Carnow, Conibear & Assoc., Ltd.
Environmental Consulting Services
600 W. Van Buren St., Suite 500, Chicago, IL 60607
t: 312.782.4486 f: 312.782.5145
www.ccaltd.com

Follow-up Radon Measurement Survey Report

Site:

Oak Park Elementary School
1200 Front Street
Aurora, Illinois 60505

Initial Survey Dates: May 9, 2018 thru May 11, 2018
Follow-Up Survey Dates: November 7, 2018 thru November 9, 2018

Prepared For:

East Aurora School District 131
417 Fifth Street
Aurora, Illinois 60505

Carnow Conibear Project No. A146000151

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Follow-up Radon Measurement Survey Report

Site:

Oak Park Elementary School
1200 Front Street
Aurora, Illinois 60505

Surveyed by: 

Nicole Bennett
Radon Measurement Professional

Report by: 

Daniel Lyons
Industrial Hygiene Technician

Reviewed by: 

Derek Lantry
Director, Technical Operations

Carnow Conibear Project No. A146000151

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APPENDICES

1.0 EXECUTIVE SUMMARY

Carnow, Conibear, & Assoc., Ltd. (Carnow Conibear) was contracted by East Aurora School District 131 to perform a radon measurement survey at Oak Park Elementary School located at 1200 Front Street in Aurora, Illinois. The initial survey was conducted on May 9, 2018 and completed on May 11, 2018 by Nicole Bennett, an Illinois Emergency Management Agency (IEMA) licensed Radon Measurement Professional (License No. RNI2016213). Following the initial survey, Carnow Conibear conducted follow-up radon measurement surveys in locations exceeding the EPA recommended radon action level of 4.0 PicoCuries per liter (pCi/L). Subsequently, the follow-up sampling was initiated on November 7, 2018 and completed on November 9, 2018 by Nicole Bennett. The scope of work included short-term (two to four day) radon measurements in frequently occupied rooms with substantial ground contact. The radon sampling was performed following IEMA and the United States Environmental Protection Agency (USEPA) testing protocols for commercial and school radon measurements, the radon device manufacturer's recommendations, and Carnow Conibear's Quality Assurance Plan.

May 9, 2018 thru May 11, 2018 (Initial Survey)
A total of fifty-seven (57) radon test devices were deployed during the initial survey including forty-nine (49) single devices, five (5) duplicates, and three (3) blanks.

November 7, 2018 thru November 9, 2018 (Follow-up Survey)
A total of two (2) radon test devices were deployed during the follow-up survey including one (1) single device and one (1) duplicate.

Activated radon charcoal devices manufactured by Air Chek Inc. were utilized during the initial and follow-up radon surveys. The activated charcoal devices are passive devices containing activated carbon to measure radon. Testing was initiated on May 9, 2018 and completed on May 11, 2018. Follow-up testing was initiated on November 7, 2018 and completed on November 9, 2018.

Radon measurement results for initial testing ranged from less than (<) 0.3 to 7.4 pCi/L. Results for follow-up testing ranged from 5.5 to 6.6 pCi/L. Both initial and follow-up radon measurement results identified areas exceeding the EPA recommended radon action level of 4.0 pCi/L. The average indoor radon concentrations are 1.3 pCi/L nationwide. The average outdoor radon concentration is 0.4 pCi/L.

Based on the radon measurement results Carnow Conibear offers the following:

- Initial and follow-up testing confirmed radon concentrations exceeded the EPA recommended radon action level of 4.0 pCi/L within Room 11A.

- Develop a mitigation strategy to reduce radon concentrations starting with the simplest approach, re-evaluate thru additional radon testing to determine

effectiveness, and utilize information to proceed with subsequent phases, as necessary. Additional recommendations for radon reduction options are presented in the report that follows.

- Consider contracting an IEMA licensed radon mitigation professional to design and install a remediation system to reduce radon levels within Room 11A. The radon mitigation professional shall be licensed by the IEMA to conduct radon mitigation in schools and commercial buildings. The radon contractor shall install the mitigation system in accordance with all requirements of 32 Illinois Administrative Code 422. The contractor shall verify the location and quantity of suction points and fans installed is adequate to remove the radon gas.

- Routine follow-up radon measurement surveys are recommended every two (2) years at different seasonal times following IEMA and the USEPA testing protocols and the radon device manufacturer's recommendations.

- Additional testing is also recommended if significant changes are made to the building's structural or mechanical components.

2.0 BACKGROUND

Radon is a naturally occurring, radioactive, colorless, odorless, tasteless gas produced from the decay of uranium and radium found in most soil and rock. Natural soils and rock such as granites, shales, and corals, contaminated soils from uranium processing mills, contaminated building materials, and groundwater water supplies directly from wells are a few common sources of radon. Radon can be found at some level in all indoor and outdoor air. Unlike most airborne contaminants, radon is chemically inert, or chemically inactive. As a result, it is not chemically bound or attached to other materials and can move easily through porous materials or void space.

