

SmartIAQ Report Test Results

Prepared for:

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This report offers recommendations so you can make informed decisions about the health, comfort, and safety of your home. Knowing what's in the air you breathe and what you can do about it has never been more important. If you have additional questions, please visit www.airadviceforhomes.com.

Monitor ID: 35323

Report ID: #1058

Test Period: 11/24/2021 - 11/29/2021

Conducted by:

Huck Finn & Co.

WHAT WE TEST

HEALTH



**ACTION
REQUIRED**

Particulate Matter Chemical Pollutants Carbon Dioxide

Particulate Matter:

Levels are acceptable

Chemical Pollutants:

Levels are significantly elevated

Carbon Dioxide:

Stale air

- Build-up of chemical pollutants
- Inadequate fresh air introduction

POSSIBLE CAUSES

- Inspect/add ventilation and/or VOC reduction system
- Check current system run time for ventilation

RECOMMENDED ACTION

COMFORT



**NO ACTION
NECESSARY**

Temperature Relative Humidity

Temperature:

Levels are acceptable

Relative Humidity:

Levels are acceptable

- None

- No action necessary

SAFETY



**NO ACTION
NECESSARY**

Carbon Monoxide

Carbon Monoxide:

Levels are acceptable

- None

- No action necessary

THE ENVIRONMENT

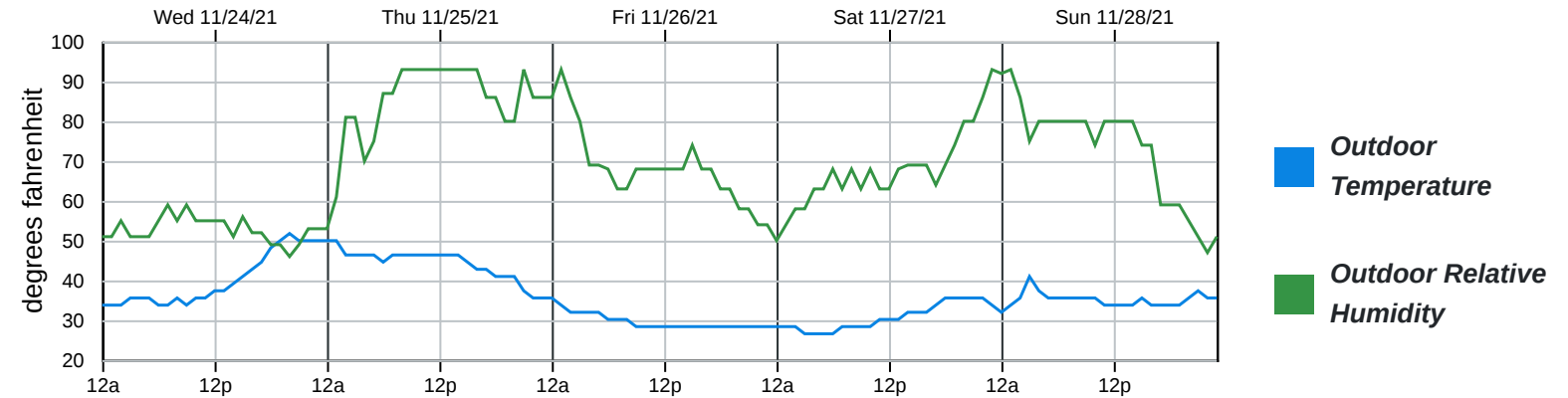
The outdoor environment plays a key role in what happens indoors. The most familiar example is how outdoor temperature and relative humidity can affect indoor comfort. The building envelope is the first defense against outdoor temperature extremes. A “tight” building envelope can insure a comfortable indoor environment despite challenging outdoor conditions.

A less obvious example of how outdoor conditions can affect the indoors is air pollution, like smog, pollen, and wildfire smoke. A “tight” building envelope can block pollutants out. However, without the appropriate controls, a tight building also can trap pollutants indoors. The key to a safe indoor environment is to control pollutants in the home, whether those pollutants came from outside or were generated within the home.

