



# ROCK COUNTY ENVIRONMENTAL HEALTH REPORT CARD 2010

*Preventing Illness and Enhancing Health Through Quality Service*



# About This Report Card

## Background

This report card was originally developed by a committee of concerned citizens and public officials interested in the status of key environmental health issues in Rock County. The Rock County Health Dept publishes the Report Card each year.

## Objectives

The objectives of this report card are to track the short-term (1-year), near term (5- 10 year), and long-term trends of key environmental health issues. The trends and status of this key data can be useful in determining the need for action concerning specific environmental health issues that may be impacting our quality of life in Rock County.

## Issue Selection and Criteria

Issues tracked by this report card were selected based on the following criteria:

- Significance of the issue
- Quality of data
- Availability of data
- Long-term viability of data

Many environmental health issues are not represented in this report due to insufficient data availability.

## Health Standards


Environmental health issues are correlated and compared to existing health standards.

## Issues Identified by this report card:

- *Air Quality*
  - Facility Air Emissions
  - Ozone Levels
  - Radon levels (household)
- *Lead Poisoning*
  - Childhood Blood Lead Levels
- *Drinking Water Quality*
  - Bacteria
  - Nitrates
- *Land Impacts*
  - Land Parcel Changes
  - Population Trend
  - DNR contamination cases

# Table of Contents

	<u>Page</u>
Air Quality	3
• Total Facility Emissions	4
• Household Radon	5
• Ozone	6
Land Impacts	7
• Contamination Sites	8
• Land Use Trends	9
Drinking Water Quality	10
• Bacteria in Drinking Water	11
• Nitrates in Drinking Water	12
Lead Poisoning	13
• Childhood Blood Lead Levels	14
For More Information	15-16
Resources	17

A photograph of two industrial smokestacks emitting thick white plumes of smoke against a clear blue sky. The smokestacks are dark and vertical, with the smoke rising from their tops and spreading across the upper half of the frame. The overall scene is bright and clear, suggesting a sunny day.

# Air Quality

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# Total Facility Emissions



## Description of the Environmental Health Indicator

'Total facility emissions' are an estimated amount of point source and fugitive air emissions from facilities in Rock County. Facilities are required to submit emission data annually to the Environmental Protection Agency (EPA). The '1998 core

chemicals list' is used to compile the total pounds of 'on-site' total emissions. Air pollution in general can have short and long-term effects including respiratory illnesses, cancer and organ damage.

## Health Standards

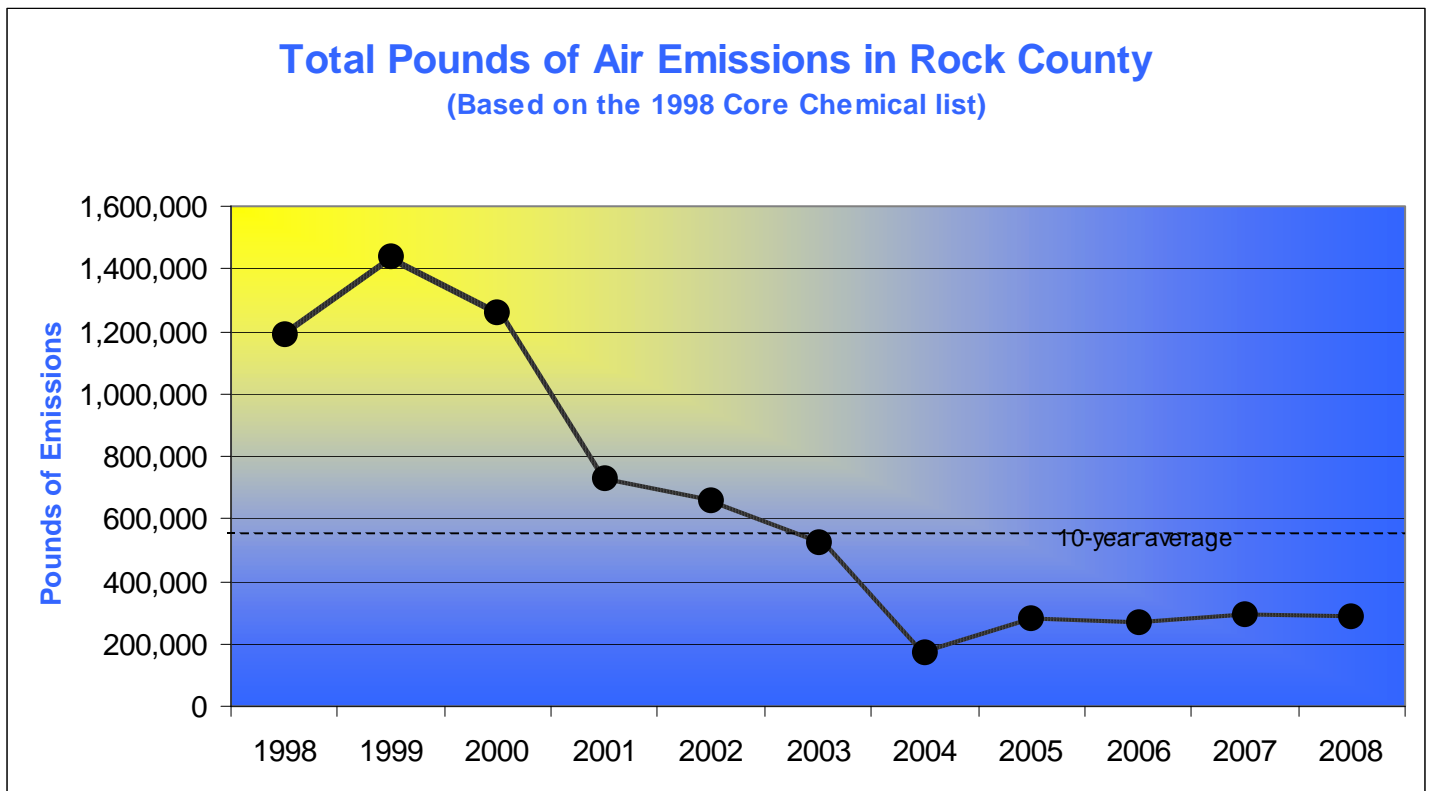
There is no adopted health standard for pounds of chemicals released annually.