Typically, most radon gas is generated from the surrounding soil or bedrock, pulled through the soil or rock by air pressure differentials, and enters the structure. However, radon gas can come from water, outside air, or contaminated building materials. The strength of the radon source has the biggest impact on indoor radon concentrations. The route of entry (i.e. through holes in the foundation), the building's ventilation rate, foundation type, and differences in soils beneath the building can affect the indoor radon concentrations.

The primary health effect attributed to radon exposure is lung cancer. The World Health Organization (WHO), the National Academy of Sciences, the US Department of Health and Human Services, and the EPA classify radon as known human carcinogen. The EPA states radon is the largest source of radiation exposure and risk to the general public. When radon and products of radon decay are inhaled, decay can occur while in contact with the lung prior to being expelled. Because radon is chemically inert, most inhaled radon is rapidly exhaled. However, the inhaled decay products are readily deposited in the lungs, release energy in the form of radiation causing lung tissue damage, and consequently increase the risk of lung cancer.

Radon concentrations in air are commonly expressed in picoCuries per liter (pCi/L) in the United States. An EPA national residential radon survey completed in 1991, determined the average indoor radon level is 1.3 pCi/L and the average outdoor level is about 0.4 pCi/L. The National Academy of Sciences' (NAS) latest report on radon, the Biological Effects of Ionizing Radiation (BEIR) VI Report (1999), estimates radon in indoor air causes about 21,000 lung cancer deaths each year in the United States. The EPA states that any level of radon carries some risk, there are no safe levels, and has established an action level of 4.0 pCi/L.

3.0 SCOPE OF WORK

Carnow, Conibear, & Assoc., Ltd. (Carnow Conibear) was contracted by East Aurora School District 131 to perform a radon measurement survey at Oak Park Elementary School located at 1200 Front Street in Aurora, Illinois.

The scope of work included short-term radon measurements in frequently occupied rooms with substantial ground contact. The duration of short-term measurements can range from two (2) to four (4) days. Prior to placement of the radon measurement devices a Quality Assurance Project Plan (QAPP) was developed and general observations were performed to verify test conditions, identify device placement locations, and determine structural and mechanical building components. The QAPP was created to document and describe the necessary quality assurance procedures, quality control activities, and provide a clear, concise, and complete plan for the radon measurement operations. The non-interference agreement is required by the IEMA to document an understanding of the required closed building testing conditions. Observations of test conditions verified closed building conditions were maintained at a minimum of twelve (12) hours prior to testing and throughout the measurement period. Closed building conditions are necessary for short-term radon measurements in order to stabilize the radon and radon decay product concentrations and increase the reproducibility of the measurement. Closed building conditions require windows and exterior doors on all levels be kept closed (except for normal entry and exit) during the measurement period. Closed building conditions also require the normal operation of heating, ventilating, and air conditions systems.

Initial radon test devices were deployed in forty-nine (49) locations. In addition, five (5) duplicates and three (3) blanks were utilized to measure precision and bias, and ensure quality data. Follow-up radon test devices were deployed in one (1) location. In addition, one (1) duplicate was utilized to measure precision and bias, and ensure quality data. Radon test devices were documented in a permanent log noting the address of the building measured, a diagram of the test area noting the exact locations of all measurement devices deployed, exact start and stop times of the measurement period, a description of the device used and serial number, and the name and IEMA license number of the Radon Measurement Professional. At the end of the measurement period the radon test devices were retrieved, resealed, and mailed to the laboratory for analysis.

The radon measurement results are reported in picoCurie per liter (pCi/L). A picoCurie per liter is 2.22 atomic radon disintegrations per minute for each liter of air. The results of the radon measurements are interpreted to determine the need for additional testing and assess the quality and confidence of the measurement data. Typically, follow-up measurements will be recommended in every room with results greater than 4.0 pCi/L. The recommendation to mitigate elevated levels of radon shall not be based on the initial measurement results.

4.0 METHODOLOGY

The radon testing was performed following requirements set forth by the IEMA, USEPA, and Carnow Conibear's Quality Assurance Plan. The radon measurement survey consisted of several phases. The initial phase consisted of preliminary testing protocol, including an explanation of services, instructions to comply with closed building conditions, the development of the Quality Assurance Project Plan, and determination of the testing period. Next, general observations of the building were performed to verify test conditions, identify device placement locations, and determine structural and mechanical building components.

The measurement phase included the radon testing device placement and retrieval. Activated radon charcoal devices manufactured by Air Chek Inc. were utilized during this radon survey. The activated charcoal devices are passive devices containing activated carbon to measure radon. Radon test devices were placed in such a way to limit unintentional interference from building occupants. The measurement devices were placed at least three feet from doors, windows to the outside, at least one foot from exterior walls, at least four feet from heat sources, out of the direct flow of ventilation ducts and sunlight, and suspended in the general breathing zone. Duplicate tests were conducted for a minimum of 10% of the total radon test devices deployed to measure precision. Field blanks were submitted for a minimum of 5% of the total number of radon test devices deployed to measure background gamma radiation. Spike tests were not submitted for this survey, but are submitted for a minimum of three per 100 radon test devices or a minimum of three per year to measure laboratory accuracy. A total of fifty-seven (57) initial radon test devices were deployed including forty-nine (49) single devices, five (5) duplicates, and three (3) blanks. Additionally, a total of two (2) follow-up radon test devices were deployed including one (1) single device and one (1) duplicate. At the end of the measurement periods the radon measurement devices were retrieved, resealed, and shipped overnight to Air Chek Inc. for analysis. Air Chek Inc. calculates the radon concentration after measuring the gamma activity by the radon decay products produced from the random decay of the collected radon. The final phase consisted of interpreting the results and an assessment of the quality and confidence of the measurement data.