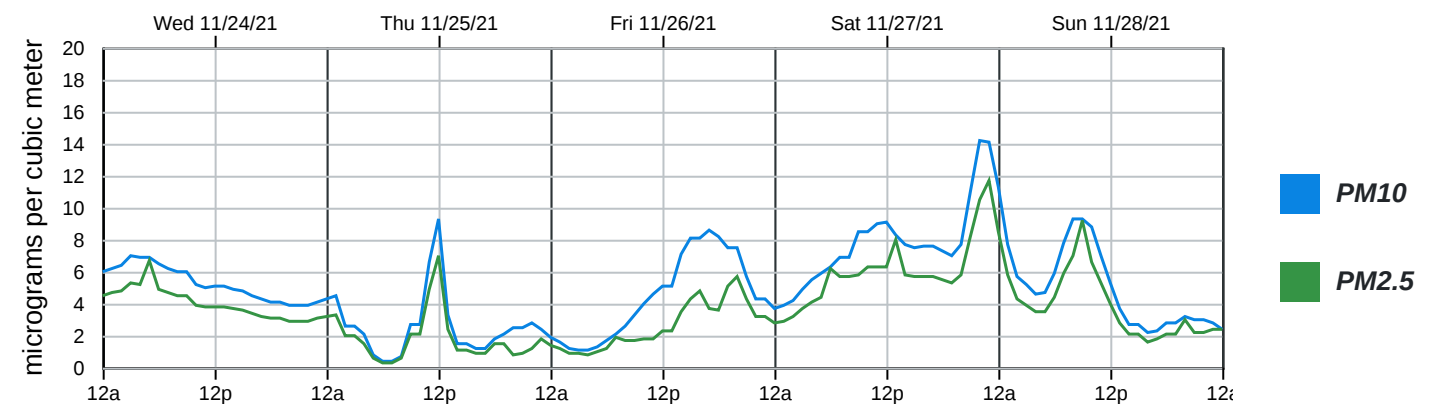
Source:
www.epa.gov
www.ashrae.com

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OUTDOOR WEATHER

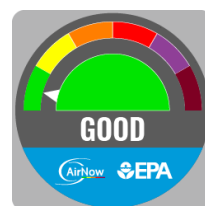


OUTDOOR PARTICULATE MATTER

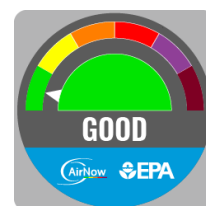


YOUR OUTDOOR RATING

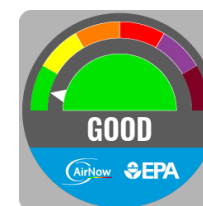
The Air Quality Index (AQI) is provided by the EPA. This daily rating considers five outdoor pollutants including particles and ozone. Visit www.airnow.gov/aqi to learn more about AQI.



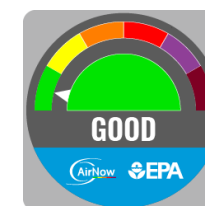
Day 1
2021-11-24



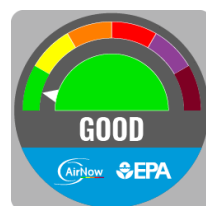
Day 2
2021-11-25



