



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Oakland Terrace Elementary School
Date of Test Report	2/17/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	69
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	1.1 pCi/L

Project Status:

1. 5-Year retesting completed.



February 17, 2023

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

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

Location: Oakland Terrace Elementary School
2720 Plyers Mill Road
Silver Spring, MD 20902

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 Oakland Terrace Elementary School, located at 2720 Plyers Mill Rd. Silver Spring, MD 20902 (subject site).

Scope of Services:

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

KCI visited the site on January 23, 2023 and deployed seventy-eight (78) 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 January 26, 2023 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Accustar Labs - MA. for analysis by gamma-ray spectroscopy.

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

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 the 31°F to 52°F. Maximum sustained winds ranged from 5-25 miles per hour. Average humidity was around 60% with .32 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		
Oakland Terrace ES		
Test Period: 01/23/2023 - 01/26/2023		
Kit Number	Room / Area	Result
11634632	1	0.5
11634631	2	0.7
11634679	3	< 0.3
11634642	4	0.9
11634630	5	< 0.3
11634609	6	< 0.3
11634643	7	0.5
11634610	8	< 0.3
11634635	8	< 0.3
11634618	9	< 0.3
11634644	9	< 0.3
11634636	10	< 0.3
11634628	11	< 0.3
11634603	12	< 0.3
11634612	13	< 0.3
11634601	14	0.6
11634611	15	< 0.3
11634650	15	< 0.3
11634627	16	< 0.3
11634617	17	< 0.3
11634651	18	< 0.3
11634652	18	< 0.3
11634629	19	< 0.3
11634637	19	< 0.3
11634658	20	< 0.3
11634659	21	< 0.3
11634669	22	< 0.3
11634657	23	< 0.3
11634668	24	< 0.3
11634678	25	< 0.3
11634671	26	< 0.3
11634663	27	< 0.3
11634670	27	< 0.3
11634655	28	0.6
11634656	29	< 0.3
11634638	30	< 0.3
11634647	31	< 0.3
11634677	32	0.6
11634646	33	< 0.3
11634672	34	< 0.3
11634675	100	< 0.3
11634674	101	< 0.3

Table 1- Radon Testing Results		
Oakland Terrace ES		
Test Period: 01/23/2023 - 01/26/2023		
Kit Number	Room / Area	Result
11634676	105	< 0.3
11634602	106	0.5
11634604	109	< 0.3
11634607	110	< 0.3
11634673	111	< 0.3
11634648	31 OFFICE	< 0.3
11634645	APR	< 0.3
11634665	APR	< 0.3
11634682	ASSISTANT PRINCIPAL	< 0.3
11634639	BS OFFICE	0.9
11634623	COMMUNICATION LAB	0.9
11634625	CONFERENCE	< 0.3
11634606	GYM	0.7
11634613	GYM	1.0
11634614	GYM OFFICE	1.1
11634615	KITCHEN OFFICE	< 0.3
11634664	KITCHEN OFFICE	0.6
11634654	LOUNGE	0.7
11634634	MAIN	< 0.3
11634661	MEDIA	0.7
11634662	MEDIA	< 0.3
11634605	MEDIA OFFICE	< 0.3
11634616	MEDIA WORKROOM	< 0.3
11634624	MEDIA WORKROOM	< 0.3
11634619	MRS LANE	< 0.3
11634622	NURSE	< 0.3
11634621	NURSE REST	< 0.3
11634667	PARA	< 0.3
11634620	PRINCIPAL	< 0.3
11634633	STAFF OFFICE 1	0.6
11634640	STAFF OFFICE 1	0.6
11634641	STAFF OFFICE 2	< 0.3
11634608	STAFF OFFICE 4	0.8
11634653	STAGE	0.6
11634626	TELEPHONE	< 0.3
11634649	WORKROOM	< 0.3

