

President's Message

What's In Our Water?

Special Edition
Vol. 44, Issue 2

*President's
Message*

☞ page 1

*OCCA In
The News*

☞ page 2

*Donation
Coupon*

☞ page 3

*Groundwater:
Did You Know?*

☞ page 4

*Protecting Private
Water Supplies*

☞ page 5-6

*OCCA Launches
Water Program*

☞ page 6

*Project
Specifics*

☞ page 7

*OCCA Seeks Test
Sites, Data*

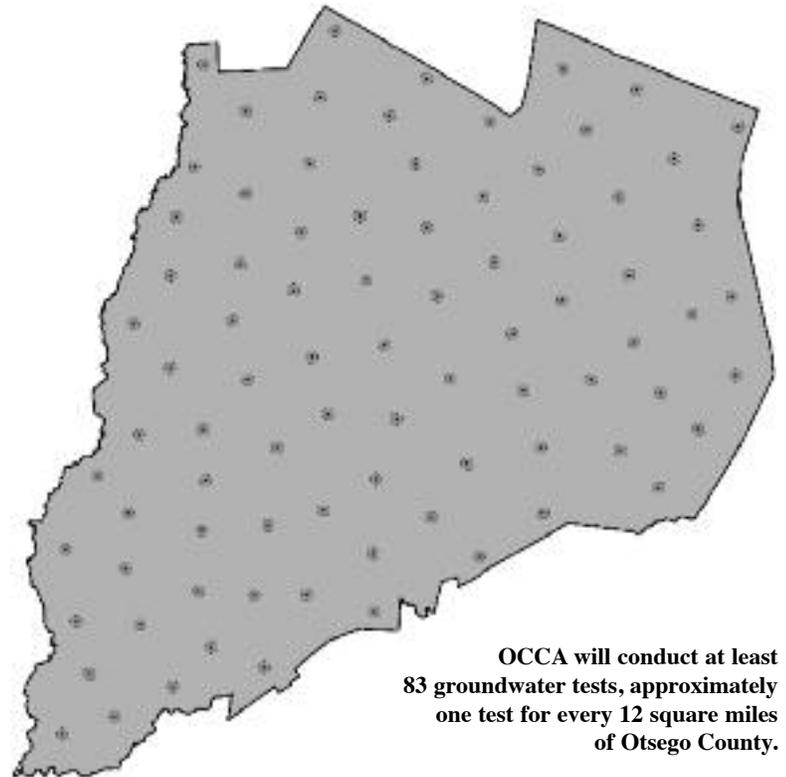
☞ page 8

Groundwater – fresh-water held within soil and permeable rock in underground aquifers – is one of our most valuable resources. Half of America drinks groundwater every day.

Groundwater comes from rain, snow, sleet and hail that soak into the ground. The water moves down into the ground because of gravity, passing between particles of soil, sand, gravel, or rock until it reaches a depth where the ground is filled, or saturated, with water.

The potential industrialization of Otsego County by the natural gas industry and its possible environmental impacts – particularly those associated with the process known as hydrofracking, or fracking – may be the most important issue addressed by Otsego County in the 40+ year history of this organization. At the same time, we recognize that there are a variety of other activities that may put our groundwater at risk. Other potential sources of contamination come from past or present human activity, e.g., mining, farming and heavy industry. Growth in rural areas also brings with it potential sources of pollution.

According to the United States Environmental Protection Agency, about 15 percent of Americans have their own sources of drinking water, including wells, cisterns and springs. Unlike people served by public drinking water systems, they do not have experts regularly checking their water's



OCCA will conduct at least 83 groundwater tests, approximately one test for every 12 square miles of Otsego County.

source and quality.

Most homeowners do not know the quality of their well water AND, as such, would not be able to prove water contamination if it were to occur. With this in mind, the Otsego County Conservation Association is launching a groundwater testing program that will provide certified baseline testing of private drinking water wells in pre-targeted areas countywide. These data will provide:

1. a baseline for, and fingerprinting of, well water chemistry by which changes to the wells will be detectable, and
2. a better understanding of groundwater flow systems and subsequent mapping of aquifers.

OCCA is reaching out to you for financial assistance so that we may initiate this essen-

Continued on Page 2



Has your water already been tested? Please share those results with OCCA, as we work to characterize groundwater quality countywide. See page 8 for details.

