



WARWICK PUBLIC SCHOOLS

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SUPERINTENDENT

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TO: Philip Thornton, Ed.D, Superintendent
FROM: Steven D. Gothberg, Director
DATE: March 22, 2017
SUBJECT: Air Quality Testing Report for Warwick Veteran's

Attached, please find the completed and reviewed Air Quality Testing Report, submitted to Warwick Public Schools, by Environmental Consulting and Management after their Air Quality Testing at Warwick Veteran's Memorial Junior High School. Please forward this report to the School Committee for their review and release as they see fit. Myself and Mr. Daniel Simas, from Environmental Consulting and Management, will be available at the School Committee meeting on April 4, 2017 for any questions, regarding the report and testing, that the School Committee may have.

Please contact me should you have any questions regarding this recommendation.



March 6, 2017

Warwick Public Schools
Attn: Mr. Phil Ricchiuti
150 Draper Avenue
Warwick, RI 02889

Re: Indoor Air Quality Survey Results – Warwick Veterans Junior High School

Dear Mr. Ricchiuti:

Environmental Consulting and Management, Inc. (ECM) personnel performed an indoor air quality survey from February 28th through March 2nd, 2017 within the Warwick Veterans Junior High School located at 2401 West Shore Road, Warwick, RI. The testing consisted of the use of direct reading instrumentation to analyze levels of temperature, relative humidity, carbon monoxide/dioxide, volatile organic compounds (VOCs), hydrogen sulfide, and oxygen within the building along with exterior sampling for comparison purposes.

Indoor air quality is affected by a variety of factors including time of day, season, weather, occupancy, housekeeping, HVAC systems, and outside influences such as fungal spores or pollution. Air quality problems can be caused by one or more of these constantly changing factors.

OBSERVATIONS

The Warwick Veterans Junior High School building originally opened in 1956, and expanded to include the 900 Wing in the 1960s. In 2016 the school underwent a conversion to a middle school with children from Aldrich Junior High School and Gorton Junior High School being sent to the new middle school. Currently the school is running at approximately 90% capacity. The testing was performed by ECM at the Warwick Veterans Junior High School in response to increasing complaints of poor indoor air quality within the school. The survey was conducted in each student and faculty occupied space in the Warwick Veterans Junior High School, it was however limited to readily accessible areas only, and therefore did not include areas such as spaces above drop ceilings, inside duct work, or in the crawlspace. The survey was conducted during normal school hours with students and faculty occupying the areas during testing, and environments encountered were representative of typical conditions. All faculty and staff were accommodating during testing, allowing us access to all areas needed for the survey, and providing background on their experiences within the building.

Overall, the building appeared generally clean and fairly well maintained. Floors were generally clean, waxed, and clear of debris, horizontal surfaces appeared free of dust accumulation, and no unusual odors were detected. Some classrooms had the windows open to help ventilate the room, however the windows were open in less than twenty percent of the classrooms as it was fairly cold outside. Occupancy of the classrooms varied by time of day, with some rooms being vacant during certain periods and others occupied by up to twenty five students and a teacher. Classrooms that contained larger numbers of students and faculty with the windows closed were perceived to feel much warmer and more humid, due to a lack of ventilation.

The most common deficiency observed in many of the classrooms and hallways was the number of water stained ceiling tiles, primarily on the first floor. Many of the classrooms have suspended drop ceiling tiles with the original 1'x1' acoustical ceiling tiles present above. In rooms where there are no drop ceilings or areas where the original acoustical ceiling is visible above, a large number of heavily water stained 1'x1' ceiling tiles were observed. These areas include the first and second floor of D Wing, and the first floor of B Wing and C Wing. The fiberglass insulation lining the ceiling in the G Wing area was observed to be water damaged as well. ECM observed from the building exterior that some of the rubber roofing on the G Wing is no longer adhered to the roof deck, meaning the integrity of the roofing may be compromised and no longer watertight. Given the design of the roof of G Wing, water that penetrates the roof would collect at the location discovered to be water stained on the insulation below.

Possible asbestos containing material were also noted during the survey, including older floor tile in areas mostly inaccessible to students, pipe insulation, and ceiling tiles. All possible asbestos containing materials were found to be in good condition and not in need of immediate remediation. According to documents provided by Warwick Schools an AHERA management plan is in place to monitor the condition of these materials.

METHODOLOGY

ECM utilized the following direct reading instruments:

Amprobe CO2-100 - Temperature, Relative Humidity, Carbon Dioxide

GX-6000 Smart 6 Sensor Sample Draw Gas Monitor – VOCs, Carbon Monoxide, Hydrogen Sulfide, Oxygen

DIRECT READING RESULTS

Temperature:

The Amprobe CO2-100 found the indoor temperature range to be between **61.0 and 77.6** degrees Fahrenheit within the areas tested. The exterior temperatures ranged between **48.5** and **60.7** degrees. The American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) recommend a winter indoor temperature range of between 68 and 76 degrees Fahrenheit. Indoor temperatures are highly dependent on outdoor conditions, and small variances outside the ASHRAE recommended range does not necessarily indicate an indoor air quality problem.

Relative Humidity:

The Amprobe CO2-100 recorded interior relative humidity levels between **11.2%** and **55.2%**. The exterior humidity level was found to be between **23.7% and 85.1%** over the three days of testing. According to the ASHRAE Standard 55-1981, relative humidity should be maintained between 30% and 60% depending on the season and indoor temperatures. Humidity itself is not usually considered to cause health problems unless it is found to be at one extreme or the other. Low humidity can lead to irritation of the eyes, nose, and throat of the building occupants. High humidity can provide ideal conditions for the growth of microorganisms and mold, which can in turn cause allergic reactions in building occupants.

Carbon Dioxide:

Carbon dioxide (CO₂) is a natural constituent of the air we breath; it is a colorless, odorless and non-flammable gas produced by metabolic processes (such as respiration) and by combustion of fossil fuels. The average outdoor air concentration of carbon dioxide is in the order of 350 to 400 ppm. Indoor levels are usually higher, due to the carbon dioxide exhaled by building occupants. Human respiration alone can lead to carbon dioxide levels in excess of 3,000 ppm, especially in poorly ventilated rooms. Indoor combustion appliances, in particular gas stoves, can also increase carbon dioxide levels. Inadequate outside air ventilation can make classrooms uncomfortable and can reduce productivity. Poor ventilation can also lead to increased humidity, as moisture produced indoors is not vented to the outside. High humidity can encourage the growth of mold and dust mites; both of which are allergens and asthma triggers.

Carbon dioxide levels within the areas sampled were found to be between **403** and **4130 parts per million (ppm)**. The outdoor levels ranged between **383** and **424 ppm**. The ASHRAE guideline recommends that the indoor concentration of carbon dioxide should be less than 700 ppm above the outdoor readings. Carbon dioxide concentrations in occupied spaces usually range from 500 to 1000 ppm. Large concentrations of carbon dioxide can cause air quality concerns as an indicator of the lack of outside air exchange rates. The NIOSH/OSHA exposure limit is 5000 ppm based on an 8 hour exposure period. The highest levels of CO₂ were found in classrooms with large numbers of active students with the windows often closed or only slightly open, most commonly in the 900 Wing, D Wing, and B Wing.

Potential Concerns for CO₂ Concentration:

350-400 ppm - normal outdoor ambient air

350-1000 ppm – indoor occupied spaces with good air exchange

1000-2000 ppm – complaints of drowsiness and poor air quality

2000-5000 ppm – complaints of headaches, loss of concentration, sleepiness, and stale air.

>5000 ppm – the permissible exposure limit for occupied spaces, toxicity could occur

Carbon Monoxide:

Carbon monoxide (CO) is a poisonous, colorless, odorless, and tasteless gas. Carbon monoxide is a common industrial hazard resulting from the incomplete burning of natural gas and any other material containing carbon such as gasoline, kerosene, oil, propane, coal, or wood. Forges, blast furnaces and coke ovens produce CO, but one of the most common sources of exposure in the workplace is the internal combustion engine.