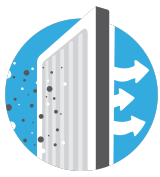
Day 3
2021-11-26



Day 4
2021-11-27



Day 5
2021-11-28



HEALTH: PARTICULATE MATTER

TEST RESULTS

What We Found: Particle levels were below 10 ug/m3.

**NO ACTION
NECESSARY**

Why is no action necessary?

Particle levels are generally not a cause for concern when daily average levels are below 10 ug/m3.

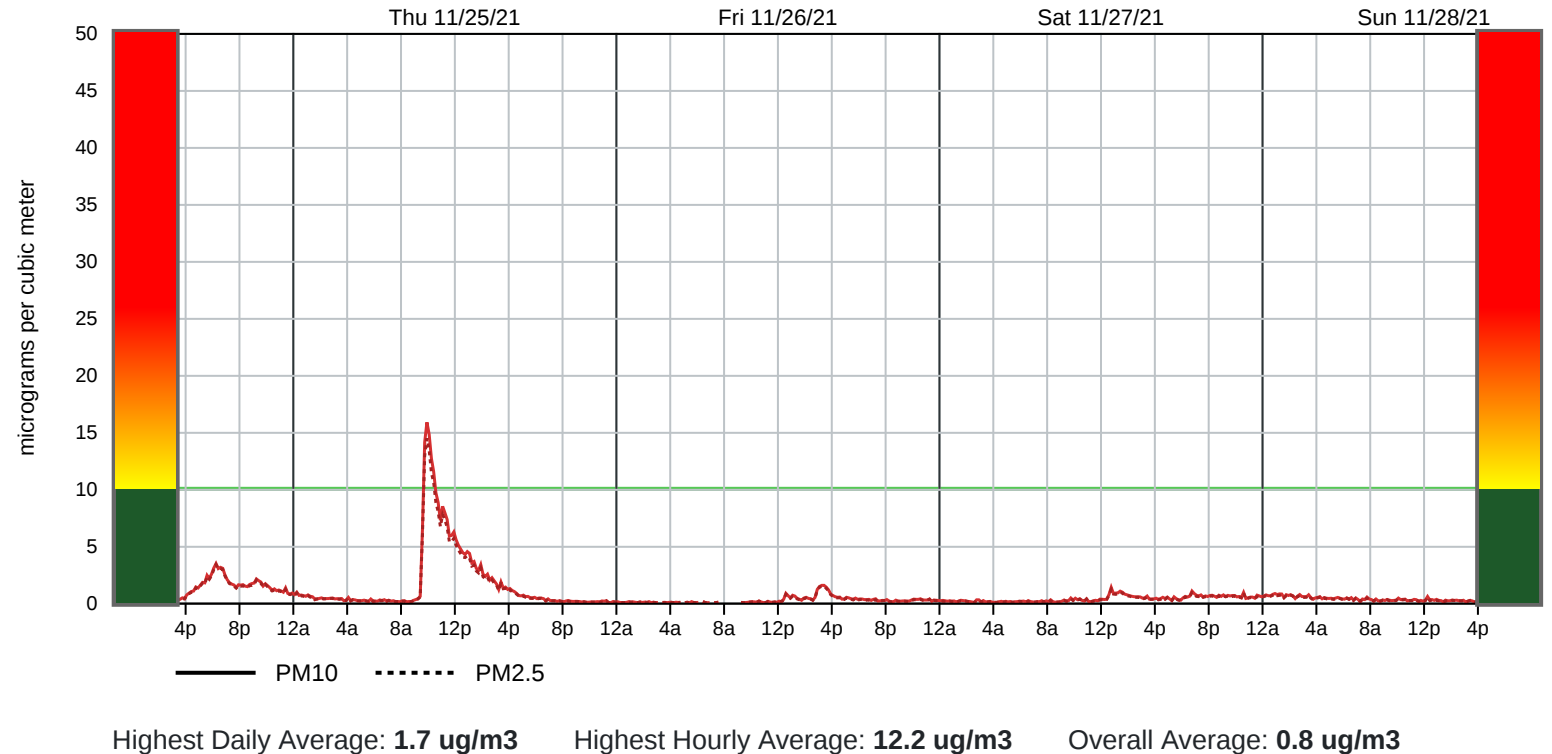
Particulate matter is known to trigger asthma and allergy symptoms. At levels above 35 ug/m3, it can harm normally healthy adults by causing emphysema and diminished lung capacity. Children, the elderly, and pregnant women are more susceptible.