Water

continued from page 1

tial countywide program that will legally document and characterize groundwater quality prior to the advent of gas drilling – or other heavy industry – here in our home county. We estimate that the program will cost \$80,000.



VICKY M. LENTZ

On the basis of the Otsego County Soil & Water Conservation District's "General Guidance Document on Well Water Monitoring in Advance of High Volume Horizontal Hydrofracturing" and U.S. EPA drinking water guidelines, 24 parameters are recommended for testing, at a cost of approximately \$800 per test.

Both water sampling and analysis will be conducted by New York State Department of Health Environmental Laboratory Approval Program-certified laboratory staff, after the appropriate test sites have been identified by hydrology professionals using previously collected water quality data. This battery of third-party testing will identify the baseline concentrations of signature chemicals typically associated with hydrofracking or other heavy industrial activity which may or may not already be present in the groundwater.

If later water tests show increased levels of these signature chemicals after hydrofracking, if it were to occur, the changes would provide evidence that contamination had resulted from drilling activities and these pre-drilling tests – which will adhere to the necessary chain of custody and methodology protocols – would provide legal documentation to be used for litigation purposes in proving well water contamination as a result of gas drilling.

OCCA's proposed groundwater monitoring initiative is unique – there is currently no other program in the country that addresses the need for BOTH characterization AND legal documentation and protection of groundwater resources. While this scientific data in and of itself is valuable, sample collection and analysis by anyone other than third party water quality professionals and certified

laboratories may not be admissible in legal proceedings involving gas wells in New York State. As a result, these tests come at a hefty price.

If we are to prepare our county for the advent of natural gas drilling or other heavy industry, and serve as a model for other counties to follow, time is of the essence. I am asking for your financial support for this program so that we can move forward immediately.

Concurrent with the fundraising stage of this program, our partners at SUNY-Oneonta and SWCD are collecting and analyzing existing data in order to direct us to appropriate well testing sites that will fill in the gaps and avoid overlap with previous efforts.

Please see the links on the OCCA website home page for further details about this important program as well as related reference materials and information regarding our organization.

If we can provide any additional background about this funding request or expand upon any information provided in this newsletter, please do not hesitate to call me at (607) 263-5425 or OCCA Executive Director Darla M. Youngs at (607) 547-4488.

The source of drinking water for most rural households in Otsego County is groundwater and it is also the main source of water in our lakes, ponds, and streams. Yet, despite the crucial role groundwater plays in our rural communities, relatively little is known about groundwater quality. For decades, the oil and gas industry has maintained that fracking has never contaminated underground drinking water and, in the absence of legal baseline water quality data, it has been difficult to convincingly prove that hydrofracking has resulted in well water contamination.

Apart from gas drilling concerns, the importance of understanding the characteristics of our drinking water – and of fingerprinting well water and the aquifers from which it flows – is paramount to protection of this resource without which we cannot survive.

For these reasons, I hope you will find that this program merits your support to the fullest extent possible.

*Vicky M. Lentz
President*

OCCA in the news

Links on our website's "Home" page (www.occainfo.org) and "News" page (www.occainfo.org/news), allow you to catch up on or revisit news items generated from our press releases.

Annual Dinner and Meeting

OCCA announces Conservationists of the Year, Annual Dinner: The Otsego County Conservation Association has announced that Louis W. Allstadt and Dr. Ronald Bishop are co-recipients of its 2012 Conservationist of the Year award.

Allstadt and Bishop are being honored for their diligence in providing industry- and science-based information to the public on the possible environmental impacts of high-volume horizontal hydrofracturing for natural gas. OCCA will also present a Special Recognition for Environmental Advocacy to the Middlefield Neighbors. Award recipients will be honored at OCCA's Annual Dinner, to be held on Friday, November 16 at The Tryon Inn in Cherry Valley. "This year's awards reflect the diversity of voices in the community working to educate Otsego County residents with regard to potential gas drilling impacts and to safeguard the environment," said OCCA Executive Director Darla M. Youngs. Otsego County Soil and Water Conservation District Manager Scott Fickbohm and Les Hasbargen of SUNY-Oneonta's Catskill Headwaters Research Institute will give a two-part keynote presentation titled "The Importance of Baseline Monitoring in the Protection of Water Resources." OCCA Board President Vicky Lentz will follow the keynote presentation with an update on OCCA's groundwater testing initiative, "What's In Our Water?", which addresses the need for both characterization and legal documentation and protection of Otsego County's groundwater resources.

