



School / Facility Radon Testing Report Form

Instructions: Submit one testing report form per-facility per-round of testing. 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 ≥ 2.0 -pCi/L; ≥ 2.7 -pCi/L; ≥ 4.0 -pCi/L; and ≥ 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.

School Year: **23-24**

| | |
|-----------|---------------------------------|
| Facility: | Francis Scott Key Middle School |
| Address: | 910 Schindler Drive |
| | Silver Spring, MD 20903 |

| | |
|--------------------------------|---|
| Reason for Testing: | <input checked="" type="checkbox"/> Scheduled Re-Testing (2 or 5-year schedule) <input type="checkbox"/> Clearance Testing (Post-Mitigation) <input type="checkbox"/> System(s) Performance Testing (Post-Mitigation) <input type="checkbox"/> New Construction/Facility |
| Facility Current Radon Status: | <input checked="" type="checkbox"/> Active Mitigation (2-year regular schedule) <input type="checkbox"/> No Active Mitigation (5-year regular schedule) <input type="checkbox"/> Not Previously Tested |
| 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 or Considered <input type="checkbox"/> Required (>8.0 -pCi/L) <input type="checkbox"/> Required (≥ 4.0 -pCi/L) <input type="checkbox"/> Consider (≥ 2.0 & <4.0 -pCi/L) | <input checked="" type="checkbox"/> No Change in Status <input type="checkbox"/> Active Mitigation (2-year regular schedule) <input type="checkbox"/> No Active Mitigation (5-year regular schedule) |

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) | |
| <i>Other—Specify here:</i> | | | | |
| Detector/Device Name: | Air Chek – Radon Test Kits | | | |
| Manufacturer: | Radon Lab | | | |
| Person(s) Deploying or Retrieving Test Devices and certification number | | | Organization/Company | |
| Tyler McCleaf | | | KCI Technologies, Inc. | |
| | | | | |
| | | | | |
| <i>If noncertified individuals, the qualified measurement professional providing oversight -</i> | | | | |
| Tyler McCleaf, CSP – Cert. #111004-RMP | | | KCI Technologies, Inc. | |

Testing

| | | | | |
|---|------------------------|---|--|---|
| <input checked="" type="checkbox"/> Short-Term | Length of Test (days): | 3 | Date of Deployment and Retrieval (mm/dd/yy): | 01/29/2024 |
| <input type="checkbox"/> Long-Term | | | | 02/01/2024 |
| Does the test period include weekends, school breaks or holidays? | | | | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| <i>If “Yes” please explain/detail in the space below:</i> | | | | |
| | | | | |
| Was HVAC operating under occupied conditions? | | | | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <i>If “No” please explain/detail in the space below:</i> | | | | |
| | | | | |

Testing (continued)

| | Detectors Deployed | | |
|-----------------------------|--------------------|----------------|-------|
| | Ground-Contact | Upper-Level(s) | Total |
| Test Locations ¹ | 74 | 3 | 77 |
| Duplicates ² | 7 | 0 | 7 |
| Field Blanks ³ | 4 | 0 | 4 |
| Grand Total | | | 88 |

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.

| | | | | | |
|----------------------------|---|----------------------------|---|--------------------------------|---|
| Spike Samples ¹ | 6 | Trip Blank(s) ² | 1 | Office Blank(s) ^{3,4} | 1 |
|----------------------------|---|----------------------------|---|--------------------------------|---|

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.

| | |
|--|---|
| Spike Sample Lab Results. Measured values are satisfactory, i.e., within ± 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 QA plan previously submitted? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |

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

If “No” to either, please describe any QC measurements that were missing or outside of control tolerances established in the QAP here:

Summary of Test Results¹ and Determination of Valid Measurements²

| | Ground-Contact | Upper-Level(s) | Total |
|--|-----------------------|-----------------------|--------------|
| Number of test locations: | 74 | 3 | 77 |
| Number of locations ≥ 8.0 -pCi/L: | 0 | 0 | 0 |
| Number of locations ≥ 4.0 and ≤ 8 -pCi/L: | 0 | 0 | 0 |
| Number of locations ≥ 2.7 and ≤ 4 -pCi/L: | 1 | 0 | 0 |
| Number of locations ≥ 2.0 and ≤ 4 -pCi/L: | 2 | 0 | 0 |
| Number of missing required test locations ³ : | 0 | 0 | 0 |
| Percentage of missing test locations for the facility ^{4,5} : | 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 ≥ 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 ≥ 4.0 -pCi/L and the total number of test locations are ≥ 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 Results¹ and Determination of Valid Measurements² (continued)

| | |
|---|---|
| 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 <input 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 <input type="checkbox"/> No |
| <i>If Yes to both above – then Testing Status – ‘No Further Testing Needed’ mark ‘NA’ below and complete Conclusions section</i> | |
| If No to either above , were all results obtained under 4.0-pCi/L and were there sufficient valid measurements obtained? ^{1,2} <i>If Yes – then Testing Status - ‘No Further Testing Needed’ complete Conclusion section</i> <i>If No, then Testing Status - ‘Follow-up Testing Required’ continue below</i> | <input type="checkbox"/> Yes <input type="checkbox"/> No <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.

- **If ‘No Further Testing Needed’** complete conclusions section on first page.
- **If ‘Follow-up Testing Required’** – complete Follow-up Testing described below and the conclusion section on the first page for only the valid measurements/results obtained

Follow-Up Testing (if required)

Required if –

- 1- Not enough valid results were obtained from a facility (table above);
- 2- Any results ≥ 4.0 – pCi/L; and
- 3- At the discretion of MCPS IAQ Staff

Follow-up Testing:

- 1- If an insufficient number of valid measurements obtained during initial round:
 - return to facility to test locations that require valid measurements
- 2- Follow-up Testing for valid measurements ≥ 4.0-pCi/L

| Initial Result(s) | Procedure | Follow-up Result | Conclusion |
|-------------------|---|------------------|----------------------------|
| ≥ 4.0-pCi/L | 1- Short-term follow-up test 2- Average the results of the two tests | ≥4.0 | Mitigation Required |
| | | <4.0 but >2.0 | Consider Mitigation |
| | | <2.0 | Not Required or Considered |

- **Complete second School/Facility Radon Testing Report Form for only Follow-up Testing locations.**

Attachment 1:
Summary Data Tables

| Table 1- Radon Testing Results | | |
|---|-------------|--------|
| Francis Scott Key Middle School | | |
| Test Period: 01/29/2024 - 02/01/2024 | | |
| Kit Number | Room / Area | Result |
| 11464822 | 102 | < 0.3 |
| 11464814 | 104 | < 0.3 |
| 11464823 | 104 | < 0.3 |
| 11464833 | 106 | < 0.3 |
| 11464824 | 107 | < 0.3 |
| 11464815 | 108 | < 0.3 |
| 11464827 | 110 | < 0.3 |
| 11464860 | 117 | < 0.3 |
| 11464885 | 118 | < 0.3 |
| 11464891 | 118 | < 0.3 |
| 11464873 | 122 | < 0.3 |
| 11464883 | 122 | < 0.3 |
| 11464867 | 125 | < 0.3 |
| 11464879 | 126 | < 0.3 |
| 11464861 | 129 | < 0.3 |
| 11464862 | 129 | < 0.3 |
| 11464871 | 133 | < 0.3 |
| 11464872 | 133 | < 0.3 |
| 11464884 | 136 | < 0.3 |
| 11464866 | 137 | 0.5 |
| 11464865 | 139 | < 0.3 |
| 11464805 | 140 | < 0.3 |
| 11464864 | 141 | < 0.3 |
| 11464880 | 142 | < 0.3 |
| 11464881 | 144 | < 0.3 |
| 11464858 | 145 | < 0.3 |
| 11464868 | 148 | < 0.3 |
| 11464869 | 148 | < 0.3 |
| 11464870 | 150 | < 0.3 |
| 11464875 | 152 | 0.9 |
| 11464853 | 153 | 0.7 |
| 11464882 | 156 | 1.4 |
| 11464855 | 157 | 1.5 |
| 11464856 | 157 | 1.1 |
| 11464876 | 158 | < 0.3 |
| 11464846 | 161 | 0.9 |
| 11464850 | 163 | 0.8 |
| 11464863 | 164 | < 0.3 |
| 11464854 | 168 | < 0.3 |
| 11464857 | 170 | 1.0 |
| 11464848 | 173 | 0.6 |
| 11464852 | 174 | 0.7 |
| 11464847 | 181 | 1.0 |

| Table 1- Radon Testing Results | | |
|---|----------------|--------|
| Francis Scott Key Middle School | | |
| Test Period: 01/29/2024 - 02/01/2024 | | |
| Kit Number | Room / Area | Result |
| 11464838 | 182 | 2.8 |
| 11464845 | 182 | 2.1 |
| 11464829 | 185 | 2.0 |
| 11464830 | 186 | 1.3 |
| 11464840 | 191 | 0.9 |
| 11464837 | 193 | 0.6 |
| 11464890 | 212 | < 0.3 |
| 11464892 | 227 | < 0.3 |
| 11464889 | 252 | 0.6 |
| 11464804 | 100A | < 0.3 |
| 11464809 | 100B | < 0.3 |
| 11464810 | 100C | < 0.3 |
| 11464811 | 100D | < 0.3 |
| 11464812 | 100F | < 0.3 |
| 11464817 | 100K | < 0.3 |
| 11464818 | 100M | < 0.3 |
| 11464839 | 101A | 0.5 |
| 11464806 | 101B | < 0.3 |
| 11464821 | 101E | < 0.3 |
| 11464841 | 101F | < 0.3 |
| 11464816 | 106A | < 0.3 |
| 11464834 | 106E | < 0.3 |
| 11464828 | 110A | < 0.3 |
| 11464826 | 110B | < 0.3 |
| 11464820 | 110C | < 0.3 |
| 11464825 | 110E | < 0.3 |
| 11464808 | 110F | < 0.3 |
| 11464819 | 110F | < 0.3 |
| 11464807 | 110G | < 0.3 |
| 11464859 | 117A | < 0.3 |
| 11464851 | 161A | 0.8 |
| 11464843 | 186A | 1.5 |
| 11464844 | 186A | < 0.3 |
| 11464849 | 186B | 1.6 |
| 11464878 | BLR | 1.5 |
| 11464835 | CAFE | < 0.3 |
| 11464836 | CAFE | < 0.3 |
| 11464842 | CAFE | < 0.3 |
| 11464874 | GLR | < 0.3 |
| 11464802 | GYM | 0.5 |
| 11464877 | GYM | < 0.3 |
| 11464813 | KITCHEN OFFICE | 1.0 |
| 11464803 | MAIN OFFICE | < 0.3 |

| Table 1- Radon Testing Results | | |
|---|--------------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 01/29/2024 - 02/01/2024 | | |
| | | |
| Kit Number | Room / Area | Result |
| 11464831 | MEDIA | 0.6 |
| 11464832 | MEDIA | < 0.3 |

| Table 3 - QC Radon Testing Results | | | |
|---|----------------|--------------------|---------------|
| Francis Scott Key Middle School | | | |
| Test Period: 01/29/2024 - 02/01/2024 | | | |
| | | | |
| Kit Number | QC Type | Room / Area | Result |
| 11464814 | FB | 104 | <0.3 |
| 11464885 | D | 118 | <0.3 |
| 11464883 | FB | 122 | <0.3 |
| 11464861 | D | 129 | <0.3 |
| 11464872 | FB | 133 | <0.3 |
| 11464869 | D | 148 | <0.3 |
| 11464855 | D | 157 | 1.5 |
| 11464845 | D | 182 | 2.1 |
| 11464808 | D | 110f | <0.3 |
| 11464844 | FB | 186a | <0.3 |
| 11464842 | D | Cafe | <0.3 |

Attachment 2:
Laboratory Reports

Radon test result report for:
FRANCIS SCOTT KEY MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|----------|---------|-----------------------|-----------------------|-----------|------------|
| 11464804 | 100A | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464809 | 100B | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464810 | 100C | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464811 | 100D | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464812 | 100F | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464817 | 100K | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464818 | 100M | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464839 | 101A | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.5 ± 0.3 | 2024-02-05 |
| 11464806 | 101B | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464821 | 101E | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464841 | 101F | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464822 | 102 | 2024-01-29 @ 9:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464823 | 104 | 2024-01-29 @ 9:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464814 | 104 | 2024-01-29 @ 9:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464833 | 106 | 2024-01-29 @ 9:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464816 | 106A | 2024-01-29 @ 9:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464834 | 106E | 2024-01-29 @ 9:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464824 | 107 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464815 | 108 | 2024-01-29 @ 9:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464827 | 110 | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464828 | 110A | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464826 | 110B | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464820 | 110C | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464825 | 110E | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464808 | 110F | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464819 | 110F | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464807 | 110G | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464860 | 117 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464859 | 117A | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464885 | 118 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464891 | 118 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464873 | 122 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464883 | 122 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464867 | 125 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464879 | 126 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464861 | 129 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464862 | 129 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |

Radon test result report for:
FRANCIS SCOTT KEY MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|----------|---------|-----------------------|-----------------------|-----------|------------|
| 11464871 | 133 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464872 | 133 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464884 | 136 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464866 | 137 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.5 ± 0.3 | 2024-02-05 |
| 11464865 | 139 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464805 | 140 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464864 | 141 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464880 | 142 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464881 | 144 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464858 | 145 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464868 | 148 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464869 | 148 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464870 | 150 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464875 | 152 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.9 ± 0.4 | 2024-02-05 |
| 11464853 | 153 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.7 ± 0.3 | 2024-02-05 |
| 11464882 | 156 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 1.4 ± 0.4 | 2024-02-05 |
| 11464856 | 157 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 1.1 ± 0.4 | 2024-02-05 |
| 11464855 | 157 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 1.5 ± 0.4 | 2024-02-05 |
| 11464876 | 158 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464846 | 161 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.9 ± 0.3 | 2024-02-05 |
| 11464851 | 161A | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.8 ± 0.3 | 2024-02-05 |
| 11464850 | 163 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.8 ± 0.3 | 2024-02-05 |
| 11464863 | 164 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464854 | 168 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464857 | 170 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 1.0 ± 0.3 | 2024-02-05 |
| 11464848 | 173 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.6 ± 0.3 | 2024-02-05 |
| 11464852 | 174 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.7 ± 0.3 | 2024-02-05 |
| 11464847 | 181 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 1.0 ± 0.3 | 2024-02-05 |
| 11464845 | 182 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 2.1 ± 0.4 | 2024-02-05 |
| 11464838 | 182 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 2.8 ± 0.4 | 2024-02-05 |
| 11464829 | 185 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 2.0 ± 0.4 | 2024-02-05 |
| 11464830 | 186 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 1.3 ± 0.4 | 2024-02-05 |
| 11464843 | 186A | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 1.5 ± 0.4 | 2024-02-05 |
| 11464844 | 186A | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464849 | 186B | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 1.6 ± 0.4 | 2024-02-05 |
| 11464840 | 191 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.9 ± 0.4 | 2024-02-05 |
| 11464837 | 193 | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.6 ± 0.3 | 2024-02-05 |

February 7, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**FRANCIS SCOTT KEY MS
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 11464890 | 212 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464892 | 227 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464889 | 252 | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | 0.6 ± 0.3 | 2024-02-05 |
| 11464878 | BLR | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | 1.5 ± 0.4 | 2024-02-05 |
| 11464836 | CAFE | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464842 | CAFE | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464835 | CAFE | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464874 | GLR | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464802 | GYM | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | 0.5 ± 0.3 | 2024-02-05 |
| 11464877 | GYM | 2024-01-29 @ 11:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |
| 11464813 | KITCHEN OFFICE | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 1.0 ± 0.4 | 2024-02-05 |
| 11464803 | MAIN OFFICE | 2024-01-29 @ 9:00 am | 2024-02-01 @ 9:00 am | < 0.3 | 2024-02-05 |
| 11464831 | MEDIA | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | 0.6 ± 0.3 | 2024-02-05 |
| 11464832 | MEDIA | 2024-01-29 @ 10:00 am | 2024-02-01 @ 10:00 am | < 0.3 | 2024-02-05 |

