pm$ 2.4 D	2020-01-03
9340038	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.7 $\pm$ 2.3 D	2020-01-03
9340006	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 $\pm$ 2.4 D	2020-01-03
9340092	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	31.4 $\pm$ 2.8 D	2020-01-03
9340097	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.7 $\pm$ 2.5 D	2020-01-03
9340075	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	29.6 $\pm$ 2.6 D	2020-01-03
9340043	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.1 $\pm$ 2.6 D	2020-01-03
9340011	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.8 $\pm$ 2.5 D	2020-01-03
9340016	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.2 $\pm$ 2.4 D	2020-01-03
9341702	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 $\pm$ 2.5 D	2020-01-03

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).
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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340048	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.5 $\pm$ 2.4 D	2020-01-03
9340021	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.7 $\pm$ 2.6 D	2020-01-03
9341707	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.8 $\pm$ 2.4 D	2020-01-03
9340053	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.8 $\pm$ 2.5 D	2020-01-03
9340058	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.5 $\pm$ 2.7 D	2020-01-03
9340026	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.9 $\pm$ 2.4 D	2020-01-03
9341712	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.3 $\pm$ 2.4 D	2020-01-03
9340080	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9340063	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.8 $\pm$ 2.5 D	2020-01-03
9340031	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.9 $\pm$ 2.4 D	2020-01-03
9341717	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.7 $\pm$ 2.4 D	2020-01-03
9340085	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 $\pm$ 2.5 D	2020-01-03
9340068	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.2 $\pm$ 2.5 D	2020-01-03
9340036	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.6 $\pm$ 2.3 D	2020-01-03
9340004	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 $\pm$ 2.6 D	2020-01-03
9340090	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.3 $\pm$ 2.5 D	2020-01-03
9340073	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 $\pm$ 2.5 D	2020-01-03
9340041	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.6 $\pm$ 2.4 D	2020-01-03
9340009	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.1 $\pm$ 2.4 D	2020-01-03
9340095	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.2 $\pm$ 2.5 D	2020-01-03
9340100	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.5 $\pm$ 2.4 D	2020-01-03
9340078	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.0 $\pm$ 2.4 D	2020-01-03
9340046	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.0 $\pm$ 2.6 D	2020-01-03
9340014	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	21.8 $\pm$ 2.8 D	2020-01-03
9340019	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.0 $\pm$ 2.5 D	2020-01-03
9341705	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.8 $\pm$ 2.6 D	2020-01-03
9340051	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.5 $\pm$ 2.4 D	2020-01-03
9340056	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.7 $\pm$ 2.6 D	2020-01-03
9340024	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.3 $\pm$ 2.5 D	2020-01-03
9341710	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.2 $\pm$ 2.3 D	2020-01-03
9340061	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.9 $\pm$ 2.6 D	2020-01-03
9340029	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	23.0 $\pm$ 2.3 D	2020-01-03
9341715	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.0 $\pm$ 2.5 D	2020-01-03
9340083	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.9 $\pm$ 2.4 D	2020-01-03
9340066	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9340034	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.4 $\pm$ 2.5 D	2020-01-03
9341720	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.3 $\pm$ 2.5 D	2020-01-03

