

February 9, 2023

Mr. Bryan Brown
Director of Buildings & Grounds
Fridley Public Schools
6000 West Moore Lake Drive
Fridley, MN 55432



**RE: Fridley High School
Short-Term Radon Testing Results
IEA Project #20211121**

Dear Mr. Brown:

IEA placed 168 Air Chek Pro short-term radon test kits in the following buildings for the purpose of evaluating radon levels:

- Fridley High School – 168 Samples

The radon samples were placed by the following Minnesota Department of Health (MDH) licensed Radon Measurement Professionals:

Measurement Professional	License Number	Signature
Jack Skluzacek	RMEA-00475	

The air intakes were good and the ventilation system was operating in good condition at the time of placement and retrieval.

INTRODUCTION

Radon is a colorless, odorless, tasteless, radioactive gas that occurs naturally in soil, rocks, and underground water supplies and in the ambient air. According to the U.S. Environmental Protection Agency (EPA) and other scientific organizations, naturally occurring radon gas has been associated with an increased risk of developing lung cancer. The chances of developing lung cancer from radon exposure are dependent on several factors, including individual susceptibility and, perhaps more importantly, the dose and duration of exposure. Radon testing in schools is highly recommended by the Minnesota Department of Health (MDH) and EPA.

INSTITUTE FOR ENVIRONMENTAL ASSESSMENT, INC.
www.ieasafety.com

BROOKLYN PARK
9201 West Broadway, #600
Brooklyn Park, MN 55445
763-315-7900 / FAX 763-315-7920
800-233-9513

MANKATO
610 North Riverfront Drive
Mankato, MN 56001
507-345-8818 / FAX 507-345-5301
800-233-9513

ROCHESTER
210 Woodlake Drive SE
Rochester, MN 55904
507-281-6664 / FAX 507-281-6695
800-233-9513

BRAINERD
601 NW 5th Street, Ste. #4
Brainerd, MN 56401
218-454-0703 / FAX 218-454-0703
800-233-9513

MARSHALL
1420 East College Drive
Marshall, MN 56258
507-476-3599 / FAX 507-537-6985
800-233-9513

VIRGINIA
5525 Emerald Avenue
Mountain Iron, MN 55768
218-410-9521
800-233-9513

IEA placed Air Chek Pro Chek short-term radon test kits in frequently occupied areas in the buildings listed above at Fridley Public Schools for the purpose of sampling for radon in accordance with the MDH's *Guidance for Radon Testing in Minnesota Schools* (2021) and ANSI/AARST 'Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings' (ANSI/AARST MALB 2014 with 1/21 revisions). A total of 168 radon test kits were placed from December 6, 2022, to December 9, 2022, for a total short-term sampling period of 3 days; including three (3) test kits that were missing at the time of pick-up. The radon test kits were analyzed by AirChek, Inc., MDH license #RL-00003, located at 1936 Butler Bridge Road, Mills River, NC 28759. The sampling and analysis methodologies are provided in Appendix A.

IEA followed ANSI/AARST MALB 2014 with 1/21 revisions for quality assurance measurements by including duplicate kits, control kits (blanks), and spiked kits.

The following radon kits were missing at pickup:

- Small Wrestling Room- Kit Missing
- Auxiliary Gym 3- Kit Missing
- 134 Office- Kit Missing

Client communications and commitments were delivered to the client on the following dates:

- Client Advisories and Authorizations – October 22, 2021
- Facilitating Staff Commitments – November 22, 2022
- Occupant notices – November 21, 2022

EVALUATION CRITERIA

The MDH and the EPA have established a recommended action level in intended to be occupied areas of 4.0 picocuries per liter (pCi/L) for an annual average. Testing was conducted during school days when the building is significantly occupied. The HVAC system was set as it normally is during school days. Testing was conducted during the heating season when the average outdoor temperature is less than 65°F., as recommended by the MDH, when the ventilation system was operating normally, and windows and doors were closed. Consequently, sampling under these “closed” conditions is when the radon risk is most likely to occur.

MDH recommends follow-up testing for sampling results that are above the action level. Please refer to the following table for MDH guidelines:

RESULTS (pCi/L)	RECOMMENDED ACTION
LESS THAN 4	Re-test after changes to foundation or HVAC and every 5 years
GREATER THAN 4	Conduct CRM short-term testing during winter months
LESS THAN 4 (<u>DURING OCCUPANCY</u>) AFTER CRM TESTING	Repeat CRM testing if not conducted during winter or if conducted during abnormal ventilation. Otherwise consider re-testing after changes to foundation or HVAC and every 5 years
GREATER THAN 4 (<u>DURING OCCUPANCY</u>) AFTER CRM TESTING	Reduce radon in rooms to less than 4 through radon mitigation. Conduct CRM testing to verify radon reduction.

CRM: Continuous Radon Monitor

RESULTS & DISCUSSION

The laboratory report, which includes maps of the building with sampling locations, is provided in Appendix B. Following are summary results for each building.

Fridley High School

6000 West Moore Lake Drive NE
Fridley, MN 55432

A total of 168 test kits were placed at Fridley High School. The four (4) kits in the Small Wrestling Room, Auxiliary Gym 3, and 134 Office were missing or damaged when the test kits were collected. The number of missing test kits did not exceed allowance in the ANSI/AARST MALB 2014 with 1/21 revisions standard. The results indicated that radon levels in all locations were below the action level of 4 pCi/L. See Table 1 below for a summary of the results:

TABLE 1: Fridley High School - RANGE OF RESULTS				
	0.0 – 1.9 pCi/L	2.0 – 2.9 pCi/L	3.0 – 3.9 pCi/L	≥ 4 pCi/L
Number of Tests	163	1	0	0 ¹
¹ All below action level.				

pCi/L: picocuries per liter

CONCLUSIONS & RECOMMENDATIONS

Low Levels: The radon levels in the sampled locations were below the EPA action level of 4 pCi/L.

