

School Year: **24-25**

|                       |   |  |  |
|-----------------------|---|--|--|
| Facility:             | North Chevy Chase Elementary School   |  |  |
| Address:              | 3700 Jones Bridge Rd.   |  |  |
|                       | Chevy Chase, MD 20815   |  |  |
| Reason for Testing:   | Scheduled Re-Testing - <input checked="" type="checkbox"/> 2-year or <input type="checkbox"/> 5-year schedule<br><input type="checkbox"/> Clearance Testing (Post-Mitigation)<br><input checked="" type="checkbox"/> Building Envelope or HVAC Upgrades<br><input type="checkbox"/> New Construction – Addition or Facility |  |  |
| Current Radon Status: | <input checked="" type="checkbox"/> Active Mitigation (2-year regular schedule)<br><input type="checkbox"/> No Active Mitigation (5-year regular schedule)<br><input type="checkbox"/> Not Previously Tested (New Facility)   |  |  |
| Round of Testing:     | <input checked="" type="checkbox"/> Initial Testing -or- <input type="checkbox"/> Follow-up Testing   |  |  |
| Testing Status:       | <input checked="" type="checkbox"/> No Further Testing Needed -or- <input type="checkbox"/> Follow-Up Testing Required  |  |  |

## Conclusion (When Testing Status is - No Further Testing Needed)

| Mitigation -   | Facility Radon Status:   |                       |      |
|--|--|-----------------------|------|
| <input checked="" type="checkbox"/> Not Required<br><input type="checkbox"/> Required ( $\geq 4.0$ -pCi/L)<br>Rooms: | <input checked="" type="checkbox"/> No Change in Status<br><input type="checkbox"/> Active Mitigation (2-year regular schedule)<br><input type="checkbox"/> No Active Mitigation (5-year regular schedule) |                       |      |
| Number of Rooms Tested   | 52   | Lowest Value (pCi/L)  | <0.3 |
| Number of Rooms ( $\geq 4.0$ -pCi/L)   | 0  | Highest Value (pCi/L) | 2.5  |

**Instructions:** Submit one testing report form per-facility. Include the following as attachments:

Attachment 1- Summary Data Tables – containing the following: (see attached samples tables)

- Testing Results – lab/detector Identification, by room number/name (alpha-numeric order) as depicted on facility map/floor plan provided by the facility/school at the time of test device deployment;
- Summary Results – list of rooms by test result  $\geq 2.0$ -pCi/L;  $\geq 2.7$ -pCi/L;  $\geq 4.0$ -pCi/L; and  $\geq 8.0$ -pCi/L;
- QA/QC Results - (field blanks and duplicates) indicating location collected; trip and office blanks; and spike sample results;
- Invalid Measurement Locations – missed locations, missing and or damaged/compromised testing devices.

Attachment 2 – Laboratory Report(s)

Attachment 3 – Sampling Location Map(s) – indicating approximate location of samples, duplicates and blanks.

## Detector and Deployment

|   |   |   |
|---|---|---|
| Detector/Device Type:   | <input checked="" type="checkbox"/> Passive | <input checked="" type="checkbox"/> Charcoal Absorption (CAD) <input type="checkbox"/> Alpha Track (ATD) <input type="checkbox"/> Other |
|   | <input type="checkbox"/> Continuous         | <input type="checkbox"/> Electret ion Chamber (EIC) <input type="checkbox"/> Electronic Integration (EID)                               |
| Other—Specify here:   |   |   |
| Detector/Device Name:   | Air Chek – Radon Test Kits                  |   |
| Manufacturer:   | Radon Labs                                  |   |
| Person(s) Deploying or Retrieving Test Devices and certification number                   |   | Organization/Company  |
| Tyler McCleaf, CSP Cert. # 111004-RMP   |   | KCI Technologies, Inc.  |
|   |   |   |
|   |   |   |
| If noncertified individuals, the qualified measurement professional providing oversight - |   |   |

## Testing

|   |                        |   |  |   |
|---|------------------------|---|--|---|
| <input checked="" type="checkbox"/> Short-Term                    | Length of Test (days): | 3 | Date of Deployment and Retrieval (mm/dd/yy): | 1/27/2025   |
| <input type="checkbox"/> Long-Term                                |                        |   |  | 1/30/2025   |
| Does the test period include weekends, school breaks or holidays? |                        |   |  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| If “Yes” please explain/detail in the space below:                |                        |   |  |   |
|   |                        |   |  |   |
| Was HVAC operating under occupied conditions?                     |                        |   |  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| If “No” please explain/detail in the space below:                 |                        |   |  |   |
|   |                        |   |  |   |

**Testing** (continued)

| Round of Testing            | Detectors Deployed |           |                |           | Total |
|-----------------------------|--------------------|-----------|----------------|-----------|-------|
|                             | Ground-Contact     |           | Upper-Level(s) |           |       |
|                             | Initial            | Follow-Up | Initial        | Follow-Up |       |
| Test Locations <sup>1</sup> | 51                 | 0         | 1              | 0         | 52    |
| Duplicates <sup>2</sup>     | 5                  | 0         | 0              | 0         | 5     |
| Field Blanks <sup>3</sup>   | 2                  | 0         | 0              | 0         | 2     |
| Grand Total                 |                    |           |                |           | 59    |

1 – include all detectors deployed (duplicates, field blanks); 1 detector per occupied (or intended to be occupied) ground-contact space ≤ 2,000-square feet; large spaces ≥ 2,000-square feet - 1 detector per 2,000-square feet or part thereof); and upper floors - 10% of all occupied or intended to be occupied rooms per floor (these are in addition to ground contact locations)

2 - 10% of all locations tested, per floor

3 – 5% of all locations tested, per floor

**Quality Assurance / Quality Control (QA/QC)**

A Quality Assurance plan that is consistent with ANSI/AARST MS-QA (Radon Measurement Systems Quality Assurance) was submitted under separate cover, and is available to review at the MCPS Radon Testing and Mitigation Program website. The following number of QA/QC samples are associated this facility.

| Round of Testing              | QA/QC Samples  |           | Total |
|-------------------------------|----------------|-----------|-------|
|                               | Initial        | Follow-Up |       |
| Spikes <sup>1</sup>           | Not applicable |           | 10    |
| Trip Blanks <sup>2</sup>      | 1              | 0         | 1     |
| Office Blanks <sup>3, 4</sup> | 1              | 0         | 1     |
|                               |                |           | 12    |

1 - 3% of EIC detectors; and 3% from each LOT of CAD and ATD detectors; a maximum of 6-spiked measurements per month for both EIC detectors and each LOT of CAD and ATD detectors.

2 – One per shipping container from start of detector deployment

3 – One per facility tested as devices are removed/allocated from the storage location for deployment;

4 - One additional blank, analyzed prior to deployment, for storage locations that have not been evaluated or monitored, for detectors that have been stored for more than 30-day durations.

**Quality Assurance / Quality Control** (continued)

|   |   |
|---|---|
| Spike Sample Lab Results. Measured values are satisfactory, i.e., within $\pm 25\%$ of the chamber's reference value?                     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   |
| Quality Control measurements comply with QA/QC requirements in the submitted testing organization's/company's QA plan?                    | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No   |
| <b>Round of Testing</b>   | <b>Initial</b> <b>Follow-Up</b>   |
| All Field, Trip and Office Blanks are $\leq$ (less than or equal to) to the Method Detection Limit?                                       | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> No <input checked="" type="checkbox"/> No |
| For all Duplicate Samples <sup>1</sup> , the higher value is $\leq 2x$ the lower value?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> No <input checked="" type="checkbox"/> No |
| For all Duplicate Samples <sup>1</sup> , Relative Percent Difference(s) (RPD) <sup>2</sup> are less than the Warning Level <sup>3</sup> ? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> No <input checked="" type="checkbox"/> No |
| For all Duplicate Samples <sup>1</sup> , Relative Percent Difference(s) (RPD) <sup>2</sup> are less than the Control Level <sup>3</sup> ? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No<br><input type="checkbox"/> No <input checked="" type="checkbox"/> No |

1 – Duplicate Control – a “NO” response constitute a control failure and the space/location represented by the duplicate sample becomes an invalid measurement location and should be listed in the “Invalid Measurement Locations” Table attached to this report.

2 - The objective of duplicate tests is to assess the precision error of the measurement method or, how well two side-by-side measurements agree or disagree. Precision involving duplicates is calculated by using Relative Percent Difference (RPD). RPD is equal to the difference between the higher test result minus the lower value test result divided by the average of the two duplicate test results, multiplied by 100. The RPD result is then compared to the warning and control limits.

3 - The Warning Level is set at the deviation from ideal performance that would be expected to occur by chance only 5% of the time, and Control Limits are set at that deviation from ideal performance that would be expected to occur by chance only 1% of the time. The Warning Level indicates a potential problem, which should be investigated. The Control Level indicates that the measurement system should be subject to corrective action.

The control and warning levels for duplicates, based on the averaged duplicate test result, are -

| Average concentration of the two duplicate test results | Warning Level | Control Level  |
|---|---------------|----------------|
| < 2.0-pCi/L   | 1-pCi/L       | Not applicable |
| Between 2.0 and 3.9-pCi/L                               | 50% RPD       | 67% RPD        |
| $\geq 4.0$ -pCi/L                                       | 28% RPD       | 36% RPD        |

## Summary of Test Results<sup>1</sup> and Determination of Valid Measurements<sup>2</sup>

| Round of Testing   | Ground-Contact |           | Upper-Level(s) |           | Total |
|--|----------------|-----------|----------------|-----------|-------|
|  | Initial        | Follow-Up | Initial        | Follow-Up |       |
| Number of test locations:  | 51             | 0         | 1              | 0         | 52    |
| Number of locations $\geq 8.0$ -pCi/L:                                 | 0              | 0         | 0              | 0         | 0     |
| Number of locations $\geq 4.0$ and $\leq 8$ -pCi/L:                    | 0              | 0         | 0              | 0         | 0     |
| Number of locations $\geq 2.7$ and $< 4$ -pCi/L:                       | 0              | 0         | 0              | 0         | 0     |
| Number of locations $\geq 2.0$ and $< 2.7$ -pCi/L:                     | 2              | 0         | 0              | 0         | 2     |
| Number of missing required test locations <sup>3</sup> :               | 0              | 0         | 0              | 0         | 0     |
| Number of failed duplicate control locations:                          | 0              | 0         | 0              | 0         | 0     |
| Percentage of missing test locations for the facility <sup>4,5</sup> : | 0              | 0         | 0              | 0         | 0     |

1 – for locations with multiple test results, report consistent with Section 7.2(When Two Test Results Disagree) and 8.1.2 (Averaging) of ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings;

2 - the allowance is to be calculated individually for Ground-Contact and Upper-Level(s) Test Locations;

3 – includes missed or inaccessible locations upon deployment or retrieval, damaged (not able to analyze) and missing detectors upon retrieval;

4 – if all valid measurements are  $< 4.0$ -pCi/L and the total number of test locations are  $\geq 18$ , there is an allowance of  $\leq 33\%$ . If less than 18 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023;

5 – if any valid measurements are  $\geq 4.0$ -pCi/L and the total number of test locations are  $\geq 20$ , there is an allowance of  $\leq 25\%$  of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023.

## Summary of Test Results<sup>1</sup> and Determination of Valid Measurements<sup>2</sup> (continued)

| Round of Testing  | Initial   | Follow-Up   |
|---|---|---|
| Were test devices deployed in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No                                | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No                                |
| Were valid measurements obtained in all occupied and intended to be occupied rooms in contact with the ground, and, if applicable, 10% of upper floor rooms?  | <input checked="" type="checkbox"/> Yes<br><input type="checkbox"/> No                                | <input type="checkbox"/> Yes<br><input checked="" type="checkbox"/> No                                |
| <b>If Yes to both above – then Testing Status – ‘No Further Testing Needed’ mark ‘NA’ below and complete Conclusions section</b>  |   |   |
| <b>If No to either above, were all results obtained under 4.0-pCi/L and were sufficient valid measurements obtained?<sup>1,2</sup></b><br><b>If Yes, then - ‘No Further Testing Needed’ complete Conclusion section on first page.</b><br><b>If No, then - ‘Follow-up Testing Required’ continue below.</b> | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input checked="" type="checkbox"/> NA | <input type="checkbox"/> Yes<br><input type="checkbox"/> No<br><input checked="" type="checkbox"/> NA |

1 – if all valid measurements are <4.0-pCi/L and the total number of test locations are ≥18, there is an allowance of ≤33%. If less than 18 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the allowance;

2 – if any valid measurements are ≥4.0-pCi/L and the total number of test locations are ≥20, there is an allowance of ≤25% of the total locations tested. If less than 20 test locations please review section 6.2 of the ANSI/AARST MA-MFLB 2023 – Conducting Measurements of Radon in Multifamily, School, Commercial and Mix-Use Buildings to determine the number the allowance.