5.0 SUMMARY OF RESULTS

Table 1.0 Radon Measurement Device Results identify all the radon measurement devices deployed and the reported radon results. The radon measurement results are reported in picoCurie per liter (pCi/L).

The radon measurement results indicate areas tested exceeded the EPA and IEMA recommended radon action level of 4.0 pCi/L during the time of the test. No testing abnormalities were noted during the radon measurement interval. Additionally, no radon mitigation systems were observed in the building.

Table 1.0 Radon Measurement Device Results

Oak Park Elementary School
1200 Front Street
Aurora, Illinois 60505

Device Location	Device Serial #	Start Date	Start Time	Stop Date	Stop Time	Result (pCi/L)	Average Result (pCi/L)	Comments
Sprinkler	9044831	5/9/2018	4:25 PM	5/11/2018	5:55 PM	1.2	-	
Room 10	9044832	5/9/2018	4:26 PM	5/11/2018	5:56 PM	1.2	-	
Room 11	9044833	5/9/2018	4:28 PM	5/11/2018	5:57 PM	0.8	-	
Room 11A	9044834	5/9/2018	4:29 PM	5/11/2018	5:58 PM	**7.4**	**6.7**	
Room 11A	9106288	11/7/2018	4:57 PM	11/9/2018	6:00 PM	**6.6**		Follow-Up Measurement
Room 11A	9106289	11/7/2018	4:57 PM	11/9/2018	6:00 PM	**5.5**		Follow-Up Measurement Duplicate RPD = 18.1%
Room 9	9044835	5/9/2018	4:31 PM	5/11/2018	6:00 PM	0.9	-	
Room 9	9044836	5/9/2018	4:31 PM	5/11/2018	6:00 PM	0.8	-	Duplicate RPD = 11.7%
Room 8	9044837	5/9/2018	4:32 PM	5/11/2018	6:02 PM	0.6	-	
Room 7	9044838	5/9/2018	4:33 PM	5/11/2018	6:02 PM	0.7	-	
Room 6	9044839	5/9/2018	4:34 PM	5/11/2018	6:03 PM	1.1	-	
Room 5	9044840	5/9/2018	4:35 PM	5/11/2018	6:04 PM	< 0.3	-	
Room 4	9044841	5/9/2018	4:36 PM	5/11/2018	6:05 PM	0.8	-	
Room 3	9044842	5/9/2018	4:37 PM	5/11/2018	6:05 PM	0.6	-	
Room 2	9044843	5/9/2018	4:39 PM	5/11/2018	6:06 PM	1.4	-	
Room 1	9044844	5/9/2018	4:40 PM	5/11/2018	6:07 PM	0.5	-	
24 / Multipurpose Room	9044845	5/9/2018	4:41 PM	5/11/2018	6:08 PM	0.5	-	
24 / Multipurpose Room	9044846	5/9/2018	4:42 PM	5/11/2018	6:08 PM	< 0.3	-	
Room 24A	9044847	5/9/2018	4:43 PM	5/11/2018	6:09 PM	0.7	-	