Water Quality

TMDL presentation: Ron Entringer of the New York State Department of Conservation gave a presentation on the Chesapeake Bay Total Maximum Daily Load at the Otsego County Water Quality Coordinating Committee meeting on Thursday, October 25. To view Entringer's presentation, visit http://occainfo.org/documents/NYWIP2_UpdateforOtsegoCWQCC.2012-10-25_000.pdf

OCCA's website features sections focusing on environmental issues facing our region plus details on current programming, how to donate and ways to contribute.

WHAT'S IN OUR WATER?

- **Groundwater is one of our most valuable resources. Half of America drinks groundwater every day.**
- **More than 17 million households in the United States use individual wells to supply water for their families. Wells are used to extract groundwater from aquifers.**
- **Heavy industrial activity may put our groundwater at risk.**
- **Most homeowners do not know the quality of their well water and, as such, would not be able to prove water contamination if it were to occur.**

The Otsego County Conservation Association is launching a groundwater monitoring program that will provide certified baseline testing of private drinking water wells in pre-targeted areas countywide!

Our program addresses the need for both characterization AND legal documentation and protection of groundwater resources. Understanding the characteristics of our drinking water—and fingerprinting well water and the aquifers from which it flows—is paramount to protection of this resource without which we cannot survive. Reported contamination of groundwater due to gas drilling in Pennsylvania – during drilling and up to six months after – could not be verified due to lack of pre-drilling water testing which might have proven whether or not the conditions were pre-existing.

WE NEED YOUR HELP TO COLLECT A BASELINE OF WELL WATER CHEMISTRY THROUGHOUT OTSEGO COUNTY BY WHICH CHANGES TO WELLS WILL BE DETECTABLE!

YES, I support OCCA's efforts to protect Otsego County's groundwater.

Please accept my tax-deductible donation of _____.

Name: _____

E-mail: _____

Address _____

City _____ State _____ Zip _____ Phone _____

Clip and mail to: Otsego County Conservation Association, PO Box 931, Cooperstown, NY 13326

www.occainfo.org

Groundwater: Did You Know?

- Half of all Americans use groundwater for drinking water supplies.

- Of all the earth's water that's useable by humans, 98% is groundwater.

- Groundwater – its depth from the surface, quality for drinking water, and chance of being polluted – varies from place to place. Generally, the deeper the well, the better the groundwater. The amount of new water flowing into the area also affects groundwater quality.

- Groundwater may contain some natural impurities or contaminants, even with no human activity or pollution. Natural contaminants can come from many conditions in the watershed or in the ground.

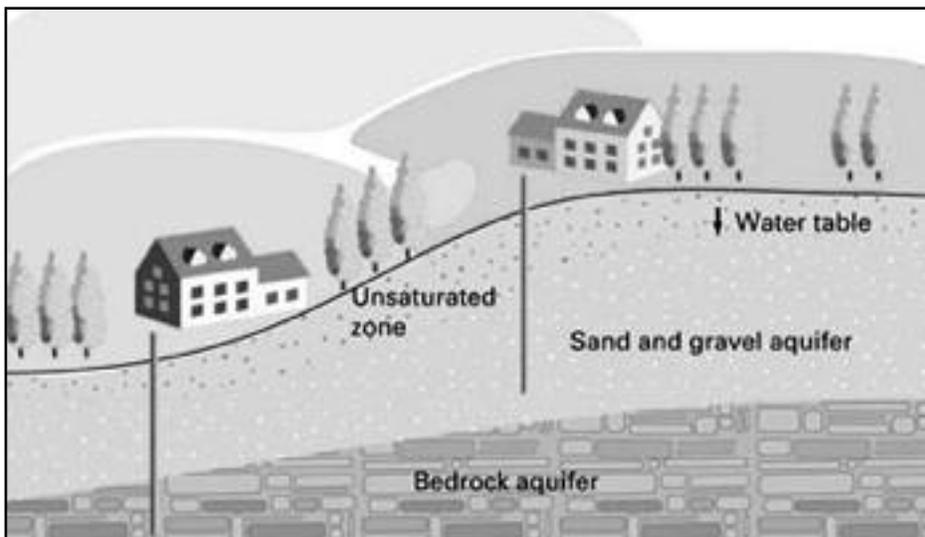
- Water moving through underground rocks and soils may pick up magnesium, calcium and chlorides.

