



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Fox Chapel Elementary School
Date of Test Report	1/25/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	72
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.3 pCi/L

Project Status:

1. 5-Year retesting completed.



January 25, 2023

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

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

Location: Fox Chapel Elementary School
19315 Archdale Road
Germantown, MD 20876

Dear Mr. Croyle:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools (MCPS) pursuant to completing a “short-term” 3 day radon test for the Fox Chapel Elementary School located at 19315 Archdale Rd. Germantown, MD 20876 (subject site).

Scope of Services:

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

KCI visited the site on December 19, 2022 and deployed eighty-four (84) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on December 22, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Accustar Labs - MA for analysis by gamma-ray spectroscopy.

Accustar Labs - MA is a NRSB certified analytical laboratory for radon analysis (certification #ARL0017) located at 2 Saber Way, Ward Hill, MA 01835.

Evaluation of Testing Conditions:

These tests represent:

- Follow up to initial testing.

These tests were conducted to:

- Evaluate radon concentration levels at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate temperatures ranged from 23°F to 55°F. Maximum sustained winds ranged from 0-18 miles per hour. Average humidity was around 75% with 0.0 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

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

Quality Control Samples	
Results of Blank Canisters:	The office blanks, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L.
Adequate Laboratory Precision?	Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved.
Spike Sample Analysis:	The Spike Sample analysis results indicate the laboratory is operating within statistical control limits.

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 891-1769.

Sincerely,



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

Attachments: A- Floor Plan with Test Locations
 B- Table 1-3, Radon Test Summary Spreadsheets
 C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

Table 1- Radon Testing Results		
Fox Chapel ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11285055	4	< 0.3
11285003	9	< 0.3
11285005	10	0.6
11285004	11	< 0.3
11285001	13	0.9
11285017	14	< 0.3
11285009	16	0.6
11285034	17	< 0.3
11285010	19	< 0.3
11285091	19	0.8
11285079	20	< 0.3
11285018	21	< 0.3
11285012	23	< 0.3
11285073	24	< 0.3
11285023	26	< 0.3
11285016	27	< 0.3
11285020	27	0.6
11285019	28	< 0.3
11285030	28	< 0.3
11285013	30	< 0.3
11285008	32	< 0.3
11285002	35	< 0.3
11285086	36	< 0.3
11285022	38	0.8
11285026	38	< 0.3
11285011	40	< 0.3
11285007	41	< 0.3
11285040	101	< 0.3
11285036	102	< 0.3
11285046	102	< 0.3
11285043	103	< 0.3
11285045	108	0.7
11285052	109	< 0.3
11285065	109	< 0.3
11285044	110	1.2
11285087	111	< 0.3
11285097	112	< 0.3
11285049	113	< 0.3
11285098	114	< 0.3
11285060	118	< 0.3
11285028	119	< 0.3
11285081	124	< 0.3
11285076	125	1.2
11285077	126	< 0.3
11285032	127	< 0.3

Table 1- Radon Testing Results		
Fox Chapel ES		
Test Period: 12/19/2022 - 12/22/2022		
Kit Number	Room / Area	Result
11285069	128	< 0.3
11285067	130	< 0.3
11285078	130	< 0.3
11285059	131	< 0.3
11285084	131	< 0.3
11285100	132	< 0.3
11285031	138	< 0.3
11285024	141	< 0.3
11285096	141	< 0.3
11285083	144	< 0.3
11285095	147	< 0.3
11285029	154	< 0.3
11285089	159	< 0.3
11285066	160	< 0.3
11285092	161	< 0.3
11285058	162	< 0.3
11285085	164	< 0.3
11285071	100J	< 0.3
11285035	APR	0.6
11285061	APR	0.5
11285064	ASSISTANT PRINCIPAL	< 0.3
11285090	BS OFFICE	< 0.3
11285021	GYM	0.9
11285082	GYM	< 0.3
11285015	GYM OFFICE	< 0.3
11285088	GYM OFFICE	< 0.3
11285038	IMC	< 0.3
11285093	IMC	< 0.3
11285037	ISOLATION 1	< 0.3
11285053	KITCHEN OFFICE	< 0.3
11285063	MAIL	0.7
11285033	MAIN	< 0.3
11285068	MEDIA OFFICE	< 0.3
11285099	MEDIA OFFICE	< 0.3
11285094	MEDIA WORKROOM	< 0.3
11285027	NURSE OFFICE	< 0.3
11285062	PRINCIPAL	< 0.3
11285054	STAGE	< 0.3
11285070	ZEN DEN	1.3

Table 2- Radon Testing Results			
Fox Chapel ES			
Test Period: 12/19/22 - 12/22/22			
Kit Number	QC Type	Room / Area	Result
11285010	D	19	< 0.3
11285020	FB	27	0.6
11285019	D	28	< 0.3
11285022	D	38	0.8
11285036	D	102	< 0.3
11285052	D	109	< 0.3
11285067	FB	130	< 0.3
11285084	D	131	< 0.3
11285096	D	141	< 0.3
11285088	FB	Gym Office	< 0.3
11285038	D	IMC	< 0.3
11285099	FB	Media Office	< 0.3
11288518	OB	OFFICE BLANK	< 0.3
11287685	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285055	04	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285003	09	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285005	10	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	0.6 ± 0.5	2022-12-28
11285071	100J	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285040	101	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285046	102	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285036	102	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285043	103	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285045	108	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	0.7 ± 0.5	2022-12-28
11285065	109	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285052	109	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285004	11	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285044	110	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	1.2 ± 0.5	2022-12-28
11285087	111	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285097	112	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285049	113	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285098	114	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285060	118	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285028	119	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285081	124	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285076	125	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	1.2 ± 0.6	2022-12-28
11285077	126	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285032	127	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285069	128	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285001	13	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	0.9 ± 0.5	2022-12-28
11285067	130	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285078	130	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285059	131	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285084	131	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285100	132	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285031	138	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285017	14	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285024	141	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285096	141	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285083	144	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285095	147	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285029	154	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285089	159	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285009	16	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	0.6 ± 0.5	2022-12-28
11285066	160	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285092	161	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285058	162	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285085	164	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285034	17	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285010	19	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285091	19	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	0.8 ± 0.5	2022-12-28
11285079	20	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285018	21	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285012	23	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285073	24	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285023	26	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285020	27	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	0.6 ± 0.5	2022-12-28
11285016	27	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285030	28	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285019	28	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285013	30	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285008	32	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285002	35	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285086	36	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285026	38	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285022	38	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	0.8 ± 0.5	2022-12-28
11285011	40	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285007	41	2022-12-19 @ 9:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285035	APR	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	0.6 ± 0.5	2022-12-28
11285061	APR	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	0.5 ± 0.5	2022-12-28
11285064	ASSISTANT PRINCIPAL	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285090	BS OFFICE	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285021	GYM	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	0.9 ± 0.6	2022-12-28
11285082	GYM	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285088	GYM OFFICE	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285015	GYM OFFICE	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	< 0.3	2022-12-28
11285093	IMC	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285038	IMC	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285037	ISOLATION 1	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28