## Follow-Up Testing

### Required –

- If an insufficient number (greater than the allowance provided above) of valid measurements were obtained during the initial round of testing (the “missing required test locations” in the table above);
- Any location test results ≥ 4.0-pCi/L;
- Any location where duplicates fail QC checks; and or
- At the discretion of MCPS IAQ Staff

| Reason for Follow-Up Testing        | Testing Procedure  | Follow-up Result      | Conclusion                        |
|-------------------------------------|--|-----------------------|-----------------------------------|
| Insufficient Number of Measurements | Follow same procedures as Initial Testing  | Not Applicable        | Follow Initial Testing procedures |
| Results $\geq 4.0$ -pCi/L           | Deploy two Short-term follow-up tests and required blanks and duplicates; Average the results of the two tests | $\geq 4.0$            | Mitigation Required               |
| Failed QC checks                    |  | $\geq 2.0$ and $<4.0$ | Consider Mitigation               |
|                                     |  | $<2.0$                | Mitigation Not Required           |

- **If follow-up testing identifies additional spaces requiring additional testing it will be performed as part of the ongoing follow-testing round.**

# **Attachment 1:**

## **Summary Data Tables**

| Table 1- Radon Testing Results      |             |        |
|-------------------------------------|-------------|--------|
| North Chevy Chase Elementary School |             |        |
| Test Period: 1/27/2025 - 1/30/2025  |             |        |
|                                     |             |        |
| Kit Number                          | Room / Area | Result |
| 11930903                            | 10          | 1.3    |
| 11930925                            | 12          | 1.5    |
| 11930912                            | 13          | 0.6    |
| 11930913                            | 14          | 1.1    |
| 11930909                            | 15          | 1.1    |
| 11930907                            | 16          | 1.3    |
| 11930908                            | 16          | 1.5    |
| 11930904                            | 17          | 0.8    |
| 11930926                            | 18          | < 0.3  |
| 11930941                            | 20          | < 0.3  |
| 11930951                            | 20          | < 0.3  |
| 11930945                            | 21          | < 0.3  |
| 11930938                            | 23          | < 0.3  |
| 11930946                            | 24          | < 0.3  |
| 11930922                            | 25          | < 0.3  |
| 11930930                            | 25          | < 0.3  |
| 11930943                            | 26          | < 0.3  |
| 11930937                            | 27          | < 0.3  |
| 11930964                            | 32          | 0.7    |
| 11930947                            | 33          | < 0.3  |
| 11930963                            | 33          | < 0.3  |
| 11930957                            | 34          | 2.4    |
| 11930956                            | 34          | 2.5    |
| 11930966                            | 103         | 1.5    |
| 11930973                            | 104         | 0.8    |
| 11930916                            | 105         | 1.5    |
| 11930960                            | 107         | 1.2    |
| 11930958                            | 107         | 1.3    |
| 11930965                            | 112         | 1.1    |
| 11930940                            | 114         | 1.4    |
| 11930961                            | 202         | 1.0    |
| 11930923                            | 110A        | 1.4    |
| 11930924                            | 118A        | 1.3    |
| 11930931                            | 118B        | 1.5    |
| 11930932                            | 118C        | 1.1    |
| 11930959                            | 118D        | 1.6    |
| 11930939                            | 118E        | 1.4    |



| <b>Table 1- Radon Testing Results</b>      |                   |        |
|--|-------------------|--------|
| <b>North Chevy Chase Elementary School</b> |                   |        |
| <b>Test Period: 1/27/2025 - 1/30/2025</b>  |                   |        |
|  |                   |        |
| Kit Number                                 | Room / Area       | Result |
| 11930935                                   | APR               | 0.6    |
| 11930934                                   | APR               | < 0.3  |
| 11930921                                   | BUILDING SERVICES | 0.6    |
| 11930914                                   | CONFERENCE        | 0.7    |
| 11930910                                   | COUNSELOR         | 0.8    |
| 11930949                                   | GYM               | < 0.3  |
| 11930950                                   | GYM               | < 0.3  |
| 11930955                                   | GYM OFFICE        | 1.2    |
| 11930954                                   | HEALTH            | 0.5    |
| 11930918                                   | MAIN OFFICE       | 0.9    |
| 11930944                                   | MEDIA             | 0.5    |
| 11930929                                   | MEDIA             | < 0.3  |
| 11930942                                   | MEDIA             | < 0.3  |
| 11930952                                   | MEDIA OFFICE      | < 0.3  |
| 11930953                                   | MEDIA WORK ROOM   | 0.7    |
| 11930906                                   | OFFICE 1          | < 0.3  |
| 11930905                                   | OFFICE 2          | 0.7    |
| 11930917                                   | PRINCIPAL         | 1.0    |
| 11930919                                   | SPEECH            | 0.8    |
| 11930911                                   | STAFF DEVELOPMENT | 1.1    |
| 11930936                                   | STAFF LOUNGE      | < 0.3  |
| 11930920                                   | WORK ROOM         | 0.8    |

[illegible]

| Table 3 - QC Radon Testing Results  |         |              |        |
|-------------------------------------|---------|--------------|--------|
| North Chevy Chase Elementary School |         |              |        |
| Test Period: 1/27/2025 - 1/30/2025  |         |              |        |
|                                     |         |              |        |
| Kit Number                          | QC Type | Room / Area  | Result |
| 11930908                            | D       | 16           | 1.5    |
| 11930951                            | D       | 20           | < 0.3  |
| 11930930                            | D       | 25           | < 0.3  |
| 11930947                            | FB      | 33           | < 0.3  |
| 11930956                            | D       | 34           | 2.5    |
| 11930960                            | D       | 107          | 1.2    |
| 11930929                            | FB      | Media        | < 0.3  |
| 11906885                            | OB      | OFFICE BLANK | < 0.3  |
| 11906899                            | TB      | TRAVEL BLANK | < 0.3  |

| Table 3a - Duplicate Worksheet / Data Validation   |          |             |  |       |                         |                 |                         |         |                                      |               |
|--|----------|-------------|--|-------|-------------------------|-----------------|-------------------------|---------|--------------------------------------|---------------|
| North Chevy Chase Elementary School  |          |             |  |       |                         |                 |                         |         |                                      |               |
| Test Period: 01/27/2025 - 01/30/2025   |          |             |  |       |                         |                 |                         |         |                                      |               |
|  |          |             |  |       |                         |                 |                         |         |                                      |               |
| Sample ID  |          |             | Duplicate Concentrations (pCi/L) and OC Checks |       |                         |                 |                         |         |                                      |               |
| Kit Numbers  |          | Room / Area | Higher   | Lower | Check #1<br>(Pass/Fail) | 2x the<br>Lower | Check #2<br>(Pass/Fail) | Average | Relative Percent<br>Difference (RPD) | Check #3      |
| 11930907   | 11930908 | 16          | 1.5  | 1.3   | ✓                       | 2.6             | PASS                    | 1.4     | <1-pCi/L                             | ✓             |
| 11930941   | 11930951 | 20          | 0.3  | 0.3   | ✓                       | 0.6             | PASS                    | 0.3     | <1-pCi/L                             | ✓             |
| 11930922   | 11930930 | 25          | 0.3  | 0.3   | ✓                       | 0.6             | PASS                    | 0.3     | <1-pCi/L                             | ✓             |
| 11930957   | 11930956 | 34          | 2.5  | 2.4   | ✓                       | 4.8             | PASS                    | 2.5     | 4.1%                                 | ✓             |
| 11930960   | 11930960 | 107         | 1.3  | 1.2   | ✓                       | 2.4             | PASS                    | 1.3     | <1-pCi/L                             | ✓             |
| <b>NOTES:</b><br>QC Check #1 - Data Entry<br>QC Check #2 - Higher duplicate concentration is < or = to 2x the Lower<br>QC Check #3 - Meets RPD Limits, by average duplicate concentration<br>- enter 2 if RPD is BELOW warning and control levels, AND passes QC Check 1 and 2<br>- enter 1 if RPD is ABOVE warning and BELOW control levels, AND passes QC Check 1 and 2<br>- enter 0 if RPD is ABOVE control level, or 'FAILS' QC Check 1 or 2 |          |             |  |       |                         |                 | Average (pCi/L)         |         | Warning Level                        | Control Level |
|  |          |             |  |       |                         |                 | < 2.0                   |         | 1-pCi/L                              | NA            |
|  |          |             |  |       |                         |                 | Between 2.0 and 3.9     |         | 50% RPD                              | 67% RPD       |
|  |          |             |  |       |                         |                 | ≥ 4.0                   |         | 28% RPD                              | 36% RPD       |

[illegible]

# **Attachment 2:**

## **Laboratory Reports**

Radon test result report for:**NORTH CHEVY CHASE ES  
MAIN**

| Kit #    | Room Id | Started               | Ended                 | pCi/L     | Analyzed   |
|----------|---------|-----------------------|-----------------------|-----------|------------|
| 11930903 | 10      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 1.3 ± 0.5 | 2025-02-04 |
| 11930966 | 103     | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.5 ± 0.5 | 2025-02-04 |
| 11930973 | 104     | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 0.8 ± 0.4 | 2025-02-04 |
| 11930916 | 105     | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.5 ± 0.5 | 2025-02-04 |
| 11930958 | 107     | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.3 ± 0.5 | 2025-02-04 |
| 11930960 | 107     | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.2 ± 0.4 | 2025-02-04 |
| 11930923 | 110A    | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.4 ± 0.5 | 2025-02-04 |
| 11930965 | 112     | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.1 ± 0.4 | 2025-02-04 |
| 11930940 | 114     | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.4 ± 0.4 | 2025-02-04 |
| 11930924 | 118A    | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.3 ± 0.4 | 2025-02-04 |
| 11930931 | 118B    | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.5 ± 0.5 | 2025-02-04 |
| 11930932 | 118C    | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.1 ± 0.4 | 2025-02-04 |
| 11930959 | 118D    | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.6 ± 0.5 | 2025-02-04 |
| 11930939 | 118E    | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.4 ± 0.5 | 2025-02-04 |
| 11930925 | 12      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 1.5 ± 0.5 | 2025-02-04 |
| 11930912 | 13      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.6 ± 0.4 | 2025-02-04 |
| 11930913 | 14      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 1.1 ± 0.4 | 2025-02-04 |
| 11930909 | 15      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 1.1 ± 0.5 | 2025-02-04 |
| 11930908 | 16      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 1.5 ± 0.5 | 2025-02-04 |
| 11930907 | 16      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 1.3 ± 0.5 | 2025-02-04 |
| 11930904 | 17      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.8 ± 0.4 | 2025-02-04 |
| 11930926 | 18      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930941 | 20      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930951 | 20      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930961 | 202     | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 1.0 ± 0.4 | 2025-02-04 |
| 11930945 | 21      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930938 | 23      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930946 | 24      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930922 | 25      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930930 | 25      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930943 | 26      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930937 | 27      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930964 | 32      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 0.7 ± 0.5 | 2025-02-04 |
| 11930963 | 33      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | < 0.3     | 2025-02-04 |
| 11930947 | 33      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | < 0.3     | 2025-02-04 |
| 11930956 | 34      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 2.5 ± 0.5 | 2025-02-04 |
| 11930957 | 34      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | 2.4 ± 0.5 | 2025-02-04 |

Radon test result report for:**NORTH CHEVY CHASE ES  
MAIN**

| Kit #    | Room Id           | Started               | Ended                 | pCi/L     | Analyzed   |
|----------|-------------------|-----------------------|-----------------------|-----------|------------|
| 11930934 | APR               | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930935 | APR               | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.6 ± 0.4 | 2025-02-04 |
| 11930921 | BUILDING SERVICES | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.6 ± 0.4 | 2025-02-04 |
| 11930914 | CONFERENCE        | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.7 ± 0.4 | 2025-02-04 |
| 11930910 | COUNSELOR         | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.8 ± 0.4 | 2025-02-04 |
| 11930949 | GYM               | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | < 0.3     | 2025-02-04 |
| 11930950 | GYM               | 2025-01-27 @ 10:00 am | 2025-01-30 @ 10:00 am | < 0.3     | 2025-02-04 |
| 11930955 | GYM OFFICE        | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 1.2 ± 0.5 | 2025-02-04 |
| 11930954 | HEALTH            | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.5 ± 0.4 | 2025-02-04 |
| 11930918 | MAIN OFFICE       | 2025-01-27 @ 9:00 am  | 2025-01-30 @ 9:00 am  | 0.9 ± 0.4 | 2025-02-04 |
| 11930944 | MEDIA             | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.5 ± 0.4 | 2025-02-04 |
| 11930929 | MEDIA             | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930942 | MEDIA             | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930952 | MEDIA OFFICE      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930953 | MEDIA WORK ROOM   | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.7 ± 0.4 | 2025-02-04 |
| 11930906 | OFFICE 1          | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930905 | OFFICE 2          | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.7 ± 0.4 | 2025-02-04 |
| 11930917 | PRINCIPAL         | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 1.0 ± 0.4 | 2025-02-04 |
| 11930919 | SPEECH            | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.8 ± 0.4 | 2025-02-04 |
| 11930911 | STAFF DEVELOPMENT | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 1.1 ± 0.4 | 2025-02-04 |
| 11930936 | STAFF LOUNGE      | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | < 0.3     | 2025-02-04 |
| 11930920 | WORK ROOM         | 2025-01-27 @ 10:00 am | 2025-01-30 @ 9:00 am  | 0.8 ± 0.4 | 2025-02-04 |



February 4, 2025

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

Radon test result report for:

**OFFICE  
MAIN**

| Kit #    | Room Id | Started               | Ended                 | pCi/L | Analyzed   |
|----------|---------|-----------------------|-----------------------|-------|------------|
| 11906885 | O       | 2025-01-27 @ 11:00 am | 2025-01-30 @ 11:00 am | < 0.3 | 2025-02-04 |
| 11906899 | O       | 2025-01-28 @ 11:00 am | 2025-01-31 @ 11:00 am | < 0.3 | 2025-02-04 |

February 4, 2025

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

Radon test result report for:

**TRAVEL  
MAIN**

| Kit #    | Room Id | Started               | Ended                 | pCi/L | Analyzed   |
|----------|---------|-----------------------|-----------------------|-------|------------|
| 11906900 | T       | 2025-01-27 @ 11:00 am | 2025-01-30 @ 11:00 am | < 0.3 | 2025-02-04 |
| 11926699 | T       | 2025-01-28 @ 11:00 am | 2025-01-31 @ 11:00 am | < 0.3 | 2025-02-04 |

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 20001560

NOMINAL Conditions: Radon Conc 50.6 pCi/L Rel. Hum 50.6 % Temp. 70.8 F

Date Start: 12/14/24 Date Stop: 12/17/24 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0815 Time Stop: 0815 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (3) CHAR BAGS Device No.'s: \_\_\_\_\_

