

Prepared For:
John Smith
1234 Any Street
Portland, OR 97219
(503) 416-0000

Conducted By:
AirAdvice
503-416-7859

Test Period:
4/18/10 – 4/24/10

Monitor ID:
#11922

Report ID:
#164139

This report offers recommendations so you can make informed decisions about the health, comfort and safety your building provides. 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.airadvice.com or call 503-295-6610.


What We Tested

What We Found

Possible Causes

Recommended Action

HEALTH



Action Necessary


Particle Allergens, Chemical Pollutants, Carbon Dioxide

- ▶ **Particle Allergens:**
Levels are significantly elevated
- ▶ **Chemical Pollutants:**
Levels improvable
- ▶ **Carbon Dioxide:**
Stale air

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

- Upgrade ventilation
- Add VOC reduction device
- Remove VOC sources
- Upgrade filtration

COMFORT



Action Necessary

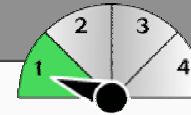
Temperature Relative Humidity

- ▶ **Temperature:**
Too cool
- ▶ **Relative Humidity:**
Too moist

- Inadequate temperature setpoint or inadequate thermostat
- Inadequate dehumidification
- Setpoints out of alignment

- Check thermostat for proper setpoint and function
- Add ventilation

SAFETY



No Action Necessary

Carbon Monoxide

- ▶ **Carbon Monoxide:**
Levels are acceptable

- None

- No action necessary

The Outdoor Environment

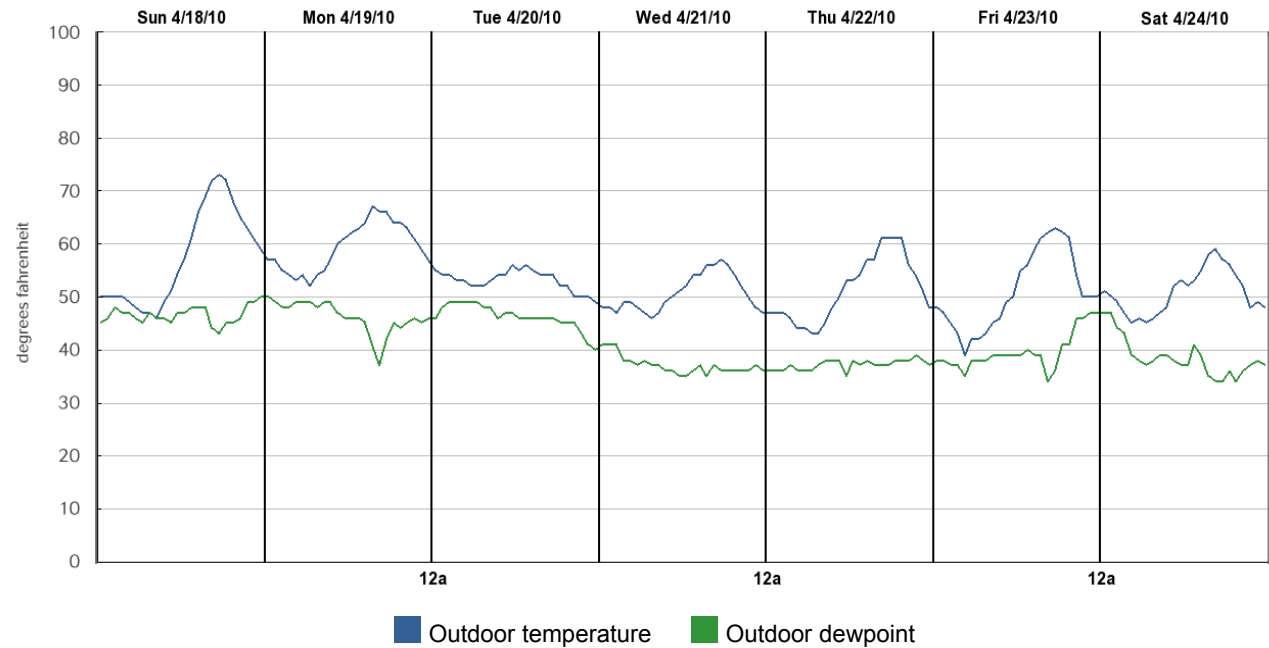
THE ENVIRONMENT

The Outdoor Environment plays a key role in what happens in the indoor environment. For instance, the outdoor air rating provided by the ALA is a C or worse grade, a good particulate filter on your home's fresh air source would help to improve the overall levels of particulates in the home. The outdoor weather illustrates how temperature and dew point can affect the indoor temperature and relative humidity. A dew point in the range of 40 to 60 oF is ideal to maintain the optimum comfort range for relative humidity (RH) inside. A dew point above 60 oF outside would require some amount of dehumidification to maintain the optimum comfort range.

