



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

|                          |                                                                                                                                                    |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name                | Pine Crest Elementary School                                                                                                                       |
| Date of Test Report      | 6/1/2022                                                                                                                                           |
| Round of Testing         | Initial<br>Follow-up<br>Post Remediation<br>2 Year Testing<br>5 Year Testing<br>HVAC Upgrade<br>Window Replacement<br>New Addition<br>New Facility |
| # Rooms Tested           | 1                                                                                                                                                  |
| # Rooms $\geq$ 4.0 pCi/L | 0                                                                                                                                                  |
| Lowest Value             | <0.3 pCi/L                                                                                                                                         |
| Highest Value            | 1.2 pCi/L                                                                                                                                          |

**Project Status**

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



June 1, 2022

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

Re: **Radon Testing Services**  
KCI Job # 122108316

Location: Pine Crest Elementary School  
201 Woodmoor Dr.  
Silver Spring, MD 20901

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 Pine Crest Elementary School, located at 201 Woodmoor Dr. Silver Spring, MD 20901 (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](http://www.epa.gov/radon).

KCI visited the site on April 19, 2022 and deployed four (4) 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 sampled the following locations during this follow-up test:

1. Rooms with missing test kits from the Radon 2022 testing period (i.e. test kit was deployed but not recovered),
2. Rooms with invalidated test kits from the Radon 2022 testing period (e.g. an open window in the room or disturbed test kit),
3. Rooms which were locked/inaccessible during the Radon 2022 testing period,
4. Rooms with elevated radon results (i.e.  $\geq 3.5$  pCi/L),
5. Rooms previously tested for radon but not tested in Radon 2022, and
6. Additional rooms that require testing (if applicable.)

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 April 22, 2022 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:**

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

KCI recorded observations of the following conditions in each room 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 low temperatures were in the low 40°Fs and high temperatures ranged from the low 60°Fs to the mid 80°Fs. Maximum sustained winds ranged from 0-30 miles per hour. Average humidity was around 49% with 0.03 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       |             |        |
|--------------------------------------|-------------|--------|
| Pine Crest ES RT                     |             |        |
| Test Period: 04/19/2022 - 04/22/2022 |             |        |
|                                      |             |        |
| Kit Number                           | Room / Area | Result |
| 11139392                             | GYM         | < 0.3  |
| 11139393                             | GYM         | 1.1    |
| 11139394                             | GYM         | 0.9    |
| 11139400                             | GYM         | 1.2    |



| Table 2- Radon Testing Results       |         |              |        |
|--------------------------------------|---------|--------------|--------|
| Pine Crest ES RT                     |         |              |        |
| Test Period: 04/19/2022 - 04/22/2022 |         |              |        |
|                                      |         |              |        |
| Kit Number                           | QC Type | Room / Area  | Result |
| 11139393                             | D       | Gym          | 1.1    |
| 11139392                             | FB      | Gym          | < 0.3  |
| 11139882                             | OB      | OFFICE BLANK | < 0.3  |
| 11139881                             | TB      | TRAVEL BLANK | < 0.3  |



# ATTACHMENT C

## Laboratory Analytical Results

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April 25, 2022

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

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| <b>Kit #</b> | <b>Room Id</b> | <b>Started</b>        | <b>Ended</b>         | <b>pCi/L</b> | <b>Analyzed</b> |
|--------------|----------------|-----------------------|----------------------|--------------|-----------------|
| 11139392     | GYM            | 2022-04-19 @ 12:00 pm | 2022-04-22 @ 9:00 am | < 0.3        | 2022-04-25      |
| 11139393     | GYM            | 2022-04-19 @ 12:00 pm | 2022-04-22 @ 9:00 am | 1.1 ± 0.3    | 2022-04-25      |
| 11139394     | GYM            | 2022-04-19 @ 12:00 pm | 2022-04-22 @ 9:00 am | 0.9 ± 0.3    | 2022-04-25      |
| 11139400     | GYM            | 2022-04-19 @ 12:00 pm | 2022-04-22 @ 9:00 am | 1.2 ± 0.3    | 2022-04-25      |

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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 204620

NOMINAL Conditions: Radon Conc 27.0 pCi/L Rel. Hum 50.1 % Temp. 70.0 F

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0705 Time Stop: 0705 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (5) Char Bags - Device No.'s: \_\_\_\_\_

11139367, 11139368, 11139371, \_\_\_\_\_

11139710, 11139717 \_\_\_\_\_

E3 Right

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

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March 30, 2022

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within  $\pm 25\%$  of the chamber's reference value (25.7 pCi/L).