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).
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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340002	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.7 $\pm$ 2.5 D	2020-01-03
9340088	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.4 $\pm$ 2.5 D	2020-01-03
9340071	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.9 $\pm$ 2.4 D	2020-01-03
9340039	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 $\pm$ 2.5 D	2020-01-03
9340007	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.9 $\pm$ 2.4 D	2020-01-03
9340093	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.5 D	2020-01-03
9340098	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.8 $\pm$ 2.5 D	2020-01-03
9340076	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.5 D	2020-01-03
9340044	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.2 $\pm$ 2.5 D	2020-01-03
9340012	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	22.5 $\pm$ 2.2 D	2020-01-03
9340017	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.3 $\pm$ 2.5 D	2020-01-03
9341703	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.0 $\pm$ 2.5 D	2020-01-03
9340049	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.0 $\pm$ 2.5 D	2020-01-03
9340022	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.6 $\pm$ 2.6 D	2020-01-03
9341708	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	28.8 $\pm$ 2.8 D	2020-01-03
9340054	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.8 $\pm$ 2.5 D	2020-01-03
9340059	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.5 $\pm$ 2.6 D	2020-01-03
9340027	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.6 $\pm$ 2.5 D	2020-01-03
9341713	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 $\pm$ 2.5 D	2020-01-03
9340081	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	18.4 $\pm$ 2.1 D	2020-01-03
9340064	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 $\pm$ 2.5 D	2020-01-03
9340032	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.1 $\pm$ 2.4 D	2020-01-03
9341718	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	23.7 $\pm$ 2.4 D	2020-01-03
9340086	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 $\pm$ 2.6 D	2020-01-03
9340069	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.6 $\pm$ 2.5 D	2020-01-03
9340037	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	28.4 $\pm$ 2.6 D	2020-01-03
9340005	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	???? DIF1	2020-01-03
9340091	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.5 $\pm$ 2.5 D	2020-01-03
9340096	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.2 $\pm$ 2.5 D	2020-01-03
9340074	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	27.7 $\pm$ 2.5 D	2020-01-03
9340042	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.6 $\pm$ 2.5 D	2020-01-03
9340010	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.5 $\pm$ 2.5 D	2020-01-03
9341701	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	22.9 $\pm$ 2.3 D	2020-01-03
9340047	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	26.7 $\pm$ 2.5 D	2020-01-03
9340015	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.4 $\pm$ 2.5 D	2020-01-03
9340020	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	24.1 $\pm$ 2.4 D	2020-01-03
9341706	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	31.0 $\pm$ 2.7 D	2020-01-03

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
9340052	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.4 $\pm$ 2.6 D	2020-01-03
9340057	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	27.3 $\pm$ 2.5 D	2020-01-03
9340025	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9341711	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	22.5 $\pm$ 2.2 D	2020-01-03
9340079	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	26.9 $\pm$ 2.5 D	2020-01-03
9340062	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.6 $\pm$ 2.5 D	2020-01-03
9340030	N/A	2019-12-21 @ 8:00 am	2019-12-23 @ 8:00 am	25.0 $\pm$ 2.4 D	2020-01-03
9341716	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	25.1 $\pm$ 2.4 D	2020-01-03
9340084	N/A	2019-12-21 @ 9:00 am	2019-12-23 @ 9:00 am	24.5 $\pm$ 2.3 D	2020-01-03



# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc Job Number 193598

NOMINAL Conditions: Radon Conc \_\_\_\_\_ pCi/L Rel. Hum \_\_\_\_\_ % Temp. \_\_\_\_\_ F

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0830 Time Stop: 0830

(Group 4)  
Device No.'s: (20) Char. Bags -

9340061 thru 9340080

Temp of \_\_\_\_\_  
RH % 50.1  
Avg pCi/L 25.5

52

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0835 Time Stop: 0835

(Group 5)  
Device No.'s: (20) Char. Bags -

9340081 thru 9340100

Temp of \_\_\_\_\_  
RH % 50.1  
Avg pCi/L 25.5

25

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0840 Time Stop: 0840

(Group 6)  
Device No.'s: (20) Char. Bags -

9341701 thru 9341720

Temp of \_\_\_\_\_  
RH % 50.1  
Avg pCi/L 25.5

25

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

Radon test result report for:

**BETHESDA CHEVY CHASE HIGH SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9339782	E030	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	0.7 ± 0.5	2020-01-14
9341236	315	2020-01-06 @ 12:00 pm	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9340666	A030B	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9341205	A105	2020-01-06 @ 10:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341208	A115	2020-01-06 @ 10:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341207	A115	2020-01-06 @ 10:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341231	A201	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341230	A222	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9340685	AUDITORIUM	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	0.6 ± 0.4	2020-01-14
9340679	AUDITORIUM	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9341225	B100	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341223	B101	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341224	B101	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341222	B103	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341220	B105	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341219	B106	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341218	B107	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341217	B109	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341221	B110	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341216	B111	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341213	B112	2020-01-06 @ 10:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341214	B112	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341215	B113	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341211	B114	2020-01-06 @ 10:00 am	2020-01-09 @ 10:00 am	0.7 ± 0.4	2020-01-14
9341212	B115	2020-01-06 @ 10:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341210	B117	2020-01-06 @ 10:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341209	B118	2020-01-06 @ 10:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341201	B126	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340670	B127	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340673	B129	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9341227	B136	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341226	B136	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341228	B140	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	0.7 ± 0.4	2020-01-14
9341232	B220	2020-01-06 @ 12:00 pm	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341235	B315	2020-01-06 @ 12:00 pm	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9340699	C108	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	0.6 ± 0.4	2020-01-14
9340700	C113	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14

Radon test result report for:

**BETHESDA CHEVY CHASE HIGH SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340680	C115	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	0.6 ± 0.4	2020-01-14
9341233	C206	2020-01-06 @ 12:00 pm	2020-01-09 @ 10:00 am	0.6 ± 0.4	2020-01-14
9341234	C206	2020-01-06 @ 12:00 pm	2020-01-09 @ 10:00 am	0.9 ± 0.4	2020-01-14
9341237	C307	2020-01-06 @ 12:00 pm	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341203	CAFETERIA	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9341204	CAFETERIA	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	0.8 ± 0.4	2020-01-14
9341202	CAFETERIA	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340698	CONTROL BOOTH	2020-01-06 @ 10:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9341206	CYBER CAFE	2020-01-06 @ 10:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340655	D003	2020-01-06 @ 8:00 am	2020-01-09 @ 8:00 am	< 0.3	2020-01-14
9340684	D003	2020-01-06 @ 8:00 am	2020-01-09 @ 8:00 am	< 0.3	2020-01-14
9340662	E006	2020-01-06 @ 8:00 am	2020-01-09 @ 8:00 am	< 0.3	2020-01-14
9340669	E006	2020-01-06 @ 8:00 am	2020-01-09 @ 8:00 am	< 0.3	2020-01-14
9340661	E007	2020-01-06 @ 8:00 am	2020-01-09 @ 8:00 am	0.6 ± 0.4	2020-01-14
9340668	E008	2020-01-06 @ 8:00 am	2020-01-09 @ 8:00 am	1.0 ± 0.5	2020-01-14
9339706	E031	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	1.0 ± 0.5	2020-01-14
9339779	E032	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	0.7 ± 0.5	2020-01-14
9339786	E033	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	0.8 ± 0.4	2020-01-14
9340657	E034	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	0.8 ± 0.4	2020-01-14
9340658	E035	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	1.5 ± 0.5	2020-01-14
9340671	F000	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340656	F001	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340665	F003	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340686	F005	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340653	F005	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340667	F006	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340659	F007	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	0.5 ± 0.4	2020-01-14
9340652	F010	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340651	F012	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340650	F014	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340672	F016	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340692	F100	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340693	F100	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340678	F111	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340654	F118	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340674	F125	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340691	F125	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14

Radon test result report for:

**BETHESDA CHEVY CHASE HIGH SCHOOL  
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340676	MAIN GYM	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340697	MAIN GYM	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	0.5 ± 0.4	2020-01-14
9341229	MEDIA CENTER	2020-01-06 @ 11:00 am	2020-01-09 @ 10:00 am	< 0.3	2020-01-14
9339727	PE BREAKROOM	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	1.1 ± 0.4	2020-01-14
9339783	PE OFFICE MEN	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	0.8 ± 0.4	2020-01-14
9339781	PE OFFICE WOMEN	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	0.8 ± 0.4	2020-01-14
9339791	PE OFFICE WOMEN	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	1.0 ± 0.4	2020-01-14
9340695	SECOND GYM	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340696	SECOND GYM	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340683	STAGE	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9340677	STAGE	2020-01-06 @ 9:00 am	2020-01-09 @ 9:00 am	< 0.3	2020-01-14
9339705	WRESTLING	2020-01-06 @ 8:00 am	2020-01-09 @ 9:00 am	0.7 ± 0.4	2020-01-14



### Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 3

Name of Schools:

- |                              |                            |
|------------------------------|----------------------------|
| 1. Bannockburn E.S.          | 12. Montgomery Knolls E.S. |
| 2. Bethesda E.S.             | 13. Newport Mills M.S.     |
| 3. Bethesda-Chevy Chase H.S. | 14. Oak View E.S.          |
| 4. Bradley Hill E.S.         | 15. Rock View E.S.         |
| 5. Burning Tree E.S.         | 16. Roscoe Nix E.S.        |
| 6. Burnt Mills E.S.          | 17. Sligo M.S.             |
| 7. East Silver Springs E.S.  | 18. Spring Mill Center     |
| 8. Einstein H.S.             | 19. Springbrook H.S.       |
| 9. Flora Singer E.S.         | 20. Westland M.S.          |
| 10. Key M.S.                 | 21. Woodlin M.S.           |
| 11. Montgomery Blair H.S.    |                            |

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	Date	Initials
Radon Test Kits Deployed	1/6/20 to 1/7/20	JM
Radon Test Kits Collected	1/9/20 to 1/10/20	JM
Radon Test Kits Shipped to Lab*	1/10/20	JM
Radon Test Kits Received by Lab*	1/13/202	JM

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

**RADON SCREENING SURVEY – FOLLOW-UP BETHESDA-CHEVY CHASE HIGH SCHOOL**

4301 East-West Highway, Bethesda, Maryland 20814

**EXECUTIVE SUMMARY**

Date of Test Report:	3/21/16 Follow-Up
Round of Testing:	Initial <span style="border: 1px solid red; border-radius: 50%; padding: 2px;">Follow-up</span> Post Remediation
# Rooms Tested	7
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	<0.3
High Value:	2.0
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) 1/27/16 Initial	Result (pCi/L) 3/21/16 Follow-Up	Average Result (pCi/L)
A101	0.7 Tampered	0.8	0.8
B126	--- Missing	0.6	0.6
B128	--- Missing	0.7	0.7
B129	--- Missing	<0.3	<0.3
C313	--- Missing	0.6	0.6
E030	1.0 Tampered	2.0	1.5
Main Gym	<0.3 Tampered	<0.3	<0.3



### MCPS RADON TESTING

#### Executive Summary: Bethesda-Chevy Chase High School

Date of Test Report:	3/21/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	7
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.0

#### Project Status:

Retesting completed; no further action at this time.



March 21, 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: Bethesda-Chevy Chase High School  
4301 East-West Highway  
Bethesda, Maryland 20814

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 Bethesda-Chevy Chase High School, located at 4301 East-West Highway in Bethesda, Maryland 20814 (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](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on February 23, 2016 and deployed eleven (11) 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 26, 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:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
<b><math>\geq 4.0</math> pCi/L</b>	none	n/a
<b><math>&lt; 4.0</math> pCi/L</b>	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.

<b>Radon Testing Results</b>		
<b>Bethesda-Chevy Chase High School</b>		
<b>Test Period: 02/23/16-02/26/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7719195	A101	0.7
7717380	A101	0.8
7719171	B126	0.6
7719196	B128	0.7
7719187	B129	< 0.3
7719488	C313	0.6
7719184	E030	2.0
7719179	GYM	< 0.3
7719180	GYM	< 0.3

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Bethesda-Chevy Chase High School</b>		
<b>Test Period: 02/23/16-02/26/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7719494	D (B129)	< 0.3
7719181	FB (A101)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results



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

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Radon test result report for:  
**BETHESDA-CHEVY CHASE HIGH SCHOOL  
MAIN**

