



**TO:** David Kallie, CEO, CR, CAP- Dimension, Design, Build, Remodel Inc

**FROM:** Martine Davis, BBEC, Indoor Environmental Testing Inc.

**DATE:** December 5, 2019

**RE:** Environmental testing for the property at W238N7540 High Ridge Dr.in Sussex WI.

We have completed the Environmental testing at this property. Below you will find a summary of our findings.

Instruments were used to collect air quality parameters such as temperature, relative humidity, carbon dioxide levels (a surrogate measurement for fresh air and ventilation), Formaldehyde, Volatile Organic Compounds (VOCs), PM2.5 and PM10 particles and airborne mold counts. Lab analysis via DNA extraction was also used to measure mold exposure potential by measuring mold in household dust. Instruments were used to collect EMF (Electro-Magnetic Fields) readings.

The table below provides your results along with the average for a typical new construction single family home. As you will note, the air quality and EMF measurements achieved in this residence are far superior to the average dwelling so congratulations on achieving such great results!

Component Unit of Meas.	Temp	R.H. %	CO2 PPM	CH2O PPB	VOCs Ng/L	Mold p/m3	PM2.3 Ug/m3	PM10 Ug/m3	Mold DNA cells	Magn Fields nT	Elec Fields V/m	RF mW/m2
Outside/Standard	58 °	36	419	0	0	12,381	35	150	----	20	Varies	18
MBR	68°	46.9	494	0	180	396	.2	5	3.2K	1.1	4.7	1.1
Kitchen/DR/LR	67 °	44.5	660	10	180	1,999	.3	20	3.2K	2	4.8	.2
Basement	65 °	47.8	500	0	180	1,751	.6	14	3.2K	2	9.1	.1
Average New Home	Varies	Varies	1200-1800	79-180	1,900	2K-20K	>1	>20	5.6K	20	12-15	Varies based on electronics

CH2O = Formaldehyde  
 ug/m3 = Microgram/m<sup>3</sup> of air  
 PPB= Parts Per Billion

mW/m2 = microwatts/square meter  
 ng/L = Nanograms/liter of air  
 RF=Radio Frequencies/Cell Tower Radiation

p/m<sup>3</sup>= Particles per cubic meter of air  
 nT = NanoTesla  
 V/m= Volts per meter

*Note: Future readings will vary based on the occupants' activities and electronics*

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Relative humidity: **Excellent**

The American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE) has a voluntary standard for human occupancy which recommends a minimum 30% Relative Humidity in the winter for temperatures between 68.5- and 76-degrees Fahrenheit. When indoor relative humidity is below 30% — nose irritation and inflammation can occur as can sore throats, chronic sinus infections, eye and skin irritation, nose bleeds and sneezing. During summer months, relative humidity should be below 58% to avoid mold growth.

Carbon Dioxide: **Excellent**

The average for an occupied home (new construction) is 1200-2000 ppm. New homes are built very tight and exceed the recommended level of Carbon Dioxide. This makes the space feel stuffy and stale. Make-up is needed in new(er) homes. The levels recorded in this home were very good due to the added fresh air exchange.

Mold: **Excellent**

Mold spores are present in the air inside and outside at all times. When interpreting mold counts indoors, there are no pass-fail criteria and no set government guidelines, partly because individual responses to mold vary considerably. For example, individuals with mold allergies or those sensitized to mold during a previous exposure to a water-damaged building may have severe reactions to minute quantities of mold while others may have no reaction at all.

Generally, indoor mold counts should be less than outdoor mold counts and similar to other indoor environments for similar settings, i.e. residential, offices, hospitals, etc. In this case, mold counts were substantially lower than outdoor counts and lower than the average residential setting.

Coarse (PM<sub>10</sub>) and Fine (PM<sub>2.5</sub>) airborne particle matter: **Excellent**

The EPA's National Ambient Air Quality Standards (NAAQS) define the amount in weight (expressed as particle mass PM) of fine particles smaller than 2.5 microns and coarse particles smaller than 10 microns that are acceptable for ambient air. The NAAQS standards are used to regulate air pollution in U.S. cities and are also often referred to by regulatory agencies (OSHA) and non-governmental organizations (NIOSH, ACGIH, ASHRAE) as thresholds to judge the quality of indoor air as well. The current fine particle (PM<sub>2.5</sub>) exposure standard is **35 µg/m<sup>3</sup>** and the coarse particle (PM<sub>10</sub>) exposure standard is **150 µg/m<sup>3</sup>**.

All areas measured were substantially less than exposure standards and better than average for all environmental parameters tested.

Conclusion:

All parameters measured indicate excellent air quality with ample ventilation and fresh air entry, low mold counts, low particle counts, low VOCs and formaldehyde and better than average EMF readings. Based on the results of our assessment, we do not have any further recommendations at this time. Thank you for the opportunity to serve you.

*Martine Davis*

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#### Appendix A. Limitations of Testing/Disclaimer

- Please note that our sampling is only a “snapshot” of conditions and air quality at a particular point in time. Indoor Air Quality has many variables and can fluctuate throughout the day.
- Mold testing has limitations. Low mold counts on lab test results do not rule out hidden mold contamination in wall or ceiling cavities, under flooring, behind insulation, etc. ... Also, a low mold count in one area does not rule out microbial contamination in a nearby, untested area.
- The conclusions and recommendations presented in this report are based solely on the conditions observed and tests taken at the time of the site visit, and should not be relied upon to be representative of conditions at any other time.
- We cannot make any claims regarding the presence or absence of indoor air pollutants or contaminants other than those actually tested.
- We can make no assumptions as to conditions present in rooms which we did not test.
- Mechanical and visual inspections are limited to those items to which we have physical and visual access.