11477880, 11477883, 11477896 \_\_\_\_\_

B4 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

December 23, 2024

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

Radon test result report for:

**SK  
MAIN**

| Kit #    | Room Id | Started              | Ended                | pCi/L      | Analyzed   |
|----------|---------|----------------------|----------------------|------------|------------|
| 11477880 | SK1     | 2024-12-14 @ 8:00 am | 2024-12-17 @ 8:00 am | 52.0 ± 4.2 | 2024-12-23 |
| 11477883 | SK2     | 2024-12-14 @ 8:00 am | 2024-12-17 @ 8:00 am | 54.6 ± 4.4 | 2024-12-23 |
| 11477896 | SK3     | 2024-12-14 @ 8:00 am | 2024-12-17 @ 8:00 am | 45.5 ± 3.6 | 2024-12-23 |

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 20002919

NOMINAL Conditions: Radon Conc 7.0 pCi/L Rel. Hum 51.4 % Temp. 70.7 F

Date Start: 3/7/25 Date Stop: 3/10/25 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0832 Time Stop: 0832 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

Device No.'s: (7) CHAR BAGS Device No.'s: \_\_\_\_\_

11886401 thru 11886406,

11886410

G3 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 19, 2025

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

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Radon test result report for:

**QC**  
**MAIN**

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| Kit #    | Room Id | Started              | Ended                | pCi/L     | Analyzed   |
|----------|---------|----------------------|----------------------|-----------|------------|
| 11886401 | SK1     | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.8 ± 1.1 | 2025-03-19 |
| 11886405 | SK2     | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.1 ± 1.1 | 2025-03-19 |
| 11886406 | SK3     | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.7 ± 1.1 | 2025-03-19 |
| 11886403 | SK4     | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.9 ± 1.2 | 2025-03-19 |
| 11886404 | SK5     | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.6 ± 1.2 | 2025-03-19 |
| 11886410 | SK6     | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 7.0 ± 1.1 | 2025-03-19 |
| 11886402 | SK7     | 2025-03-07 @ 9:00 am | 2025-03-10 @ 9:00 am | 8.6 ± 1.2 | 2025-03-19 |

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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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Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing January 27<sup>th</sup> – January 30<sup>th</sup>, 2024

Name of Schools:

1. Robert Frost MS
2. Walter Johnson HS
3. North Chevy Chase ES
4. Somerset ES

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|                                  | Date       | Initials |
|----------------------------------|------------|----------|
| Radon Test Kits Deployed         | 01/27/2025 | DM       |
| Radon Test Kits Collected        | 01/30/2025 | DM       |
| Radon Test Kits Shipped to Lab*  | 01/31/2025 | DM       |
| Radon Test Kits Received by Lab* | 02/03/2025 | DM       |

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

### **MCPS RADON TESTING – EXECUTIVE SUMMARY**

|                          |  |
|--------------------------|--|
| Site Name                | North Chevy Chase Elementary School  |
| Date of Test Report      | 1/04/2023  |
| 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           | 55   |
| # Rooms $\geq 4.0$ pCi/L | 1  |
| Lowest Value             | <0.3 pCi/L   |
| Highest Value            | 4.3 pCi/L  |

Project Status:

1. Initial testing completed;
2. Mitigate Room 25





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

January 4, 2023

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

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

Location: North Chevy Chase Elementary School  
3700 Jones Bridge Rd.  
Chevy Chase, MD 20815

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 North Chevy Chase Elementary School, located at 3700 Jones Bridge Rd. Chevy Chase, MD 20815 (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 December 5, 2022 and deployed sixty-four (64) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on December 8, 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 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 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.

### **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          | 25               | 4.3    |
| <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       |             |        |
|--------------------------------------|-------------|--------|
| North Chevy Chase ES                 |             |        |
| Test Period: 12/05/2022 - 12/08/2022 |             |        |
|                                      |             |        |
| Kit Number                           | Room / Area | Result |
| 11287209                             | 10          | 0.8    |
| 11287202                             | 12          | 1.0    |
| 11287214                             | 13          | 1.4    |
| 11287219                             | 13          | 1.4    |
| 11287213                             | 14          | 1.4    |
| 11287220                             | 15          | 1.2    |
| 11287221                             | 16          | 1.9    |
| 11287218                             | 17          | 0.8    |
| 11287227                             | 18          | 0.6    |
| 11287222                             | 20          | < 0.3  |
| 11287235                             | 21          | 3.3    |
| 11287230                             | 22          | 1.2    |
| 11287236                             | 23          | 1.6    |
| 11287216                             | 24          | 1.6    |
| 11287223                             | 25          | 4.3    |
| 11287217                             | 26          | 2.4    |
| 11287231                             | 27          | 2.4    |
| 11287237                             | 27          | 2.6    |
| 11287234                             | 31          | 1.0    |
| 11287242                             | 31          | 1.0    |
| 11287245                             | 32          | 1.6    |
| 11287251                             | 32          | 1.7    |
| 11287239                             | 33          | 1.3    |
| 11287240                             | 34          | 1.7    |
| 11287247                             | 103         | 1.7    |
| 11287246                             | 104         | 1.5    |
| 11287253                             | 104         | 1.0    |
| 11287254                             | 105         | 1.9    |
| 11287267                             | 107         | 1.4    |
| 11287255                             | 112         | 1.4    |
| 11287256                             | 112         | < 0.3  |
| 11287258                             | 114         | < 0.3  |
| 11287268                             | 114         | 1.7    |
| 11287257                             | 208         | < 0.3  |
| 11287259                             | 110A        | 1.8    |
| 11287260                             | 118A        | 1.5    |
| 11287248                             | 118B        | 2.0    |
| 11287261                             | 118C        | 1.8    |
| 11287249                             | 118D        | 1.9    |
| 11287262                             | 118E        | 2.0    |
| 11287243                             | APR         | 1.2    |
| 11287244                             | APR         | 1.6    |

| Table 1- Radon Testing Results       |                     |        |
|--------------------------------------|---------------------|--------|
| North Chevy Chase ES                 |                     |        |
| Test Period: 12/05/2022 - 12/08/2022 |                     |        |
|                                      |                     |        |
| Kit Number                           | Room / Area         | Result |
| 11287224                             | BLDG SERVICE OFFICE | 1.2    |
| 11287201                             | CONFERENCE ROOM     | 2.3    |
| 11287210                             | COUNSELOR           | 1.2    |
| 11287250                             | GYM                 | 1.1    |
| 11287252                             | GYM                 | 0.9    |
| 11287241                             | GYM OFFICE          | 1.2    |
| 11287204                             | HEALTH              | 2.2    |
| 11287203                             | MAIN OFFICE         | 2.1    |
| 11287207                             | MEDIA               | 1.0    |
| 11287215                             | MEDIA               | 1.8    |
| 11287208                             | MEDIA OFFICE        | 1.5    |
| 11287229                             | MEDIA OFFICE        | 0.8    |
| 11287226                             | MEDIA WORKROOM      | 1.2    |
| 11287228                             | MEDIA WORKROOM      | 1.4    |
| 11287211                             | PRINCIPAL           | 2.4    |
| 11287206                             | SPEECH              | 1.6    |
| 11287212                             | STAFF DEVELOPMENT   | 2.1    |
| 11287232                             | STAFF LOUNGE        | 1.4    |
| 11287225                             | STAFF OFFICE 1      | 1.7    |
| 11287238                             | STAFF OFFICE 2      | 1.3    |
| 11287233                             | STAFF OFFICE 3      | 1.2    |
| 11287205                             | STAFF ROOM          | 1.1    |



| Table 2- Radon Testing Results   |         |                |        |
|----------------------------------|---------|----------------|--------|
| North Chevy Chase ES             |         |                |        |
| Test Period: 12/05/22 - 12/08/22 |         |                |        |
|                                  |         |                |        |
| Kit Number                       | QC Type | Room / Area    | Result |
| 11287219                         | D       | 13             | 1.4    |
| 11287237                         | D       | 27             | 2.6    |
| 11287242                         | FB      | 31             | 1.0    |
| 11287245                         | D       | 32             | 1.6    |
| 11287253                         | D       | 104            | 1.0    |
| 11287255                         | D       | 112            | 1.4    |
| 11287258                         | FB      | 114            | < 0.3  |
| 11287229                         | FB      | Media office   | 0.8    |
| 11287226                         | D       | Media workroom | 1.2    |
| 11133716                         | OB      | OFFICE BLANK   | < 0.3  |
| 11140129                         | TB      | TRAVEL BLANK   | < 0.3  |



## ATTACHMENT C

### Laboratory Analytical Results

Radon test result report for:**NORTH CHEVY CHASE ES  
MAIN**

| Kit #    | Room Id | Started               | Ended                 | pCi/L     | Analyzed   |
|----------|---------|-----------------------|-----------------------|-----------|------------|
| 11287209 | 10      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 0.8 ± 0.5 | 2022-12-14 |
| 11287247 | 103     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.7 ± 0.5 | 2022-12-14 |
| 11287246 | 104     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.5 ± 0.5 | 2022-12-14 |
| 11287253 | 104     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.0 ± 0.5 | 2022-12-14 |
| 11287254 | 105     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.9 ± 0.5 | 2022-12-14 |
| 11287267 | 107     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.4 ± 0.5 | 2022-12-14 |
| 11287259 | 110A    | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.8 ± 0.5 | 2022-12-14 |
| 11287255 | 112     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.4 ± 0.5 | 2022-12-14 |
| 11287256 | 112     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | < 0.3     | 2022-12-14 |
| 11287258 | 114     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | < 0.3     | 2022-12-14 |
| 11287268 | 114     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.7 ± 0.5 | 2022-12-14 |
| 11287260 | 118A    | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.5 ± 0.5 | 2022-12-14 |
| 11287248 | 118B    | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 2.0 ± 0.6 | 2022-12-14 |
| 11287261 | 118C    | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.8 ± 0.5 | 2022-12-14 |
| 11287249 | 118D    | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.9 ± 0.5 | 2022-12-14 |
| 11287262 | 118E    | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 2.0 ± 0.5 | 2022-12-14 |
| 11287202 | 12      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.0 ± 0.5 | 2022-12-14 |
| 11287219 | 13      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.4 ± 0.5 | 2022-12-14 |
| 11287214 | 13      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.4 ± 0.5 | 2022-12-14 |
| 11287213 | 14      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.4 ± 0.5 | 2022-12-14 |
| 11287220 | 15      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.2 ± 0.5 | 2022-12-14 |
| 11287221 | 16      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.9 ± 0.5 | 2022-12-14 |
| 11287218 | 17      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 0.8 ± 0.5 | 2022-12-14 |
| 11287227 | 18      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 0.6 ± 0.5 | 2022-12-14 |
| 11287222 | 20      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | < 0.3     | 2022-12-14 |
| 11287257 | 208     | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | < 0.3     | 2022-12-14 |
| 11287235 | 21      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 3.3 ± 0.6 | 2022-12-14 |
| 11287230 | 22      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.2 ± 0.5 | 2022-12-14 |
| 11287236 | 23      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.6 ± 0.6 | 2022-12-14 |
| 11287216 | 24      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.6 ± 0.5 | 2022-12-14 |
| 11287223 | 25      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 4.3 ± 0.8 | 2022-12-14 |
| 11287217 | 26      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 2.4 ± 0.6 | 2022-12-14 |
| 11287237 | 27      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 2.6 ± 0.6 | 2022-12-14 |
| 11287231 | 27      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 2.4 ± 0.6 | 2022-12-14 |
| 11287234 | 31      | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.0 ± 0.6 | 2022-12-14 |
| 11287242 | 31      | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.0 ± 0.6 | 2022-12-14 |
| 11287251 | 32      | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.7 ± 0.5 | 2022-12-14 |

Radon test result report for:**NORTH CHEVY CHASE ES  
MAIN**

| Kit #    | Room Id             | Started               | Ended                 | pCi/L     | Analyzed   |
|----------|---------------------|-----------------------|-----------------------|-----------|------------|
| 11287245 | 32                  | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.6 ± 0.5 | 2022-12-14 |
| 11287239 | 33                  | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.3 ± 0.5 | 2022-12-14 |
| 11287240 | 34                  | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.7 ± 0.5 | 2022-12-14 |
| 11287244 | APR                 | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.6 ± 0.5 | 2022-12-14 |
| 11287243 | APR                 | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.2 ± 0.5 | 2022-12-14 |
| 11287224 | BLDG SERVICE OFFICE | 2022-12-05 @ 10:00 am | 2022-12-08 @ 11:00 am | 1.2 ± 0.5 | 2022-12-14 |
| 11287201 | CONFERENCE ROOM     | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 2.3 ± 0.6 | 2022-12-14 |
| 11287210 | COUNSELOR           | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.2 ± 0.5 | 2022-12-14 |
| 11287252 | GYM                 | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 0.9 ± 0.5 | 2022-12-14 |
| 11287250 | GYM                 | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.1 ± 0.5 | 2022-12-14 |
| 11287241 | GYM OFFICE          | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.2 ± 0.5 | 2022-12-14 |
| 11287204 | HEALTH              | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 2.2 ± 0.5 | 2022-12-14 |
| 11287203 | MAIN OFFICE         | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 2.1 ± 0.5 | 2022-12-14 |
| 11287215 | MEDIA               | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.8 ± 0.5 | 2022-12-14 |
| 11287207 | MEDIA               | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.0 ± 0.5 | 2022-12-14 |
| 11287208 | MEDIA OFFICE        | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.5 ± 0.5 | 2022-12-14 |
| 11287229 | MEDIA OFFICE        | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 0.8 ± 0.5 | 2022-12-14 |
| 11287226 | MEDIA WORKROOM      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.2 ± 0.5 | 2022-12-14 |
| 11287228 | MEDIA WORKROOM      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.4 ± 0.5 | 2022-12-14 |
| 11287211 | PRINCIPAL           | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 2.4 ± 0.6 | 2022-12-14 |
| 11287206 | SPEECH              | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.6 ± 0.6 | 2022-12-14 |
| 11287212 | STAFF DEVELOPMENT   | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 2.1 ± 0.6 | 2022-12-14 |
| 11287232 | STAFF LOUNGE        | 2022-12-05 @ 10:00 am | 2022-12-08 @ 11:00 am | 1.4 ± 0.5 | 2022-12-14 |
| 11287225 | STAFF OFFICE 1      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 11:00 am | 1.7 ± 0.5 | 2022-12-14 |
| 11287238 | STAFF OFFICE 2      | 2022-12-05 @ 10:00 am | 2022-12-08 @ 11:00 am | 1.3 ± 0.5 | 2022-12-14 |
| 11287233 | STAFF OFFICE 3      | 2022-12-05 @ 11:00 am | 2022-12-08 @ 11:00 am | 1.2 ± 0.5 | 2022-12-14 |
| 11287205 | STAFF ROOM          | 2022-12-05 @ 10:00 am | 2022-12-08 @ 10:00 am | 1.1 ± 0.5 | 2022-12-14 |

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KC1 TECHNOLOGIES, INC Job Number 208343

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

Date Start: 12/24/22 Date Stop: 12/27/23 Date Start: \_\_\_\_\_ Date Stop: \_\_\_\_\_

Time Start: 0810 Time Stop: 0810 Time Start: \_\_\_\_\_ Time Stop: \_\_\_\_\_

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

11285109, 11285110, 11285101 \_\_\_\_\_

THRU 11285103 \_\_\_\_\_

BY CPT

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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December 29, 2022

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

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Radon test result report for:

**OFFICE**

**MA** MCPS - Spike Sample Lab Results. Measured values are satisfactory, i.e., within  $\pm 25\%$  of the chamber's reference value (34.7 pCi/L).

