

# ON THE AIR

Spring  
2011

A Newsletter about  
Clean Air. Provided  
by Spokane Regional  
Clean Air Agency.

## Measuring Concentrations of Pollutants in Our Air

**T**wenty-four hours a day, 365 days a year, air quality monitoring equipment is humming along, taking samples of the air at various locations throughout Spokane County. While not all air samplers run 24/7, there is always one running at any given time.

There are 10 air sampling locations around Spokane County. Each location samples for specific “criteria pollutants” considered harmful to public health and the environment. For each “criteria pollutant” there is a National Ambient Air Quality Standard set by the U.S. Environmental Protection Agency. Though there are six criteria pollutants, Spokane Clean Air currently measures and reports three of these, along with other pollutants of concern. Because of very low levels, the agency does not monitor for lead or sulfur dioxide. Nitrogen dioxide levels are checked but not reported because they are quite low.



**Air Monitoring Technician, Mark Rowe, describes sampling equipment technology to a local reporter.**

**PARTICULATES** - Eight sites monitor Particulate Matter (PM). Particles that measure 10 microns or smaller are  $PM_{10}$ , and within that range, particles measuring 2.5 microns or smaller are  $PM_{2.5}$ . These fine particles are released mainly during combustion—motor vehicles, wood burning

and industrial processes.  $PM_{10}$  includes larger particles—mostly dust from travel on unpaved and paved roadways, as well as construction and agricultural activities.

Particulate matter is measured using both manual, filter-based methods and automated, real-time methods. These methods allow technicians to measure different kinds of particulate matter.

The standards for  $PM_{2.5}$  and  $PM_{10}$  are 35 and 150 micrograms per cubic meter of air, respectively. Both standards are based on a 24 hour, midnight-to-midnight averaging time.

*continued inside*

## 2010 Air Quality

Ron Edgar, Chief of Technical Services for Spokane Clean Air, answers questions about last year’s air quality.

*Overall, how did air quality in the Spokane area measure-up last year?*

We continued to have mostly good air quality, recording 323 days that measured within the “good” range on the Air Quality Index (AQI). However, there were three days when air quality measured in the “unhealthy for sensitive groups” category on the AQI.

*What caused the unhealthy days?*

Two days in July and August were during severe dust storms. The third bad air day was in late December when wood smoke came very concentrated during an air stagnation.

*During winter, temporarily restricting the use of wood burning devices is a tool. But what can be done with natural events, like dust storms and wildfires?*

Some of the impacts can and have been reduced by using prescribed burns to reduce the chance of massive wildfires. Farmers are implementing Best Management Practices to reduce soil erosion from winds.

*For information about local air quality programs and challenges ahead, visit [www.spokaneCleanair.org/about\\_our\\_air.asp](http://www.spokaneCleanair.org/about_our_air.asp)*

# Proper Disposal Is Key to Reducing Mercury

**M**ercury occurs naturally in the environment and exists in several forms. These forms can be organized under three headings: metallic mercury (also known as elemental mercury), inorganic mercury, and organic mercury. Metallic mercury is a shiny, silver-white metal that is liquid at room temperature. At room temperature, metallic mercury evaporates very slowly and forms mercury vapors.

## *Where is mercury found?*

Metallic mercury has been used in a variety of household products and industrial items, including thermometers, fluorescent light bulbs, barometers, and some blood pressure devices. Mercury-containing products can lead to contamination when thrown away in the trash, where they might be crushed, incinerated, or otherwise mismanaged in a way that causes airborne releases, after which mercury falls back to earth in rainwater.

Washington state has taken a leadership role through the Mercury Education and Reduction Act passed in 2003, which called for the elimination, phase-out, collection and recycling of certain mercury-containing products. From 2003-2007, the Department of Ecology reported that 12,000 pounds of mercury was prevented from entering the environment.

In Washington, mercury is still used in very small amounts in a few household products, such as fluorescent light bulbs and lamps and button cell batteries. These items should not be thrown away with our trash.