Table 1.0 Radon Measurement Device Results

Oak Park Elementary School
1200 Front Street
Aurora, Illinois 60505

Device Location	Device Serial #	Start Date	Start Time	Stop Date	Stop Time	Result (pCi/L)	Average Result (pCi/L)	Comments
Room 24B	9044848	5/9/2018	4:43 PM	5/11/2018	6:10 PM	< 0.3	-	
Room 24C	9044849	5/9/2018	4:44 PM	5/11/2018	6:11 PM	2.2	-	
Room 12	9044850	5/9/2018	4:47 PM	5/11/2018	6:13 PM	0.8	-	
Room 12	9044851	5/9/2018	4:47 PM	5/11/2018	6:13 PM	< 0.3	-	Duplicate **RPD = 90.9%**
Room 13	9044852	5/9/2018	4:48 PM	5/11/2018	6:14 PM	0.9	-	
Room 13 Closet	9044853	5/9/2018	4:50 PM	5/11/2018	6:14 PM	0.9	-	
Room 14	9044854	5/9/2018	4:51 PM	5/11/2018	6:15 PM	1.0	-	
Room 14 Closet	9044855	5/9/2018	4:52 PM	5/11/2018	6:15 PM	1.0	-	
Room 15	9044856	5/9/2018	4:53 PM	5/11/2018	6:17 PM	0.5	-	
Room 15 Closet	9044857	5/9/2018	4:54 PM	5/11/2018	6:17 PM	0.6	-	
Room 16	9044858	5/9/2018	4:55 PM	5/11/2018	6:18 PM	0.7	-	
Room 16	9044859	5/9/2018	4:55 PM	5/11/2018	6:18 PM	0.7	-	Duplicate RPD = 0%
Room 16 Closet	9044860	5/9/2018	4:56 PM	5/11/2018	6:18 PM	0.6	-	
Room 17	9044861	5/9/2018	4:57 PM	5/11/2018	6:19 PM	0.6	-	
Room 17 Closet	9044862	5/9/2018	4:59 PM	5/11/2018	6:19 PM	0.7	-	
Room 18	9044863	5/9/2018	5:00 PM	5/11/2018	6:20 PM	0.6	-	
Room 18 Closet	9044864	5/9/2018	5:01 PM	5/11/2018	6:20 PM	0.6	-	
Room 19	9044865	5/9/2018	5:03 PM	5/11/2018	6:22 PM	0.6	-	
Room 19 Closet	9044866	5/9/2018	5:04 PM	5/11/2018	6:22 PM	0.6	-	
Room 21	9044867	5/9/2018	5:05 PM	5/11/2018	6:24 PM	< 0.3	-	
Room 21	9044868	5/9/2018	5:06 PM	5/11/2018	6:25 PM	0.5	-	
Room 23A Storage	9044869	5/9/2018	5:08 PM	5/11/2018	6:27 PM	< 0.3	-	
Room 20	9044870	5/9/2018	5:09 PM	5/11/2018	6:28 PM	< 0.3	-	
Room 20	9044871	5/9/2018	5:09 PM	5/11/2018	6:28 PM	< 0.3	-	Duplicate RPD = 0%
Room 23	9044872	5/9/2018	5:10 PM	5/11/2018	6:29 PM	< 0.3	-	
Room 22	9044873	5/9/2018	5:11 PM	5/11/2018	6:29 PM	< 0.3	-	
Room 25	9044874	5/9/2018	5:12 PM	5/11/2018	6:30 PM	1.0	-	

Table 1.0 Radon Measurement Device Results

Oak Park Elementary School
1200 Front Street
Aurora, Illinois 60505

Device Location	Device Serial #	Start Date	Start Time	Stop Date	Stop Time	Result (pCi/L)	Average Result (pCi/L)	Comments
Room 33	9044875	5/9/2018	5:14 PM	5/11/2018	6:31 PM	< 0.3	-	
Room 30	9044876	5/9/2018	5:15 PM	5/11/2018	6:32 PM	1.1	-	
Room 32	9044877	5/9/2018	5:17 PM	5/11/2018	6:33 PM	1.8	-	
Room 27	9044878	5/9/2018	5:19 PM	5/11/2018	6:34 PM	0.8	-	
Room 26	9044879	5/9/2018	5:23 PM	5/11/2018	6:35 PM	1.0	-	
Room 26	9044880	5/9/2018	5:23 PM	5/11/2018	6:35 PM	0.9	-	Duplicate RPD = 10.5%
Room 29 / Gym	9044881	5/9/2018	5:25 PM	5/11/2018	6:36 PM	1.0	-	
Room 28	9044882	5/9/2018	5:26 PM	5/11/2018	6:37 PM	0.8	-	
Room 29A	9044883	5/9/2018	5:27 PM	5/11/2018	6:38 PM	1.7	-	
Room 29 / Gym	9044884	5/9/2018	5:30 PM	5/11/2018	6:39 PM	0.8	-	
Hallway	9044885	5/9/2018	5:30 PM	5/11/2018	6:40 PM	< 0.3	-	Blank
Hallway	9044886	5/9/2018	5:30 PM	5/11/2018	6:40 PM	< 0.3	-	Blank
Hallway	9044887	5/9/2018	5:30 PM	5/11/2018	6:40 PM	< 0.3	-	Blank

RPD - Relative Percent Difference = difference divided by the average of simultaneous results times 100. Results less than 4.0 pCi/L shall agree with a RPD of less than 67 percent. Results greater than 4.0 pCi/l shall agree with a RDP of less than 36 percent.
The EPA and IEMA recommended radon action level is 4.0 pCi/L.

6.0 CONCLUSIONS

Carnow, Conibear, & Assoc., Ltd. (Carnow Conibear) was contracted by East Aurora School District 131 to perform a radon measurement survey at the Oak Park Elementary School located at 1200 Front Street Street in Aurora, Illinois. The initial survey was conducted on May 9, 2018 and completed on May 11, 2018 by Nicole Bennett, an Illinois Emergency Management Agency (IEMA) licensed Radon Measurement Professional (License No. RNI2016213). Following the initial survey, Carnow Conibear conducted follow-up radon measurement surveys in locations exceeding the EPA recommended radon action level of 4.0 PicoCuries per liter (pCi/L). Subsequently, the follow-up sampling was initiated on November 7, 2018 and completed on November 9, 2018 by Nicole Bennett. The scope of work included short-term (two to four day) radon measurements in frequently occupied rooms with substantial ground contact. The radon sampling was performed following IEMA and the United States Environmental Protection Agency (USEPA) testing protocols for commercial and school radon measurements, the radon device manufacturer's recommendations, and Carnow Conibear's Quality Assurance Plan.