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

February 7, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
OFFICE BLANK
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 11285577 | OB | 2024-01-29 @ 10:00 am | 2024-02-01 @ 11:00 am | < 0.3 | 2024-02-05 |

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

February 7, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRAVEL BLANK
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 11633585 | TB | 2024-01-29 @ 10:00 am | 2024-02-01 @ 11:00 am | < 0.3 | 2024-02-05 |

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

January 29, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
STORAGE
KCI

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 11635097 | Storage | 2024-01-07 @ 9:00 am | 2024-01-11 @ 9:00 am | < 0.3 | 2024-01-15 |

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI TECHNOLOGIES, INC Job Number 213327

NOMINAL Conditions: Radon Conc 49.5 pCi/L Rel. Hum 24.7 % Temp. 69.8 F

Date Start: 1/19/24 Date Stop: 1/22/24 Date Start: _____ Date Stop: _____

Time Start: 0831 Time Stop: 0831 Time Start: _____ Time Stop: _____

Device No.'s: (6) CHAR BAGS - Device No.'s: _____

11284003, 11284005, 11284006

11284007, 11284008, 11284013

F3 Left

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

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

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

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

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

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

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

January 29, 2024

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**BOWSER MORNER
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 11284003 | SK | 2024-01-19 @ 9:00 am | 2024-01-22 @ 9:00 am | 47.0 ± 3.8 | 2024-01-29 |
| 11284005 | SK | 2024-01-19 @ 9:00 am | 2024-01-22 @ 9:00 am | 43.4 ± 3.5 | 2024-01-29 |
| 11284006 | SK | 2024-01-19 @ 9:00 am | 2024-01-22 @ 9:00 am | 42.1 ± 3.4 | 2024-01-29 |
| 11284007 | SK | 2024-01-19 @ 9:00 am | 2024-01-22 @ 9:00 am | 46.4 ± 3.7 | 2024-01-29 |
| 11284008 | SK | 2024-01-19 @ 9:00 am | 2024-01-22 @ 9:00 am | 46.2 ± 3.7 | 2024-01-29 |
| 11284013 | SK | 2024-01-19 @ 9:00 am | 2024-01-22 @ 9:00 am | 45.6 ± 3.6 | 2024-01-29 |

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – Testing January 29th – February 1st 2024

Name of Schools:

- 1. John F. Kennedy HS
- 2. Francis Scott Key MS
- 3. Montgomery Village MS
- 4. Oak View ES
- 5. North Chevy Chase ES
- 6. Cabin Branch ES

| | Date | Initials |
|----------------------------------|------------|----------|
| Radon Test Kits Deployed | 01/29/2024 | OM |
| Radon Test Kits Collected | 02/01/2024 | JW |
| Radon Test Kits Shipped to Lab* | 02/01/2024 | OM |
| Radon Test Kits Received by Lab* | 02/05/2024 | OM |

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

Attachment 3:
Sampling Location Map



MCPS RADON TESTING – EXECUTIVE SUMMARY

| | |
|--------------------------|--|
| Site Name | Francis Scott Key Middle School |
| Date of Test Report | 05/27/2022 |
| Round of Testing | Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility |
| # Rooms Tested | 5 |
| # Rooms \geq 4.0 pCi/L | 0 |
| Lowest Value | <0.3 pCi/L |
| Highest Value | 0.9 pCi/L |

Project Status

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



May 27, 2022

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

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

Location: Francis Scott Key Middle School
910 Schindler Dr.
Silver Spring, MD 20903

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 Francis Scott Key Middle School, located at 910 Schindler Dr. Silver Spring, MD 20903 (subject site).

Scope of Services:

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

KCI visited the site on March 29, 2022 and deployed seven (7) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

KCI sampled the following locations during this follow-up test:

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

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

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

KCI returned to the site on April 01, 2022 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

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

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

KCI also compiled weather data for the testing period and conducted observations of relevant field conditions. During the test period, weather records indicate low temperatures were in the mid 20°Fs and high temperatures ranged from the low 50°Fs to the mid 70°Fs. Maximum sustained winds ranged from 0-33 miles per hour. Average humidity was around 47% with 0.23 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

| Table 1- Radon Testing Results | | |
|--------------------------------------|-------------|--------|
| Francis Scott Key MS RT | | |
| Test Period: 03/29/2022 - 04/01/2022 | | |
| | | |
| Kit Number | Room / Area | Result |
| 11139865 | 102 | < 0.3 |
| 11139855 | 191 | 0.8 |
| 11139860 | 191 | 0.9 |
| 11139856 | 193 | < 0.3 |
| 11139857 | 193 | < 0.3 |
| 11139866 | 195 | < 0.3 |
| 11139859 | 101F | < 0.3 |

| Table 2- Radon Testing Results | | | |
|--------------------------------------|---------|--------------|--------|
| Francis Scott Key MS RT | | | |
| Test Period: 03/29/2022 - 04/01/2022 | | | |
| | | | |
| Kit Number | QC Type | Room / Area | Result |
| 11139860 | D | 191 | 0.9 |
| 11139856 | FB | 193 | < 0.3 |
| 11139883 | OB | OFFICE BLANK | < 0.3 |
| 11139841 | TB | TRAVEL BLANK | < 0.3 |

ATTACHMENT C

Laboratory Analytical Results

April 4, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**FRANCIS SCOTT KEY MS
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|----------------------|--------------|-----------------|
| 11139859 | 101F | 2022-03-29 @ 10:00 am | 2022-04-01 @ 9:00 am | < 0.3 | 2022-04-04 |
| 11139865 | 102 | 2022-03-29 @ 10:00 am | 2022-04-01 @ 9:00 am | < 0.3 | 2022-04-04 |
| 11139855 | 191 | 2022-03-29 @ 10:00 am | 2022-04-01 @ 9:00 am | 0.8 ± 0.3 | 2022-04-04 |
| 11139860 | 191 | 2022-03-29 @ 10:00 am | 2022-04-01 @ 9:00 am | 0.9 ± 0.3 | 2022-04-04 |
| 11139856 | 193 | 2022-03-29 @ 10:00 am | 2022-04-01 @ 9:00 am | < 0.3 | 2022-04-04 |
| 11139857 | 193 | 2022-03-29 @ 10:00 am | 2022-04-01 @ 9:00 am | < 0.3 | 2022-04-04 |
| 11139866 | 195 | 2022-03-29 @ 10:00 am | 2022-04-01 @ 9:00 am | < 0.3 | 2022-04-04 |

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

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

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: _____ Date Stop: _____

Time Start: 0705 Time Stop: 0705 Time Start: _____ Time Stop: _____

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

11139367, 11139368, 11139371, _____

11139710, 11139717 _____

E3 light

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

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

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

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

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

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

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

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools – Retesting

Name of Schools:

1. Watkins Mill HS
2. Cresthaven ES
3. East Silver Spring ES
4. Fairland Center
5. Francis Scott Key MS
6. Greencastle ES
7. Roscoe Nix ES
8. West Farm Transportation Depot
9. Wheaton HS
10. White Oak MS
11. William Tyler Page ES
12. Bel Pre ES
13. Fairland ES
14. Highland ES
15. Rolling Terrace ES
16. Takoma Park MS
17. Viers Mill ES
18. Poolesville ES

| | Date | Initials |
|----------------------------------|------------|----------|
| Radon Test Kits Deployed | 03/29/2022 | BMM |
| Radon Test Kits Collected | 04/01/2022 | BMM |
| Radon Test Kits Shipped to Lab* | 04/01/2022 | BMM |
| Radon Test Kits Received by Lab* | 04/04/2022 | BMM |

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



MCPS RADON TESTING – EXECUTIVE SUMMARY

| | |
|--------------------------|--|
| Site Name | Francis Scott Key Middle School |
| Date of Test Report | 4/29/2022 |
| Round of Testing | Initial Follow-up Post Remediation 2 Year Testing 5 Year Testing HVAC Upgrade Window Replacement New Addition New Facility |
| # Rooms Tested | 75 |
| # Rooms \geq 4.0 pCi/L | 0 |
| Lowest Value | <0.3 pCi/L |
| Highest Value | 1.7 pCi/L |

Project Status:

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



April 29, 2022

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

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

Location: Francis Scott Key Middle School
910 Schindler Dr.
Silver Spring, MD 20903

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 Francis Scott Key Middle School, located at 910 Schindler Dr. Silver Spring, MD 20903 (subject site).

Scope of Services:

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

KCI visited the site on March 7, 2022 and deployed eighty-five (85) activated charcoal (AC) radon test kits. KCI deployed radon test kits in all frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance.

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

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

KCI returned to the site on March 10, 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 post-mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

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 mid 20s and high temperatures ranged from the high 70s to the low 50s Fahrenheit. Maximum sustained winds ranged from 0-32 miles per hour. Average humidity was around 65% with 1.09 inches of precipitation (rain) was recorded during testing period.

Results:

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

The results of the radon test analysis indicated the following:

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Check, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

OC- Quality Control

| Table 1- Radon Testing Results | | |
|--------------------------------------|-------------|--------|
| Francis Scott Key MS | | |
| Test Period: 03/07/2022 - 03/10/2022 | | |
| Kit Number | Room / Area | Result |
| 11130434 | 100 | < 0.3 |
| 11130441 | 100 | 0.6 |
| 11130442 | 100 | < 0.3 |
| 11133813 | 101 | 0.5 |
| 11133831 | 101 | 0.9 |
| 11133808 | 104 | < 0.3 |
| 11133853 | 104 | < 0.3 |
| 11130447 | 106 | 0.8 |
| 11133840 | 107 | < 0.3 |
| 11130411 | 108 | < 0.3 |
| 11130448 | 110 | < 0.3 |
| 11130428 | 117 | < 0.3 |
| 11130430 | 118 | 0.9 |
| 11130425 | 122 | < 0.3 |
| 11133817 | 125 | < 0.3 |
| 11130435 | 126 | 0.6 |
| 11133820 | 129 | < 0.3 |
| 11133822 | 133 | < 0.3 |
| 11130424 | 136 | < 0.3 |
| 11133818 | 137 | < 0.3 |
| 11133819 | 139 | < 0.3 |
| 11130410 | 140 | < 0.3 |
| 11133821 | 141 | < 0.3 |
| 11130422 | 142 | < 0.3 |
| 11130418 | 144 | < 0.3 |
| 11133835 | 145 | < 0.3 |
| 11130419 | 148 | < 0.3 |
| 11130421 | 150 | < 0.3 |
| 11130429 | 150 | < 0.3 |
| 11130431 | 152 | < 0.3 |
| 11133833 | 153 | 0.6 |
| 11133828 | 156 | < 0.3 |
| 11133829 | 157 | < 0.3 |
| 11133826 | 158 | < 0.3 |
| 11130407 | 161 | < 0.3 |
| 11130408 | 163 | < 0.3 |
| 11130409 | 163 | < 0.3 |
| 11133827 | 164 | < 0.3 |
| 11133834 | 168 | < 0.3 |
| 11133809 | 170 | < 0.3 |
| 11130414 | 173 | < 0.3 |
| 11130415 | 174 | < 0.3 |

| Table 1- Radon Testing Results | | |
|--------------------------------------|-----------------|--------|
| Francis Scott Key MS | | |
| Test Period: 03/07/2022 - 03/10/2022 | | |
| Kit Number | Room / Area | Result |
| 11133802 | 174 | < 0.3 |
| 11133825 | 174 | < 0.3 |
| 11130405 | 181 | < 0.3 |
| 11130420 | 182 | 1.7 |
| 11130402 | 185 | 0.6 |
| 11130406 | 186 | 1.0 |
| 11133810 | 207 | < 0.3 |
| 11133851 | 224 | < 0.3 |
| 11133852 | 232 | < 0.3 |
| 11133848 | 248 | < 0.3 |
| 11133824 | 1010 | < 0.3 |
| 11133849 | 10100 | < 0.3 |
| 11130440 | 100A | 0.7 |
| 11130432 | 100B | < 0.3 |
| 11130443 | 100C | < 0.3 |
| 11133803 | 100D | < 0.3 |
| 11130436 | 100F | < 0.3 |
| 11133804 | 100G | 0.6 |
| 11130433 | 100K | < 0.3 |
| 11130412 | 100M | < 0.3 |
| 11133814 | 101A | < 0.3 |
| 11133839 | 101D | 0.6 |
| 11133807 | 101E | < 0.3 |
| 11130449 | 106A | < 0.3 |
| 11130450 | 106E | < 0.3 |
| 11130444 | 110A | < 0.3 |
| 11133838 | 110B | < 0.3 |
| 11133801 | 110C | < 0.3 |
| 11133837 | 110E | < 0.3 |
| 11133806 | 110F | < 0.3 |
| 11133836 | 110G | < 0.3 |
| 11130426 | 161A | 0.6 |
| 11130413 | 186A | 1.2 |
| 11133823 | 187A | < 0.3 |
| 11133830 | 187A | < 0.3 |
| 11133832 | 187A | < 0.3 |
| 11130403 | CAFETERIA | < 0.3 |
| 11130404 | CAFETERIA | < 0.3 |
| 11130417 | CAFETERIA | < 0.3 |
| 11130401 | ENSEMBLE OFFICE | 0.6 |
| 11130423 | GYM | 0.8 |
| 11130427 | GYM | 1.1 |

| Table 1- Radon Testing Results | | |
|--------------------------------------|-------------|--------|
| Francis Scott Key MS | | |
| Test Period: 03/07/2022 - 03/10/2022 | | |
| | | |
| Kit Number | Room / Area | Result |
| 11130439 | GYM | 1.0 |

| Table 2- Radon Testing Results | | | |
|--------------------------------------|---------|--------------|--------|
| Francis Scott Key MS | | | |
| Test Period: 03/07/2022 - 03/10/2022 | | | |
| Kit Number | QC Type | Room / Area | Result |
| 11130441 | D | 100 | 0.6 |
| 11130434 | FB | 100 | < 0.3 |
| 11130427 | D | Gym | 1.1 |
| 11130429 | D | 150 | < 0.3 |
| 11133802 | D | 174 | < 0.3 |
| 11133825 | FB | 174 | < 0.3 |
| 11130409 | D | 163 | < 0.3 |
| 11133823 | D | 187a | < 0.3 |
| 11133832 | FB | 187a | < 0.3 |
| 11133808 | D | 104 | < 0.3 |
| 11131662 | OB | OFFICE BLANK | < 0.3 |
| 11131691 | TB | TRAVEL BLANK | < 0.3 |

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
FRANCIS SCOTT KEY MS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|----------|---------|-----------------------|-----------------------|-----------|------------|
| 11130434 | 100 | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130442 | 100 | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130441 | 100 | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | 0.6 ± 0.3 | 2022-03-14 |
| 11130440 | 100A | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | 0.7 ± 0.3 | 2022-03-14 |
| 11130432 | 100B | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130443 | 100C | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130436 | 100F | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130433 | 100K | 2022-03-07 @ 9:00 am | 2022-03-10 @ 10:00 am | < 0.3 | 2022-03-14 |
| 11130412 | 100M | 2022-03-07 @ 9:00 am | 2022-03-10 @ 10:00 am | < 0.3 | 2022-03-14 |
| 11130447 | 106 | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | 0.8 ± 0.3 | 2022-03-14 |
| 11130449 | 106A | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130450 | 106E | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130411 | 108 | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130448 | 110 | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130444 | 110A | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11130428 | 117 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130430 | 118 | 2022-03-07 @ 9:00 am | 2022-03-10 @ 10:00 am | 0.9 ± 0.3 | 2022-03-14 |
| 11130425 | 122 | 2022-03-07 @ 9:00 am | 2022-03-10 @ 10:00 am | < 0.3 | 2022-03-14 |
| 11130435 | 126 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 10:00 am | 0.6 ± 0.3 | 2022-03-14 |
| 11130424 | 136 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 10:00 am | < 0.3 | 2022-03-14 |
| 11130410 | 140 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130422 | 142 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130418 | 144 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130419 | 148 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130421 | 150 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130429 | 150 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130431 | 152 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130407 | 161 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130426 | 161A | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | 0.6 ± 0.3 | 2022-03-14 |
| 11130408 | 163 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130409 | 163 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130414 | 173 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130415 | 174 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130405 | 181 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130420 | 182 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | 1.7 ± 0.3 | 2022-03-14 |
| 11130402 | 185 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | 0.6 ± 0.3 | 2022-03-14 |
| 11130406 | 186 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | 1.0 ± 0.4 | 2022-03-14 |

