

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

936 RIDGEBROOK ROAD • SPARKS, MD 21152 • 410-316-7800 • (FAX) 410-316-7935

Site Name	Blake High School
Date of Report	2/28/2020
Round of Testing	Initial
	Follow-up
	Post Remediation
	2 year testing
	5 year testing
	HVAC Upgrade
	Window Replacement
	New Addition
	New Facility
# of Rooms Tested	3
# Rooms ≥4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	<0.3 pCi/L

MCPS RADON TESTING - EXECUTIVE SUMMARY

Project Status

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



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2/28/2020

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

Re: Radon Testing Services

KCI Job #12146341.126

Location: Blake High School 300 Norwood Road Silver Spring, Maryland 20905

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 Blake High School, located at 300 Norwood Road in Silver Spring, Maryland 20905 (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 #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 or www.epa.gov/radon.

KCI visited the site on 2/11/20 and deployed four (4) 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.

KCI sampled the following locations during this follow-up test:

1. Rooms with missing test kits from the December 2019 testing period (i.e. test kit was deployed but not recovered),

- 2. Rooms with invalidated test kits from the December 2019 testing period (e.g. an open window in the room or disturbed test kit),
- 3. Rooms which were locked/inaccessible during the December 2019 testing period,
- 4. Rooms with elevated December 2019 results (i.e. \geq 3.5 piC/L),
- 5. Rooms previously tested for radon but not tested in December 2019, and
- 6. Additional rooms that require testing (if applicable.)

A floor plan map of the building with the test locations is included as Appendix 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, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on 2/14/2020 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 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 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 mid-20s to the upper-40s; and high temperatures ranged from the lower-40s to the upper-50s. Maximum sustained winds ranged from 14-24 miles per hour. Average humidity was approximately 74%. A total of 1.32 inches of rain were recorded during the testing period. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

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). Follow-up 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 piC/L	None	N/A
≤4.0 piC/L	See Attachment B	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 410-316-7800.

Sincerely,

Mr. Tyler P. McCleaf Radon Measurement Provider 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

<u>Floor Plan Legend</u> X-Sample Location (in red) X- Previous Sample Location 1- Not Samled; No Ground Contact 2- Not Samled: Uncorpusied (or g. Store

2- Not Samled; Unoccupied (e.g. Storage, Mechanical)

3- Not Samled; High Humidity/Moisture

4- Not Samled; Bathroom/Hallway

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			
	Blake High School		
Test Period: 02/11/20-02/14/20			
Kit Number Room / Area Result			
9346901 C142 < 0.3			
9346902 A212 < 0.3			
9346964 C144 < 0.3		< 0.3	
9348502 OFFICE BLANK < 0.3		< 0.3	

Table 2- Radon Testing Results			
Blake High School			
Test Period: 02/11/20-02/14/20			
Kit Number QC Type Room / Area Result			
9348522	TRANSIT BLANK	NA	0.7
9341735	TRANSIT BLANK	NA	<0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for: BLAKE HS MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9346902	A212	2020-02-11 @ 8:00 am	2020-02-14 @ 11:00 am	< 0.3	2020-02-19
9346901	C142D	2020-02-11 @ 8:00 am	2020-02-14 @ 11:00 am	< 0.3	2020-02-19
9346964	C144	2020-02-11 @ 8:00 am	2020-02-14 @ 11:00 am	< 0.3	2020-02-19

EXPOSURE IN BOWSER-	MORNER RADON CHAMBER
CLIENT KCI Technolog	gies, Inc. Job Number 194523
	_pCi/L Rel. Hum <u>49.8</u> % Temp. <u>70.2</u> F
Date Start: 2/21/20 Date Stop: 2/24/2	20 Date Start: Date Stop:
Time Start: 0745 Time Stop: 0745	Time Start: Time Stop:
	Device No.'s:
9341725 thru 9341733	
52 Left	
Date Start: Date Stop:	Date Start: Date Stop:
Time Start: Time Stop:	Time Start: Time Stop:
Device No.'s:	Device No.'s:
е	
Date Start: Date Stop:	Date Start: Date Stop:
Time Start: Time Stop:	Time Start: Time Stop:
Device No.'s:	Device No.'s:

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

February 28, 2020

**** 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
9341725	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.9 ± 1.6	2020-02-26
9341730	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.1 ± 1.6	2020-02-26
9341728	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.9 ± 1.6	2020-02-26
9341726	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.8 ± 1.5	2020-02-26
9341731	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	25.1 ± 1.5	2020-02-26
9341729	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	26.2 ± 1.6	2020-02-26
9341727	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.2 ± 1.6	2020-02-26
9341732	N/A	2020-02-21 @ 8:00 am	2020-02-24 @ 8:00 am	27.3 ± 1.6	2020-02-26



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Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 2

Name of Schools:

- 1. Argyle M.S.
- 2. Banneker M.S.
- 3. Bel Pre E.S.
- 4. Blake H.S.
- 5. Briggs Chaney M.S.

- 6. Fallsmead E.S.
- 7. Farquhar M.S.
- 8. Kennedy H.S.
- 9. Magruder H.S.
- 10. Wheaton H.S.

	Date	Initials
Radon Test Kits Deployed	2/11/20	JM
Radon Test Kits Collected	2/14/20	m
Radon Test Kits Shipped to Lab*	2/14/20	TUM
Radon Test Kits Received by Lab*	2/17/20	- TUA

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



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Site Name	James Hubert Blake High School
Date of Report	2/3/2020
Round of Testing	Initial
	Follow-up
	Post Remediation
	2 year testing
	5 year testing
	HVAC Upgrade
	Window Replacement
	New Addition
	New Facility
# of Rooms Tested	105
# Rooms ≥4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.1 pCi/L

MCPS RADON TESTING - EXECUTIVE SUMMARY

Project Status

Current Project Status at this time: Testing Complete; missing/compromised tests to be sampled.