If results between 2-4: It is recommended to take action and address results of radon concentrations greater than half the action level (2-4 pCi/L).

The EPA has established recommended guidelines for permissible radon concentrations in schools. The following are general recommendations for frequently occupied areas of schools:

- The building should be retested at least every 5 years and in conjunction with any sale of the building.
- Rooms that were not tested because they were not occupied, should be tested if they become occupied in the future.
- Test locations that were intended to be tested but did not result in valid measurements (missing test kits).

In addition, retesting should be conducted when any of the following circumstances occur:

- A new addition is constructed, or a significant renovation occurs
- A ground contact area not previously tested is occupied
- Heating or cooling systems are significantly altered, resulting in changes to air pressures or distribution
- Ventilation is significantly altered by extensive weatherization, changes to mechanical systems, or comparable procedures

- Significant openings to soil occur due to:
 - Ground water or slab surface water control systems (e.g., sumps, perimeter drain tile, shower/tub retrofits, etc.)
 - Natural settlement causing major cracks to develop
 - Earthquakes, construction blasting, or formation of sink holes nearby
 - A mitigation system is altered, modified or repaired
- Rooms should be retested during the winter heating season (i.e., under “closed” conditions) which is typically “worst case” conditions.

Per Minnesota Statutes, section 123B.571, school districts are required to report radon test results at a school board meeting and report results to the MDH. IEA is able to assist with presenting results to the school board, and the MDH reporting. The MDH ‘School Radon Testing Form’ is located in Appendix E.

For more information regarding radon, see the EPA’s A Citizen’s Guide to Radon at <http://www.epa.gov/radon>. MDH can be contacted at health.indoorair@state.mn.us or 651-201-4601.

GENERAL COMMENTS

The analysis and opinions expressed in this report are based upon data obtained from radon sampling district-wide and are representative of the locations and time period sampled. This report does not reflect variations in conditions that may occur across the site, property, or facility. Actual conditions may vary and may not become evident without further assessment.

The report is prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted environmental, health and safety practices. Other than as provided in the preceding sentence and in our Proposal #11036 dated October 22, 2021, regarding radon sampling services at the district locations, including the General Conditions attached thereto, no warranties are extended or made.

IEA appreciates the opportunity to submit this analysis to Fridley Public Schools.

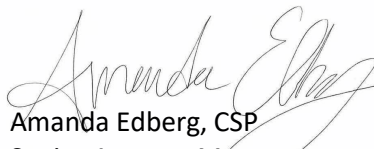
Should you require additional radon testing or have any questions regarding radon or any other environmental, health, or safety-related concerns, please do not hesitate to contact our office.

Sincerely,

Reviewed by,

IEA, Inc.


Allison Eischens
EHS Account Manager


Amanda Edberg, CSP
Senior Account Manager

ARE/khb 02092023

Enc.

Appendix A

Methodology and Quality Control Measurements

Sampling Methodology

IEA placed Air Chek, Inc. Pro Chek activated charcoal radon test kits designed specifically for the detection of gamma emissions caused by the decay of Radon-222 and its daughter products. The kit is made of a padded envelope which contains activated charcoal. The kit is placed during normal occupancy HVAC operations and sealed with vinyl tape after 72 to 96 hours of indoor exposure. Individual kits are uniquely identified with a number and corresponding bar code.

Upon receipt at the analytical laboratory, the kits are logged in using the unique numbers assigned to each kit. The kits are placed on a gamma detector to count the gamma emissions from the decay of radon adsorbed by the charcoal. A calibration factor determined in part by the exposure time and decay time is used to calculate the radon concentration. A correction factor is also applied for weight gain from any moisture absorbed by the charcoal during the sampling period.

Any unusual conditions are noted on the processing form and shown on the exposure report.

MDH and ANSI/AARST MALB 2014 Quality Control Measurements

IEA followed ANSI/AARST MALB 2014 with 1/21 revisions and MDH recommendations for quality assurance measurements to ensure the accuracy of test results. Quality assurance measurements include side-by-side test kits (duplicates) and unexposed control test kits (blanks).

Duplicates are pairs of test kits placed 4-8 inches apart for the same test period. Duplicates are stored, placed, retrieved, and shipped to the laboratory for analysis in the same manner as the other test kits so that the laboratory cannot distinguish them. Since duplicates are placed side-by-side, the measured values for radon should be the same. The average of all duplicates' relative percent difference (RPD) should not exceed 25%. If they do, an investigation to identify the cause may be warranted and could include repeating the measurements. Duplicate averages are listed in Table 1 below.

Table 1: Duplicate Device Measurements and Averages				
Location		Test 1 (pCi/L)	Test 2 (pCi/L)	Average (pCi/L)
Building	Room/Area			
Fridley High School	103A	0.8	< 0.3	0.6
Fridley High School	108	< 0.3	< 0.3	< 0.3
Fridley High School	109	< 0.3	0.7	0.5
Fridley High School	114	0.6	1.1	0.9
Fridley High School	124	0.5	0.6	0.6
Fridley High School	125 OFFICE	0.7	0.5	0.6
Fridley High School	136	0.9	0.8	0.9
Fridley High School	140	0.6	< 0.3	0.5
Fridley High School	141	0.6	< 0.3	0.5
Fridley High School	143A	0.6	0.7	0.7
Fridley High School	152	0.8	0.8	0.8
Fridley High School	155	1.3	0.9	1.1
Fridley High School	156	0.8	0.8	0.8
Fridley High School	165	< 0.3	0.5	0.4
Fridley High School	OFFICE ACROSS OF COPIER ROOM	0.6	0.6	0.6
Fridley High School	SOCIAL WORKER	0.5	0.9	0.7