March 15, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FRANCIS SCOTT KEY MS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|-----------------|-----------------------|----------------------|--------------|-----------------|
| 11130413 | 186A | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | 1.2 ± 0.3 | 2022-03-14 |
| 11130417 | CAFETERIA | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130403 | CAFETERIA | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130404 | CAFETERIA | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11130401 | ENSEMBLE OFFICE | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | 0.6 ± 0.3 | 2022-03-14 |
| 11130439 | GYM | 2022-03-07 @ 9:00 am | 2022-03-10 @ 9:00 am | 1.0 ± 0.3 | 2022-03-14 |
| 11130423 | GYM | 2022-03-07 @ 9:00 am | 2022-03-10 @ 9:00 am | 0.8 ± 0.3 | 2022-03-14 |
| 11130427 | GYM | 2022-03-07 @ 9:00 am | 2022-03-10 @ 9:00 am | 1.1 ± 0.3 | 2022-03-14 |

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

Radon test result report for:
FRANCIS SCOTT KEY MS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|----------|---------|-----------------------|-----------------------|-----------|------------|
| 11133803 | 100D | 2022-03-07 @ 9:00 am | 2022-03-10 @ 10:00 am | < 0.3 | 2022-03-14 |
| 11133804 | 100G | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | 0.6 ± 0.3 | 2022-03-14 |
| 11133831 | 101 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | 0.9 ± 0.3 | 2022-03-14 |
| 11133813 | 101 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | 0.5 ± 0.3 | 2022-03-14 |
| 11133814 | 101A | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133839 | 101D | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | 0.6 ± 0.3 | 2022-03-14 |
| 11133807 | 101E | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133824 | 101E1 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 10:00 am | < 0.3 | 2022-03-14 |
| 11133849 | 101E2 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 10:00 am | < 0.3 | 2022-03-14 |
| 11133808 | 104 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133853 | 104 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133840 | 107 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133838 | 110B | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11133801 | 110C | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11133837 | 110E | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11133806 | 110F | 2022-03-07 @ 11:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11133836 | 110G | 2022-03-07 @ 9:00 am | 2022-03-10 @ 8:00 am | < 0.3 | 2022-03-14 |
| 11133817 | 125 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133820 | 129 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133822 | 133 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133818 | 137 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133819 | 139 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133821 | 141 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133835 | 145 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133833 | 153 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | 0.6 ± 0.3 | 2022-03-14 |
| 11133828 | 156 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133829 | 157 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133826 | 158 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133827 | 164 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133834 | 168 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133809 | 170 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133825 | 174 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133802 | 174 | 2022-03-07 @ 10:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133832 | 187A | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133830 | 187A | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133823 | 187A | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133810 | 207 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |

March 15, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
FRANCIS SCOTT KEY MS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|----------------------|--------------|-----------------|
| 11133851 | 224 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133852 | 232 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |
| 11133848 | 248 | 2022-03-07 @ 11:00 am | 2022-03-10 @ 9:00 am | < 0.3 | 2022-03-14 |

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 204620

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

Date Start: 3/18/22 Date Stop: 3/21/22 Date Start: _____ Date Stop: _____

Time Start: 0705 Time Stop: 0705 Time Start: _____ Time Stop: _____

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

11139367, 11139368, 11139371, _____

11139710, 11139717 _____

E3 light

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

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

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

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

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

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

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

March 30, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon – March 2022 Schools

Name of Schools:

1. Cresthaven ES
2. Key, Francis Scott MS
3. Nix, Roscoe ES
4. Greencastle ES
5. Jackson Road
6. Page, William Tyler ES
7. West Farm Transportation Depot
8. Westover ES
9. White Oak MS

| | Date | Initials |
|----------------------------------|------------|----------|
| Radon Test Kits Deployed | 03/07/2022 | BMM |
| Radon Test Kits Collected | 03/10/2022 | BMM |
| Radon Test Kits Shipped to Lab* | 03/10/2022 | BMM |
| Radon Test Kits Received by Lab* | 03/13/2022 | BMM |

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



MCPS RADON TESTING - EXECUTIVE SUMMARY

| | |
|--------------------------|---|
| Site Name | Francis Scott Key Middle School |
| Date of Report | 3/5/2020 |
| Round of Testing | Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility |
| # of Rooms Tested | 11 |
| # Rooms \geq 4.0 pCi/L | 0 |
| Lowest Value | <0.3 pCi/L |
| Highest Value | 1.1 pCi/L |

Project Status

Current Project Status at this time: Retesting completed; no further action.



3/5/2020

Mr. Richard Cox, MS
Team Leader
Montgomery County Public Schools
Division of Maintenance
Gaithersburg, Maryland 20879

Re: Radon Testing Services

KCI Job #12146341.126

Location: Francis Scott Key Middle School

910 Schindler Drive
Silver Spring, Maryland 20903

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Francis Scott Key Middle School, located at 910 Schindler Drive in Silver Spring, Maryland 20903 (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 #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on 2/18/2020 and deployed thirteen (13) 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.

KCI sampled the following locations during this follow-up test:

1. Rooms with missing test kits from the December 2019 testing period (i.e. test kit was deployed but not recovered),

-
2. Rooms with invalidated test kits from the December 2019 testing period (e.g. an open window in the room or disturbed test kit),
 3. Rooms which were locked/inaccessible during the December 2019 testing period,
 4. Rooms with elevated December 2019 results (i.e. ≥ 3.5 pCi/L),
 5. Rooms previously tested for radon but not tested in December 2019, and
 6. Additional rooms that require testing (if applicable.)

A floor plan map of the building with the test locations is included as Appendix 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 nine (9) 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.

KCI returned to the site on 2/21/2020 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a NRSB certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

KCI recorded observations of the following conditions in each room 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.

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 mid-20s to the lower-40s; and high temperatures ranged from the upper-30s to the upper-50s. Maximum sustained winds ranged from 13-21 miles per hour. Average humidity was approximately 50%. A total of .01 inches of rain were recorded during the testing period. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

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

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|---------------------|------------------|------------------|
| ≥4.0 pCi/L | None | N/A |
| ≤4.0 pCi/L | See Attachment B | 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 410-316-7800.

Sincerely,

Mr. Tyler P. McCleaf
 Radon Measurement Provider
 KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations

B - Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

ATTACHMENT A

Floor Plan With Test Locations

Floor Plan Legend

X-Sample Location (in red)

X- Previous Sample Location

1- Not Samled; No Ground Contact

2- Not Samled; Unoccupied (e.g. Storage, Mechanical)

3- Not Samled; High Humidity/Moisture

4- Not Samled; Bathroom/Hallway

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

| Table 1- Radon Testing Results | | |
|---------------------------------|-------------------|--------|
| Francis Scott Key Middle School | | |
| Test Period: 02/18/20-02/21/20 | | |
| Kit Number | Room / Area | Result |
| 9348504 | SCHOOL STORE 103 | < 0.3 |
| 9348507 | GYM | 1.1 |
| 9348508 | GIRLS LOCKER ROOM | < 0.3 |
| 9348509 | 181A | < 0.3 |
| 9348510 | BOYS LOCKER ROOM | < 0.3 |
| 9348513 | 161A | < 0.3 |
| 9348515 | STAGE | < 0.3 |
| 9348516 | 145 | < 0.3 |
| 9348517 | 158 | < 0.3 |
| 9348518 | 186A | < 0.3 |
| 9348519 | IMC OFFICE B | < 0.3 |
| 9348523 | GYM | 0.8 |
| 9348571 | OFFICE BLANK | < 0.3 |

| Table 2- Radon Testing Results | | | |
|---------------------------------|---------------|-------------|--------|
| Francis Key Scott Middle School | | | |
| Test Period: 02/18/20-02/21/20 | | | |
| | | | |
| Kit Number | QC Type | Room / Area | Result |
| 9348506 | TRANSIT BLANK | NA | < 0.3 |

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

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

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|----------------|------------|
| 9341725 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 26.9 \pm 1.6 | 2020-02-26 |
| 9341730 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 26.1 \pm 1.6 | 2020-02-26 |
| 9341728 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 26.9 \pm 1.6 | 2020-02-26 |
| 9341726 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 25.8 \pm 1.5 | 2020-02-26 |
| 9341731 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 25.1 \pm 1.5 | 2020-02-26 |
| 9341729 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 26.2 \pm 1.6 | 2020-02-26 |
| 9341727 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 27.2 \pm 1.6 | 2020-02-26 |
| 9341732 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 27.3 \pm 1.6 | 2020-02-26 |

March 5, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

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

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|----------------|-----------------|
| 9341733 | | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 26.4 \pm 1.6 | 2020-02-26 |

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

March 5, 2020

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

S

N/A

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 9341729 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 26.2 ± 1.6 | 2020-02-26 |
| 9341727 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 27.2 ± 1.6 | 2020-02-26 |
| 9341732 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 27.3 ± 1.6 | 2020-02-26 |
| 9341725 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 26.9 ± 1.6 | 2020-02-26 |
| 9341730 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 26.1 ± 1.6 | 2020-02-26 |
| 9341728 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 26.9 ± 1.6 | 2020-02-26 |
| 9341726 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 25.8 ± 1.5 | 2020-02-26 |
| 9341731 | N/A | 2020-02-21 @ 8:00 am | 2020-02-24 @ 8:00 am | 25.1 ± 1.5 | 2020-02-26 |

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies, Inc. Job Number 194523

NOMINAL Conditions: Radon Conc 25.8 pCi/L Rel. Hum 49.8 % Temp. 70.2 F

Date Start: 2/21/20 Date Stop: 2/24/20 Date Start: _____ Date Stop: _____

Time Start: 0745 Time Stop: 0745 Time Start: _____ Time Stop: _____

Device No.'s: (9) Char Bags - Device No.'s: _____

9341725 thru 9341733

52 ceph

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

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

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

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

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

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

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

P4792 / WILLIAM LYMAN

| Kit Number | Start Date | Start Time | End Date | End Time | Temp. | Facility | Building | Room | Project ID | Floor | Result |
|------------|------------|------------|------------|------------|------------|---------------|------------|-------------------|------------|------------|------------|
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| 9348504 | 2020-02-18 | 11:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | SCHOOL STORE 103 | [REDACTED] | 1 | < 0.3 |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| 9348506 | 2020-02-18 | 9:00 am | 2020-02-21 | 2:00 pm | 70 | TRANIST BLANK | | | [REDACTED] | 3 | < 0.3 |
| 9348507 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | GYM | [REDACTED] | 1 | 1.1 |
| 9348508 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | GIRLS LOCKER ROOM | [REDACTED] | 1 | < 0.3 |
| 9348509 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | 181A | [REDACTED] | 1 | < 0.3 |
| 9348510 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | BOYS LOCKER ROOM | [REDACTED] | 1 | < 0.3 |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| 9348513 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | 161A | [REDACTED] | 1 | < 0.3 |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| 9348515 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | STAGE | [REDACTED] | 1 | < 0.3 |
| 9348516 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | 145 | [REDACTED] | 1 | < 0.3 |
| 9348517 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | 158 | [REDACTED] | 1 | < 0.3 |
| 9348518 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | 186A | [REDACTED] | 1 | < 0.3 |
| 9348519 | 2020-02-18 | 9:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | IMC OFFICE B | [REDACTED] | 1 | < 0.3 |
| 9348523 | 2020-02-18 | 10:00 am | 2020-02-21 | 10:00 am | 70 | KEY MS | 311 | GYM | [REDACTED] | 1 | 0.8 |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| 9348571 | 2020-02-18 | 9:00 am | 2020-02-21 | 2:00 pm | 70 | OFFICE BLANK | | | [REDACTED] | 3 | < 0.3 |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |



Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 3

Name of Schools:

1. Bannockburn E.S.
2. Bradley Hills E.S.
3. East Silver Spring E.S.
4. Einstein H.S.
5. Flora M. Singer E.S.
6. Francis Scott Key M.S.
7. Jones Lane E.S
8. Montgomery Blair H.S.
9. Oak View E.S.
10. Redland M.S.
11. Springbrook H.S.

| | Date | Initials |
|----------------------------------|---------|----------|
| Radon Test Kits Deployed | 2/18/20 | |
| Radon Test Kits Collected | 2/21/20 | |
| Radon Test Kits Shipped to Lab* | 2/21/20 | |
| Radon Test Kits Received by Lab* | 2/24/20 | |

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



MCPS RADON TESTING - EXECUTIVE SUMMARY

| | |
|--------------------------|---|
| Site Name | Francis Scott Key Middle School |
| Date of Report | 2/21/2020 |
| Round of Testing | Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility |
| # of Rooms Tested | 67 |
| # Rooms \geq 4.0 pCi/L | 0 |
| Lowest Value | <0.3 pCi/L |
| Highest Value | 2.3 pCi/L |

Project Status

Current Project Status at this time: Testing Complete; missed locations and missing/compromised tests to be sampled.



2/21/2020

Mr. Richard Cox, MS
Environmental Team Leader
Montgomery County Public Schools
Division of Maintenance
Gaithersburg, Maryland 20879

Re: Radon Testing Services

KCI Job #12146341126

Location: Francis Scott Key Middle School

910 Schindler Drive
Silver Spring, Maryland 20903

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Francis Scott Key Middle School, located at 910 Schindler Drive in Silver Spring, Maryland 20903 (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 Provider (certification #111004 RT) supervised the testing. Additional information on radon management and the health effects of radon exposure is available from www.montgomerycountymd.gov/dep/air/radon or www.epa.gov/radon.

KCI visited the site on 1/6/2020 and deployed eighty (80) 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 Appendix 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 sixty (60) 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.

KCI returned to the site on 1/9/2020 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, Inc. is a National Radon Safety Board (NRSB) radon measurement provider and is a certified analytical laboratory for radon analysis (certification #ARL1402) located at 1936 Butler Bridge Road, Mills River, North Carolina.

EVALUATION OF TESTING CONDITIONS

These tests represent:

- Follow-up to initial testing.

These tests were conducted to:

- Evaluate radon concentrations at the facility.

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

KCI recorded observations of the following conditions in each room 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.

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 upper-20s and high temperatures were in the mid-50s. Maximum sustained winds ranged from 10-23 miles per hour. Average humidity was around 64%. 0.32 inches of precipitation (rain) was recorded during the testing period.

RESULTS

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

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|----------------------------|------------------|------------------|
| ≥4.0 pCi/L | None | N/A |
| ≤4.0 pCi/L | See Attachment B | 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 410-316-7800.

Sincerely,

Mr. Tyler P. McCleaf
Radon Measurement Provider
111004 RT

KCI Technologies, Inc.