Radon measurement results for initial testing ranged from less than (<) 0.3 to 7.4 pCi/L. Additionally, radon measurement results for follow-up testing ranged from 5.5 to 6.6 pCi/L. Both initial and follow-up radon measurement results indicated areas tested exceeded the EPA recommended radon action level of 4.0 pCi/L. The average indoor radon concentrations are 1.3 pCi/L nationwide. The average outdoor radon concentration is 0.4 pCi/L.

Based on the radon measurement results Carnow Conibear offers the following:

- Initial and follow-up testing confirmed an average radon concentration exceeding the EPA recommended radon action level of 4.0 pCi/L within Room 11A.

- Develop a mitigation strategy to reduce radon concentrations starting with the simplest approach, re-evaluate thru additional radon testing to determine effectiveness, and utilize information to proceed with subsequent phases, as necessary.

- Room 11A is located adjacent to the Boiler Room and has a crawl space access. The crawlspace entrance is thru an opening in the floor. The crawlspace access provides a significant route of entry and pathway for radon to enter the building. If feasible, install an air tight barrier at the crawlspace access point to prevent radon entry.

- Extensive moisture issues are evident at the exterior wall and ceiling above in Room 11A. It appears a newly installed ceiling mounted unit heater located near the exterior wall/ceiling is creating thermal differences and subsequent

condensation. Additionally, the heater may cause stack effect pulling air from the crawl space into this room because of a difference in temperature and moisture. Adjust unit heater accordingly to prevent excessive condensation and repair water damaged wall and ceiling components.

- Consider contracting an IEMA licensed radon mitigation professional to design and install a remediation system to reduce radon levels within Room 11A. The radon mitigation professional shall be licensed by the IEMA to conduct radon mitigation in schools and commercial buildings. The radon contractor shall install the mitigation system in accordance with all requirements of 32 Illinois Administrative Code 422. The contractor shall verify the location and quantity of suction points and fans installed is adequate to remove the radon gas.

- Conduct post mitigation radon testing to evaluate the radon mitigation system function. The post mitigation testing shall be conducted no sooner than twenty-four (24) hours nor later than thirty (30) days following activation of the mitigation system. The post mitigation radon test shall be conducted by an IEMA licensed radon measurement professional.

- Because building designs, construction, and tenant and operational use patterns vary, it is not always possible to recommend standard mitigation actions that apply to all buildings. Costs for radon reduction are dependent on the extent and levels of radon, building design and construction, and the ability of maintenance personnel or building engineers to participate in the diagnosis and mitigation of the radon problem.

- Routine follow-up radon measurement surveys are recommended every two (2) years at different seasonal times following IEMA and the USEPA testing protocols and the radon device manufacturer’s recommendations.

- Additional testing is also recommended if significant changes are made to the building’s structural or mechanical components.