January 5, 2023

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11285053	KITCHEN OFFICE	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285063	MAIL	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	0.7 ± 0.5	2022-12-28
11285033	MAIN	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285099	MEDIA OFFICE	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285068	MEDIA OFFICE	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285094	MEDIA WORKROOM	2022-12-19 @ 9:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285027	NURSE OFFICE	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285062	PRINCIPAL	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285054	STAGE	2022-12-19 @ 8:00 am	2022-12-22 @ 8:00 am	< 0.3	2022-12-28
11285070	ZEN DEN	2022-12-19 @ 10:00 am	2022-12-22 @ 9:00 am	1.3 ± 0.6	2022-12-28

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KC1 TECHNOLOGIES, INC Job Number 208343

NOMINAL Conditions: Radon Conc 34.7 pCi/L Rel. Hum 49.4 % Temp. 69.6 F

Date Start: 12/24/22 Date Stop: 12/27/22 Date Start: _____ Date Stop: _____

Time Start: 0810 Time Stop: 0810 Time Start: _____ Time Stop: _____

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

11285109, 11285110, 11285101

THRU 11285103

BY LEFT

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

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

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

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

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

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

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

December 29, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OFFICE

MAIN

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Week 3 December Schools

Name of Schools:

1. Clopper Mill ES
2. Cold Spring ES
3. Fox Chapel ES
4. Gaithersburg HS
5. Longview School
6. North Lake Center
7. Ronald McNair ES
8. Rosemont ES
9. S. Christa McAuliffe ES
10. Spark M. Matsunaga ES
11. William B. Gibbs, JR. ES

	Date	Initials
Radon Test Kits Deployed	12/19/2022	BMM
Radon Test Kits Collected	12/22/2022	BMM
Radon Test Kits Shipped to Lab*	12/22/2022	BMM
Radon Test Kits Received by Lab*	12/28/2022	BMM

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



**MONTGOMERY COUNTY PUBLIC SCHOOLS
RADON TESTING**

Executive Summary:
Fox Chapel Elementary School
19315 Archdale Road
Germantown, MD 20876

Date of Test Report:	3/15/2019
Round of Testing:	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	1
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	0.9
High Value:	0.9

Project Status

Retesting completed: No further action at this time.



March 15, 2019

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

Re: Radon Testing Services

Location: Fox Chapel Elementary School
19315 Archdale Road
Germantown, MD 20876

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Fox Chapel Elementary School, located at 19315 Archdale Road, Germantown, MD 20876 (subject site).

Scope of Services:

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

PSI visited the site on February 25, 2019 and deployed one (1) activated charcoal (AC) radon test kit. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on February 28, 2019 to retrieve the radon sampling test kit. A floor plan map of the building with the test location is included as Attachment A of this report.

PSI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis located at 929 Mount Zion Road, Lebanon, Pennsylvania (certification # ARLO007).

Evaluation of Testing Conditions:

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

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



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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D -Duplicate Sample

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

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

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

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Fox Chapel Elementary School		
Testing period: 2/25/19 - 2/28/19		
Kit Number	Room / Area	Result (pCi/L)
3923431	23	0.9

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

NRPP 105011 AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 04481387-1

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

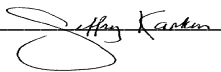
MCPS Radon Survey Fox Chapel ES
19315 Archdale Road
Germantown MD 20876

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3220705	3923431	02/25/2019 8:30 am 02/28/2019 8:17 am	Floor Main Room 23	0.9

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

Distributed by: Intertek-PSI (VA)

Date Received: 03/04/2019 Date Logged: 03/04/2019 Date Analyzed: 03/05/2019 Date Reported: 03/05/2019

Report Reviewed By: 

Report Approved By: 

Disclaimer:

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

Shawn Price, Director of Laboratory Operations, AccuStar Labs

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



**MONTGOMERY COUNTY PUBLIC SCHOOLS
RADON TESTING**

Executive Summary:
Fox Chapel Elementary School
19315 Archdale Road
Germantown, MD 20876

Date of Test Report:	12/28/2018
Round of Testing:	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# of Rooms Tested:	63
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	3.1

Project Status

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



December 28, 2018

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

Re: Radon Testing Services

Location: Fox Chapel Elementary School
19315 Archdale Road
Germantown, MD 20876

Dear Mr. Cox:

Intertek-PSI (PSI) is pleased to submit the following report to the Montgomery County Public Schools (MCPS) for completion of a "short-term" 3-day radon test for Fox Chapel Elementary School, located at 19315 Archdale Road, Germantown, MD 20876 (subject site).

Scope of Services:

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

PSI visited the site on November 27, 2018 and deployed seventy-seven (77) activated charcoal (AC) radon test kits. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on November 30, 2018 to retrieve the radon sampling test kits. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

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



Evaluation of Testing Conditions:

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

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:

D -Duplicate Sample

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

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

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



Respectfully Submitted,

INTERTEK-PSI

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

Nand Kaushik, P.E.
Department Manager, Environmental Services
Nand.Kaushik@intertek.com

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

ATTACHMENT B

Radon Test Summary Spreadsheet

Radon Testing Results		
Fox Chapel Elementary School		
Testing period: 11/27/18 - 11/30/18		
Kit Number	Room / Area	Result (pCi/L)
3918828	1	1.5
3917567	4	1.3
3917565	9	0.6
3917563	10	0.8
3917564	11	0.7
3917562	13	0.7
3917600	14	0.6
3917595	16	0.5
3917598	17	1.0
3917597	19	0.7
3917594	20	0.9
3917596	21	0.7
3917531	23 (MISSING)	--
3917630	24	0.6
3917629	26	0.4
3917628	27	< 0.4
3917627	28	0.4
3917626	30	0.5
3917625	32	0.5
3917624	34	0.8
3917623	35	0.6
3917622	36	0.4
3917621	38	0.4
3917610	40	0.4
3917608	41	< 0.4
3917568	43	0.8
3917603	101	< 0.4
3917604	102	< 0.4
3917605	103	0.6
3917606	104	< 0.4
3917691	107	< 0.4
3917684	108	< 0.4
3917686	109	< 0.4
3917687	110	0.7
3917689	111	0.4
3917688	112	0.5
3917685	113	0.6
3917690	114	0.4
3917651	118	0.6
3917695	119	0.7
3917653	120	0.5
3917654	120	< 0.4
3917602	124	< 0.4