2/3/2020

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: James Hubert Blake High School 300 Norwood Road Silver Spring, Maryland 20905

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 James Hubert Blake High School, located at 300 Norwood Road in Silver Spring, Maryland 20905 (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 https://www.montgomeryschoolsmd.org/departments/facilities/maintenance/default.aspx?id=458858 or www.epa.gov/radon.

KCI visited the site on 12/16/2019 and deployed one-hundred twenty-five (125) 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.

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 12/19/2019 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.

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• Evaluate radon concentrations at the facility.

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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 lower-20s and high temperatures were in the lower-40s. Maximum sustained winds ranged from 12-26 miles per hour. Average humidity was around 67%. 0.54 inches of precipitation (rain and snow) was recorded during the 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:

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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:

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- QC- Quality Control

Table 1- Radon Testing Results					
	Blake High School				
Test F	Period: 12/16/2019-12/19	9/2019			
Kit Number	Room / Area	Result			
9340201	B229	0.9			
9340202	G286	0.5			
9340203	B119	< 0.3			
9340204	B113	< 0.3			
9340205	B120	< 0.3			
9340206	B120	0.6			
9340207	B120 B115	< 0.3			
9340208	C133	1.2			
9340210	F308	0.6			
9340211	A107	1.9			
9340212	C136	1			
9340212	C136A	0.7			
9340213	B230	1.1			
9340214	C137	1.1			
9340215	C135	0.6			
9340210	F301	< 0.3			
9340217	E264A	0.9			
9340218	C242	0.9			
9340219	C242	< 0.3			
9340220	C131	< 0.3			
	C131	1.1			
9340222	C134 C131	0.7			
9340223 9340224	C133A	0.7			
9340224	C135A C242	1			
9340225	D249	< 0.3			
9340220	A205	0.7			
9340227	A205	0.7			
9340301	A101B A103	0.6			
9340302	A103	< 0.3			
9340303	A101 A105	0.9			
9340304	A103	< 0.3			
9340305	A102B A101N				
9340300	A101N A102N	0.6 0.6			
9340307	A102N A102A	0.6			
9340308	B110	0.0			
9340309	A102O	< 0.3			
9340310	A1020	< 0.3			
9340311	B110	0.6			
-	A102M				
9340313 9340314		0.6			
	A102C	< 0.3 1.4			
9340315	A100G	1.4			
9340316	A102G				
9340317	A102F	0.6			
9340318	A102E	0.9			
9340319	A102D	0.7			
9340320	A100H	0.8			
9340321	A102H	0.6			
9340322	A100C	0.6			
9340323	AP2	1.3			
9340324	AP3	1.4			

9340384	F171	< 0.3
9340385	E165A	0.6
9340386	B125A	< 0.3
9340387	E160	0.5
9340388	E160C	1
9340389	E160D	0.6
9340390	E165	0.8
9340391	E163	0.7
9340392	E170	0.7
9340393	E161C	< 0.3
9340394	B112	1.1
9340395	B120	1
9340396	E161	0.8
9340397	E162	1.1
9340398	E162	0.9
9340399	B123	< 0.3
9340400	B125	< 0.3
9340329	A102H	0.7
9340350	A159	1.3
9341394	OFFICE BLANK	< 0.3
9340368	C144	MISSING
9340374	142D	MISSING
9340209	A212	MISSING

Table 2- Radon Testing Results						
Blake High School						
	Test Period: 12/16	/2019-12/19/2019				
Kit Number	QC Type	Room / Area	Result			
9340306	D	A101N	0.6			
9340330	D	A102H	1			
9340329	FB	A102H	0.7			
9340346	D	D149	0.9			
9340337	FB	D149	0.8			
9340352	D	A159	1.4			
9340361	D	H1000	1.3			
9340360	FB	H1000	0.5			
9340373	D	G184C	0.7			
9340379	D	F171	<0.3			
9340384	FB	F171	<0.3			
9340397	D	E162	1.1			
9340206	D	B120	0.6			
9340205	FB	B120	<0.3			
9340221	D	C131	<0.3			
9340219	D	C242	0.7			
9340220	FB	C242	<0.3			
9341377	TRANSIT BLANK	NA	0.5			
9341379	TRANSIT BLANK	NA	< 0.3			
9341380	TRANSIT BLANK	NA	< 0.3			
9341398	TRANSIT BLANK	NA	< 0.3			

Summary of Missed Locations							
James Hubert Blake High School							
Test Period: 12/16/2019 - 12/19/2019							
Kit Number	Room/Area	Result					
	NA						

Summary of Missing, Compromised and >/= 4 piC/L Tests								
James Hubert Blake High School								
Test Period: 12/16/2019-12/19/2019								
Kit Number	Kit Number Room/Area							
9340368	*C144	Missing						
9340374	*142D	Missing						
9340209	*A212	Missing						