Table 2- Radon Testing Results			
Oakland Terrace ES			
Test Period: 01/23/23 - 01/26/23			
Kit Number	QC Type	Room / Area	Result
11634610	D	8	< 0.3
11634618	FB	9	< 0.3
11634650	D	15	< 0.3
11634651	FB	18	< 0.3
11634637	D	19	< 0.3
11634663	D	27	< 0.3
11634665	D	APR	< 0.3
11634615	FB	Kitchen Office	< 0.3
11634633	D	Staff Office 1	0.6
11633990	OB	OFFICE BLANK	< 0.3
11633992	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11634632	1	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	0.5 ± 0.3	2023-01-30
11634636	10	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634675	100	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634674	101	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634676	105	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634602	106	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	0.5 ± 0.3	2023-01-30
11634604	109	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634628	11	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634607	110	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634673	111	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634603	12	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634612	13	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634601	14	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	0.6 ± 0.3	2023-01-30
11634650	15	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634611	15	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634627	16	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634617	17	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634652	18	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634651	18	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634637	19	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634629	19	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634631	2	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	0.7 ± 0.3	2023-01-30
11634658	20	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634659	21	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634669	22	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634657	23	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634668	24	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634678	25	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634671	26	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634663	27	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634670	27	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634655	28	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	0.6 ± 0.3	2023-01-30
11634656	29	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634679	3	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634638	30	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634647	31	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634648	31 OFFICE	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11634677	32	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	0.6 ± 0.3	2023-01-30
11634646	33	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634672	34	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634642	4	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	0.9 ± 0.3	2023-01-30
11634630	5	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634609	6	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634643	7	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	0.5 ± 0.3	2023-01-30
11634635	8	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634610	8	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634618	9	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634644	9	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634665	APR	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634645	APR	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634682	ASSISTANT PRINCIPAL	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634639	BS OFFICE	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	0.9 ± 0.3	2023-01-30
11634623	COMMUNICATION LAB	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	0.9 ± 0.3	2023-01-30
11634625	CONFERENCE	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634606	GYM	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	0.7 ± 0.3	2023-01-30
11634613	GYM	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	1.0 ± 0.4	2023-01-30
11634614	GYM OFFICE	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	1.1 ± 0.4	2023-01-30
11634664	KITCHEN OFFICE	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	0.6 ± 0.3	2023-01-30
11634615	KITCHEN OFFICE	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634654	LOUNGE	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	0.7 ± 0.3	2023-01-30
11634634	MAIN	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634661	MEDIA	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	0.7 ± 0.4	2023-01-30
11634662	MEDIA	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634605	MEDIA OFFICE	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634616	MEDIA WORKROOM	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634624	MEDIA WORKROOM	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634619	MRS LANE	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634622	NURSE	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634621	NURSE REST	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634667	PARA	2023-01-23 @ 1:00 pm	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634620	PRINCIPAL	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634633	STAFF OFFICE 1	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	0.6 ± 0.3	2023-01-30
11634640	STAFF OFFICE 1	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	0.6 ± 0.3	2023-01-30
11634641	STAFF OFFICE 2	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30

January 30, 2023

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11634608	STAFF OFFICE 4	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	0.8 ± 0.3	2023-01-30
11634653	STAGE	2023-01-23 @ 12:00 pm	2023-01-26 @ 11:00 am	0.6 ± 0.3	2023-01-30
11634626	TELEPHONE	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30
11634649	WORKROOM	2023-01-23 @ 11:00 am	2023-01-26 @ 11:00 am	< 0.3	2023-01-30

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 2 January Schools

Name of Schools:

1. Glen Haven ES
2. Kemp Mill ES
3. John F. Kennedy HS
4. Oakland Terrace ES
5. Odessa Shannon MS
6. JoAnn Leleck ES @ Broad Acres
7. New Hampshire Estates ES
8. Cannon Road ES
9. Galway ES
- 10.A. Mario Loiederman MS

	Date	Initials
Radon Test Kits Deployed	01/23/2023	BMM
Radon Test Kits Collected	01/26/2023	BMM
Radon Test Kits Shipped to Lab*	01/26/2023	BMM
Radon Test Kits Received by Lab*	01/31/2023	BMM

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

**RADON SCREENING SURVEY – FOLLOW-UP OAKLAND TERRACE ELEMENTARY
SCHOOL**

2720 Plyers Mill Road, Silver Spring, Maryland 20902

EXECUTIVE SUMMARY

Date of Test Report:	3/16/16 Follow-Up
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested	2
# Rooms \geq 4.0 pCi/L:	0
Low Value:	<0.3
High Value:	<0.3
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) 2/29/16 (Rev 1 Initial)	Result (pCi/L) 3/16/16 Follow-Up	Average Result (pCi/L)
Cafeteria	0.7 Tampered	<0.3	0.5
Classroom 31	0.7 Tampered	<0.3	0.5



MCPS RADON TESTING

Executive Summary: Oakland Terrace Elementary School

Date of Test Report:	3/16/2016
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	2
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	< 0.3

Project Status:

Retesting completed; no further action at this time.