Besides tightness across the chest, initial symptoms of CO poisoning may include headache, fatigue, dizziness, drowsiness, or nausea. Sudden chest pain may occur in people with angina. During prolonged or high exposures, symptoms may worsen and include vomiting, confusion, and collapse in addition to loss of consciousness and muscle weakness. Symptoms vary widely from person to person. CO poisoning may occur sooner in those most susceptible: young children, elderly people, people with lung or heart disease, people at high altitudes, or those who already have elevated CO blood levels, such as smokers. Also, CO poisoning poses a special risk to fetuses.

The OSHA PEL is 50 parts per million (ppm). OSHA standards prohibit worker exposure to more than 50 parts of the gas per million parts of air averaged during an 8-hour time period.

Carbon monoxide was **not detected** within any of the areas tested.

Volatile Organic Compounds (VOCs):

Volatile organic compounds are chemicals used to manufacture and maintain building materials, interior furnishing, cleaning products and personal care products. "Volatile" means that these chemicals evaporate or can easily get into the air at room temperature. "Organic" means these chemicals are carbon based. The term "chemical emissions" refers to VOCs as they evaporate into the air from products.

Studies by the U.S. Environmental Protection Agency (U.S.EPA) and other researchers have found that VOCs are common in indoor environments and that their levels may be two to a thousand times higher than outdoors. There may be anywhere from 50 to hundreds of individual VOCs in the indoor air at any one time. Some may produce objectionable odors at very low levels, but many have no noticeable smell. Many VOCs are irritants and can cause headaches, eye, nose and throat irritation and dizziness. Long-term exposure to certain VOCs may lead to chronic diseases or cancer. At high concentrations, some VOCs are toxic.

VOCs levels were found to be **1.2 ppm or less** during the survey, with the one exception being the former automotive shop area, with readings peaking at **7.8 ppm** where spray paint had just been used, and **2.7 ppm** in the adjacent room.

Hydrogen Sulfide:

Hydrogen sulfide is a colorless gas with the characteristic foul odor of rotten eggs. Hydrogen sulfide often results from the microbial breakdown of organic matter in the absence of oxygen gas, such as in swamps and sewers. Hydrogen sulfide gas is created and released into the air when waste water remains stagnant for a long period of time, and becomes depleted of dissolved oxygen. Hydrogen sulfide also occurs in volcanic gases, natural gas, and in some sources of well water. People living or working near improperly functioning sewage systems can be affected by this toxic gas. Higher levels of hydrogen sulfide are often found within the steam rising from manhole covers in cities, which can be brought into homes and buildings through HVAC systems causing adverse health effects for occupants.

Hydrogen sulfide exposure causes a variety of adverse health issues. Low levels of hydrogen sulfide can cause respiratory issues, eye irritation, dizziness, nausea, headache and drowsiness. At high levels, hydrogen sulfide can cause rapid loss of consciousness and even death. Hydrogen sulfide is also responsible for an estimated 50-70% of the sewage pipe corrosion in the United States. This corrosion occurs when hydrogen sulfide gas reacts with the moisture on the walls of the pipe to form caustic sulfuric acid (H₂SO₄), which corrodes the infrastructure of the sewage system. This corrosion leads to the need for costly pipe repairs, and increases the likelihood that additional hydrogen sulfide will be released into the air near offices and homes. Hydrogen sulfide was **not detected** in any of the areas tested at Warwick Veterans Junior High School.

CONCLUSIONS AND RECOMMENDATIONS

Refer to Attachment #1 for specific measurement results for each room and area sampled. The readings detected for carbon monoxide, VOCs, hydrogen sulfide, and oxygen were all within their ASHRAE recommended ranges. Relative humidity was slightly low in several areas, but this is not uncommon during the winter time. Several rooms also had dehumidifiers in use during the time of the survey which were provided by the school because of the concern of steam piping leaks. Low humidity can often be a cause for discomfort among occupants, leading to irritation and dryness of the eyes, nose, and throat.

The average temperature levels found within the building were typically with the recommended range, with only a few of the more heavily occupied rooms with closed windows reaching temperatures near 78 degrees.

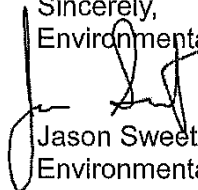
Carbon dioxide levels in most of the classrooms were found to be above 1000 ppm, with some of the more heavily occupied rooms reaching levels of 1400 to 4100 ppm. These levels are the direct result of human metabolism from a large number of students in a room with inadequate ventilation. Classrooms with open windows had slight improvements in carbon dioxide levels, but most were still above 1000 ppm. According to Warwick School Department representatives upgrades to the buildings ventilation system is one of the improvements scheduled to take place between summer 2017 and summer 2018. The installation of rooftop HVAC units should increase fresh air intake and overall air circulation and air quality within the building.

The most significant visual issue is with the water damaged ceiling tiles. The original 1'x1' spline ceiling tiles show signs of water damage from either current or past issues from condensation on uninsulated piping in the ceiling above, or inadequacies in the roofing causing exterior water intrusion. According to Warwick School Department representatives the roofing has been completely redone since 2014, and any ceiling tile damage related to roofing are from past events. The majority of the water damage to the ceiling tiles appears come from steam piping deficiencies. These steam related issues are scheduled to be addressed in the near future. The water stained tiles in the drop ceiling should be properly replaced as soon as possible. The water damaged 1'x1' spline ceiling tiles should also be addressed, during the future steam heating system upgrades. ECM was unable to access the areas above the drop ceiling or perform a closer inspection of the spline ceiling tiles, therefore it is unknown if any fungal growth is present related to the water damaged tiles.

LIMITATIONS

All observations documented in this report were made under the conditions existing at the time of the survey. Indoor air quality is affected by a wide variety of conditions including weather, time of year, occupancy, and exterior conditions. The levels documented within this report should only be used as a general guideline of current exposure conditions. Should conditions change they should be brought to the attention of ECM Inc. for further investigation. New information, verified by ECM Inc. personnel, may lead to modification of the observations and conclusions presented in this report. No warranties other than those expressed in the contract for this project are expressed or implied.

Sincerely,
Environmental Consulting & Management




Jason Sweet
Environmental Consultant/Project Manager



Colin Hannagan
Environmental Consultant

Technical Review by



Paul Matuszko, Certified Industrial Hygienist
ECM - Project Associate
American Board of Industrial Hygiene Certification # 9236