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for: BLAKE HIGH SCHOOL

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340355	A159	2019-12-16 @ 11:00 am	n 2019-12-19 @ 9:00 am	1.7 ± 0.4	2019-12-23
9340352	A159	2019-12-16 @ 11:00 am	n 2019-12-19 @ 9:00 am	1.4 ± 0.4	2019-12-23
9340349	C146	2019-12-16 @ 11:00 am	n 2019-12-19 @ 9:00 am	0.9 ± 0.3	2019-12-23
9340351	H1007C	2019-12-16 @ 11:00 am	n 2019-12-19 @ 9:00 am	1.0 ± 0.4	2019-12-23
9340354	H1009	2019-12-16 @ 11:00 am	n 2019-12-19 @ 9:00 am	1.0 ± 0.3	2019-12-23
9340356	H1011E	2019-12-16 @ 11:00 am	n 2019-12-19 @ 9:00 am	1.2 ± 0.4	2019-12-23
9340353	STG1	2019-12-16 @ 11:00 am	n 2019-12-19 @ 9:00 am	1.8 ± 0.4	2019-12-23

Radon test result report for: BLAKE HIGH SCHOOL 321

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340343	A100	2019-12-16 @ 10:00 am	2019-12-19 @ 8:00 am	< 0.3	2019-12-23
9340344	A100A	2019-12-16 @ 10:00 am	2019-12-19 @ 8:00 am	0.6 ± 0.4	2019-12-23
9340345	A100B	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	1.1 ± 0.4	2019-12-23
9340322	A100C	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	0.6 ± 0.3	2019-12-23
9340331	A100C	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	1.2 ± 0.4	2019-12-23
9340315	A100G	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	1.4 ± 0.4	2019-12-23
9340320	A100H	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	0.8 ± 0.3	2019-12-23
9340327	A100I	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	0.7 ± 0.4	2019-12-23
9340328	A100K	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	0.7 ± 0.4	2019-12-23
9340325	A100L	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	0.8 ± 0.4	2019-12-23
9340332	A1000	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	0.8 ± 0.4	2019-12-23
9340303	A101	2019-12-16 @ 8:00 am	2019-12-19 @ 9:00 am	< 0.3	2019-12-23
9340301	A101B	2019-12-16 @ 8:00 am	2019-12-19 @ 9:00 am	0.6 ± 0.4	2019-12-23
9340306	A101N	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	0.6 ± 0.4	2019-12-23
9340311	A102	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	< 0.3	2019-12-23
9340308	A102A	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	0.6 ± 0.4	2019-12-23
9340305	A102B	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	< 0.3	2019-12-23
9340314	A102C	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	< 0.3	2019-12-23
9340319	A102D	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	0.7 ± 0.3	2019-12-23
9340318	A102E	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	0.9 ± 0.4	2019-12-23
9340317	A102F	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	0.6 ± 0.4	2019-12-23
9340316	A102G	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	1.1 ± 0.4	2019-12-23
9340321	A102H	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	0.6 ± 0.4	2019-12-23
9340330	A102H	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	1.0 ± 0.4	2019-12-23
9340313	A102M	2019-12-16 @ 8:00 am	2019-12-19 @ 11:00 am	0.6 ± 0.3	2019-12-23
9340307	A102N	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	0.6 ± 0.4	2019-12-23
9340310	A102O	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	< 0.3	2019-12-23
9340302	A103	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	0.6 ± 0.3	2019-12-23
9340348	A103C	2019-12-16 @ 10:00 am	2019-12-19 @ 8:00 am	< 0.3	2019-12-23
9340304	A105	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	0.9 ± 0.4	2019-12-23
9340211	A107	2019-12-16 @ 2:00 pm	2019-12-19 @ 8:00 am	1.9 ± 0.4	2019-12-23
9340227	A205	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	0.7 ± 0.3	2019-12-23
9340326	AP1	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	1.2 ± 0.4	2019-12-23
9340323	AP2	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	1.3 ± 0.4	2019-12-23
9340324	AP3	2019-12-16 @ 9:00 am	2019-12-19 @ 8:00 am	1.4 ± 0.4	2019-12-23
9340309	B110	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	0.9 ± 0.4	2019-12-23
9340312	B110	2019-12-16 @ 8:00 am	2019-12-19 @ 8:00 am	0.6 ± 0.4	2019-12-23

Radon test result report for: BLAKE HIGH SCHOOL 321

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340394	B112	2019-12-16 @ 2:00 pm	2019-12-19 @ 8:00 am	1.1 ± 0.4	2019-12-23
9340204	B113	2019-12-16 @ 2:00 pm	2019-12-19 @ 8:00 am	< 0.3	2019-12-23
9340207	B115	2019-12-16 @ 2:00 pm	2019-12-19 @ 8:00 am	< 0.3	2019-12-23
9340203	B119	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340206	B120	2019-12-16 @ 2:00 pm	2019-12-19 @ 7:00 am	0.6 ± 0.4	2019-12-23
9340395	B120	2019-12-16 @ 2:00 pm	2019-12-19 @ 7:00 am	1.0 ± 0.4	2019-12-23
9340205	B120	2019-12-16 @ 2:00 pm	2019-12-19 @ 7:00 am	< 0.3	2019-12-23
9340380	B121	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340399	B123	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340400	B125	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340386	B125A	2019-12-16 @ 2:00 pm	2019-12-19 @ 11:00 am	< 0.3	2019-12-23
9340201	B229	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	0.9 ± 0.4	2019-12-23
9340214	B230	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	1.1 ± 0.4	2019-12-23
9340221	C131	2019-12-16 @ 3:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340223	C131	2019-12-16 @ 3:00 pm	2019-12-19 @ 10:00 am	0.7 ± 0.4	2019-12-23
9340208	C133	2019-12-16 @ 3:00 pm	2019-12-19 @ 10:00 am	1.2 ± 0.4	2019-12-23
9340224	C133A	2019-12-16 @ 3:00 pm	2019-12-19 @ 10:00 am	0.9 ± 0.4	2019-12-23
9340222	C134	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	1.1 ± 0.4	2019-12-23
9340216	C135	2019-12-16 @ 3:00 pm	2019-12-19 @ 10:00 am	0.6 ± 0.3	2019-12-23
9340212	C136	2019-12-16 @ 3:00 pm	2019-12-19 @ 10:00 am	1.0 ± 0.4	2019-12-23
9340213	C136A	2019-12-16 @ 3:00 pm	2019-12-19 @ 10:00 am	0.7 ± 0.4	2019-12-23
9340215	C137	2019-12-16 @ 3:00 pm	2019-12-19 @ 10:00 am	1.3 ± 0.4	2019-12-23
9340371	C142	2019-12-16 @ 1:00 pm	2019-12-19 @ 11:00 am	0.9 ± 0.4	2019-12-23
9340219	C242	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	0.7 ± 0.3	2019-12-23
9340220	C242	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	< 0.3	2019-12-23
9340225	C242	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	1.0 ± 0.4	2019-12-23
9340347	D103B	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	0.7 ± 0.3	2019-12-23
9340339	D148	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	1.2 ± 0.4	2019-12-23
9340338	D148A	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	1.1 ± 0.4	2019-12-23
9340337	D149	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	0.8 ± 0.4	2019-12-23
9340340	D149	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	0.5 ± 0.3	2019-12-23
9340346	D149	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	0.9 ± 0.4	2019-12-23
9340335	D150	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	2.0 ± 0.4	2019-12-23
9340336	D150A	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	1.4 ± 0.4	2019-12-23
9340333	D151	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	0.7 ± 0.4	2019-12-23
9340334	D153	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	< 0.3	2019-12-23
9340342	D159K	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	0.9 ± 0.4	2019-12-23