Radon Testing Results		
Fox Chapel Elementary School		
Testing period: 11/27/18 - 11/30/18		
Kit Number	Room / Area	Result (pCi/L)
3917607	125	< 0.4
3917601	142	< 0.4
3917660	149	0.4
3917659	154	0.8
3917658	159	0.6
3917657	161	0.8
3918827	01A	1.4
3918829	01D	1.6
3918830	01E	3.1
3918821	01F	2.6
3917697	100A	0.8
3917696	100B	0.9
3917698	100C	0.6
3917682	105D	< 0.4
3917655	120A	0.4
3917656	120B	< 0.4
3917694	APR	0.5
3917693	APR	0.6
3917692	APR Stage	< 0.4
3917569	Gym	0.4
3917570	Gym	0.6
3917699	Health	0.7
3917700	Main Office	0.6

Radon Testing Results		
Fox Chapel Elementary School		
Testing period: 11/27/18 - 11/30/18		
Kit Number	QC Type	Result (pCi/L)
3917566	9 (D)	0.6
3917561	14 (D)	0.7
3917599	17 (D)	0.6
3917609	41 (D)	< 0.4
3917683	105D (D)	0.6
3917681	107 (D)	0.6
3917652	118 (D)	0.6
3917524	Field Blank	< 0.4
3917523	Field Blank	< 0.4
3918811	Office Blank	< 0.4
3917525	Transit Blank	< 0.4

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Fox Chapel ES
Not indicated
Germantown MD 20876

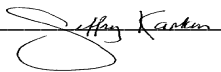
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3199352	3917700	11/27/2018 6:30 am	11/30/2018 6:40 am	Floor Main Level Room Main Office	0.6
3199353	3917699	11/27/2018 6:31 am	11/30/2018 6:41 am	Floor Main Level Room Health	0.7
3199354	3917698	11/27/2018 6:32 am	11/30/2018 6:42 am	Floor Main Level Room 100C	0.6
3199355	3917697	11/27/2018 6:33 am	11/30/2018 6:43 am	Floor Main Level Room 100A	0.8
3199356	3917696	11/27/2018 6:34 am	11/30/2018 6:44 am	Floor Main Level Room 100B	0.9
3199357	3917695	11/27/2018 6:35 am	11/30/2018 6:45 am	Floor Main Level Room 119	0.7
3199358	3917694	11/27/2018 6:36 am	11/30/2018 6:46 am	Floor Main Level Room APR	0.5
3199359	3917693	11/27/2018 6:37 am	11/30/2018 6:47 am	Floor Main Level Room APR	0.6
3199360	3917692	11/27/2018 6:38 am	11/30/2018 6:48 am	Floor Main Level Room APR Stage	< 0.4

Comment:

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/01/2018 Date Logged: Date Analyzed: 12/01/2018 Date Reported: 12/05/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Fox Chapel ES
Not indicated
Germantown MD 20876

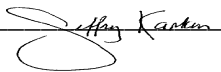
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
3199361	3917691	11/27/2018 6:40 am 11/30/2018 6:49 am	Floor Main Level Room 107	< 0.4
3199362	3917681	11/27/2018 6:40 am 11/30/2018 6:49 am	Floor Main Level Room 107 Duplicate	0.6
3199363	3917682	11/27/2018 6:41 am 11/30/2018 6:51 am	Floor Main Level Room 105D	< 0.4
3199364	3917683	11/27/2018 6:41 am 11/30/2018 6:51 am	Floor Main Level Room 105D Duplicate	0.6
3199365	3917684	11/27/2018 6:43 am 11/30/2018 6:53 am	Floor Main Level Room 108	< 0.4
3199366	3917685	11/27/2018 6:44 am 11/30/2018 6:54 am	Floor Main Level Room 113	0.6
3199367	3917686	11/27/2018 6:45 am 11/30/2018 6:55 am	Floor Main Level Room 109	< 0.4
3199368	3917687	11/27/2018 6:46 am 11/30/2018 6:56 am	Floor Main Level Room 110	0.7
3199369	3917688	11/27/2018 6:47 am 11/30/2018 6:57 am	Floor Main Level Room 112	0.5
3199370	3917689	11/27/2018 6:48 am 11/30/2018 6:58 am	Floor Main Level Room 111	0.4

Comment:

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/01/2018 Date Logged: Date Analyzed: 12/01/2018 Date Reported: 12/05/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Fox Chapel ES
Not indicated
Germantown MD 20876

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3199371	3917690	11/27/2018 6:49 am	11/30/2018 6:59 am	Floor Main Level Room 114	0.4
3199372	3917651	11/27/2018 6:51 am	11/30/2018 7:00 am	Floor Main Level Room 118	0.6
3199373	3917652	11/27/2018 6:51 am	11/30/2018 7:00 am	Floor Main Level Room 118 Duplicate	0.6
3199374	3917653	11/27/2018 7:03 am	11/30/2018 7:02 am	Floor Main Level Room 120	0.5
3199375	3917654	11/27/2018 7:04 am	11/30/2018 7:03 am	Floor Main Level Room 120	< 0.4
3199376	3917655	11/27/2018 7:05 am	11/30/2018 7:04 am	Floor Main Level Room 120A	0.4
3199377	3917656	11/27/2018 7:06 am	11/30/2018 7:05 am	Floor Main Level Room 120B	< 0.4
3199378	3917657	11/27/2018 7:07 am	11/30/2018 7:06 am	Floor Main Level Room 161	0.8
3199379	3917658	11/27/2018 7:08 am	11/30/2018 7:07 am	Floor Main Level Room 159	0.6
3199380	3917659	11/27/2018 7:09 am	11/30/2018 7:08 am	Floor Main Level Room 154	0.8

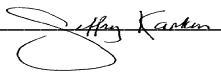
Comment:

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/01/2018 Date Logged:

Date Analyzed: 12/01/2018 Date Reported: 12/05/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Fox Chapel ES
Not indicated
Germantown MD 20876

