



MCPS RADON TESTING – EXECUTIVE SUMMARY

Site Name	Lucy V. Barnsley Elementary School
Date of Test Report	2/20/2023
Round of Testing	Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility
# Rooms Tested	68
# Rooms Re-tested	2
# Rooms \geq 4.0 pCi/L	0
Lowest Value	<0.3 pCi/L
Highest Value	2.3 pCi/L

Project Status:

1. Initial testing completed;
2. Missing or compromised samples need re-test.
3. Retesting Completed 1/31/23 – 2/3/23.
4. 5-Year Testing Completed.



February 20, 2023

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

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

Location: Lucy V. Barnsley Elementary School
14516 Nadine Drive
Rockville, MD 20853

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 Beall Elementary School, located at 451 Beall Avenue in Rockville, Maryland 20850 (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 initially on December 5, 2022 and deployed sixty-six (66) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

KCI returned to the site on December 8, 2022 to retrieve initial testing 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.

KCI re-visited the site on January 31, 2023 to deploy four (4) activated charcoal (AC) radon test kits for testing of missed rooms or compromised test kits during initial testing.

KCI returned to the site on February 3, 2023 to retrieve the radon re-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.

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.

Evaluation of Testing Conditions:

These tests represent:

- Follow up to initial testing.

These tests were conducted to:

- Evaluated radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the initial test period, weather records indicate low temperatures were in the 20s°F and high temperatures ranged to the mid-50s°F. Maximum sustained winds ranged from 0-12 miles per hour. Average humidity was around 75% with .04 inches of precipitation (rain) was recorded during testing period.

During the re-testing period, weather records indicate low temperatures were in the mid-20s°F and high temperatures ranged to the low 40s°F. Maximum sustained winds ranged from 0-21 miles per hour. Average humidity was around 70% with .18 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	

The results of the radon re-testing 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		
Lucy V. Barnsley ES		
Test Period: 12/12/2022 - 12/15/2022		
Kit Number	Room / Area	Result
11140260	3	< 0.3
11140251	5	0.7
11140241	6	< 0.3
11140243	7	0.7
11140250	11	< 0.3
11140271	11	0.9
11140272	11	0.5
11140249	15	< 0.3
11140279	100	0.5
11140201	101	0.6
11140207	101	0.6
11140212	103	< 0.3
11140211	105	< 0.3
11140220	106	0.5
11140227	107	0.7
11140229	109	2.3
11140224	111	< 0.3
11140230	111	< 0.3
11140231	111	< 0.3
11140268	112	< 0.3
11140238	113	0.7
11140232	115	0.9
11140216	124	0.6
11140210	126	1.3
11140204	128	1.1
11140237	130	0.7
11140258	131	0.7
11140228	132	0.5
11140277	133	0.9
11140219	134	1.8
11140259	137	< 0.3
11140267	138	1.3
11140205	150	< 0.3
11140213	150	0.9
11140206	151	0.9
11140214	157	0.9
11140215	157	0.7
11140264	208	0.8
11140209	215	0.9
11140226	217	1.0
11140239	217	1.0
11140246	219	0.8

Table 1- Radon Testing Results		
Lucy V. Barnsley ES		
Test Period: 12/12/2022 - 12/15/2022		
Kit Number	Room / Area	Result
11140240	221	0.7
11140247	223	< 0.3
11140217	226	0.9
11140225	227	1.1
11140233	227	1.4
11140234	227	< 0.3
11140236	235	1.3
11140244	237	< 0.3
11140235	239	1.1
11140218	243	0.6
11140261	245	2.2
11140256	247	1.2
11140262	249	1.0
11140263	249	0.8
11140203	251	0.7
11140270	256	0.8
11140202	257	0.6
11140255	259	1.0
11140276	261	0.9
11140242	263	< 0.3
11140269	277	< 0.3
11140294	100F	< 0.3
11140208	157A	0.6
11140245	225A	1.7
11140253	225B	1.6
11140248	227A	1.6
11140221	APR	< 0.3
11140222	APR	0.6
11140287	HEALTH EXAM ROOM	< 0.3
11140278	HEALTH ROOM	< 0.3
11140285	HEALTH ROOM	< 0.3
11140286	HEALTH ROOM OFFICE	< 0.3
11140223	KITCHEN OFFICE	0.8
11140252	MC	2.2
11140254	MC	2.1