Radon test result report for: BLAKE HIGH SCHOOL 321

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340226	D249	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	< 0.3	2019-12-23
9340387	E160	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	0.5 ± 0.3	2019-12-23
9340388	E160C	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	1.0 ± 0.4	2019-12-23
9340389	E160D	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	0.6 ± 0.4	2019-12-23
9340396	E161	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	0.8 ± 0.4	2019-12-23
9340393	E161C	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340397	E162	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	1.1 ± 0.4	2019-12-23
9340398	E162	2019-12-16 @ 2:00 pm	2019-12-19 @ 10:00 am	0.9 ± 0.3	2019-12-23
9340391	E163	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	0.7 ± 0.4	2019-12-23
9340390	E165	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	0.8 ± 0.4	2019-12-23
9340385	E165A	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	0.6 ± 0.3	2019-12-23
9340392	E170	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	0.7 ± 0.4	2019-12-23
9340218	E264A	2019-12-16 @ 4:00 pm	2019-12-19 @ 11:00 am	0.9 ± 0.4	2019-12-23
9340379	F171	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340384	F171	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340378	F171	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340377	F173	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340383	F174	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	0.7 ± 0.3	2019-12-23
9340376	F175	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	0.8 ± 0.4	2019-12-23
9340381	F175A	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	< 0.3	2019-12-23
9340382	F176	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	1.1 ± 0.3	2019-12-23
9340217	F301	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	< 0.3	2019-12-23
9340210	F308	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	0.6 ± 0.3	2019-12-23
9340372	G184	2019-12-16 @ 12:00 pm	2019-12-19 @ 11:00 am	0.9 ± 0.3	2019-12-23
9340370	G184C	2019-12-16 @ 12:00 pm	2019-12-19 @ 11:00 am	1.0 ± 0.3	2019-12-23
9340373	G184C	2019-12-16 @ 1:00 pm	2019-12-19 @ 11:00 am	0.7 ± 0.4	2019-12-23
9340375	G185	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	0.6 ± 0.4	2019-12-23
9340369	G190	2019-12-16 @ 1:00 pm	2019-12-19 @ 10:00 am	0.6 ± 0.3	2019-12-23
9340202	G286	2019-12-16 @ 3:00 pm	2019-12-19 @ 11:00 am	0.5 ± 0.4	2019-12-23
9340360	H1000	2019-12-16 @ 11:00 am	2019-12-19 @ 9:00 am	0.5 ± 0.3	2019-12-23
9340363	H1000	2019-12-16 @ 11:00 am	2019-12-19 @ 9:00 am	1.3 ± 0.4	2019-12-23
9340361	H1000	2019-12-16 @ 11:00 am	2019-12-19 @ 9:00 am	1.3 ± 0.4	2019-12-23
9340359	H1000	2019-12-16 @ 12:00 pm	2019-12-19 @ 9:00 am	2.1 ± 0.4	2019-12-23
9340362	H1000	2019-12-16 @ 11:00 am	2019-12-19 @ 9:00 am	1.2 ± 0.3	2019-12-23
9340365	H1002	2019-12-16 @ 11:00 am	2019-12-19 @ 9:00 am	1.2 ± 0.4	2019-12-23
9340364	H1002	2019-12-16 @ 11:00 am	2019-12-19 @ 9:00 am	1.1 ± 0.3	2019-12-23
9340366	H1007E	2019-12-16 @ 12:00 pm	2019-12-19 @ 9:00 am	1.8 ± 0.4	2019-12-23

Radon test result report for: BLAKE HIGH SCHOOL 321

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340367	H1017	2019-12-16 @ 12:00 pm	2019-12-19 @ 9:00 am	0.9 ± 0.4	2019-12-23
9340341	H1020	2019-12-16 @ 10:00 am	2019-12-19 @ 9:00 am	1.1 ± 0.4	2019-12-23
9340358	TEAM B1	2019-12-16 @ 12:00 pm	2019-12-19 @ 9:00 am	1.4 ± 0.4	2019-12-23
9340357	TEAM B2	2019-12-16 @ 12:00 pm	2019-12-19 @ 9:00 am	1.2 ± 0.4	2019-12-23