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Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7717380	A101	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	0.8 ± 0.3	2016-03-01
7719181	A101	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	< 0.3	2016-03-01
7719195	A101	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	0.7 ± 0.3	2016-03-01
7719171	B126	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	0.6 ± 0.3	2016-03-01
7719196	B128	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	0.7 ± 0.3	2016-03-01
7719187	B129	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	< 0.3	2016-03-01
7719494	B129	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	< 0.3	2016-03-01
7719488	C313	2016-02-23 @ 11:00 am	2016-02-26 @ 10:00 am	0.6 ± 0.3	2016-03-01
7719184	E030	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	2.0 ± 0.3	2016-03-01
7719179	GYM	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	< 0.3	2016-03-01
7719180	GYM	2016-02-23 @ 10:00 am	2016-02-26 @ 10:00 am	< 0.3	2016-03-01

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

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Radon test result report for:  
**MCPS**  
**Phase 9 Office Blanks**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
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

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

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

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Radon test result report for:  
**MCPS**  
**Phase 9 Office Blanks**

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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

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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**

<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
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  $\mu$ 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   |                        |

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	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          |                         |

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	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: Bethesda-Chevy Chase High School

Date of Test Report:	1/27/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	75
# Rooms $\geq$ 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.0

#### Project Status:

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



January 27, 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 # 12146341.22

Location: Bethesda-Chevy Chase High School  
4301 East-West Highway  
Bethesda, MD 20814

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 Bethesda-Chevy Chase High School, located at 4301 East-West Highway in Bethesda, Maryland 20814 (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](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on January 4, 2016 and deployed eighty-five (85) 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 7, 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:

<b>Radon Concentration</b>	<b>Room</b>	<b>Result</b>
$\geq 4.0$ pCi/L	none	n/a
$< 4.0$ 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

<b>Radon Testing Results</b>		
<b>Bethesda Chevy Chase HS</b>		
<b>Test Period: 01/04/16-01/07/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7720458	2ND GYM	< 0.3
7720459	2ND GYM	0.6
7720420	A101	0.9
7720419	* A101 (Tampered)	0.7
7720421	A102	2
7720483	A411	< 0.3
7720484	A418	0.9
7720401	B100	< 0.3
7720402	B101	0.6
7720405	B103	< 0.3
7720410	B105	1.1
7720412	B106	1.1
7720411	B107	< 0.3
7720413	B109	< 0.3
7720409	B110	< 0.3
7720414	B111	0.5
7720415	B112	0.6
7720417	B113	< 0.3
7720407	B114	0.6
7720416	B115	0.6
7720406	B117	< 0.3
7720418	B118	< 0.3
7720422	B126	0.6
7720423	* B126 (Missing)	0
7720424	B127	0.7
7720426	* B128 (Missing)	0
7720427	* B129 (Missing)	0
7720428	B131	0.8
7720452	B136	< 0.3
7720453	B140	0.8
7720478	B219	0.7
7720477	B220	< 0.3
7720476	B221	< 0.3
7720475	B226	0.8
7720431	C101	1.1
7720432	C101A	1.1
7720433	C102	1.1
7720434	C104	1.1
7720435	C105	0.7
7720436	C106	0.9
7720437	C107	0.7
7720438	C108	0.9
7720442	C109	0.6
7720439	C110	1
7720444	C111	0.6
7720443	C112	0.6

Table Note:

\* Missing or Compromised Sample

<b>Radon Testing Results</b>		
<b>Bethesda Chevy Chase HS</b>		
<b>Test Period: 01/04/16-01/07/16</b>		
<b>Kit Number</b>	<b>Room / Area</b>	<b>Result</b>
7720446	C113	1
7720445	C114	0.6
7720447	C115	0.6
7720482	C310	< 0.3
7720481	C312	0.7
7720480	* C313 (Missing)	0
7720479	C314	0.7
7720460	D003	1
7720465	D004	1
7720467	D008A	0.9
7720468	D009	1.5
7720454	D104	0.7
7720455	D104	1.3
7720461	E006	0.9
7720463	E006A	1.3
7720462	E007	1
7720471	* E020 (Tampered)	1
7720469	E030	1.5
7720470	E031	1.2
7720472	E032	1.6
7720473	E033	1.4
7720474	E034	1.6
7720449	E102	0.9
7720450	E102	< 0.3
7720451	E102A	< 0.3
7720456	MAIN GYM	< 0.3
7720457	* MAIN GYM (Tampered)	< 0.3

