

# Indoor Environmental Quality



## Executive Summary

The information in this report is designed to illustrate how the building is performing with regards to environmental parameters, to help identify issues, and offer solutions and next steps for correction. The action levels below are based on the worst case of the min/max values vs acceptable ranges.

### Health & Safety



**Particulates:** 2 of 2 spaces measured had elevated levels of Particle Allergens.

**Chemical Pollutants:** 2 of 2 spaces measured had elevated levels of Chemical Pollutants.

**Carbon Monoxide:** 0 of 2 spaces measured had elevated levels of Carbon Monoxide.

### Comfort & Energy



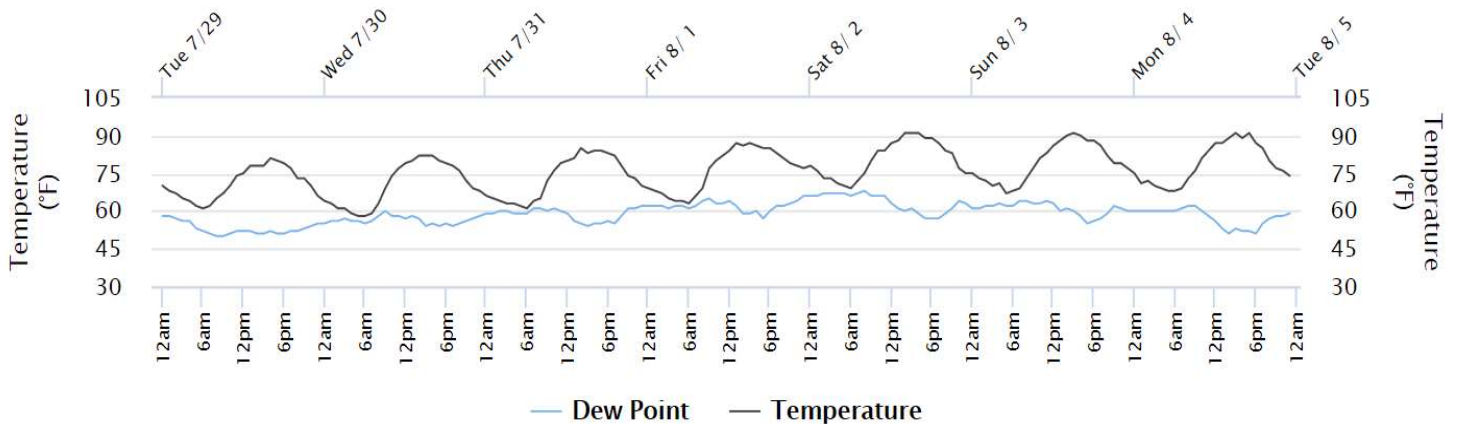
**Temperature:** 2 of 2 spaces were too warm at times, while 0 of 2 spaces were too cool at times.

**Relative Humidity:** 0 of 2 spaces had high relative humidity at times, while 2 of 2 had low relative humidity at times.

**Carbon Dioxide:** 1 of 2 spaces were over-ventilated and can save energy by reducing the amount of outside air.

## Weather

The outdoor environment plays a key role in what happens in the indoor environment. Temperature and dew point can affect the indoor temperature and relative humidity. The outdoor data included in this report was recorded at *Madison, WI 53792*.



## Outdoor Air Quality

The Air Quality Index, or AQI, is the system used to warn the public when air pollution is dangerous. The AQI tracks ozone (smog) and particle pollution (tiny particles from ash, power plants and factories, vehicle exhaust, soil dust, pollen, and other pollution), as well as four other widespread air pollutants. Keeping track of the current air quality information can help you take steps to protect yourself, children, and others from unhealthy levels of air pollution. ~American Lung Association

**Outdoor Air Quality Index for  
Dane County is 160**



**Unhealthy  
151-200**

## Custom Deployment Name

### Comfort & Energy

5/11/2020 – 5/17/2020

The graphs below show trending for Temperature, Humidity and Carbon Dioxide levels. The background transitions from white to gray to show occupied vs unoccupied time, respectively. The trend line transitions from green to red to show where levels transition from good to bad.