Sources: www.epa.gov and www.ashrae.com

Powered by: 
www.airadvice.com
 © 2008 AirAdvice, Inc.
 ALL RIGHTS RESERVED

Outdoor Weather



YOUR OUTDOOR AIR RATING*

Outdoor Air Quality Rating for:
Multnomah County*

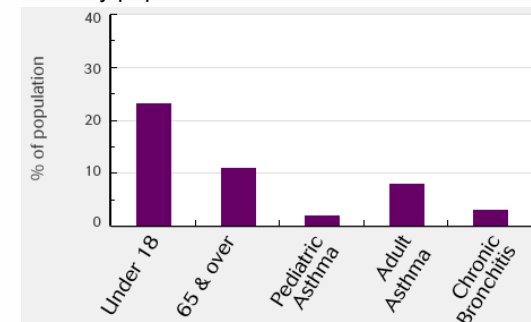


The American Lung Association rates each county for its outdoor air quality on a scale from 'A – F', with 'A' being the best. Outdoor air pollution varies based on city density, local industrial sources, climate, and time of year. When considering air quality, remember that outdoor air quality affects indoor quality.

* As determined by the American Lung Association®, ALA State of the Air Report 2008 (www.lungusa.org).

At Risk Groups

The following chart shows percentage of sensitive people at risk in your area (by risk group) based on total county population.



Energy Use & Its Impact

TEST RESULTS

What We Found:

Significant energy savings possible.

Action Necessary

How are energy savings possible?

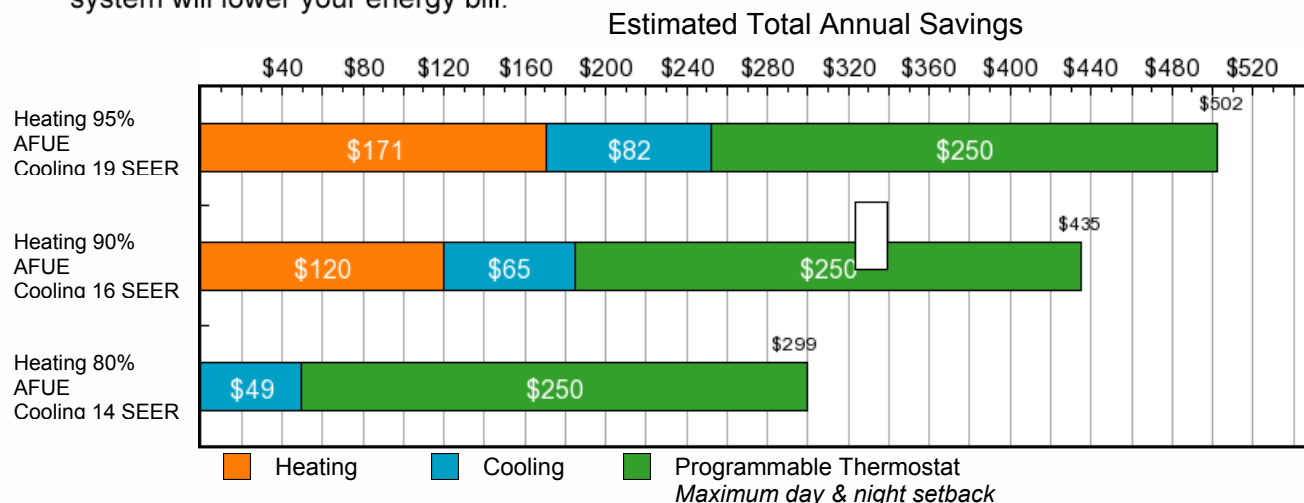
Monthly energy savings are possible by improving the efficiency of your HVAC system, using a programmable thermostat with a greater than 8° of setback for both the day and nighttime along with weatherizing your home through such means as improved insulation, energy star windows and other simple techniques. Reducing your energy consumption also has a positive effect on the environment by reducing your Carbon Footprint by reducing the amount of Carbon Dioxide emitted into the atmosphere.

Sources: www.energy.gov,
www.energystar.gov &
www.usgbc.org.

Powered by: 
www.airadvice.com
 © 2007 AirAdvice, Inc.
 ALL RIGHTS RESERVED

EQUIPMENT UPGRADE

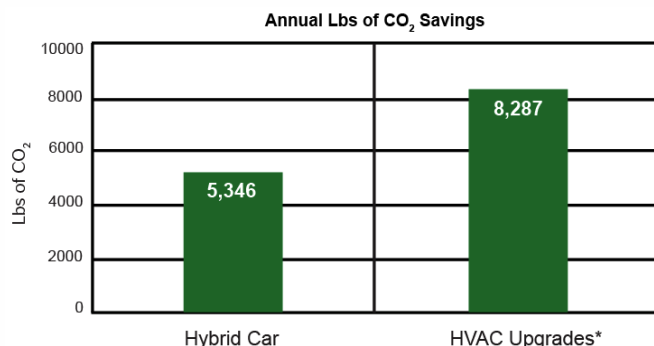
Upgrading to a higher efficiency heating and cooling system will lower your energy bill:



We are using your Heating system with AFUE rating of 80% and your Cooling system with a SEER rating of 10 for our calculations. If you upgrade all your systems to the most efficient, your approximate annual energy savings should be between \$400 and \$600

CARBON FOOTPRINT:

Reducing Greenhouse Gas Emissions



Typical HVAC upgrades offer a greater impact on CO₂ emissions

*Includes high efficiency heating and cooling system, and programmable thermostat. Go to <http://www.epa.gov/> to learn more about limiting your carbon footprint.