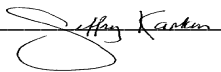
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3199381	3917660	11/27/2018 7:10 am	11/30/2018 7:09 am	Floor Main Level Room 149	0.4
3199382	3917601	11/27/2018 7:11 am	11/30/2018 7:10 am	Floor Main Level Room 142	< 0.4
3199383	3917602	11/27/2018 7:12 am	11/30/2018 7:11 am	Floor Main Level Room 124	< 0.4
3199384	3917603	11/27/2018 7:13 am	11/30/2018 7:12 am	Floor Main Level Room 101	< 0.4
3199385	3917604	11/27/2018 7:14 am	11/30/2018 7:13 am	Floor Main Level Room 102	< 0.4
3199386	3917605	11/27/2018 7:15 am	11/30/2018 7:14 am	Floor Main Level Room 103	0.6
3199387	3917606	11/27/2018 7:16 am	11/30/2018 7:15 am	Floor Main Level Room 104	< 0.4
3199388	3917607	11/27/2018 7:17 am	11/30/2018 7:16 am	Floor Main Level Room 125	< 0.4
3199389	3917608	11/27/2018 7:22 am	11/30/2018 7:17 am	Floor Lower Level Room 41	< 0.4
3199390	3917609	11/27/2018 7:22 am	11/30/2018 7:17 am	Floor Lower Level Room 41 Duplicate	< 0.4

Comment:

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/01/2018 Date Logged: Date Analyzed: 12/01/2018 Date Reported: 12/05/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Fox Chapel ES
Not indicated
Germantown MD 20876

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3199391	3917610	11/27/2018 7:24 am	11/30/2018 7:19 am	Floor Lower Level Room 40	0.4
3199392	3917621	11/27/2018 7:26 am	11/30/2018 7:20 am	Floor Lower Level Room 38	0.4
3199393	3917622	11/27/2018 7:28 am	11/30/2018 7:21 am	Floor Lower Level Room 36	0.4
3199394	3917623	11/27/2018 7:30 am	11/30/2018 7:22 am	Floor Lower Level Room 35	0.6
3199395	3917624	11/27/2018 7:32 am	11/30/2018 7:23 am	Floor Lower Level Room 34	0.8
3199396	3917625	11/27/2018 7:34 am	11/30/2018 7:24 am	Floor Lower Level Room 32	0.5
3199397	3917626	11/27/2018 7:36 am	11/30/2018 7:25 am	Floor Lower Level Room 30	0.5
3199398	3917627	11/27/2018 7:38 am	11/30/2018 7:26 am	Floor Lower Level Room 28	0.4
3199399	3917628	11/27/2018 7:40 am	11/30/2018 7:27 am	Floor Lower Level Room 27	< 0.4
3199400	3917629	11/27/2018 7:42 am	11/30/2018 7:28 am	Floor Lower Level Room 26	0.4

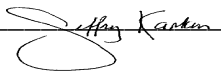
Comment:

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/01/2018 Date Logged:

Date Analyzed: 12/01/2018 Date Reported: 12/05/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Fox Chapel ES
Not indicated
Germantown MD 20876

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3199401	3917630	11/27/2018 7:44 am	11/30/2018 7:29 am	Floor Lower Level Room 24	0.6
3199402	3917594	11/27/2018 7:48 am	11/30/2018 7:31 am	Floor Lower Level Room 20	0.9
3199403	3917595	11/27/2018 7:50 am	11/30/2018 7:32 am	Floor Lower Level Room 16	0.5
3199404	3917596	11/27/2018 7:52 am	11/30/2018 7:33 am	Floor Lower Level Room 21	0.7
3199405	3917597	11/27/2018 7:54 am	11/30/2018 7:34 am	Floor Lower Level Room 19	0.7
3199406	3917598	11/27/2018 7:56 am	11/30/2018 7:35 am	Floor Lower Level Room 17	1.0
3199407	3917599	11/27/2018 7:56 am	11/30/2018 7:35 am	Floor Lower Level Room 17 Duplicate	0.6
3199408	3917600	11/27/2018 8:00 am	11/30/2018 7:38 am	Floor Lower Level Room 14	0.6
3199409	3917561	11/27/2018 8:00 am	11/30/2018 7:38 am	Floor Lower Level Room 14 Duplicate	0.7
3199410	3917562	11/27/2018 8:01 am	11/30/2018 7:39 am	Floor Lower Level Room 13	0.7

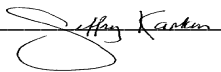
Comment:


Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/01/2018 Date Logged:

Date Analyzed: 12/01/2018 Date Reported: 12/05/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Fox Chapel ES
Not indicated
Germantown MD 20876

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3199411	3917563	11/27/2018 8:02 am	11/30/2018 7:40 am	Floor Lower Level Room 10	0.8
3199412	3917564	11/27/2018 8:03 am	11/30/2018 7:41 am	Floor Lower Level Room 11	0.7
3199413	3917565	11/27/2018 8:05 am	11/30/2018 7:42 am	Floor Lower Level Room 9	0.6
3199414	3917566	11/27/2018 8:05 am	11/30/2018 7:42 am	Floor Lower Level Room 9 Duplicate	0.6
3199415	3917567	11/27/2018 8:06 am	11/30/2018 7:44 am	Floor Lower Level Room 4	1.3
3199416	3917568	11/27/2018 8:07 am	11/30/2018 7:45 am	Floor Lower Level Room 43	0.8
3199417	3917569	11/27/2018 8:08 am	11/30/2018 7:46 am	Floor Lower Level Room Gym	0.4
3199418	3917570	11/27/2018 8:09 am	11/30/2018 7:47 am	Floor Lower Level Room Gym	0.6
3199419	3918827	11/27/2018 8:31 am	11/30/2018 7:48 am	Floor Lower Level Room 01A	1.4
3199420	3918821	11/27/2018 8:32 am	11/30/2018 7:49 am	Floor Lower Level Room 01F	2.6

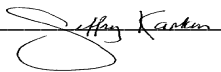
Comment:

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/01/2018 Date Logged:

Date Analyzed: 12/01/2018 Date Reported: 12/05/2018

Report Reviewed By: 

Report Approved By: 

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NRPP 105011 AL
NRSB ARL0007

Laboratory Report for:

Property Tested: Project # 04481387-1

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

MCPS Radon Survey Fox Chapel ES
Not indicated
Germantown MD 20876

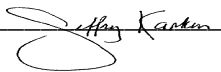
Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3199421	3918830	11/27/2018 8:33 am	11/30/2018 7:50 am	Floor Lower Level Room 01E	3.1
3199422	3918829	11/27/2018 8:34 am	11/30/2018 7:51 am	Floor Lower Level Room 01D	1.6
3199423	3918828	11/27/2018 8:35 am	11/30/2018 7:52 am	Floor Lower Level Room 1	1.5
3199424	3918811	11/27/2018 6:00 am	11/30/2018 6:00 pm	Floor NA Room Office Blank	< 0.4
3199425	3917525	11/27/2018 6:00 am	11/30/2018 6:00 pm	Floor NA Room Transit Blank	< 0.4
3199426	3917524	11/27/2018 6:30 am	11/30/2018 7:52 am	Floor NA Room Field Blank	< 0.4
3199427	3917523	11/27/2018 6:30 am	11/30/2018 7:52 am	Floor NA Room Field Blank	< 0.4