Attachments:

A- Floor Plan with Test Locations

B - Tables 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 Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

Table 1- Radon Testing Results

Francis Scott Key Middle School

Test Period: 1/6/2020-1/9/2020

| Kit Number | Room / Area | Result |
|------------|-------------|--------|
| 9348201 | MAIN OFFICE | < 0.3 |
| 9348202 | 100A | < 0.3 |
| 9348203 | 100B | < 0.3 |
| 9348204 | 100C | < 0.3 |
| 9348205 | 100D | < 0.3 |
| 9348206 | 100F | < 0.3 |
| 9348207 | 110E | < 0.3 |
| 9348208 | 100K | < 0.3 |
| 9348209 | 100M | < 0.3 |
| 9348210 | 110F | < 0.3 |
| 9348211 | 110A | < 0.3 |
| 9348212 | 108 | < 0.3 |
| 9348213 | 110G | 0.8 |
| 9348214 | 110E | < 0.3 |
| 9348215 | 110C | 0.7 |
| 9348216 | 110B | < 0.3 |
| 9348217 | 106 | < 0.3 |
| 9348218 | 106 | < 0.3 |
| 9348219 | 106A | < 0.3 |
| 9348221 | 110 | < 0.3 |
| 9348222 | 106A | < 0.3 |
| 9348223 | 104 | < 0.3 |
| 9348224 | 102 | < 0.3 |
| 9348225 | 118 | < 0.3 |
| 9348226 | 122 | < 0.3 |
| 9348227 | 136 | 0.6 |
| 9348228 | 140 | < 0.3 |
| 9348229 | 136 | < 0.3 |
| 9348231 | 126 | < 0.3 |
| 9348232 | 144 | 0.7 |
| 9348233 | 148 | 0.6 |
| 9348234 | 150 | 0.7 |
| 9348235 | 156 | 2.3 |
| 9348236 | 168 | < 0.3 |
| 9348237 | 152 | 1 |
| 9348238 | 141 | < 0.3 |
| 9348239 | 152 | < 0.3 |
| 9348240 | 164 | < 0.3 |
| 9348241 | 142 | < 0.3 |
| 9348242 | 117 | < 0.3 |
| 9348243 | 125 | 0.6 |
| 9348244 | 129 | < 0.3 |

| | | |
|---------|-----------------|---------|
| 9348245 | 152 | 1.3 |
| 9348246 | 133 | < 0.3 |
| 9348247 | 139 | < 0.3 |
| 9348248 | 137 | < 0.3 |
| 9348249 | 170 | < 0.3 |
| 9348250 | 153 | < 0.3 |
| 9348251 | 153 | < 0.3 |
| 9348252 | 157 | < 0.3 |
| 9348253 | 161 | < 0.3 |
| 9348254 | 174 | < 0.3 |
| 9348256 | 163 | < 0.3 |
| 9348258 | 186 | < 0.3 |
| 9348259 | 185 | < 0.3 |
| 9348260 | 191 | < 0.3 |
| 9348261 | 181 | < 0.3 |
| 9348262 | 181 | < 0.3 |
| 9348263 | 181 | < 0.3 |
| 9348264 | 193 | < 0.3 |
| 9348265 | KITCHEN OFFICE | < 0.3 |
| 9348266 | CAFETERIA | < 0.3 |
| 9348267 | IMC | < 0.3 |
| 9348268 | IMC | < 0.3 |
| 9348269 | IMC OFFICE A | 0.5 |
| 9348270 | CAFETERIA | < 0.3 |
| 9348272 | 101E | < 0.3 |
| 9348274 | IMC WORKROOM A | < 0.3 |
| 9348275 | IMC WORK ROOM B | < 0.3 |
| 9348276 | 107 | < 0.3 |
| 9348277 | CONTROL ROOM | < 0.3 |
| 9348278 | 224 | < 0.3 |
| 9348279 | 206 | < 0.3 |
| 9348280 | 206 | < 0.3 |
| 9348281 | 206 | < 0.3 |
| 9348282 | 201 | < 0.3 |
| 9348283 | 213 | < 0.3 |
| 9348284 | 248 | < 0.3 |
| 9348285 | 255 | < 0.3 |
| 9348286 | 257 | < 0.3 |
| 9339712 | OFFICE BLANK | < 0.3 |
| 9348220 | GYM | 0.5 |
| 9348255 | 182 | 0.6 |
| 9348257 | 173 | < 0.3 |
| 9348271 | 101E | < 0.3 |
| 9348230 | GYM | MISSING |
| 9348273 | IMC OFFICE B | MISSING |

| Table 2- Radon Testing Results | | | |
|---------------------------------|---------------|-------------|--------|
| Francis Scott Key Middle School | | | |
| Test Period: 1/6/2020-1/9/2020 | | | |
| Kit Number | QC Type | Room / Area | Result |
| 9348207 | D | 110E | <0.3 |
| 9348218 | FB | 106 | <0.3 |
| 9348219 | D | 106A | <0.3 |
| 9348229 | D | 136 | <0.3 |
| 9348239 | FB | 152 | <0.3 |
| 9348245 | D | 152 | 1.3 |
| 9348250 | D | 153 | <0.3 |
| 9348261 | FB | 181 | <0.3 |
| 9348262 | D | 181 | <0.3 |
| 9348272 | D | 101E | <0.3 |
| 9348279 | FB | 206 | <0.3 |
| 9348280 | D | 206 | <0.3 |
| 9348319 | TRANSIT BLANK | NA | <0.3 |
| 9348320 | TRANSIT BLANK | NA | <0.3 |
| 9348313 | TRANSIT BLANK | NA | <0.3 |

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

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

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|------------------|------------|
| 9340067 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340035 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 22.5 \pm 2.3 D | 2020-01-03 |
| 9340003 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.2 \pm 2.4 D | 2020-01-03 |
| 9340089 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 23.3 \pm 2.3 D | 2020-01-03 |
| 9340072 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 18.3 \pm 2.0 D | 2020-01-03 |
| 9340040 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.3 \pm 2.6 D | 2020-01-03 |
| 9340008 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.8 \pm 2.5 D | 2020-01-03 |
| 9340094 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.7 \pm 2.5 D | 2020-01-03 |
| 9340099 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 27.5 \pm 2.6 D | 2020-01-03 |
| 9340077 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.2 \pm 2.5 D | 2020-01-03 |
| 9340045 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.7 \pm 2.4 D | 2020-01-03 |
| 9340013 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.9 \pm 2.6 D | 2020-01-03 |
| 9340018 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 29.1 \pm 2.8 D | 2020-01-03 |
| 9341704 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340050 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.2 \pm 2.6 D | 2020-01-03 |
| 9340023 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.2 \pm 2.7 D | 2020-01-03 |
| 9341709 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.5 \pm 2.4 D | 2020-01-03 |
| 9340055 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.8 \pm 2.6 D | 2020-01-03 |
| 9340060 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.3 \pm 2.5 D | 2020-01-03 |
| 9340028 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 23.9 \pm 2.3 D | 2020-01-03 |
| 9341714 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 28.3 \pm 2.7 D | 2020-01-03 |
| 9340082 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.4 \pm 2.6 D | 2020-01-03 |
| 9340065 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.2 \pm 2.4 D | 2020-01-03 |
| 9340033 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.2 \pm 2.5 D | 2020-01-03 |
| 9341719 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.7 \pm 2.5 D | 2020-01-03 |
| 9340001 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.3 \pm 2.5 D | 2020-01-03 |
| 9340087 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.8 \pm 2.4 D | 2020-01-03 |
| 9340070 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 19.5 \pm 2.4 D | 2020-01-03 |
| 9340038 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.7 \pm 2.3 D | 2020-01-03 |
| 9340006 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.2 \pm 2.4 D | 2020-01-03 |
| 9340092 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 31.4 \pm 2.8 D | 2020-01-03 |
| 9340097 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.7 \pm 2.5 D | 2020-01-03 |
| 9340075 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 29.6 \pm 2.6 D | 2020-01-03 |
| 9340043 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.1 \pm 2.6 D | 2020-01-03 |
| 9340011 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.8 \pm 2.5 D | 2020-01-03 |
| 9340016 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 23.2 \pm 2.4 D | 2020-01-03 |
| 9341702 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.8 \pm 2.5 D | 2020-01-03 |

Radon test result report for:

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

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|------------------|------------|
| 9340048 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.5 \pm 2.4 D | 2020-01-03 |
| 9340021 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.7 \pm 2.6 D | 2020-01-03 |
| 9341707 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.8 \pm 2.4 D | 2020-01-03 |
| 9340053 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.8 \pm 2.5 D | 2020-01-03 |
| 9340058 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.5 \pm 2.7 D | 2020-01-03 |
| 9340026 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.9 \pm 2.4 D | 2020-01-03 |
| 9341712 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.3 \pm 2.4 D | 2020-01-03 |
| 9340080 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340063 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.8 \pm 2.5 D | 2020-01-03 |
| 9340031 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.9 \pm 2.4 D | 2020-01-03 |
| 9341717 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.7 \pm 2.4 D | 2020-01-03 |
| 9340085 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.9 \pm 2.5 D | 2020-01-03 |
| 9340068 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.2 \pm 2.5 D | 2020-01-03 |
| 9340036 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 23.6 \pm 2.3 D | 2020-01-03 |
| 9340004 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.9 \pm 2.6 D | 2020-01-03 |
| 9340090 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.3 \pm 2.5 D | 2020-01-03 |
| 9340073 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.8 \pm 2.5 D | 2020-01-03 |
| 9340041 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.6 \pm 2.4 D | 2020-01-03 |
| 9340009 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.1 \pm 2.4 D | 2020-01-03 |
| 9340095 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.2 \pm 2.5 D | 2020-01-03 |
| 9340100 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.5 \pm 2.4 D | 2020-01-03 |
| 9340078 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.0 \pm 2.4 D | 2020-01-03 |
| 9340046 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.0 \pm 2.6 D | 2020-01-03 |
| 9340014 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 21.8 \pm 2.8 D | 2020-01-03 |
| 9340019 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.0 \pm 2.5 D | 2020-01-03 |
| 9341705 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 27.8 \pm 2.6 D | 2020-01-03 |
| 9340051 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.5 \pm 2.4 D | 2020-01-03 |
| 9340056 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.7 \pm 2.6 D | 2020-01-03 |
| 9340024 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.3 \pm 2.5 D | 2020-01-03 |
| 9341710 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.2 \pm 2.3 D | 2020-01-03 |
| 9340061 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 28.9 \pm 2.6 D | 2020-01-03 |
| 9340029 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 23.0 \pm 2.3 D | 2020-01-03 |
| 9341715 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 27.0 \pm 2.5 D | 2020-01-03 |
| 9340083 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.9 \pm 2.4 D | 2020-01-03 |
| 9340066 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340034 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.4 \pm 2.5 D | 2020-01-03 |
| 9341720 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.3 \pm 2.5 D | 2020-01-03 |

Radon test result report for:

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

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|------------------|------------|
| 9340002 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.7 \pm 2.5 D | 2020-01-03 |
| 9340088 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.4 \pm 2.5 D | 2020-01-03 |
| 9340071 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.9 \pm 2.4 D | 2020-01-03 |
| 9340039 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.9 \pm 2.5 D | 2020-01-03 |
| 9340007 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.9 \pm 2.4 D | 2020-01-03 |
| 9340093 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.5 D | 2020-01-03 |
| 9340098 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.8 \pm 2.5 D | 2020-01-03 |
| 9340076 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.5 D | 2020-01-03 |
| 9340044 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.2 \pm 2.5 D | 2020-01-03 |
| 9340012 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 22.5 \pm 2.2 D | 2020-01-03 |
| 9340017 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.3 \pm 2.5 D | 2020-01-03 |
| 9341703 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.0 \pm 2.5 D | 2020-01-03 |
| 9340049 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.0 \pm 2.5 D | 2020-01-03 |
| 9340022 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.6 \pm 2.6 D | 2020-01-03 |
| 9341708 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 28.8 \pm 2.8 D | 2020-01-03 |
| 9340054 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.8 \pm 2.5 D | 2020-01-03 |
| 9340059 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.5 \pm 2.6 D | 2020-01-03 |
| 9340027 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.6 \pm 2.5 D | 2020-01-03 |
| 9341713 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.5 \pm 2.5 D | 2020-01-03 |
| 9340081 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 18.4 \pm 2.1 D | 2020-01-03 |
| 9340064 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.5 \pm 2.5 D | 2020-01-03 |
| 9340032 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.1 \pm 2.4 D | 2020-01-03 |
| 9341718 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 23.7 \pm 2.4 D | 2020-01-03 |
| 9340086 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.9 \pm 2.6 D | 2020-01-03 |
| 9340069 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.6 \pm 2.5 D | 2020-01-03 |
| 9340037 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 28.4 \pm 2.6 D | 2020-01-03 |
| 9340005 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | ???? DIF1 | 2020-01-03 |
| 9340091 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.5 \pm 2.5 D | 2020-01-03 |
| 9340096 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.2 \pm 2.5 D | 2020-01-03 |
| 9340074 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 27.7 \pm 2.5 D | 2020-01-03 |
| 9340042 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.6 \pm 2.5 D | 2020-01-03 |
| 9340010 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.5 \pm 2.5 D | 2020-01-03 |
| 9341701 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 22.9 \pm 2.3 D | 2020-01-03 |
| 9340047 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 26.7 \pm 2.5 D | 2020-01-03 |
| 9340015 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.4 \pm 2.5 D | 2020-01-03 |
| 9340020 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 24.1 \pm 2.4 D | 2020-01-03 |
| 9341706 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 31.0 \pm 2.7 D | 2020-01-03 |

Radon test result report for:

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

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|----------------------|------------------|------------|
| 9340052 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.4 \pm 2.6 D | 2020-01-03 |
| 9340057 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 27.3 \pm 2.5 D | 2020-01-03 |
| 9340025 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9341711 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 22.5 \pm 2.2 D | 2020-01-03 |
| 9340079 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 26.9 \pm 2.5 D | 2020-01-03 |
| 9340062 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.6 \pm 2.5 D | 2020-01-03 |
| 9340030 | N/A | 2019-12-21 @ 8:00 am | 2019-12-23 @ 8:00 am | 25.0 \pm 2.4 D | 2020-01-03 |
| 9341716 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 25.1 \pm 2.4 D | 2020-01-03 |
| 9340084 | N/A | 2019-12-21 @ 9:00 am | 2019-12-23 @ 9:00 am | 24.5 \pm 2.3 D | 2020-01-03 |

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc Job Number 193598

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

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0830 Time Stop: 0830

(Group 4)
Device No.'s: (20) Char. Bags -

9340061 thru 9340080

Temp of _____
RH % 50.1
Avg pCi/L 25.5

52

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0835 Time Stop: 0835

(Group 5)
Device No.'s: (20) Char. Bags -

9340081 thru 9340100

Temp of _____
RH % 50.1
Avg pCi/L 25.5

25

Date Start: 12/21/19 Date Stop: 12/23/19

Time Start: 0840 Time Stop: 0840

(Group 6)
Device No.'s: (20) Char. Bags -

9341701 thru 9341720

Temp of _____
RH % 50.1
Avg pCi/L 25.5

25

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

Radon test result report for:
FRANCIS SCOTT KEY MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|-----------------------|----------------------|-----------|------------|
| 9348202 | 100A | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348203 | 100B | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348204 | 100C | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348205 | 100D | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348206 | 100F | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348208 | 100K | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348209 | 100M | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348272 | 101E | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348224 | 102 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348223 | 104 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348218 | 106 | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348217 | 106 | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348222 | 106A | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348219 | 106A | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348276 | 107 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348212 | 108 | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348221 | 110 | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348211 | 110A | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348216 | 110B | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348215 | 110C | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | 0.7 ± 0.4 | 2020-01-14 |
| 9348214 | 110E | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348207 | 110E | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348210 | 110F | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348213 | 110G | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | 0.8 ± 0.4 | 2020-01-14 |
| 9348242 | 117 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348225 | 118 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348226 | 122 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348243 | 125 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | 0.6 ± 0.4 | 2020-01-14 |
| 9348231 | 126 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348244 | 129 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348246 | 133 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348229 | 136 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348227 | 136 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | 0.6 ± 0.5 | 2020-01-14 |
| 9348248 | 137 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348247 | 139 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348228 | 140 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348238 | 141 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |

Radon test result report for:
FRANCIS SCOTT KEY MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|--------------|-----------------------|----------------------|-----------|------------|
| 9348241 | 142 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348232 | 144 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | 0.7 ± 0.4 | 2020-01-14 |
| 9348233 | 148 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | 0.6 ± 0.4 | 2020-01-14 |
| 9348234 | 150 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | 0.7 ± 0.4 | 2020-01-14 |
| 9348239 | 152 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348237 | 152 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | 1.0 ± 0.4 | 2020-01-14 |
| 9348245 | 152 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | 1.3 ± 0.4 | 2020-01-14 |
| 9348250 | 153 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348251 | 153 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348235 | 156 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 2:00 pm | 2.3 ± 0.5 | 2020-01-14 |
| 9348252 | 157 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348253 | 161 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348256 | 163 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348240 | 164 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348236 | 168 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348249 | 170 | 2020-01-06 @ 12:00 pm | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |
| 9348254 | 174 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348261 | 181 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348262 | 181 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348263 | 181 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348259 | 185 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348258 | 186 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348260 | 191 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348264 | 193 | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348282 | 201 | 2020-01-06 @ 2:00 pm | 2020-01-09 @ 3:00 pm | < 0.3 | 2020-01-14 |
| 9348280 | 206 | 2020-01-06 @ 2:00 pm | 2020-01-09 @ 3:00 pm | < 0.3 | 2020-01-14 |
| 9348281 | 206 | 2020-01-06 @ 2:00 pm | 2020-01-09 @ 3:00 pm | < 0.3 | 2020-01-14 |
| 9348279 | 206 | 2020-01-06 @ 2:00 pm | 2020-01-09 @ 3:00 pm | < 0.3 | 2020-01-14 |
| 9348283 | 213 | 2020-01-06 @ 2:00 pm | 2020-01-09 @ 3:00 pm | < 0.3 | 2020-01-14 |
| 9348278 | 224 | 2020-01-06 @ 2:00 pm | 2020-01-09 @ 3:00 pm | < 0.3 | 2020-01-14 |
| 9348284 | 248 | 2020-01-06 @ 2:00 pm | 2020-01-09 @ 3:00 pm | < 0.3 | 2020-01-14 |
| 9348285 | 255 | 2020-01-06 @ 2:00 pm | 2020-01-09 @ 3:00 pm | < 0.3 | 2020-01-14 |
| 9348286 | 257 | 2020-01-06 @ 2:00 pm | 2020-01-09 @ 3:00 pm | < 0.3 | 2020-01-14 |
| 9348266 | CAFETERIA | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348270 | CAFETERIA | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348277 | CONTROL ROOM | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348267 | IMC | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |

Radon test result report for:
**FRANCIS SCOTT KEY MS
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|-----------------|-----------------------|----------------------|--------------|-----------------|
| 9348268 | IMC | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348269 | IMC OFFICE A | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | 0.5 ± 0.4 | 2020-01-14 |
| 9348275 | IMC WORK ROOM B | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348274 | IMC WORKROOM A | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348265 | KITCHEN OFFICE | 2020-01-06 @ 1:00 pm | 2020-01-09 @ 2:00 pm | < 0.3 | 2020-01-14 |
| 9348201 | MAIN OFFICE | 2020-01-06 @ 11:00 am | 2020-01-09 @ 1:00 pm | < 0.3 | 2020-01-14 |



Radon Test Kit Chain of Custody

Project Name: MCPS Radon 2019 Week 3

Name of Schools:

- | | |
|------------------------------|----------------------------|
| 1. Bannockburn E.S. | 12. Montgomery Knolls E.S. |
| 2. Bethesda E.S. | 13. Newport Mills M.S. |
| 3. Bethesda-Chevy Chase H.S. | 14. Oak View E.S. |
| 4. Bradley Hill E.S. | 15. Rock View E.S. |
| 5. Burning Tree E.S. | 16. Roscoe Nix E.S. |
| 6. Burnt Mills E.S. | 17. Sligo M.S. |
| 7. East Silver Springs E.S. | 18. Spring Mill Center |
| 8. Einstein H.S. | 19. Springbrook H.S. |
| 9. Flora Singer E.S. | 20. Westland M.S. |
| 10. Key M.S. | 21. Woodlin M.S. |
| 11. Montgomery Blair H.S. | |

| | Date | Initials |
|----------------------------------|----------------------|----------|
| Radon Test Kits Deployed | 1/6/20 to 1/7/20 | JM |
| Radon Test Kits Collected | 1/9/20 to 1/10/20 | JM |
| Radon Test Kits Shipped to Lab* | 1/10/20 | JM |
| Radon Test Kits Received by Lab* | 1/13/202 | JM |

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



MCPS RADON TESTING - EXECUTIVE SUMMARY

| | |
|--------------------------|---|
| Site Name | Francis Scott Key Middle School |
| Date of Report | March 13, 2018 |
| Round of Testing | Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility |
| # of Rooms Tested | 20 |
| # Rooms \geq 4.0 pCi/L | 0 |
| Lowest Value | < 0.3 pCi/L |
| Highest Value | 1.1 pCi/L |

Project Status

Current Project Status at this time: Retesting completed; no further action at this time.



March 13, 2018

Mr. Richard Cox, MS
Team Leader
Montgomery County Public Schools
Division of Maintenance
Gaithersburg, Maryland 20879

Re: Radon Testing Services

KCI Job #1214634188

Location: Francis Scott Key Middle School

910 Schindler Dr.
Silver Spring, Maryland 20903

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Francis Scott Key Middle School, located at 910 Schindler Dr. in Silver Spring, Maryland 20903 (subject site).

SCOPE OF SERVICES

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

KCI visited the site on February 12, 2018 and deployed twenty-two (22) 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.

KCI sampled the following locations during this follow-up test:

1. Rooms not successfully tested,
2. Rooms with elevated November 2017 results (i.e. ≥ 3.5 pCi/L).

A floor plan map of the building with the test locations is included as Appendix 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, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on February 15, 2018 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, 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 post-mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

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 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.

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 ranged from the mid-20s to upper 40s and high temperatures ranged from the high-30s to the high-60s. Maximum sustained winds ranged from 10-15 miles per hour. Average humidity was around 69%. 0.05 Inches of precipitation was recorded during the 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). The laboratory analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|----------------------------|------------------|------------------|
| ≥ 4.0 pCi/L | None | N/A |
| ≤ 4.0 pCi/L | See Attachment B | See Attachment B |

| Quality Control Samples | |
|--------------------------------|---|
| Results of Blank Canisters: | The field blank, 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 410-316-7800.

Sincerely,



Radon Measurement Specialist
KCI Technologies, Inc.

Attachments:

B - Radon Test Summary Spreadsheets

C - Laboratory Analytical Results

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

| Table 1 - Radon Testing Results | | |
|--|--------------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 02/12/18-02/15/18 | | |
| Kit Number | Room / Area | Result |
| 7986494 | 103 | 0.6 |
| 7986782 | 114 | 0.5 |
| 7986497 | 141 | 0.7 |
| 7986791 | 182 | 0.7 |
| 7986485 | 101E1 | 1.1 |
| 7986495 | 101E2 | 0.8 |
| 7986792 | 100B | 0.6 |
| 7986793 | 100C | 1.0 |
| 7986794 | 100D | < 0.3 |
| 7986795 | 100E | 0.7 |
| 7986482 | 106E | 0.5 |
| 7986486 | 116A | 0.6 |
| 7986480 | 118 OFFICE | 0.9 |
| 7986488 | 122A | 0.7 |
| 7986496 | * 145 (Tampered) | < 0.3 |
| 7986781 | 161A | < 0.3 |
| 7986478 | BOYS LOCKER ROOM | 0.9 |
| 7986500 | GIRLS LOCKER ROOM | 1.0 |
| 7986780 | KITCHEN | < 0.3 |
| 7986796 | STAGE | < 0.3 |

Table Note:

* Missing or Compromised Sample

| Table 2 - Radon Testing Results | | |
|--|----------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 02/12/18-02/15/18 | | |
| Kit Number | QC Type | Result |
| 7986498 | D (141) | < 0.3 |
| 7986499 | FB (141) | < 0.3 |

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:
FRANCIS SCOTT KEY MS
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|------------------|----------------------|----------------------|-----------|------------|
| 7986792 | 100B | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | 0.6 ± 0.3 | 2018-02-19 |
| 7986793 | 100C | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | 1.0 ± 0.3 | 2018-02-19 |
| 7986794 | 100D | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | < 0.3 | 2018-02-19 |
| 7986795 | 100E | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | 0.7 ± 0.3 | 2018-02-19 |
| 7986485 | 101E1 | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | 1.1 ± 0.3 | 2018-02-19 |
| 7986495 | 101E2 | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | 0.8 ± 0.3 | 2018-02-19 |
| 7986494 | 103 | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | 0.6 ± 0.3 | 2018-02-19 |
| 7986482 | 106E | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | 0.5 ± 0.3 | 2018-02-19 |
| 7986782 | 114 | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | 0.5 ± 0.3 | 2018-02-19 |
| 7986486 | 116A | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | 0.6 ± 0.3 | 2018-02-19 |
| 7986480 | 118 OFFICE | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | 0.9 ± 0.3 | 2018-02-19 |
| 7986488 | 122A | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | 0.7 ± 0.3 | 2018-02-19 |
| 7986497 | 141 | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | 0.7 ± 0.3 | 2018-02-19 |
| 7986498 | 141 | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | < 0.3 | 2018-02-19 |
| 7986499 | 141 | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | < 0.3 | 2018-02-19 |
| 7986496 | 145 | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | < 0.3 | 2018-02-19 |
| 7986781 | 161A | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | < 0.3 | 2018-02-19 |
| 7986791 | 182 | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | 0.7 ± 0.3 | 2018-02-19 |
| 7986478 | BOYS LOCKER ROOM | 2018-02-12 @ 5:00 pm | 2018-02-15 @ 3:00 pm | 0.9 ± 0.3 | 2018-02-19 |
| 7986500 | GIRLS LOCKER ROO | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | 1.0 ± 0.3 | 2018-02-19 |
| 7986780 | KITCHEN | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | < 0.3 | 2018-02-19 |
| 7986796 | STAGE | 2018-02-12 @ 4:00 pm | 2018-02-15 @ 3:00 pm | < 0.3 | 2018-02-19 |



Radon Test Kit Chain of Custody

Project Name: MCPS Radon

Names of Schools:

1. Highland Elementary School
2. Stephen Knolls Elementary School
3. Silver Creek Middle School
4. Woodlin Elementary School
5. Sligo Creek Elementary School
6. Francis Scott Key Middle School
7. John T. Baker Middle School
8. Cedar Grove Elementary School
9. Clarksburg Elementary School
10. Clarksburg Elementary School Annex
11. Fields Road Elementary School
12. Dufief Elementary School
13. Brown Station Elementary School
14. Diamond Elementary School
15. Fallsmeade Elementary School
16. Thomas Whootton High School
17. Lake Seneca Elementary School
18. Redland Middle School
19. Newport Mill Middle School
20. Bethesda Trans. and Maint. Depot
21. Sequoyah Elementary School
22. Gaithersburg Middle School
23. Wayside Elementary School
24. Travilah Elementary School
25. Damascus High School
26. Jones Lane Elementary School
27. Greencastle Elementary School
28. Spring Brook High School
29. Montgomery Blair High School
30. Watkins Mill High School

| | Date | Initials |
|----------------------------------|---------|----------|
| Radon Test Kits Deployed | 2/12/18 | JM |
| Radon Test Kits Collected | 2/15/18 | JM |
| Radon Test Kits Shipped to Lab* | 2/15/18 | JM |
| Radon Test Kits Received by Lab* | 2/19/15 | JM |

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

Radon test result report for:
OFFICE BLANKS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7979482 | 1 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986991 | 10 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985684 | 11 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986987 | 12 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986993 | 13 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986990 | 14 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7979485 | 2 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985686 | 3 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986995 | 4 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986989 | 5 | 2018-02-13 @ 1:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986998 | 6 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986986 | 7 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986985 | 8 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986997 | 9 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |

Radon test result report for:
TRANSIT BLANKS

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7984188 | 1 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7984044 | 10 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986582 | 11 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986999 | 12 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7987000 | 13 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7984196 | 14 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986996 | 2 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986994 | 3 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7986992 | 4 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985680 | 5 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985698 | 6 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985699 | 7 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985700 | 8 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |
| 7985872 | 9 | 2018-02-13 @ 2:00 pm | 2018-02-16 @ 2:00 pm | < 0.3 | 2018-02-20 |

February 28, 2018

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within $\pm 25\%$ of the chamber's reference value (20.9 pCi/L).

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|----------------|-----------------|
| 7984181 | 1 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 19.7 \pm 0.8 | 2018-02-21 |
| 7986621 | 2 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 19.4 \pm 0.8 | 2018-02-21 |
| 7985683 | 3 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 19.5 \pm 0.8 | 2018-02-21 |
| 7984168 | 4 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 20.5 \pm 0.8 | 2018-02-21 |
| 7986618 | 5 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 19.9 \pm 0.8 | 2018-02-21 |
| 7984169 | 6 | 2018-02-16 @ 11:00 am | 2018-02-19 @ 11:00 am | 20.4 \pm 0.8 | 2018-02-21 |

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 183530

NOMINAL Conditions: Radon Conc 20.9 pCi/L Rel. Hum 49.8 % Temp. 79.1 F

Date Start: 2/16/18 Date Stop: 2/19/18 Date Start: _____ Date Stop: _____
 Time Start: 1052 Time Stop: 1052 Time Start: _____ Time Stop: _____
 Device No.'s: (6) Char. Bags Device No.'s: _____
7984181, 7986621, 7985683 _____
7984168, 7986618, 7984169 _____
G3 Middle

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____
 Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____
 Device No.'s: _____ Device No.'s: _____

Date Start: _____ Date Stop: _____ Date Start: _____ Date Stop: _____
 Time Start: _____ Time Stop: _____ Time Start: _____ Time Stop: _____
 Device No.'s: _____ Device No.'s: _____

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



MCPS RADON TESTING - EXECUTIVE SUMMARY

| | |
|--------------------------|---|
| Site Name | Francis Scott Key Middle School |
| Date of Report | February 1, 2018 |
| Round of Testing | Initial Follow-up Post Remediation 2 year testing 5 year testing HVAC Upgrade Window Replacement New Addition New Facility |
| # of Rooms Tested | 68 |
| # Rooms ≥ 4.0 pCi/L | 0 |
| Lowest Value | < 0.3 pCi/L |
| Highest Value | 1.6 pCi/L |

Current Project Status at this time: Results satisfactory to date; missed locations and missing/compromised tests to be sampled.



February 1, 2018

Mr. Richard Cox, MS
Team Leader
Montgomery County Public Schools
Division of Maintenance
Rockville, Maryland 20855

Re: Radon Testing Services

KCI Job #1214694182

Location: Francis Scott Key Middle School

910 Schindler Dr.
Silver Spring, Maryland 20903

Dear Mr. Cox:

KCI Technologies, Inc. (KCI) is pleased to submit the following report to Montgomery County Public Schools pursuant to completing a “short-term” 3-day radon test for the Francis Scott Key Middle School, located at 910 Schindler Dr. in Silver Spring, Maryland 20903 (subject site).

SCOPE OF SERVICES

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

KCI visited the site on December 4, 2017 and deployed ninety (90) 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 Appendix 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, Inc. prior to being returned to the laboratory for analysis.

KCI returned to the site on December 7, 2017 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Aircheck, Inc. for analysis by gamma-ray spectroscopy. Aircheck, 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:

- Post-mitigation biennial testing.

These tests were conducted to:

- Confirm the success of the mitigation system(s).

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 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.

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 high-20s to mid-40s and high temperatures ranged from the low-40s to mid-50s. Maximum sustained winds ranged from 12-17 miles per hour. Average humidity was around 65%. 0.16 Inches of precipitation was recorded during the testing period.

RESULTS

The sampling locations, field observations, 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). Missing/compromised tests, missed rooms, and locked rooms are listed on Table 3 (Attachment B). The laboratory

analytical results are included in Attachment C. Laboratory results and exposure data for the spike samples are also included in Attachment C.

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|----------------------------|------------------|------------------|
| ≥ 4.0 pCi/L | None | N/A |
| ≤ 4.0 pCi/L | See Attachment B | See Attachment B |

| Quality Control Samples | |
|--------------------------------|---|
| Results of Blank Canisters: | The field blanks, office blank, 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 410-316-7800.

Sincerely,



James Mouldsdale, CHMM
Radon Measurement Specialist
KCI Technologies, Inc.