RECOMMENDED ACTION

There are many steps you can take to improve the energy efficiency of your home. For example, you can:

- Increase your thermostat setback

Health: Particle Allergens

TEST RESULTS

What We Found: Allergen levels were above 35 ug/m³ for one or more days.

**Action
Necessary**

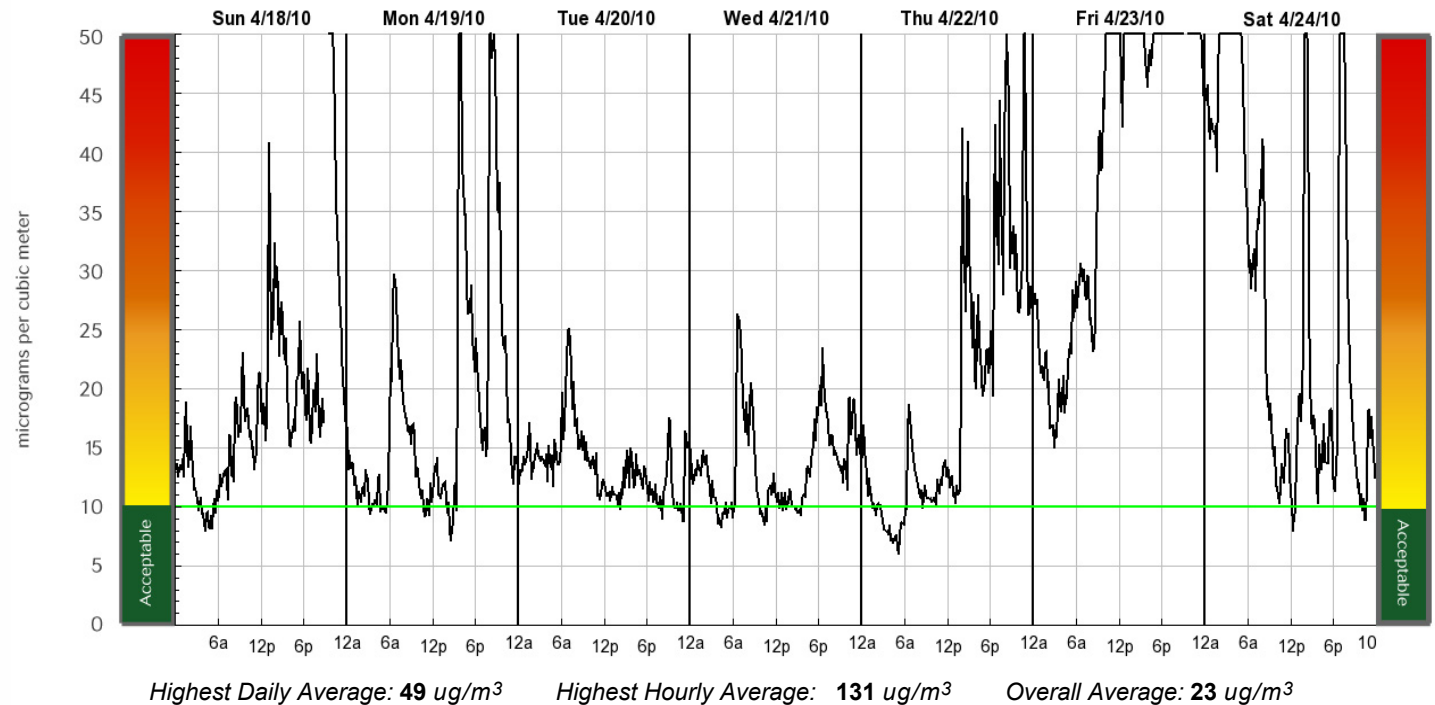
Why is action necessary?

Particle allergens are generally a cause for concern when daily average levels are above 10 ug/m³.

Particle allergens are known to trigger asthma and allergy symptoms. At levels above 35 ug/m³, they 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).

Powered by: 
www.airadvice.com
© 2007 AirAdvice, Inc.
ALL RIGHTS RESERVED



ABOUT PARTICLE ALLERGENS

Particle allergens are always present in your home's air. They 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

There are many steps you can take to control sources of particle allergens. You can:

- Clean, replace or upgrade Filter
- Clean duct work
- Use the exhaust fan during cooking
- Use a HEPA or whole-home vacuum
- Reduce the use of incense or candles


Healthy air starts here.™

Health: Chemical Pollutants

TEST RESULTS

What We Found: Chemical pollutant levels were between 501-3000 ug/m³ for a day or more.

Action Recommended
for Sensitive Individuals

Why is action recommended?

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: European Union (EU); Leadership in Energy & Environmental Design (LEED); Environmental Protection Agency at Research Triangle Park (EPA-RTP).