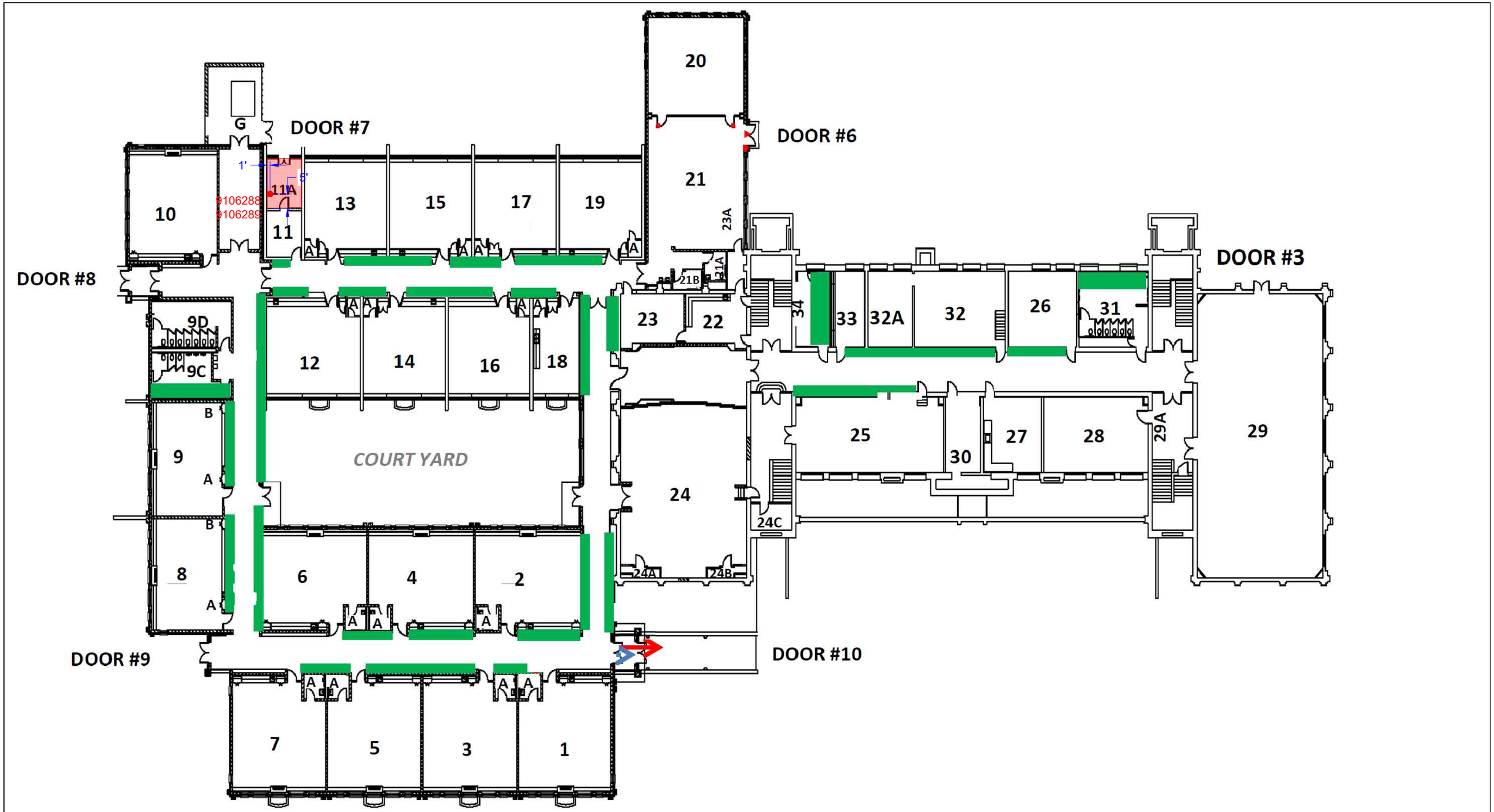
7.0 LIMITATIONS AND CONDITIONS

The information contained in this report was prepared for the exclusive use and reliance of East Aurora School District 131 and Carnow Conibear. This information is based on the specific parameters of the scope of work for this project and the regulations in force at the time of the report.

Carnow Conibear has applied prevailing industry standards and reasonable judgment and effort within the scope of work, while conducting the radon measurement survey. The standards, judgment, and effort used by Carnow Conibear personnel to investigate, assess, and determine the presence of potential environmental hazards and liabilities associated with the radon survey at the Oak Park Elementary School, Aurora, Illinois are consistent with requirements outlined in federal and state guidelines. Carnow Conibear makes no warranty, express or implied, that the findings and interpretations in this report are a complete representation of the environmental hazards and liabilities, associated with the Oak Park Elementary School, Aurora, Illinois.

APPENDIX A

Floor Plans – Radon Sampling Locations



1 RADON SAMPLE LOCATIONS
FIRST FLOOR PARTIAL

1/32" = 1'-0"

N TRUE NORTH

N APPARENT NORTH

TESTED BY:
Nicole Bennett
IEMA License #: RNI2016213

DRAWN BY:
A. Rodriguez

CHECKED BY:
D. Lantry

CLIENT:
East Aurora Public School District 131
417 Fifth Street
Aurora, Illinois, 60505

LEGEND:
- Approximate location of activated charcoal radon measurement device
- 4482418 Radon measurement device serial number
- Radon measurement 4.0 pCi/L and above

0 10' 20'

K:_comwpd\Projects\Radon Program\2018 Projects\2018 East Aurora District Radon Testing\000 Retests (Long and Short-term)\Oak Park\12.11.2018 Oak Park School Radon.dwg

SHEET TITLE:
Radon Testing Locations at
Oak Elementary School
1200 Front Street
Aurora, Illinois 60505