## Local Trend

Total Facility Air Emissions in 2008 was slightly lower than 2007. The 2008 air emissions in Rock County were 51% lower than the 10-year average. The decrease in emissions is likely due to stricter emission regulations combined with the loss of some major industrial operations in Rock County.

## What is Being Done?

The EPA and Wisconsin DNR regulate total pounds of air emissions. Rock County Health Department evaluates the air emissions data in an effort to determine potential links to residents' overall quality of life.



# Household Radon



## Description of the Environmental Health Indicator

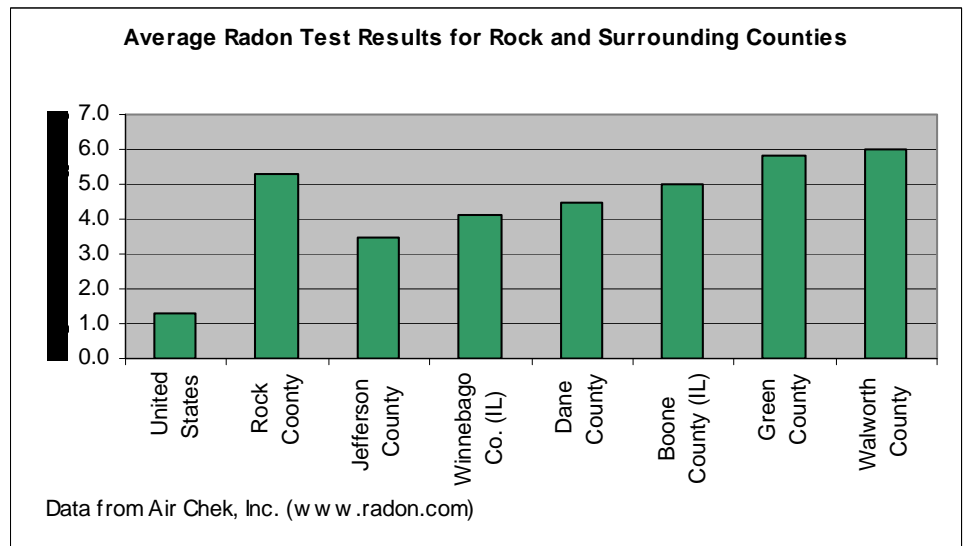
Radon is a naturally occurring gas that can be present in homes. Based on lifetime exposure, radon is the second leading cause of lung cancer. Old and new homes can easily be modified to prevent radon from entering the home. It is important that homeowners conduct radon tests and eliminate long-term risks if necessary.

## Health Standards

The EPA has established a radon health standard of 4 pCi/L (Pico Curies/Liter). Radon levels above 4 pCi/L could increase long-term health risks.