Blanks can be used to determine whether the manufacturing, shipping, storage, or processing of the detector has "contaminated" your measurements. Blanks are opened and immediately re-sealed to keep room air from infiltrating the test kit. Blanks are labeled and shipped in the same manner as the exposed test kits so that the laboratory cannot distinguish them. Since blanks are not exposed to radon, their measurement value should be below the lower limit of detection. Field blanks are listed in the laboratory report as FStorage Room A, FStorage Room B, etc. Office blanks are listed in the laboratory report as OStorage Room A, OStorage Room B, etc. Lab-Transit Blanks are listed in Table 2 below.

Table 2: Blanks				
Date	Device ID	Type of Blank	Description	Radon Concentration
11/8/2022	11623115	Lab-Transit	LTBP-74	< 0.3
11/8/2022	11623110	Lab-Transit	LTBP-75	< 0.3
11/8/2022	11605431	Lab-Transit	LTBP-76	< 0.3
12/6/2022	11621968	Field	FStorage Room A	< 0.3
12/6/2022	11621967	Field	FStorage Room B	< 0.3
12/6/2022	11621966	Field	FStorage Room C	< 0.3
12/6/2022	11019439	Office	OSTORAGE ROOM A	< 0.3
12/6/2022	11019433	Office	OSTORAGE ROOM B	< 0.3
12/6/2022	11019441	Office	OSTORAGE ROOM C	< 0.3
1/21/2022	11094804	Lab-Transit	LTBP-4	< 0.3
1/21/2022	11094805	Lab-Transit	LTBP-5	< 0.3
1/21/2022	11094806	Lab-Transit	LTBP-6	< 0.3

Spikes are test kits that have been exposed in a chamber to a known concentration of radon. Using spiked measurements can help evaluate the accuracy of a laboratory analysis and/or how accurately test kits supplied by a laboratory measure radon. Spiked test kits are labeled and shipped in the same manner as the exposed test kits so that the laboratory cannot distinguish them. Spiked results completed for our laboratory are included in the following pages. Spiked test kits are listed in Table 3 below.

Table 3: Spiked Detectors			
Date	Device ID	Measured Value (pCi/L)	Reference Value (pCi/L)
11/4/2022	11130300	26.8	27.6
11/4/2022	11130298	26.5	27.6
11/4/2022	11019440	27	27.6
11/4/2022	11019482	25.3	27.6
11/4/2022	11128517	24.5	27.6
11/4/2022	11128803	24.2	27.6

Appendix B

Laboratory Report and Maps

Radon test result report for:**FRIDLEY PUBLIC SCHOOLS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11623044	101	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623043	102	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623041	103	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623042	103A OFFICE	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623038	104	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623037	105	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623036	106	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623035	107	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-12
11623083	109A OFFICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	< 0.3	2022-12-12
11623084	109B	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.6 ± 0.3	2022-12-12
11623080	110 FINANCES MAIN	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.6 ± 0.3	2022-12-12
11623075	111 NUTRITIONAL SERVICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	< 0.3	2022-12-12
11623077	111 OFFICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	< 0.3	2022-12-12
11623076	112 BUILDING GROUNDS OFFICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.5 ± 0.3	2022-12-12
11623074	113	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.7 ± 0.3	2022-12-12
11623071	115	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.8 ± 0.3	2022-12-12
11623070	116	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.8 ± 0.3	2022-12-12
11623068	117	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.6 ± 0.3	2022-12-12
11623069	118	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.7 ± 0.3	2022-12-12
11623067	119	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.7 ± 0.3	2022-12-12
11623066	120	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	1.1 ± 0.3	2022-12-12
11623065	121	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	1.0 ± 0.3	2022-12-12
11623064	122	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.8 ± 0.3	2022-12-12
11623047	123 BAND EAST	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	< 0.3	2022-12-12
11623048	123 BAND NORTH	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.8 ± 0.3	2022-12-12
11623062	126 PRATICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	< 0.3	2022-12-12
11623059	127 PRACTICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.7 ± 0.3	2022-12-12
11623061	128	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	< 0.3	2022-12-12
11623058	129 PRACTICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.7 ± 0.3	2022-12-12
11623057	130 PRACTICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	< 0.3	2022-12-12
11623056	131 PRACTICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	< 0.3	2022-12-12
11623053	133 OFFICE	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.8 ± 0.3	2022-12-12
11621914	134	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	1.4 ± 0.3	2022-12-12
11621909	135	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.8 ± 0.3	2022-12-12
11621915	136 OFFICE E	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621913	136 OFFICE W	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621912	137	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12