Powered by: 
www.airadvice.com
© 2007 AirAdvice, Inc.
ALL RIGHTS RESERVED



Highest Daily Average: **2346** ug/m³ Highest Hourly Average: **4000** ug/m³ Overall Average: **1348** ug/m³

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:

- Add ventilation
- Add VOC reduction device
- Ventilate or store chemicals outside

Health: Carbon Dioxide

TEST RESULTS

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

**Action
Necessary**

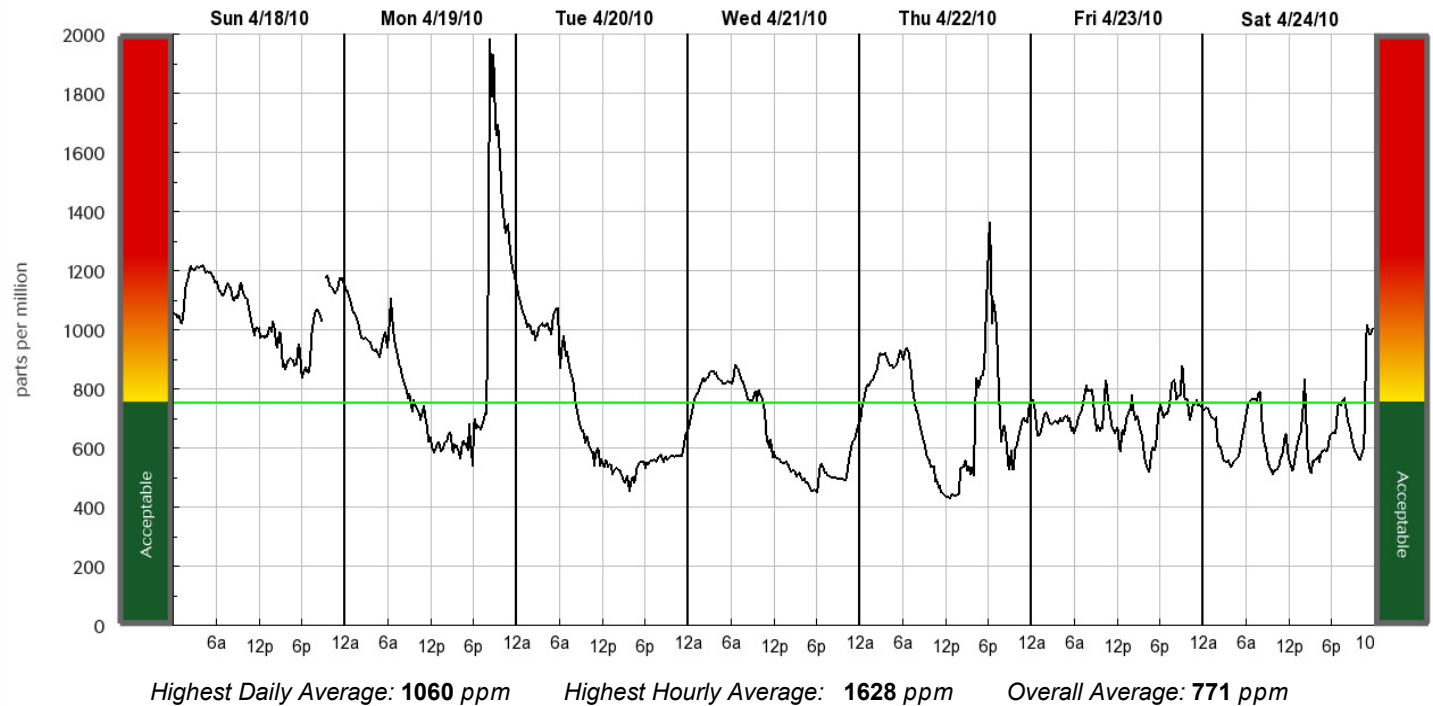
Why is action necessary?

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.

Powered by: 
www.airadvice.com
© 2007 AirAdvice, Inc.
ALL RIGHTS RESERVED



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 the carbon dioxide levels of your home. You can:

- Add ventilation


Home
advice
Healthy air starts here.™

Comfort: Temperature

TEST RESULTS

What We Found: The temperature level was below 68 for a day or more.