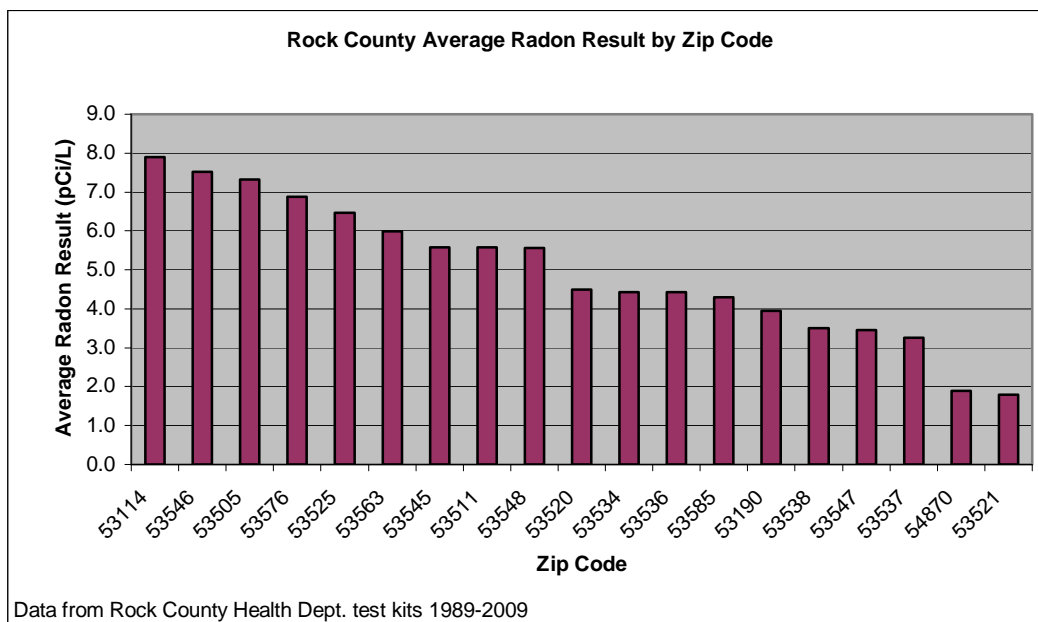
## Local Trend

66% of homes sampled in Rock County contained high levels of Radon in 2009. This compares to the 10-year average of 61% of homes testing high in Rock County. 535 radon tests were performed in 2009.



## What is Being Done?

Household radon levels are monitored by the Rock County Health Department. Radon kits and more radon information may be obtained through the Rock County Health Department at either the Janesville or the Beloit location. Radon kits are sold for cost through the Rock County Health Department.



# Ozone

## Description of the Environmental Health Indicator

Exposure to elevated ozone levels can irritate lung airways, aggravate asthma, reduce lung capacity, and increase susceptibility to respiratory illnesses. Ozone pollution comes from a variety of sources such as vehicles, industry, and consumer products. Ozone can be transported into an area from sources that are hundreds of miles upwind.

## Health Standards

The American Lung Association in Conjunction with the EPA has established an Air Quality Index for the number of days per year with unhealthy ozone levels. The best score is a score of zero, while any score over 3.3 days per year is considered unhealthy for ozone.

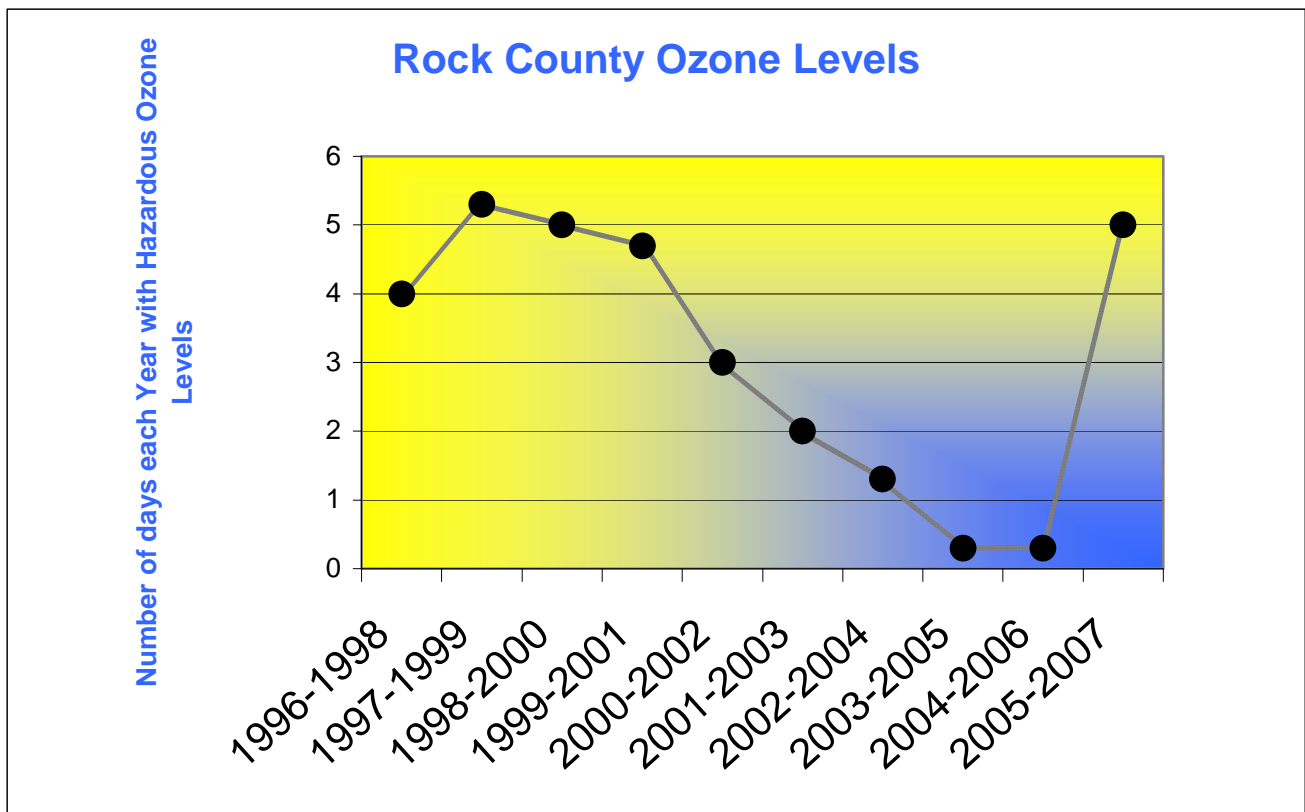


## Local Trend

In Rock County, the weighted average for the 2005-07 period for ‘unhealthy’ ozone days increased to an average of 5 days per year. This value could vary significantly depending on emissions, prevailing winds and especially prolonged hot weather. This increase in days with unhealthy ozone levels is the highest since the 1997-1999 period.