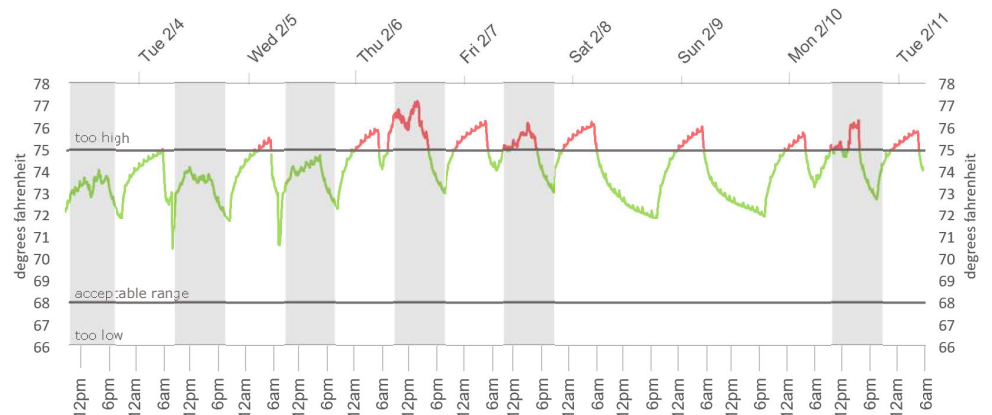
#### Temperature ●●●●



This thermal resistor (thermistor) sensor has a range of 32 to 100 degrees °F and an accuracy of  $\pm 2$  °F.

##### Findings

We detected several temperature control issues in this facility during the deployment.



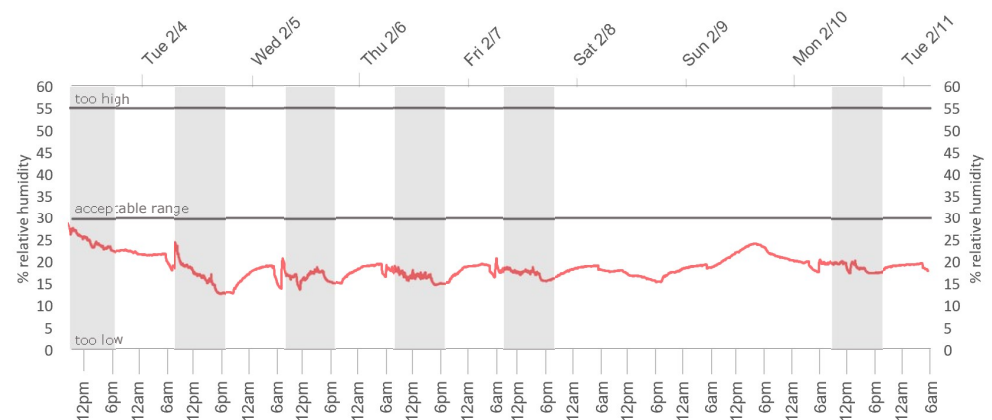
#### Relative Humidity ●●●●



This capacitive sensor has a range of 10 to 90% and an accuracy of  $\pm 5$ %.

##### Findings

The large number of Relative Humidity issues identified may cause comfort and moisture issues in your facility and is likely indicative of the amount of outside air being brought into the facility.



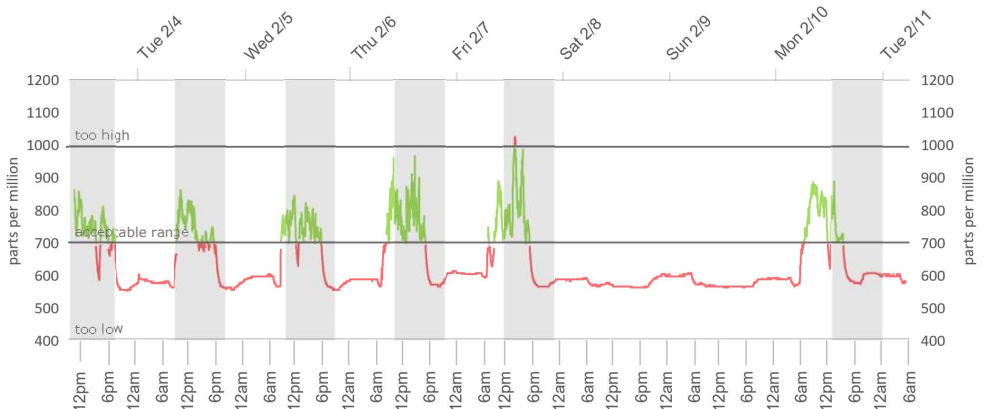
#### Carbon Dioxide ●●●●



This non-dispersive infrared (NDIR) sensor has a range of 0 to 2,000 ppm and an accuracy of  $\pm 100$  ppm.

