



C.O.W.S.: Community Onsite Wastewater and Stormwater 319 Project

See our website for this interpretative sign and others
about Stormwater BMPs:
Bio-swale / Detention Basin-Beyond the Basin / Gabion Basket Wall /
Level Spreader Trench / Native Vegetation / Outlet Protection /
Pervious Concrete Paving / Site Construction

"Clean water is not an expenditure of federal funds; clean water is an investment in the future of our country."

- Rep. Bob Shuster

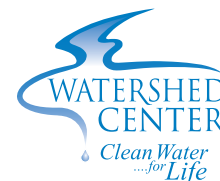


Watershed Committee of the Ozarks
320 North Main Avenue
Springfield, MO 65806-1208
(417) 866-1127
www.watershedcommittee.org



Missouri Department
of Natural Resources

"U.S. Environmental Protection Agency Region 7, through the Missouri Department of Natural Resources, has provided partial funding for this project under Section 319 of the Clean Water Act."



Project Overview

Stormwater

- Who:** The Missouri Department of Natural Resources awarded this grant to the Watershed Committee of the Ozarks.
- What:** A Section 319 Nonpoint Source Implementation Grant provided the total project award of \$185,750. The non-federal matching support in the amount of \$123,900 was provided through The Watershed Committee of the Ozarks and its partners for a total project cost of \$309,650.
- When:** Grant Period – June 1, 2004 through July 31, 2008
- Where:** The Springfield area and surrounding drinking watershed.
- Why:** Springfield and the surrounding area is growing. Our water supply—above and below the ground—is important for the quality of life, the economy, and the environmental health of our region. The C.O.W.S. grant directed funding to address two of the biggest water quality issues related to growth: wastewater and stormwater. This publication outlines the projects accomplished in the scope of this grant to address wastewater and stormwater in our community.

319
Project

Stormwater Education

In an effort to reduce non-point source pollution, the Springfield Stormwater Design Criteria Manual (Draft) Informational Forum for Professionals was attended by professional engineers, designers, developers, contractors, and environmental consultants. Professionals from within these disciplines provided informative sessions one day a week for ten weeks on topics ranging from stormwater codes and law to best management practices. Presenters included the City Springfield, Greene County, U.S. Environmental Protection Agency, Missouri Department of Natural Resources, U.S. Army Corps of Engineers, Wilson Hydro LLC, Wright Water Engineers Inc., Missouri State University, and Intuition and Logic.

Stormwater Demonstrations

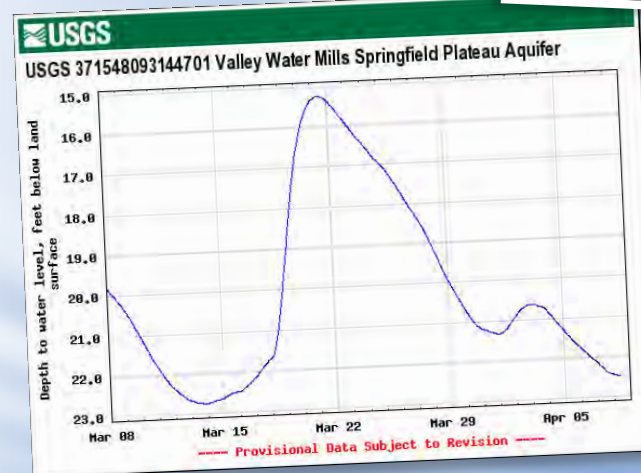


At the Watershed Center, our motto is to treat every drop of water as though it is a precious resource. In support of this philosophy, a certified green building is being constructed to display water and energy efficiency.

The site currently has several stormwater Best Management Practices (BMP's) demonstrations. An interpretive sign to explain the purpose and function of the BMP's will accompany each demonstration practice (see back page for additional information about interpretive signage).

Groundwater Education

The Missouri Department of Natural Resources Water Resource Center has a very helpful website on everything related to groundwater and wells, including the monitoring well network: <http://www.dnr.mo.gov/env/wrc/index.html>.



Groundwater

- Case studies and strategies
- Networking with other stakeholders to brainstorm ideas for preventing contamination in communities
- Local assistance available to everyone

Well Care Workshop



This workshop was co-sponsored by the Water Systems Council, Missouri Department of Natural Resources, Watershed Committee of the Ozarks, and The Groundwater

Foundation. Experts provided an entire day of educational sessions including:

- Geology and Groundwater Resources of Missouri
- State Perspective on Private Wells in Missouri –Agency Roles & Responsibilities
- Well Driller Continuing Education Program
- Private Wells - What They Mean to Public Water Systems and Vice Versa
- Pollution Prevention Education and Abandoned Wells
- Karst Topography and the Potential Impacts of Surface Activity on Well Water



319
Project

Groundwater Monitoring Project

Two monitoring wells were installed at the Watershed Center to measure the water levels of the two separate aquifers under the Springfield area. The shallow Springfield Aquifer and deeper Ozark Aquifer are separated by a layer of rock called Northview Shale, which acts as a barrier between the two aquifers. The wells measure the water levels of each aquifer and communicate **real-time data via satellite.**



Both wells are at this link, listed under "Greene County" – <http://nwis.waterdata.usgs.gov/mo/nwis/current/?type=gw>. The two monitoring wells at the Watershed Center are also part of a bigger project by the Water Resources Center of the Missouri Department of Natural Resources—adding new wells to the statewide observation well network. The existing network of 75 wells, from 30 to 1800 feet deep, help monitor the status of groundwater resources throughout the state of Missouri. Eighty additional observation wells are planned.