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

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

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## Radon Test Kit Chain of Custody

Project Name: MCPS Radon – April 2022 Schools – Retesting

Name of Schools:

1. Lynnbrook Center
2. Chevy Chase ES
3. North Chevy Chase ES
4. Wood Acres ES
5. Ashburton ES
6. Carderock Springs ES
7. North Bethesda MS
8. Brooke Grove ES

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|                                  | Date       | Initials |
|----------------------------------|------------|----------|
| Radon Test Kits Deployed         | 12/05/2022 | Bully    |
| Radon Test Kits Collected        | 12/08/2022 | Bully    |
| Radon Test Kits Shipped to Lab*  | 12/08/2022 | Bully    |
| Radon Test Kits Received by Lab* | 12/14/2022 | Bully    |

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



**RADON SCREENING SURVEY – FOLLOW-UP NORTH CHEVY CHASE ELEMENTARY  
SCHOOL**

3700 Jones Bridge Road, Chevy Chase, Maryland 20815

**EXECUTIVE SUMMARY**

|   |  |
|---|--|
| Date of Test Report:                                    | 3/7/16 Follow-Up                         |
| Round of Testing:                                       | Initial<br>Follow-up<br>Post Remediation |
| # Rooms Tested  | 4  |
| # Rooms $\geq$ 4.0 pCi/L:                               | 0  |
| Low Value:  | 0.6                                      |
| High Value:   | 1.7                                      |
| Confirmed Rooms $\geq$ 4.0 pCi/L US EPA<br>Action Level | 0  |

**Summary of Sampling Events  $\geq$  4.0 pCi/L**

| Room               | Result (pCi/L)<br>3/3/16 (Rev 1) Initial | Result (pCi/L)<br>3/7/16 Follow-Up | Average Result<br>(pCi/L) |
|--------------------|--|------------------------------------|---------------------------|
| 32                 | 5.0                                      | 1.7                                | 3.4                       |
| MAIN OFFICE        | 1.6 (tampered)                           | 0.8                                | 1.2                       |
| Principal's Office | missing                                  | 0.6                                | 0.6                       |
| MPR                | missing                                  | 1.4 (tampered)                     | 1.4                       |



## MCPS RADON TESTING

### Executive Summary: North Chevy Chase Elementary School

|                           |  |
|---------------------------|--|
| Date of Test Report:      | 3/7/2016                                 |
| Round of Testing:         | Initial<br>Follow-up<br>Post Remediation |
|                           |  |
| # Rooms Tested:           | 4  |
| # Rooms $\geq$ 4.0 pCi/L: | 0  |
|                           |  |
| Low Value:                | 0.6                                      |
| High Value:               | 1.7                                      |

#### Project Status:

Retesting completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.

Retesting completed; missing or compromised samples need re-test.



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

March 7, 2016

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

Re: **Radon Testing Services**  
KCI Job # 12146341.28

Location: North Chevy Chase Elementary School  
3700 Jones Bridge Road  
Chevy Chase, MD 20815

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 North Chevy Chase Elementary School, located at 3700 Jones Bridge Road in Chevy Chase, Maryland 20815 (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](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on February 8, 2016 and deployed six (6) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on February 11, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

### **Evaluation of Testing Conditions:**

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

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:

| <b>Radon Concentration</b>         | <b>Room</b>      | <b>Result</b> |
|------------------------------------|------------------|---------------|
| <b><math>\geq 4.0</math> pCi/L</b> | none             | n/a           |
| <b><math>&lt; 4.0</math> pCi/L</b> | See Attachment B |               |

Notes:

D- Duplicate sample

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

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

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

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

## ATTACHMENT B

### Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank\*

PM- Project Manager

QC- Quality Control

\*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 8 testing. Office blanks were not submitted under each school individually.



| Radon Testing Results               |                  |        |
|-------------------------------------|------------------|--------|
| North Chevy Chase Elementary School |                  |        |
| Test Period: 02/08/16-02/11/16      |                  |        |
|                                     |                  |        |
| Kit Number                          | Room / Area      | Result |
| 7730299                             | 32               | 1.7    |
| 7730295                             | MAIN OFFICE      | 0.8    |
| 7730297                             | * MPR (tampered) | 1.4    |
| 7730296                             | PRINC OFF        | 0.6    |

Table Note:

\* Missing or Compromised Sample

| Radon Testing Results               |                    |        |
|-------------------------------------|--------------------|--------|
| North Chevy Chase Elementary School |                    |        |
| Test Period: 02/08/16-02/11/16      |                    |        |
| Kit Number                          | QC Type            | Result |
| 7730298                             | * D (MPR:tampered) | 1.3    |
| 7730300                             | FB (32)            | < 0.3  |

Table Note:

\* Missing or Compromised Sample

## ATTACHMENT C

### Laboratory Analytical Results

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February 25, 2016

**LABORATORY ANALYSIS  
REPORT \*\***

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Radon test result report for:  
**NORTH CHEVY CHASE ELEMENTARY SCHOOL  
MAIN**

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| Kit #   | Room Id     | Started               | Ended                | pCi/L     | Analyzed   |
|---------|-------------|-----------------------|----------------------|-----------|------------|
| 7730299 | 32          | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 1.7 ± 0.4 | 2016-02-15 |
| 7730300 | 32          | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | < 0.3     | 2016-02-15 |
| 7730295 | MAIN OFFICE | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 0.8 ± 0.3 | 2016-02-15 |
| 7730297 | MPR         | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 1.4 ± 0.4 | 2016-02-15 |
| 7730298 | MPR         | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 1.3 ± 0.3 | 2016-02-15 |
| 7730296 | PRINC OFF   | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 0.6 ± 0.3 | 2016-02-15 |

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February 25, 2016

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

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Radon test result report for:

**MCPS RADON  
PHASE 8  
OFFICE BLANKS**

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| Kit #   | Room Id | Started              | Ended                | pCi/L | Analyzed   |
|---------|---------|----------------------|----------------------|-------|------------|
| 7729754 | 0       | 2016-02-08 @ 4:00 pm | 2016-02-11 @ 5:00 pm | < 0.3 | 2016-02-15 |
| 7729757 | 0       | 2016-02-08 @ 4:00 pm | 2016-02-11 @ 5:00 pm | < 0.3 | 2016-02-15 |
| 7729758 | 0       | 2016-02-08 @ 4:00 pm | 2016-02-11 @ 5:00 pm | < 0.3 | 2016-02-15 |

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

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

February  
15,  
2016

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

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

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

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

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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

Date Start: 11/30/16 Date Stop: 2/1/17

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

Time Start: 0926 Time Stop: 0926

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

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

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

7718281, 7718282, 7718291,

7718288, 7718289, 7718273

3 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  $\mu$ R/h Elevation = 820 ft





## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 8

Name of Schools:

- |                          |                          |
|--------------------------|--------------------------|
| 1. Blair G. Ewing Center | 12. Jackson Road ES      |
| 2. Cedar Grove ES        | 13. Jones Lane ES        |
| 3. Clarksburg ES         | 14. Lake Seneca ES       |
| 4. Cloverly ES           | 15. Laytonsville ES      |
| 5. Cold Spring ES        | 16. Montgomery Knolls ES |
| 6. Damascus ES           | 17. North Chevy Chase ES |
| 7. Dufief ES             | 18. Oakview ES           |
| 8. East Silver Spring    | 19. Randolph Maint       |
| 9. Georgian Forest ES    | 20. Robert Frost MS      |
| 10. Germantown ES        | 21. Shady Grove Maint    |
| 11. Glenallen ES         | 22. Viers Mill ES        |

---

|                                  | Date     | Initials |
|----------------------------------|----------|----------|
| Radon Test Kits Deployed         | 2/8/16   | JM       |
| Radon Test Kits Collected        | 2/11/16  | JM       |
| Radon Test Kits Shipped to Lab*  | 12/11/16 | JM       |
| Radon Test Kits Received by Lab* | 12/15/16 | JM       |

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



## MCPS RADON TESTING

### Executive Summary: North Chevy Chase Elementary School

|                           |  |
|---------------------------|--|
| Date of Test Report:      | 3/3/2016 (Rev 1)                         |
| Round of Testing:         | Initial<br>Follow-up<br>Post Remediation |
|                           |  |
| # Rooms Tested:           | 50                                       |
| # Rooms $\geq 4.0$ pCi/L: | 1  |
|                           |  |
| Low Value:                | < 0.3                                    |
| High Value:               | 5.0                                      |

Rooms with results  $\geq 4.0$  pCi/L:  
Room CR32 (5.0 pCi/L)

#### Project Status:

Initial testing completed; re-test needed for results  $\geq 4.0$  pCi/L.  
Initial testing completed; missing or compromised samples need re-test.



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

March 3, 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: North Chevy Chase Elementary School  
3700 Jones Bridge Road  
Chevy Chase, MD 20815

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 North Chevy Chase Elementary School, located at 3700 Jones Bridge Road in Chevy Chase, Maryland 20815 (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](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on December 21, 2015 and deployed sixty (60) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on 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:

| <b>Radon Concentration</b>         | <b>Room</b>      | <b>Result</b> |
|------------------------------------|------------------|---------------|
| <b><math>\geq 4.0</math> pCi/L</b> | CR32             | 5.0           |
| <b><math>&lt; 4.0</math> pCi/L</b> | 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. Moulds  
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          |                       |        |
|--------------------------------|-----------------------|--------|
| North Chevy Chase E.S          |                       |        |
| Test Period: 12/21/15-12/24/15 |                       |        |
| Kit Number                     | Room / Area           | Result |
| 7712046                        | 112                   | 1.8    |
| 7712042                        | 114                   | 2.0    |
| 7712058                        | 205                   | 1.8    |
| 7712052                        | 110A                  | 2.0    |
| 7712038                        | 118A                  | 2.3    |
| 7712041                        | 118B                  | 2.5    |
| 7712049                        | 118C                  | 3.0    |
| 7712055                        | 118D                  | 2.7    |
| 7712039                        | BLDG SER              | 1.5    |
| 7712032                        | CF21                  | 1.7    |
| 7712002                        | CONF RM               | 1.8    |
| 7712012                        | COUNSELOR RM          | 1.2    |
| 7712013                        | CR10                  | 1.4    |
| 7712043                        | CR103                 | 2.2    |
| 7712047                        | CR104                 | 1.2    |
| 7712051                        | CR105                 | 2.5    |
| 7712037                        | CR107                 | 2.5    |
| 7712016                        | CR12                  | 1.4    |
| 7712017                        | CR13                  | 1.2    |
| 7712001                        | CR14                  | 1.4    |
| 7712019                        | CR15                  | 1.1    |
| 7712015                        | CR16                  | 1.9    |
| 7712020                        | CR17                  | 0.8    |
| 7712024                        | CR18                  | 0.7    |
| 7712021                        | CR20                  | 1.1    |
| 7712028                        | CR22                  | 1.2    |
| 7712031                        | CR23                  | 2.1    |
| 7712025                        | CR24                  | 1.9    |
| 7712029                        | CR25                  | 1.6    |
| 7712027                        | CR26                  | 1.8    |
| 7712026                        | CR27                  | 1.3    |
| 7712050                        | CR31                  | < 0.3  |
| 7712045                        | CR32                  | 5.0    |
| 7712054                        | CR33                  | 1.0    |
| 7712059                        | CR34                  | 2.0    |
| 7712009                        | DEVEL TEACH OFF       | 2.9    |
| 7712053                        | GYM                   | < 0.3  |
| 7712070                        | GYM                   | 0.6    |
| 7712057                        | GYM OFF               | 1.4    |
| 7712008                        | HEALTH RM             | 1.8    |
| 7712004                        | * MAIN OFF (tampered) | 1.6    |
| 7712018                        | MEDIA CTR             | 1.3    |
| 7712022                        | MEDIA CTR             | 1.2    |
| 7712011                        | MEDIA CTR OFF         | 1.3    |
| 7712033                        | * MPR (missing)       | -      |
| 7712014                        | PHONE ROOM            | 1.8    |