Source:

American Lung Association
Environmental Protection Agency (EPA)
Indoor Air Quality Association (IAQA)

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ABOUT PARTICULATE MATTER

Particulate matter is always present in your home's air. It can build up to unhealthy levels due to activities in the home, the presence of excessive sources, and heating & cooling system issues.

Sources: Pets, dirt on shoes, burning candles, smoking, open windows (outside pollen, spores, etc.), dust mites, many common household activities, including cooking and cleaning.

Possible heating & cooling issues: Leaky, dirty, or poorly designed ductwork, inadequate filtration, no filtration at all.

RECOMMENDED ACTION

None -- no action necessary. For more information on indoor air quality, see:

- www.airadviceforhomes.com



HEALTH: CHEMICAL POLLUTANTS

TEST RESULTS

What We Found: Chemical pollutant levels were above 3000 ug/m³ for one or more days.

**ACTION
REQUIRED**

Why is action necessary?

Chemical pollutants are generally a cause for concern when daily average levels are above 500 ug/m³.

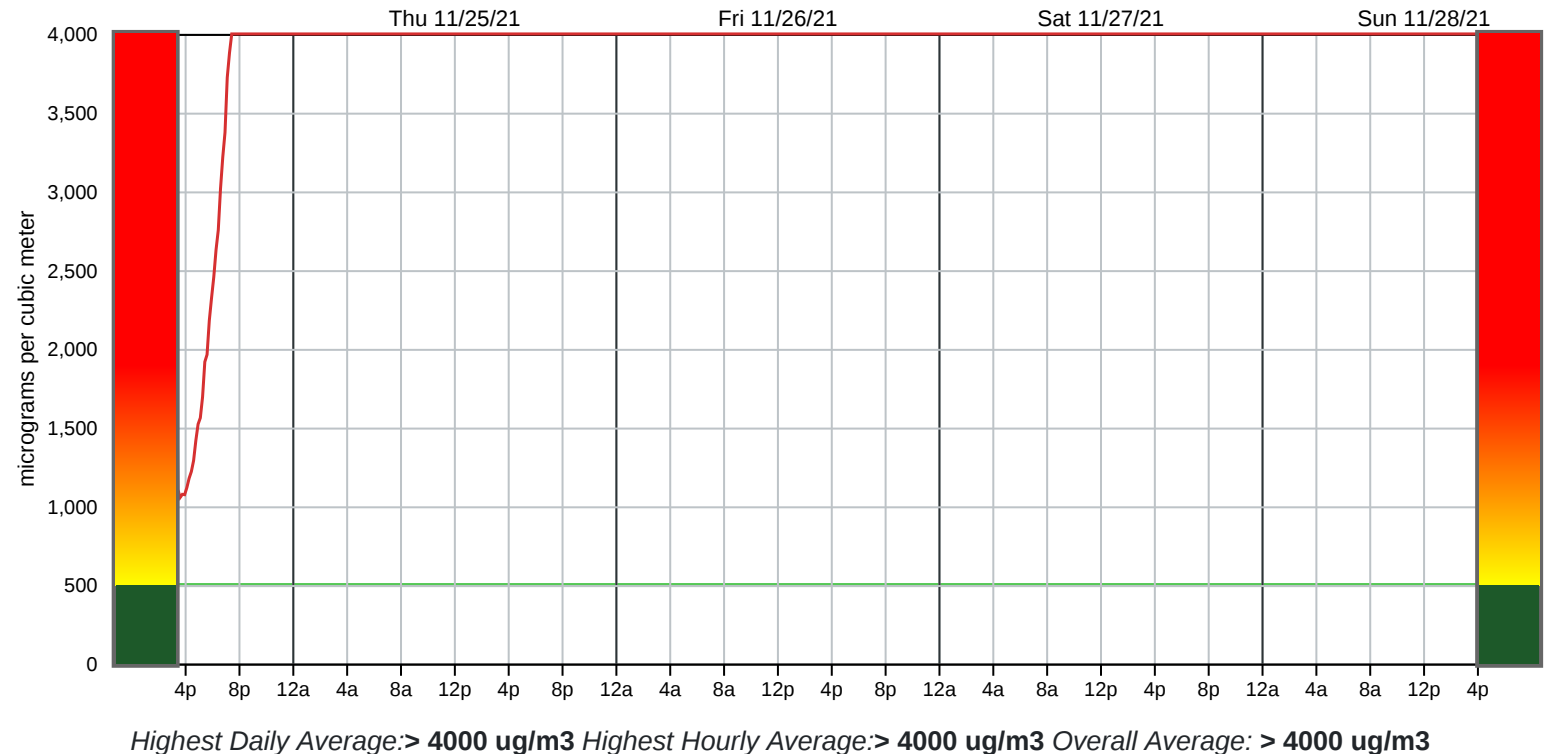
Chemical pollutants are known to trigger asthma and allergy symptoms. At moderate levels, eyes and nasal passages can be irritated. Some people can experience nausea and headaches. At very high levels, they can even affect normally healthy adults by overworking the liver and kidneys. Children, the elderly, and pregnant women are more susceptible.