Comment:

Test Performed By: Nan Lin

Distributed by: Intertek-PSI (VA)

Date Received: 12/01/2018 Date Logged: Date Analyzed: 12/01/2018 Date Reported: 12/05/2018

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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NRPP 105011 AL
NRSB ARL0007
Ohio RL41

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

Laboratory Report for:

Property Tested:

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

MCPS Radon Survey
4514 Taylorsville Road
Dayton OH 45424

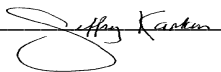
Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
3204125	3926831	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	36.1
3204126	3926832	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	34.8
3204127	3926833	12/07/2018 9:47 am - 12/10/2018 9:47 am	Spike	33.7
3204128	3926834	12/07/2018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


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

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

Disclaimer:

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Shawn Price, Director of Laboratory Operations, AccuStar Labs

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EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI

Job Number 187732

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

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

Date Start: _____ Date Stop: _____

Time Start: 0947 Time Stop: 0947

Time Start: _____ Time Stop: _____

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

Device No.'s: _____

3926831 thru 3926840

G2 left

Date Start: _____ Date Stop: _____

Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____

Time Start: _____ Time Stop: _____

Device No.'s: _____

Device No.'s: _____

Date Start: _____ Date Stop: _____

Date Start: _____ Date Stop: _____

Time Start: _____ Time Stop: _____

Time Start: _____ Time Stop: _____

Device No.'s: _____

Device No.'s: _____

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



Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

1. Ashburton ES
2. Carderock Springs ES
3. Diamond ES
4. Fox Chapel ES
5. Baker MS
6. Damascus ES
7. Clemente MS
8. Clopper Mill ES
9. Broad Acres ES
10. Greencastle ES
11. Harmony Hills ES
12. Silver Spring International MS
13. Gaithersburg MS
14. Garrett Park ES
15. New Hampshire Estates ES
16. Georgian Forest ES

	Date	Initials
Radon Test Kits Deployed	11/27/2018	NL
Radon Test Kits Sampled	11/30/2018	NL
Radon Test Kits Shipped to Lab*	11/30/2018	NL
Radon Test Kits Received by Lab*	12/01/2018; 12/02/2018; 12/03/2018	NL

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

RADON SCREENING SURVEY – FOLLOW-UP FOX CHAPEL ELEMENTARY SCHOOL

19315 Archdale Road, Germantown, Maryland 20876

EXECUTIVE SUMMARY

Date of Test Report:	4/8/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	1
# Rooms \geq 4.0 pCi/L:	0
Low Value:	<0.4
High Value:	<0.4
Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level	0

Summary of Sampling Events \geq 4.0 pCi/L

Room	Result (pCi/L) 2/8/16 Initial	Result (pCi/L) 4/8/16 Follow-Up	Average Result (pCi/L)
27	--- Missing	<0.4	<0.4



MCPS RADON TESTING

Executive Summary: Fox Chapel Elementary School

Date of Test Report:	4/8/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	1
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	<0.4

Project Status:

Retesting completed; no further action at this time.



April 8, 2016

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

Re: **Radon Testing Services**
KCI Job # 12146341.31

Location: Fox Chapel Elementary School
19315 Archdale Road
Germantown, MD 20876

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 Fox Chapel Elementary School, located at 19315 Archdale Road in Germantown, Maryland 20876 (subject site).

Scope of Services:

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

KCI visited the site on March 21, 2016 and deployed one (1) charcoal (AC) radon test kit. 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 location 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 TCS Industries Inc. as spike samples. The spiked tests were exposed to a known radon concentration by TCS prior to being returned to the laboratory for analysis.

KCI returned to the site on March 24, 2016 to retrieve the radon sampling test kit. KCI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis (certification # ARL0007) located at 929 Mount

Zion Road, Lebanon, Pennsylvania.

Evaluation of Testing Conditions:

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

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D- Duplicate sample

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

The sampling locations, field observations, and analytical results are listed on Table 1 (Attachment B). The laboratory analytical results are also attached (Attachment C). Laboratory results and exposure data for the spike samples are also included in Attachment C.

Our professional services have been performed in accordance with customary principles and practices in the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 316-7800.

Sincerely,



James M. Mouldale
Radon Measurement Specialist
KCI Technologies, Inc.

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank*

PM- Project Manager

QC- Quality Control

*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 11 testing. Office blanks were not submitted under each school individually.

Radon Testing Results		
Fox Chapel Elementary School		
Test Period: 03/21/16-03/24/16		
Kit Number	Room / Area	Result
3029187	27	<0.4

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 12146341

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

Fox Chapel ES
19315 Archdale Road
Germantown MD 20876

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
3018396	3029187	03/21/2016 3:30 pm 03/24/2016 1:15 pm	Unit 27 First Floor	<0.4

Comment: A copy of this report was emailed to tehsin@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 03/28/2016 Date Logged: 03/28/2016 Date Analyzed: 03/28/2016 Date Reported: 03/29/2016

Report Reviewed By: Grace Heubling

Report Approved By: Carolyn D. Koke

Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

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Radon Device Type Open Face Canister

Send Written Report To:

Name: KCI Technologies, Inc
 Address: 936 Ridgebrook Road
 Address: Sparks
 City / Town: Sparks
 State/Province Postal Code: MD 21152
 Report Country: Baltimore County
 Email Address: tehsin@kci.com

Site Tested:

Site Name: Fox Chapel E.S.
 Address: 19315 Archdale Rd.
 Address: Germantown
 City / Town: Germantown
 State/Province Postal Code: MD 20876
 Test Country: Montgomery County
 Project Number: 12146341

Contact Information:

Contact: Tehsin Aurangabadwala
 Telephone: 410-891-1726
 Technician:
 Cert. Number:
 Signature:

Lab Use Only	Device Number	Building Number	Unit Number	Floor	Name of Room	Start Date mm/dd/yyyy	Start Time hh:mm am / pm	Stop Date mm/dd/yyyy	Stop Time hh:mm am / pm	Lab Use Only
	3029187		27	1	TEMP 720	3/24/2014	3:30 pm	3/24/2014	1:15 pm	