Radon test result report for:**FRIDLEY PUBLIC SCHOOLS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11621916	138	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11621917	138A OFFICE	2022-12-06 @ 2:00 pm	2022-12-09 @ 2:00 pm	0.8 ± 0.3	2022-12-12
11621918	139	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.5 ± 0.3	2022-12-12
11621923	140A CUSTODIAL WORKSHOP	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	1.0 ± 0.3	2022-12-12
11621919	140A CUSTODIAL WORKSHOP OFFICE	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11621926	142	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11621925	143	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11621933	143A OFFICE	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.6 ± 0.3	2022-12-12
11621931	143B	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	< 0.3	2022-12-12
11621930	144	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	< 0.3	2022-12-12
11621934	145	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	1.1 ± 0.3	2022-12-12
11621932	146	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	< 0.3	2022-12-12
11621935	147	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.8 ± 0.3	2022-12-12
11621929	148	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.8 ± 0.3	2022-12-12
11621936	149	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11621937	150	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621941	152 ACTIVIES ROOM	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.6 ± 0.3	2022-12-12
11621940	153	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	1.0 ± 0.3	2022-12-12
11621942	154	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621948	157	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11621944	158	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621949	159	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.6 ± 0.3	2022-12-12
11621950	160	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	1.0 ± 0.3	2022-12-12
11621951	161	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621952	162	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11621953	163	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	< 0.3	2022-12-12
11621954	164	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.8 ± 0.3	2022-12-12
11621957	166	2022-12-06 @ 3:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11621958	167	2022-12-06 @ 3:00 pm	2022-12-09 @ 1:00 pm	0.6 ± 0.3	2022-12-12
11621959	168	2022-12-06 @ 3:00 pm	2022-12-09 @ 1:00 pm	0.5 ± 0.3	2022-12-12
11621961	169	2022-12-06 @ 3:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621962	170	2022-12-06 @ 3:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621960	171	2022-12-06 @ 3:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11623014	ACTIVITIES ASSISTANT	2022-12-06 @ 10:00 am	2022-12-09 @ 9:00 am	0.5 ± 0.3	2022-12-12
11623013	ACTIVITIES DIRECTOR	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623005	AMIN. ASSISTANT TO PRINCIPAL	2022-12-06 @ 9:00 am	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-12
11623007	ASSISTANT DIRECTOR OF HUMAN RESOURC	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12

Radon test result report for:**FRIDLEY PUBLIC SCHOOLS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11623003	ASSISTANT PRINCIPAL	2022-12-06 @ 9:00 am	2022-12-09 @ 9:00 am	< 0.3	2022-12-12
11623095	AUDITORIUM 1	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	1.6 ± 0.3	2022-12-12
11623094	AUDITORIUM 2	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	1.4 ± 0.3	2022-12-12
11623093	AUDITORIUM 3	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	1.7 ± 0.3	2022-12-12
11623092	AUDITORIUM 4	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	1.7 ± 0.3	2022-12-12
11623097	AUDITORIUM SOUND BOOTH	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	1.3 ± 0.3	2022-12-12
11621902	AUXILIARY GYM 1	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	1.1 ± 0.3	2022-12-12
11621904	AUXILIARY GYM 2	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	1.1 ± 0.3	2022-12-12
11623019	BOARD ROOM	2022-12-06 @ 10:00 am	2022-12-09 @ 9:00 am	1.0 ± 0.3	2022-12-12
11623049	BOYS LOCKER ROOM	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	1.2 ± 0.3	2022-12-12
11623091	CAFETERIA 1	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	0.7 ± 0.3	2022-12-12
11623088	CAFETERIA 2	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	0.6 ± 0.3	2022-12-12
11623090	CAFETERIA 3	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	0.6 ± 0.3	2022-12-12
11623089	CAFETERIA 4	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	0.6 ± 0.3	2022-12-12
11623087	CAFETERIA 5	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	0.7 ± 0.3	2022-12-12
11621963	COMPUTER LAB	2022-12-06 @ 3:00 pm	2022-12-09 @ 1:00 pm	< 0.3	2022-12-12
11623016	CONFERENCE ROOM	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-12
11623079	COPY ROOM BY NUTRITIONAL SERVICES	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.6 ± 0.3	2022-12-12
11623081	CUBICLES BY FINANCES MAIN	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.6 ± 0.3	2022-12-12
11623039	D103A - 1	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-12
11623040	D103A - 2	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623034	D108 - 1	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623029	D108 - 2	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623085	D109 - 1	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	< 0.3	2022-12-12
11623086	D109 - 2	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.7 ± 0.3	2022-12-12
11623072	D114 - 1	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.6 ± 0.3	2022-12-12
11623073	D114 - 2	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	1.1 ± 0.3	2022-12-12
11623054	D124 - 1	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.5 ± 0.3	2022-12-12
11623055	D124 - 2	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.6 ± 0.3	2022-12-12
11623060	D125 OFFICE - 1	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.7 ± 0.3	2022-12-12
11623063	D125 OFFICE - 2	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.5 ± 0.3	2022-12-12
11621905	D136 - 1	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621911	D136 - 2	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.8 ± 0.3	2022-12-12
11621921	D140 - 1	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.6 ± 0.3	2022-12-12
11621922	D140 - 2	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	< 0.3	2022-12-12
11621920	D141 - 1	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.6 ± 0.3	2022-12-12
11621924	D141 - 2	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	< 0.3	2022-12-12