Warwick Veterans Junior High School - Indoor Air Quality Survey

| Date | Sample Location | Time | Temperature (F) | Relative Humidity (%) | CO2 (ppm) | CO (ppm) | VOC (ppm) | H2S (ppm) | Oxygen (%) | # Occupants (Students/Teachers) | Windows | Comments |
|------------------|--------------------------------|-------|-----------------|-----------------------|-----------|----------|-----------|-----------|------------|---------------------------------|-------------------|---|
| 2/28/17 | Exterior | 9:11 | 48.5 | 58.8 | 424 | 0 | 0 | 0 | 20.9 | - | - | Windy with no precipitation |
| Morning | | | | | | | | | | | | |
| 2/28/17 | Room 913 | 9:18 | 66.5 | 63.7 | 1065 | 0 | 0 | 0 | 20.9 | 18/1 | Closed | Three dying houseplants |
| 2/28/17 | Room 911 | 9:22 | 66.6 | 44.4 | 856 | 0 | 0 | 0 | 20.9 | 0 | Closed | Closet floors dirty |
| 2/28/17 | Room 909 | 9:27 | 70.6 | 45.9 | 1224 | 0 | 0 | 0 | 20.9 | 0/1 | Closed | Refrigerator with fruit on top |
| 2/28/17 | Room 907 | 9:33 | 71.1 | 37.3 | 722 | 0 | 0 | 0 | 20.9 | 0 | Closed | One slightly discolored ceiling tile by windows, damaged floor tile in corner by utility tunnel hatch |
| 2/28/17 | Room 905 | 9:39 | 72.3 | 49.4 | 1336 | 0 | 0.1 | 0 | 20.8 | 22/1 | Closed | |
| 2/28/17 | Room 903 | 9:42 | 71.2 | 38.4 | 694 | 0 | 0 | 0 | 20.8 | 0 | Closed | Air purifier/ozonizer in use, water damaged ceiling tile by vent and exterior corner |
| 2/28/17 | Room 901 | 9:45 | 70.9 | 45 | 976 | 0 | 0 | 0 | 20.9 | 22/2 | Closed | |
| 2/28/17 | Room 900 | 9:47 | 71.1 | 36.7 | 670 | 0 | 0 | 0 | 20.9 | 21/1 | Closed | |
| 2/28/17 | Resource Office | 9:50 | 70.9 | 30.5 | 484 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 2/28/17 | Room 902 | 10:12 | 71.5 | 39.4 | 1629 | 0 | 0 | 0 | 20.8 | 18/2 | Closed | Refrigerator and Keurig machine, four damaged floor tile by teacher desk |
| 2/28/17 | Room 904 | 9:55 | 69.6 | 38.8 | 725 | 0 | 0.1 | 0 | 20.9 | 8/1 | Closed | Slight odor in closet, CO2 increase in closet |
| 2/28/17 | Room 908 | 9:59 | 70.9 | 39.8 | 801 | 0 | 0 | 0 | 20.9 | 0 | Closed | One water damaged ceiling tile by windows |
| 2/28/17 | Room 908 | 10:04 | 71.5 | 41.8 | 1053 | 0 | 0.1 | 0 | 20.8 | 1/1 | Closed | Air purifier in use, 3 water damaged ceiling tiles along track in front center of room |
| 2/28/17 | Room 910 | 10:09 | 73.3 | 42.6 | 1688 | 0 | 0.1 | 0 | 20.7 | 21/1 | Closed | Four damaged floor tile around utility hatch |
| 2/28/17 | 600 Wing Custodial Closet | 10:16 | 68.3 | 40 | 663 | 0 | 0 | 0 | 20.9 | 0 | Two Slightly open | |
| 2/28/17 | 600 Wing Server/work room | 10:18 | 69 | 36.6 | 615 | 0 | 0 | 0 | 20.9 | 0 | None | |
| 2/28/17 | Cafeteria | 10:25 | 68.5 | 34.3 | 546 | 0 | 0 | 0 | 20.9 | 0 | Closed | 2 covered radiators |
| 2/28/17 | Kitchen | 10:28 | 70.4 | 35 | 565 | 0 | 0 | 0 | 20.9 | 5 | Closed | Hole in ductwork vibration cloth, TSI with no damage, water staining on ceiling in utility closet |
| 2/28/17 | Room D101 | 10:33 | 71 | 35.5 | 850 | 0 | 0 | 0 | 20.9 | 20/1 | Closed | 2 houseplants |
| 2/28/17 | Room D103 | 11:19 | 73.5 | 37.1 | 1233 | 0 | 0.1 | 0 | 20.7 | 20/2 | Closed | Two heavily stained ceiling tiles with damage on ceiling above |
| 2/28/17 | Room D105 | 10:37 | 69.8 | 32.2 | 417 | 0 | 0 | 0 | 20.9 | 0 | Three wide open | 2 heavily stained ceiling tiles |
| 2/28/17 | Room D107 | 10:43 | 69.3 | 35.9 | 765 | 0 | 0 | 0 | 20.9 | 9/1 | Closed | One water stained ceiling tile |
| 2/28/17 | Room D109 | 10:46 | 72.1 | 38.2 | 1438 | 0 | 0.1 | 0 | 20.8 | 25/2 | One slightly open | Large amount of houseplants |
| 2/28/17 | Room D111 | 10:49 | 74.2 | 30.8 | 731 | 0 | 0 | 0 | 20.9 | 19/1 | One slightly open | Radiators covered with supplies |
| 2/28/17 | Room D108/110 | 10:54 | 74.1 | 27.4 | 531 | 0 | 0 | 0 | 20.9 | 0 | Closed | Radiator slightly covered |
| 2/28/17 | D Wing Teachers Room | 11:00 | 73 | 28.5 | 584 | 0 | 0 | 0 | 20.9 | 0 | Closed | Many heavily water stained 1x1 ceiling tiles |
| 2/28/17 | Room D106 | 11:08 | 73.3 | 28.6 | 605 | 0 | 0 | 0 | 20.8 | 1 | Closed | Three water stained ceiling tiles, staining on tiles above drop ceiling |
| 2/28/17 | Room D104 | 11:09 | 72.7 | 35.3 | 950 | 0 | 0.3 | 0 | 20.8 | 17/1 | Closed | |
| 2/28/17 | Room D102 | 11:11 | 72.3 | 32.2 | 748 | 0 | 0.7 | 0 | 20.9 | 4/1 | Closed | One houseplant |
| 2/28/17 | D Wing Teachers Room (by D10) | 11:14 | 72.5 | 32.1 | 621 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | Three heavily stained tiles near corner pipe screwed back into place, covered with silicone |
| Afternoon | | | | | | | | | | | | |
| 2/28/17 | Cafeteria | 12:08 | 68.3 | 47.4 | 1130 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 2/28/17 | Room DJ5 | 12:11 | 71 | 36.7 | 738 | 0 | 0 | 0 | 20.9 | 0 | None | |
| 2/28/17 | D Wing Storage Room | 12:13 | 71.8 | 39.2 | 784 | 0 | 0 | 0 | 20.9 | 0 | None | |
| 2/28/17 | Room 913 | 12:17 | 68.5 | 44.5 | 848 | 0 | 0 | 0 | 20.9 | 1 | Closed | |
| 2/28/17 | Room 911 | 12:21 | 69.3 | 56.8 | 2401 | 0 | 0 | 0 | 20.9 | 1 | Closed | |
| 2/28/17 | Room 906 | 12:24 | 71.9 | 59.7 | 4130 | 0 | 0.5 | 0 | 20.7 | 28/1 | Closed | |
| 2/28/17 | Room 907 | 12:27 | 71.5 | 46.1 | 1148 | 0 | 0 | 0 | 20.9 | 18/1 | Closed | |
| 2/28/17 | Room 905 | 12:29 | 71 | 46.8 | 1103 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 2/28/17 | Room 903 | 12:32 | 69.8 | 43.8 | 844 | 0 | 0 | 0 | 20.9 | 5 | Closed | |
| 2/28/17 | Room 901 | 12:37 | 70.1 | 44.3 | 1050 | 0 | 0 | 0 | 20.9 | 21/1 | Closed | |
| 2/28/17 | Room 900 | 12:40 | 68.1 | 43.3 | 1780 | 0 | 0 | 0 | 20.9 | 20/2 | Closed | |
| 2/28/17 | Resource Room | 12:42 | 69.7 | 40.5 | 980 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 2/28/17 | Room 902 | 12:50 | 70.4 | 44.2 | 1591 | 0 | 0 | 0 | 20.9 | 21/2 | Closed | |
| 2/28/17 | Room 904 | 12:52 | 69.9 | 47.8 | 1590 | 0 | 0.1 | 0 | 20.9 | 3/1 | Closed | |
| 2/28/17 | Room 906 | 12:56 | 68.7 | 36.9 | 956 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 2/28/17 | Room 908 | 12:59 | 71.3 | 46.7 | 2056 | 0 | 0.1 | 0 | 20.9 | 9/1 | Closed | |
| 2/28/17 | Room 910 | 13:02 | 70.2 | 43.6 | 1090 | 0 | 0 | 0 | 20.9 | 22/1 | Closed | |
| 2/28/17 | Occupational Therapy Storage H | 13:12 | 66.7 | 43.9 | 840 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 2/28/17 | Room D101 | 13:15 | 71.9 | 48.6 | 3194 | 0 | 0.1 | 0 | 20.8 | 24/2 | Closed | 30 water stained ceiling tiles, 4 missing, some heavily damaged, water damaged floor tiles in several locations |
| 2/28/17 | Room D103 | 13:18 | 73.2 | 42.5 | 2080 | 0 | 0 | 0 | 20.9 | 24/2 | Closed | |
| 2/28/17 | Room D105 | 13:22 | 83.2 | 36.7 | 815 | 0 | 0 | 0 | 20.6 | 0 | Three wide open | |
| 2/28/17 | Room D107 | 13:25 | 67.5 | 45 | 1372 | 0 | 0 | 0 | 20.9 | 8/1 | Closed | |
| 2/28/17 | Room D109 | 13:29 | 72.6 | 44.3 | 2703 | 0 | 0.1 | 0 | 20.9 | 20/1 | Closed | |
| 2/28/17 | Room D111 | 13:32 | 74.3 | 34.2 | 1493 | 0 | 0 | 0 | 20.8 | 21/1 | One slightly open | |
| 2/28/17 | Room D108/110 | 13:35 | 73.6 | 31.8 | 1376 | 0 | 0 | 0 | 20.9 | 1 | Closed | |
| 2/28/17 | D Wing Teachers Room | 13:55 | 72.9 | 32.6 | 1265 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 2/28/17 | Room D106 | 13:58 | 73.2 | 38.5 | 1472 | 0 | 0 | 0 | 20.9 | 12/1 | Closed | |
| 2/28/17 | Room D104 | 14:00 | 71.5 | 35.8 | 1005 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 2/28/17 | Room D102 | 14:03 | 71.9 | 38.2 | 1188 | 0 | 0.1 | 0 | 20.9 | 7/2 | Closed | |
| 2/28/17 | Teachers Room (by D102) | 14:06 | 71.3 | 36.7 | 1108 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 2/28/17 | Exterior | 14:30 | 51.4 | 74.2 | 385 | 0 | 0 | 0 | 20.9 | - | - | Light precipitation |