## What is Being Done?

The American Lung Association and the EPA monitor ozone levels. There is one location in Rock County which is monitored and that is in Beloit. Rock County Health Department uses ozone level information to issue press releases informing the public of air quality alerts and the potential health impacts.



An aerial photograph of a town, likely in the Pacific Northwest, showing a river flowing through the center. A large bridge spans the river, and the surrounding area is densely packed with residential and commercial buildings. The image is slightly faded to allow the text to stand out.

# Land Impacts



# Contamination Sites

## Description of the Environmental Health Indicator

Contamination sites are locations in the county where a chemical spill has been reported or documented. These spills could range from small spills that were immediately cleaned up and pose little or no environmental impact to large ‘superfund’ type releases that will impact the environment for many years into the future.

## Health Standards

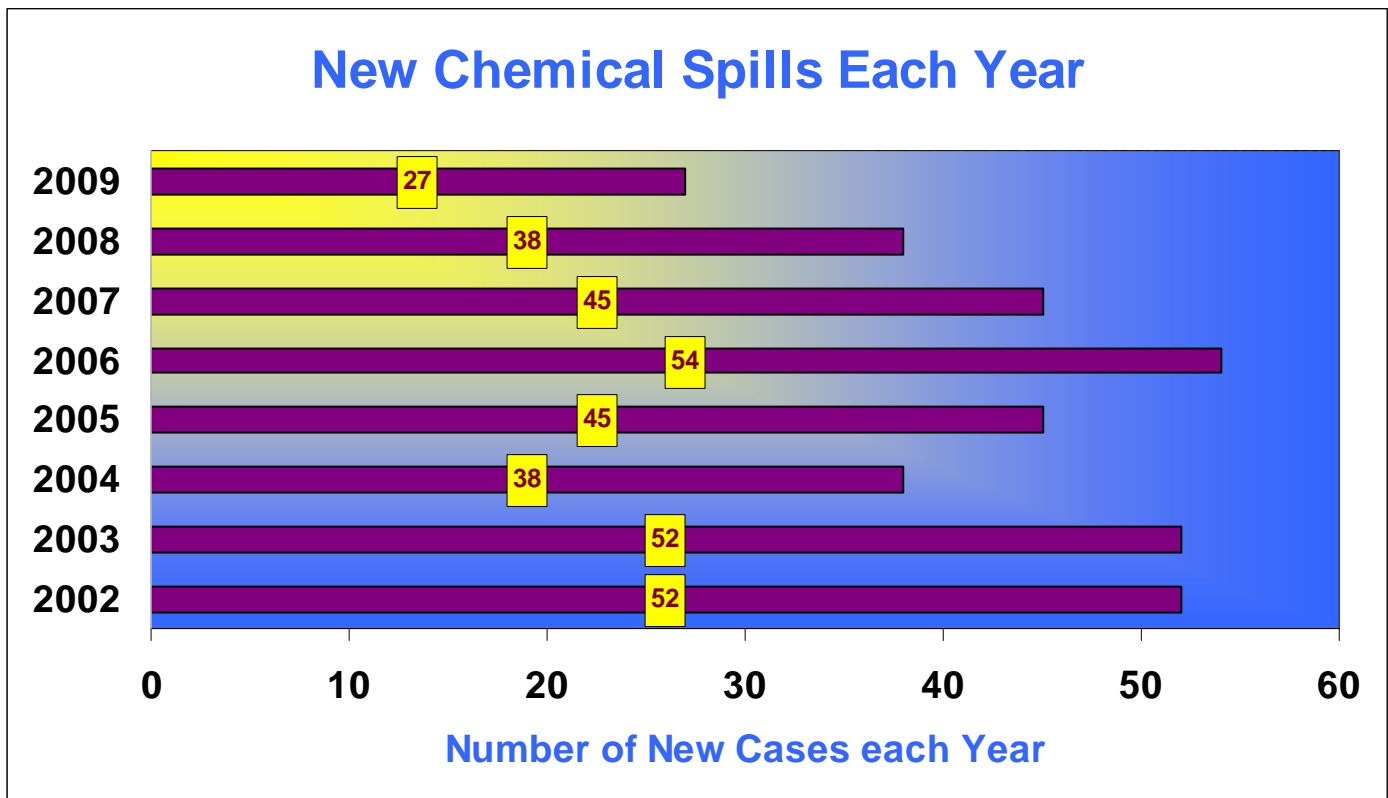
There is no standard for the number of contamination sites as monitored by this report card. Each individual contamination site would have specific contaminants with soil and/or groundwater health standards. The information below includes all chemical spills reported each year, both large and small.

## Local Trend

The number of new chemical spills decreased by nine in 2009 when compared to 2008. This is the third straight year of lower reported spills in the county and the lowest number of spills reported in the last eight years.

## What is being done?

The WDNR regulates chemical spills, and Rock County Health Department uses this information to inform residents of the potential risks to well water.