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested: Project # 12146341

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

MCPS Radon Phase 11 (re-testing) Office Blank

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
3018362	3029232	03/21/2016 8:00 am 03/24/2016 8:00 am	Unit O First Floor Main Room	<0.4

Comment: A copy of this report was emailed to tehsin@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 03/28/2016 Date Logged: 03/28/2016 Date Analyzed: 03/28/2016 Date Reported: 03/29/2016

Report Reviewed By: Grace Heubling

Report Approved By: Carolyn D. Koke

Carolyn D. Koke, President, AccuStar Labs

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Radon Device Type Open Face Canister

Send Written Report To:

Name	KCI Technologies, Inc
Address	936 Ridgebrook Road
Address	
City / Town	Sparks
State/Province Postal Code	MD 21152
Report Country	Baltimore County
Email Address	fehsin@kci.com

Site Tested:

Site Name	KCI OFFICE
Address	936 RIDGEBROOK RD
Address	
City / Town	SPARKS
State/Province Postal Code	MD 21152
Test Country	Montgomery County
Project Number	12146341

Contact Information:

Contact	Tehsin Aurangabadwala
Telephone	410-891-1726
Technician	
Cert. Number	
Signature	

Lab Use Only	Device Number	Building Number	Unit Number	Floor	Name of Room	Temp	Start Date mm/dd/yyyy	Start Time hh:mm am / pm	Stop Date mm/dd/yyyy	Stop Time hh:mm am / pm	Lab Use Only
	3029232		0	1	MAIN	72	3/21/2016	8:00 AM	3/24/2016	8:00 AM	

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

MCPS
Transit Blanks

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result (pCi/L)
3010588	3028953	01/19/2016 1:00 pm	01/22/2016 9:30 am	1	< 0.4
3010589	3028955	01/19/2016 1:00 pm	01/22/2016 9:30 am	2	< 0.4
3010590	3028954	01/19/2016 1:00 pm	01/22/2016 9:30 am	3	< 0.4
3010591	3028997	01/19/2016 1:00 pm	01/22/2016 9:30 am	4	< 0.4

Comment: AMENDED REPORT for 3028953-8955, 3028997 on 2/22/16 to add all missing information from the blank datasheet. A copy of this report was emailed to james.mouldsdales@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 01/27/2016 Date Logged: 01/27/2016 Date Analyzed: 01/28/2016 Date Reported: 01/28/2016

Report Reviewed By: Christie Bates

Report Approved By: Carolyn D. Koke

Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

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Return canisters for analysis to:
AccuStar Labs
 929 Mt. Zion Rd., Lebanon, PA 17046
 800-523-4964

AccuStar Labs - Lebanon, PA
INFORMATION FORM - Large Buildings -
 Projects - Apartments

Instructions on back of form
 Read instructions carefully
 Discrepancies will invalidate tests

Test Site Info

Name of Building/Project or Owner: Transit
 Site Address: Transit
 City: _____ State: _____ Zip: _____ County: _____
 Projects Contact Name: Don Coale Phone: _____ Email: _____

Do not use this form in
 New Jersey or Florida
 Call for correct forms.

Multi-Page Report Y-N

LAB USE ONLY	
Wgt. Gain	pCi/L
	LOH
	LOH
	LOH
	LOH

Detector Serial#	ROOM NAME & NUMBER - LOCATION OF DETECTOR IN ROOM (indicate duplicates and blanks)	Floor	Start Date	Start Time Include AM/PM	Stop Date	Stop Time Include AM/PM
3028953	Transit	1	1/19/16	approx: 00pm 1/23/16		9:30am
8955	Transit	1	1/19/16			
8954	Transit	1	1/19/16			
8997	Transit	1	1/19/16			

1/27/2016

KCI Technologies, Inc.

3010588 3028953 ACPC275B EXP12/31/2018

Structure Type: (circle one or more) Basement - Crawlspace - Slab on Grade - Other
Test Purpose: (Circle all that apply) Initial Screening - Follow Up Test - Post Mitigation - Real Estate - Other
Building Type: (Circle One) Residential - Non Residential Private Day Care - Private School Day Care in Public School - Public School

Both Placed by and Retrieved by signatures are required
 Canisters placed by _____ # _____
 Canisters retrieved by _____ # _____

Send Results To: _____
 Company Name: KCI Tech
 Address: 936 Ridgebrook
 City: Sparks State: MD Zip: 21152
 Phone: 410-599-3826
 EMAIL Results to: James.Mouldale@kci.com

Were general operating conditions maintained?	Yes - No	explain if NO
Were closed building conditions maintained?	Yes - No	explain if NO
Normal Temp.	Yes - No	
Normal Humidity	Yes - No	
Windy Y-N	Rainy Y-N	

Make sure information is complete and correct.
 If a recalculation is requested there is a \$10.00 recalc fee PER Canister.

Mailing: PO Box 990 Jonestown, PA 17038
 Shipping: 929 Mt Zion Road, Lebanon, PA 17046
 800-523-4964 fax 717-274-5662
 NEHA 10511AL NRSB ARL 0007

TCS INDUSTRIES, INC.

(717) 657-7032

RADON GAS DETECTION

www.radondetek.com

4326 Crestview Road, Harrisburg, PA 17112

James Mouldale
KCI
936 Ridgebrook Rd.
Sparks, MD 21152

April 04, 2016

Dear Mr. Mouldale:

The spike exposure data were:

Start 04/04/16 @ 1110 hrs EDT
End 04/06/16 @ 1113 hrs EDT

AC 3029218, 3029219, 3029220, 3029217, 3029214, 3029217, and 3029166

Average radon concentration was 10.6 pCi/L +/- 5%

Avg. Temp. was 71F
Avg. RH was 51%
Elevation was 490 feet above sea level

Sincerely,



Carl H. Distenfeld, CHP

TCS Radon Chamber NRSB CHM 0002

NRPP 10511AL
NRSB ARL0007

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

Laboratory Report for:

Property Tested:

KCI Technologies
936 Ridgebrook Rd
Sparks MD 21152

MCPS
Radon Spike Sample Laboratory Results


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result (pCi/L)
3020102	3029166	04/04/2016 11:10 am 04/06/2016 11:13 am	Not Indicated	11.9
3020103	3029214	04/04/2016 11:10 am 04/06/2016 11:13 am	Not Indicated	11.5
3020104	3029217	04/04/2016 11:10 am 04/06/2016 11:13 am	Not Indicated	10.7
3020105	3029218	04/04/2016 11:10 am 04/06/2016 11:13 am	Not Indicated	11.3
3020106	3029219	04/04/2016 11:10 am 04/06/2016 11:13 am	Not Indicated	11.0
3020107	3029220	04/04/2016 11:10 am 04/06/2016 11:13 am	Not Indicated	10.5

Comment: A copy of this report was emailed to james.mouldsdale@kci.com.