Table Note:

\* Missing or Compromised Sample

| Radon Testing Results          |                       |        |
|--------------------------------|-----------------------|--------|
| North Chevy Chase E.S          |                       |        |
| Test Period: 12/21/15-12/24/15 |                       |        |
|                                |                       |        |
| Kit Number                     | Room / Area           | Result |
| 7712003                        | * PRINC OFF (missing) | -      |
| 7712034                        | SLOUNGE               | 0.9    |
| 7712036                        | SOFF1                 | 0.8    |
| 7712030                        | SOFF2                 | 1.2    |
| 7712005                        | SPEECH OFF            | 2.1    |
| 7712007                        | STAFF WORK            | 1.8    |

Table Note:

\* Missing or Compromised Sample

| Radon Testing Results          |                   |        |
|--------------------------------|-------------------|--------|
| North Chevy Chase E.S          |                   |        |
| Test Period: 12/21/15-12/24/15 |                   |        |
| Kit Number                     | QC Type           | Result |
| 7712056                        | D (118C)          | 2.5    |
| 7712035                        | D (BLDG SER)      | 1.4    |
| 7712006                        | D (CONF RM)       | 2.1    |
| 7712023                        | D (MEDIA CTR)     | 1.7    |
| 7712044                        | * D (MPR:missing) | -      |
| 7712010                        | FB (PHONE RM)     | < 0.3  |
| 7712040                        | FB (SOFF2)        | < 0.3  |
| 7712192                        | OB (0)            | < 0.3  |

Table Note:

\* Missing or Compromised Sample

## ATTACHMENT C

### Laboratory Analytical Results

Radon test result report for:  
**NORTH CHEVY CHASE E.S  
MAIN**

| Kit #   | Room Id      | Started               | Ended                 | pCi/L     | Analyzed   |
|---------|--------------|-----------------------|-----------------------|-----------|------------|
| 7712192 | 00           | 2015-12-21 @ 6:00 pm  | 2015-12-24 @ 2:00 pm  | < 0.3     | 2015-12-29 |
| 7712052 | 110A         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.0 ± 0.4 | 2015-12-29 |
| 7712046 | 112          | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712042 | 114          | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.0 ± 0.4 | 2015-12-29 |
| 7712038 | 118A         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.3 ± 0.4 | 2015-12-29 |
| 7712041 | 118B         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.5 ± 0.4 | 2015-12-29 |
| 7712049 | 118C         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 3.0 ± 0.5 | 2015-12-29 |
| 7712056 | 118C         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.5 ± 0.4 | 2015-12-29 |
| 7712055 | 118D         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.7 ± 0.4 | 2015-12-29 |
| 7712058 | 205          | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712035 | BLDG SER     | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.4 ± 0.4 | 2015-12-29 |
| 7712039 | BLDG SER     | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.5 ± 0.4 | 2015-12-29 |
| 7712032 | CF21         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.7 ± 0.4 | 2015-12-29 |
| 7712002 | CONF RM      | 2015-12-21 @ 9:00 am  | 2015-12-24 @ 8:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712006 | CONF RM      | 2015-12-21 @ 9:00 am  | 2015-12-24 @ 8:00 am  | 2.1 ± 0.4 | 2015-12-29 |
| 7712012 | COUNSELOR RM | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712013 | CR10         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.4 ± 0.4 | 2015-12-29 |
| 7712043 | CR103        | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 2.2 ± 0.4 | 2015-12-29 |
| 7712047 | CR104        | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712051 | CR105        | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 2.5 ± 0.4 | 2015-12-29 |
| 7712037 | CR107        | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.5 ± 0.4 | 2015-12-29 |
| 7712016 | CR12         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.4 ± 0.4 | 2015-12-29 |
| 7712017 | CR13         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712001 | CR14         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.4 ± 0.4 | 2015-12-29 |
| 7712019 | CR15         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.1 ± 0.4 | 2015-12-29 |
| 7712015 | CR16         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.9 ± 0.4 | 2015-12-29 |
| 7712020 | CR17         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 0.8 ± 0.3 | 2015-12-29 |
| 7712024 | CR18         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 0.7 ± 0.3 | 2015-12-29 |
| 7712021 | CR20         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.1 ± 0.3 | 2015-12-29 |
| 7712028 | CR22         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712031 | CR23         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 2.1 ± 0.4 | 2015-12-29 |
| 7712025 | CR24         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.9 ± 0.4 | 2015-12-29 |
| 7712029 | CR25         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.6 ± 0.4 | 2015-12-29 |
| 7712027 | CR26         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712026 | CR27         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.3 ± 0.4 | 2015-12-29 |
| 7712050 | CR31         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | < 0.3     | 2015-12-29 |
| 7712045 | CR32         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 5.0 ± 0.6 | 2015-12-29 |

January 14, 2016  
**LABORATORY ANALYSIS  
REPORT \*\***

Radon test result report for:  
**NORTH CHEVY CHASE E.S  
MAIN**

| Kit #   | Room Id         | Started               | Ended                 | pCi/L     | Analyzed   |
|---------|-----------------|-----------------------|-----------------------|-----------|------------|
| 7712054 | CR33            | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 1.0 ± 0.3 | 2015-12-29 |
| 7712059 | CR34            | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 2.0 ± 0.4 | 2015-12-29 |
| 7712009 | DEVEL TEACH OFF | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 2.9 ± 0.5 | 2015-12-29 |
| 7712053 | GYM             | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | < 0.3     | 2015-12-29 |
| 7712070 | GYM             | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 0.6 ± 0.3 | 2015-12-29 |
| 7712057 | GYM OFF         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 1.4 ± 0.4 | 2015-12-29 |
| 7712008 | HEALTH RM       | 2015-12-21 @ 10:00 am | 2015-12-24 @ 8:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712004 | MAIN OFF        | 2015-12-21 @ 9:00 am  | 2015-12-24 @ 8:00 am  | 1.6 ± 0.4 | 2015-12-29 |
| 7712022 | MEDIA CTR       | 2015-12-21 @ 10:00 am | 2015-12-24 @ 8:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712023 | MEDIA CTR       | 2015-12-21 @ 10:00 am | 2015-12-24 @ 8:00 am  | 1.7 ± 0.4 | 2015-12-29 |
| 7712018 | MEDIA CTR       | 2015-12-21 @ 10:00 am | 2015-12-24 @ 8:00 am  | 1.3 ± 0.4 | 2015-12-29 |
| 7712011 | MEDIA CTR OFF   | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.3 ± 0.4 | 2015-12-29 |
| 7712033 | MPR             | @                     | @                     |           |            |
| 7712044 | MPR             | @                     | @                     |           |            |
| 7712010 | PHONE RM        | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | < 0.3     | 2015-12-29 |
| 7712014 | PHONE ROOM      | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712003 | PRINC OFF       | @                     | @                     |           |            |
| 7712034 | SLOUNGE         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 0.9 ± 0.4 | 2015-12-29 |
| 7712036 | SOFF1           | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 0.8 ± 0.3 | 2015-12-29 |
| 7712030 | SOFF2           | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712040 | SOFF2           | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | < 0.3     | 2015-12-29 |
| 7712005 | SPEECH OFF      | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 2.1 ± 0.4 | 2015-12-29 |
| 7712007 | STAFF WORK      | 2015-12-21 @ 9:00 am  | 2015-12-24 @ 8:00 am  | 1.8 ± 0.4 | 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  $\mu$ R/h Elevation = 820 ft



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

## Chain of Custody

Project Name: MCPS Radon Phase 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



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

**Executive Summary:**  
**North Chevy Chase Elementary School**  
3700 Jones Bridge Road,  
Chevy Chase, MD 20815

|                              |   |
|------------------------------|---|
| Date of Test Report:         | 3/29/2019   |
| Round of Testing:            | Initial<br><b>Follow-up</b><br>Post Remediation<br>2 Year Testing<br>5 Year Testing<br>HVAC Upgrade<br>Window Replacement<br>New Addition<br>New Facility |
| # of Rooms Tested:           | 1   |
| # of Rooms $\geq$ 4.0 pCi/L: | 0   |
| Low Value:                   | 0   |
| High Value:                  | 0   |

**Project Status**  
**Missing: APR**



March 29, 2019

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

Re: Radon Testing Services

Location: Northlake Center  
15101 Bauer 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 North Chevy Chase Elementary School, located at 370 Jones Bridge Road, Chevy Chase, MD 20815 (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](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

PSI visited the site on February 26, 2019 and deployed one (1) activated charcoal (AC) radon test kit. PSI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. PSI returned to the site on March 01, 2019 to retrieve the radon sampling test kit but sample was missing. A floor plan map of the building with the test location is included as Attachment A of this report.

PSI shipped all radon tests via overnight delivery to AccuStar Labs for analysis by gamma-ray spectroscopy. Accustar Labs is a NRSB certified analytical laboratory for radon analysis located at 929 Mount Zion Road, Lebanon, Pennsylvania (certification # 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 |
|---------------------|------------------|--------|
| $\geq 4.0$ pCi/L    | None             | NA     |
| $\leq 4.0$ 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, appearing to read "Nand Kaushik". The signature is fluid and cursive, with the first name "Nand" and last name "Kaushik" clearly distinguishable.

Nand Kaushik, P.E.

Department Manager, Environmental Services

[Nand.Kaushik@intertek.com](mailto: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               |             |                |
|-------------------------------------|-------------|----------------|
| North Chevy Chase Elementary School |             |                |
| Testing period: 2/26/19 - 3/01/19   |             |                |
| Kit Number                          | Room / Area | Result (pCi/L) |
| --                                  | APR         | --             |



**Table Notes:**

D – Duplicate

FB – Field Blank

OB – Office Blank

TB – Transit Blank

QC – Quality Control



## MONTGOMERY COUNTY PUBLIC SCHOOLS RADON TESTING

### Executive Summary: North Chevy Chase Elementary School

3700 Jones Bridge Road,  
Chevy Chase, MD 20815

|                              |   |
|------------------------------|---|
| Date of Test Report:         | 02/05/2019  |
| Round of Testing:            | Initial<br>Follow-up<br>Post Remediation<br>2 Year Testing<br><b>5 Year Testing</b><br>HVAC Upgrade<br>Window Replacement<br>New Addition<br>New Facility |
| # of Rooms Tested:           | 57  |
| # of Rooms $\geq 4.0$ pCi/L: | 0   |
| Low Value:                   | < 0.4   |
| High Value:                  | 1.3   |

### Project Status

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



February 5, 2019

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

Re: Radon Testing Services

Location: North Chevy Chase Elementary School  
3700 Jones Bridge Road,  
Chevy Chase, MD 20815

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 North Chevy Chase Elementary School, located at 370 Jones Bridge Road, Chevy Chase, MD 20815 (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](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

PSI visited the site on December 3, 2018 and deployed seventy-three (73) 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 December 6, 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 |
|---------------------|------------------|--------|
| $\geq 4.0$ pCi/L    | None             | NA     |
| $\leq 4.0$ 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**

Nand Kaushik, P.E.  
Department Manager, Environmental Services  
[Nand.Kaushik@intertek.com](mailto: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               |                   |                |
|-------------------------------------|-------------------|----------------|
| North Chevy Chase Elementary School |                   |                |
| Testing period: 12/3/18 - 12/6/18   |                   |                |
| Kit Number                          | Room / Area       | Result (pCi/L) |
| 3927906                             | 112               | <0.4           |
| 3927905                             | 114               | <0.4           |
| 3927908                             | 110A              | <0.4           |
| 3927909                             | 118A              | <0.4           |
| 3927902                             | 118B              | <0.4           |
| 3927901                             | 118C              | <0.4           |
| 3927900                             | 118D              | <0.4           |
| 3927898                             | 118D              | <0.4           |
| 3927899                             | 118E              | <0.4           |
| 3927894                             | AR200             | <0.4           |
| 3927895                             | AR205             | <0.4           |
| 3927897                             | AR208             | <0.4           |
| 3927944                             | CR10              | <0.4           |
| 3927910                             | CR103             | <0.4           |
| 3927872                             | CR104             | <0.4           |
| 3927904                             | CR105             | <0.4           |
| 3927907                             | CR107             | <0.4           |
| 3927903                             | CR107             | <0.4           |
| 3927970                             | CR12              | <0.4           |
| 3927962                             | CR13              | <0.4           |
| 3927968                             | CR14              | 0.5            |
| 3927965                             | CR15              | <0.4           |
| 3927961                             | CR16              | 0.5            |
| 3927966                             | CR17              | <0.4           |
| 3927963                             | CR18              | <0.4           |
| 3927951                             | CR21              | 1.0            |
| 3927918                             | CR23              | 0.7            |
| 3927920                             | CR25              | 0.7            |
| 3927917                             | CR26              | 1.0            |
| 3927919                             | CR27              | 1.3            |
| 3927878                             | CR31              | 0.6            |
| 3927880                             | CR32              | 0.7            |
| 3927876                             | CR33              | 1.3            |
| 3927875                             | CR34              | 0.9            |
| 3927956                             | Room 20           | 0.6            |
| 3927953                             | Room 22           | <0.4           |
| 3927952                             | Room 24           | 0.8            |
| 3881190                             | APR               | 0.4            |
| 3881166                             | APR (MISSING)     | --             |
| 3927916                             | Building Services | <0.4           |
| 3927942                             | Conference        | <0.4           |
| 3927967                             | Counselor         | 0.6            |
| 3927914                             | ESOL              | 0.4            |