March 16, 2016

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

Re: **Radon Testing Services**
KCI Job # 12146341.29

Location: Oakland Terrace Elementary School
2720 Plyers Mill Road
Silver Spring, MD 20902

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 Oakland Terrace Elementary School, located at 2720 Plyers Mill Road in Silver Spring, Maryland 20902 (subject site).

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KCI visited the site on February 23, 2016 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. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on February 26, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

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

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

KCI also conducted observations of field conditions which could affect the results of the test and compiled weather data for the testing period. Note that strong storms and heavy rainfall were recorded during the test period. The unusual weather conditions may have resulted in atypical radon test results for this facility.

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:

D- Duplicate sample

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank*

PM- Project Manager

QC- Quality Control

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

Radon Testing Results		
Oakland Terrace Elementary School		
Test Period: 02/22/16-02/25/16		
Kit Number	Room / Area	Result
7718509	31	< 0.3
7718527	CAFE	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Oakland Terrace Elementary School		
Test Period: 02/22/16-02/25/16		
Kit Number	QC Type	Result
7718511	D (31)	< 0.3
7718510	FB (31)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

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

Radon test result report for:
**OAKLAND TERRACE ELEMENTARY SCHOOL
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718509	31	2016-02-22 @ 11:00 am	2016-02-25 @ 11:00 am	< 0.3	2016-02-29
7718510	31	2016-02-22 @ 11:00 am	2016-02-25 @ 11:00 am	< 0.3	2016-02-29
7718511	31	2016-02-22 @ 11:00 am	2016-02-25 @ 11:00 am	< 0.3	2016-02-29
7718527	CAFE	2016-02-22 @ 11:00 am	2016-02-25 @ 11:00 am	< 0.3	2016-02-29

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

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

Radon test result report for:
MCPS
Phase 9 Office Blanks

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

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

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

Radon test result report for:
MCPS
Phase 9 Office Blanks

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

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

February 23, 2016
LABORATORY ANALYSIS REPORT

Radon test result report for:
TRANSIT- PHASE 7, 8, 9
NONE

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7734937	1	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734946	10	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734955	11	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734956	12	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734959	13	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734930	14	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734953	15	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734954	16	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734940	17	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734949	18	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734948	19	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734939	2	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734942	20	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734929	21	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734933	22	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734934	23	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734936	24	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734943	25	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734944	26	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734935	27	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734928	28	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734952	29	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734947	3	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734931	30	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734932	31	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718520	32	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718523	33	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718522	34	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7718521	35	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734945	4	2016-02-19 @ 3:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734960	5	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734958	6	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734951	7	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734957	8	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23
7734938	9	2016-02-19 @ 4:00 pm	2016-02-22 @ 11:00 am	< 0.3	2016-02-23

February
15,
2016

**** LABORATORY ANALYSIS
REPORT ****

Spike Sample Laboratory Results

Radon test result report for:
MCPS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7718273	101A	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.5 ± 0.6	2016-02-04
7718281	102B	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.4 ± 0.6	2016-02-04
7718282	103C	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.3 ± 0.6	2016-02-04
7718288	104D	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.7 ± 0.6	2016-02-04
7718289	105E	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.6 ± 0.6	2016-02-04
7718291	106F	2016-01-30 @ 9:00 am	2016-02-01 @ 9:00 am	6.5 ± 0.6	2016-02-04

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

Note: Spike samples are test canisters that are deliberately exposed to a controlled high level of radon in a laboratory. They provide a quality control measure in the testing process and do NOT reflect radon levels in the building being tested.

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

NOMINAL Conditions: Radon Conc 5.9 pCi/L Rel. Hum 45.9 % Temp. 79.0 F

Date Start: 11/30/16 Date Stop: 2/1/16 Date Start: _____ Date Stop: _____

Time Start: 0926 Time Stop: 0926 Time Start: _____ Time Stop: _____

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

7718281, 7718282, 7718291, _____

7718288, 7718289, 7718273 _____

ε3 Left

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

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

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

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

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 9

Name of Schools:

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

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

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



MCPS RADON TESTING

Executive Summary: Oakland Terrace Elementary School

Date of Test Report:	2/29/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	59
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	1.6

Project Status:

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



February 29, 2016 (Rev 1)

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

Re: **Radon Testing Services**
KCI Job # 12146341.19

Location: Oakland Terrace Elementary School
2720 Plyers Mill Road
Silver Spring, MD 20902

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 Oakland Terrace Elementary School, located at 2720 Plyers Mill Road in Silver Spring, Maryland 20902 (subject site).