Distributed by: KCI Technologies, Inc.

Date Received: 04/07/2016 Date Logged: 04/07/2016 Date Analyzed: 04/07/2016 Date Reported: 04/08/2016

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.

Report Reviewed By: 

Report Approved By: 
Carolyn D. Koke, President, AccuStar Labs

Disclaimer:

The uncertainty of this radon measurement is +/- 10 %. Factors contributing to uncertainty include statistical variations, daily and seasonal variations in radon concentrations, sample collection techniques and operation of the dwelling. Interference with test conditions may influence the test results.

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

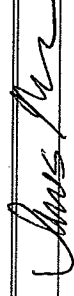
Send Written Report To:

Name: KCI Technologies, Inc
 Address: 936 Ridgebrook Road
 Address:
 City / Town: Sparks
 State/Province Postal Code: MD 21152
 Report Country: Baltimore County
 Email Address: tehsin@kci.com

Site Tested:

Site Name: MCRS
 Address: 850 Hagerford Dr
 Address:
 City / Town: Rockville
 State/Province Postal Code: MD 20850
 Test Country: Montgomery County
 Project Number: 12146341

Contact Information:

Contact: Tehsin Aurangabadwala
 Telephone: 410-891-1726
 Technician:
 Cert. Number:
 Signature: 

Lab Use Only	Device Number	Building Number	Unit Number	Floor	Name of Room	Temp	Start Date mm/dd/yyyy	Start Time hh:mm am / pm	Stop Date mm/dd/yyyy	Stop Time hh:mm am / pm	Lab Use Only
	3029166	1		1	1		4/4/16	11:10am	4/6/16	11:15am	
	3029214	1		1	2						
	3029217	1		1	3						
	3029218	1		1	4						
	3029219	1		1	5						
	3029220	1		1	6						



MCPS RADON TESTING

Executive Summary: Fox Chapel Elementary School

Date of Test Report:	2/08/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	49
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	0.9

Project Status:

Initial testing completed; missing samples need re-test.



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

February 8, 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: Fox Chapel Elementary School
19315 Archdale Road
Germantown, MD 20876

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 Fox Chapel Elementary School, located at 19315 Archdale Road in Germantown, Maryland 20876 (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 sixty (60) 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 pCi/L	none	n/a
< 4.0 pCi/L	See Attachment B	

Notes:
D- Duplicate sample

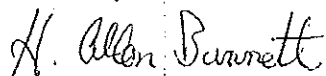
All field blanks, office blank, and lab transit blanks had test results of less than the laboratory detection limit of 0.3 pCi/L. Review of the duplicate sample analysis indicates that adequate laboratory measurement precision was achieved. The Spike sample analysis results indicate the laboratory is 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.

Mr. Richard Cox
February 8, 2016
Page 4

Sincerely,



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		
Fox Chapel Elementary School		
Test Period: 01/11/16-01/14/16		
Kit Number	Room / Area	Result
7717759	4	< 0.3
7717762	9	0.5
7717764	10	< 0.3
7717763	11	0.7
7717765	13	0.8
7717766	14	0.5
7717770	16	< 0.3
7717769	17	0.9
7717755	19	0.8
7717768	20	0.5
7717800	21	0.6
7717771	24	0.9
7717796	26	< 0.3
7717798	28	< 0.3
7717772	30	< 0.3
7717773	32	< 0.3
7717761	36	< 0.3
7717757	38	< 0.3
7717758	40	< 0.3
7717760	41	< 0.3
7717754	43	< 0.3
7717751	45	< 0.3
7717753	45	< 0.3
7717779	45	< 0.3
7714580	100	< 0.3
7714596	101	< 0.3
7714597	102	< 0.3
7714592	103	< 0.3
7714590	104	< 0.3
7717795	105	< 0.3
7717793	105	< 0.3
7717792	107	< 0.3
7717788	108	< 0.3
7717787	110	< 0.3
7717791	111	0.6
7717790	112	< 0.3
7717789	113	< 0.3
7717785	118	0.6
7717786	119	< 0.3
7717783	120	< 0.3
7717775	125	< 0.3
7717777	126	< 0.3
7717776	130	< 0.3
7717782	159	< 0.3
7717780	160	0.8
7717781	161	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Fox Chapel Elementary School		
Test Period: 01/11/16-01/14/16		
Kit Number	Room / Area	Result
7717778	162	< 0.3
7714588	100A	< 0.3
7714557	100B	0.7
7714577	100C	0.7
7714582	100H	0.7
7717797	* 27 (Missing)	0

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Fox Chapel Elementary School		
Test Period: 01/11/16-01/14/16		
Kit Number	QC Type	Result
7717794	D (105)	< 0.3
7717767	D (14)	< 0.3
7717784	D (159)	< 0.3
7717774	D (32)	< 0.3
7717756	D (38)	< 0.3
7714584	FB (100)	< 0.3
7717799	FB (45)	< 0.3
7719388	OB (0)	< 0.3

Table Note:

* Missing or Compromised Sample

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

February 4, 2016 **LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**FOX CHAPEL ELEMENTARY SCHOOL
 MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7719388	0	2016-01-11 @ 4:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717764	10	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7714580	100	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7714584	100	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7714588	100A	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7714557	100B	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	0.7 ± 0.3	2016-01-18
7714577	100C	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	0.7 ± 0.3	2016-01-18
7714582	100H	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	0.7 ± 0.3	2016-01-18
7714596	101	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7714597	102	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7714592	103	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7714590	104	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-20
7717793	105	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717794	105	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717795	105	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717792	107	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717788	108	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717763	11	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	0.7 ± 0.3	2016-01-18
7717787	110	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717791	111	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	0.6 ± 0.4	2016-01-20
7717790	112	2016-01-11 @ 3:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717789	113	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717785	118	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.6 ± 0.3	2016-01-18
7717786	119	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717783	120	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717775	125	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-20
7717777	126	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717765	13	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	0.8 ± 0.3	2016-01-18
7717776	130	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717766	14	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	0.5 ± 0.3	2016-01-18
7717767	14	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-20
7717782	159	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717784	159	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717770	16	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717780	160	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.8 ± 0.3	2016-01-18
7717781	161	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717778	162	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18