Action
Recommended

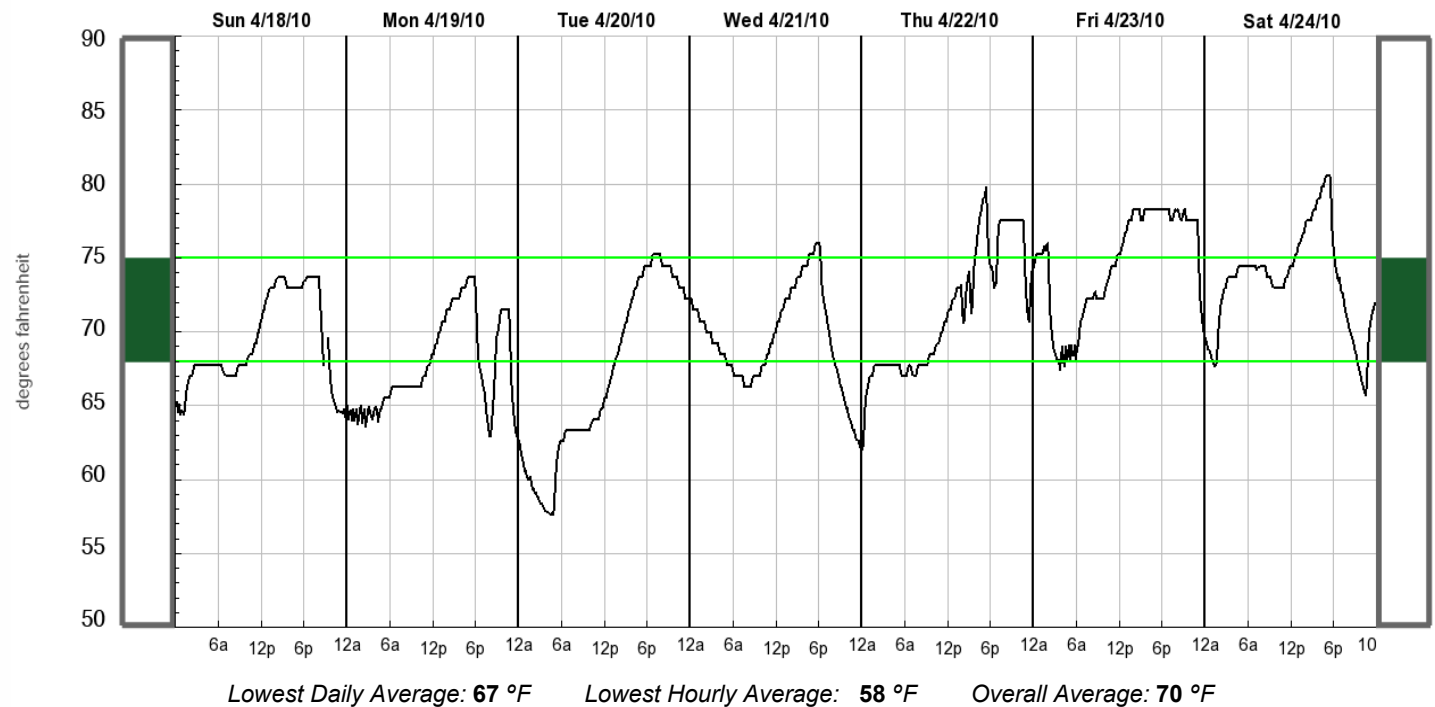
Why is action recommended?

Comfortable temperatures fall within the range of 68F and 75F. In addition temperatures are most comfortable when steady, with fluctuations less than 1-1/2 degree.

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.

Powered by: 
www.airadvice.com
© 2007 AirAdvice, Inc.
ALL RIGHTS RESERVED



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

There are many steps you can take to control the temperature levels of your home. You can:

- Upgrade to programmable thermostat


Healthy air starts here.™

Comfort: Relative Humidity

TEST RESULTS

What We Found: The overall average for relative humidity levels were above 55 for the test.

**Action
Necessary**

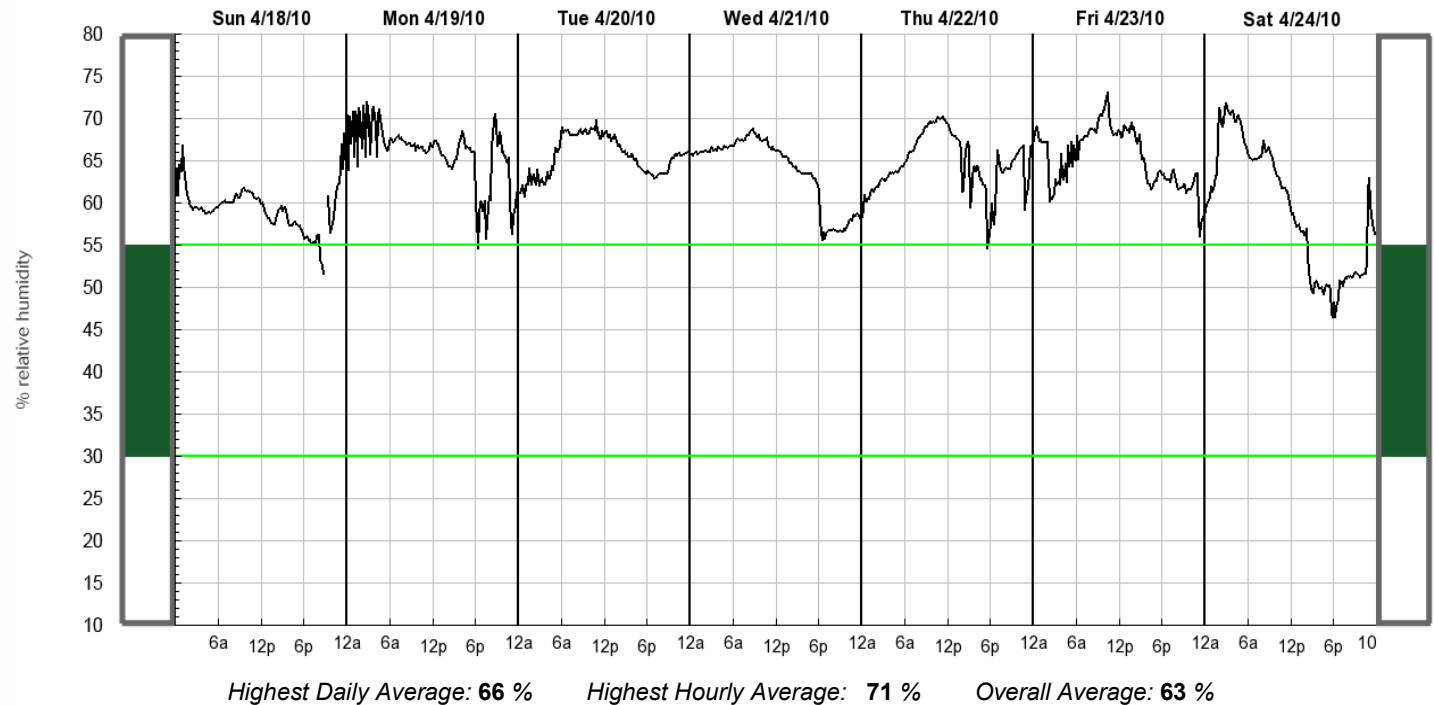
Why is action necessary?