Attachments:

B- Tables 1-3, Radon Test Summary Spreadsheets

C- Laboratory Analytical Results

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 | | |
|--|--------------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 12/04/17-12/07/17 | | |
| Kit Number | Room / Area | Result |
| 7975901 | 100 | 0.7 |
| 7975931 | 101 | 0.9 |
| 7975930 | 101 | 0.9 |
| 7975924 | 102 | 0.7 |
| 7975923 | 104 | < 0.3 |
| 7975921 | 106 | < 0.3 |
| 7975925 | 107 | 0.7 |
| 7975920 | 108 | 0.6 |
| 7975917 | 110 | 0.8 |
| 7975977 | 117 | 0.9 |
| 7975937 | 118 | 1.6 |
| 7975936 | 122 | 1.2 |
| 7975978 | 125 | 0.7 |
| 7975935 | 126 | 1.1 |
| 7975979 | 129 | 1.0 |
| 7975980 | 133 | 0.8 |
| 7975941 | 136 | 0.8 |
| 7975968 | 137 | 0.7 |
| 7975967 | 139 | 0.7 |
| 7975940 | 140 | < 0.3 |
| 7975975 | 142 | 0.8 |
| 7975976 | 144 | 1.1 |
| 7975974 | 148 | 0.9 |
| 7975972 | 150 | 1.0 |
| 7975973 | 152 | 1.2 |
| 7975963 | 153 | 0.9 |
| 7975969 | 156 | 1.4 |
| 7975962 | 157 | 1.0 |
| 7975970 | 158 | < 0.3 |
| 7975971 | 158 | 0.6 |
| 7975958 | 161 | 0.9 |
| 7975956 | 163 | 0.7 |
| 7975965 | 164 | 0.9 |
| 7975964 | 168 | 1.0 |
| 7975960 | 170 | 1.2 |
| 7975954 | 173 | 1.0 |
| 7975959 | 174 | 1.1 |
| 7975944 | 175 | 0.6 |
| 7975945 | 175 | 0.5 |
| 7975947 | 181 | 0.8 |
| 7975957 | 182 | 1.5 |
| 7975949 | 185 | 1.2 |
| 7975953 | 186 | 0.9 |
| 7975950 | 191 | 1.3 |
| 7975951 | 193 | 0.9 |
| 7975952 | 195 | 0.9 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|--|--------------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 12/04/17-12/07/17 | | |
| Kit Number | Room / Area | Result |
| 7975984 | 220 | < 0.3 |
| 7975986 | 221 | 1.4 |
| 7975987 | 232 | 0.9 |
| 7975989 | 238 | 0.8 |
| 7975928 | 1010 | 0.8 |
| 7975929 | 10100 | 0.8 |
| 7975908 | 100F | 0.7 |
| 7975909 | 100K | 0.8 |
| 7975910 | 100M | 1.0 |
| 7975934 | 101A | < 0.3 |
| 7975904 | 101A | 0.9 |
| 7975905 | 101B | 0.6 |
| 7975906 | 101C | 0.6 |
| 7975933 | 101D | 1.0 |
| 7975907 | 101D | 0.8 |
| 7975927 | 101E | 0.9 |
| 7975932 | 101F | 1.6 |
| 7975922 | 106A | 0.6 |
| 7975919 | 110A | < 0.3 |
| 7975915 | 110B | 0.8 |
| 7975914 | 110C | < 0.3 |
| 7975913 | 110E | 0.7 |
| 7975918 | 110F | 1.0 |
| 7975911 | 110G | 0.9 |
| 7975966 | * 141 (Missing) | - |
| 7975948 | 181A | 0.7 |
| 7975942 | GYM | 0.7 |
| 7975943 | GYM | 0.5 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|--|-------------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 12/04/17-12/07/17 | | |
| Kit Number | QC Type | Result |
| 7975902 | D (100) | 0.8 |
| 7975926 | D (107) | 0.8 |
| 7975916 | D (110) | 0.9 |
| 7975912 | D (110G) | 0.7 |
| 7975938 | D (118) | 1.0 |
| 7975981 | D (133) | 0.6 |
| 7975961 | D (170) | 0.6 |
| 7975955 | D (173) | 0.7 |
| 7975946 | D (175) | < 0.3 |
| 7975985 | D (220) | < 0.3 |
| 7975903 | FB (100) | < 0.3 |
| 7975939 | FB (118) | < 0.3 |
| 7975982 | FB (133) | < 0.3 |
| 7975983 | FB (168) | 0.6 |
| 7975988 | FB (232) | < 0.3 |
| 7193828 | OB (OFFICE BLANK) | < 0.3 |

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:

**FRANCIS SCOTT KEY MIDDLE SCHOOL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|----------|----------------------|----------------------|-----------|------------|
| 7975928 | 1.01E+03 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975929 | 1.01E+04 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975901 | 100 | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975902 | 100 | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975903 | 100 | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | < 0.3 | 2017-12-12 |
| 7975908 | 100F | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975909 | 100K | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975910 | 100M | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | 1.0 ± 0.4 | 2017-12-12 |
| 7975931 | 101 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975930 | 101 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.5 | 2017-12-12 |
| 7975934 | 101A | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | < 0.3 | 2017-12-12 |
| 7975904 | 101A | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975905 | 101B | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | 0.6 ± 0.4 | 2017-12-12 |
| 7975906 | 101C | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | 0.6 ± 0.4 | 2017-12-12 |
| 7975933 | 101D | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 1.0 ± 0.4 | 2017-12-12 |
| 7975907 | 101D | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 7:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975927 | 101E | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975932 | 101F | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 1.6 ± 0.4 | 2017-12-12 |
| 7975924 | 102 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975923 | 104 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | < 0.3 | 2017-12-12 |
| 7975921 | 106 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | < 0.3 | 2017-12-12 |
| 7975922 | 106A | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.6 ± 0.4 | 2017-12-12 |
| 7975926 | 107 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975925 | 107 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975920 | 108 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 0.6 ± 0.4 | 2017-12-12 |
| 7975916 | 110 | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975917 | 110 | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 8:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975919 | 110A | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 8:00 am | < 0.3 | 2017-12-12 |
| 7975915 | 110B | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 8:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975914 | 110C | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 8:00 am | < 0.3 | 2017-12-12 |
| 7975913 | 110E | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975918 | 110F | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 8:00 am | 1.0 ± 0.4 | 2017-12-12 |
| 7975911 | 110G | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975912 | 110G | 2017-12-04 @ 1:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975977 | 117 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975937 | 118 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 1.6 ± 0.4 | 2017-12-12 |
| 7975938 | 118 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 1.0 ± 0.4 | 2017-12-12 |

Radon test result report for:

**FRANCIS SCOTT KEY MIDDLE SCHOOL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|-----------------------|-----------------------|-----------|------------|
| 7975939 | 118 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | < 0.3 | 2017-12-12 |
| 7975936 | 122 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 1.2 ± 0.4 | 2017-12-12 |
| 7975978 | 125 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975935 | 126 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | 1.1 ± 0.4 | 2017-12-12 |
| 7975979 | 129 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 1.0 ± 0.4 | 2017-12-12 |
| 7975980 | 133 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975981 | 133 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.6 ± 0.4 | 2017-12-12 |
| 7975982 | 133 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | < 0.3 | 2017-12-12 |
| 7975941 | 136 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975968 | 137 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975967 | 139 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975940 | 140 | 2017-12-04 @ 2:00 pm | 2017-12-07 @ 8:00 am | < 0.3 | 2017-12-12 |
| 7975966 | 141 | @ | @ | | |
| 7975975 | 142 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975976 | 144 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 1.1 ± 0.5 | 2017-12-12 |
| 7975974 | 148 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 9:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975972 | 150 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 9:00 am | 1.0 ± 0.4 | 2017-12-12 |
| 7975973 | 152 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 9:00 am | 1.2 ± 0.4 | 2017-12-12 |
| 7975963 | 153 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975969 | 156 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 9:00 am | 1.4 ± 0.4 | 2017-12-12 |
| 7975962 | 157 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 1.0 ± 0.5 | 2017-12-12 |
| 7975970 | 158 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 9:00 am | < 0.3 | 2017-12-12 |
| 7975971 | 158 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 9:00 am | 0.6 ± 0.4 | 2017-12-12 |
| 7975958 | 161 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975956 | 163 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975965 | 164 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975964 | 168 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 1.0 ± 0.4 | 2017-12-12 |
| 7975983 | 168 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.6 ± 0.4 | 2017-12-12 |
| 7975960 | 170 | 2017-12-04 @ 10:00 am | 2017-12-07 @ 10:00 am | 1.2 ± 0.4 | 2017-12-12 |
| 7975961 | 170 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 8:00 am | 0.6 ± 0.4 | 2017-12-12 |
| 7975954 | 173 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 1.0 ± 0.4 | 2017-12-12 |
| 7975955 | 173 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975959 | 174 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 1.1 ± 0.4 | 2017-12-12 |
| 7975944 | 175 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 9:00 am | 0.6 ± 0.4 | 2017-12-12 |
| 7975945 | 175 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 9:00 am | 0.5 ± 0.4 | 2017-12-12 |
| 7975946 | 175 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 9:00 am | < 0.3 | 2017-12-12 |
| 7975947 | 181 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.8 ± 0.4 | 2017-12-12 |

December 29, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

**FRANCIS SCOTT KEY MIDDLE SCHOOL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 7975948 | 181A | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975957 | 182 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 1.5 ± 0.5 | 2017-12-12 |
| 7975949 | 185 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 1.2 ± 0.4 | 2017-12-12 |
| 7975953 | 186 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975950 | 191 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 1.3 ± 0.4 | 2017-12-12 |
| 7975951 | 193 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975952 | 195 | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975984 | 220 | 2017-12-04 @ 4:00 pm | 2017-12-07 @ 9:00 am | < 0.3 | 2017-12-12 |
| 7975985 | 220 | 2017-12-04 @ 5:00 pm | 2017-12-07 @ 9:00 am | < 0.3 | 2017-12-12 |
| 7975986 | 221 | 2017-12-04 @ 5:00 pm | 2017-12-07 @ 9:00 am | 1.4 ± 0.4 | 2017-12-12 |
| 7975987 | 232 | 2017-12-04 @ 5:00 pm | 2017-12-07 @ 9:00 am | 0.9 ± 0.4 | 2017-12-12 |
| 7975988 | 232 | 2017-12-04 @ 5:00 pm | 2017-12-07 @ 9:00 am | < 0.3 | 2017-12-12 |
| 7975989 | 238 | 2017-12-04 @ 5:00 pm | 2017-12-07 @ 9:00 am | 0.8 ± 0.4 | 2017-12-12 |
| 7975942 | GYM | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.7 ± 0.4 | 2017-12-12 |
| 7975943 | GYM | 2017-12-04 @ 3:00 pm | 2017-12-07 @ 8:00 am | 0.5 ± 0.4 | 2017-12-12 |
| 7193828 | OFFICE BLANK | 2017-12-04 @ 11:00 am | 2017-12-07 @ 11:00 am | < 0.3 | 2017-12-12 |



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase

Names of Schools:

- | | |
|---------------------------------------|----------------------------------|
| 1. Brooke Grove Elementary School | 14. Newport Mill Middle School |
| 2. Brown Station Elementary School | 15. Oakview Elementary School |
| 3. Diamond Elementary School Addition | 16. Quince Orchard High School |
| 4. Dufief Elementary School | 17. Robert Frost Middle School |
| 5. Emory Grove Center | 18. Rosa Parks Middle School |
| 6. Fields Road Elementary School | 19. South Lake Elementary School |
| 7. Facilities Maintenance Depot | |
| 8. Forest Oak Middle School | |
| 9. Francis Scott Key Middle School | |
| 10. Gaithersburg Elementary School | |
| 11. Gaithersburg Middle School | |
| 12. Germantown Elementary School | |
| 13. Greenwood Elementary School | |
| 14. Jones Lane Elementary School | |

| | Date | Initials |
|----------------------------------|----------|----------|
| Radon Test Kits Deployed | 12/04/17 | JM |
| Radon Test Kits Collected | 12/07/17 | JM |
| Radon Test Kits Shipped to Lab* | 12/07/17 | JM |
| Radon Test Kits Received by Lab* | 12/11/17 | JM |

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

Radon test result report for:**TRANSIT 2
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|------------|----------------------|----------------------|-----------|------------|
| 7193838 | TRANSIT 1 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7979384 | TRANSIT 10 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7979385 | TRANSIT 11 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7984056 | TRANSIT 12 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7983834 | TRANSIT 13 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7194097 | TRANSIT 14 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7194092 | TRANSIT 15 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7193840 | TRANSIT 16 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7979072 | TRANSIT 17 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7979071 | TRANSIT 18 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7979065 | TRANSIT 19 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | 0.6 ± 0.4 | 2017-12-13 |
| 7978194 | TRANSIT 2 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7985660 | TRANSIT 20 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7985661 | TRANSIT 21 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | 0.7 ± 0.4 | 2017-12-13 |
| 7193843 | TRANSIT 22 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7984055 | TRANSIT 23 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7983813 | TRANSIT 24 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7983827 | TRANSIT 25 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7978193 | TRANSIT 3 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7978189 | TRANSIT 4 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | 0.5 ± 0.4 | 2017-12-13 |
| 7986187 | TRANSIT 5 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7986188 | TRANSIT 6 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7986177 | TRANSIT 7 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7979077 | TRANSIT 8 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |
| 7979386 | TRANSIT 9 | 2017-12-05 @ 2:00 pm | 2017-12-08 @ 2:00 pm | < 0.3 | 2017-12-13 |

December 19, 2017

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS - Spike Sample Laboratory Results. Measured values are satisfactory, i.e. within $\pm 25\%$ of the chamber's reference value (27.7 pCi/L).

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|----------------|-----------------|
| 7975075 | S1 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 25.6 \pm 0.7 | 2017-12-07 |
| 7975064 | S2 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 27.4 \pm 0.8 | 2017-12-07 |
| 7975063 | S3 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 26.3 \pm 0.7 | 2017-12-07 |
| 7975065 | S4 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 23.0 \pm 0.7 | 2017-12-07 |
| 7975069 | S5 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 25.6 \pm 0.7 | 2017-12-07 |
| 7975070 | S6 | 2017-12-01 @ 11:00 am | 2017-12-04 @ 11:00 am | 23.0 \pm 0.7 | 2017-12-07 |

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCI Technologies Inc. Job Number 182393

NOMINAL Conditions: Radon Conc 27.7 pCi/L Rel. Hum 49.1 % Temp. 70.1 F

Date Start: 12/1/17 Date Stop: 12/4/17 Date Start: _____ Date Stop: _____

Time Start: 1049 Time Stop: 1049 Time Start: _____ Time Stop: _____

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

7975075, 7975064, 7975063, _____

7975065, 7975069, 7975070 _____

F4 Rght

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

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

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

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

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

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

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



MCPS RADON TESTING

Executive Summary: Francis Scott Key Middle School

| | |
|---------------------------|--|
| Date of Test Report: | 10/19/2016 |
| Round of Testing: | Initial Follow-up Post Remediation |
| # Rooms Tested: | 15 |
| # Rooms \geq 4.0 pCi/L: | 0 |
| Low Value: | < 0.3 |
| High Value: | 0.7 |

Project Status:

Post remediation testing completed; no further action at this time.



October 19, 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 # 12146341.54

Location: Francis Scott Key Middle School
910 Schindler Drive
Silver Spring, MD 20903

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 Francis Scott Key Middle School, located at 910 Schindler Drive in Silver Spring, Maryland 20903 (subject site).

Scope of Services:

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

KCI visited the site on September 26, 2016 and deployed nineteen (19) 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 September 29, 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:

These tests represent:

- Post-mitigation testing for radon mitigation systems installed recently.

To expedite the testing, tests were conducted in September as soon as students and staff returned to:

- Confirm the success of the mitigation system(s).

Future periodic testing should be conducted during the heating season in ideal conditions as described below. 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 cooling mode; therefore, KCI concludes that this test was not conducted during ideal testing conditions.

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.

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 50s and high temperatures in the mid-60s to mid-70s. Maximum sustained winds ranged from 3-15 miles per hour. Average humidity ranged from 71 to 89 percent. Rain (1.83 inches in Gaithersburg, MD) was recorded on 9/29/16. The weather conditions during the testing period may have resulted in atypical radon test results for this facility.