Table 2- Radon Testing Results			
Lucy V. Barnsley ES			
Test Period: 12/12/22 - 12/15/22			
Kit Number	QC Type	Room / Area	Result
11140272	D	11	0.5
11140250	FB	11	< 0.3
11140201	D	101	0.6
11140231	FB	111	< 0.3
11140239	D	217	1.0
11140225	D	227	1.1
11140234	FB	227	< 0.3
11140263	D	249	0.8
11140278	D	Health room	< 0.3
11286981	OB	OFFICE BLANK	< 0.3
11286982	TB	TRAVEL BLANK	< 0.3

Table 1- Radon Testing Results		
Lucy V. Barnsley ES RT		
Test Period: 01/31/2023 - 02/03/2023		
Kit Number	Room / Area	Result
11634688	104	< 0.3
11634690	104	< 0.3
11634694	104	< 0.3
11634695	122	0.8

Table 2- Radon Testing Results			
Lucy V. Barnsley ES RT			
Test Period: 01/31/23 - 02/03/23			
Kit Number	QC Type	Room / Area	Result
11634690	D	104	< 0.3
11634694	FB	104	< 0.3
11634990	OB	OFFICE BLANK	< 0.3
11634991	TB	TRAVEL BLANK	< 0.3

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
LUCY V BARNESLEY ES
1

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11140260	003	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	< 0.3	2022-12-19
11140251	005	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	0.7 ± 0.3	2022-12-19
11140241	006	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	< 0.3	2022-12-19
11140243	007	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	0.7 ± 0.3	2022-12-19
11140271	011	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	0.9 ± 0.4	2022-12-19
11140272	011	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	0.5 ± 0.3	2022-12-19
11140250	011	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	< 0.3	2022-12-19
11140249	015	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	< 0.3	2022-12-19
11140279	100	2022-12-12 @ 3:00 pm	2022-12-15 @ 11:00 am	0.5 ± 0.4	2022-12-19
11140294	100F	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	< 0.3	2022-12-19
11140207	101	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.6 ± 0.4	2022-12-19
11140201	101	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.6 ± 0.3	2022-12-19
11140212	103	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140211	105	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140220	106	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.5 ± 0.3	2022-12-19
11140227	107	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.7 ± 0.3	2022-12-19
11140229	109	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	2.3 ± 0.4	2022-12-19
11140230	111	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140224	111	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140231	111	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140268	112	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	< 0.3	2022-12-19
11140238	113	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.7 ± 0.3	2022-12-19
11140232	115	2022-12-12 @ 1:00 pm	2022-12-15 @ 1:00 pm	0.9 ± 0.4	2022-12-19
11140216	124	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.6 ± 0.3	2022-12-19
11140210	126	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.3 ± 0.4	2022-12-19
11140204	128	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.1 ± 0.4	2022-12-19
11140237	130	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.7 ± 0.4	2022-12-19
11140258	131	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	0.7 ± 0.3	2022-12-19
11140228	132	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.5 ± 0.3	2022-12-19
11140277	133	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	0.9 ± 0.3	2022-12-19
11140219	134	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	1.8 ± 0.4	2022-12-19
11140259	137	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	< 0.3	2022-12-19
11140267	138	2022-12-12 @ 3:00 pm	2022-12-15 @ 12:00 pm	1.3 ± 0.4	2022-12-19
11140205	150	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140213	150	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.9 ± 0.4	2022-12-19
11140206	151	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.9 ± 0.3	2022-12-19
11140214	157	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.9 ± 0.4	2022-12-19

Radon test result report for:

LUCY V BARNSLEY ES**1**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11140215	157	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.7 ± 0.3	2022-12-19
11140208	157A	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.6 ± 0.3	2022-12-19
11140264	208	2022-12-12 @ 3:00 pm	2022-12-15 @ 12:00 pm	0.8 ± 0.4	2022-12-19
11140209	215	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.9 ± 0.3	2022-12-19
11140226	217	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.0 ± 0.4	2022-12-19
11140239	217	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.0 ± 0.4	2022-12-19
11140246	219	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.8 ± 0.4	2022-12-19
11140240	221	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.7 ± 0.4	2022-12-19
11140247	223	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140245	225A	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.7 ± 0.4	2022-12-19
11140253	225B	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.6 ± 0.3	2022-12-19
11140217	226	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.9 ± 0.4	2022-12-19
11140233	227	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.4 ± 0.4	2022-12-19
11140234	227	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140225	227	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.1 ± 0.4	2022-12-19
11140248	227A	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.6 ± 0.4	2022-12-19
11140236	235	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.3 ± 0.4	2022-12-19
11140244	237	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140235	239	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.1 ± 0.4	2022-12-19
11140218	243	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.6 ± 0.3	2022-12-19
11140261	245	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	2.2 ± 0.4	2022-12-19
11140256	247	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.2 ± 0.4	2022-12-19
11140263	249	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.8 ± 0.3	2022-12-19
11140262	249	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.0 ± 0.4	2022-12-19
11140203	251	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.7 ± 0.3	2022-12-19
11140270	256	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.8 ± 0.3	2022-12-19
11140202	257	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	0.6 ± 0.4	2022-12-19
11140255	259	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	1.0 ± 0.4	2022-12-19
11140276	261	2022-12-12 @ 3:00 pm	2022-12-15 @ 1:00 pm	0.9 ± 0.4	2022-12-19
11140242	263	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140269	277	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140221	APR	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	< 0.3	2022-12-19
11140222	APR	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.6 ± 0.4	2022-12-19
11140287	HEALTH EXAM ROOM	2022-12-12 @ 3:00 pm	2022-12-15 @ 11:00 am	< 0.3	2022-12-19
11140278	HEALTH ROOM	2022-12-12 @ 3:00 pm	2022-12-15 @ 11:00 am	< 0.3	2022-12-19
11140285	HEALTH ROOM	2022-12-12 @ 3:00 pm	2022-12-15 @ 11:00 am	< 0.3	2022-12-19
11140286	HEALTH ROOM OFFICE	2022-12-12 @ 3:00 pm	2022-12-15 @ 11:00 am	< 0.3	2022-12-19

December 19, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
LUCY V BARNSLEY ES
1

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11140223	KITCHEN OFFICE	2022-12-12 @ 1:00 pm	2022-12-15 @ 12:00 pm	0.8 ± 0.3	2022-12-19
11140254	MC	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	2.1 ± 0.4	2022-12-19
11140252	MC	2022-12-12 @ 2:00 pm	2022-12-15 @ 12:00 pm	2.2 ± 0.4	2022-12-19

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

February 7, 2023

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11634688	104	2023-01-31 @ 1:00 pm	2023-02-03 @ 10:00 am	< 0.3	2023-02-07
11634690	104	2023-01-31 @ 1:00 pm	2023-02-03 @ 10:00 am	< 0.3	2023-02-07
11634694	104	2023-01-31 @ 1:00 pm	2023-02-03 @ 10:00 am	< 0.3	2023-02-07
11634695	122	2023-01-31 @ 1:00 pm	2023-02-03 @ 10:00 am	0.8 ± 0.4	2023-02-07

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 208802

NOMINAL Conditions: Radon Conc 24.4 pCi/L Rel. Hum 48.6 % Temp. 79.3 F

Date Start: 1/27/23 Date Stop: 1/30/23 Date Start: _____ Date Stop: _____

Time Start: 0816 Time Stop: 0816 Time Start: _____ Time Stop: _____

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

11633682, 11633687, 11633688 _____

11633695, 11633696 _____

P3 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**

February 3, 2023

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OFFICE

MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11633696	SK10	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	24.2 ± 1.9	2023-02-03
11633682	SK6	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	26.9 ± 2.1	2023-02-03
11633687	SK7	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	23.8 ± 1.9	2023-02-03
11633688	SK8	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	25.9 ± 2.1	2023-02-03
11633695	SK9	2023-01-27 @ 8:00 am	2023-01-30 @ 8:00 am	27.0 ± 2.2	2023-02-03

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. Beall ES
2. Gaithersburg HS
3. Kingsview MS
4. Lucy V. Barnsley ES
5. Martin Luther King Jr. MS
6. Mill Creek Towne ES
7. North Bethesda MS
8. Radnor Center
9. Winston Churchill HS

	Date	Initials
Radon Test Kits Deployed	01/31/2023	DM
Radon Test Kits Collected	02/03/2023	DM
Radon Test Kits Shipped to Lab*	02/03/2023	DM
Radon Test Kits Received by Lab*	02/06/2023	DM

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



MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

Executive Summary:

Lucy V. Barnsley Elementary School

14516 Nadine Drive,
Rockville, MD 20853

Date of Test Report:	3/20/2019
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:	2
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	1.0

Project Status

Retesting completed: No further action at this time.