Radon test result report for:**FRIDLEY PUBLIC SCHOOLS**

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11621927	D143A - 1	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.6 ± 0.3	2022-12-12
11621928	D143A - 2	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11621938	D152 - 1	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.8 ± 0.3	2022-12-12
11621939	D152 - 2	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.8 ± 0.3	2022-12-12
11621943	D155 - 1	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	1.3 ± 0.3	2022-12-12
11621945	D155 - 2	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621946	D156 - 1	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.8 ± 0.3	2022-12-12
11621947	D156 - 2	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.8 ± 0.3	2022-12-12
11621955	D165 - 1	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	< 0.3	2022-12-12
11621956	D165 - 2	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.5 ± 0.3	2022-12-12
11623023	DEAN OF STUDENTS ACROSS CONFERENCE	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-12
11623008	DIRECTOR OF HUMAN RESOURCES	2022-12-06 @ 9:00 am	2022-12-09 @ 9:00 am	0.7 ± 0.3	2022-12-12
11623006	DIRECTOR OF TEACHING AND LEARNING	2022-12-06 @ 9:00 am	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-12
11623010	DOFFICE ACROSS OF COPIER ROOM - 1	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-12
11623012	DOFFICE ACROSS OF COPIER ROOM - 2	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-12
11623031	DSOCIAL WORKER - 1	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.5 ± 0.3	2022-12-12
11623030	DSOCIAL WORKER - 2	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.9 ± 0.3	2022-12-12
11623015	EXECUTIVE ASSISTANT	2022-12-06 @ 10:00 am	2022-12-09 @ 9:00 am	0.6 ± 0.3	2022-12-12
11621968	FSTORAGE ROOM A	2022-12-06 @ 3:00 pm	2022-12-09 @ 2:00 pm	< 0.3	2022-12-12
11621967	FSTORAGE ROOM B	2022-12-06 @ 3:00 pm	2022-12-09 @ 2:00 pm	< 0.3	2022-12-12
11621966	FSTORAGE ROOM C	2022-12-06 @ 3:00 pm	2022-12-09 @ 2:00 pm	< 0.3	2022-12-12
11623045	GIRLS LOCKER ROOM OFFICE	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.9 ± 0.3	2022-12-12
11621908	KITCHEN 1	2022-12-06 @ 1:00 pm	2022-12-09 @ 1:00 pm	0.9 ± 0.3	2022-12-12
11621907	KITCHEN 2	2022-12-06 @ 2:00 pm	2022-12-09 @ 1:00 pm	0.7 ± 0.3	2022-12-12
11623022	LIASON	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.7 ± 0.3	2022-12-12
11623011	MAIL ROOM	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.6 ± 0.3	2022-12-12
11623100	MAIN GYM 1	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	0.7 ± 0.3	2022-12-12
11623099	MAIN GYM 2	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	0.7 ± 0.3	2022-12-12
11623098	MAIN GYM 3	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	0.7 ± 0.3	2022-12-12
11621906	MAIN GYM 4	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	0.8 ± 0.3	2022-12-12
11621901	MAIN GYM 5	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	< 0.3	2022-12-12
11623052	MAIN WRESTLING ROOM EAST	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-12
11623051	MAIN WRESTLING ROOM SOUTH	2022-12-06 @ 11:00 am	2022-12-09 @ 10:00 am	0.9 ± 0.3	2022-12-12
11623017	NUTRITIONAL/ED SERVICES SECRETARY	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623026	OFFICE ACROSS SOCIAL WORKER	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.9 ± 0.3	2022-12-12
11623082	OFFICE BY FINANCES MAIN	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.8 ± 0.3	2022-12-12
11623024	OFFICE RIGHT TO DEAN OF STUDENTS	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-12

December 12, 2022

**** LABORATORY ANALYSIS REPORT ****

Radon test result report for:

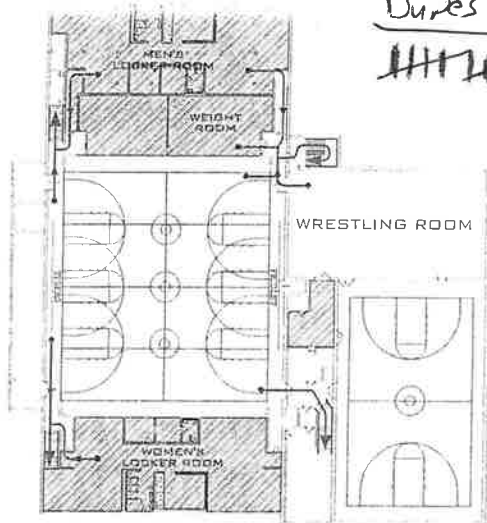
FRIDLEY PUBLIC SCHOOLS

Kit #	Room Id	Started	Ended	pCi/L	Analyzed
11621965	OSTORAGE ROOM A	2022-12-06 @ 3:00 pm	2022-12-09 @ 2:00 pm	< 0.3	2022-12-12
11621969	OSTORAGE ROOM B	2022-12-06 @ 3:00 pm	2022-12-09 @ 2:00 pm	< 0.3	2022-12-12
11621964	OSTORAGE ROOM C	2022-12-06 @ 3:00 pm	2022-12-09 @ 2:00 pm	< 0.3	2022-12-12
11623004	PRINCIPAL	2022-12-06 @ 9:00 am	2022-12-09 @ 9:00 am	0.8 ± 0.3	2022-12-12
11623002	RECEPTION	2022-12-06 @ 9:00 am	2022-12-09 @ 9:00 am	0.7 ± 0.3	2022-12-12
11623028	ROOM A LSN	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-12
11623027	ROOM B MAIN NURSE OFFICE	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.7 ± 0.3	2022-12-12
11623021	ROOM BY LIASON	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-12
11623078	ROOM BY NUTRITIONAL SERVICES MAIN	2022-12-06 @ 11:00 am	2022-12-09 @ 11:00 am	0.8 ± 0.3	2022-12-12
11623033	ROOM C COT	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	< 0.3	2022-12-12
11623032	ROOM D NURSE	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.7 ± 0.3	2022-12-12
11623025	SCHOOL PSYCHOLOGIST	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.7 ± 0.3	2022-12-12
11623096	STAGE	2022-12-06 @ 1:00 pm	2022-12-09 @ 12:00 pm	2.1 ± 0.3	2022-12-12
11623020	STUDENT SUPPORT SERVICE OFFICE	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	0.8 ± 0.3	2022-12-12
11623018	SUPERINTENDENT	2022-12-06 @ 10:00 am	2022-12-09 @ 9:00 am	0.6 ± 0.3	2022-12-12
11623046	WEIGHT ROOM	2022-12-06 @ 10:00 am	2022-12-09 @ 10:00 am	1.0 ± 0.3	2022-12-12