- Some groundwater naturally contains dissolved elements such as arsenic, boron, selenium, or radon, a gas formed by the natural breakdown of radioactive uranium in the soil. Whether these natural contaminants are health problems depends on the amount of the substance present.

- In addition to natural contaminants, groundwater is often polluted by human activities such as:

- o Improper use of fertilizers, animal manures, herbicides, insecticides, and pesticides
- o Improperly built or poorly located and/or maintained septic systems for household wastewater
- o Leaking or abandoned underground storage tanks or piping
- o Storm water drains that discharge chemicals to groundwater
- o Improper disposal or storage of wastes
- o Chemical spills at local industrial sites

- More than 17 million households in the United States use individual wells to supply water for their families. Wells are used to extract water from aquifers.



- Most U.S. groundwater is safe for human use. However, groundwater contamination has been found in all 50 states, so well owners have reason to be vigilant in protecting their water supplies.

- The Safe Drinking Water Act does not protect private wells.

- The risk of having problems depends on how good your well is – how well it was built and located, and how well you maintain it. It also depends on your local environment. That includes the quality of the aquifer from which you draw your water and the human activities going on in your area that can affect your well water.

- What is poured on the ground today can end up in our drinking water many years later.

- Basic tests can determine if bacteria and nitrates are present in well water. More sophisticated and expensive tests are required to detect pesticides and chemicals.

- Most private well owners occasionally test for bacteria, but rarely, if ever, test for anything else. Generally, people test their water only when it tastes funny or smells bad.

This information was compiled from a number of sources, including the United States Environmental Protection Agency, The Groundwater Foundation and others.

Protecting Private Water Supplies Near Gas Well Drilling In New York State

Provided by the Community Science Institute, Ithaca

FAQ #1. Should I be worried about contamination of my water by a gas well? Yes. There is solid evidence that gas wells have contaminated drinking water supplies in the past. While no systematic studies are available on the Marcellus Shale, experience with old-style vertical gas wells in Pennsylvania suggests there is roughly a 1% to 5% chance of contamination. Penn State Cooperative Extension recommends testing all wells, springs, ponds and streams within 1,000 feet of a traditional vertical gas well. Because horizontal well holes typically extend several thousand feet out from the drill pad, landowners further than 1,000 feet from the well head may also want to consider testing.

FAQ #2. How can water on my property become contaminated by a gas well? There are several ways contamination can occur. Some are related to carelessness and human error. Others are related to the extremely high pressures and large volumes of fluid used for hydraulic fracturing that can force fluids as well as natural gas to move in unexpected directions underground. There is also a possibility, remote but real, that the cement casing around the vertical part of the well hole will fail, allowing fluids and gas to escape.

FAQ #3. What should I test my water for and what does it cost? It's not possible to know in advance exactly which chemicals may get into your water. Contaminants could come from the drilling fluid; the hydraulic fracturing fluid; underground metals, radioactive materials, organic compounds and brine released by the drilling and fracturing processes; or a combination of these sources. Testing for all possible contaminants would cost thousands of dollars. Baseline testing is designed to provide evidence of contamination while minimizing expense. If evidence of contamination is found, follow-up tests can identify as many of the pollutants as possible. Each certified lab approaches baseline testing differently, and consumers decide which lab to use and what to test for.

FAQ #4. When should I test my water? Water quality tends to be quite constant, notwithstanding small seasonal fluctuations. Thus, under federal environmental laws, state governments are required to monitor water for human impacts no more than about once every six years. Accordingly, baseline testing within about five years before a gas well is drilled is recommended; within six months after the well is completed; every two years for the 10- to 50-year life of the well pad or every time the well is hydraulically fractured again, whichever comes first; and every two years for ten years after the well is abandoned and plugged.