February 4, 2016 **LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**FOX CHAPEL ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7717769	17	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	0.9 ± 0.4	2016-01-20
7717755	19	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	0.8 ± 0.3	2016-01-18
7717768	20	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	0.5 ± 0.3	2016-01-18
7717800	21	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	0.6 ± 0.3	2016-01-18
7717771	24	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	0.9 ± 0.3	2016-01-18
7717796	26	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717797	27	@	@		
7717798	28	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717772	30	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717773	32	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717774	32	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717761	36	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-20
7717756	38	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717757	38	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-20
7717759	4	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717758	40	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717760	41	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717754	43	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-20
7717753	45	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717799	45	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717751	45	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-18
7717779	45	2016-01-11 @ 2:00 pm	2016-01-14 @ 10:00 am	< 0.3	2016-01-20
7717762	9	2016-01-11 @ 1:00 pm	2016-01-14 @ 10:00 am	0.5 ± 0.3	2016-01-18

February 2, 2016 **LABORATORY ANALYSIS REPORT ****

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

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

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: 0939 Time Stop: 0939 Time Start: _____ Time Stop: _____

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

7706211, 7706366, _____

7706380, 7706381 _____

F3 Cont

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

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

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

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

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

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

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



Chain of Custody

Project Name: MCPS Radon Phase V

Name of Schools:

- | | | |
|-------------------------|---------------------------|-------------------------|
| 1. Arcola ES | 11. Clopper Mill ES | 21. Parkland Magnet MS |
| 2. Argyle ES | 12. College Gardens ES | 22. Rachel Carson ES |
| 3. Bells Mill ES | 13. Eastern MS | 23. Roberto Clemente MS |
| 4. Bethesda ES | 14. Fallsmead ES | 24. Rock Creek ES |
| 5. Brookhaven ES | 15. Fields Road ES | 25. Rockview ES |
| 6. Burning Tree ES | 16. Flower Hill ES | 26. Rockville HS |
| 7. Capt. James Daly ES | 17. Flower Valley ES | 27. Rocky Hill MS |
| 8. Carderock Springs ES | 18. Fox Chapel ES | 28. Seneca Valley HS |
| 9. Cashell ES | 19. Glen Haven ES | 29. Westover ES |
| 10. Clearspring ES | 20. James Hubert Blake HS | 30. William Farquar MS |

	Date	Initials
Radon Test Kits Deployed	1/11/16	JM
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

November 19, 2015

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

Re: Radon Evaluation- Fox Chapel Elementary School

Dear Mr. Yarup:

Environmental radon testing has been completed at Fox Chapel Elementary School.

Twenty charcoal canisters were placed in various rooms throughout the school. The canisters were placed on November 6, 2015 and retrieved on November 9, 2015. The detected radon concentrations were below the EPA recommended level of 4.0 pico curries per liter (pCi/l) of air at all tested locations. Test locations and results are summarized in the attached table.

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

Sincerely,

Michael A. Cecil
Michael A. Cecil, CIH

**Fox Chapel Elementary School
Environmental Radon Results
November 6, 2015 - November 9, 2015**

Location	Detected Radon Concentration (pCi/l)
APR	0.5
Gym	0.9
IMC	1.0
Main Office	1.4
Room 04	1.4
Room 10	2.5
Room 14	2.5
Room 16	1.7
Room 20	2.6
Room 24	2.1
Room 26	<0.5
Room 27	1.0
Room 28 A	<0.5
Room 28 B (Quality control)	<0.5
Room 30	0.6
Room 32	0.6
Room 36	0.6
Room 38	1.1
Room 40	1.0
Room 41	0.8

A.B.E. Radiation Measurements Laboratory

Division of Health Physics Associates, Inc.

1005 Old 22 PO Box 214 Lenhartsville, PA 19534

dee@radprotection.com

(610) 756-4153 (Voice) (610) 756-0042 (FAX)

November 18, 2015

MA Cecil & Associates, Inc.
4475 Shannon Way
Port Republic, MD 20676

Attn: Kimberly Tayman

re: **Radon Sampling**, Fox Chapel Elementary School,
19315 Archdale Rd., Germantown, MD 20876.
Dates of tests: November 6 to 9, 2015
Chamber Spikes: 3.5 % Deviation; August 11 to 13, 2015

Dear Ms. Tayman:

The following is a report of the radon sampling your company conducted at the referenced property using activated charcoal. The charcoal analysis procedures have passed the US EPA's Radon Measurement Proficiency Testing program, and A.B.E. Radiation Measurements Lab is certified by the PA DEP as a laboratory (certification number 0048). The table lists each sample location and the net radon levels in picocuries per liter (pCi/l). Screening testing should be conducted under "closed house" conditions; however, A.B.E. Radiation Measurements Laboratory has no control over how the test device is treated in our absence or the degree of ventilation at the property over the course of the test.

<u>Canister Number</u>	<u>Location</u>	<u>Start Time</u>	<u>End Time</u>	<u>pCi/l</u>
172774	Main Office	16:29	07:13	1.4
172737	Gym	16:33	07:14	0.9
172797	Room 38	16:34	07:16	1.1
172785	Room 41	16:36	07:17	0.8
172779	Room 40	16:37	07:18	1.0
172758	Room 36	16:37	07:19	0.6
172759	Room 30	16:40	07:20	0.6
172787	Room 32	16:39	07:20	0.6
172766	Room 28 A	16:41	07:21	<0.5
168295	Room 28 B	16:41	07:21	<0.5
172748	Room 27	16:42	07:23	1.0
172756	Room 26	16:43	07:23	<0.5
172789	Room 24	16:45	07:24	2.1
172780	Room 20	16:46	07:25	2.6
168565	Room 16	16:46	07:26	1.7
168589	Room 14	16:48	07:26	2.5
172795	Room 10	16:49	07:27	2.5
172731	Room 04	16:50	07:28	1.4
172740	IMC	16:55	07:12	1.0
172796	APR	16:56	07:11	0.5

CONCLUSIONS

The radon concentrations measured during the test were below the US EPA screening guideline of less than 4.0 pCi/l and remedial action to reduce the radon concentration is not indicated based on the results of this test. Because of the variability of radon air concentrations over the course of a year, follow-up biannual testing during a different season, under occupied conditions, is recommended to better estimate the annual average air concentrations.

The results of this test are valid only for the date, time and conditions under which the test was conducted and only for the client ordering the test.

Should you wish to discuss this report, please do not hesitate to contact us at (610) 756-4153.

Thank you for the opportunity to serve you.

Sincerely,

A handwritten signature in cursive script that reads "A. LaMastra".

A. LaMastra
President