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

Dunes
 HHHHHHHH

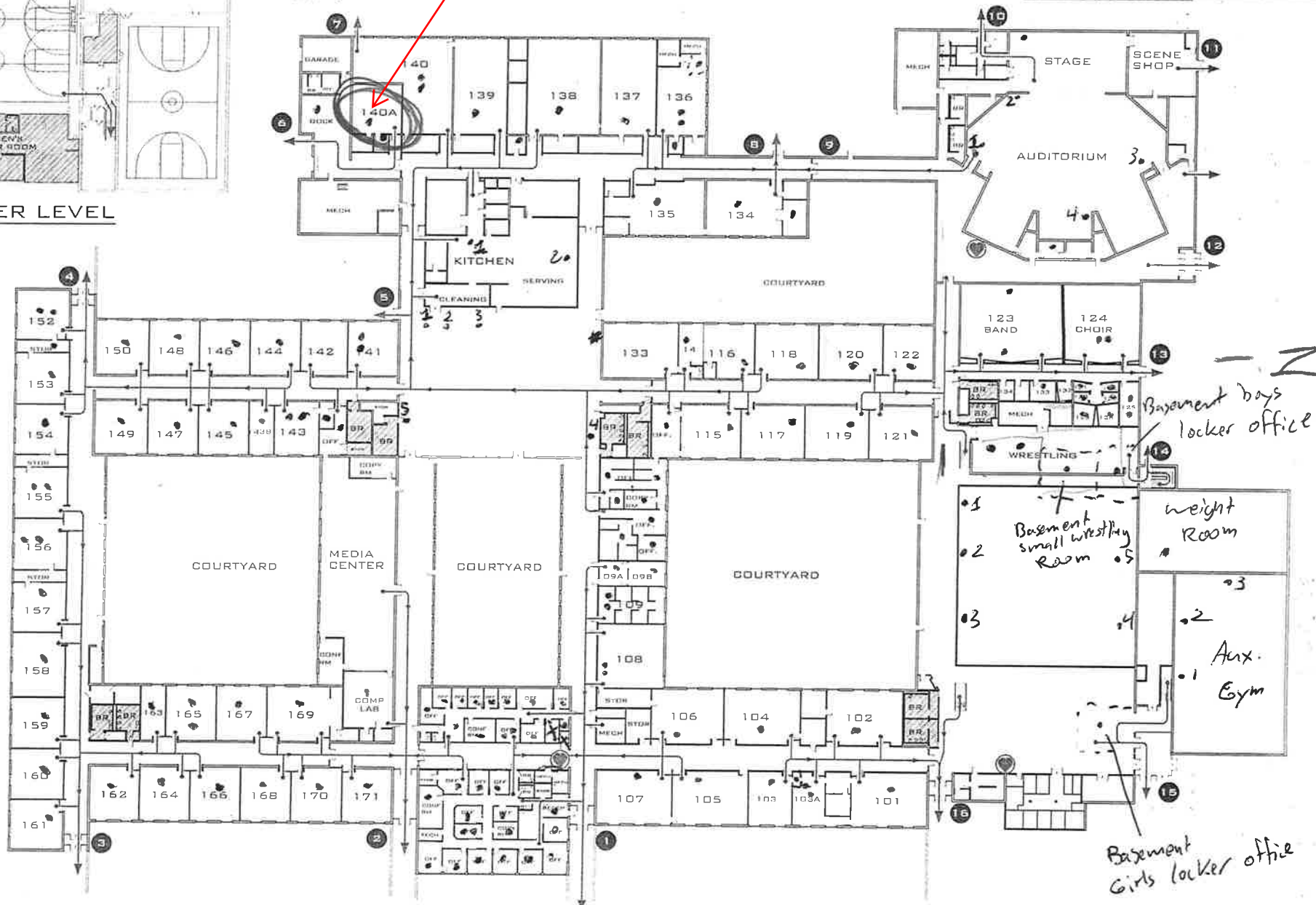
AED LOCATION



LOWER LEVEL

X = not needed

Field blanks



FRIDLEY HIGH SCHOOL

ALL LEVELS FLOOR PLAN SEPT 2018



FIRE EXIT



SEVERE WEATHER



SHELTER AREA

AED LOCATION

LOWER LEVEL

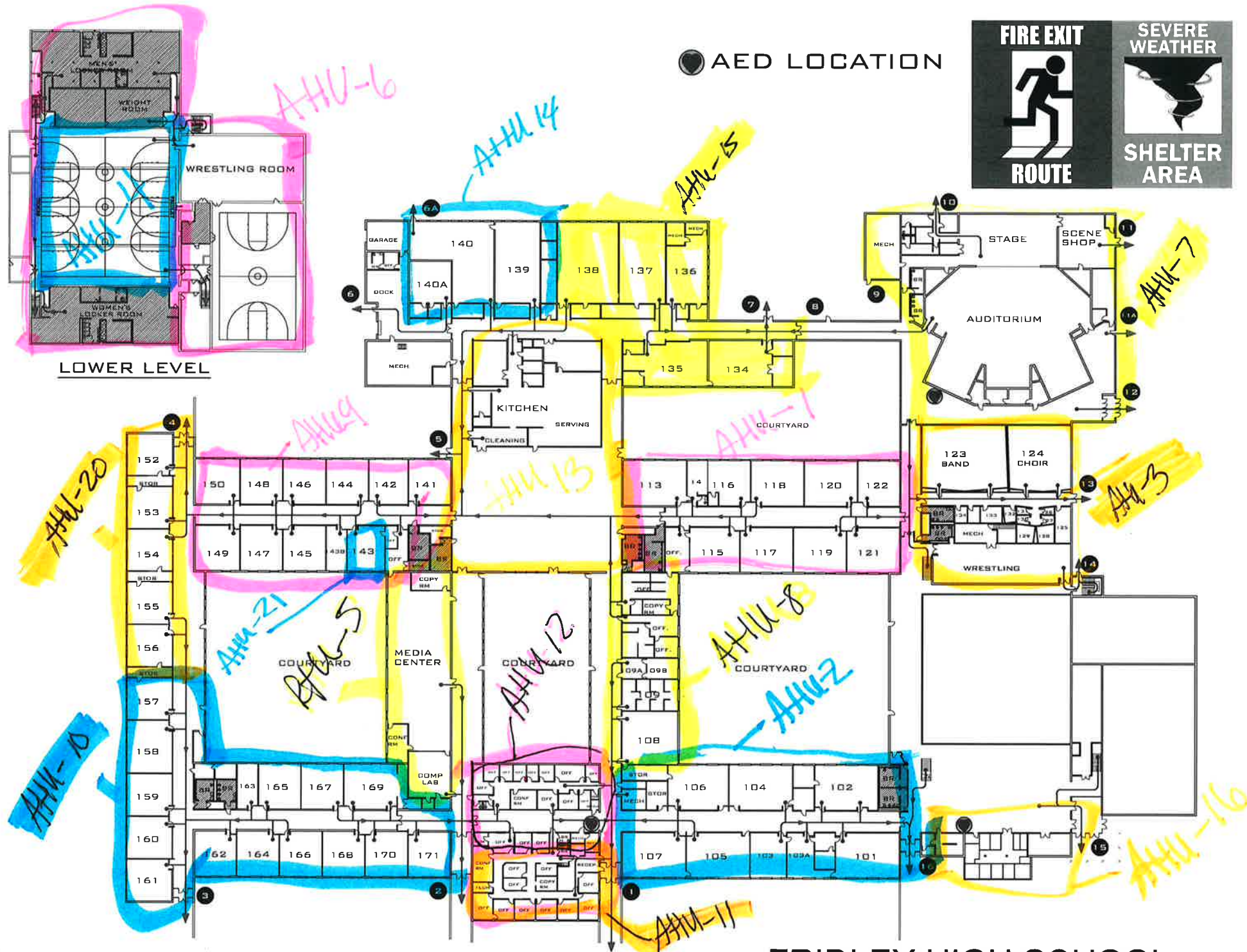
FRIDLEY HIGH SCHOOL

ALL LEVELS FLOOR PLAN | MAY 2021



INSTITUTE FOR
ENVIRONMENTAL ASSESSMENT

9201 West Broadway Brooklyn Park, MN 55445
Tel: 763.315.7900 Toll Free: 800.233.9513
Fax: 763.315.7920



Appendix C

Signed Non-Interference Agreement



Radon Compliance Form - Sign by Building Operator (or use hard copy)

Overview

Client	Fridley Public Schools
Building	Fridley High School
Measurement Professional - NOTE: Any employee placing detectors must be certified.	Other
Other:	Jack Skluzacek RMEA-00475
Test Start Date	12-06-2022
Test End Date	12-09-2022

Declaration of Observed Compliance

Notice of Inspection for Facilitating Staff	<p>Please help to maintain the required test conditions throughout the building</p> <ol style="list-style-type: none">1. All windows and exterior doors must be kept closed (aside from momentary entry or exit) for 12 hours before and during the test.2. Heating and cooling systems must be set to normal occupied operating temperatures.3. Test devices are not to be disturbed. <p>Further guidance on required building conditions are located on the next page. Test devices are not dangerous in anyway. The type of devices used for this testing will include:</p> <p>Short-term test kits. It is important that these devices are fully open and not covered. They will be analyzed by a laboratory.</p> <p>Continuous radon monitors. These are electronic devices that record hourly radon readings.</p> <p>Long-term test kits. It is important that these devices are not covered. They will be analyzed by a laboratory.