Scope of Services:

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

KCI visited the site on December 15, 2016 and deployed seventy-one (71) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on December 18, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

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.

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Radon Testing Results		
Oakland Terrace E.S		
Test Period: 12/15/15-12/18/15		
Kit Number	Room / Area	Result
7704369	ASSISTANT PRINCI	1.1
7704534	BUILDING SERVICE	1.6
7704527	* CAFETERIA (Tampered)	0.7
7704587	CLASS ROOM 10	< 0.3
7704570	CLASS ROOM 100	0.5
7705156	CLASS ROOM 101	< 0.3
7704586	CLASS ROOM 106	0.7
7704573	CLASS ROOM 109	0.9
7705154	CLASS ROOM 11	< 0.3
7704565	CLASS ROOM 12	< 0.3
7704563	CLASS ROOM 13	< 0.3
7704594	CLASS ROOM 14	< 0.3
7704598	CLASS ROOM 15	< 0.3
7704571	CLASS ROOM 16	< 0.3
7704585	CLASS ROOM 17	< 0.3
7704592	CLASS ROOM 18	< 0.3
7704590	CLASS ROOM 19	0.7
7704568	CLASS ROOM 20	< 0.3
7704595	CLASS ROOM 21	< 0.3
7704572	CLASS ROOM 22	0.8
7704575	CLASS ROOM 23	< 0.3
7704574	CLASS ROOM 26	< 0.3
7704577	CLASS ROOM 27	< 0.3
7704576	CLASS ROOM 28	0.7
7704525	CLASS ROOM 29	0.8
7704589	CLASS ROOM 30	< 0.3
7704526	* CLASS ROOM 31 (Tampered)	0.7
7704530	CLASS ROOM 32	0.5
7704529	CLASS ROOM 33	0.5
7704597	CLASS ROOM 34	0.7
7705150	CLASS ROOM 4	< 0.3
7705155	CLASS ROOM 5	1.5
7705163	CLASS ROOM 6	< 0.3
7704355	CLASS ROOM 7	0.7
7704560	CLASS ROOM 8	< 0.3
7705142	CLASS ROOM 9	< 0.3
7705147	CLASSROOM 2	< 0.3
7704305	CONFERENCE	0.9
7704591	DUAL PURPOSE ROOM	< 0.3
7705144	DUAL PURPOSE ROOM	< 0.3
7704354	ESOL	1.6
7704561	GYM	0.8
7704564	GYM	0.6
7704562	IMC	1.0
7704593	IMC	< 0.3
7704566	IMC OFFICE	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Oakland Terrace E.S		
Test Period: 12/15/15-12/18/15		
Kit Number	Room / Area	Result
7704567	IMC WORKPLACE	< 0.3
7704588	INSTRUMENT MUSIC	0.7
7705165	KAHUNA LOUNGE	1.3
7704599	KITCHEN	0.9
7704373	MAIN OFFICE	1.0
7704365	NURSES	1.3
7704293	PRINCIPAL OFF	1.1
7704366	PRINTER ROOM	1.2
7704578	ROOM 24	< 0.3
7704580	ROOM 25	< 0.3
7705148	SR1	0.6
7704400	STAFF OFFICE 1	1.6
7704583	STAFF OFFICE 140	0.5
7705157	STAFF ROOM 100	0.8
7704374	STAFF ROOM 2	1.4
7705149	SUPPLY ROOM 3	< 0.3

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Oakland Terrace E.S		
Test Period: 12/15/15-12/18/15		
Kit Number	QC Type	Result
7704537	D (BUILDING SERVICE)	1.6
7705146	D (CLASS ROOM 109)	0.6
7704569	D (CLASS ROOM 12)	< 0.3
7704596	D (CLASS ROOM 22)	0.7
7705143	D (CLASS ROOM 7)	0.9
7706368	FB (CLASS ROOM 8)	< 0.3
7706369	FB (CONFERENCE)	< 0.3
7705164	FB (GYM)	< 0.3
7708214	OB (OFFICE BLANK)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