Results:

The results of the radon test analysis indicated the following:

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

Notes:

D- Duplicate sample

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

| Radon Testing Results | | |
|--|--------------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 09/26/16-09/29/16 | | |
| Kit Number | Room / Area | Result |
| 7802843 | 102 | < 0.3 |
| 7802206 | 104 | < 0.3 |
| 7802844 | 106- Health | < 0.3 |
| 7802246 | 110 | 0.6 |
| 7802247 | 114 | 0.6 |
| 7802250 | 114 | 0.7 |
| 7802242 | 100 | < 0.3 |
| 7802238 | 100B | < 0.3 |
| 7801882 | 100C | < 0.3 |
| 7802207 | 100D | 0.6 |
| 7802806 | 100F | < 0.3 |
| 7802215 | 100K | < 0.3 |
| 7802208 | 100M | < 0.3 |
| 7802248 | 110B | 0.6 |
| 7802249 | 110C | 0.6 |
| 7802204 | 110G | < 0.3 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|--|----------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 09/26/16-09/29/16 | | |
| Kit Number | QC Type | Result |
| 7802205 | D (100) | < 0.3 |
| 7802805 | D (100D) | < 0.3 |
| 7802243 | FB (100) | < 0.3 |

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

Radon test result report for:**FRANCIS SCOTT KEY MIDDLE SCHOOL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|-----------|----------------------|-----------------------|-----------|------------|
| 7802205 | 100 | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 12:00 pm | < 0.3 | 2016-10-03 |
| 7802242 | 100 | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 12:00 pm | < 0.3 | 2016-10-03 |
| 7802243 | 100 | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 12:00 pm | < 0.3 | 2016-10-03 |
| 7802238 | 100B | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7801882 | 100C | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7802207 | 100D | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | 0.6 ± 0.3 | 2016-10-03 |
| 7802805 | 100D | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7802806 | 100F | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7802215 | 100K | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7802208 | 100M | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7802843 | 102 | 2016-09-26 @ 4:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7802206 | 104 | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7802844 | 106HEALTH | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7802246 | 110 | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | 0.6 ± 0.3 | 2016-10-03 |
| 7802248 | 110B | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | 0.6 ± 0.3 | 2016-10-03 |
| 7802249 | 110C | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | 0.6 ± 0.3 | 2016-10-03 |
| 7802204 | 110G | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | < 0.3 | 2016-10-03 |
| 7802247 | 114 | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | 0.6 ± 0.3 | 2016-10-03 |
| 7802250 | 114 | 2016-09-26 @ 3:00 pm | 2016-09-29 @ 1:00 pm | 0.7 ± 0.3 | 2016-10-03 |

October 7, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

MCPS Radon

Phase 18 Office Blanks

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 7802697 | 1 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7801899 | 10 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802932 | 11 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802935 | 12 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802915 | 13 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802941 | 2 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802942 | 3 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802919 | 4 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802918 | 5 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802917 | 6 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802916 | 7 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802952 | 8 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |
| 7802928 | 9 | 2016-09-26 @ 11:00 am | 2016-09-29 @ 11:00 am | < 0.3 | 2016-10-03 |

Radon test result report for:

MCPS Radon**Phase 18 Transit Blanks**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 7714274 | 1 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7802962 | 10 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7714295 | 11 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7714299 | 12 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7714273 | 13 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7714270 | 14 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7802965 | 2 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7802696 | 3 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7802690 | 4 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7714275 | 5 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7714298 | 6 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7802990 | 7 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7802974 | 8 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |
| 7802694 | 9 | 2016-09-26 @ 10:00 am | 2016-09-29 @ 10:00 am | < 0.3 | 2016-10-03 |

October 12, 2016

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**MCPS Radon
Spike Sample Results**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7769880 | 101 | 2016-09-24 @ 8:00 am | 2016-09-26 @ 8:00 am | 22.9 ± 1.0 | 2016-09-28 |
| 7769884 | 102 | 2016-09-24 @ 8:00 am | 2016-09-26 @ 8:00 am | 22.4 ± 1.0 | 2016-09-28 |
| 7769885 | 103 | 2016-09-24 @ 8:00 am | 2016-09-26 @ 8:00 am | 23.0 ± 1.0 | 2016-09-28 |
| 7769890 | 104 | 2016-09-24 @ 8:00 am | 2016-09-26 @ 8:00 am | 22.3 ± 1.0 | 2016-09-28 |
| 7769891 | 105 | 2016-09-24 @ 8:00 am | 2016-09-26 @ 8:00 am | 26.8 ± 1.2 | 2016-09-28 |
| 7769899 | 106 | 2016-09-24 @ 8:00 am | 2016-09-26 @ 8:00 am | 24.1 ± 1.1 | 2016-09-28 |

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 176788

NOMINAL Conditions: Radon Conc 26.1 pCi/L Rel. Hum 49.6 % Temp. 70.0 F

Date Start: 9/24/16 Date Stop: 9/26/16 Date Start: _____ Date Stop: _____

Time Start: 0758 Time Stop: 0758 Time Start: _____ Time Stop: _____

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

7769899, 7769884, 7769885, _____

7769889, 7769890, 7769891 _____

F3 Left

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

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

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

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

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

1. Wood Acres Elementary School
2. Walt Whitman High School
3. Burning Tree Elementary School
4. Ashburton Elementary School
5. Bethesda Maintenance
6. Bethesda Transportation
7. Herbert Hoover Middle School
8. Cold Spring Elementary School
9. Garret Park Elementary School
10. Rock View Elementary School
11. Francis Scott Key Middle School
12. Montgomery Blair High School
13. Stephen Knolls School
14. Lourie Center
15. Shriver Elementary School
16. Viers Mill Elementary School
17. Highland Elementary School
18. Newport Middle School
19. Albert Einstein High School
20. Sligo Middle School
21. East Silver Spring Elementary School
22. Oak View Elementary School
23. Roscoe Nix Elementary School
24. Northwood High School
25. Springbrook High School
26. John F. Kennedy High School

| | Date | Initials |
|----------------------------------|----------|----------|
| Radon Test Kits Deployed | 9/26/16 | JM |
| Radon Test Kits Collected | 9/29/16 | JM |
| Radon Test Kits Shipped to Lab* | 9/30/16 | JM |
| Radon Test Kits Received by Lab* | 10/03/16 | JM |

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 18

Name of Schools:

- | | |
|--|-----------------------------------|
| 1. Damascus High School | 17. Watkins Mills High School |
| 2. Cedar Grove Elementary School | 18. Forest Oak Middle School |
| 3. Hallie Wells Middle School | 19. Gaithersburg Middle School |
| 4. Clarksburg Elementary School | 20. Emory Grove |
| 5. Clarksburg High School | 21. Fields Road Elementary School |
| 6. Woodlin Elementary School | 22. Beall Elementary School |
| 7. Flora Singer Elementary School | 23. Julius West Middle School |
| 8. Spring Mill Center | 24. Thomas Wootton High School |
| 9. Dr. Charles Drew Elementary School | 25. Robert Frost High School |
| 10. William Farquah Middle School | 26. Travilah Elementary School |
| 11. Rosa Parks Middle School | 27. Jones Lane Elementary School |
| 12. Blair Ewing Center | 28. Longview School |
| 13. Lathrop Smith Environmental Center | 29. Rock Terrace High School |
| 14. Sequoyah Elementary School | 30. Germantown Elementary School |
| 15. Shady Grove Middle School | 31. Lake Seneca Elementary School |
| 16. Captain James Daly Elementary School | |

| | Date | Initials |
|----------------------------------|----------|----------|
| Radon Test Kits Deployed | 9/27/16 | JM |
| Radon Test Kits Collected | 9/30/16 | JM |
| Radon Test Kits Shipped to Lab* | 9/30/16 | JM |
| Radon Test Kits Received by Lab* | 10/03/16 | JM |

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

RADON SCREENING SURVEY – FOLLOW-UP FRANCIS SCOTT KEY MIDDLE SCHOOL

910 Schindler Drive, Silver Spring, Maryland 20903

EXECUTIVE SUMMARY

| | |
|--|--|
| Date of Test Report: | 3/23/16 Follow-Up |
| Round of Testing: | Initial Follow-up Post Remediation |
| # Rooms Tested | 13 |
| # Rooms \geq 4.0 pCi/L: | 0 |
| Low Value: | <0.3 |
| High Value: | 3.5 |
| Confirmed Rooms \geq 4.0 pCi/L US EPA Action Level | 2 |

Summary of Sampling Events \geq 4.0 pCi/L

| Room | Result (pCi/L) 2/15/16 Initial | Result (pCi/L) 3/23/16 Follow-Up | Average Result (pCi/L) |
|------|-----------------------------------|-------------------------------------|---------------------------|
| 100B | 7.5 | 2.7 | 5.1 |
| 110G | 6.2 | 1.2 | 3.7 |
| 100C | 5.6 | 3.5 | 4.6 |
| 110C | 5.3 | 1.2 | 3.3 |
| 100M | 5.2 | 2.0 | 3.6 |
| 100D | 5.1 | 1.8 | 3.5 |
| 110B | 5.1 | 1.1 | 3.1 |
| 100 | 4.2 | 1.4 | 2.8 |
| 100F | 3.2 | 1.8 | 2.5 |
| 100K | 3.8 | 2.5 | 3.2 |
| 102 | 3.5 | 1.3 | 2.4 |
| 110 | 3.2 | 0.8 | 2.0 |
| 114 | 3.7 | <0.3 | 2.0 |
| | | | |
| | | | |



MCPS RADON TESTING

Executive Summary: Francis Scott Key Middle School

| | |
|---------------------------|--|
| Date of Test Report: | 3/23/2016 |
| Round of Testing: | Initial Follow-up Post Remediation |
| # Rooms Tested: | 13 |
| # Rooms \geq 4.0 pCi/L: | 0 |
| Low Value: | < 0.3 |
| High Value: | 3.5 |

Project Status:

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



March 23, 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 # 12146341.30

Location: Francis Scott Key Middle School
910 Schindler Drive
Silver Spring, MD 20903

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 Francis Scott Key Middle School, located at 910 Schindler Drive in Silver Spring, Maryland 20903 (subject site).

Scope of Services:

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

KCI visited the site on February 29, 2016 and deployed eighteen (18) 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 March 3, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936 Butler

Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

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

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

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

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

Results:

The results of the radon test analysis indicated the following:

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

Notes:
D- Duplicate sample

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

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

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

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank*

PM- Project Manager

QC- Quality Control

*Office blanks were submitted at a rate of 1% for all samples deployed in Phase 10 testing. Office blanks were not submitted under each school individually.

| Radon Testing Results | | |
|--|--------------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 02/29/16-03/03/16 | | |
| Kit Number | Room / Area | Result |
| 7730863 | 100 | 1.4 |
| 7730867 | 102 | 1.3 |
| 7730688 | 110 | 0.8 |
| 7730860 | 114 | < 0.3 |
| 7730679 | 114 | < 0.3 |
| 7730864 | 114 | < 0.3 |
| 7730861 | 100B | 2.7 |
| 7730866 | 100C | 3.5 |
| 7729769 | 100D | 1.8 |
| 7730865 | 100F | 1.8 |
| 7730862 | 100K | 2.5 |
| 7730857 | 100M | 2.0 |
| 7730683 | 110B | 1.1 |
| 7730858 | 110C | 1.2 |
| 7730674 | 110G | 1.2 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|--|----------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 02/29/16-03/03/16 | | |
| Kit Number | QC Type | Result |
| 7729759 | D (110B) | 1.3 |
| 7730869 | D (114) | < 0.3 |
| 7730859 | FB (114) | < 0.3 |

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

March 16, 2016
** LABORATORY ANALYSIS REPORT **

Radon test result report for:
**FRANCIS SCOTT KEY MIDDLE SCHOOL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|----------------------|-----------------------|-----------|------------|
| 7730863 | 100 | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 1.4 ± 0.4 | 2016-03-07 |
| 7730861 | 100B | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 2.7 ± 0.4 | 2016-03-07 |
| 7730866 | 100C | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 3.5 ± 0.5 | 2016-03-07 |
| 7729769 | 100D | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 1.8 ± 0.4 | 2016-03-07 |
| 7730865 | 100F | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 1.8 ± 0.4 | 2016-03-07 |
| 7730862 | 100K | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 2.5 ± 0.4 | 2016-03-07 |
| 7730857 | 100M | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 1:00 pm | 2.0 ± 0.4 | 2016-03-07 |
| 7730867 | 102 | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 1:00 pm | 1.3 ± 0.3 | 2016-03-07 |
| 7730688 | 110 | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 0.8 ± 0.3 | 2016-03-07 |
| 7729759 | 110B | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 1.3 ± 0.4 | 2016-03-07 |
| 7730683 | 110B | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 1.1 ± 0.4 | 2016-03-07 |
| 7730858 | 110C | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 1.2 ± 0.4 | 2016-03-07 |
| 7730674 | 110G | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 12:00 pm | 1.2 ± 0.4 | 2016-03-07 |
| 7730679 | 114 | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 1:00 pm | < 0.3 | 2016-03-07 |
| 7730859 | 114 | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 1:00 pm | < 0.3 | 2016-03-07 |
| 7730860 | 114 | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 1:00 pm | < 0.3 | 2016-03-07 |
| 7730864 | 114 | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 1:00 pm | < 0.3 | 2016-03-07 |
| 7730869 | 114 | 2016-02-29 @ 5:00 pm | 2016-03-03 @ 1:00 pm | < 0.3 | 2016-03-07 |

March 16, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
**MCPS Radon
Phase 10 Office Blanks**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|-----------------------|-----------------------|--------------|-----------------|
| 7726881 | 0 | 2016-02-29 @ 12:00 pm | 2016-03-03 @ 12:00 pm | < 0.3 | 2016-03-07 |
| 7735197 | 0 | 2016-02-29 @ 12:00 pm | 2016-03-03 @ 12:00 pm | < 0.3 | 2016-03-07 |

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

March 22, 2016 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
TRANSIT - PHASE 10 & 11
MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|--------------|----------------|----------------------|----------------------|--------------|-----------------|
| 7735300 | 1 | 2016-03-18 @ 4:00 pm | 2016-03-21 @ 4:00 pm | < 0.3 | 2016-03-22 |
| 7735296 | 2 | 2016-03-18 @ 4:00 pm | 2016-03-21 @ 4:00 pm | < 0.3 | 2016-03-22 |
| 7735294 | 3 | 2016-03-18 @ 4:00 pm | 2016-03-21 @ 4:00 pm | < 0.3 | 2016-03-22 |

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

February
15,
2016

**LABORATORY ANALYSIS
REPORT ****

Spike Sample Laboratory Results

Radon test result report for:
MCPS

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

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

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

EXPOSURE IN BOWSER-MORNER RADON CHAMBER

CLIENT KCF Technologies Inc. Job Number 173704

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

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

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

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

7718281, 7718282, 7718291, _____

7718288, 7718289, 7718273 _____

ε3 Left

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

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

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

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

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

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

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



Radon Test Kit Chain of Custody

Project Name: MCPS Radon Phase 10

Name of Schools:

1. Clarksburg Annex
2. Gaithersburg HS
3. Garrett Park Annex
4. Fields Road ES
5. Whitman HS
6. Rockview ES
7. Whittier Woods
8. Roscoe Nix ES
9. Clearspring ES
10. Key MS

| | Date | Initials |
|----------------------------------|---------|----------|
| Radon Test Kits Deployed | 2/29/16 | JM |
| Radon Test Kits Collected | 3/3/16 | JM |
| Radon Test Kits Shipped to Lab* | 3/3/16 | JM |
| Radon Test Kits Received by Lab* | 3/7/16 | JM |

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



MCPS RADON TESTING

Executive Summary: Francis Scott Key Middle School

| | |
|---------------------------|--|
| Date of Test Report: | 2/15/2016 |
| Round of Testing: | Initial Follow-up Post Remediation |
| # Rooms Tested: | 70 |
| # Rooms \geq 4.0 pCi/L: | 8 |
| Low Value: | < 0.3 |
| High Value: | 7.5 |

Rooms with results \geq 4.0 pCi/L:

Room 100B (7.5 pCi/L), Room 110G (6.2 pCi/L), Room 100C (5.6 pCi/L), Room 110C (5.3 pCi/L), Room 100M (5.2 pCi/L), Room 100D (5.1 pCi/L), Room 110B (5.1 pCi/L), Room 100 (4.2 pCi/L),

Project Status:

Initial testing completed; re-test needed for results \geq 4.0 pCi/L.



February 15, 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 # 12146341.25

Location: Francis Scott Key Middle School
910 Schindler Drive
Silver Spring, MD 20903

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 Francis Scott Key Middle School, located at 910 Schindler Drive in Silver Spring, Maryland 20903 (subject site).

Scope of Services:

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

KCI visited the site on January 19, 2016 and deployed eighty-six (86) activated charcoal (AC) radon test kits. KCI deployed radon test kits in frequently-occupied ground contact rooms, and other areas, (if applicable) in accordance with AARST guidance. A floor plan map of the building with the test locations is included as Attachment A of this report.