| <b>Radon Testing Results</b>               |                    |                       |
|--|--------------------|-----------------------|
| <b>North Chevy Chase Elementary School</b> |                    |                       |
| <b>Testing period: 12/3/18 - 12/6/18</b>   |                    |                       |
| <b>Kit Number</b>                          | <b>Room / Area</b> | <b>Result (pCi/L)</b> |
| 3927871                                    | Gym                | 0.8                   |
| 3927873                                    | Gym                | 0.9                   |
| 3927874                                    | Gym Office         | 0.9                   |
| 3927950                                    | Health             | 0.8                   |
| 3927947                                    | Health Office      | 0.7                   |
| 3927912                                    | Kitchen            | 0.9                   |
| 3927948                                    | Main Office        | 0.6                   |
| 3927957                                    | Media Center       | 0.6                   |
| 3927954                                    | Media Center       | 0.8                   |
| 3927959                                    | Media Office #1    | 0.6                   |
| 3927958                                    | Media Office #2    | 0.8                   |
| 3927945                                    | Principal          | 0.6                   |
| 3927969                                    | Speech             | 0.6                   |
| 3927943                                    | Staff Development  | 0.7                   |
| 3927911                                    | Staff Lounge       | 0.6                   |
| 3927913                                    | Staff Office 1     | <0.4                  |
| 3927960                                    | Studio             | 0.4                   |
| 3927946                                    | Workroom           | <0.4                  |



| Radon Testing Results               |                  |                |
|-------------------------------------|------------------|----------------|
| North Chevy Chase Elementary School |                  |                |
| Testing period: 12/3/18 - 12/6/18   |                  |                |
| Kit Number                          | QC Type          | Result (pCi/L) |
| 3927941                             | CR10 (D)         | <0.4           |
| 3927964                             | CR18 (D)         | <0.4           |
| 3927915                             | CR25 (D)         | 0.6            |
| 3927877                             | CR32 (D)         | 1.0            |
| 3927949                             | Main Office (D)  | 0.5            |
| 3927955                             | Room 22 (D)      | <0.4           |
| 3927879                             | Staff Lounge (D) | 0.6            |
| 3928060                             | Field Blank      | <0.4           |
| 3928051                             | Field Blank      | <0.4           |
| 3926362                             | Field Blank      | <0.4           |
| 3926370                             | Office Blank     | <0.4           |
| 3926367                             | Transit Blank    | Invalid        |

**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

Laboratory Report for:

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

Property Tested: Project # 04481387-1

MCPS Radon Survey  
North Chevy Chase ES  
3700 Jones Bridge Road  
Chevy Chase MD 20815 USA


| Log Number | Device Number | Test Exposure Duration: |                    | Area Tested               |             |             |  | Result pCi/L |
|------------|---------------|-------------------------|--------------------|---------------------------|-------------|-------------|--|--------------|
| 2404240    | 3927948       | 12/03/2018 9:30 am      | 12/06/2018 8:14 am | Bldg North Chevy Chase ES | Flr First   | Rm Main Of  |  | 0.6          |
| 2404241    | 3927949       | 12/03/2018 9:30 am      | 12/06/2018 8:14 am | Bldg North Chevy Chase ES | Flr First   | Rm Main off |  | 0.5          |
| 2404242    | 3927950       | 12/03/2018 9:31 am      | 12/06/2018 8:15 am | Bldg North Chevy Chase ES | Flr First   | Rm Health   |  | 0.8          |
| 2404243    | 3927947       | 12/03/2018 9:32 am      | 12/06/2018 8:15 am | Bldg North Chevy Chase ES | Flr First   | Rm Nurses   |  | 0.7          |
| 2404244    | 3927945       | 12/03/2018 9:33 am      | 12/06/2018 8:16 am | Bldg North Chevy Chase ES | Flr First   | Rm Principa |  | 0.6          |
| 2404245    | 3927946       | 12/03/2018 9:34 am      | 12/06/2018 8:17 am | Bldg North Chevy Chase ES | Flr First   | Rm Work R   |  | < 0.4        |
| 2404246    | 3927942       | 12/03/2018 9:36 am      | 12/06/2018 8:17 am | Bldg North Chevy Chase ES | Flr First   | Rm Conf R   |  | < 0.4        |
| 2404247    | 3927943       | 12/03/2018 9:38 am      | 12/06/2018 8:18 am | Bldg North Chevy Chase ES | Flr First   | Rm Staff De |  | 0.7          |
| 2404248    | 3927944       | 12/03/2018 9:39 am      | 12/06/2018 8:20 am | Bldg North Chevy Chase ES | Floor First | Room CR     |  | < 0.4        |
| 2404249    | 3927941       | 12/03/2018 9:39 am      | 12/06/2018 8:20 am | Bldg North Chevy Chase ES | Floor First | Room CR     |  | < 0.4        |
| 2404250    | 3927970       | 12/03/2018 9:40 am      | 12/06/2018 8:21 am | Bldg North Chevy Chase ES | Floor First | Room CR     |  | < 0.4        |

**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: 12/09/2018 Date Reported: 12/21/2018

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.

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  
North Chevy Chase ES  
3700 Jones Bridge Road  
Chevy Chase MD 20815 USA

| Log Number | Device Number | Test Exposure Duration: |                    | Area Tested                                    |  | Result pCi/L |
|------------|---------------|-------------------------|--------------------|--|--|--------------|
| 2404251    | 3927969       | 12/03/2018 9:41 am      | 12/06/2018 8:22 am | Bldg North Chevy Chase ES Flr First Rm Speech  |  | 0.6          |
| 2404252    | 3927967       | 12/03/2018 9:42 am      | 12/06/2018 8:22 am | Bldg North Chevy Chase ES Flr First Rm Counsel |  | 0.6          |
| 2404253    | 3927968       | 12/03/2018 9:44 am      | 12/06/2018 8:23 am | Bldg North Chevy Chase ES Floor First Room CR  |  | 0.5          |
| 2404254    | 3927962       | 12/03/2018 9:45 am      | 12/06/2018 8:24 am | Bldg North Chevy Chase ES Floor First Room CR  |  | < 0.4        |
| 2404255    | 3927965       | 12/03/2018 9:46 am      | 12/06/2018 8:25 am | Bldg North Chevy Chase ES Floor First Room CR  |  | < 0.4        |
| 2404256    | 3927961       | 12/03/2018 9:47 am      | 12/06/2018 8:26 am | Bldg North Chevy Chase ES Floor First Room CR  |  | 0.5          |
| 2404257    | 3927966       | 12/03/2018 9:48 am      | 12/06/2018 8:27 am | Bldg North Chevy Chase ES Floor First Room CR  |  | < 0.4        |
| 2404258    | 3927963       | 12/03/2018 9:50 am      | 12/06/2018 8:30 am | Bldg North Chevy Chase ES Floor First Room CR  |  | < 0.4        |
| 2404259    | 3927964       | 12/03/2018 9:50 am      | 12/06/2018 8:30 am | Bldg North Chevy Chase ES Floor First Room CR  |  | < 0.4        |
| 2404260    | 3927960       | 12/03/2018 9:51 am      | 12/06/2018 8:31 am | Bldg North Chevy Chase ES Flr First Rm Studio  |  | 0.4          |
| 2404261    | 3927959       | 12/03/2018 9:52 am      | 12/06/2018 8:32 am | Bldg North Chevy Chase ES Flr First Rm Media O |  | 0.6          |

**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: 12/09/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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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  
North Chevy Chase ES  
3700 Jones Bridge Road  
Chevy Chase MD 20815 USA


| Log Number | Device Number | Test Exposure Duration: |                    |  |  | Area Tested                                    | Result pCi/L |
|------------|---------------|-------------------------|--------------------|--|--|--|--------------|
| 2404262    | 3927958       | 12/03/2018 9:53 am      | 12/06/2018 8:32 am |  |  | Bldg North Chevy Chase ES Flr First Rm Media O | 0.8          |
| 2404263    | 3927954       | 12/03/2018 9:54 am      | 12/06/2018 8:33 am |  |  | Bldg North Chevy Chase ES Flr First Rm Media C | 0.8          |
| 2404264    | 3927957       | 12/03/2018 9:54 am      | 12/06/2018 8:33 am |  |  | Bldg North Chevy Chase ES Flr First Rm Media C | 0.6          |
| 2404265    | 3927956       | 12/03/2018 9:55 am      | 12/06/2018 8:34 am |  |  | Bldg North Chevy Chase ES Flr First Rm Rm 20   | 0.6          |
| 2404266    | 3927953       | 12/03/2018 9:56 am      | 12/06/2018 8:35 am |  |  | Bldg North Chevy Chase ES Flr First Rm Rm 22   | < 0.4        |
| 2404267    | 3927955       | 12/03/2018 9:57 am      | 12/06/2018 8:35 am |  |  | Bldg North Chevy Chase ES Floor First Room Rm  | < 0.4        |
| 2404268    | 3927952       | 12/03/2018 9:58 am      | 12/06/2018 8:36 am |  |  | Bldg North Chevy Chase ES Floor First Room Rm  | 0.8          |
| 2404269    | 3927951       | 12/03/2018 10:00 am     | 12/06/2018 8:37 am |  |  | Bldg North Chevy Chase ES Floor First Room CR  | 1.0          |
| 2404270    | 3927917       | 12/03/2018 10:02 am     | 12/06/2018 8:38 am |  |  | Bldg North Chevy Chase ES Floor First Room CR  | 1.0          |
| 2404271    | 3927918       | 12/03/2018 10:04 am     | 12/06/2018 8:39 am |  |  | Bldg North Chevy Chase ES Floor First Room CR  | 0.7          |
| 2404272    | 3927919       | 12/03/2018 10:06 am     | 12/06/2018 8:40 am |  |  | Bldg North Chevy Chase ES Floor First Room CR  | 1.3          |

**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: 12/09/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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Shawn Price, Director of Laboratory Operations, AccuStar Labs

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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  
North Chevy Chase ES  
3700 Jones Bridge Road  
Chevy Chase MD 20815 USA


| Log Number | Device Number | Test Exposure Duration: |          |            |         | Area Tested                                      | Result pCi/L |
|------------|---------------|-------------------------|----------|------------|---------|--|--------------|
| 2404273    | 3927920       | 12/03/2018              | 10:08 am | 12/06/2018 | 8:42 am | Bldg North Chevy Chase ES Floor First Room CR    | 0.7          |
| 2404274    | 3927915       | 12/03/2018              | 10:08 am | 12/06/2018 | 8:42 am | Bldg North Chevy Chase ES Floor First Room CR    | 0.6          |
| 2404275    | 3927916       | 12/03/2018              | 10:10 am | 12/06/2018 | 8:45 am | Bldg North Chevy Chase ES Flr First Rm Bldg Sv   | < 0.4        |
| 2404276    | 3927913       | 12/03/2018              | 10:12 am | 12/06/2018 | 8:46 am | Bldg North Chevy Chase ES Flr First Rm Staff Off | < 0.4        |
| 2404277    | 3927914       | 12/03/2018              | 10:14 am | 12/06/2018 | 8:46 am | Bldg North Chevy Chase ES Floor First Room ES    | 0.4          |
| 2404278    | 3927912       | 12/03/2018              | 10:16 am | 12/06/2018 | 8:47 am | Bldg North Chevy Chase ES Flr First Rm Kitchen   | 0.9          |
| 2404279    | 3927911       | 12/03/2018              | 10:18 am | 12/06/2018 | 8:48 am | Bldg North Chevy Chase ES Flr First Rm Staff Lo  | 0.6          |
| 2404280    | 3927879       | 12/03/2018              | 10:18 am | 12/06/2018 | 8:48 am | Bldg North Chevy Chase ES Flr First Rm Staff Lo  | 0.6          |
| 2404281    | 3927880       | 12/03/2018              | 10:26 am | 12/06/2018 | 8:51 am | Bldg North Chevy Chase ES Floor First Room CR    | 0.7          |
| 2404282    | 3927877       | 12/03/2018              | 10:26 am | 12/06/2018 | 8:51 am | Bldg North Chevy Chase ES Floor First Room CR    | 1.0          |
| 2404283    | 3927878       | 12/03/2018              | 10:28 am | 12/06/2018 | 8:52 am | Bldg North Chevy Chase ES Floor First Room CR    | 0.6          |

**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: 12/09/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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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  
North Chevy Chase ES  
3700 Jones Bridge Road  
Chevy Chase MD 20815 USA


| Log Number | Device Number | Test Exposure Duration: |          |            |         | Area Tested                                   | Result pCi/L |
|------------|---------------|-------------------------|----------|------------|---------|---|--------------|
| 2404284    | 3927875       | 12/03/2018              | 10:29 am | 12/06/2018 | 8:53 am | Bldg North Chevy Chase ES Floor First Room CR | 0.9          |
| 2404285    | 3927876       | 12/03/2018              | 10:30 am | 12/06/2018 | 8:54 am | Bldg North Chevy Chase ES Floor First Room CR | 1.3          |
| 2404286    | 3927874       | 12/03/2018              | 10:31 am | 12/06/2018 | 8:55 am | Bldg North Chevy Chase ES Flr First Rm PE Off | 0.9          |
| 2404287    | 3927871       | 12/03/2018              | 10:32 am | 12/06/2018 | 8:57 am | Bldg North Chevy Chase ES Floor First Room Gy | 0.8          |
| 2404288    | 3927873       | 12/03/2018              | 10:34 am | 12/06/2018 | 8:57 am | Bldg North Chevy Chase ES Floor First Room Gy | 0.9          |
| 2404289    | 3927872       | 12/03/2018              | 10:35 am | 12/06/2018 | 8:58 am | Bldg North Chevy Chase ES Flr First Rm CR104  | < 0.4        |
| 2404290    | 3927908       | 12/03/2018              | 10:37 am | 12/06/2018 | 9:00 am | Bldg North Chevy Chase ES Floor First Room 11 | < 0.4        |
| 2404291    | 3927909       | 12/03/2018              | 10:39 am | 12/06/2018 | 9:01 am | Bldg North Chevy Chase ES Floor First Room 11 | < 0.4        |
| 2404292    | 3927910       | 12/03/2018              | 10:41 am | 12/06/2018 | 9:01 am | Bldg North Chevy Chase ES Flr First Rm CR103  | < 0.4        |
| 2404293    | 3927904       | 12/03/2018              | 10:42 am | 12/06/2018 | 9:02 am | Bldg North Chevy Chase ES Flr First Rm CR105  | < 0.4        |
| 2404294    | 3927906       | 12/03/2018              | 10:43 am | 12/06/2018 | 9:02 am | Bldg North Chevy Chase ES Floor First Room 11 | < 0.4        |