</p> <p>Declaration of Observed Compliance</p> <p>Failure to reasonably maintain test conditions can lead to unnecessary expense, disruptions and unreliable data. Disturbing test devices can also cause unreliable or invalid test results.</p> <ul style="list-style-type: none">• Please report in a timely manner if required test conditions are not maintained.• Please sign and return this form once the test is complete.
To the best of my knowledge, the required conditions were maintained during the test.	Yes
Printed Name	Tim Buttweiler
Signature	

Section 3



Radon Compliance Form - Sign by Building Operator (or use hard copy)

Embedded Photo

More Detailed Guidance for Staff

Required Closed-Building Conditions	
Windows	Keep Closed, Seal broken windows closed
External doors (except for normal entry or exit)	Keep Closed
Heating & Cooling Systems	Set to normal operating conditions
Bathroom fans	Operate normally
Fireplaces (including gas)	Do not operate
Auxiliary or temporary systems that bring air into the building	Do not operate (unless an integral part of HVAC or supplies make-up air for combustion appliances)
Exhaust systems (ex. from shops, laundries, kitchens)	Avoid excessive operation
Interior doors, Stairwells, Fire Doors	Operate Normally
Garage doors	Operate normally
Ceiling Fans, Portable Fans	Do not blow directly on the test device
Window AC Units	Operate in recirculation mode only
Window Fans	Do not operate. Seal shut or remove.
Humidifiers, Dehumidifiers, Portable Air Cleaners	Operate Normally
Central Vacuum Cleaner Systems	Operate Normally
Passive crawl space vents	Operate normally
Crawlspace exhaust systems for humidity control	Operate normally
Passive Vents for Combustion Make-Up Air	Leave Open
Combustion Appliance Vents	Operate Normally
Passive Solar Systems	Operate Normally
Attic Vent Fans	Operate Normally
Evaporative Cooling Systems	Do not operate