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| <b>Kit #</b> | <b>Room Id</b> | <b>Started</b>       | <b>Ended</b>         | <b>pCi/L</b>   | <b>Analyzed</b> |
|--------------|----------------|----------------------|----------------------|----------------|-----------------|
| 11139367     | SK1            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 25.9 $\pm$ 2.1 | 2022-03-30      |
| 11139368     | SK2            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 23.9 $\pm$ 2.0 | 2022-03-30      |
| 11139371     | SK3            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 25.7 $\pm$ 2.1 | 2022-03-30      |
| 11139710     | SK4            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 26.4 $\pm$ 2.1 | 2022-03-30      |
| 11139717     | SK5            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 24.6 $\pm$ 2.0 | 2022-03-30      |

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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 – April 2022 Schools – Retesting

Name of Schools:

1. Pine Crest ES
2. Montgomery Knolls ES
3. Poolesville ES
4. Cloverly ES

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|                                  | Date       | Initials |
|----------------------------------|------------|----------|
| Radon Test Kits Deployed         | 04/19/2022 | BMM      |
| Radon Test Kits Collected        | 04/22/2022 | BMM      |
| Radon Test Kits Shipped to Lab*  | 04/22/2022 | BMM      |
| Radon Test Kits Received by Lab* | 04/25/2022 | BMM      |

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



**MCPS RADON TESTING – EXECUTIVE SUMMARY**

|                          |                                                                                                                                                    |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Name                | Pine Crest Elementary School                                                                                                                       |
| Date of Test Report      | 4/26/2022                                                                                                                                          |
| Round of Testing         | Initial<br>Follow-up<br>Post Remediation<br>2 Year Testing<br>5 Year Testing<br>HVAC Upgrade<br>Window Replacement<br>New Addition<br>New Facility |
| # Rooms Tested           | 52                                                                                                                                                 |
| # Rooms $\geq$ 4.0 pCi/L | 1                                                                                                                                                  |
| Lowest Value             | <0.3 pCi/L                                                                                                                                         |
| Highest Value            | 4.5 pCi/L                                                                                                                                          |

Project Status:

Initial testing completed; Missing, elevated, or compromised samples need re-sampling





April 26, 2022

Brian T. Croyle, PG, CHMM  
Environmental Specialist  
Montgomery County Public Schools  
Gaithersburg, MD 20879

Re: **Radon Testing Services**  
KCI Job # 122108316

Location: Pine Crest Elementary School  
201 Woodmoor Dr.  
Silver Spring, MD 20901

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 Pine Crest ES, located at 201 Woodmoor Dr. Silver Spring, MD 20901 (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](http://www.epa.gov/radon).

KCI visited the site on March 1, 2022 and deployed fifty nine (59) 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 March 4, 2022 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:**

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentration levels in 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 low temperatures were in the 20s and high temperatures ranged from the high 50s to the low 60s Fahrenheit. Maximum sustained winds ranged from 9-17 miles per hour. Average humidity was around 40% with 0 inches of precipitation (rain) was recorded during testing period.

**Results:**

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

The results of the radon test analysis indicated the following:

| Radon Concentration | Room             | Result |
|---------------------|------------------|--------|
| ≥4.0 pCi/L          | Gym              | 4.5    |
| <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       |                        |        |
|--------------------------------------|------------------------|--------|
| Pine Crest ES                        |                        |        |
| Test Period: 03/01/2022 - 03/04/2022 |                        |        |
| Kit Number                           | Room / Area            | Result |
| 11114181                             | 1                      | < 0.3  |
| 11114192                             | 1                      | 1.3    |
| 11114191                             | 2                      | 1.6    |
| 11132781                             | 3                      | 1.0    |
| 11114196                             | 4                      | 1.0    |
| 11132771                             | 6                      | 1.1    |
| 11132799                             | 6                      | 1.0    |
| 11132780                             | 7                      | 0.9    |
| 11132779                             | 8                      | < 0.3  |
| 11114177                             | 9                      | 0.9    |
| 11114189                             | 10                     | 0.9    |
| 11132787                             | 12                     | < 0.3  |
| 11133728                             | 14                     | < 0.3  |
| 11133721                             | 26                     | 0.8    |
| 11132798                             | 30                     | < 0.3  |
| 11132800                             | 121                    | 1.6    |
| 11132786                             | 123                    | 2.8    |
| 11114175                             | 128                    | 2.0    |
| 11133735                             | 130                    | 1.3    |
| 11132789                             | 132                    | 1.3    |
| 11132790                             | 133                    | 2.1    |
| 11132785                             | 134                    | 3.3    |
| 11132793                             | 135                    | 1.4    |
| 11132783                             | 136                    | 2.2    |
| 11132784                             | 136                    | 2.1    |
| 11132774                             | 138                    | < 0.3  |
| 11133734                             | 138                    | 1.4    |
| 11132777                             | 140                    | 1.5    |
| 11132782                             | 142                    | 1.4    |
| 11132791                             | 230                    | 0.8    |
| 11114185                             | 11 MEDIA               | 0.7    |
| 11132788                             | 13 LINKAGES            | 1.8    |
| 11133741                             | 13 LINKAGES            | 1.5    |
| 11132794                             | BUILDING SERVICES 140A | 0.9    |
| 11114179                             | CALMING ROOM           | 1.0    |
| 11114187                             | CALMING ROOM           | 1.2    |
| 11114183                             | CONFERENCE             | 0.7    |
| 11133727                             | COVID TRIAGE           | 1.0    |
| 11132772                             | GYM                    | 4.5    |
| 11132778                             | GYM                    | 1.6    |
| 11114176                             | GYM OFFICE             | 1.5    |
| 11114194                             | HEALTH                 | 0.6    |