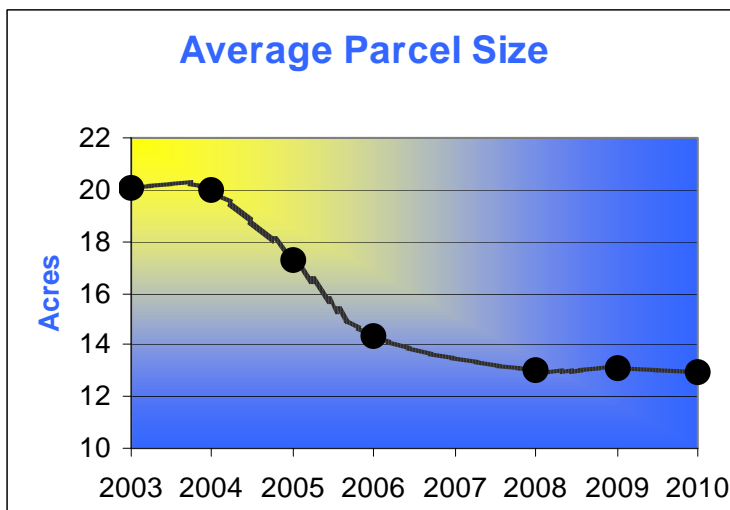
# Land Use Trends



## Description of the Environmental Health Indicator

Land Use has been identified as an important indicator of possible changes in environmental health issues. Land use changes can have negative or positive influences on such things as groundwater recharge, surface water runoff, air quality, and the overall quality of life. This report shows indications of the rate of land use changes in Rock County. The more intensively we use our land, the more demand we place on our natural resources.

This report uses 'rural' Rock County land parcel divisions (non-municipal) and parcel size as an indication of changing land use in the county. Additional data over time will be needed to better evaluate this indicator.



## Health Standards

There are no specific health standards for land use trends. There are State, County and Local regulations limiting land use changes.

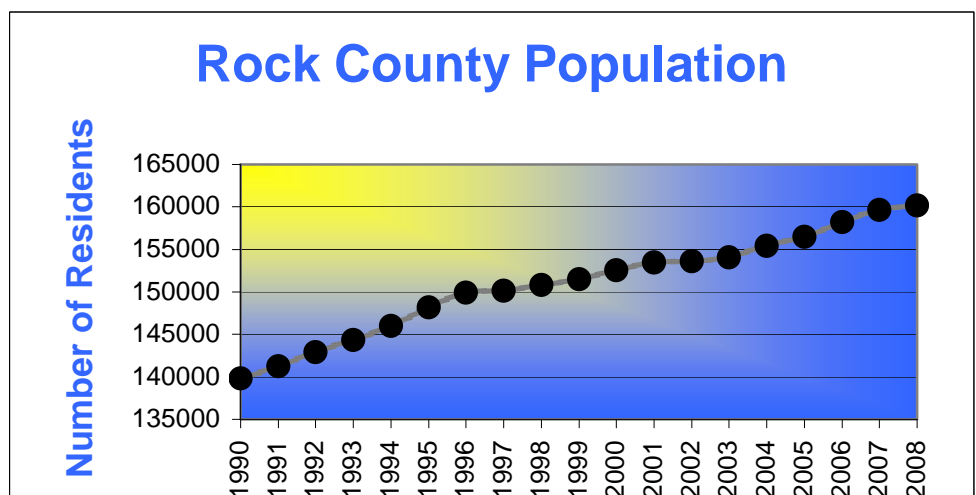
## Local Trend


From August 2006 to February 2010 the number of property parcels stayed about the same. This is reflective of the very low number of new housing starts in the county. The average size of parcels in the past year decreased from 13.1 acres to 12.9 acres. In 2009 the estimated annual county population

increased by 590 people. The county is gradually transitioning from a farming community to a residential area.

## What is being done?

Rock County monitors land use trends. Rock County and surrounding towns are developing comprehensive land-use plans to evaluate potential land use impacts.



A photograph of a flooded road. In the background, there is a dense line of green trees. In the middle ground, a road is partially submerged in water. A yield sign (inverted triangle with a red border and the word 'YIELD' in the center) is mounted on a pole. Above it are two street signs: a green one for 'RIVERSIDE ST' and a smaller one for 'TWIN C'. The water in the foreground is calm, reflecting the sky and the signs. The overall scene suggests a natural disaster or flooding event.

# Drinking Water Quality

# Bacteria in Drinking Water



## Description of the Environmental Health Indicator

Bacteria in drinking water is associated with intestinal illnesses, diarrhea, and cramping. Common causes of unsafe wells are insects entering a well, recent plumbing work, and flooding.