Table Note:

\* Missing or Compromised Sample



<b>Radon Testing Results</b>		
<b>Bethesda Chevy Chase HS</b>		
<b>Test Period: 01/04/16-01/07/16</b>		
<b>Kit Number</b>	<b>QC Type</b>	<b>Result</b>
7720403	D (B101)	< 0.3
7720408	D (B114)	0.6
7720425	D (B127)	< 0.3
7720429	D (B131)	0.6
7720440	D (C110)	0.6
7720448	D (C113)	< 0.3
7720404	FB (B101)	< 0.3
7720430	FB (B131)	< 0.3
7720441	FB (C110)	< 0.3
7712530	OB (0)	< 0.3

Table Note:

\* Missing or Compromised Sample

# ATTACHMENT C

## Laboratory Analytical Results

January 25, 2016  
**LABORATORY ANALYSIS REPORT**

Radon test result report for:  
**BETHESDA CHEVY CHASE HS MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7712530	0	2016-01-04 @ 6:00 pm	2016-01-07 @ 3:00 pm	< 0.3	2016-01-11
7720458	2ND GYM	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7720459	2ND GYM	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-12
7720420	A101	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.9 ± 0.3	2016-01-11
7720419	A101	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.4	2016-01-12
7720421	A102	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	2.0 ± 0.4	2016-01-12
7720483	A411	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-12
7720484	A418	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	0.9 ± 0.3	2016-01-12
7720401	B100	2016-01-04 @ 8:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720402	B101	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-12
7720403	B101	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720404	B101	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720405	B103	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7720410	B105	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.1 ± 0.4	2016-01-12
7720412	B106	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.1 ± 0.4	2016-01-12
7720411	B107	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720413	B109	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720409	B110	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7720414	B111	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.5 ± 0.3	2016-01-11
7720415	B112	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.4	2016-01-12
7720417	B113	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7720407	B114	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-12
7720408	B114	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.4	2016-01-12
7720416	B115	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-11
7720406	B117	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720418	B118	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720423	B126	@	@		
7720422	B126	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-12
7720425	B127	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7720424	B127	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-12
7720426	B128	@	@		
7720427	B129	@	@		
7720429	B131	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-11
7720428	B131	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.8 ± 0.4	2016-01-12
7720430	B131	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720452	B136	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720453	B140	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.8 ± 0.4	2016-01-12

January 25, 2016  
**LABORATORY ANALYSIS REPORT**

Radon test result report for:  
**BETHESDA CHEVY CHASE HS MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7720478	B219	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	0.7 ± 0.4	2016-01-12
7720477	B220	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-12
7720476	B221	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-12
7720475	B226	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	0.8 ± 0.4	2016-01-12
7720431	C101	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.1 ± 0.3	2016-01-11
7720432	C101A	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.1 ± 0.4	2016-01-12
7720433	C102	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.1 ± 0.4	2016-01-12
7720434	C104	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.1 ± 0.3	2016-01-11
7720435	C105	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-12
7720436	C106	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.9 ± 0.3	2016-01-11
7720437	C107	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7720438	C108	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.9 ± 0.3	2016-01-11
7720442	C109	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-11
7720439	C110	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	1.0 ± 0.3	2016-01-11
7720440	C110	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-11
7720441	C110	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7720444	C111	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-12
7720443	C112	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-12
7720446	C113	2016-01-04 @ 9:00 am	2016-01-07 @ 10:00 am	1.0 ± 0.3	2016-01-11
7720448	C113	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720445	C114	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.3	2016-01-12
7720447	C115	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.6 ± 0.4	2016-01-12
7720482	C310	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	< 0.3	2016-01-12
7720481	C312	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	0.7 ± 0.4	2016-01-12
7720480	C313	@	@		
7720479	C314	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	0.7 ± 0.4	2016-01-12
7720460	D003	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.0 ± 0.4	2016-01-12
7720465	D004	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.0 ± 0.3	2016-01-11
7720466	D008	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.5 ± 0.4	2016-01-12
7720467	D008A	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.9 ± 0.3	2016-01-11
7720468	D009	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.5 ± 0.4	2016-01-12
7720454	D104	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.7 ± 0.3	2016-01-11
7720455	D104	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.3 ± 0.4	2016-01-12
7720461	E006	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	0.9 ± 0.4	2016-01-12
7720463	E006A	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.3 ± 0.3	2016-01-11
7720462	E007	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.0 ± 0.4	2016-01-12
7720464	E008	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.0 ± 0.4	2016-01-12