| Table 1- Radon Testing Results       |                   |        |
|--------------------------------------|-------------------|--------|
| Pine Crest ES                        |                   |        |
| Test Period: 03/01/2022 - 03/04/2022 |                   |        |
| Kit Number                           | Room / Area       | Result |
| 11114198                             | HEALTH            | 0.8    |
| 11114186                             | IT SPEC OFFICE    | < 0.3  |
| 11132795                             | KITCHEN OFFICE    | 1.0    |
| 11114200                             | LOUNGE            | 0.9    |
| 11114178                             | MAIN OFFICE       | 1.2    |
| 11114195                             | MEDIA BOOK ROOM   | 0.8    |
| 11114188                             | MEDIA CENTER      | < 0.3  |
| 11114199                             | MEDIA CENTER      | < 0.3  |
| 11133729                             | MULTIPURPOSE ROOM | 0.6    |
| 11133733                             | MULTIPURPOSE ROOM | 0.7    |
| 11114184                             | OPEN OFFICE       | 0.7    |
| 11114193                             | PCC               | 0.6    |
| 11114180                             | PRINCIPAL         | 0.5    |
| 11114190                             | PRINT ROOM        | < 0.3  |
| 11132797                             | STAGE             | < 0.3  |
| 11114197                             | TELEPHONE         | 1.1    |
| 11114182                             | WORKROOM          | 0.6    |



| Table 2- Radon Testing Results       |         |              |        |
|--------------------------------------|---------|--------------|--------|
| Pine Crest ES                        |         |              |        |
| Test Period: 03/01/2022 - 03/04/2022 |         |              |        |
| Kit Number                           | QC Type | Room / Area  | Result |
| 11114198                             | D       | Health       | 0.8    |
| 11114179                             | D       | Calming Room | 1.0    |
| 11114181                             | FB      | 1            | < 0.3  |
| 11132799                             | D       | 6            | 1.0    |
| 11132784                             | D       | 136          | 2.1    |
| 11132774                             | FB      | 138          | < 0.3  |
| 11133741                             | D       | 13 Linkages  | 1.5    |
| 11130861                             | OB      | OFFICE BLANK | < 0.3  |
| 11130854                             | TB      | TRAVEL BLANK | < 0.3  |



# ATTACHMENT C

## Laboratory Analytical Results

Radon test result report for:

| Kit #    | Room Id                | Started               | Ended                 | pCi/L     | Analyzed   |
|----------|------------------------|-----------------------|-----------------------|-----------|------------|
| 11114192 | 1                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 1.3 ± 0.3 | 2022-03-07 |
| 11114181 | 1                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | < 0.3     | 2022-03-07 |
| 11114189 | 10                     | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 0.9 ± 0.3 | 2022-03-07 |
| 11114185 | 11 MEDIA               | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 0.7 ± 0.3 | 2022-03-07 |
| 11132787 | 12                     | 2022-03-01 @ 10:00 am | 2022-03-04 @ 10:00 am | < 0.3     | 2022-03-07 |
| 11132800 | 121                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 1.6 ± 0.3 | 2022-03-07 |
| 11132786 | 123                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 2.8 ± 0.3 | 2022-03-07 |
| 11114175 | 128                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 2.0 ± 0.3 | 2022-03-07 |
| 11132788 | 13 LINKAGES            | 2022-03-01 @ 10:00 am | 2022-03-04 @ 9:00 am  | 1.8 ± 0.3 | 2022-03-07 |
| 11133741 | 13 LINKAGES            | 2022-03-01 @ 10:00 am | 2022-03-04 @ 9:00 am  | 1.5 ± 0.3 | 2022-03-07 |
| 11133735 | 130                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 1.3 ± 0.3 | 2022-03-07 |
| 11132789 | 132                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 1.3 ± 0.3 | 2022-03-07 |
| 11132790 | 133                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 2.1 ± 0.3 | 2022-03-07 |
| 11132785 | 134                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 3.3 ± 0.3 | 2022-03-07 |
| 11132793 | 135                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 1.4 ± 0.3 | 2022-03-07 |
| 11132784 | 136                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 2.1 ± 0.3 | 2022-03-07 |
| 11132783 | 136                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 2.2 ± 0.3 | 2022-03-07 |
| 11132774 | 138                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | < 0.3     | 2022-03-07 |
| 11133734 | 138                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 1.4 ± 0.3 | 2022-03-07 |
| 11133728 | 14                     | 2022-03-01 @ 10:00 am | 2022-03-04 @ 9:00 am  | < 0.3     | 2022-03-07 |
| 11132777 | 140                    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 1.5 ± 0.3 | 2022-03-07 |
| 11132782 | 142                    | 2022-03-01 @ 10:00 am | 2022-03-04 @ 10:00 am | 1.4 ± 0.3 | 2022-03-07 |
| 11114191 | 2                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 1.6 ± 0.3 | 2022-03-07 |
| 11132791 | 230                    | 2022-03-01 @ 10:00 am | 2022-03-04 @ 10:00 am | 0.8 ± 0.3 | 2022-03-07 |
| 11133721 | 26                     | 2022-03-01 @ 10:00 am | 2022-03-04 @ 10:00 am | 0.8 ± 0.3 | 2022-03-07 |
| 11132781 | 3                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 1.0 ± 0.3 | 2022-03-07 |
| 11132798 | 30                     | 2022-03-01 @ 10:00 am | 2022-03-04 @ 10:00 am | < 0.3     | 2022-03-07 |
| 11114196 | 4                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 1.0 ± 0.3 | 2022-03-07 |
| 11132799 | 6                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 1.0 ± 0.3 | 2022-03-07 |
| 11132771 | 6                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 1.1 ± 0.3 | 2022-03-07 |
| 11132780 | 7                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 0.9 ± 0.3 | 2022-03-07 |
| 11132779 | 8                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | < 0.3     | 2022-03-07 |
| 11114177 | 9                      | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 0.9 ± 0.3 | 2022-03-07 |
| 11132794 | BUILDING SERVICES 140A | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 0.9 ± 0.3 | 2022-03-07 |
| 11114179 | CALMING ROOM           | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 1.0 ± 0.3 | 2022-03-07 |
| 11114187 | CALMING ROOM           | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 1.2 ± 0.3 | 2022-03-07 |
| 11114183 | CONFERENCE             | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | 0.7 ± 0.3 | 2022-03-07 |

Radon test result report for:

| Kit #    | Room Id           | Started               | Ended                 | pCi/L     | Analyzed   |
|----------|-------------------|-----------------------|-----------------------|-----------|------------|
| 11133727 | COVID TRIAGE      | 2022-03-01 @ 10:00 am | 2022-03-04 @ 9:00 am  | 1.0 ± 0.3 | 2022-03-07 |
| 11132772 | GYM               | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 4.5 ± 0.4 | 2022-03-07 |
| 11132778 | GYM               | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 1.6 ± 0.3 | 2022-03-07 |
| 11114176 | GYM OFFICE        | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 1.5 ± 0.3 | 2022-03-07 |
| 11114198 | HEALTH            | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | 0.8 ± 0.3 | 2022-03-07 |
| 11114194 | HEALTH            | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | 0.6 ± 0.3 | 2022-03-07 |
| 11114186 | IT SPEC OFFICE    | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | < 0.3     | 2022-03-07 |
| 11132795 | KITCHEN OFFICE    | 2022-03-01 @ 10:00 am | 2022-03-04 @ 10:00 am | 1.0 ± 0.3 | 2022-03-07 |
| 11114200 | LOUNGE            | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | 0.9 ± 0.3 | 2022-03-07 |
| 11114178 | MAIN OFFICE       | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | 1.2 ± 0.3 | 2022-03-07 |
| 11114195 | MEDIA BOOK ROOM   | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 9:00 am  | 0.8 ± 0.3 | 2022-03-07 |
| 11114199 | MEDIA CENTER      | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | < 0.3     | 2022-03-07 |
| 11114188 | MEDIA CENTER      | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | < 0.3     | 2022-03-07 |
| 11133729 | MULTIPURPOSE ROOM | 2022-03-01 @ 10:00 am | 2022-03-04 @ 9:00 am  | 0.6 ± 0.3 | 2022-03-07 |
| 11133733 | MULTIPURPOSE ROOM | 2022-03-01 @ 10:00 am | 2022-03-04 @ 9:00 am  | 0.7 ± 0.3 | 2022-03-07 |
| 11114184 | OPEN OFFICE       | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | 0.7 ± 0.3 | 2022-03-07 |
| 11114193 | PCC               | 2022-03-01 @ 9:00 am  | 2022-03-04 @ 10:00 am | 0.6 ± 0.3 | 2022-03-07 |
| 11114180 | PRINCIPAL         | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | 0.5 ± 0.3 | 2022-03-07 |
| 11114190 | PRINT ROOM        | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | < 0.3     | 2022-03-07 |
| 11132797 | STAGE             | 2022-03-01 @ 10:00 am | 2022-03-04 @ 9:00 am  | < 0.3     | 2022-03-07 |
| 11114197 | TELEPHONE         | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | 1.1 ± 0.3 | 2022-03-07 |
| 11114182 | WORKROOM          | 2022-03-01 @ 8:00 am  | 2022-03-04 @ 9:00 am  | 0.6 ± 0.3 | 2022-03-07 |

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

NOMINAL Conditions: Radon Conc 27.0 pCi/L Rel. Hum 50.1 % Temp. 70.0 F

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0705 Time Stop: 0705 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (5) Char Bags - Device No.'s: \_\_\_\_\_

11139367, 11139368, 11139371, \_\_\_\_\_

11139710, 11139717 \_\_\_\_\_

E3 light

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_ Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_ Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: \_\_\_\_\_ Device No.'s: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

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March 30, 2022

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within  $\pm 25\%$  of the chamber's reference value (25.7 pCi/L).

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| <b>Kit #</b> | <b>Room Id</b> | <b>Started</b>       | <b>Ended</b>         | <b>pCi/L</b>   | <b>Analyzed</b> |
|--------------|----------------|----------------------|----------------------|----------------|-----------------|
| 11139367     | SK1            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 25.9 $\pm$ 2.1 | 2022-03-30      |
| 11139368     | SK2            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 23.9 $\pm$ 2.0 | 2022-03-30      |
| 11139371     | SK3            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 25.7 $\pm$ 2.1 | 2022-03-30      |
| 11139710     | SK4            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 26.4 $\pm$ 2.1 | 2022-03-30      |
| 11139717     | SK5            | 2022-03-18 @ 7:00 am | 2022-03-21 @ 7:00 am | 24.6 $\pm$ 2.0 | 2022-03-30      |

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

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March 30, 2022

**\*\* LABORATORY ANALYSIS REPORT \*\***

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Radon test result report for:

**RSH  
MAIN**

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| <b>Kit #</b> | <b>Room Id</b> | <b>Started</b>       | <b>Ended</b>         | <b>pCi/L</b> | <b>Analyzed</b> |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 11139726     | BASEMENT       | 2022-03-20 @ 8:00 am | 2022-03-23 @ 7:00 am | 0.9 ± 0.5    | 2022-03-30      |
| 11139725     | DINING         | 2022-03-20 @ 8:00 am | 2022-03-23 @ 7:00 am | < 0.3        | 2022-03-30      |

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## Radon Test Kit Chain of Custody

**Project Name:** MCPS Radon – March 2022 Schools

**Name of Schools:**

1. Newport Mill MS
2. Rock View ES
3. Eastern MS
4. Blair, Montgomery HS
5. Montgomery Knolls ES
6. Northwood HS
7. Oakview ES
8. Pine Crest ES
9. Arcola ES
10. Glenallen ES

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|                                  | Date       | Initials |
|----------------------------------|------------|----------|
| Radon Test Kits Deployed         | 03/01/2022 | PM       |
| Radon Test Kits Collected        | 03/04/2022 | PM       |
| Radon Test Kits Shipped to Lab*  | 03/04/2022 | PM       |
| Radon Test Kits Received by Lab* | 03/07/2022 | PM       |

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