Warwick Veterans Junior High School - Indoor Air Quality Survey

| Date | Sample Location | Time | Temperature (F) | Relative Humidity (%) | CO2 (ppm) | CO (ppm) | VOC (ppm) | H2S (ppm) | Oxygen (%) | # Occupants (Students/Teachers) | Windows | Comments |
|------------------|---------------------|-------|-----------------|-----------------------|-----------|----------|-----------|-----------|------------|---------------------------------|-------------------|--|
| 3/1/17 | Exterior | 7:55 | 52.3 | 85.1 | 420 | 0 | 0 | 0 | 20.9 | - | - | Light precipitation |
| Morning | | | | | | | | | | | | |
| 3/1/17 | Room D215 | 8:00 | 67.9 | 51 | 925 | 0 | 0 | 0 | 20.9 | 1 | Closed | 12 1x1 ceiling tiles water damaged, three houseplants |
| 3/1/17 | Room D213 | 8:04 | 70.2 | 48.2 | 1085 | 0 | 0 | 0 | 20.9 | 12/1 | Closed | |
| 3/1/17 | Room D211 | 8:07 | 70.3 | 44.5 | 1184 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room D209 | 8:09 | 70.5 | 42 | 954 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room D207 | 8:12 | 70.1 | 50 | 1560 | 0 | 0 | 0 | 20.9 | 18/1 | Closed | |
| 3/1/17 | Room D205 | 8:14 | 72.2 | 47.9 | 1360 | 0 | 0.1 | 0 | 20.9 | 15/2 | Closed | Two houseplants |
| 3/1/17 | Room D203 | 8:16 | 71.2 | 48.3 | 1264 | 0 | 0 | 0 | 20.9 | 14/1 | Closed | Two houseplants |
| 3/1/17 | Room D202 | 8:16 | 71.2 | 49.7 | 1483 | 0 | 0 | 0 | 20.9 | 19/1 | Closed | Aquariums on radiators |
| 3/1/17 | Room D204 | 8:22 | 70.5 | 42.5 | 1267 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room D206 | 8:25 | 70.1 | 48.4 | 1284 | 0 | 1.2 | 0 | 20.9 | 19/2 | Four open | Three houseplants |
| 3/1/17 | Room D208 | 8:28 | 71.2 | 48.2 | 1670 | 0 | 0 | 0 | 20.9 | 18/1 | One open | Five houseplants |
| 3/1/17 | Room D210 | 8:31 | 72.4 | 45.3 | 1987 | 0 | 0 | 0 | 20.9 | 25/1 | Closed | Air purifier in use, 16 houseplants |
| 3/1/17 | Room F2 | 8:35 | 74.6 | 42.2 | 935 | 0 | 0 | 0 | 20.9 | 0 | None | |
| 3/1/17 | Room F10 | 8:37 | 74.2 | 42.6 | 524 | 0 | 0 | 0 | 20.9 | 0 | None | 21 Water damaged ceiling tiles 1x1 |
| 3/1/17 | Library | 8:42 | 74.5 | 41 | 1020 | 0 | 0 | 0 | 20.9 | 2 | Closed | 3 houseplants |
| 3/1/17 | Room C202 | 8:44 | 72 | 40.3 | 902 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room C204 | 8:46 | 72.2 | 38.8 | 826 | 0 | 0 | 0 | 20.9 | 0 | Closed | Science laboratory |
| 3/1/17 | Room C206 | 8:51 | 71.7 | 37.6 | 847 | 0 | 0 | 0 | 20.9 | 0 | Closed | One water stained ceiling tile |
| 3/1/17 | Room C208 | 8:53 | 70.9 | 46.4 | 1770 | 0 | 0 | 0 | 20.9 | 21/1 | Closed | |
| 3/1/17 | Room C209 | 8:56 | 69.7 | 49.3 | 899 | 0 | 0 | 0 | 20.9 | 0 | Closed | Six water stained ceiling tiles |
| 3/1/17 | Room C211 | 9:00 | 70.1 | 46.3 | 1060 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room C207 | 9:03 | 66.5 | 38.7 | 681 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room C205 | 9:05 | 67.9 | 46.8 | 1126 | 0 | 0 | 0 | 20.9 | 0 | Closed | Four water stained ceiling tiles |
| 3/1/17 | Safety Zone | 9:09 | 68.8 | 48.1 | 1329 | 0 | 0 | 0 | 20.9 | 0 | None | |
| 3/1/17 | Resource Room C5 | 9:12 | 70 | 46.1 | 1674 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room C203 | 9:19 | 70.1 | 45.1 | 1315 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room B202 | 9:22 | 72.7 | 46.3 | 1277 | 0 | 0 | 0 | 20.9 | 1 | Closed | Radiator partially blocked |
| 3/1/17 | Room B204 | 9:24 | 72.9 | 44.9 | 1355 | 0 | 0 | 0 | 20.9 | 1 | Closed | |
| 3/1/17 | Room B206 | 9:28 | 73.8 | 48 | 2101 | 0 | 0 | 0 | 20.8 | 19/2 | Closed | Uninsulated pipe under front teacher counter, reports of condensation |
| 3/1/17 | Room B210 | 9:34 | 72.7 | 52.1 | 2890 | 0 | 0.1 | 0 | 20.7 | 22/1 | Closed | |
| 3/1/17 | Room B212 | 9:36 | 73.7 | 43.2 | 2136 | 0 | 0.1 | 0 | 20.9 | 17/1 | One open | Dehumidifier in use |
| 3/1/17 | Room B208 | 9:39 | 73.6 | 48.9 | 2230 | 0 | 0.1 | 0 | 20.8 | 24/1 | Two slightly open | Dehumidifier in use |
| 3/1/17 | Room B213 | 9:42 | 73.3 | 47.1 | 1988 | 0 | 0.1 | 0 | 20.8 | 18/1 | Closed | |
| 3/1/17 | Room B211 | 9:45 | 73.9 | 41.8 | 1868 | 0 | 0 | 0 | 20.9 | 0 | Closed | Dehumidifier in use |
| 3/1/17 | Room B209 | 9:48 | 72.6 | 44.8 | 1595 | 0 | 0.1 | 0 | 20.9 | 13/1 | Closed | |
| 3/1/17 | Room B207 | 9:53 | 71.4 | 40.9 | 1365 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room B205 | 10:00 | 72 | 45 | 1868 | 0 | 0 | 0 | 20.9 | 15/2 | Closed | One large houseplant |
| 3/1/17 | Technical Office | 10:02 | 71.1 | 44.5 | 1232 | 0 | 0 | 0 | 20.9 | 1 | One open | |
| 3/1/17 | Room G102 | 10:09 | 74.5 | 41.3 | 1417 | 0 | 0 | 0 | 20.9 | 1 | Closed | |
| 3/1/17 | Room G104 | 10:12 | 74.6 | 46 | 2270 | 0 | 0 | 0 | 20.8 | 16/1 | Closed | 11 slightly water stained ceiling tiles |
| 3/1/17 | Room G106 | 10:17 | 71.3 | 43.4 | 1094 | 0 | 0 | 0 | 20.8 | 3/2 | Closed | 10 slightly stained ceiling tiles |
| 3/1/17 | Prep room | 10:25 | 73.5 | 42.7 | 1588 | 0 | 0 | 0 | 20.8 | 9 | Closed | |
| 3/1/17 | Room G108 Wood Shop | 10:27 | 74.5 | 41.1 | 1418 | 0 | 0 | 0 | 20.9 | 16 | Closed | Water damaged fiberglass insulation |
| 3/1/17 | Room G110 Metals | 10:30 | 73.8 | 41 | 1400 | 0 | 0 | 0 | 20.5 | 6/2 | Closed | Water damaged fiberglass insulation |
| 3/1/17 | Room G116 | 10:32 | 72.2 | 42.8 | 1340 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | Water damaged fiberglass insulation |
| 3/1/17 | Room G106 | 10:34 | 71.6 | 48.5 | 1283 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room G107 | 10:36 | 73.1 | 45.4 | 1526 | 0 | 0 | 0 | 20.6 | 20/1 | Closed | |
| 3/1/17 | Room G105 | 10:38 | 73.3 | 44.1 | 1394 | 0 | 0 | 0 | 20.9 | 22/1 | Closed | Five water stained ceiling tiles |
| 3/1/17 | Room C103 | 10:40 | 73.8 | 48.6 | 1918 | 0 | 0 | 0 | 20.7 | 19/1 | Three open | Three water stained ceiling tiles |
| 3/1/17 | Room G101 | 10:44 | 74.6 | 47.9 | 1975 | 0 | 0.1 | 0 | 20.8 | 20/1 | Closed | Science laboratory drainage Tank in corner, six water stained ceiling tiles, three houseplants |
| 3/1/17 | Gymnasium A | 10:49 | 76 | 39.8 | 1133 | 0 | 0 | 0 | 20.9 | 0 | None | |
| 3/1/17 | Weight Room | 10:52 | 70.5 | 41.7 | 1130 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Boys Locker Room | 10:55 | 71.1 | 45.3 | 1044 | 0 | 0 | 0 | 20.8 | 0 | | |
| 3/1/17 | Gymnasium B | 10:57 | 73.9 | 42.8 | 1045 | 0 | 0 | 0 | 20.9 | 0 | None | |
| 3/1/17 | Girls Locker Room | 11:00 | 69.7 | 45.5 | 970 | 0 | 0 | 0 | 20.9 | 1 | Closed | |
| Afternoon | | | | | | | | | | | | |
| 3/1/17 | Room D215 | 11:45 | 69.2 | 50.6 | 1544 | 0 | 0 | 0 | 20.9 | 1 | Closed | |
| 3/1/17 | Room D213 | 11:47 | 70.4 | 56.2 | 2212 | 0 | 0 | 0 | 20.8 | 1 | Closed | |
| 3/1/17 | Room D211 | 11:49 | 70.9 | 47.5 | 1310 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room D209 | 11:50 | 71.3 | 47.9 | 1785 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room D207 | 11:53 | 70.6 | 52.5 | 1724 | 0 | 0 | 0 | 20.9 | 0 | One slightly open | |
| 3/1/17 | Room D205 | 11:55 | 70.6 | 51.9 | 1592 | 0 | 0 | 0 | 20.9 | 0 | Two slightly open | |
| 3/1/17 | Room D203 | 11:57 | 71 | 50.8 | 1649 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room D202 | 11:59 | 71.2 | 51.8 | 1924 | 0 | 0.7 | 0 | 20.9 | 0 | Closed | |
| 3/1/17 | Room D206 | 12:00 | 71.5 | 51.1 | 1792 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room D208 | 12:02 | 71.9 | 48.7 | 1870 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room D210 | 12:04 | 72.9 | 49.1 | 2190 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room F2 | 12:15 | 73.5 | 46.3 | 578 | 0 | 0 | 0 | 20.8 | 2 | None | |