EXPOSURE IN BOWSER-MORNER RADON CHAMBER KCI Technologies Ine Job Number 193598 CLIENT NOMINAL Conditions: Radon Conc_ ___pCi/L Rel. Hum _____ % Temp. F Date Start: 12/22/19 Date Stop: 12/23/19 Time Start: <u>Q815</u> Time Stop: <u>Q815</u> (Graup 1) Device No.'s: (20) Chan. Bags-C 0 N N S R 9340020 9340001 thru femp °F Avg pCi/l RH % SS Date Start: 12/21/19 Date Stop: 12/23/19 Time Start: 0829 Time Stop: 0820 (Gray 2) Device No.'s: (20) Char. Bags-70, 70, 30. 9340040 9340021 thro femp °F Avg pCi/l RH % 54 Date Start: 12/21/19 Date Stop: 12/23/19 Time Start: 0825 Time Stop: 0823 (Group 3) Device No.'s: (20) Char. 3 , O L 5 0 S 9340041 9340060 thno emp °F Avg pCi/L RH % 93

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

January 3, 2020

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

Radon test result report for: **S**

N/A

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

Radon test result report for: **S**

N/A

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

**** LABORATORY ANALYSIS REPORT ****

 $\frac{Radon \ test \ result \ report \ for:}{S}$

N/A

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9340052	N/A	2019-12-21 @ 8	8:00 am 2019-12-23 @ 8	:00 am 27.4 ± 2.6 D	2020-01-03
9340057	N/A	2019-12-21 @ 8	8:00 am 2019-12-23 @ 8	:00 am 27.3 ± 2.5 D	2020-01-03
9340025	N/A	2019-12-21 @ 8	8:00 am 2019-12-23 @ 8	:00 am $25.1 \pm 2.4 \text{ D}$	2020-01-03
9341711	N/A	2019-12-21 @ 9	9:00 am 2019-12-23 @ 9	:00 am $22.5 \pm 2.2 \text{ D}$	2020-01-03
9340079	N/A	2019-12-21 @ 9	9:00 am 2019-12-23 @ 9	:00 am 26.9 ± 2.5 D	2020-01-03
9340062	N/A	2019-12-21 @ 9	9:00 am 2019-12-23 @ 9	:00 am 25.6 ± 2.5 D	2020-01-03
9340030	N/A	2019-12-21 @ 8	8:00 am 2019-12-23 @ 8	:00 am 25.0 ± 2.4 D	2020-01-03
9341716	N/A	2019-12-21 @ 9	9:00 am 2019-12-23 @ 9	:00 am $25.1 \pm 2.4 \text{ D}$	2020-01-03
9340084	N/A	2019-12-21 @ 9	9:00 am 2019-12-23 @ 9	:00 am 24.5 ± 2.3 D	2020-01-03



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS Corporate Office: 936 Ridgebrook road • Sparks, Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 2

Name of Schools:

- 1. Argyle M.S.
- 2. Banneker M.S.
- 3. Bel Pre E.S.
- 4. Bells Mill E.S.
- 5. Bethesda Maintenance Depot
- 6. Beverly Farms E.S.
- 7. Blake H.S.
- 8. Dufief E.S.
- 9. Briggs Chaney M.S.
- 10. Brookhaven E.S.
- 11. Burtonsville E.S.
- 12. Cabin John M.S.

- 13. Candelwood E.S.
- 14. Drew E.S.
- 15. Fallsmead E.S.
- 16. Farquhar M.S.
- 17. Kennedy H.S.
- 18. Luxmanor E.S.
- 19. Magruder H.S.
- 20. Redland M.S.
- 21. Shriver E.S.
- 22. Smith Center
- 23. Viers Mill E.S.
- 24. Wheaton H.S.

	Date	Initials
Radon Test Kits Deployed	12/16/19 to 12/17/19	M
Radon Test Kits Collected	12/19/19 to 12/20/19	m
Radon Test Kits Shipped to Lab*	12/20/19	Th
Radon Test Kits Received by Lab*	12/23/19	TW

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



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MCPS RADON TESTING

Executive Summary: James Hubert Blake High School

Date of Test Report:	2/9/2016
Round of Testing:	Initial
	Follow-up
	Post Remediation
# Rooms Tested:	95
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.4

Project Status: Initial testing completed; no further action at this time.



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February 9, 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 # 12146341.24
Location:	James Hubert Blake High School
	200 Norrand Dood

300 Norwood Road Silver Spring, MD 20905

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 James Hubert Blake High School, located at 300 Norwood Road in Silver Spring, Maryland 20905 (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 11, 2016 and deployed one hundred twenty (120) 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 14, 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 piC/L	none	n/a	
<4.0 piC/L	See Attachn	nent 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.