March 20, 2019

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

Re: Radon Testing Services

Location: Lucy V. Barnsley Elementary School
14516 Nadine Drive,
Rockville, MD 20853

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 Lucy V. Barnsley Elementary School, located at 14516 Nadine Drive, Rockville, MD 20853 (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 26, 2019 and deployed two (2) 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 March 1, 2019 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.

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).

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		
Lucy V. Barnsley Elementary School		
Testing period: 2/26/19 - 3/1/19		
Kit Number	Room / Area	Result (pCi/L)
3923527	140A (Platform)	< 0.4
3923545	157 (Gym)	1.0

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

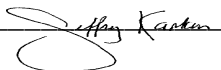
MCPS Radon Survey Lucy Barnsley ES
4516 Nadine Drive
Rockville MD 20853


Log Number	Device Number	Test Date	Exposure Start	Exposure End	Area Tested	Result pCi/L
3220604	3923527	02/26/2019	8:35 am	03/01/2019 8:10 am	Floor Main Room 140A	< 0.4
3220605	3923545	02/26/2019	8:40 am	03/01/2019 8:11 am	Floor Main Room 157 (Gym)	1.0

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: 03/04/2019 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:
Lucy V. Barnsley Elementary School
14516 Nadine Drive,
Rockville, MD 20853

Date of Test Report:	2/13/2019
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:	42
# of Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.4
High Value:	3.0

Project Status

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



February 13, 2019

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

Re: Radon Testing Services

Location: Lucy V. Barnsley Elementary School
14516 Nadine Drive,
Rockville, MD 20853

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 Lucy V. Barnsley Elementary School, located at 14516 Nadine Drive, Rockville, MD 20853 (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 12, 2018 and deployed fifty-six (56) 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 15, 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 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		
Lucy V. Barnsley Elementary School		
Testing period: 11/12/18 - 11/15/18		
Kit Number	Room / Area	Result (pCi/L)
3915777	3	< 0.4
3915784	5	< 0.4
3915793	6	< 0.4
3915781	7	< 0.4
3915709	11	< 0.4
3915722	15	< 0.4
3915725	100	< 0.4
3915776	101	0.5
3915733	102	< 0.4
3915772	104	0.5
3915701	105	< 0.4
3915702	106	0.4
3915703	107	0.6
3915837	109	2.2
3915761	111	1.0
3915792	112	< 0.4
3915727	113	1.3
3915775	116	< 0.4
3915762	120	< 0.4
3915724	124	0.6
3915795	126	< 0.4
3915726	128	< 0.4
3915743	130	1.5
3915770	131	< 0.4
3915794	132	0.9
3915769	133	< 0.4
3915708	134	< 0.4
3915723	137	< 0.4
3915899	138	< 0.4
3915838	147	< 0.4
3915834	150	< 0.4
3915833	151	0.8
3915791	100C	< 0.4
3915782	100E	0.5
3925713	100F	< 0.4
3915741	102B	0.4
3915742	102C	< 0.4
3915839	115 and 117	0.9
3881197	140 (APR)	< 0.4
3881187	140 (APR)	< 0.4
3915840	140A (Platform) (MISSING)	--
3915764	140B	< 0.4
3881166	157 (Gym)	<0.4

Radon Testing Results		
Lucy V. Barnsley Elementary School		
Testing period: 11/12/18 - 11/15/18		
Kit Number	Room / Area	Result (pCi/L)
3881177	157 (Gym) (MISSING)	--
3915766	157A	0.7