Warwick Veterans Junior High School - Indoor Air Quality Survey

| Date | Sample Location | Time | Temperature (F) | Relative Humidity (%) | CO2 (ppm) | CO (ppm) | VOC (ppm) | H2S (ppm) | Oxygen (%) | # Occupants (Students/Teachers) | Windows | Comments |
|--------|---------------------|-------|-----------------|-----------------------|-----------|----------|-----------|-----------|------------|---------------------------------|-------------------|--|
| 3/1/17 | Room F10 | 12:17 | 73.6 | 48.8 | 596 | 0 | 0 | 0 | 20.8 | 0 | None | |
| 3/1/17 | Library | 12:19 | 73.6 | 45 | 526 | 0 | 0 | 0 | 20.8 | 10/2 | Closed | |
| 3/1/17 | Room C202 | 12:21 | 71.6 | 45.4 | 499 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room C204 | 12:23 | 72 | 43.1 | 542 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room C206 | 12:25 | 71.4 | 42.3 | 485 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room C208 | 12:28 | 71.1 | 51 | 811 | 0 | 0 | 0 | 20.7 | 22/1 | Closed | |
| 3/1/17 | Room C209 | 12:31 | 68.5 | 52.5 | 547 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room C211 | 12:33 | 69.1 | 51.3 | 655 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room C207 | 12:35 | 68.2 | 42.6 | 465 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room C205 | 12:37 | 67.9 | 52.5 | 439 | 0 | 0 | 0 | 20.8 | 3 | Closed | |
| 3/1/17 | Safety Zone | 12:39 | 68.5 | 52.7 | 526 | 0 | 0 | 0 | 20.7 | 0 | Closed | |
| 3/1/17 | Resource Room CS | 12:41 | 70.1 | 52.6 | 573 | 0 | 0 | 0 | 20.7 | 0 | Closed | |
| 3/1/17 | Room C203 | 12:44 | 70.3 | 49.7 | 577 | 0 | 0 | 0 | 20.8 | 0 | Closed | |
| 3/1/17 | Room C201 | 12:47 | 71.5 | 47.9 | 882 | 0 | 0 | 0 | 20.7 | 1 | Closed | Five houseplants |
| 3/1/17 | Room B202 | 12:50 | 72.7 | 48 | 556 | 0 | 0 | 0 | 20.8 | 1 | Closed | |
| 3/1/17 | Room B204 | 12:52 | 73.1 | 47.2 | 550 | 0 | 0 | 0 | 20.7 | 0 | Closed | |
| 3/1/17 | Room B205 | 12:56 | 73.2 | 50.9 | 634 | 0 | 0 | 0 | 20.6 | 12/2 | Closed | |
| 3/1/17 | Room B210 | 13:00 | 73 | 51.1 | 1014 | 0 | 0 | 0 | 20.5 | 15/1 | Two slightly open | |
| 3/1/17 | Room B212 | 13:03 | 75.5 | 45.4 | 1154 | 0 | 0 | 0 | 20.5 | 18/1 | Closed | Dehumidifier in use |
| 3/1/17 | Room B208 | 12:58 | 73.3 | 49.1 | 898 | 0 | 0 | 0 | 20.8 | 18/1 | Closed | |
| 3/1/17 | Room B213 | 13:05 | 74.9 | 48.1 | 1100 | 0 | 0 | 0 | 20.5 | 1 | Closed | |
| 3/1/17 | Room B211 | 13:09 | 75.1 | 40.3 | 881 | 0 | 0 | 0 | 20.7 | 10/2 | Closed | Dehumidifier in use, air purifier in use |
| 3/1/17 | Room B209 | 13:11 | 73.6 | 46.3 | 815 | 0 | 0 | 0 | 20.6 | 18/1 | One open | |
| 3/1/17 | Room B207 | 13:17 | 68.5 | 49.2 | 405 | 0 | 0 | 0 | 20.7 | 0 | Closed | |
| 3/1/17 | Room B205 | 13:22 | 71.5 | 49.2 | 797 | 0 | 0 | 0 | 20.6 | 22/1 | Closed | |
| 3/1/17 | Technical Office | 13:24 | 66.7 | 52.7 | 484 | 0 | 0 | 0 | 20.7 | 2 | One open | |
| 3/1/17 | Room G102 | 13:35 | 73 | 50.1 | 996 | 0 | 0.3 | 0 | 20.5 | 17/1 | Closed | |
| 3/1/17 | Room G104 | 13:38 | 73.4 | 45 | 622 | 0 | 0.1 | 0 | 20.6 | 0 | Closed | |
| 3/1/17 | Room G106 | 13:40 | 72.7 | 42.2 | 472 | 0 | 0 | 0 | 20.7 | 0 | Closed | |
| 3/1/17 | Prep room | 13:43 | 72.5 | 44.8 | 540 | 0 | 0 | 0 | 20.7 | 0 | Closed | |
| 3/1/17 | Room G108 Wood Shop | 13:45 | 71.6 | 45.5 | 524 | 0 | 0 | 0 | 20.7 | 14/2 | Closed | |
| 3/1/17 | Room G110 Metals | 13:47 | 70.3 | 45.6 | 446 | 0 | 2.7 | 0 | 20.7 | 0 | Closed | |
| 3/1/17 | Room G116 | 13:48 | 69.3 | 47.5 | 404 | 0 | 7.8 | 0 | 20.7 | 0 | Closed | Spray paint in use |
| 3/1/17 | Room G109 | 13:52 | 69.9 | 52 | 493 | 0 | 0 | 0 | 20.7 | 0 | Closed | |
| 3/1/17 | Room G107 | 13:57 | 70.8 | 45.5 | 535 | 0 | 0.7 | 0 | 20.6 | 0 | Closed | |
| 3/1/17 | Room G105 | 14:00 | 72.8 | 47.5 | 803 | 0 | 1.2 | 0 | 20.6 | 14/1 | Closed | |
| 3/1/17 | Room G103 | 14:03 | 72.2 | 51.3 | 638 | 0 | 0 | 0 | 20.6 | 12/1 | Closed | |
| 3/1/17 | Room G101 | 14:07 | 71.4 | 48.5 | 438 | 0 | 0 | 0 | 20.7 | 0 | Closed | |
| 3/1/17 | Gymnasium A | 14:13 | 75.2 | 44.5 | 777 | 0 | 0 | 0 | 20.8 | 60/3 | None | |
| 3/1/17 | Gymnasium B | 14:20 | 74 | 42.5 | 498 | 0 | 0 | 0 | 20.7 | 0 | None | |
| 3/1/17 | Exterior | 14:30 | 60.7 | 75.5 | 383 | 0 | 0 | 0 | 20.9 | 0 | - | |