**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: 12/09/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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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  
North Chevy Chase ES  
3700 Jones Bridge Road  
Chevy Chase MD 20815 USA


| Log Number | Device Number | Test Exposure Duration: |          |            |         | Area Tested                                   | Result pCi/L |
|------------|---------------|-------------------------|----------|------------|---------|---|--------------|
| 2404295    | 3927905       | 12/03/2018              | 10:43 am | 12/06/2018 | 9:03 am | Bldg North Chevy Chase ES Floor First Room 11 | < 0.4        |
| 2404296    | 3927907       | 12/03/2018              | 10:44 am | 12/06/2018 | 9:04 am | Bldg North Chevy Chase ES Flr First Rm CR107  | < 0.4        |
| 2404297    | 3927903       | 12/03/2018              | 10:44 am | 12/06/2018 | 9:04 am | Bldg North Chevy Chase ES Flr First Rm CR107  | < 0.4        |
| 2404298    | 3927902       | 12/03/2018              | 10:45 am | 12/06/2018 | 9:05 am | Bldg North Chevy Chase ES Floor First Room 11 | < 0.4        |
| 2404299    | 3927901       | 12/03/2018              | 10:46 am | 12/06/2018 | 9:05 am | Bldg North Chevy Chase ES Floor First Room 11 | < 0.4        |
| 2404300    | 3927900       | 12/03/2018              | 10:48 am | 12/06/2018 | 9:06 am | Bldg North Chevy Chase ES Floor First Room 11 | < 0.4        |
| 2404301    | 3927898       | 12/03/2018              | 10:48 am | 12/06/2018 | 9:06 am | Bldg North Chevy Chase ES Floor First Room 11 | < 0.4        |
| 2404302    | 3927899       | 12/03/2018              | 10:50 am | 12/06/2018 | 9:07 am | Bldg North Chevy Chase ES Floor First Room 11 | < 0.4        |
| 2404303    | 3927897       | 12/03/2018              | 10:51 am | 12/06/2018 | 9:10 am | Bldg North Chevy Chase ES Flr Second Rm AR2   | < 0.4        |
| 2404304    | 3927895       | 12/03/2018              | 10:52 am | 12/06/2018 | 9:11 am | Bldg North Chevy Chase ES Flr Second Rm AR2   | < 0.4        |
| 2404305    | 3927894       | 12/03/2018              | 10:54 am | 12/06/2018 | 9:12 am | Bldg North Chevy Chase ES Flr Second Rm AR2   | < 0.4        |

**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: 12/09/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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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  
North Chevy Chase ES  
3700 Jones Bridge Road  
Chevy Chase MD 20815 USA


| Log Number | Device Number | Test Exposure Duration: |                    | Area Tested               |        |               |  | Result pCi/L |
|------------|---------------|-------------------------|--------------------|---------------------------|--------|---------------|--|--------------|
| 2404306    | 3928060       | 12/03/2018 9:30 am      | 12/06/2018 9:12 am | Bldg North Chevy Chase ES | Flr NA | Rm Field Bla  |  | < 0.4        |
| 2404307    | 3928051       | 12/03/2018 9:30 am      | 12/06/2018 9:12 am | Bldg North Chevy Chase ES | Flr NA | Rm Field Bla  |  | < 0.4        |
| 2404308    | 3926362       | 12/03/2018 9:30 am      | 12/06/2018 9:12 am | Bldg North Chevy Chase ES | Flr NA | Rm Field Bla  |  | < 0.4        |
| 2404309    | 3926367       | 12/03/2018 9:30 am      | 12/06/2018 9:12 am | Bldg North Chevy Chase ES | Flr NA | Rm Transit Bl |  | Invalid      |
| 2404310    | 3926370       | 12/03/2018 6:00 am      | 12/06/2018 6:00 pm | Bldg North Chevy Chase ES | Flr NA | Rm Office Bla |  | < 0.4        |

**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: 12/09/2018 Date Reported: 12/21/2018

Report Reviewed By: 

Report Approved By: 

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NELAC NY 11769  
NRPP 101193 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  
North Chevy Chase ES  
3700 Jones Bridge Road  
Bethesda MD 20815

| Log Number | Device Number | Area Tested                                    | Result<br>pCi/L |
|------------|---------------|--|-----------------|
| 2403709    | 3881190       | Bldg North Chevy Chase ES Floor First Room APR | 0.4             |

Radon test results are below the EPA action level of 4 pCi/L. The EPA suggests that you may want to test again in the future to ensure that radon levels remain below the action level. If the property tested uses water from a private well, you may wish to consider testing for radon in water.

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

Distributed by: Intertek-PSI (VA)

Test Began: 12/03/2018 10:20 am Date Received: 12/10/2018 Date Analyzed: 12/08/2018  
Test Ended: 12/06/2018 8:49 am Date Logged: 12/10/2018 Date Reported: 12/21/2018  
Test Exposure Duration: 70.5 Hours

Report Reviewed By:  Report Approved By: 

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NRPP 105011 AL  
NRSB ARL0007  
Ohio RL41

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

Laboratory Report for:

Property Tested:

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

MCPS Radon Survey  
4514 Taylorsville Road  
Dayton OH 45424

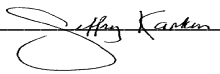
| Log Number | Device Number | Test Exposure Duration: |                    | Area Tested |  | Result pCi/L |
|------------|---------------|-------------------------|--------------------|-------------|--|--------------|
| 3204125    | 3926831       | 12/07/2018 9:47 am      | 12/10/2018 9:47 am | Spike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

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

Test Performed By: Unknown

Distributed by: Intertek-PSI (VA)

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

Report Reviewed By: 

Report Approved By: 

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# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT Intertek - PSI

Job Number 187732

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

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

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

Time Start: 0947 Time Stop: 0947

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

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

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

3926831 thru 3926840

G2 Left

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

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

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

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

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

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

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

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

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

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

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

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

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



## Chain of Custody

Project Name: MCPS Radon Survey 2018

Name of Schools:

- |  |                                |
|--|--------------------------------|
| 1. Ewing Center                            | 13. Garrett Park ES Annex      |
| 2. Department of Food & Nutrition Services | 14. Goshen ES                  |
| 3. Damascus HS                             | 15. Kingsley Wilderness Center |
| 4. Edison HS                               | 16. Kensington Parkwood ES     |
| 5. Emory Grove Center                      | 17. Monocacy ES                |
| 6. John Poole MS                           | 18. Lakewood ES                |
| 7. Lakelands Park MS                       | 19. Little Bennett ES          |
| 8. Laytonsville ES                         | 20. Lois P. Rockwell ES        |
| 9. Gaithersburg HS                         | 21. Olney ES                   |
| 10. Neelsville MS                          | 22. North Chevy Chase ES       |
| 11. Sequoyah ES                            | 23. Woodfield ES               |
| 12. Clarksburg ES Annex                    | 24. Wootton HS                 |

---

|                                  | Date                      | Initials |
|----------------------------------|---------------------------|----------|
| Radon Test Kits Deployed         | 12/03/2018                | ML       |
| Radon Test Kits Sampled          | 12/06/2018                | ML       |
| Radon Test Kits Shipped to Lab*  | 12/06/2018                | ML       |
| Radon Test Kits Received by Lab* | 12/07/2018;<br>12/08/2018 | ML       |

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

**RADON SCREENING SURVEY – FOLLOW-UP NORTH CHEVY CHASE ELEMENTARY  
SCHOOL**

3700 Jones Bridge Road, Chevy Chase, Maryland 20815

**EXECUTIVE SUMMARY**

|   |  |
|---|--|
| Date of Test Report:                                    | 3/7/16 Follow-Up                         |
| Round of Testing:                                       | Initial<br>Follow-up<br>Post Remediation |
| # Rooms Tested  | 4  |
| # Rooms $\geq$ 4.0 pCi/L:                               | 0  |
| Low Value:  | 0.6                                      |
| High Value:   | 1.7                                      |
| Confirmed Rooms $\geq$ 4.0 pCi/L US EPA<br>Action Level | 0  |

**Summary of Sampling Events  $\geq$  4.0 pCi/L**

| Room               | Result (pCi/L)<br>3/3/16 (Rev 1) Initial | Result (pCi/L)<br>3/7/16 Follow-Up | Average Result<br>(pCi/L) |
|--------------------|--|------------------------------------|---------------------------|
| 32                 | 5.0                                      | 1.7                                | 3.4                       |
| MAIN OFFICE        | 1.6 (tampered)                           | 0.8                                | 1.2                       |
| Principal's Office | missing                                  | 0.6                                | 0.6                       |
| MPR                | missing                                  | 1.4 (tampered)                     | 1.4                       |



## MCPS RADON TESTING

### Executive Summary: North Chevy Chase Elementary School

|                           |  |
|---------------------------|--|
| Date of Test Report:      | 3/7/2016                                 |
| Round of Testing:         | Initial<br>Follow-up<br>Post Remediation |
|                           |  |
| # Rooms Tested:           | 4  |
| # Rooms $\geq$ 4.0 pCi/L: | 0  |
|                           |  |
| Low Value:                | 0.6                                      |
| High Value:               | 1.7                                      |

#### Project Status:

Retesting completed; use the average of the initial and re-test results in a room to determine if remediation is necessary.

Retesting completed; missing or compromised samples need re-test.





ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

March 7, 2016

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

Re: **Radon Testing Services**  
KCI Job # 12146341.28

Location: North Chevy Chase Elementary School  
3700 Jones Bridge Road  
Chevy Chase, MD 20815

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 North Chevy Chase Elementary School, located at 3700 Jones Bridge Road in Chevy Chase, Maryland 20815 (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](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on February 8, 2016 and deployed six (6) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on February 11, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

### **Evaluation of Testing Conditions:**

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

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:

| <b>Radon Concentration</b>         | <b>Room</b>      | <b>Result</b> |
|------------------------------------|------------------|---------------|
| <b><math>\geq 4.0</math> pCi/L</b> | none             | n/a           |
| <b><math>&lt; 4.0</math> pCi/L</b> | See Attachment B |               |

Notes:

D- Duplicate sample

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

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

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

Sincerely,



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

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

# ATTACHMENT A

## Floor Plan With Test Locations

## ATTACHMENT B

### Radon Test Summary Spreadsheet

**Table Notes:**

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank\*

PM- Project Manager

QC- Quality Control

\*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 8 testing. Office blanks were not submitted under each school individually.

| Radon Testing Results               |                  |        |
|-------------------------------------|------------------|--------|
| North Chevy Chase Elementary School |                  |        |
| Test Period: 02/08/16-02/11/16      |                  |        |
|                                     |                  |        |
| Kit Number                          | Room / Area      | Result |
| 7730299                             | 32               | 1.7    |
| 7730295                             | MAIN OFFICE      | 0.8    |
| 7730297                             | * MPR (tampered) | 1.4    |
| 7730296                             | PRINC OFF        | 0.6    |

Table Note:

\* Missing or Compromised Sample

| Radon Testing Results               |                    |        |
|-------------------------------------|--------------------|--------|
| North Chevy Chase Elementary School |                    |        |
| Test Period: 02/08/16-02/11/16      |                    |        |
| Kit Number                          | QC Type            | Result |
| 7730298                             | * D (MPR:tampered) | 1.3    |
| 7730300                             | FB (32)            | < 0.3  |

Table Note:

\* Missing or Compromised Sample



## ATTACHMENT C

### Laboratory Analytical Results

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February 25, 2016

**LABORATORY ANALYSIS  
REPORT \*\***

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Radon test result report for:  
**NORTH CHEVY CHASE ELEMENTARY SCHOOL  
MAIN**

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| Kit #   | Room Id     | Started               | Ended                | pCi/L     | Analyzed   |
|---------|-------------|-----------------------|----------------------|-----------|------------|
| 7730299 | 32          | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 1.7 ± 0.4 | 2016-02-15 |
| 7730300 | 32          | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | < 0.3     | 2016-02-15 |
| 7730295 | MAIN OFFICE | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 0.8 ± 0.3 | 2016-02-15 |
| 7730297 | MPR         | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 1.4 ± 0.4 | 2016-02-15 |
| 7730298 | MPR         | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 1.3 ± 0.3 | 2016-02-15 |
| 7730296 | PRINC OFF   | 2016-02-08 @ 10:00 am | 2016-02-11 @ 9:00 am | 0.6 ± 0.3 | 2016-02-15 |

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

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February 25, 2016

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

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Radon test result report for:

**MCPS RADON  
PHASE 8  
OFFICE BLANKS**

---

| Kit #   | Room Id | Started              | Ended                | pCi/L | Analyzed   |
|---------|---------|----------------------|----------------------|-------|------------|
| 7729754 | 0       | 2016-02-08 @ 4:00 pm | 2016-02-11 @ 5:00 pm | < 0.3 | 2016-02-15 |
| 7729757 | 0       | 2016-02-08 @ 4:00 pm | 2016-02-11 @ 5:00 pm | < 0.3 | 2016-02-15 |
| 7729758 | 0       | 2016-02-08 @ 4:00 pm | 2016-02-11 @ 5:00 pm | < 0.3 | 2016-02-15 |