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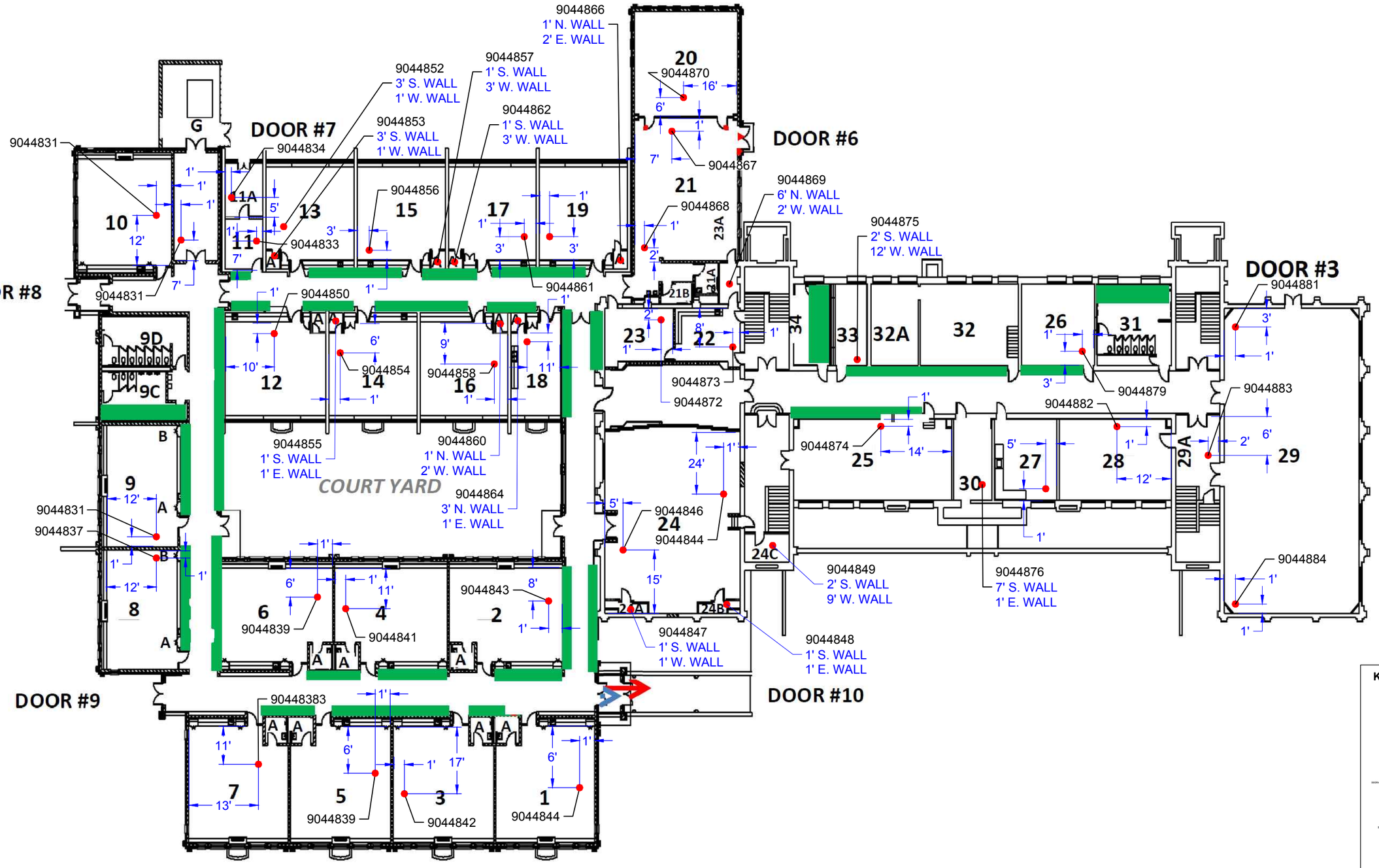
CARNOW CONIBEAR

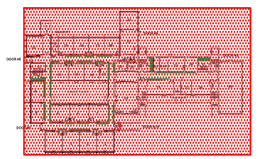
CCA PROJECT NO.
A146000137

SURVEY DATE:
5/9/2018 to 5/11/2018

SHEET NO.
Rn-1



KEY PLAN



1 RADON SAMPLE LOCATIONS
FIRST FLOOR PARTIAL

1/32" = 1'-0"

TRUE NORTH

APPARENT NORTH

TESTED BY:
Nicole Bennett
IEMA License #: RNI2016213

DRAWN BY:
A. Rodriguez

CHECKED BY:
D. Lantry

CLIENT:
East Aurora Public School District 131
417 Fifth Street
Aurora, Illinois, 60505

LEGEND:
Approximate location of activated charcoal radon measurement device
4482418 Radon measurement device serial number
0 10' 20'

SHEET TITLE:
Radon Testing Locations at
Oak Elementary School
1200 Front Street
Aurora, Illinois 60505

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CARNOW CONIBEAR

CCA PROJECT NO.
A146000137

SURVEY DATE:
5/9/2018 to 5/11/2018

SHEET NO.
Rn-1

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APPENDIX B

Laboratory Analysis Report

November 13, 2018 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:
SCHOOL
OAK PARK

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9106289	ROOM 11A	2018-11-07 @ 5:00 pm	2018-11-09 @ 6:00 pm	5.5 ± 0.5	2018-11-12
9106288	ROOM 11A	2018-11-07 @ 5:00 pm	2018-11-09 @ 6:00 pm	6.6 ± 0.5	2018-11-12

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

May 16, 2018 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OAK PARK ELEMENTARY
1200 FRONT STREET, AURORA IL