Warwick Veterans Junior High School - Indoor Air Quality Survey

| Date | Sample Location | Time | Temperature (F) | Relative Humidity (%) | CO2 (ppm) | CO (ppm) | VOC (ppm) | H2S (ppm) | Oxygen (%) | # Occupants (Students/Teachers) | Windows | Comments |
|-----------|------------------------------|-------|-----------------|-----------------------|-----------|----------|-----------|-----------|------------|---------------------------------|-------------------|---|
| Morning | | | | | | | | | | | | |
| 3/2/17 | Exterior | 7:46 | 51.4 | 32 | 393 | 0 | 0 | 0 | 20.9 | - | - | Clear and windy |
| 3/2/17 | Principal's Office | 7:51 | 69.2 | 44.4 | 516 | 0 | 0 | 0 | 20.9 | 0 | Closed | One water stained ceiling tile |
| 3/2/17 | Main Office | 7:56 | 70.3 | 36.2 | 467 | 0 | 0 | 0 | 20.9 | 4 | Closed | Five houseplants |
| 3/2/17 | Vice Principal's Office | 8:47 | 71.1 | 20.9 | 417 | 0 | 0 | 0 | 20.9 | 0 | Closed | Air purifier in use |
| 3/2/17 | Guidance Dept Chair Office | 7:59 | 61 | 27.4 | 412 | 0 | 0 | 0 | 20.9 | 0 | Two open | |
| 3/2/17 | Guidance Counselor Office A | 8:02 | 64.9 | 41.7 | 490 | 0 | 0.1 | 0 | 20.8 | 0 | Closed | |
| 3/2/17 | Guidance Counselor Office B | 8:05 | 71.4 | 29.5 | 505 | 0 | 0 | 0 | 20.8 | 1 | Closed | |
| 3/2/17 | Guidance Counselor Office C | 8:08 | 72.1 | 28.3 | 466 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | Water stained ceiling tiles 1x1 |
| 3/2/17 | Guidance Counselor Office D | 8:10 | 72.1 | 30.5 | 465 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Guidance Counselor Office E | 8:13 | 71 | 18.3 | 432 | 0 | 0 | 0 | 20.9 | 0 | One open | |
| 3/2/17 | Guidance Counselor Office F | 8:15 | 70.3 | 31.3 | 422 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Guidance Counselor Office G | 8:17 | 71.6 | 31.9 | 459 | 0 | 0.1 | 0 | 20.8 | 0 | Closed | Dehumidifier in use |
| 3/2/17 | Guidance Counselor Office H | 8:19 | 74.3 | 25.8 | 479 | 0 | 0 | 0 | 20.9 | 0 | Closed | Dehumidifier in use, air ionizer in use |
| 3/2/17 | Guidance Counselor Office I | 8:22 | 70.6 | 28.8 | 508 | 0 | 0.1 | 0 | 20.9 | 0 | One open | |
| 3/2/17 | Guidance Counselor Office J | 8:25 | 70.5 | 31.6 | 496 | 0 | 0.1 | 0 | 20.9 | 1 | None | |
| 3/2/17 | Guidance Office File Storage | 8:27 | 72.1 | 38.5 | 788 | 0 | 0.1 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Guidance Telecom Room | 8:39 | 74.7 | 27.8 | 569 | 0 | 0.1 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Guidance Office Reception | 8:41 | 74.6 | 22.9 | 517 | 0 | 0.1 | 0 | 20.8 | 1 | None | |
| 3/2/17 | Guidance Office Storage | 8:43 | 72.6 | 23.9 | 493 | 0 | 0.1 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Guidance Former Waiting Room | 8:45 | 72.7 | 22.8 | 462 | 0 | 0.1 | 0 | 20.9 | 0 | None | |
| 3/2/17 | B Wing Server Room | 8:53 | 66.5 | 16.3 | 434 | 0 | 0 | 0 | 20.9 | 0 | Closed | 23 water stained ceiling tiles 1x1 |
| 3/2/17 | B Wing Teachers Lounge | 8:00 | 68.3 | 31.8 | 414 | 0 | 0.2 | 0 | 20.9 | 0 | Closed | 9 water stained ceiling tiles |
| 3/2/17 | Room B105 | 9:07 | 72.2 | 21.1 | 781 | 0 | 0.1 | 0 | 20.9 | 15/1 | Two slightly open | Dehumidifier in use, 12 houseplants, air purifier in use |
| 3/2/17 | Room B107 | 9:09 | 68.3 | 17.2 | 408 | 0 | 0 | 0 | 20.9 | 0 | Three open | Dehumidifier in use, seven water stained ceiling tiles above drop ceiling |
| 3/2/17 | Clinic Storage | 9:12 | 70.4 | 27.9 | 462 | 0 | 0.2 | 0 | 20.9 | 0 | Closed | One exterior exhaust fan |
| 3/2/17 | Nurses Office | 9:14 | 69.5 | 22.3 | 448 | 0 | 0 | 0 | 20.9 | 1 | Closed | Personal heater/fac |
| 3/2/17 | Clinic Reception | 9:17 | 70.1 | 26 | 482 | 0 | 0.1 | 0 | 20.9 | 1 | None | |
| 3/2/17 | Room B112 | 9:20 | 75.5 | 27.6 | 1013 | 0 | 0.4 | 0 | 20.9 | 18/1 | Two slightly open | Three water stained ceiling tiles above drop ceiling |
| 3/2/17 | Room B110 | 8:24 | 74.5 | 25.3 | 1150 | 0 | 0.3 | 0 | 20.9 | 27/1 | One slightly open | 5 water stained ceiling tiles above drop ceiling |
| 3/2/17 | Room B108 | 8:28 | 71.9 | 21.9 | 706 | 0 | 0.1 | 0 | 20.9 | 21/1 | Two slightly open | 3 water stained ceiling tiles above drop ceiling, uninsulated pipe in corner with water stained tile underneath |