Comfortable relative humidity levels fall within the range of 30% to 55%. Ideally according to the ALA the relative humidity should be 50%, with levels in the 40-50% range offering the most comfort possible.

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.

Powered by: 
www.airadvice.com
© 2007 AirAdvice, Inc.
ALL RIGHTS RESERVED



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

There are many steps you can take to control the humidity of your home. You can:

- Install a dehumidification system
- Operate bathroom fans
- Use stove fan during cooking


Healthy air starts here.™

Safety: Carbon Monoxide

TEST RESULTS

What We Found:

Carbon Monoxide levels were below 5 ppm.

**No Action
Necessary**

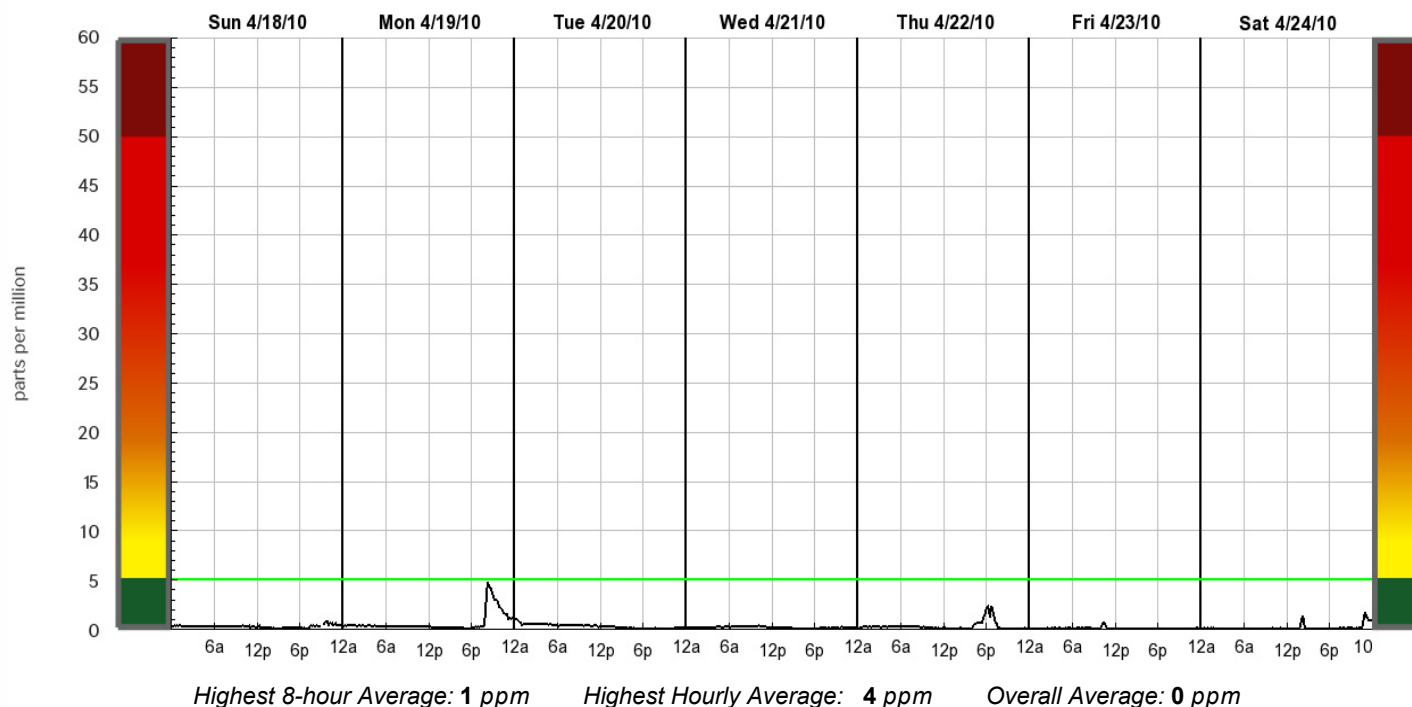
Why is no action necessary?