FAQ #5. Where should I have my water tested? Testing must be performed by a commercial lab that is certified by the New York State Department of Health – Environmental Laboratory Approval Program (NYSDOH-ELAP). Only test results from an ELAP-certified lab are admissible in legal proceedings involving gas wells in New York. Go to <http://www.wadsworth.org/labcert/elap/comm.html> for a list of certified labs.

FAQ #6. Can I save money and collect water samples myself? No, not if you want the test results to stand up in court. Samples must be collected by an unbiased third party who uses accepted procedures and verifies the chain of custody for the sample. Typically

samples are collected by someone from the certified testing lab. Baseline testing is like taking out an insurance policy on your water. It's not cheap, but it will pay big dividends if your water is contaminated.

FAQ #7. What happens if baseline testing indicates my water is contaminated? It is recommended that you contact your town's water commissioner, your county health department, and the NYSDEC Division of Water in Albany. Inform them of the results of the baseline tests and request assistance in: a) Designing follow-up tests to identify all the contaminants in your water, b) Assessing the health risks and environmental risks caused by the contaminants, and c) Seeking financial compensation from the gas company. Unfortunately, once an underground aquifer is contaminated, it is all but impossible to clean it up. The best that can be done is to identify as many of the contaminants as possible and develop long-term strategies for managing and living with the risks.



This FAQ sheet is based on information provided as a public service by the Community Science Institute (CSI), a nonprofit organization whose mission is to monitor and protect natural resources, particularly water. More detailed information is available at http://www.communityscience.org/?page_id=1066. CSI operates a certified water quality testing laboratory located near the Ithaca airport and certified by the New York State Department of Health – Environmental Laboratory Approval Program (NYSDOH-ELAP ID# 11790). In addition to certified baseline testing of private drinking water wells, CSI partners with a network of more than 100 volunteers to monitor water quality in streams in the Cayuga Lake and Upper Susquehanna River watersheds. The lab is certified to test drinking water samples from private wells. www.communityscience.org. 607-257-6606.

OCCA to conduct baseline water tests

**By Joe Mahoney
The Daily Star**

COOPERSTOWN – The Otsego County Conservation Association is coordinating an ambitious effort to determine the quality of well water throughout Otsego County.

“Good clean water is one of our greatest assets in this part of the country, and we know so little about it that we felt that we needed to start learning more,” said Vicky M. Lentz, the president of the OCCA Board of Directors.

In the event that natural gas drilling comes to the region, the data culled from the research will provide baseline information against which comparisons can be made in the event gas drilling or other new industrial activity comes into the county.

Lentz said the information that will be produced by the research could be used for numerous other purposes.

“Gas drilling was the wakeup call,” she said. “We know we have something good (with the abundant supply of local water) here. We just don’t know how good it is.”

She said she expects testing will start once OCCA achieves its goal of raising \$80,000 to support the research. The current drive, she said, has now reached nearly three-fourths of that targeted sum.

“We’re getting a tremendous response from the people

we have talked to,” she said.

Raising \$80,000 will give the organization enough money to fund the testing of 83 wells. “That equates to about one in every 17 square miles of the county,” she said. “We’d like to do more. The more money we can get, the more wells we can test, the more knowledge we can get. It just grows.”

The wells that will be selected for the research will be chosen by hydrologists with the Catskill Headwaters Research Institute, a branch of the State University College at Oneonta. The samples will be collected by certified technicians, she said.

“As far as we know, we’re probably the first organization in the country to do broad scale water testing,” said Lentz.

OCCA is preparing a request for proposals for a certified lab to conduct the sample collection and analysis, according to Darla Youngs, the organization’s executive director.

OCCA is also inviting Otsego County property owners and municipalities who have already had their water tested by Community Science Institute and other labs to send the results of those tests to OCCA so they may be included in the county’s baseline data, Youngs said.

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'What's In Our Water' Project Specifics

With the recommended water testing coming at a price tag of approximately \$800 per residence, many citizens and property owners are unable to consider such valuable testing as a viable option. As such, OCCA is looking to establish a fund of \$80,000 that will be used to strategically complete groundwater testing of private drinking water wells in pre-targeted areas countywide, based on existing data and identified gaps.

Such a fund will be able to provide, at a minimum, one groundwater test for every 12 square miles of Otsego County – approximately 83 tests plus cover the administrative costs associated with the project.