Mr. Richard Cox February 9, 2016 Page 4

Sincerely,

N. allen Burnett

H. Allen Bennett Certified Industrial Hygienist KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations B- Table 1-Radon Test Summary Spreadsheet C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results						
James Hubert Blake High School Test Period: 01/11/16-01/14/16						
16	Test Period: 01/11/16-01/14/16					
Kit Number	Room / Area	Result				
7718872	A100	< 0.3				
7718873	A100	< 0.3				
7718880	A1000	< 0.3				
7718874	A100A	< 0.3				
7718875	A100B	< 0.3				
7718876	A100C	< 0.3				
7718877	A100D	< 0.3				
7718878	A100E	0.6				
7718881	A100F	1.2				
7718882	A100G	1				
7718883	A100H	< 0.3				
7718884	A100I	< 0.3				
7718885	A100K	< 0.3				
7718879	A100L	0.6				
7718602	A101	< 0.3				
7718601	A102	< 0.3				
7718894	A102A	0.5				
7718893	A102B	< 0.3				
7718892	A102C	< 0.3				
7718891	A102D	< 0.3				
7718890	A102E	< 0.3				
7718889	A102F	< 0.3				
7718888	A102G	< 0.3				
7718886	A102H	< 0.3				
7718896	A102M	< 0.3				
7718898	A102N	< 0.3				
7718895	A102O	< 0.3				
7718603	A103	0.6				
7718605	A103A	0.7				
7718604	A103C	< 0.3				
7718606	A107	1.9				
7718868	A159	1.2				
7718870	A159	0.9				
7718610	B110	< 0.3				
7718609	B110	< 0.3				
7718813	B112	0.6				
7718611	B113	< 0.3				
7718612	B115	< 0.3				
7718811	B120	0.8				
7718844	C144	< 0.3				
7718845	C146	0.8				
7718842	COACH OFFICE	0.7				
7718855	D148	1.3				
7718856	D148	2.4				
7718860	D148H	1.3				
7718857	D1481	0.9				

Radon Testing Results							
	James Hubert Blake High School Test Period: 01/11/16-01/14/16						
1 est renou: 01/11/10-01/14/10							
Kit Number	Room / Area	Result					
7718861	D149	0.5					
7718852	D150	0.9					
7718862	D151	< 0.3					
7718865	D152	0.8					
7718863	D153	0.7					
7718867	D155	0.5					
7718869	D155A	< 0.3					
7718853	D159J	0.8					
7718854	D159K	1					
7718864	DIRECTORS OFFICE	0.6					
7718816	E160	0.7					
7718817	E160C	0.7					
7718818	E160D	< 0.3					
7718815	E161	< 0.3					
7718821	E161C	< 0.3					
7718822	E161D	< 0.3					
7718823	E161E	< 0.3					
7718819	E162	< 0.3					
7718820	E163	< 0.3					
7718824	E165	0.8					
7718825	E165 OFFICE	1					
7718826	E165 STORAGE	0.9					
7718827	E170	< 0.3					
7718613	E262	< 0.3					
7718627	E267	< 0.3					
7718618	E268	0.7					
7718625	E269	< 0.3					
7718615	E270	0.7					
7718617	E279	< 0.3					
7718828	F171	< 0.3					
7718829	F171 OFFICE	< 0.3					
7718831	F172	0.8					
7718830	F173	< 0.3					
7718833	F174	< 0.3					
7718836	F175	< 0.3					
7718834	F175 OFFICE	< 0.3					
7718837	F176	0.6					
7718619	F301	< 0.3					
7718622	F302	< 0.3					
7718621	F303	< 0.3					
7718620	F304	< 0.3					
7718624	F306	< 0.3					
7718623	F308	0.6					
7718843	G184	< 0.3					
7718840	G185	< 0.3					
7718841	G185	< 0.3					
7718838	G190	< 0.3					
7718851	H1000	0.9					
7718858	H1000	1					
7718849	H1002	1.1					

Radon Testing Results James Hubert Blake High School Test Period: 01/11/16-01/14/16						
Kit Number	Kit Number Room / Area Result					
7718848	H1002	1				
7718846	H100C	1				
7718847	H1011E	1				
7718859	H1020	1.3				
7718607	HEALTH ROOM	< 0.3				

Radon Testing Results James Hubert Blake High School Test Period: 01/11/16-01/14/16				
Kit Number	Result			
7718900	D (A102)	0.5		
7718887	D (À102H)	< 0.3		
7718897	D (A102M)	< 0.3		
7718812	D (B120)	0.8		
7718866	D (D155)	0.6		
7718614	D (E262)	0.6		
7718626	D (E269)	< 0.3		
7718616	D (E270)	0.6		
7718832	D (F172)	0.7		
7718835	D (F173)	< 0.3		
7718839	D (G190)	0.6		
7718850	D (H1002)	1.3		
7718899	FB (A102O)	< 0.3		
7718871	FB (A159)	< 0.3		
7718814	FB (B112)	< 0.3		
7718628	FB (E267)	< 0.3		
7718608	FB (HEALTH ROOM)	< 0.3		
7717704	OB (0)	< 0.3		
7719386	OB (0)	< 0.3		

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

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for: JAMES HUBERT BLAKE HIGH SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7717704	0	2016-01-11 @ 4:00 pm	2016-01-14 @ 1:00 pm	< 0.3	2016-01-18
7719386	0	2016-01-11 @ 4:00 pm	2016-01-14 @ 1:00 pm	< 0.3	2016-01-18
7718824	165	2016-01-11 @ 12:00 pm	2016-01-14 @ 11:00 am	0.8 ± 0.3	2016-01-18
7718872	A100	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718873	A100	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718880	A1000	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718874	A100A	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718875	A100B	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718876	A100C	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718877	A100D	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718878	A100E	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	0.6 ± 0.3	2016-01-18
7718881	A100F	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	1.2 ± 0.3	2016-01-18
7718882	A100G	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	1.0 ± 0.3	2016-01-18
7718883	A100H	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718884	A100I	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718885	A100K	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718879	A100L	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.6 ± 0.3	2016-01-18
7718602	A101	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718601	A102	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718900	A102	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	0.5 ± 0.3	2016-01-18
7718894	A102A	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	0.5 ± 0.3	2016-01-18
7718893	A102B	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718892	A102C	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718891	A102D	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718890	A102E	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718889	A102F	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718888	A102G	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718886	A102H	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718887	A102H	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718896	A102M	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718897	A102M	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718898	A102N	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718899	A102O	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718895	A102O	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718603	A103	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	0.6 ± 0.3	2016-01-18
7718605	A103A	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	0.7 ± 0.3	2016-01-18
7718604	A103C	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18