Radon Testing Results		
Lucy V. Barnsley Elementary School		
Testing period: 11/12/18 - 11/15/18		
Kit Number	QC Type	Result (pCi/L)
3915712	6 (D)	< 0.4
3915721	106 (D)	0.6
3915778	102 (D)	< 0.4
3915836	130 (D)	1.1
3915714	126 (D)	0.5
3915728	120 (D)	0.4
3915710	101 (D)	< 0.4
3917304	Field Blank	< 0.4
3917303	Field Blank	< 0.4
3917302	Transit Blank	< 0.4
3917305	Office Blank	< 0.4

Table Notes:

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control

ATTACHMENT C

Laboratory Analytical Results

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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
14516 Nadine Drive
Rockville MD 20853

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
2393393	3915766	11/12/2018	8:59 am	11/15/2018	7:55 am	Not indicated	0.7
2393394	3915777	11/12/2018	6:56 am	11/15/2018	6:57 am	Floor Lower level Room 003	< 0.4
2393395	3915713	11/12/2018	7:52 am	11/15/2018	7:26 am	Not Indicated	< 0.4
2393396	3915784	11/12/2018	7:10 am	11/15/2018	6:58 am	Floor Lower level Room 005	< 0.4
2393397	3915781	11/12/2018	7:04 am	11/15/2018	6:59 am	Floor Lower level Room 007	< 0.4
2393398	3915709	11/12/2018	7:06 am	11/15/2018	7:02 am	Floor Lower level Room 011	< 0.4
2393399	3915722	11/12/2018	7:09 am	11/15/2018	7:05 am	Floor Lower level Room 015	< 0.4
2393400	3915793	11/12/2018	7:11 am	11/15/2018	7:07 am	Floor Lower level Room 006	< 0.4
2393401	3915712	11/12/2018	7:12 am	11/15/2018	7:07 am	Floor Lower level Room 006	< 0.4
2393402	3915772	11/12/2018	7:20 am	11/15/2018	7:11 am	Floor Lower level Room 104	0.5
2393403	3915702	11/12/2018	7:24 am	11/15/2018	7:12 am	Floor Lower level Room 106	0.4

Comment: AMENDED REPORT for 3915766 and 3915713 on 1/8/19 to add the date and time the test began and ended. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, 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.

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NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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
14516 Nadine Drive
Rockville MD 20853

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2393404	3915721	11/12/2018 7:25 am	11/15/2018 7:12 am	Floor Main Level Room 106	0.6
2393405	3915701	11/12/2018 7:28 am	11/15/2018 7:15 am	Floor Main Level Room 105	< 0.4
2393406	3915703	11/12/2018 7:34 am	11/15/2018 7:16 am	Floor Main Level Room 107	0.6
2393407	3915837	11/12/2018 7:36 am	11/15/2018 7:17 am	Floor Main Level Room 109	2.2
2393408	3915729	11/12/2018 7:37 am	11/15/2018 7:18 am	Floor Main Level Room crawl space	3.0
2393409	3915708	11/12/2018 7:42 am	11/15/2018 7:20 am	Floor Main Level Room 134	< 0.4
2393410	3915899	11/12/2018 7:44 am	11/15/2018 7:21 am	Floor Main Level Room 138	< 0.4
2393411	3915723	11/12/2018 7:46 am	11/15/2018 7:22 am	Floor Main Level Room 137	< 0.4
2393412	3915792	11/12/2018 7:50 am	11/15/2018 7:24 am	Floor Main Level Room 112	< 0.4
2393413	3915782	11/12/2018 7:56 am	11/15/2018 7:27 am	Floor Main Level Room 100E	0.5
2393414	3915791	11/12/2018 7:58 am	11/15/2018 7:28 am	Floor Main Level Room 100C	< 0.4

Comment: AMENDED REPORT for 3915766 and 3915713 on 1/8/19 to add the date and time the test began and ended. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, AccuStar Labs

Disclaimer:

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NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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
14516 Nadine Drive
Rockville MD 20853