Source:

International WELL Building Institute (IWBI)
Leadership in Energy & Environmental Design
Environmental Protection Agency at Research
Triangle Park (EPA-RTP).

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ABOUT CHEMICAL POLLUTANTS

Levels can build up in your home's air due to usage of chemical products and heating/cooling system issues.

Sources: Off-gassing from building materials, carpeting, furniture and other synthetic materials, fuel fumes, scented products and air fresheners, personal care products, many household products such as paint, glue, and plastics.

Possible heating & cooling issues: Lack of fresh air introduced into home (either inadequate mechanical ventilation or none present), no chemical pollutant removal equipment.

RECOMMENDED ACTION

There are many steps you can take to control sources of chemical pollutants. You can:

- Inspect/add ventilation and/or VOC reduction system
- Install carbon filtration system
- Minimize use of VOC sources such as air fresheners and store chemicals outside



HEALTH: CARBON DIOXIDE

TEST RESULTS

What We Found: Carbon dioxide levels were above 1000 ppm for one or more days.

**ACTION
REQUIRED**

Why is action necessary?

Carbon dioxide levels are generally a cause for concern when daily average levels are above 750 ppm for sensitive individuals.

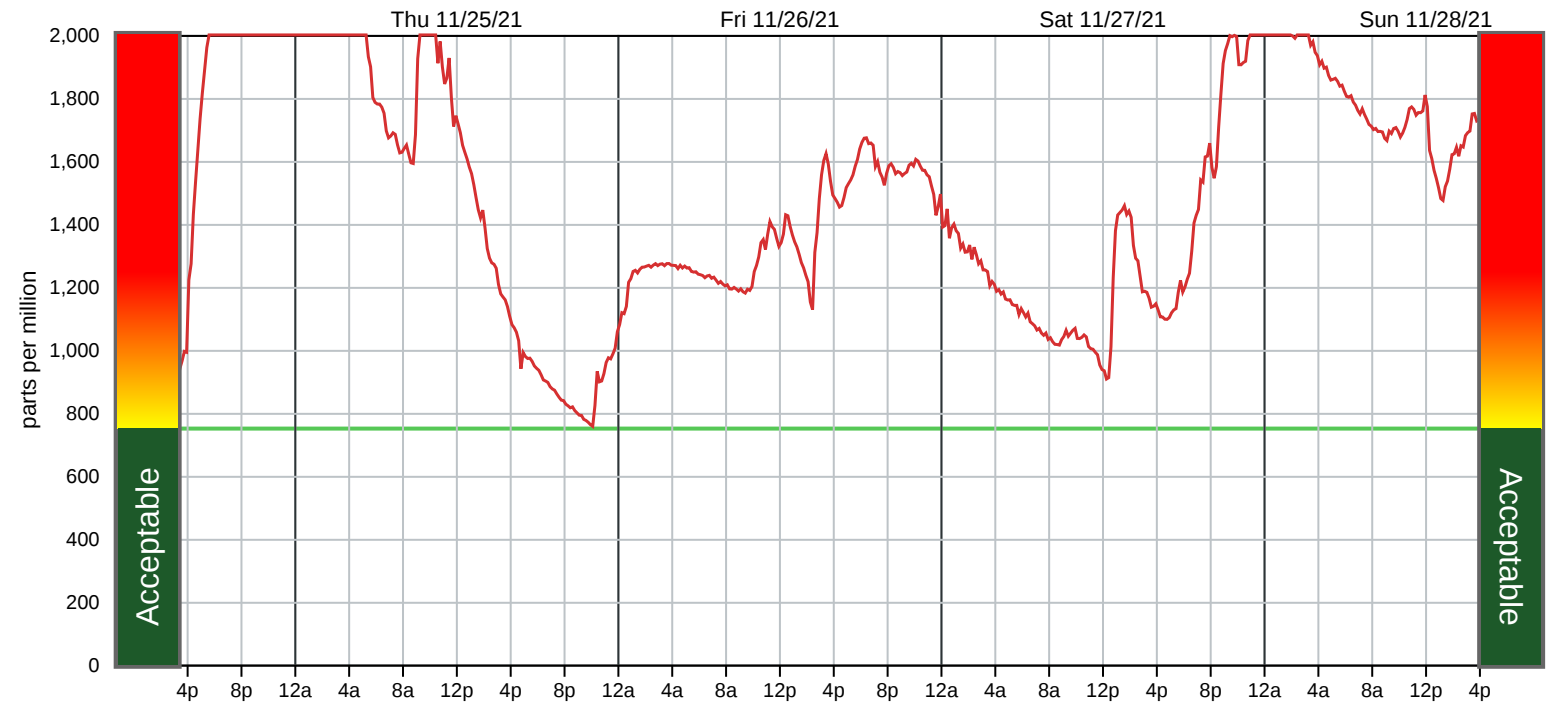
Carbon dioxide can quickly build up inside homes when people are present, causing air to feel 'stale.' If you have ever noticed persistent smells and/or wanted to crack a window in a room to get fresh air, you have experienced stale air.

Source:

American Society of Heating
Refrigeration and Air Conditioning Engineers
Indoor Air Quality Association

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Highest Daily Average: > 2000 ppm Highest Hourly Average: > 2000 ppm Overall Average: 1570 ppm

ABOUT CARBON DIOXIDE

Elevated carbon dioxide levels can occur in the home due to source causes, home heating & cooling system issues, or both.

Sources: 'Tight' (well weatherized and energy-efficient) home construction without adequate ventilation, common human & household activity (breathing, and burning candles, gas, wood, or other combustion).

Possible heating & cooling issues: Lack of supplied fresh air (no ventilation), malfunctioning ventilation, ventilation shut off by occupant, HVAC equipment needs repair or service.

RECOMMENDED ACTION

There are many steps you can take to control carbon dioxide levels. You can:

- Check current system run time for ventilation
- Add ventilation device
- Inspect gas and wood-burning appliances for proper ventilation



COMFORT: TEMPERATURE

TEST RESULTS

What We Found: The temperature level was acceptable.

**NO ACTION
NECESSARY**

Why is no action necessary?

Comfortable temperatures fall within the range of 64F and 68F. In addition temperatures are most comfortable when steady, with fluctuations less than 1-1/2 degrees.