Radon test result report for: JAMES HUBERT BLAKE HIGH SCHOOL MAIN

Kit #	Room Id	Started		Ended	pCi/I	Analyzed
7718606	A107	2016-01-11 @ 3	:00 pm	2016-01-14 @ 10:00	am 1.9 ± 0.4	2016-01-18
7718868	A159	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 1.2 ± 0.3	2016-01-18
7718870	A159	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.9 ± 0.3	2016-01-18
7718871	A159	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am < 0.3	2016-01-18
7718609	B110	2016-01-11 @ 3	:00 pm	2016-01-14 @ 10:00	am < 0.3	2016-01-18
7718610	B110	2016-01-11 @ 3	:00 pm	2016-01-14 @ 10:00	am < 0.3	2016-01-18
7718813	B112	2016-01-11 @ 1	2:00 pm	2016-01-14 @ 10:00	am 0.6 ± 0.3	2016-01-18
7718814	B112	2016-01-11 @ 1	2:00 pm	2016-01-14 @ 10:00	am < 0.3	2016-01-18
7718611	B113	2016-01-11 @ 3	:00 pm	2016-01-14 @ 12:00	pm < 0.3	2016-01-18
7718612	B115	2016-01-11 @ 3	:00 pm	2016-01-14 @ 12:00	pm < 0.3	2016-01-18
7718811	B120	2016-01-11 @ 1	2:00 pm	2016-01-14 @ 10:00	am 0.8 ± 0.3	2016-01-18
7718812	B120	2016-01-11 @ 1	2:00 pm	2016-01-14 @ 10:00	am 0.8 ± 0.3	2016-01-18
7718844	C144	2016-01-11 @ 1	:00 pm	2016-01-14 @ 11:00	am < 0.3	2016-01-18
7718845	C146	2016-01-11 @ 1	:00 pm	2016-01-14 @ 11:00	am 0.8 ± 0.3	2016-01-18
7718842	COACH OFFICE	2016-01-11 @ 1	:00 pm	2016-01-14 @ 11:00	am 0.7 ± 0.3	2016-01-18
7718855	D148	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 1.3 ± 0.3	2016-01-18
7718856	D148A	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 2.4 ± 0.4	2016-01-18
7718860	D148H	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 1.3 ± 0.3	2016-01-18
7718857	D148I	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.9 ± 0.3	2016-01-18
7718861	D149	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.5 ± 0.3	2016-01-18
7718852	D150	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.9 ± 0.3	2016-01-18
7718862	D151	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am < 0.3	2016-01-18
7718865	D152	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.8 ± 0.3	2016-01-18
7718863	D153	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.7 ± 0.3	2016-01-18
7718866	D155	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.6 ± 0.3	2016-01-18
7718867	D155	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.5 ± 0.3	2016-01-18
7718869	D155A	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am < 0.3	2016-01-18
7718853	D159J	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.8 ± 0.3	2016-01-18
7718854	D159K	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 1.0 ± 0.3	2016-01-18
7718864	DIRECTORS OFFICE	2016-01-11 @ 2	2:00 pm	2016-01-14 @ 11:00	am 0.6 ± 0.3	2016-01-18
7718816	E160	2016-01-11 @ 1	2:00 pm	2016-01-14 @ 12:00	pm 0.7 ± 0.3	2016-01-18
7718817	E160C		-	2016-01-14 @ 12:00	1	2016-01-18
7718818	E160D		-	2016-01-14 @ 12:00	1	2016-01-18
7718815	E161	2016-01-11 @ 1	2:00 pm	2016-01-14 @ 12:00	pm < 0.3	2016-01-18
7718821	E161C	2016-01-11 @ 1	2:00 pm	2016-01-14 @ 12:00	pm < 0.3	2016-01-18
7718822	E161D		1	2016-01-14 @ 12:00	1	2016-01-18
7718823	E161E	2016-01-11 @ 1	2:00 pm	2016-01-14 @ 12:00	pm < 0.3	2016-01-18

Radon test result report for: JAMES HUBERT BLAKE HIGH SCHOOL MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718819	E162	2016-01-11 @ 12:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718820	E163	2016-01-11 @ 12:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718825	E165	2016-01-11 @ 12:00 pm	2016-01-14 @ 11:00 am	1.0 ± 0.3	2016-01-18
7718826	E165	2016-01-11 @ 12:00 pm	2016-01-14 @ 11:00 am	0.9 ± 0.3	2016-01-18
7718827	E170	2016-01-11 @ 12:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718613	E262	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718614	E262	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	0.6 ± 0.3	2016-01-18
7718627	E267	2016-01-11 @ 4:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718628	E267	2016-01-11 @ 4:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718618	E268	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	0.7 ± 0.3	2016-01-18
7718625	E269	2016-01-11 @ 4:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718626	E269	2016-01-11 @ 4:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718615	E270	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	0.7 ± 0.3	2016-01-18
7718616	E270	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	0.6 ± 0.3	2016-01-18
7718617	E279	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718828	F171	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718829	F171	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718831	F172	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	0.8 ± 0.3	2016-01-18
7718832	F172	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	0.7 ± 0.3	2016-01-18
7718830	F173	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718835	F173	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718833	F174	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718834	F175	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718836	F175	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718837	F176	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	0.6 ± 0.3	2016-01-18
7718619	F301	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718622	F302	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718621	F303	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718620	F304	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718624	F306	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	< 0.3	2016-01-18
7718623	F308	2016-01-11 @ 3:00 pm	2016-01-14 @ 12:00 pm	0.6 ± 0.3	2016-01-18
7718843	G184	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718840	G185	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718841	G185	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718838	G190	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	< 0.3	2016-01-18
7718839	G190	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	0.6 ± 0.3	2016-01-18
7718858	H1000	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	1.0 ± 0.3	2016-01-18