Log Number	Device Number	Test Exposure Duration:		Area Tested	Result pCi/L
2393415	3915725	11/12/2018 8:00 am	11/15/2018 7:30 am	Floor Main Level Room 100	< 0.4
2393416	3915733	11/12/2018 8:02 am	11/15/2018 7:32 am	Floor Main Level Room 102	< 0.4
2393417	3915778	11/12/2018 8:02 am	11/15/2018 7:33 am	Floor Main Level Room 102	< 0.4
2393418	3915741	11/12/2018 8:05 am	11/15/2018 7:34 am	Floor Main Level Room 102B	0.4
2393419	3915742	11/12/2018 8:07 am	11/15/2018 7:34 am	Floor Main Level Room 102C	< 0.4
2393420	3915761	11/12/2018 8:11 am	11/15/2018 7:37 am	Floor Main Level Room 111	1.0
2393421	3915727	11/12/2018 8:13 am	11/15/2018 7:39 am	Floor Main Level Room 113	1.3
2393422	3915743	11/12/2018 8:17 am	11/15/2018 7:40 am	Floor Main Level Room 130	1.5
2393423	3915836	11/12/2018 8:17 am	11/15/2018 7:40 am	Floor Main Level Room 130	1.1
2393424	3915794	11/12/2018 8:20 am	11/15/2018 7:43 am	Floor Main Level Room 132	0.9
2393425	3915839	11/12/2018 8:22 am	11/15/2018 7:44 am	Floor Main Level Room 115 and 117	0.9

Comment: AMENDED REPORT for 3915766 and 3915713 on 1/8/19 to add the date and time the test began and ended. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, 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.

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NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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
14516 Nadine Drive
Rockville MD 20853

Log Number	Device Number	Test Exposure Duration:				Area Tested	Result pCi/L
2393426	3915795	11/12/2018	8:24 am	11/15/2018	7:46 am	Floor Main Level Room 126	< 0.4
2393427	3915714	11/12/2018	8:24 am	11/15/2018	7:46 am	Floor Main Level Room 126	0.5
2393428	3915724	11/12/2018	8:32 am	11/15/2018	7:48 am	Floor Main Level Room 124	0.6
2393429	3915726	11/12/2018	8:35 am	11/15/2018	7:49 am	Floor Main Level Room 128	< 0.4
2393430	3915762	11/12/2018	8:39 am	11/15/2018	7:50 am	Floor Main Level Room 120	< 0.4
2393431	3915728	11/12/2018	8:39 am	11/15/2018	7:50 am	Floor Main Level Room 120	0.4
2393432	3915770	11/12/2018	8:42 am	11/15/2018	7:52 am	Floor Main Level Room 131	< 0.4
2393433	3915769	11/12/2018	8:46 am	11/15/2018	7:53 am	Floor Main Level Room 133	< 0.4
2393434	3915775	11/12/2018	8:49 am	11/15/2018	7:54 am	Floor Main Level Room 116	< 0.4
2393435	3915833	11/12/2018	9:32 am	11/15/2018	7:57 am	Floor Main Level Room 151	0.8
2393436	3915834	11/12/2018	9:34 am	11/15/2018	7:58 am	Floor Main Level Room 150	< 0.4

Comment: AMENDED REPORT for 3915766 and 3915713 on 1/8/19 to add the date and time the test began and ended. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, 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.

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

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
14516 Nadine Drive
Rockville MD 20853

Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2393437	3915838	11/12/2018 9:38 am - 11/15/2018 7:59 am	Floor Main Level Room 147	< 0.4
2393438	3915764	11/12/2018 9:45 am - 11/15/2018 8:00 am	Floor Main Level Room 140B	< 0.4
2393439	3915776	11/12/2018 9:55 am - 11/15/2018 8:06 am	Floor Main Level Room 101	0.5
2393440	3915710	11/12/2018 9:55 am - 11/15/2018 8:10 am	Floor Main Level Room 101	< 0.4
2393441	3917304	11/12/2018 6:56 am - 11/15/2018 8:10 am	Field Blank	< 0.4
2393442	3917303	11/12/2018 6:56 am - 11/15/2018 8:10 am	Field Blank	< 0.4
2393443	3917302	11/12/2018 6:56 am - 11/15/2018 8:10 am	Transit Blank	< 0.4
2393444	3917305	11/12/2018 6:00 am - 11/15/2018 6:00 pm	Office Blank	< 0.4

Comment: AMENDED REPORT for 3915766 and 3915713 on 1/8/19 to add the date and time the test began and ended. A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/17/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, 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.