Embedded Photo

More Detailed Guidance for Staff

Requirements for Test Locations Within a Room	
Place detectors within the general breathing zone	3 feet from exterior doors, windows or other openings to the outdoors
	20 inches above the floor
	4 inches from other test devices and objects
Locate detectors no less than:	1 foot below the ceiling
Place detectors where they are not easily disturbed:	Select a place in an occupied area where the detectors are unlikely to be moved
Place detectors where they are not influenced by other factors:	Do not place devices in closets, crawlspaces, cupboards, sumps or nooks within building foundations
	Do not place devices in area with high air movement (ex. mechanical areas, furnace closets)
	Do not place devices in areas of high humidity (ex. kitchens, bathrooms, laundry rooms)
	Do not place devices near drafts from HVAC systems or fans
	Do not place test devices near heat sources (ex. appliances, radiators, fireplaces, direct sunlight)
	Do not place detectors on devices that produce radiation (ex. natural stone counters, pool tables, rock collections)

8.50 x 11.00 in

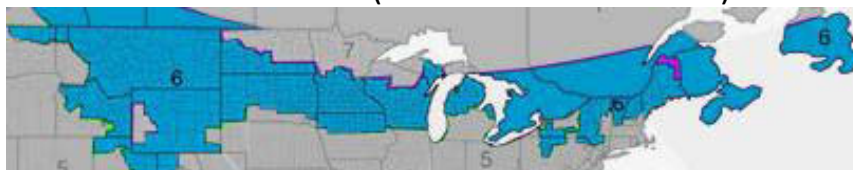


Appendix D

Average Building Operating Conditions Comparison

Southern MN

Climate Zone 6 (includes Southern MN)



		Averages			During the Test
		24 Hour	Daytime	Daytime 9-Month	Prevailing During the Test
Operating Condition	Outdoor Temperature	45 °F	50 °F	N/A	30 °F
	Heating Conditions	75%	66%	88%	100%
	Cooling Conditions	-	16%	11%	0%
	Mixed Conditions	25%	16%	-	0%
Normal Operating Condition		<ul style="list-style-type: none"> Heating conditions No variance in outdoor air ventilation 			<ul style="list-style-type: none"> Heating conditions No variance in outdoor air ventilation
Condition less likely to inhibit characterization of a radon hazard		<ul style="list-style-type: none"> Heating and air distribution systems active 			<ul style="list-style-type: none"> Heating and air distribution systems active

Appendix E

MDH Reporting Form

School Radon Testing Reporting Form

According to Minnesota Statute 123B.571 subd. 3, a school district that has tested its school buildings for the presence of radon shall report the results of its tests to the Department of Health. Please use this form to submit information about the most recent round or cycle of testing conducted for each building.

Instructions

1. Complete one form for each building tested. In this case, a building is defined as an occupied facility with a unique address. This includes administrative buildings.
2. Include this form, raw data (e.g. laboratory report) and a building map.
3. Submit this form when all work is completed for a round of testing. This includes reporting to the school board, and follow-up testing and post-mitigation testing, if applicable.
4. Email information to health.indoorair@state.mn.us.

Contact Information

Name:	Bryan Brown
Mailing Address:	6000 W Moore Lake Drive
Phone: (763) 502-5008	Email: bryan.brown@fridley.k12.mn.us

Initial Radon Testing Information

School Building Name: Fridley High School	
School District & District Number: Fridley Public Schools ISD 14	
Building Address: 6000 W Moore Lake Drive Fridley MN	
Test Kit Manufacturer: Air Chek	Device Name: Pro Chek
Date of Kit Retrieval (DD/MM/YY): 12/9/22	Length of Test (days): 3
How many rooms were tested? 137	
Does the test period include weekends? ☐ Yes ☒ No	
Does the test period include school breaks or holidays? ☐ Yes ☒ No	

SCHOOL RADON TESTING REPORTING FORM

Were all frequently-occupied ground contact rooms tested? ¹ ☒ Yes ☐ No If no, did you attempt to test all frequently occupied ground contact rooms, meaning test kits were placed in all these rooms? ☐ Yes ☐ No
How many rooms had results ≥ 4 pCi/L?: 0
Were the results reported at a school board meeting? ☐ Yes ☐ No

Follow-up Testing, Mitigation, & Post-Mitigation Testing

If one or more rooms tested ≥ 4 pCi/L, please answer the questions below:

How many rooms had follow-up testing?:		
Number of rooms with follow-up results	≥ 4 pCi/L:	< 4 pCi/L:
Of the rooms that had test results ≥ 4 pCi/L, how many rooms were:		
mitigated by HVAC balancing or operational changes? :		
mitigated by installation of active soil depressurization?:		
addressed through other corrective measures? ² :		
What was the cost of the installation and/or HVAC service work, to mitigate radon? \$		
What is the known or anticipated annual operating cost of mitigation (estimate)? \$		
After radon mitigation, how many rooms were retested?:		
Post mitigation results (# of rooms)	≥ 4 pCi/L:	< 4 pCi/L:

¹ This includes classrooms, offices, break rooms, laboratories, cafeterias, libraries, auditoriums, gymnasiums, etc. It includes rooms on grade and rooms above unoccupied spaces that are in contact with the ground, such as rooms above storage rooms, crawl spaces, tunnels, and boiler rooms. If only a sample or portion of rooms were tested, then respond with 'no'.

² 'Other corrective measures' could include moving staff out of a room and making a room unoccupied or trying to seal radon entry points.