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

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

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

February  
15,  
2016

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

Spike Sample Laboratory Results

Radon test result report for:  
**MCPS**

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

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

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

# EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

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

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

Time Start: 0926 Time Stop: 0926

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

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

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

7718281, 7718282, 7718291,

7718288, 7718289, 7718273

3 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  $\mu$ R/h Elevation = 820 ft



## Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 8

Name of Schools:

- |                          |                          |
|--------------------------|--------------------------|
| 1. Blair G. Ewing Center | 12. Jackson Road ES      |
| 2. Cedar Grove ES        | 13. Jones Lane ES        |
| 3. Clarksburg ES         | 14. Lake Seneca ES       |
| 4. Cloverly ES           | 15. Laytonsville ES      |
| 5. Cold Spring ES        | 16. Montgomery Knolls ES |
| 6. Damascus ES           | 17. North Chevy Chase ES |
| 7. Dufief ES             | 18. Oakview ES           |
| 8. East Silver Spring    | 19. Randolph Maint       |
| 9. Georgian Forest ES    | 20. Robert Frost MS      |
| 10. Germantown ES        | 21. Shady Grove Maint    |
| 11. Glenallen ES         | 22. Viers Mill ES        |

---

|                                  | Date     | Initials |
|----------------------------------|----------|----------|
| Radon Test Kits Deployed         | 2/8/16   | JM       |
| Radon Test Kits Collected        | 2/11/16  | JM       |
| Radon Test Kits Shipped to Lab*  | 12/11/16 | JM       |
| Radon Test Kits Received by Lab* | 12/15/16 | JM       |

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



## MCPS RADON TESTING

### Executive Summary: North Chevy Chase Elementary School

|                           |  |
|---------------------------|--|
| Date of Test Report:      | 3/3/2016 (Rev 1)                         |
| Round of Testing:         | Initial<br>Follow-up<br>Post Remediation |
|                           |  |
| # Rooms Tested:           | 50                                       |
| # Rooms $\geq 4.0$ pCi/L: | 1  |
|                           |  |
| Low Value:                | < 0.3                                    |
| High Value:               | 5.0                                      |

Rooms with results  $\geq 4.0$  pCi/L:  
Room CR32 (5.0 pCi/L)

#### Project Status:

Initial testing completed; re-test needed for results  $\geq 4.0$  pCi/L.  
Initial testing completed; missing or compromised samples need re-test.





ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

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

March 3, 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: North Chevy Chase Elementary School  
3700 Jones Bridge Road  
Chevy Chase, MD 20815

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 North Chevy Chase Elementary School, located at 3700 Jones Bridge Road in Chevy Chase, Maryland 20815 (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](http://www.montgomerycountymd.gov/dep/air/radon) or [www.epa.gov/radon](http://www.epa.gov/radon).

KCI visited the site on December 21, 2015 and deployed sixty (60) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on 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:

| <b>Radon Concentration</b>         | <b>Room</b>      | <b>Result</b> |
|------------------------------------|------------------|---------------|
| <b><math>\geq 4.0</math> pCi/L</b> | CR32             | 5.0           |
| <b><math>&lt; 4.0</math> pCi/L</b> | 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. Moulds  
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          |                       |        |
|--------------------------------|-----------------------|--------|
| North Chevy Chase E.S          |                       |        |
| Test Period: 12/21/15-12/24/15 |                       |        |
| Kit Number                     | Room / Area           | Result |
| 7712046                        | 112                   | 1.8    |
| 7712042                        | 114                   | 2.0    |
| 7712058                        | 205                   | 1.8    |
| 7712052                        | 110A                  | 2.0    |
| 7712038                        | 118A                  | 2.3    |
| 7712041                        | 118B                  | 2.5    |
| 7712049                        | 118C                  | 3.0    |
| 7712055                        | 118D                  | 2.7    |
| 7712039                        | BLDG SER              | 1.5    |
| 7712032                        | CF21                  | 1.7    |
| 7712002                        | CONF RM               | 1.8    |
| 7712012                        | COUNSELOR RM          | 1.2    |
| 7712013                        | CR10                  | 1.4    |
| 7712043                        | CR103                 | 2.2    |
| 7712047                        | CR104                 | 1.2    |
| 7712051                        | CR105                 | 2.5    |
| 7712037                        | CR107                 | 2.5    |
| 7712016                        | CR12                  | 1.4    |
| 7712017                        | CR13                  | 1.2    |
| 7712001                        | CR14                  | 1.4    |
| 7712019                        | CR15                  | 1.1    |
| 7712015                        | CR16                  | 1.9    |
| 7712020                        | CR17                  | 0.8    |
| 7712024                        | CR18                  | 0.7    |
| 7712021                        | CR20                  | 1.1    |
| 7712028                        | CR22                  | 1.2    |
| 7712031                        | CR23                  | 2.1    |
| 7712025                        | CR24                  | 1.9    |
| 7712029                        | CR25                  | 1.6    |
| 7712027                        | CR26                  | 1.8    |
| 7712026                        | CR27                  | 1.3    |
| 7712050                        | CR31                  | < 0.3  |
| 7712045                        | CR32                  | 5.0    |
| 7712054                        | CR33                  | 1.0    |
| 7712059                        | CR34                  | 2.0    |
| 7712009                        | DEVEL TEACH OFF       | 2.9    |
| 7712053                        | GYM                   | < 0.3  |
| 7712070                        | GYM                   | 0.6    |
| 7712057                        | GYM OFF               | 1.4    |
| 7712008                        | HEALTH RM             | 1.8    |
| 7712004                        | * MAIN OFF (tampered) | 1.6    |
| 7712018                        | MEDIA CTR             | 1.3    |
| 7712022                        | MEDIA CTR             | 1.2    |
| 7712011                        | MEDIA CTR OFF         | 1.3    |
| 7712033                        | * MPR (missing)       | -      |
| 7712014                        | PHONE ROOM            | 1.8    |

Table Note:

\* Missing or Compromised Sample

| Radon Testing Results          |                       |        |
|--------------------------------|-----------------------|--------|
| North Chevy Chase E.S          |                       |        |
| Test Period: 12/21/15-12/24/15 |                       |        |
|                                |                       |        |
| Kit Number                     | Room / Area           | Result |
| 7712003                        | * PRINC OFF (missing) | -      |
| 7712034                        | SLOUNGE               | 0.9    |
| 7712036                        | SOFF1                 | 0.8    |
| 7712030                        | SOFF2                 | 1.2    |
| 7712005                        | SPEECH OFF            | 2.1    |
| 7712007                        | STAFF WORK            | 1.8    |

Table Note:

\* Missing or Compromised Sample



| Radon Testing Results          |                   |        |
|--------------------------------|-------------------|--------|
| North Chevy Chase E.S          |                   |        |
| Test Period: 12/21/15-12/24/15 |                   |        |
| Kit Number                     | QC Type           | Result |
| 7712056                        | D (118C)          | 2.5    |
| 7712035                        | D (BLDG SER)      | 1.4    |
| 7712006                        | D (CONF RM)       | 2.1    |
| 7712023                        | D (MEDIA CTR)     | 1.7    |
| 7712044                        | * D (MPR:missing) | -      |
| 7712010                        | FB (PHONE RM)     | < 0.3  |
| 7712040                        | FB (SOFF2)        | < 0.3  |
| 7712192                        | OB (0)            | < 0.3  |

Table Note:

\* Missing or Compromised Sample

## ATTACHMENT C

### Laboratory Analytical Results

Radon test result report for:  
**NORTH CHEVY CHASE E.S  
MAIN**

| Kit #   | Room Id      | Started               | Ended                 | pCi/L     | Analyzed   |
|---------|--------------|-----------------------|-----------------------|-----------|------------|
| 7712192 | 00           | 2015-12-21 @ 6:00 pm  | 2015-12-24 @ 2:00 pm  | < 0.3     | 2015-12-29 |
| 7712052 | 110A         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.0 ± 0.4 | 2015-12-29 |
| 7712046 | 112          | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712042 | 114          | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.0 ± 0.4 | 2015-12-29 |
| 7712038 | 118A         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.3 ± 0.4 | 2015-12-29 |
| 7712041 | 118B         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.5 ± 0.4 | 2015-12-29 |
| 7712049 | 118C         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 3.0 ± 0.5 | 2015-12-29 |
| 7712056 | 118C         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.5 ± 0.4 | 2015-12-29 |
| 7712055 | 118D         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.7 ± 0.4 | 2015-12-29 |
| 7712058 | 205          | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712035 | BLDG SER     | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.4 ± 0.4 | 2015-12-29 |
| 7712039 | BLDG SER     | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.5 ± 0.4 | 2015-12-29 |
| 7712032 | CF21         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.7 ± 0.4 | 2015-12-29 |
| 7712002 | CONF RM      | 2015-12-21 @ 9:00 am  | 2015-12-24 @ 8:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712006 | CONF RM      | 2015-12-21 @ 9:00 am  | 2015-12-24 @ 8:00 am  | 2.1 ± 0.4 | 2015-12-29 |
| 7712012 | COUNSELOR RM | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712013 | CR10         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.4 ± 0.4 | 2015-12-29 |
| 7712043 | CR103        | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 2.2 ± 0.4 | 2015-12-29 |
| 7712047 | CR104        | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712051 | CR105        | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 2.5 ± 0.4 | 2015-12-29 |
| 7712037 | CR107        | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 9:00 am  | 2.5 ± 0.4 | 2015-12-29 |
| 7712016 | CR12         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.4 ± 0.4 | 2015-12-29 |
| 7712017 | CR13         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712001 | CR14         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.4 ± 0.4 | 2015-12-29 |
| 7712019 | CR15         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.1 ± 0.4 | 2015-12-29 |
| 7712015 | CR16         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.9 ± 0.4 | 2015-12-29 |
| 7712020 | CR17         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 0.8 ± 0.3 | 2015-12-29 |
| 7712024 | CR18         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 0.7 ± 0.3 | 2015-12-29 |
| 7712021 | CR20         | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.1 ± 0.3 | 2015-12-29 |
| 7712028 | CR22         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712031 | CR23         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 2.1 ± 0.4 | 2015-12-29 |
| 7712025 | CR24         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.9 ± 0.4 | 2015-12-29 |
| 7712029 | CR25         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.6 ± 0.4 | 2015-12-29 |
| 7712027 | CR26         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712026 | CR27         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.3 ± 0.4 | 2015-12-29 |
| 7712050 | CR31         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | < 0.3     | 2015-12-29 |
| 7712045 | CR32         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 5.0 ± 0.6 | 2015-12-29 |

January 14, 2016  
**LABORATORY ANALYSIS  
REPORT \*\***

Radon test result report for:  
**NORTH CHEVY CHASE E.S  
MAIN**

| Kit #   | Room Id         | Started               | Ended                 | pCi/L     | Analyzed   |
|---------|-----------------|-----------------------|-----------------------|-----------|------------|
| 7712054 | CR33            | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 1.0 ± 0.3 | 2015-12-29 |
| 7712059 | CR34            | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 2.0 ± 0.4 | 2015-12-29 |
| 7712009 | DEVEL TEACH OFF | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 2.9 ± 0.5 | 2015-12-29 |
| 7712053 | GYM             | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | < 0.3     | 2015-12-29 |
| 7712070 | GYM             | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 0.6 ± 0.3 | 2015-12-29 |
| 7712057 | GYM OFF         | 2015-12-21 @ 12:00 pm | 2015-12-24 @ 10:00 am | 1.4 ± 0.4 | 2015-12-29 |
| 7712008 | HEALTH RM       | 2015-12-21 @ 10:00 am | 2015-12-24 @ 8:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712004 | MAIN OFF        | 2015-12-21 @ 9:00 am  | 2015-12-24 @ 8:00 am  | 1.6 ± 0.4 | 2015-12-29 |
| 7712022 | MEDIA CTR       | 2015-12-21 @ 10:00 am | 2015-12-24 @ 8:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712023 | MEDIA CTR       | 2015-12-21 @ 10:00 am | 2015-12-24 @ 8:00 am  | 1.7 ± 0.4 | 2015-12-29 |
| 7712018 | MEDIA CTR       | 2015-12-21 @ 10:00 am | 2015-12-24 @ 8:00 am  | 1.3 ± 0.4 | 2015-12-29 |
| 7712011 | MEDIA CTR OFF   | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.3 ± 0.4 | 2015-12-29 |
| 7712033 | MPR             | @                     | @                     |           |            |
| 7712044 | MPR             | @                     | @                     |           |            |
| 7712010 | PHONE RM        | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | < 0.3     | 2015-12-29 |
| 7712014 | PHONE ROOM      | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 1.8 ± 0.4 | 2015-12-29 |
| 7712003 | PRINC OFF       | @                     | @                     |           |            |
| 7712034 | SLOUNGE         | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 0.9 ± 0.4 | 2015-12-29 |
| 7712036 | SOFF1           | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 0.8 ± 0.3 | 2015-12-29 |
| 7712030 | SOFF2           | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | 1.2 ± 0.4 | 2015-12-29 |
| 7712040 | SOFF2           | 2015-12-21 @ 11:00 am | 2015-12-24 @ 9:00 am  | < 0.3     | 2015-12-29 |
| 7712005 | SPEECH OFF      | 2015-12-21 @ 10:00 am | 2015-12-24 @ 9:00 am  | 2.1 ± 0.4 | 2015-12-29 |
| 7712007 | STAFF WORK      | 2015-12-21 @ 9:00 am  | 2015-12-24 @ 8:00 am  | 1.8 ± 0.4 | 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  $\mu$ R/h Elevation = 820 ft



ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS

Corporate Office: 936 Ridgebrook road • Sparks , Maryland 21152 • 410-316-7800 • (Fax) 410-316-7935

## Chain of Custody

Project Name: MCPS Radon Phase 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    |                           |

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|                                  | 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