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718851	H1000	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	0.9 ± 0.3	2016-01-18
7718848	H1002	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	1.0 ± 0.3	2016-01-18
7718849	H1002	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	1.1 ± 0.3	2016-01-18
7718850	H1002	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	1.3 ± 0.3	2016-01-18
7718846	H100C	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	1.0 ± 0.3	2016-01-18
7718847	H1011E	2016-01-11 @ 1:00 pm	2016-01-14 @ 11:00 am	1.0 ± 0.3	2016-01-18
7718859	H1020	2016-01-11 @ 2:00 pm	2016-01-14 @ 11:00 am	1.3 ± 0.3	2016-01-18
7718607	HEALTH ROOM	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7718608	HEALTH ROOM	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18

Radon test result report for: JAMES HUBERT BLAKE HIGH SCHOOL MAIN

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

Decembe	LABORATORY ANALYSIS
23,	DEDODT **
2015	REPORT **

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
0	pCi/L Rel. Hum <u>49.6</u> % Temp. <u>69.9</u> F
Date Start: $12/18/15$ Date Stop: $12/21/15$	Date Start: Date Stop:
Time Start: <u>0929</u> Time Stop: <u>0929</u>	Time Start: Time Stop:
Device No.'s: 7705132,7706208,	Device No.'s:
7706211,7706366,	
7706380, 7706381	
F3 Loft	
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:
·	
1	
	-

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



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

Chain of Custody

Project Name: MCPS Radon Phase V

Name of Schools:

- 1. Arcola ES
- 2. Argyle ES
- 3. Bells Mill ES
- 4. Bethesda ES
- 5. Brookhaven ES
- 6. Burning Tree ES
- 7. Capt. James Daly ES
- 8. Carderock Springs ES
- 9. Cashell ES
- 10. Clearspring ES

- 11. Clopper Mill ES
- 12. College Gardens ES
- 13. Eastern MS
- 14. Fallsmead ES
- 15. Fields Road ES
- 16. Flower Hill ES
- 17. Flower Valley ES
- 18. Fox Chapel ES
- 19. Glen Haven ES
- 20. James Hubert Blake HS

- 21. Parkland Magnet MS
- 22. Rachel Carson ES
- 23. Roberto Clemente MS
- 24. Rock Creek ES
- 25. Rockview ES
- 26. Rockville HS
- 27. Rocky Hill MS
- 28. Seneca Valley HS
- 29. Westover ES
- 30. William Farquar MS

	Date	Initials
Radon Test Kits Deployed	1/11/16	VM
Radon Test Kits Sampled	1/14/16	JM
Radon Test Kits Shipped to Lab*	1/15/16	JM
Radon Test Kits Received by Lab*	1/18/16	JM

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

M. A. CECIL & ASSOCIATES, INC.

4475 Shannon Way, Port Republic, Maryland 20676 (301) 855-7710 INDUSTRIAL HYGIENE AND ENVIRONMENTAL HEALTH

March 7, 2011

Mr. Sean Yarup Montgomery County Public Schools 16651 Crabbs Branch Way Rockville, Maryland 20855

Re: Radon Evaluation- James Hubert Blake High School

Dear Mr. Yarup:

Environmental radon testing has been completed at James Hubert Blake High School.

Charcoal canisters were placed in forty-three locations on the first floor of the school. The canisters were placed on February 25, 2011 and retrieved on February 28, 2011. The results and sampling locations are summarized in the following.

The detected radon concentrations for all 43 sampling locations were below the EPA recommended level of 4.0 pico curies per liter (pCi/l) of air.

Should you have any questions concerning this report please do not hesitate to contact us.

Sincerely,

Michael A. Cecil, CIH

Environmental Radon Results James Hubert Blake High School February 2011

Location	Detected Radon	
	Concentration (pCi/l)	
Main Office	< 0.5	
D-153	0.8	
Auditorium	2.0	
D-149	1.0	
D-148	2.8	
D-150	1.6	
H-1020	2.6	
Main Gym	2.0	
Boys Locker Room	1.5	
Girls Locker Room	1.3	
Small Gym	2.8	
Weight Room	1.9	
Dance Studio	1.7	
Black Box Theater	1.5	
C-137	< 0.5	
C-142	1.3	
G-184	0.5	
G-190	< 0.5	
G-185	0.7	
F-175	0.8	
F-176	1.1	
F-173	< 0.5	
F-174	< 0.5	
F-171	0.6	
F-170, Art Room	< 0.5	
E-165, Fashion	2.2	
E-162	1.4	
E-163	0.7	
E-161	1.5	
E-160	0.7	
C-134	0.9	
C-136	0.9	
C-131	< 0.5	
B-121	< 0.5	
B-123	< 0.5	
Staff Lounge	0.7	
B-118	1.1	
B-115	< 0.5	
B-113	< 0.5	
Cafeteria	< 0.5	
A-107, Amp Theater	1.8	
A-103	1.6	
A-101	0.7	
A-101	0.7	