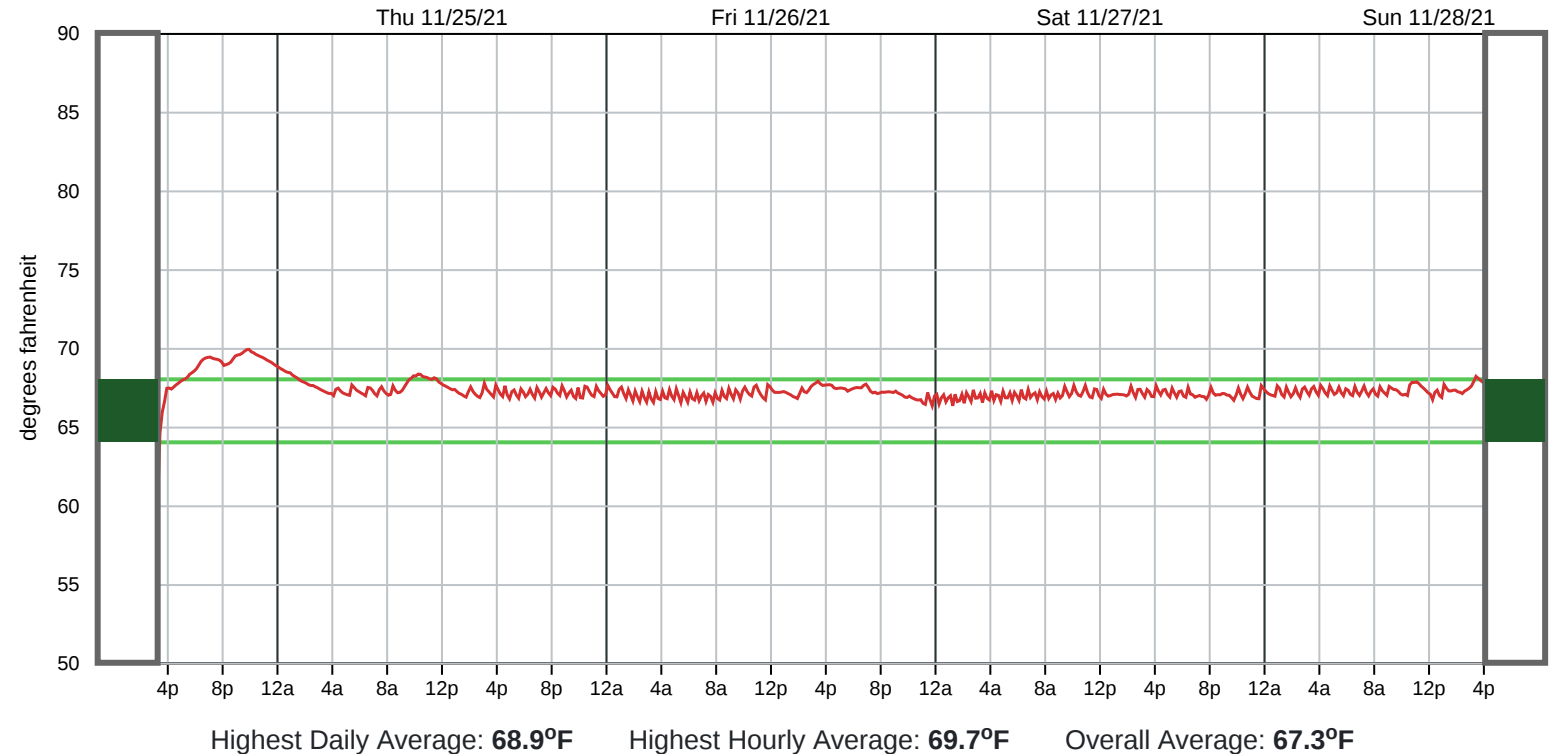
Ideally, temperature should be constant between all areas of the home. People experience a chilling or 'goose bump' sensation when temperatures are uneven and when air blows quickly across the surface of the skin.

Source:

American Society of Heating, Refrigeration and Air Conditioning Engineers

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ABOUT TEMPERATURE

Fluctuating and/or low and high temperatures can occur due to structural causes and/or home heating & cooling system issues.

Structural causes: Poor insulation, inadequate weatherization (for example, poorly sealed windows and doors create drafts).

Possible heating & cooling issues: Thermostat poorly located (in an area where air supply falsely influences readings), uneven heating or cooling from room to room due to imbalanced ductwork or inadequate or poorly sized equipment.

RECOMMENDED ACTION

None -- no action necessary. For more information on indoor air quality, see:

- www.airadviceforhomes.com



COMFORT: RELATIVE HUMIDITY

TEST RESULTS

What We Found: The relative humidity levels were between 40-55%.

**NO ACTION
NECESSARY**

Why is no action necessary?

Comfortable relative humidity levels fall within the range of 40% to 55%.