**Compact Fluorescent Light Bulbs and Lamps (CFLs)** and incandescent light bulbs both contain small amounts of mercury. Incandescent light bulbs

use all of their mercury until the end of their life. CFLs do not. **One broken fluorescent bulb can contaminate 7,000 gallons of water with mercury.** CFLs must be disposed of properly to avoid the possibility of spillage. While incandescent light bulbs can be placed in the trash, CFLs cannot.

## *How do I dispose of these materials?*

The Spokane Regional Solid Waste System (SRSWS) offers locations where residents can dispose of CFLs and tubes for free, including System Transfer Stations or the Waste to Energy Facility. For locations and hours, call the Recycling Hot line at 625-6800.



Avista supports free CFL recycling sites at three recycling centers. Visit [www.everylittlebit.com](http://www.everylittlebit.com) or [www.avistautilities.com](http://www.avistautilities.com) to view Avista CFL Recycling locations.

Home Depot allows residents to bring CFLs to their stores for turn in at no cost. Other home and garden stores may have similar programs, but customers should call first to check. Du-mor Recycling and Earthworks Recycling also accept CFLs for free. Earthworks Recycling will also take fluorescent tubes, for a small fee.

Button cell household batteries also contain small amounts of mercury.

*By Jessica Abbott, Communications Intern*

SRSWS started a Household Battery Collection Program many years ago to aid in the proper disposal of batteries. Collection sites take all kinds of household batteries. For those who participate in curbside recycling programs, batteries may also be placed in a plastic sealed bag and put on top of their other recycling bin materials so the driver can clearly see them. Curbside customers can also place lead acid batteries alongside their bins for pick up.

## *How is mercury measured and controlled at the Waste to Energy Plant?*

For many pollutants, including mercury, the testing is done during an annual source test, by a third party testing firm. During this test, samples are taken from the two different boilers in the plant. These samples are then sent off to labs, and results are sent back usually within a month. Spokane Clean Air observes these tests each year to make sure that test protocol is being followed, as set by the U.S. EPA.

The most important way to reduce mercury emissions from the plant is to inform residents about products that should not be thrown away due to their mercury content, and to promote ways to properly dispose of them.

That said, it's difficult to catch all consumer products that might contain varying levels of mercury. Therefore, the WTE plant operates continuous air pollution control equipment, including a carbon injection system, which reduces emissions from mercury-containing items that make it in the trash.

Reducing mercury starts with each of us. Do your part by properly disposing of fluorescent bulbs, tubes and other mercury-containing products.

## Measuring Pollutants . . . *continued from cover*

**CARBON MONOXIDE** - There is only one site remaining that measures carbon monoxide (CO) because levels in the Spokane-area have dropped to a point where CO is no longer a pollutant of major concern.

**OZONE** - Three sites measure ozone (O<sub>3</sub>). Ground-level ozone is a key ingredient in smog. It forms photo-chemically and therefore is most prevalent on the hottest days of summer.

Unlike ozone in the upper atmosphere, ozone at ground-level is a harmful pollutant linked to a host of respiratory problems, including asthma and bronchitis.

Contributors to ground-level ozone include industrial emissions as well as vapors released when using consumer products including gasoline, paints and solvents.

The current EPA standard for ozone is set at 0.075 parts per million (ppm),

with the average Spokane County reading in 2009 being 0.062 ppm. A proposed standard in the range of 0.060 and 0.070 ppm is in the process of being finalized.

To better understand contributors to ozone pollution, Spokane Clean Air recently added special purpose sampling of certain pollutants considered to be precursors to ozone: nitrogen oxides (NO<sub>x</sub>) and hydrocarbons.

“We want to understand how pollutants, including NO<sub>x</sub> and hydrocarbons, affect ozone formation,” explained Mark Rowe, Air Quality Technician for Spokane Clean Air.

Spokane Clean Air uses the data collected from each air quality monitoring site, along with meteorological data, to report current and forecasted air quality. This data is updated hourly at [www.spokaneleanair.org](http://www.spokaneleanair.org).