## Health Standards

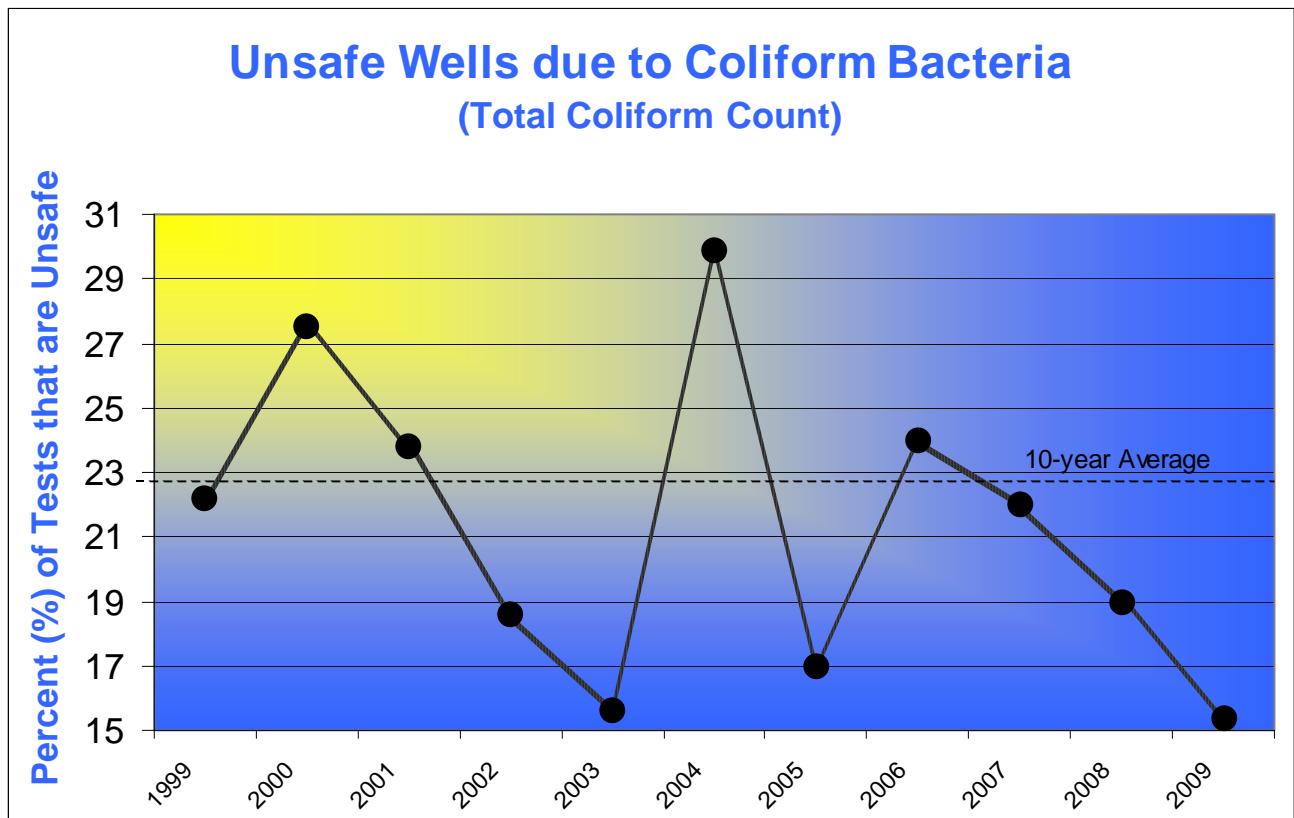
The standard for coliform bacteria in drinking water is zero. Any detection of coliform bacteria is considered unsafe due to the potential for harmful bacteria in the water.

## Local Trend

The frequency of “unsafe” bacteria tests performed in 2009 was 15.4%. This was the third year that the rate decreased and was significantly lower than the 10-year average incidence rate in Rock County.

## What is being done

Rock County Health Department monitors bacteria in wells. It’s recommended that private well users test wells annually for bacteria due to potential changes in well or groundwater conditions. A majority of private wells are not tested annually and more homeowners need to be aware of the benefits of annual well testing and proper well maintenance. Coliform test kits can be obtained at the Rock County Health Department.





# Nitrates in Drinking Water

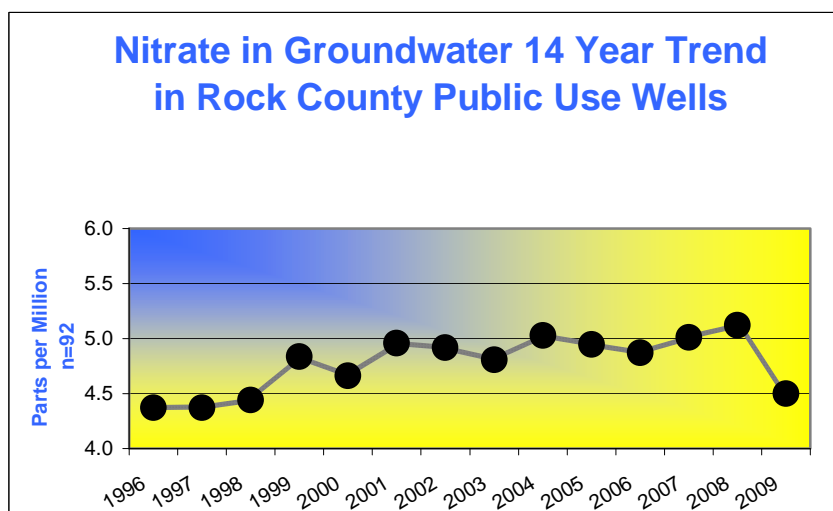


## Description of the Environmental Health Indicator

Nitrate contaminated water should not be consumed by infants under 6 months of age or women of childbearing age. Nitrates can reduce the blood's ability to carry oxygen and potentially could contribute to a condition called methemoglobinemia. Additional health effects of long-term exposure to elevated nitrate levels may potentially exist. Nitrates are naturally present in groundwater at low levels, but become elevated due to fertilizers, livestock, and septic systems.