| 3/2/17 | Room B106 | 8:32 | 76.2 | 39.9 | 1298 | 0 | 0.4 | 0 | 20.9 | 22/2 | Closed | One water stained ceiling tile, exposed pipe in corner with water staining underneath |
| 3/2/17 | Room B104 | 8:37 | 70.1 | 20.3 | 498 | 0 | 0.2 | 0 | 20.9 | 0 | One open | Dehumidifier in use, one water stained ceiling tile by pipe |
| 3/2/17 | Room B102 | 8:47 | 72.5 | 24.3 | 533 | 0 | 0.3 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Room B510 | 8:49 | 73.3 | 27.7 | 534 | 0 | 0.3 | 0 | 20.9 | 0 | One slightly open | 16 water stained ceiling tiles 1x1 |
| 3/2/17 | Room C101 | 8:51 | 73.1 | 33.4 | 1515 | 0 | 0.4 | 0 | 20.9 | 22/1 | None | |
| 3/2/17 | Room C103 | 9:53 | 74.8 | 21.1 | 677 | 0 | 0.3 | 0 | 20.9 | 20/1 | Closed | Extensive water damage to ceiling above drop ceiling |
| 3/2/17 | Room C105 | 9:58 | 75.3 | 20.8 | 807 | 0 | 0.2 | 0 | 20.9 | 18/1 | Closed | At least ten water damaged ceiling tiles above drop ceiling |
| 3/2/17 | Room C107 | 9:58 | 74.7 | 30.9 | 833 | 0 | 0.4 | 0 | 20.9 | 22/1 | Closed | |
| 3/2/17 | Room C109 | 10:00 | 73.1 | 28.7 | 605 | 0 | 0.4 | 0 | 20.9 | 8/1 | Closed | Two water stained ceiling tiles |
| 3/2/17 | Room C111 | 10:02 | 72.5 | 26.7 | 631 | 0 | 0.4 | 0 | 20.9 | 8/5 | Closed | Water stained light fixture, 13 water stained ceiling tiles |
| 3/2/17 | C Wing Office off Art Room | 10:07 | 71.8 | 18.3 | 560 | 0 | 0.2 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Room C102 | 10:09 | 73.6 | 18.7 | 567 | 0 | 0.1 | 0 | 20.9 | 23/1 | Three open | Extremely hot floor tiles in corner office |
| 3/2/17 | C Wing Storage Closet | 10:15 | 75.2 | 25.3 | 582 | 0 | 0.4 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Custodial Break Room | 10:17 | 73.3 | 16.9 | 464 | 0 | 0.2 | 0 | 20.9 | 1 | Closed | |
| 3/2/17 | Custodial Workshop | 10:19 | 72.6 | 19.4 | 446 | 0 | 0.3 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Boiler Room | 10:21 | 71.4 | 28 | 442 | 0 | 0.4 | 0 | 20.9 | 0 | Nine open | |
| 3/2/17 | Band | 10:25 | 74.8 | 29.7 | 1138 | 0 | 0.2 | 0 | 20.8 | 20/1 | Closed | |
| 3/2/17 | Music Office | 10:27 | 74.3 | 35 | 578 | 0 | 0.2 | 0 | 20.8 | 0 | Closed | |
| 3/2/17 | Room F108 | 10:30 | 75.4 | 37.2 | 621 | 0 | 0.4 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | C Wing Custodial Closet | 10:34 | 76.9 | 25.2 | 739 | 0 | 0.4 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Faculty Dining | 10:36 | 72.4 | 22.7 | 502 | 0 | 0.3 | 0 | 20.9 | 0 | Closed | 28 water stained ceiling tiles 1x1 |
| 3/2/17 | Lecture Room | 10:40 | 74.6 | 30.6 | 724 | 0 | 0.4 | 0 | 20.9 | 1 | Closed | Four water stained ceiling tiles |
| 3/2/17 | Auditorium | 10:43 | 75.5 | 27.6 | 568 | 0 | 0.4 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Stage | 10:48 | 73.5 | 30.9 | 558 | 0 | 0.4 | 0 | 20.8 | 0 | None | 24 water stained ceiling tiles above stage, louvers open to exterior directly above ceiling tiles |
| 3/2/17 | Annex Office | 11:29 | 69.2 | 34.6 | 1122 | 0 | 0.3 | 0 | 20.9 | 1 | Closed | Three houseplants |
| 3/2/17 | Annex Entry | 11:31 | 66.8 | 25.5 | 516 | 0 | 0.2 | 0 | 20.9 | 3 | Closed | |
| 3/2/17 | Annex Conference Room | 11:33 | 71.6 | 22.7 | 496 | 0 | 0.2 | 0 | 20.9 | 0 | Closed | 8 water stained ceiling tiles, one missing, one water stained light fixture |
| 3/2/17 | Annex Storage Room | 11:35 | 79 | 17.7 | 454 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | |
| Afternoon | | | | | | | | | | | | |
| 3/2/17 | Principal's Office | 11:41 | 75.4 | 24.1 | 532 | 0 | 0.2 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Main Office | 11:43 | 79.6 | 22.5 | 537 | 0 | 0.2 | 0 | 20.9 | 1 | One open | |
| 3/2/17 | Vice Principal's Office | | | | | | | | | | | |
| 3/2/17 | Guidance Dept Chair Office | 11:45 | 73.4 | 20.8 | 497 | 0 | 0.1 | 0 | 20.9 | 3 | Closed | Drafty AC unit in window |
| 3/2/17 | Guidance Counselor Office A | 11:46 | 73.6 | 23.8 | 501 | 0 | 0.2 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Guidance Counselor Office B | 11:47 | 74.7 | 22.5 | 501 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Guidance Counselor Office C | 11:48 | 75.7 | 20.4 | 504 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Guidance Counselor Office D | 11:52 | 73.1 | 16.8 | 482 | 0 | 0.1 | 0 | 20.9 | 1 | One slightly open | |