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January 25, 2016  
**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:  
**BETHESDA CHEVY CHASE HS  
MAIN**

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<b>Kit #</b>	<b>Room Id</b>	<b>Started</b>	<b>Ended</b>	<b>pCi/L</b>	<b>Analyzed</b>
7720471	E020	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	1.0 ± 0.4	2016-01-12
7720469	E030	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.5 ± 0.3	2016-01-11
7720470	E031	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	1.2 ± 0.3	2016-01-11
7720472	E032	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	1.6 ± 0.3	2016-01-11
7720473	E033	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	1.4 ± 0.4	2016-01-12
7720474	E034	2016-01-04 @ 10:00 am	2016-01-07 @ 10:00 am	1.6 ± 0.4	2016-01-12
7720449	E102	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	0.9 ± 0.4	2016-01-12
7720450	E102	2016-01-04 @ 9:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12
7720451	E102A	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7720457	MAIN GYM	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-11
7720456	MAIN GYM	2016-01-04 @ 10:00 am	2016-01-07 @ 9:00 am	< 0.3	2016-01-12

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January 15, 2016  
\*\* LABORATORY ANALYSIS REPORT \*\*

Radon test result report for:  
**MCPS PHASE 3 & 4  
TRANSIT BLANKS**

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

December  
23,  
2015

**LABORATORY ANALYSIS  
REPORT \*\***

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

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

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  $\mu$ R/h Elevation = 820 ft**





### Chain of Custody

Project Name: MCPS Radon Phase IV

Name of Schools:

- |                            |                            |                           |
|----------------------------|----------------------------|---------------------------|
| 1. Albert Einstein HS      | 12. Herbert Hoover MS      | 23. Stephen Knolls School |
| 2. Bel Pre ES              | 13. Kohn F. Kennedy HS     | 24. Strathmore ES         |
| 3. Benjamin Banneker MS    | 14. Julius West MS         | 25. Summit Hall ES        |
| 4. Bethesda Chevy Chase HS | 15. Kensington Parkwood ES | 26. Travilah ES           |
| 5. Beverly Farms ES        | 16. Lakewood ES            | 27. Twinbrook ES          |
| 6. Cabin John MS           | 17. Mill Creek ES          | 28. Waters Landing ES     |
| 7. Chevy Chase ES          | 18. Montgomery Blair HS    | 29. Watkins Mill HAS      |
| 8. Farmland ES             | 19. Montgomery Village MS  | 30. Weller Road ES        |
| 9. Forest Oak MS           | 20. Northwood HS           | 31. White Oak MS          |
| 10. Gaithersburg HS        | 21. Paint Branch ES        | 32. Winston Churchill HS  |
| 11. Garrett Park ES        | 22. Rock Creek Forest ES   |                           |

	Date	Initials
Radon Test Kits Deployed	1/4/16	JM
Radon Test Kits Sampled	1/7/16	JM
Radon Test Kits Shipped to Lab*	1/8/16	JM
Radon Test Kits Received by Lab*	1/11/16	JM

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

Note: tests kits deployed at Montgomery Blair HS 1/4/16 and 1/5/16, test kits sampled at Montgomery Blair HS 1/7/16 and 1/8/16