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

Laboratory Report for:

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

Property Tested: Project # 04481387-1


MCPS Radon Survey
Lucy Barnsley ES
14516 Nadine Drive
Rockville Maryland 20853 USA


Log Number	Device Number	Test Exposure	Duration:	Area Tested	Result
2404312	3881166	11/12/2018 9:25 am	11/15/2018 7:56 am	Floor Main Level Room 157 (Gym)	< 0.4 pCi/L

Comment: A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 12/08/2018 Date Logged: Date Analyzed: 12/10/2018 Date Reported: 01/02/2019

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, 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.

NELAC NY 11769
NRPP 103216 AL
NRSB ARL0017

EPA Method #402-R-92-004
Liquid Scintillation
NRPP Device Code 8088
NRSB Device Code 12193

Laboratory Report for:

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

Property Tested: Project # 04481387-1


MCPS Radon Survey
Lucy Barnsley ES
14516 Nadine Drive
Rockville MD 20853


Log Number	Device Number	Test Exposure Duration:	Area Tested	Result pCi/L
2393042	3881187	11/12/2018 9:52 am - 11/15/2018 8:03 am	Main Level Room 140 (APR)	<0.4
2393043	3881197	11/12/2018 9:52 am - 11/15/2018 8:03 am	Floor Main Level Room 140 (APR)	<0.4

Comment: A copy of this report was emailed to Intertek-PSI (VA).

Distributed by: Intertek-PSI (VA)

Date Received: 11/17/2018 Date Logged: 11/17/2018 Date Analyzed: 11/19/2018 Date Reported: 12/17/2018

Report Reviewed By: 

Report Approved By: 

Shawn Price, Director of Laboratory Operations, 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.

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:

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.

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. Arcola ES | 7. North Lake Center | 13. Cold Spring ES |
| 2. Glen Haven ES | 8. Barnsley ES | 14. Hoover MS |
| 3. Jackson Road | 9. Bayard Rustin ES | 15. Wayside ES |
| 4. Cashell ES | 10. Julius West MS | 16. English Manor |
| 5. Frost MS | 11. Rock Terrace HS | |
| 6. Meadow Hall ES | 12. Churchill HS | |

	Date	Initials
Radon Test Kits Deployed	11/12/2018	NL
Radon Test Kits Sampled	11/15/2018	NL
Radon Test Kits Shipped to Lab*	11/15/2018	NL
Radon Test Kits Received by Lab*	11/17/2018; 11/18/2018	NL

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



MCPS RADON TESTING

Executive Summary: Lucy V. Barnsley Elementary School

Date of Test Report:	3/2/2016 (Rev 1)
Round of Testing:	Initial Follow-up Post Remediation
# Rooms Tested:	29
# Rooms \geq 4.0 pCi/L:	0
Low Value:	< 0.3
High Value:	2.3

Project Status:

Initial testing completed; no further action at this time.



March 2, 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 # 12146341.20

Location: Lucy V. Barnsley Elementary School
14516 Nadine Drive
Rockville, MD 20853

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 Lucy V. Barnsley Elementary School, located at 14516 Nadine Drive in Rockville, Maryland 20853 (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 21, 2015 and deployed thirty-five (35) 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. Prior to sampling, KCI returned 1% of the test batch to the laboratory for analysis as lab transit blanks. 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 24, 2015 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		
Lucy V. Barnsley		
Test Period: 12/21/15-12/24/15		
Kit Number	Room / Area	Result
7713446	100	0.8
7713447	101	1.3
7713443	102	2.0
7713449	103	0.7
7713434	104	1.3
7713456	105	1.3
7713429	106	1.4
7713441	107	1.6
7713440	112	1.0
7713467	113	1.2
7713423	114	1.6
7713462	115	2.1
7713442	116	2.3
7713435	117	< 0.3
7713401	118	< 0.3
7713438	120	< 0.3
7713433	125	0.8
7713453	126	0.9
7713459	127	< 0.3
7713417	132	< 0.3
7713468	132	< 0.3
7713430	139	0.9
7713432	203	1.5
7713421	204	1.0
7713458	240	< 0.3
7713439	100A	0.9
7713445	100B	1.9
7713437	101B	1.0
7713452	139A	< 0.3
7713448	A.P.	0.5