Warwick Veterans Junior High School - Indoor Air Quality Survey

| Data | Sample Location | Time | Temperature (F) | Relative Humidity (%) | CO2 (ppm) | CO (ppm) | VOC (ppm) | H2S (ppm) | Oxygen (%) | # Occupants (Students/Teachers) | Windows | Comments |
|--------|------------------------------|-------|-----------------|-----------------------|-----------|----------|-----------|-----------|------------|---------------------------------|-------------------|--|
| 3/2/17 | Guidance Counselor Office E | 11:50 | 74.4 | 12.2 | 468 | 0 | 0 | 0 | 20.9 | 0 | One open | |
| 3/2/17 | Guidance Counselor Office F | 11:51 | 73.8 | 15.7 | 483 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Guidance Counselor Office G | 11:53 | 75 | 25.5 | 483 | 0 | 0.2 | 0 | 20.9 | 0 | Closed | Dehumidifier in use |
| 3/2/17 | Guidance Counselor Office H | 11:55 | 77.1 | 31.8 | 548 | 0 | 0.3 | 0 | 20.9 | 1 | Closed | Dehumidifier in use, air purifier in use |
| 3/2/17 | Guidance Counselor Office I | 11:56 | 77.6 | 35.4 | 510 | 0 | 0.3 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Guidance Counselor Office J | 12:00 | 75.4 | 23.7 | 491 | 0 | 0.2 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Guidance Office File Storage | 12:02 | 76.3 | 30.8 | 574 | 0 | 0.3 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Guidance Telecom Room | 12:03 | 75.9 | 22.1 | 504 | 0 | 0.2 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Guidance Office Reception | 12:04 | 76.7 | 20.8 | 526 | 0 | 0.2 | 0 | 20.9 | 1 | None | Dehumidifier in use |
| 3/2/17 | Guidance Office Storage | 12:07 | 75.4 | 22.3 | 513 | 0 | 0.2 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Guidance Former Waiting Room | 12:10 | 74.8 | 20 | 561 | 0 | 0.1 | 0 | 20.9 | 0 | None | |
| 3/2/17 | B Wing Server Room | 12:11 | 67.1 | 16.3 | 440 | 0 | 0 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | B Wing Teachers Lounge | 12:12 | 75 | 22.9 | 490 | 0 | 0.2 | 0 | 20.9 | 1 | Closed | |
| 3/2/17 | Room B105 | 12:13 | 75.9 | 27.1 | 1160 | 0 | 0.3 | 0 | 20.9 | 16/3 | One open | Dehumidifier in use air purifier in use |
| 3/2/17 | Room B107 | 12:18 | 74.2 | 19.3 | 481 | 0 | 0.2 | 0 | 20.9 | 0 | One open | Dehumidifier in use |
| 3/2/17 | Clinic Storage | 12:29 | 72.5 | 24.3 | 530 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Nurse Office | 12:32 | 71.8 | 21.8 | 488 | 0 | 0.1 | 0 | 20.9 | 1 | Closed | Heater in use |
| 3/2/17 | Clinic Reception | 12:34 | 72.6 | 24.5 | 541 | 0 | 0.2 | 0 | 20.9 | 1 | None | |
| 3/2/17 | Room B112 | 12:36 | 73.7 | 17.9 | 740 | 0 | 0.1 | 0 | 20.9 | 1 | Two slightly open | Dehumidifier in use |
| 3/2/17 | Room B110 | 12:38 | 74.1 | 25.5 | 1155 | 0 | 0.4 | 0 | 20.9 | 19/1 | Closed | Dehumidifier in use |
| 3/2/17 | Room B106 | 12:41 | 75.1 | 37.4 | 1132 | 0 | 0.4 | 0 | 20.9 | 13/1 | Closed | |
| 3/2/17 | Room B106 | 12:43 | 76.6 | 30.8 | 1178 | 0 | 0.4 | 0 | 20.9 | 21/1 | Closed | |
| 3/2/17 | Room B104 | 12:45 | 73.2 | 14.3 | 483 | 0 | 0.1 | 0 | 20.9 | 0 | One wide open | |
| 3/2/17 | Room B102 | 12:50 | 70.4 | 28.5 | 577 | 0 | 0.2 | 0 | 20.9 | 4 | Closed | |
| 3/2/17 | Room B510 | 12:54 | 73.2 | 28.1 | 547 | 0 | 0.3 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Room C101 | 13:04 | 74.5 | 23.4 | 1043 | 0 | 0.3 | 0 | 20.9 | 18/1 | Closed | |
| 3/2/17 | Room C103 | 13:08 | 75.2 | 23.7 | 1082 | 0 | 0.3 | 0 | 20.9 | 20/1 | Closed | |
| 3/2/17 | Room C105 | 13:08 | 75.5 | 24.6 | 896 | 0 | 0.3 | 0 | 20.9 | 18/1 | Closed | |
| 3/2/17 | Room C107 | 13:10 | 74.5 | 24.2 | 896 | 0 | 0.4 | 0 | 20.9 | 18/2 | One slightly open | |
| 3/2/17 | Room C109 | 13:12 | 73.5 | 24.3 | 552 | 0 | 0.3 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Room C111 | 13:14 | 72.8 | 19.4 | 566 | 0 | 0.3 | 0 | 20.9 | 6/5 | Closed | |
| 3/2/17 | C Wing Office off Art Room | 13:17 | 70.9 | 11.2 | 407 | 0 | 0 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Room C102 | 13:19 | 71.7 | 15.1 | 584 | 0 | 0 | 0 | 20.9 | 13/1 | Two slightly open | |
| 3/2/17 | C Wing Storage Closet | 13:21 | 73.4 | 23.8 | 500 | 0 | 0.3 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Custodial Break Room | 13:24 | 71.8 | 13.8 | 415 | 0 | 0 | 0 | 20.9 | 1 | Closed | |
| 3/2/17 | Custodial Workshop | 13:26 | 70.7 | 16.8 | 409 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Boiler Room | 13:28 | 67.4 | 17.9 | 396 | 0 | 0 | 0 | 20.9 | 0 | 8 open | |
| 3/2/17 | Band | 13:30 | 69.4 | 24.9 | 572 | 0 | 0.1 | 0 | 20.9 | 12/1 | Closed | |
| 3/2/17 | Music Office | 13:32 | 72.1 | 28.8 | 471 | 0 | 0.3 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Room F108 | 13:43 | 72.8 | 18.2 | 488 | 0 | 0.1 | 0 | 20.9 | 10/1 | Closed | |
| 3/2/17 | C Wing Custodial Closet | | | | | | | | | 0 | None | |
| 3/2/17 | Faculty Dining | 13:46 | 69.8 | 18.8 | 635 | 0 | 0.1 | 0 | 20.9 | 0 | Closed | |
| 3/2/17 | Lecture Room | 13:54 | 74.2 | 30.4 | 903 | 0 | 0.3 | 0 | 20.9 | 23/1 | None | |
| 3/2/17 | Auditorium | 13:56 | 72.4 | 26.6 | 512 | 0 | 0.2 | 0 | 20.9 | 0 | None | |
| 3/2/17 | Stages | 13:58 | 71.6 | 28.4 | 510 | 0 | 0.2 | 0 | 20.9 | 0 | None | |
| 3/2/17 | 2nd Floor D Wing | 14:01 | 71.5 | 22.3 | 1318 | 0 | 0.2 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | 2nd Floor F Wing | 14:04 | 72.7 | 21.7 | 852 | 0 | 0.1 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | 2nd Floor B Wing | 14:06 | 72.8 | 20.9 | 569 | 0 | 0.1 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | 2nd Floor C Wing | 14:08 | 71.1 | 13.3 | 513 | 0 | 0 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | 1st Floor G Wing | 14:10 | 69.3 | 15.9 | 425 | 0 | 0 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | 1st Floor C Wing | 14:12 | 71.7 | 15.5 | 469 | 0 | 0 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | 1st Floor F Wing | 14:14 | 73.5 | 16.1 | 489 | 0 | 0.1 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | 1st Floor 800 Wing | 14:16 | 69.8 | 23.1 | 475 | 0 | 0.1 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | 1st Floor D Wing | 14:18 | 71.2 | 20.6 | 536 | 0 | 0.1 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | 1st Floor B Wing | 14:22 | 74.1 | 19.9 | 537 | 0 | 0.3 | 0 | 20.9 | | None | Water stained ceiling tiles throughout |
| 3/2/17 | Exterior | 14:30 | 48.5 | 23.7 | 389 | 0 | 0 | 0 | 20.9 | | | Clear and windy |