**Air quality sampling stations are located on rooftops, as pictured here at the Spokane Regional Public Health Building**

Spokane Clean Air then uses these results and trends to help determine the effectiveness of current strategies and whether new strategies are needed.

The air quality monitoring program is one way Spokane Clean Air is working to ensure clean air for current and future generations.

Visit [www.spokaneleanair.org](http://www.spokaneleanair.org) to learn more about monitoring and to access data from monitoring sites.

## Springtime “To Do’s” at Home



With the cool spring we’ve been experiencing, perhaps you’ve put off spring cleaning. If so, we have a few tips we hope you’ll consider.

### *Clean it!*

- Do those annual cleaning projects that can improve efficiency, such as vacuuming refrigerator coils, changing your furnace filter and so on.

- Clean using “green cleaning” or “non-toxic” labeled products. Make green cleaning solutions with recipes at <http://livinggreensnap.org/Tips.html>

- Dust with damp cloth or vacuum.

- Fight the urge to go disposable! Use reusable cleaning tools, such as the traditional mop, fabric towels, and lint free wash rags.

### *Fix or upgrade it!*

- Check windows and doors for leaks and caulk or weather strip to minimize energy loss and save some money!

- Check for proper insulation. Re-insulating your home can get expensive, but in the end you should save on heating and cooling expenses.

- Call your local energy provider for an in-home energy audit—you might be eligible for a reduced rate on these!

- Hot water heaters can be a big energy waster. Remove scale build-up by draining water from the hot water heater.

- If replacing old equipment is on the horizon, look for the products with EnergyStar logo.

### *Reduce, Reuse, Recycle!*

- Used batteries and burned-out CFL light bulbs need to be properly disposed. Call the Recycling Hot Line for options in your area, 625-6800.

- Take items you no longer want, such as clothing, household goods or furniture, to your local second-hand stores. As the old saying goes, *“one man’s trash is another man’s treasure.”*

## ◆ AIR QUALITY CALENDAR ◆

May May is National Bike to Work month. Visit [biketoworkspokane.org](http://biketoworkspokane.org)

May 6 Board of Directors meeting, 9:30 a.m, Spokane Clean Air's office, 3104 E. Augusta Avenue. Meetings are held the first Thursday of each month, unless otherwise publicized. Meeting agendas are available online at [www.spokanecleanair.org](http://www.spokanecleanair.org)

*On the Air* is a publication of the Spokane Regional Clean Air Agency. Its purpose is to inform local residents on all aspects of outdoor air pollution. Please contact Lisa Woodard, *Editor*, with comments or story ideas:  
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This newsletter is also available electronically at [www.spokanecleanair.org](http://www.spokanecleanair.org)

## Preparing Wood Now Means More Heat Later

Early spring is the time to prepare firewood for next season. To fully dry, firewood should be split, stacked and covered for 9-12 months prior to burning. So, why should you care about burning dry wood? For many reasons, especially to save money. Burning "green" or "wet" wood is very inefficient. Most of the heat (BTUs) you hope to get from burning wood is wasted on evaporating the moisture out of the wood first. Burning dry wood provides greater heat and less smoke. Minimizing smoke is healthier for you, your family and neighbors. So, how do you know if your wood is properly dried or "seasoned"? Here are a few ideas to help:



**Wood Moisture Meters** — These are handy gadgets available at some local stove shops. The meters measure the percent of moisture. You don't want to burn firewood that has a moisture content over 20%. Spokane Clean Air will check your wood with our moisture meters. Call 477-4727, ext. 115 to make an appointment to have a sample piece of your firewood measured.

**Look & Listen** — Take a close look at the end of a split piece of wood. Are there dark circles? Take two pieces of split wood and smack them together...What did you hear? Dry wood will make a nice, loud CRACK! sound, as opposed to a low "thud" sound.

**Wood Shed Designs** — There is a variety of wood shed designs out there. We found a particularly easy-to-assemble design available at [www.burndryfirewood.org](http://www.burndryfirewood.org)