Wastewater

Onsite Wastewater Training Center (OWTC)

Onsite wastewater systems, often referred to as "septic tanks," are located all over southwest Missouri. Failing septic systems have been shown to contaminate surface and groundwater resources, including wells used for drinking water. New systems are installed every day in the Ozarks. **Certified wastewater professionals** who install these systems can positively impact the health of our water resources. When installers were surveyed on how certification courses could be more effective, they stressed the need for **hands-on demonstrations and equipment.**

The OWTC, located adjacent to the Watershed Center, serves as an **outdoor classroom** for wastewater installers. Missouri Small Flows, the Missouri Department of Health and Senior Services, and Greene County Environmental Department are involved in the certification of installers and partnered in designing the demonstrations and curriculum for the OWTC.



Beyond the "Septic Tank..."

At the OWTC, installers can learn about systems more advanced than the "septic tank." With the help of partners in the industry and donations of equipment and time by installers, we have more than ten technologies demonstrated at the site. These types of systems will be used to treat wastewater more effectively at challenging sites and help protect our surface and groundwater resources.



Technology Demonstrations at the OWTC

- Low Pressure Pipe
- Drip Irrigation
- Siphon
- Manifold Systems
- D-Boxes
- Septic Tank and Pump Tank Varieties
- Septic Tanks with Treatment Media (Pretreatment Units)
- 4 Trench Technologies
- Mini Lagoon
- Exposed Unions and Connections,
- Trade Tools and Equipment Shed
- Peat Filter

Wastewater Cost Share Projects

Onsite Remediation

Thanks to the COWS grant, there is one less failing septic system on the banks of the Little Sac River.

A cost share project provided a landowner enough incentive to work with the Watershed Committee to replace a failing system that was surface discharging directly into the Little Sac.

Pump out cost share

C.O.W.S. provided cost share funding for 150 pump-outs, removing about 150,000 gallons of wastewater from area watersheds.

The real value of this program, however, lies in education and awareness. Surveys show that one in four people do not routinely maintain septic systems, and our records show that wastewater professionals encountered several failing systems that otherwise would have gone **unchecked** without this program. Each participant in this program was provided **educational materials** about the importance and frequency of septic system maintenance.



Wastewater Workshop #1

In July, 2005 the Watershed Committee co-sponsored a Septic Tank Maintenance Field Day near Reed Springs to inform



homeowners about the importance of proper onsite system maintenance. Despite the hot summer weather sixty people attended, an example septic tank was inspected and pumped, and attendees observed different advanced treatment options that are available where traditional septic systems won't work.

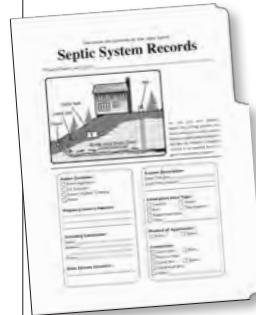
Wastewater Workshop #2

In May, 2008 over 100 people joined us at the new Onsite Wastewater Training Center to tour the site, collect educational materials, enjoy a cookout, and receive a pump-out coupon. Greene County, Springfield Greene County Parks, NRCS, and Water Quality Improvement Project representatives partnered in the event.



Homeowner Resources

A Septic System Folder and Brochure were developed to stress the importance of regular onsite wastewater maintenance. These materials provide the information neces-



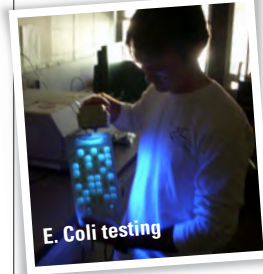
sary to keeping an onsite system "healthy." Household products that can kill the good microbes in a system are described.

Wastewater Education for the Citizen.

Thousands upon thousands of "septic tanks" are located in Southwest Missouri. Failing systems are common, and can pollute surface and groundwater resources. People with septic tanks often do not understand how to keep them working properly and don't recognize the symptoms of a failing system. C.O.W.S. provided workshops and resources to help spread the word.



Groundwater Workshops



"Pathogens in Drinking Water Sources" **FREE Workshop**. The Watershed Committee of the Ozarks, along with the Groundwater Foundation and the Missouri Department of Natural Resources, participated in a

workshop to discuss "Pathogens in Drinking Water Sources." This **FREE** workshop was open to the public. The workshop focused on preventing pathogenic contamination of both ground and surface water resources, and included expert presentations and small group activities to brainstorm and develop local action plans.

Workshop topics:

- The nature, sources, and effects of pathogens in drinking water
- Notable outbreaks of waterborne pathogens in recent history
- Expert advice about successful pathogenic contamination prevention strategies
- Local source water protection efforts
- Case studies and strategies