December
30,
2015

LABORATORY ANALYSIS REPORT **

Radon test result report for:
**OAKLAND TERRACE E.S
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7704305	CONFERENCE ROOM	2015-12-15 @ 8:00 am	2015-12-18 @ 8:00 am	0.9 ± 0.3	2015-12-22
7704293	PRINCIPAL OFFICE	2015-12-15 @ 8:00 am	2015-12-18 @ 8:00 am	1.1 ± 0.3	2015-12-22
7704580	ROOM 25	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704369	ASSISTANT PRINCI	2015-12-15 @ 9:00 am	2015-12-18 @ 8:00 am	1.1 ± 0.3	2015-12-22
7704537	BUILDING SERVICE	2015-12-15 @ 11:00 am	2015-12-18 @ 8:00 am	1.6 ± 0.3	2015-12-22
7704534	BUILDING SERVICE	2015-12-15 @ 11:00 am	2015-12-18 @ 8:00 am	1.6 ± 0.3	2015-12-22
7704527	CAFITERIA	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	0.7 ± 0.3	2015-12-22
7704591	DUAL PORPOSE RO	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704562	IMC	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	1.0 ± 0.3	2015-12-22
7704587	CLASS ROOM 10	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704570	CLASS ROOM 100	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.5 ± 0.3	2015-12-22
7705156	CLASS ROOM 101	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704586	CLASS ROOM 106	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.7 ± 0.3	2015-12-22
7705146	CLASS ROOM 109	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.6 ± 0.3	2015-12-22
7704573	CLASS ROOM 109	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.9 ± 0.3	2015-12-22
7705154	CLASS ROOM 11	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704565	CLASS ROOM 12	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704569	CLASS ROOM 12	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704563	CLASS ROOM 13	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704594	CLASS ROOM 14	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704598	CLASS ROOM 15	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704571	CLASS ROOM 16	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704585	CLASS ROOM 17	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704592	CLASS ROOM 18	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704590	CLASS ROOM 19	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.7 ± 0.3	2015-12-22
7704568	CLASS ROOM 20	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704595	CLASS ROOM 21	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704572	CLASS ROOM 22	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.8 ± 0.3	2015-12-22
7704596	CLASS ROOM 22	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.7 ± 0.3	2015-12-22
7704575	CLASS ROOM 23	2015-12-15 @ 10:00 am	2015-12-18 @ 10:00 am	< 0.3	2015-12-22
7704574	CLASS ROOM 26	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704577	CLASS ROOM 27	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704576	CLASS ROOM 28	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	0.7 ± 0.3	2015-12-22
7704525	CLASS ROOM 29	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	0.8 ± 0.3	2015-12-22
7704589	CLASS ROOM 30	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704526	CLASS ROOM 31	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	0.7 ± 0.3	2015-12-22
7704530	CLASS ROOM 32	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	0.5 ± 0.3	2015-12-22

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LABORATORY ANALYSIS REPORT **

Radon test result report for:
**OAKLAND TERRACE E.S
MAIN**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7704529	CLASS ROOM 33	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	0.5 ± 0.3	2015-12-22
7704597	CLASS ROOM 34	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	0.7 ± 0.3	2015-12-22
7705150	CLASS ROOM 4	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7705155	CLASS ROOM 5	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	1.5 ± 0.3	2015-12-22
7705163	CLASS ROOM 6	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704355	CLASS ROOM 7	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.7 ± 0.3	2015-12-22
7705143	CLASS ROOM 7	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.9 ± 0.3	2015-12-22
7704560	CLASS ROOM 8	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7706368	CLASS ROOM 8	2015-12-15 @ 6:00 pm	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7705142	CLASS ROOM 9	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7705147	CLASSROOM 2	2015-12-15 @ 9:00 am	2015-12-18 @ 8:00 am	< 0.3	2015-12-22
7706369	CONFERENCE ROOM	2015-12-15 @ 6:00 pm	2015-12-18 @ 8:00 am	< 0.3	2015-12-22
7705144	DUAL PURPOSE ROO	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704561	GYM	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.8 ± 0.3	2015-12-22
7704564	GYM	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.6 ± 0.3	2015-12-22
7705164	GYM	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704593	IMC	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704566	IMC OFFICE	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704567	IMC WORKPLACE	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704588	INSTROMENT MUSIC	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.7 ± 0.3	2015-12-22
7705165	KAHUNA LOUNGE	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	1.3 ± 0.3	2015-12-22
7704599	KITCHEN	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	0.9 ± 0.3	2015-12-22
7704373	MAIN OFFICE	2015-12-15 @ 9:00 am	2015-12-18 @ 8:00 am	1.0 ± 0.3	2015-12-22
7704354	ESOL	2015-12-15 @ 9:00 am	2015-12-18 @ 8:00 am	1.6 ± 0.3	2015-12-22
7704578	ROOM 24	2015-12-15 @ 11:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22
7704365	NURSES	2015-12-15 @ 9:00 am	2015-12-18 @ 8:00 am	1.3 ± 0.3	2015-12-22
7704366	PRINTER ROOM	2015-12-15 @ 9:00 am	2015-12-18 @ 8:00 am	1.2 ± 0.3	2015-12-22
7705148	SR1	2015-12-15 @ 9:00 am	2015-12-18 @ 8:00 am	0.6 ± 0.3	2015-12-22
7704400	STAFF OFFICE 1	2015-12-15 @ 9:00 am	2015-12-18 @ 8:00 am	1.6 ± 0.3	2015-12-22
7704583	STAFF OFFICE 140	2015-12-15 @ 10:00 am	2015-12-18 @ 9:00 am	0.5 ± 0.3	2015-12-22
7705157	STAFF ROOM 100	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	0.8 ± 0.3	2015-12-22
7704374	STAFF ROOM 2	2015-12-15 @ 9:00 am	2015-12-18 @ 8:00 am	1.4 ± 0.3	2015-12-22
7705149	SUPPLY ROOM 3	2015-12-15 @ 9:00 am	2015-12-18 @ 9:00 am	< 0.3	2015-12-22