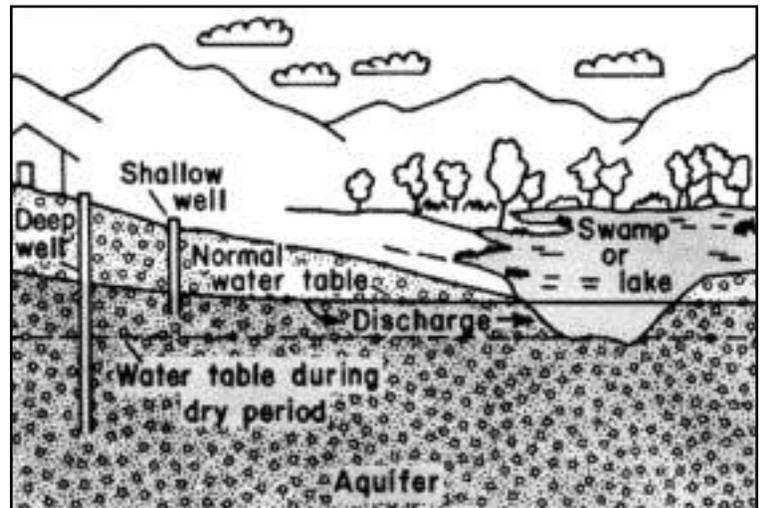
Through this project as proposed, OCCA will specifically address or deliver the following: water quality data, groundwater and aquifer fingerprinting, partnership in dissemination of data, and legal baseline testing.

1. Water Quality Data

Existing and new water quality data for Otsego County will be compiled from a range of sources including: 1) USGS National Water Information System; 2) NYSDEC Water Well Program; 2) state and county health departments; 3) gas-development companies; and 4) local universities. Analytical laboratory and quality assurance/quality control methods associated with all these data will be documented.

2. Groundwater and Aquifer Fingerprinting

It is suggested by an existing consortium of environmental professionals including but not limited to US EPA, NYSDEC, NYSDOH, SWCD, SUNY-Oneonta and its Catskill Headwaters Research Institute, OCCA, Binghamton University, Town of Oneonta, Community Science Institute and others, that water sources be "fingerprinted." SWCD and SUNY-Oneonta, in part with OCCA support, have begun testing various public and private water supplies within Otsego County. They have determined that there are currently 66 elements that can be analyzed and, of those 66, 50 elements are detectable. Initial analyses show that the range in concentrations between wells is greater than seasonal changes for a single well, and this implies that both



water wells and aquifers can be fingerprinted. This process is the thrust of the current funding request.

3. Partnership in Dissemination of Data

First steps in the newly formed Catskill Headwaters Research Institute at SUNY-Oneonta, which will serve as an umbrella for the many stakeholders engaged with watershed and aquifer activities in our region of New York State. The main goals of the Center are: 1) to coordinate watershed and aquifer monitoring; 2) to collect, store and disseminate watershed information; 3) to train students in watershed research, assessment, and management, and; 4) to facilitate ongoing discussions, research, and funding opportunities among federal, state, county, and municipal watershed managers, community-based non-government organizations, academics, community members, and other parties interested in water resources issues within the headwaters of the Susquehanna and Delaware rivers.

4. Legal Baseline Testing

Groundwater testing conducted prior to the advent of heavy industry, including the gas drilling industry and any drilling activity, to establish a legal baseline that may stand up under litigation to prove well water contamination as a result of gas drilling heretofore unsubstantiated.

For a complete program description, visit:
http://occainfo.org/documents/ProgramDescriptionWeb_005.pdf



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OCCA seeking potential test sites, existing groundwater test data

During the fundraising and data analysis stage of its "What's In Our Water" campaign, OCCA invites property owners to submit their wells for testing consideration. The final decision as to which wells are to be tested and where will be based on existing data, identified data gaps, and location, among other determining factors.

OCCA also invites Otsego County property owners who have had wells tested within the last two years to share this information with us, so that their results can also be made part of the countywide groundwater quality data pool.

Please send inquiries to:
OCCA Executive Director Darla M. Youngs at
admin@occainfo.org.

Copies of test results can be mailed to OCCA,
PO Box 931, Cooperstown, NY 13326.