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; World Health Organization (WHO); Indoor Air Quality Association (IAQA).

Powered by: 
www.airadvice.com
© 2007 AirAdvice, Inc.
ALL RIGHTS RESERVED



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).

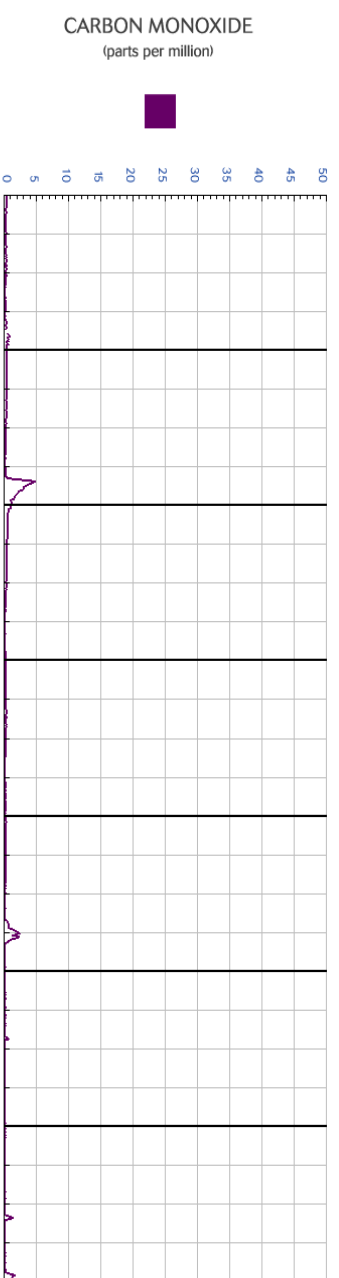
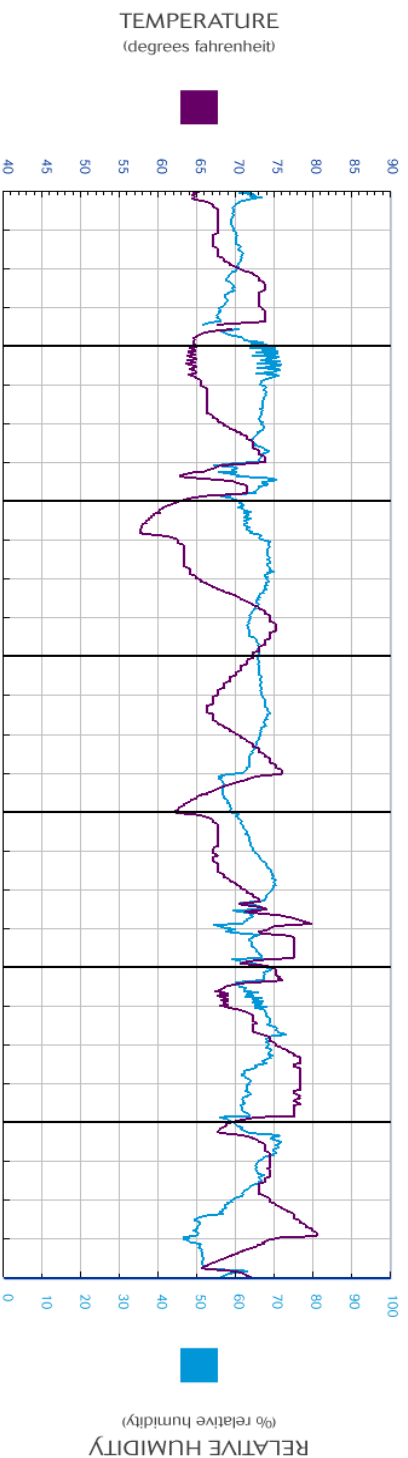
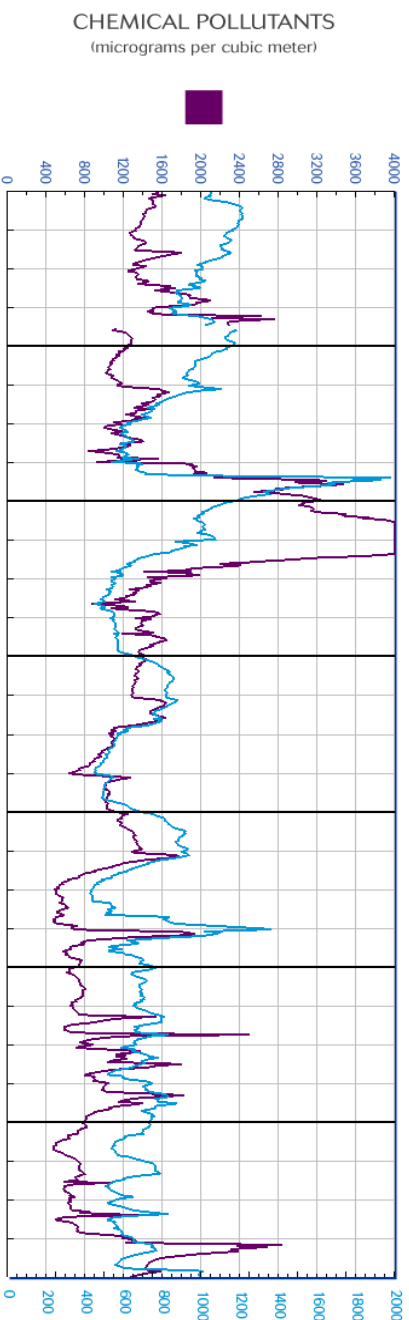
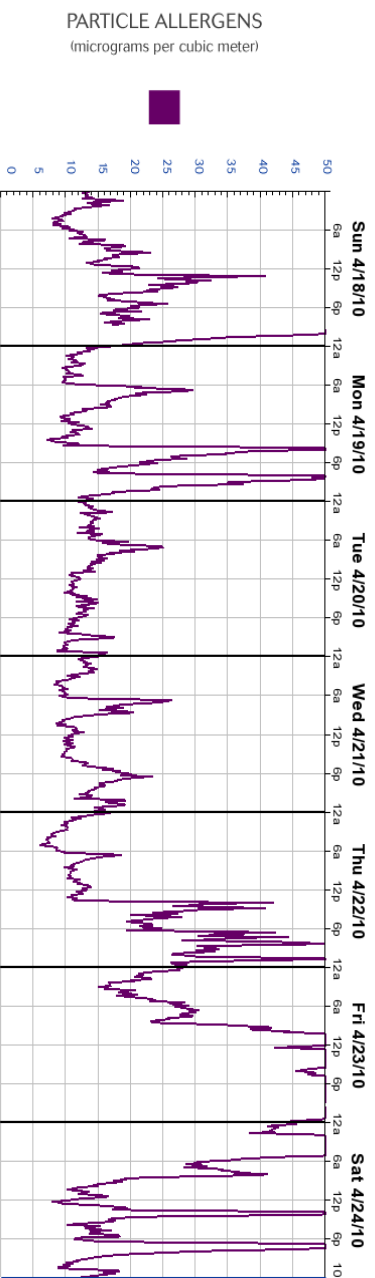
RECOMMENDED ACTION