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9044846	24 / MULTIPURPOSE ROOM	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044845	24 / MULTIPURPOSE ROOM	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.5 ± 0.2	2018-05-14
9044844	ROOM 1	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.5 ± 0.3	2018-05-14
9044832	ROOM 10	2018-05-09 @ 4:00 pm	2018-05-11 @ 6:00 pm	1.2 ± 0.3	2018-05-14
9044833	ROOM 11	2018-05-09 @ 4:00 pm	2018-05-11 @ 6:00 pm	0.8 ± 0.3	2018-05-14
9044834	ROOM 11A	2018-05-09 @ 4:00 pm	2018-05-11 @ 6:00 pm	7.4 ± 0.5	2018-05-14
9044850	ROOM 12	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.8 ± 0.3	2018-05-14
9044851	ROOM 12	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044852	ROOM 13	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.9 ± 0.3	2018-05-14
9044853	ROOM 13 CLOSET	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.9 ± 0.3	2018-05-14
9044854	ROOM 14	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	1.0 ± 0.3	2018-05-14
9044855	ROOM 14 CLOSET	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	1.0 ± 0.3	2018-05-14
9044856	ROOM 15	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.5 ± 0.3	2018-05-14
9044857	ROOM 15 CLOSET	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.6 ± 0.3	2018-05-14
9044859	ROOM 16	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.7 ± 0.3	2018-05-14
9044858	ROOM 16	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.7 ± 0.3	2018-05-14
9044860	ROOM 16 CLOSET	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.6 ± 0.3	2018-05-14
9044861	ROOM 17	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.6 ± 0.3	2018-05-14
9044843	ROOM 2	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	1.4 ± 0.3	2018-05-14
9044847	ROOM 24A	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.7 ± 0.3	2018-05-14
9044848	ROOM 24B	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044849	ROOM 24C	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	2.2 ± 0.3	2018-05-14
9044842	ROOM 3	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.6 ± 0.3	2018-05-14
9044841	ROOM 4	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.8 ± 0.3	2018-05-14
9044840	ROOM 5	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044839	ROOM 6	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	1.1 ± 0.3	2018-05-14
9044838	ROOM 7	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.7 ± 0.3	2018-05-14
9044837	ROOM 8	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.6 ± 0.3	2018-05-14
9044835	ROOM 9	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.9 ± 0.3	2018-05-14
9044836	ROOM 9	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.8 ± 0.3	2018-05-14
9044831	SPRINKLER	2018-05-09 @ 4:00 pm	2018-05-11 @ 6:00 pm	1.2 ± 0.3	2018-05-14

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

May 16, 2018 **** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

OAK PARK ELEMENTARYÂ
1200 FRONT STREET, AURORA IL

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
9044885	HALLWAY	2018-05-09 @ 6:00 pm	2018-05-11 @ 7:00 pm	< 0.3	2018-05-14
9044886	HALLWAY	2018-05-09 @ 6:00 pm	2018-05-11 @ 7:00 pm	< 0.3	2018-05-14
9044887	HALLWAY	2018-05-09 @ 6:00 pm	2018-05-11 @ 7:00 pm	< 0.3	2018-05-14
9044862	ROOM 17 CLOSET	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.7 ± 0.3	2018-05-14
9044863	ROOM 18	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.6 ± 0.3	2018-05-14
9044864	ROOM 18 CLOSET	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.6 ± 0.3	2018-05-14
9044865	ROOM 19	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.6 ± 0.3	2018-05-14
9044866	ROOM 19 CLOSET	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.6 ± 0.3	2018-05-14
9044870	ROOM 20	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044871	ROOM 20	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044867	ROOM 21	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044868	ROOM 21	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	0.5 ± 0.3	2018-05-14
9044873	ROOM 22	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044872	ROOM 23	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044869	ROOM 23A STORAGE	2018-05-09 @ 5:00 pm	2018-05-11 @ 6:00 pm	< 0.3	2018-05-14
9044874	ROOM 25	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	1.0 ± 0.3	2018-05-14
9044879	ROOM 26	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	1.0 ± 0.3	2018-05-14
9044880	ROOM 26	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	0.9 ± 0.3	2018-05-14
9044878	ROOM 27	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	0.8 ± 0.3	2018-05-14
9044882	ROOM 28	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	0.8 ± 0.3	2018-05-14
9044884	ROOM 29 / GYM	2018-05-09 @ 6:00 pm	2018-05-11 @ 7:00 pm	0.8 ± 0.3	2018-05-14
9044881	ROOM 29 / GYM	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	1.0 ± 0.3	2018-05-14
9044883	ROOM 29A	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	1.7 ± 0.3	2018-05-14
9044876	ROOM 30	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	1.1 ± 0.3	2018-05-14
9044877	ROOM 32	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	1.8 ± 0.3	2018-05-14
9044875	ROOM 33	2018-05-09 @ 5:00 pm	2018-05-11 @ 7:00 pm	< 0.3	2018-05-14

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APPENDIX C

Radon Measurement Professional License

Bruce Rauner
Governor

State of Illinois

James K. Joseph
Director

IEMA Division of Nuclear Safety

Pursuant to the Radon Industry Licensing Act, 420 ILCS 44 et seq. and 32 Illinois Adminstrative Code 422, Licensing of Radon Detection and Mitigation Services, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued.

This is to certify that **Nicole Bennett**

License Number **RNI2016213**

has met the requirements for **Radon Measurement Professional**

Issued - Expires **05/18/2016 - 05/31/2021**

Limited to Radon measurements of residential real estate, home environment, school and commercial buildings only.

SEAL OF THE STATE OF ILLINOIS
AUG. 26TH 1818

161391001

Patrick I. Daniels, Radon Program