## Health Standards

The health standard for nitrate is 10 parts per million (ppm) in drinking water according to the EPA.

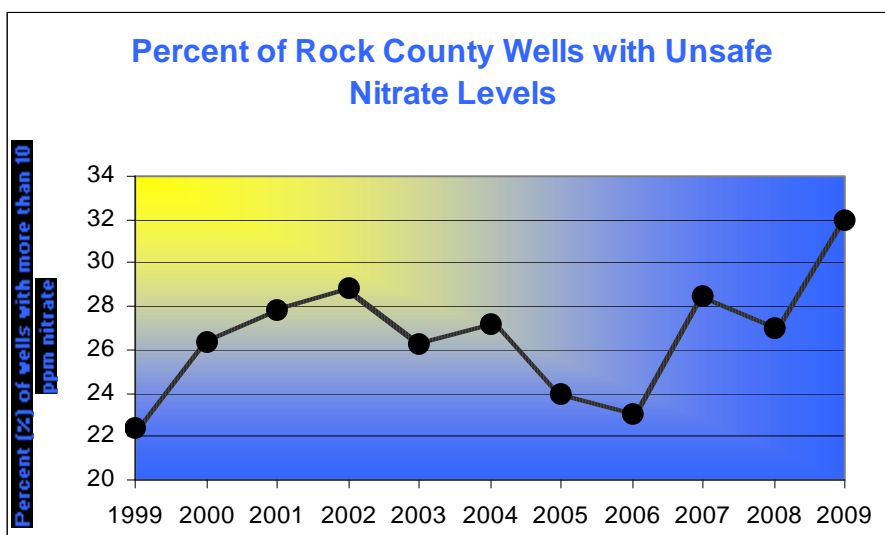


## Local Trend

The nitrate levels of 90 selected public use indicator wells in Rock County decreased in 2009 to the lowest level since 1998. Although, only a one-year trend, this may be an indication of excessively high groundwater in the County or possibly a correlation to reductions in agricultural fertilizer use.

## What is being done?

Drinking water nitrates are monitored by the Rock County Health Department. It is recommended that nitrates in private wells be tested annually. Nitrate test kits may be obtained through Rock County Health Department. Residents can receive guidance from the Rock County Health Department on any well water quality issues.





# Lead Poisoning

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# Childhood Lead Poisoning

## Description of the Environmental Health Indicator

Ingestion of lead from potential sources such as old painted surfaces can cause irreversible damage to the developing brains of children. Older homes (pre 1978) have a potentially high concentration of lead in paint which when deteriorated can result in poisoning of children through direct ingestion or by way of soiled hand-to-mouth contact. Lead poisoning can cause behavioral problems, learning disabilities, and seizures in children. Over 40% of housing units in Rock County were built prior to 1978.

## Health Standards

According to the CDC the health standard for childhood blood lead level is 10 micrograms per deciliter ( $\mu\text{g}/\text{dl}$ ).



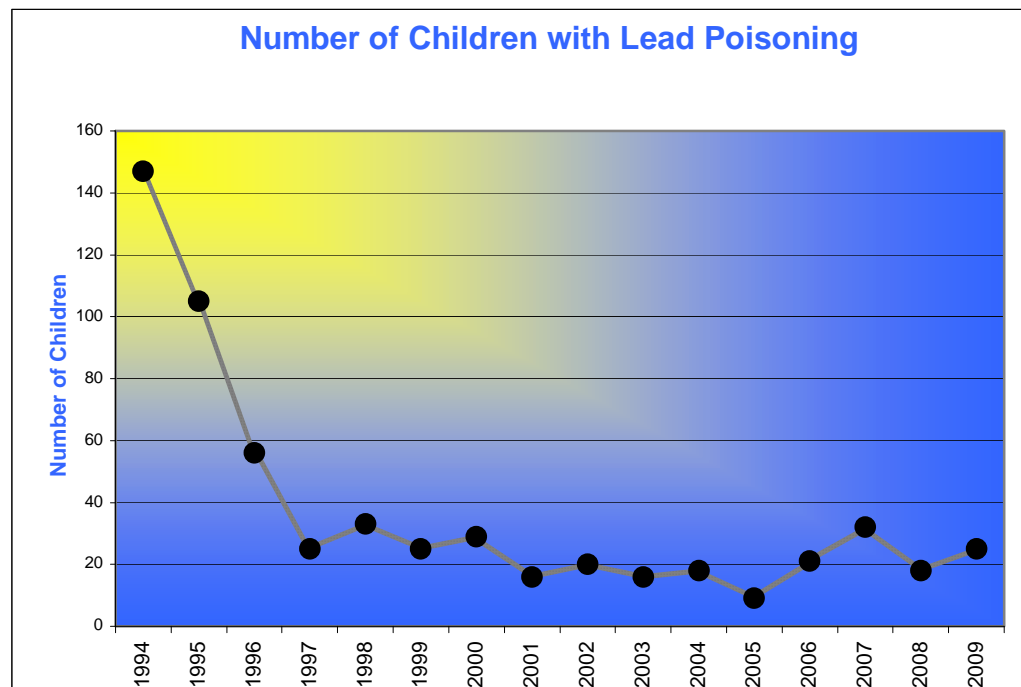
## Local Trend

The number of cases confirmed, those with a venous lead amount over  $10 \mu\text{g}/\text{dl}$ , increased slightly in 2009 in Rock County. The number of high blood lead cases was 25 in 2009, which was similar to the average of 24 cases per year since including the City of Beloit in the statistics in 2006. The maximum number of high blood lead cases was 173 in 1993. The overall trend is a significant decrease compared to the rate during the early 1990's.