Table Note:

* Missing or Compromised Sample

Radon Testing Results		
Lucy V. Barnsley		
Test Period: 12/21/15-12/24/15		
Kit Number	QC Type	Result
7713415	D (100)	1.0
7713436	D (100A)	1.1
7713407	D (120)	0.7
7713466	FB (101)	< 0.3
7707319	OB (0)	< 0.3

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

January 12, 2016
** LABORATORY ANALYSIS REPORT **

Radon test result report for:
LUCY V. BARNSLEY
MAIN

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
7707319	0	2015-12-22 @ 12:00 pm	2015-12-24 @ 12:00 pm	< 0.3	2015-12-29
7713415	100	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.0 ± 0.3	2015-12-29
7713446	100	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-29
7713436	100A	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.1 ± 0.4	2015-12-29
7713439	100A	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	0.9 ± 0.3	2015-12-29
7713445	100B	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.9 ± 0.4	2015-12-29
7713447	101	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	1.3 ± 0.4	2015-12-29
7713466	101	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7713437	101B	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.0 ± 0.3	2015-12-29
7713443	102	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	2.0 ± 0.4	2015-12-29
7713449	103	2015-12-21 @ 3:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-29
7713434	104	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.3 ± 0.3	2015-12-29
7713456	105	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.3 ± 0.4	2015-12-29
7713429	106	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.4 ± 0.3	2015-12-29
7713441	107	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.6 ± 0.4	2015-12-29
7713440	112	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.0 ± 0.3	2015-12-29
7713467	113	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.2 ± 0.3	2015-12-29
7713423	114	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.6 ± 0.4	2015-12-29
7713462	115	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	2.1 ± 0.4	2015-12-29
7713442	116	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	2.3 ± 0.4	2015-12-29
7713435	117	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7713401	118	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7713407	120	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	0.7 ± 0.3	2015-12-29
7713438	120	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7713433	125	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	0.8 ± 0.3	2015-12-29
7713453	126	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	0.9 ± 0.3	2015-12-29
7713459	127	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7713417	132	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7713468	132	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7713430	139	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	0.9 ± 0.3	2015-12-29
7713452	139A	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7713432	203	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.5 ± 0.4	2015-12-29
7713421	204	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	1.0 ± 0.3	2015-12-29
7713458	240	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	< 0.3	2015-12-29
7713448	A.P.	2015-12-21 @ 4:00 pm	2015-12-24 @ 11:00 am	0.5 ± 0.3	2015-12-29

December
29,
2015

****LABORATORY ANALYSIS
REPORT ****

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

December
23,
2015

**LABORATORY ANALYSIS
REPORT ****

Spike Sample Laboratory Results

Radon test result report for:

MCPS

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 173224

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

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

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

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

7706211, 7706366, _____

7706380, 7706381 _____

F3 Left

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

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

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

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

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

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

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



Chain of Custody

Project Name: MCPS Radon Phase II

School Names:

- | | | |
|---------------------------|-----------------------------|---------------------------|
| 1. Bannockburn ES | 11. Sherwood HS | 21. Fairland ES |
| 2. Walt Whitman HS | 12. Hadley Farms | 22. Cannon Road ES |
| 3. Walter Johnson HS | 13. S. Christa McAuliffe ES | 23. Richard Montgomery HS |
| 4. North Chevy Chase ES | 14. Ronald A. McNair ES | 24. Brooke Grove ES |
| 5. Piney Branch ES | 15. MLK MS | 25. Belmont ES |
| 6. Forest Knolls ES | 16. Ashburton ES | 26. Emory Grove |
| 7. Newport Mill MS | 17. Bradley Hills ES | 27. Clarksburg HS |
| 8. Broad Acres ES | 18. Flora M. Singer ES | 28. Clarksburg ES |
| 9. Briggs Chaney MS | 19. Woodlin ES | 29. John T. Baker MS |
| 10. Blair G. Ewing Center | 20. Montgomery Knolls ES | |

	Date	Initials
Radon Test Kits Deployed	12/21/2015	JM
Radon Test Kits Collected	12/24/2015	JM
Radon Test Kits Shipped to Lab*	12/24/2015	JM
Radon Test Kits Received by Lab*	12/28/2015	JM

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