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

KCI returned to the site on January 22, 2016 to retrieve the radon sampling test kits. KCI shipped all radon tests via overnight delivery to Airchek, Inc. for analysis by gamma-ray spectroscopy. Airchek, Inc. is a NRSB certified analytical laboratory for radon analysis (certification # ARL1402) located at 1936

Butler Bridge Road, Mills River, North Carolina.

Evaluation of Testing Conditions:

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

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

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

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

Results:

The results of the radon test analysis indicated the following:

| Radon Concentration | Room | Result |
|------------------------------------|------------------|---------------|
| ≥ 4.0 pCi/L | 100B | 7.5 |
| | 110G | 6.2 |
| | 100C | 5.6 |
| | 110C | 5.3 |
| | 100M | 5.2 |
| | 100D | 5.1 |
| | 110B | 5.1 |
| | 100 | 4.2 |
| < 4.0 pCi/L | See Attachment B | |

Notes:
D- Duplicate sample

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

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

Our professional services have been performed in accordance with customary principles and practices in

the field of industrial hygiene and engineering. If you have any questions or comments regarding this report, please feel free to contact me at (410) 316-7800.

Sincerely,



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

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

ATTACHMENT A

Floor Plan With Test Locations

ATTACHMENT B

Radon Test Summary Spreadsheet

Table Notes:

AC- Activated Charcoal

ACI- Air Chek, Inc.

D- Duplicate

FB- Field Blank

KCI- KCI Technologies, Inc.

OB- Office Blank

PM- Project Manager

QC- Quality Control

| Radon Testing Results | | |
|--|--------------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 01/19/16-01/22/16 | | |
| Kit Number | Room / Area | Result |
| 7726998 | 100 | 4.2 |
| 7726925 | 101 | 2 |
| 7726924 | 101 | 3.1 |
| 7726977 | 102 | 3.5 |
| 7726978 | 104 | 0.7 |
| 7726982 | 106 | 1.9 |
| 7726976 | 107 | 1 |
| 7726983 | 108 | 1.4 |
| 7726986 | 110 | 3 |
| 7726980 | 114 | 3.7 |
| 7726979 | 114 | 3 |
| 7726948 | 117 | 1.2 |
| 7726971 | 118 | 1.7 |
| 7726970 | 122 | 0.9 |
| 7726949 | 125 | 1 |
| 7726969 | 126 | 1.2 |
| 7726950 | 129 | < 0.3 |
| 7726951 | 133 | 0.8 |
| 7726968 | 136 | 1.1 |
| 7726952 | 137 | 1 |
| 7726953 | 139 | 0.7 |
| 7726967 | 140 | 0.9 |
| 7726954 | 141 | < 0.3 |
| 7726955 | 141 | < 0.3 |
| 7726965 | 142 | 1.1 |
| 7726966 | 144 | 0.9 |
| 7726964 | 148 | 2.6 |
| 7726962 | 150 | 1.9 |
| 7726961 | 152 | 1 |
| 7726944 | 153 | < 0.3 |
| 7726959 | 156 | 1.1 |
| 7726942 | 157 | 0.6 |
| 7726958 | 158 | 1 |
| 7726943 | 161 | 0.6 |
| 7726940 | 163 | 0.7 |
| 7726957 | 164 | 0.6 |
| 7726956 | 168 | < 0.3 |
| 7726945 | 170 | < 0.3 |
| 7726938 | 173 | < 0.3 |
| 7726946 | 174 | 0.5 |
| 7726930 | 175 | 0.5 |
| 7726929 | 175 | < 0.3 |
| 7726935 | 181 | 0.8 |
| 7726941 | 182 | < 0.3 |
| 7726934 | 185 | 0.8 |
| 7726936 | 186 | 1.5 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|--|--------------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 01/19/16-01/22/16 | | |
| Kit Number | Room / Area | Result |
| 7726927 | 187 | 0.9 |
| 7726933 | 191 | 0.8 |
| 7726932 | 193 | 0.9 |
| 7726931 | 195 | 0.9 |
| 7726920 | 207 | 0.8 |
| 7726921 | 214 | < 0.3 |
| 7726919 | 234 | < 0.3 |
| 7726918 | 257 | 0.8 |
| 7726997 | 100B | 7.5 |
| 7726996 | 100C | 5.6 |
| 7726995 | 100D | 5.1 |
| 7726992 | 100E | 2.6 |
| 7726990 | 100F | 3.2 |
| 7726994 | 100K | 3.8 |
| 7726989 | 100M | 5.2 |
| 7726973 | 101 E1 | 1.7 |
| 7726974 | 101 E2 | 0.9 |
| 7726923 | 101A | 1 |
| 7726922 | 101D | 1.4 |
| 7726972 | 101F | 2 |
| 7726981 | 106A | 3.1 |
| 7726985 | 110A | 2.8 |
| 7726987 | 110B | 5.1 |
| 7726988 | 110C | 5.3 |
| 7726984 | 110F | 2.8 |
| 7726993 | 110G | 6.2 |
| 7726939 | 161A | < 0.3 |
| 7726926 | 187A | < 0.3 |

Table Note:

* Missing or Compromised Sample

| Radon Testing Results | | |
|--|----------------|---------------|
| Francis Scott Key Middle School | | |
| Test Period: 01/19/16-01/22/16 | | |
| Kit Number | QC Type | Result |
| 7726999 | D (100) | 3.4 |
| 7726975 | D (107) | 1.3 |
| 7726991 | D (110) | 3.2 |
| 7726947 | D (117) | 1 |
| 7726963 | D (148) | 2.7 |
| 7726937 | D (173) | < 0.3 |
| 7726928 | D (175) | 0.6 |
| 7726917 | D (257) | < 0.3 |
| 7727000 | FB (100) | < 0.3 |
| 7726960 | FB (152) | < 0.3 |
| 7726916 | FB (257) | < 0.3 |
| 7727252 | OB (0) | < 0.3 |

Table Note:

* Missing or Compromised Sample

ATTACHMENT C

Laboratory Analytical Results

February 11, 2016
LABORATORY ANALYSIS REPORT

Radon test result report for:
FRANCIS SCOTT KEY MIDDLE SCHOOL MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|-----------------------|-----------------------|-----------|------------|
| 7727252 | 0 | 2016-01-19 @ 3:00 pm | 2016-01-22 @ 10:00 am | < 0.3 | 2016-01-27 |
| 7726973 | 101E1 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 8:00 am | 1.7 ± 0.4 | 2016-01-26 |
| 7726974 | 101E2 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 8:00 am | 0.9 ± 0.3 | 2016-01-27 |
| 7726998 | 100 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 6:00 am | 4.2 ± 0.5 | 2016-01-26 |
| 7727000 | 100 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 6:00 am | < 0.3 | 2016-01-26 |
| 7726999 | 100 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 6:00 am | 3.4 ± 0.5 | 2016-01-27 |
| 7726997 | 100B | 2016-01-19 @ 9:00 am | 2016-01-22 @ 6:00 am | 7.5 ± 0.8 | 2016-01-27 |
| 7726996 | 100C | 2016-01-19 @ 9:00 am | 2016-01-22 @ 6:00 am | 5.6 ± 0.6 | 2016-01-26 |
| 7726995 | 100D | 2016-01-19 @ 9:00 am | 2016-01-22 @ 6:00 am | 5.1 ± 0.6 | 2016-01-26 |
| 7726992 | 100E | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 2.6 ± 0.4 | 2016-01-26 |
| 7726990 | 100F | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 3.2 ± 0.5 | 2016-01-26 |
| 7726994 | 100K | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 3.8 ± 0.5 | 2016-01-27 |
| 7726989 | 100M | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 5.2 ± 0.6 | 2016-01-26 |
| 7726925 | 101 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 8:00 am | 2.0 ± 0.4 | 2016-01-26 |
| 7726924 | 101 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 8:00 am | 3.1 ± 0.5 | 2016-01-27 |
| 7726923 | 101A | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | 1.0 ± 0.3 | 2016-01-26 |
| 7726922 | 101D | 2016-01-19 @ 11:00 am | 2016-01-22 @ 8:00 am | 1.4 ± 0.4 | 2016-01-27 |
| 7726972 | 101F | 2016-01-19 @ 10:00 am | 2016-01-22 @ 8:00 am | 2.0 ± 0.4 | 2016-01-27 |
| 7726977 | 102 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 8:00 am | 3.5 ± 0.5 | 2016-01-26 |
| 7726978 | 104 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 8:00 am | 0.7 ± 0.4 | 2016-01-27 |
| 7726982 | 106 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 8:00 am | 1.9 ± 0.4 | 2016-01-26 |
| 7726981 | 106A | 2016-01-19 @ 9:00 am | 2016-01-22 @ 8:00 am | 3.1 ± 0.5 | 2016-01-27 |
| 7726975 | 107 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 8:00 am | 1.3 ± 0.4 | 2016-01-26 |
| 7726976 | 107 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 8:00 am | 1.0 ± 0.4 | 2016-01-27 |
| 7726983 | 108 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 1.4 ± 0.4 | 2016-01-27 |
| 7726986 | 110 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 3.0 ± 0.5 | 2016-01-27 |
| 7726991 | 110 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 3.2 ± 0.5 | 2016-01-27 |
| 7726985 | 110A | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 2.8 ± 0.5 | 2016-01-27 |
| 7726987 | 110B | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 5.1 ± 0.6 | 2016-01-27 |
| 7726988 | 110C | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 5.3 ± 0.6 | 2016-01-27 |
| 7726984 | 110F | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 2.8 ± 0.4 | 2016-01-26 |
| 7726993 | 110G | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 6.2 ± 0.7 | 2016-01-27 |
| 7726979 | 114 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 3.0 ± 0.5 | 2016-01-26 |
| 7726980 | 114 | 2016-01-19 @ 9:00 am | 2016-01-22 @ 7:00 am | 3.7 ± 0.5 | 2016-01-27 |
| 7726947 | 117 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.0 ± 0.3 | 2016-01-26 |
| 7726948 | 117 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.2 ± 0.3 | 2016-01-26 |
| 7726971 | 118 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.7 ± 0.4 | 2016-01-27 |

February 11, 2016
LABORATORY ANALYSIS REPORT **

Radon test result report for:
FRANCIS SCOTT KEY MIDDLE SCHOOL MAIN

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|-----------------------|----------------------|-----------|------------|
| 7726970 | 122 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.9 ± 0.3 | 2016-01-26 |
| 7726949 | 125 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.0 ± 0.3 | 2016-01-26 |
| 7726969 | 126 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.2 ± 0.4 | 2016-01-26 |
| 7726950 | 129 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-26 |
| 7726951 | 133 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.8 ± 0.3 | 2016-01-26 |
| 7726968 | 136 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 8:00 am | 1.1 ± 0.3 | 2016-01-26 |
| 7726952 | 137 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.0 ± 0.3 | 2016-01-26 |
| 7726953 | 139 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.7 ± 0.3 | 2016-01-26 |
| 7726967 | 140 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.9 ± 0.4 | 2016-01-27 |
| 7726954 | 141 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-26 |
| 7726955 | 141 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-26 |
| 7726965 | 142 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.1 ± 0.4 | 2016-01-27 |
| 7726966 | 144 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.9 ± 0.3 | 2016-01-26 |
| 7726963 | 148 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 2.7 ± 0.4 | 2016-01-26 |
| 7726964 | 148 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 2.6 ± 0.5 | 2016-01-27 |
| 7726962 | 150 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.9 ± 0.4 | 2016-01-27 |
| 7726960 | 152 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-26 |
| 7726961 | 152 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.0 ± 0.4 | 2016-01-26 |
| 7726944 | 153 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-26 |
| 7726959 | 156 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.1 ± 0.4 | 2016-01-27 |
| 7726942 | 157 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.6 ± 0.3 | 2016-01-26 |
| 7726958 | 158 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.0 ± 0.3 | 2016-01-26 |
| 7726943 | 161 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.6 ± 0.3 | 2016-01-26 |
| 7726939 | 161A | 2016-01-19 @ 10:00 am | 2016-01-22 @ 8:00 am | < 0.3 | 2016-01-26 |
| 7726940 | 163 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.7 ± 0.3 | 2016-01-26 |
| 7726957 | 164 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.6 ± 0.3 | 2016-01-26 |
| 7726956 | 168 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-26 |
| 7726945 | 170 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-27 |
| 7726937 | 173 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-26 |
| 7726938 | 173 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-26 |
| 7726946 | 174 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 0.5 ± 0.3 | 2016-01-26 |
| 7726929 | 175 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-26 |
| 7726930 | 175 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | 0.5 ± 0.3 | 2016-01-26 |
| 7726928 | 175 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | 0.6 ± 0.4 | 2016-01-27 |
| 7726935 | 181 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | 0.8 ± 0.3 | 2016-01-26 |
| 7726941 | 182 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-27 |
| 7726934 | 185 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | 0.8 ± 0.3 | 2016-01-26 |

February 11, 2016 **LABORATORY ANALYSIS REPORT** **

Radon test result report for:
**FRANCIS SCOTT KEY MIDDLE SCHOOL
MAIN**

| Kit # | Room Id | Started | Ended | pCi/L | Analyzed |
|---------|---------|-----------------------|----------------------|-----------|------------|
| 7726936 | 186 | 2016-01-19 @ 10:00 am | 2016-01-22 @ 7:00 am | 1.5 ± 0.4 | 2016-01-26 |
| 7726927 | 187 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | 0.9 ± 0.3 | 2016-01-26 |
| 7726926 | 187A | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | < 0.3 | 2016-01-27 |
| 7726933 | 191 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | 0.8 ± 0.3 | 2016-01-26 |
| 7726932 | 193 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | 0.9 ± 0.3 | 2016-01-27 |
| 7726931 | 195 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 7:00 am | 0.9 ± 0.3 | 2016-01-27 |
| 7726920 | 207 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 8:00 am | 0.8 ± 0.4 | 2016-01-27 |
| 7726921 | 214 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 8:00 am | < 0.3 | 2016-01-27 |
| 7726919 | 234 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 8:00 am | < 0.3 | 2016-01-27 |
| 7726916 | 257 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 8:00 am | < 0.3 | 2016-01-27 |
| 7726917 | 257 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 8:00 am | < 0.3 | 2016-01-27 |
| 7726918 | 257 | 2016-01-19 @ 11:00 am | 2016-01-22 @ 8:00 am | 0.8 ± 0.4 | 2016-01-27 |

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

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

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

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

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

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

7718281, 7718282, 7718291, _____

7718288, 7718289, 7718273 _____

ε3 Left

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

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

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

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

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

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

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



Chain of Custody

Project Name: MCPS Radon Phase VI

Name of Schools:

- | | | |
|--------------------------|------------------------------|---------------------------|
| 1. Francis Scott Key MS | 12. Little Bennett ES | 23. Rolling Terrace ES |
| 2. Gaithersburg ES | 13. Loiderman MS | 24. Roscoe Nix ES |
| 3. Gaithersburg MS | 14. Longview ES | 25. Sally K. Ride ES |
| 4. Galway ES | 15. Meadow Hall ES | 26. Spark Matsunaga ES |
| 5. Great Seneca Creek ES | 16. Neelsville MS | 27. Tacoma Park ES |
| 6. Harmony Hills ES | 17. New Hampshire Estates ES | 28. Thomas Pyle MS |
| 7. John Poole MS | 18. North Bethesda MS | 29. Wayside ES |
| 8. Judith A. Resnik ES | 19. Northwest HS | 30. Westbrook ES (retest) |
| 9. Kemp Mill ES | 20. Pine Crest ES | 31. Westland MS (retest) |
| 10. Kingsview MS | 21. Radnor Center | 32. William B. Gibbs ES |
| 11. Lakelands Park MS | 22. Ritchie Park ES | 33. William Tyler Page ES |

| | Date | Initials |
|----------------------------------|---------|----------|
| Radon Test Kits Deployed | 1/19/16 | JM |
| Radon Test Kits Sampled | 1/22/16 | JM |
| Radon Test Kits Shipped to Lab* | 1/22/16 | JM |
| Radon Test Kits Received by Lab* | 1/26/16 | JM |

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