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**** LABORATORY ANALYSIS
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Radon test result report for:
**OAKLAND TERRACE E.S
OFFICE BLANK**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7708214	OFFICE BLANK	2015-12-15 @ 5:00 pm	2015-12-18 @ 5:00 pm	< 0.3	2015-12-22

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

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**LABORATORY ANALYSIS
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Radon test result report for:
TRANSIT DEC 14 2015
NONE

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7704395	TRANSIT 1	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706508	TRANSIT 10	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706510	TRANSIT 11	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706511	TRANSIT 12	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706505	TRANSIT 13	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704371	TRANSIT 14	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706506	TRANSIT 15	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704381	TRANSIT 16	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704399	TRANSIT 17	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704390	TRANSIT 18	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704396	TRANSIT 2	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704364	TRANSIT 3	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704370	TRANSIT 4	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7704368	TRANSIT 5	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706524	TRANSIT 6	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706526	TRANSIT 7	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706518	TRANSIT 8	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16
7706516	TRANSIT 9	2015-12-13 @ 10:00 am	2015-12-15 @ 10:00 am	< 0.3	2015-12-16

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**LABORATORY ANALYSIS
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Spike Sample Laboratory Results

Radon test result report for:

MCPS

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

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

Note: Spike samples are test canisters that are deliberately exposed to a controlled high level of radon in a laboratory. They provide a quality control measure in the testing process and do NOT reflect radon levels in the building being tested.

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 173224

NOMINAL Conditions: Radon Conc 26.9 pCi/L Rel. Hum 49.6 % Temp. 69.9 F

Date Start: 12/18/15 Date Stop: 12/21/15 Date Start: _____ Date Stop: _____

Time Start: 0929 Time Stop: 0929 Time Start: _____ Time Stop: _____

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

7706211, 7706366, _____

7706380, 7706381 _____

F3 Left

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

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

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

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

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase I

Name of Schools:

- 1. Westland M.S.
- 2. East Silver Spring E.S.
- 3. Oakland Terrace E.S.
- 4. Rocking Horse Road E.S.
- 5. Beall E.S.
- 6. South Lake E.S.
- 7. Jones Lane E.S.
- 8. Quince Orchard H.S.
- 9. Damascus E.S.
- 10. Westbrooke E.S.
- 11. Highland View E.S.
- 12. Cresthaven E.S.
- 13. Viers Mill E.S.
- 14. Smith Center
- 15. Rosemont E.S.
- 16. Ridgeview M.S.
- 17. Rockwell E.S.
- 18. Oak View E.S.
- 19. Jackson Road E.S.
- 20. Highland E.S.
- 21. Watkins Mill E.S.

	Date	Initials
Radon Test Kits Deployed	12/15/15	KM
Radon Test Kits Collected	12/18/15	KM
Radon Test Kits Shipped to Lab*	12/18/15	KM
Radon Test Kits Received by Lab*	12/22/15	KM

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