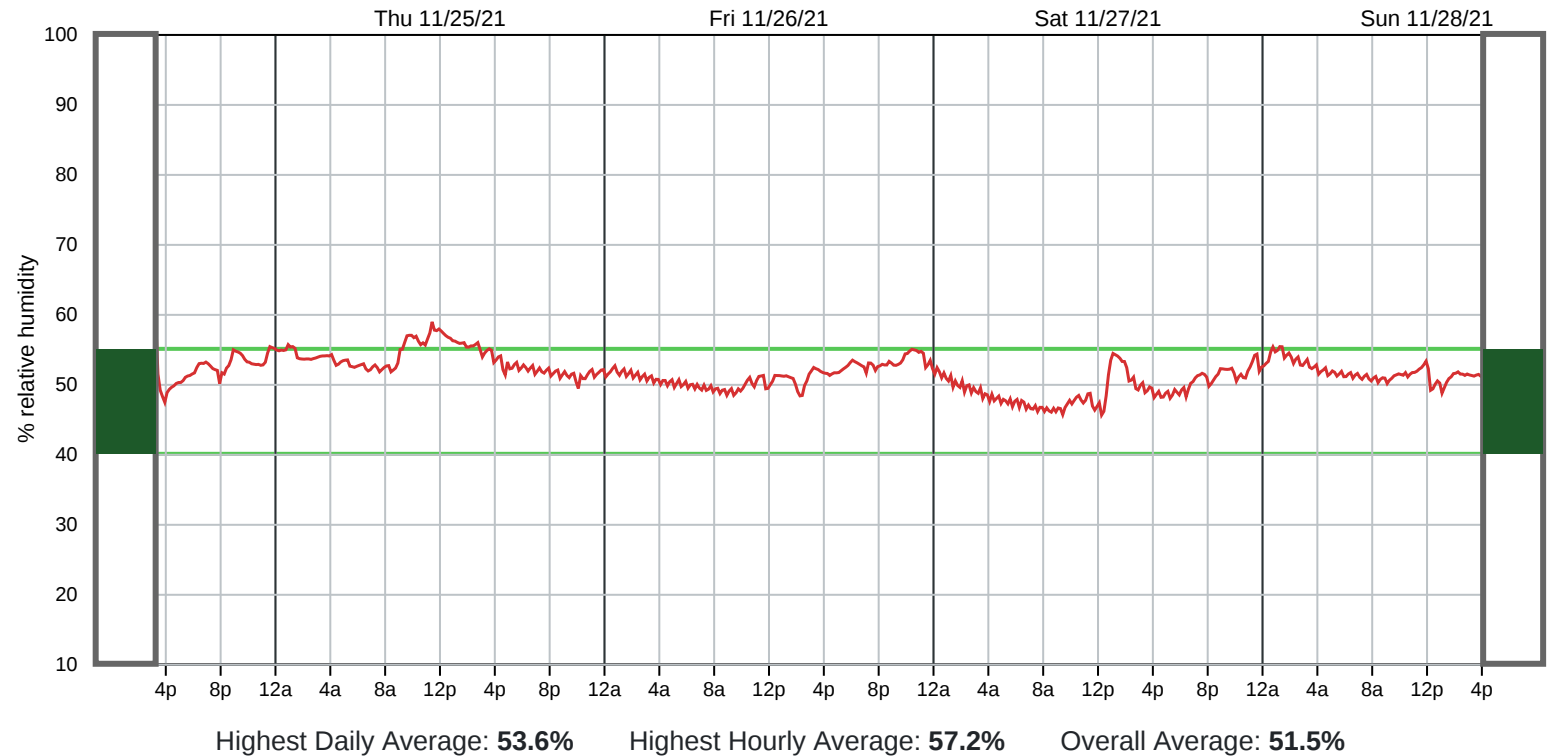
The amount of moisture in the air influences both health and comfort. When air is too dry in the winter, people typically feel colder. Also, respiratory passages can become irritated and prone to infection.

Source:

American Society of Heating, Refrigeration and Air Conditioning Engineers
Health Canada
Washington Department of Health

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ABOUT RELATIVE HUMIDITY

Structural causes: Standing water in basement or other areas, leaky pipes/faucets, inadequate ventilation in winter (causes moisture build-up inside), and home is under “negative pressure” (pulls dry or moist air in from outside).

Possible heating & cooling system issues: No or inadequate humidification, no or inadequate ventilation, improperly sized cooling system (prevents dehumidification), HVAC equipment needs repair (condensate drain or coil malfunctioning).

RECOMMENDED ACTION

None -- no action necessary. For more information on indoor air quality, see:

- www.airadviceforhomes.com



SAFETY: CARBON MONOXIDE

TEST RESULTS

What We Found: Carbon Monoxide levels were below 5 ppm.

**NO ACTION
NECESSARY**

Why is no action necessary?

Carbon monoxide levels are a cause for concern when average levels are above 5 ppm (8-hour average). When levels (8-hour average) are above 20 ppm, immediate action should be considered.