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

- www.airadvice.com


Healthy air starts here.™

Combined Test Results



Assessment Parameters



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: Living Room
Sq . Ft. of Living Space: 1500
Year Building Built: 1989
No. Bedrooms: 3
Attached Garage: Yes
Sensitive Population: Yes
SYSTEM INFORMATION
Occupied Temperature Setting: 75
Type of Thermostat: Digital
Fresh Air Intake: No
Type of Heating System: Forced Air
Heating Fuel Type: Gas
Heating System Age: 5
Heating System Size (BTUs/KW): 75000
AFUE: 80%
Type of Cooling System: Central
Cooling System Age: 5
Cooling System Size (BTUs/KW):: 36000
SEER: 10
Duct Work Sealed (if Forced Air): Yes
Duct Work Clean (if Forced Air): No
Carbon Monoxide (CO) Detector: Yes
ENERGY COSTS
Therm of Gas: \$1.20
Gallon of #2 Fuel Oil: \$2.50
Kilowatt Hour: \$0.12
Gallon of Propane: \$1.70
Heating Hours per Year: 1200
Cooling Hours per Year: 400

FILTRATION
Type of Air Filtration 1"
PCO/VOC Reduction: No
In-room HEPA Filter(s) No
VENTILATION
ERV/HRV: No
Fan to Outside in All Bathrooms: Yes
Stove Exhaust Fan to Outdoors: Yes
PURIFICATION
In-Room Purifier(s): No
HUMIDIFICATION
Central Humidifier: No
Central Dehumidifier: No
In-room Humidifier(s): No
In-room Dehumidifier(s): No
POSSIBLE POLLUTANTS
Anyone Smoke in Home/Garage: No
Candles/Incense: Yes
Wood Burning Appliance(s): No
Gas Appliance(s): No
Air Freshener(s): No
Recent Remodeling/New Furniture: Yes
Pets in Home: Yes

Everyone Deserves to Breathe Clean Air

100% of homeowners who had an AirAdvice test said they would highly recommend it to others. This is your chance to pass the good word along. Use these coupons for your family, parents, grandparents, children, neighbors, coworkers, and anyone else who you think would benefit from improved indoor air quality in their home. **50% of homes have someone who has allergies or asthma**—and in addition, children and elderly are at greatest risk of respiratory diseases.

Here are two coupons to pass along:

For Those You Love:

- ▶ Grandparents
- ▶ Parents
- ▶ Mothers with children
- ▶ Grandchildren

AirAdvice

Indoor Air Quality Test

\$49.00 (regularly \$99.00)

Friends and Family Discount

SAVE **\$50⁰⁰**

Call today **503-416-7859** to schedule a test for your home.



For Those You Care About:

- ▶ Friends
- ▶ Coworkers
- ▶ Neighbors
- ▶ Elderly citizens

AirAdvice

Indoor Air Quality Test

\$49.00 (regularly \$99.00)

Friends and Family Discount

SAVE **\$50⁰⁰**

Call today **503-416-7859** to schedule a test for your home.