##### Findings

During the monitoring of your facility we detected severe ventilation issues that need to be corrected to improve the balance between the amount of ventilation and amount of fresh air needed for your facility.



## Health & Safety

5/11/2020 – 5/17/2020

The graphs below show trending for Particulates, Chemical Pollutants and Carbon Monoxide.

The background transitions from white to gray to show occupied vs unoccupied time, respectively. The trend line transitions from green to red to show where levels transition from good to bad. In some cases there is an acceptable range between the two that will be yellow or orange depending on intensity.

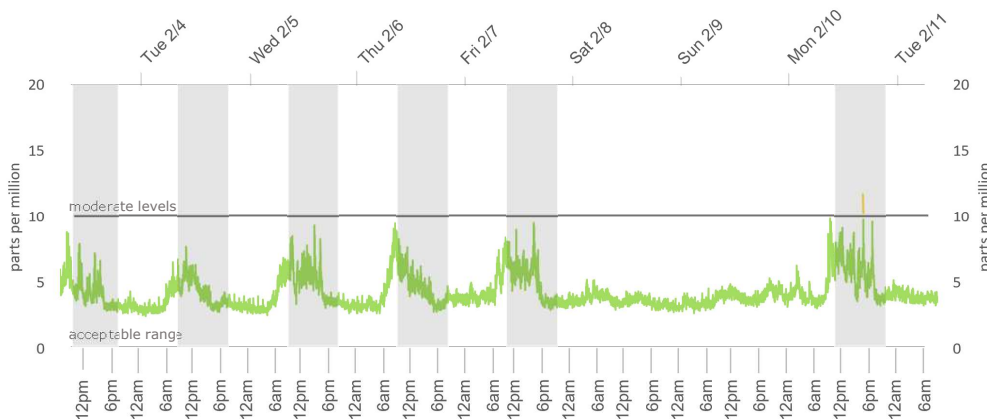
### Particulates ●○○○



This near infrared nephelometer has a range of 0 to 50  $\mu\text{g}/\text{m}^3$  in the range of 0.5 to 10 microns and an accuracy of  $\pm 20\%$  CV.

#### Findings

We did not detect any major issues in your facility during this deployment. This does not mean there may not still be opportunities to improve the performance of your facility, but it does highlight the need for maintaining the optimal performance.



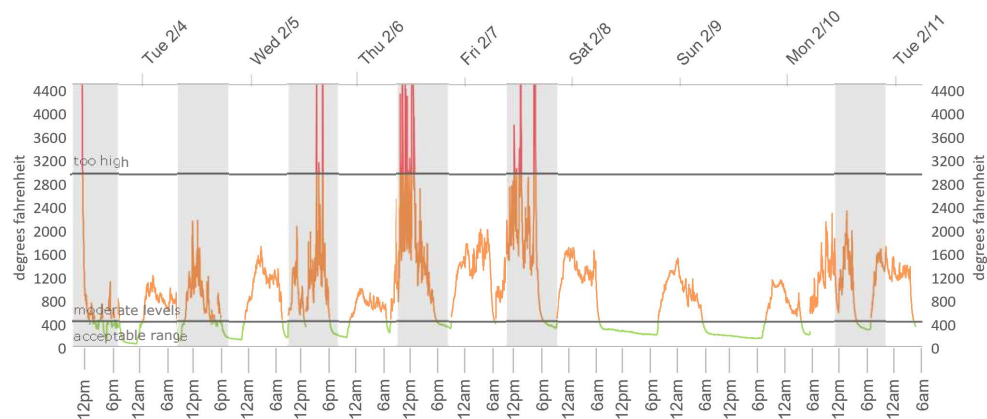
### Chemical Pollutants ●●●○



This metal oxide semi-conductor (MOS) sensor has a range of 0 – 4,000  $\mu\text{g}/\text{m}^3$  and an accuracy of  $\pm 112 \mu\text{g}/\text{m}^3$ .

#### Findings

We have detected a couple locations with elevated levels of Organic Chemicals that could have long term exposure issues for sensitive individuals. There are several simple solutions we have outlined to help reduce the source of these Organic Chemicals.



### Carbon Monoxide ●○○○



This electrochemical sensor has a range of 0 to 100 ppm and an accuracy of  $\pm 3$  ppm.

#### Findings

We did not detect any major issues in your facility during this deployment. This does not mean there may not still be opportunities to improve the performance of your facility, but it does highlight the need for maintaining the optimal performance.