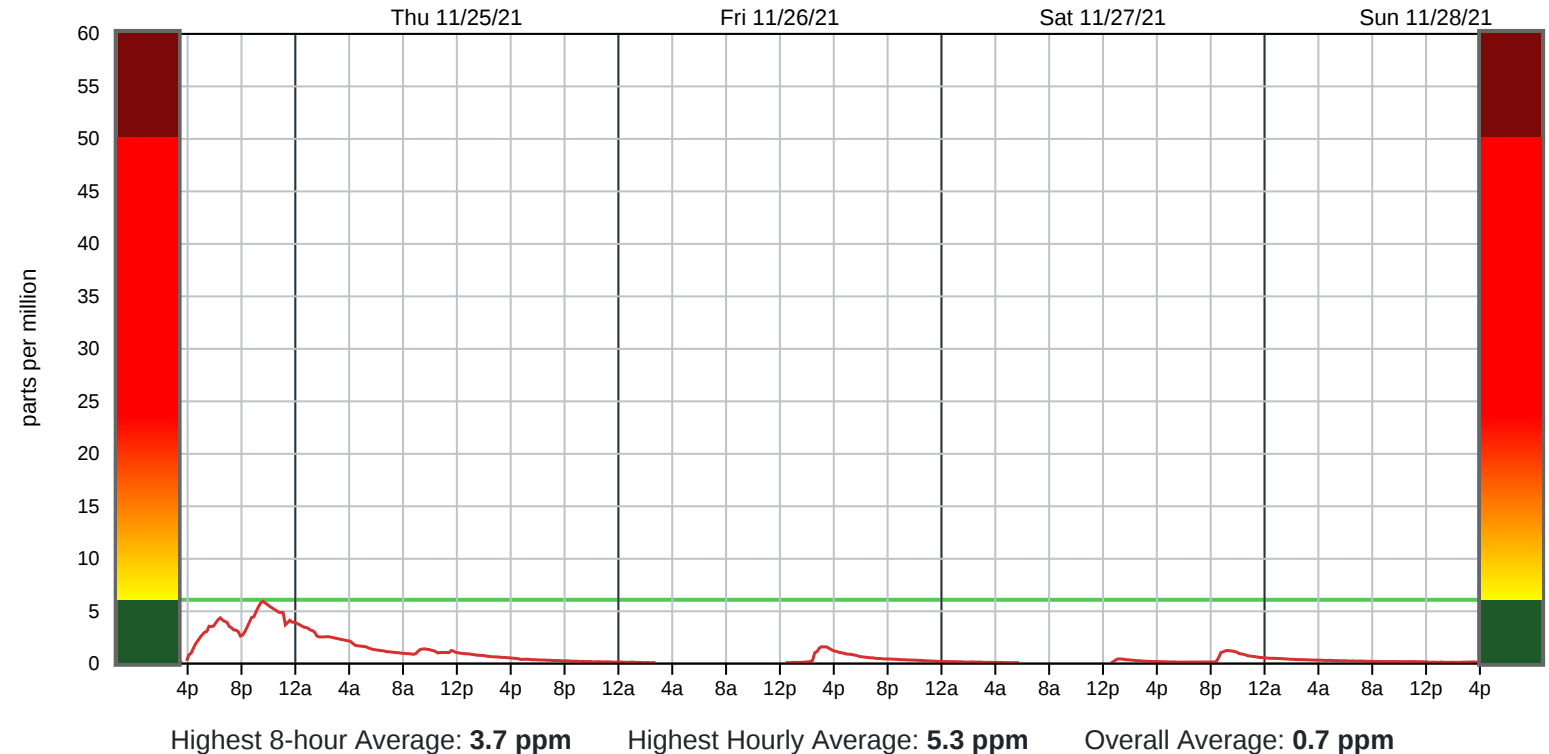
Carbon monoxide is a colorless, odorless, poisonous gas produced by combustion. When people are exposed to relatively low levels (for an 8 hour period or more), it can cause headaches and nausea. At relatively high levels it can cause memory problems and ultimately death.

Source:

US Environmental Protection Agency (EPA)
World Health Organization (WHO)
Indoor Air Quality Association (IAQA)

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ABOUT CARBON MONOXIDE

Elevated carbon monoxide levels in the home are a cause for concern. They can occur due to source causes, home heating & cooling system issues, or both.

Sources: Fireplaces, cooking, combustion appliances (water heater, gas dryer, stove), vehicles running in attached garage.

Possible heating & cooling system issues: Cracked heat exchanger on furnace, leaking chimney or vent, inadequate exhausting of a combustion appliance (water heater, gas dryer, stove).

RECOMMENDED ACTION

None -- no action necessary. For more information on indoor air quality, see:

- www.airadviceforhomes.com

Listed below are the parameters that were used to run your Indoor Air Quality report. These parameters were used to formulate specific recommendations based upon your unique air quality test results.

GENERAL INFORMATION

Room Monitor Placed In: Not specified

Sq. Ft. of Living Space: Not specified

Year Building Built: Not specified

Number of Bedrooms: Not specified

Attached Garage: Not specified

Sensitive Population: Not specified

SYSTEM INFORMATION

Occupied Temperature Setting: 66

Type of Thermostat: None

Fresh Air Intake: Not specified

Type of Heating System: Forced Air

Heating Fuel Type: Gas

Heating System Age: Not specified

Heating System Size (BTUs/KW): Not specified

AFUE: Not specified

Type of Cooling System: None

Cooling System Age: Not specified

Cooling System Size (BTUs/KW): Not specified

SEER: Not specified

Duct Work Sealed (if Forced Air): Not specified

Duct Work Clean (if Forced Air): Not specified

Carbon Monoxide (CO) Detector: Not specified

FILTRATION

Type of Air Filtration: None

PCO/VOC Reduction: Not specified

In-room HEPA Filter(s): Not specified

VENTILATION

ERV/HRV: Not specified

Fan to Outside in All Bathrooms: Not specified

Stove Exhaust Fan to Outdoors: Not specified

PURIFICATION

In-room Purifier(s): Not specified

HUMIDIFICATION

Central Humidifier: Not specified

Central Dehumidifier: Not specified

In-room Humidifier(s): Not specified

In-room Dehumidifier(s): Not specified

POSSIBLE POLLUTANTS

Anyone Smokes in Home/Garage: Not specified

Candles/Incense: Not specified

Wood Burning Appliance(s): Not specified

Gas Appliance(s): Not specified

Air Freshener(s): Not specified

Recent Remodeling/New Furniture: Not specified

Pets in Home: Not specified