## What is being done?

Rock County has implemented a birth certificate lead poisoning prevention program, which is aimed at educating and preventing lead poisoning in at-risk families. The Rock County Health Department is working with local communities, homeowners, and parents in making improvements to high-risk housing.

A \$1.1 million Housing and Urban Development (HUD) grant is available through 2011 in Rock County to help home owners offset the high costs of lead abatement.



**For more information:**



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## **Rock County Health Department**

3328 U.S. Hwy 51 N  
P.O. Box 1143  
Janesville, WI 53547-1143  
(608) 757-5441  
(608) 758-8423 (fax)

### Rock County Environmental Health Issues

In addition to concerns identified by this report card, the citizens committee also identified four priority environmental health issues in Rock County. The priority issues identified are:

- Air Quality (air monitoring and potential non-attainment area designation)
- Household Hazardous Wastes (establishment of a permanent clean sweep program)
- Groundwater Protection and Public Awareness
- Increasing Public Awareness of Environmental Health Issues (Establishment of a local environmental health website)

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## More questions regarding the information discussed above? Please visit these websites:

### Total Facility Emissions:

[www.lbl.gov/Education/ELSI/pollution-main.html](http://www.lbl.gov/Education/ELSI/pollution-main.html)

<http://www.ci.madison.wi.us/health/envhealth/airquality.html>

### Radon:

<http://www.epa.gov/radon/healthrisks.html>

[http://dhfs.wisconsin.gov/dph\\_beh/radonprot/](http://dhfs.wisconsin.gov/dph_beh/radonprot/)

### Ozone:

[www.epa.gov/air/ozonepollution/health.html](http://www.epa.gov/air/ozonepollution/health.html)

<http://dnr.wi.gov/air/aq/ozone/ozoneFAQ.htm>

### To check today's air quality visit:

<http://dnr.wi.gov/air/> and click on 'Today's Air Quality'

### Contamination Sites:

<http://www.atsdr.cdc.gov/toxhazsf.html>

### Bacteria in Drinking Water:

[www.epa.gov/safewater/contaminants/ecoli.html](http://www.epa.gov/safewater/contaminants/ecoli.html)

<http://dnr.wi.gov/org/water/dwg/bacti.htm>

### Nitrates in Drinking Water:

[www.epa.gov/safewater/dwh/c-ioc/nitrates.html](http://www.epa.gov/safewater/dwh/c-ioc/nitrates.html)

<http://dnr.wi.gov/org/water/dwg/Forms/nitrate.pdf>

### For Maximum Contaminant Levels in Drinking Water Visit:

<http://dnr.wi.gov/org/water/dwg/health/hal.htm>

### For questions about common water contaminants Visit:

<http://dnr.wi.gov/org/water/dwg/pubbro.htm>

### Lead Poisoning:

[www.epa.gov/lead/pubs/leadinfo.htm](http://www.epa.gov/lead/pubs/leadinfo.htm)

<http://dnr.wi.gov/air/aq/pollutant/lead.htm>

## Where did the Data Come From?

### Total Facility Emissions:

EPA Toxic Release Inventory (TRI) Report at [www.epa.gov/triexplorer/](http://www.epa.gov/triexplorer/)  
Last available data is for 2008.

### Household Radon:

Rock County Health Department  
Last available data is for 2009

### Ozone

EPA ([www.epa.gov](http://www.epa.gov)) and American Lung Association ([www.lungusa.org/wisconsin](http://www.lungusa.org/wisconsin))  
Data is obtained from the Beloit monitoring station (only monitoring station in county)  
Last available data is the 2009 American Lung State of the Air Report (2007 data)

### Contamination Sites:

Wisconsin DNR <http://botw.dnr.state.wi.us/botw/SetUpBasicSearchForm.do>  
Data was as of December 31, 2009

### Land Use Trends:

Rock County Planning Department Data (reported as of February 10, 2010)  
US Census Bureau (<http://www.census.gov/>) (as of November 17, 2009)

### Bacteria in Drinking Water:

Rock County Health Dept. lab data (State lab and private lab data not included)  
Data was as of December 31, 2009.

### Nitrates in Drinking Water:

Rock County Health Department  
Data is from all Rock County Health Department lab tested wells.  
'Indicator well' data is an average of 90+ public-use wells monitored since 1996.  
Public use wells include wells that serve the general public.  
Data reported as of December 31, 2009 (State lab and private lab data not included).

### Childhood Lead Poisoning:

Rock County Health Dept. (Annual Report – PHN confirmed cases)  
Data reported as of December 31, 2009