

No Standing News

Since we have no standing, we stand with those left standing.

Volume I

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BOIL YOUR POOPY WATER

Part 3 of: WATER, WATER EVERYWHERE?

The boil-your-poop-water order. Woodcrest Trailer Park on Vichy Road was under a Department of Natural Resources (DNR) boil order for months this summer because there was poop in their water. Officially, DNR said the boil order was due to fecal coliform bacteria - that's the scientific name for poop. Part of Woodcrest Trailer Park is a half mile INSIDE the city limits; part of it, we're told, is outside the city limits. Inside or outside, Woodcrest is NOT just somewhere "near Rolla" as reported by the Rolla Daily News. The Rolla City Council didn't ask a single question about the boil order. They didn't want to be distracted with serious problems that would interfere with the glamour shot they are building in Ber Juan Park, so Public Water Supply District #2 connected Woodcrest to their water district. That solves the immediate problem of clean water for the trailer park but it doesn't solve the problem of their leaking septic tanks and lagoons.

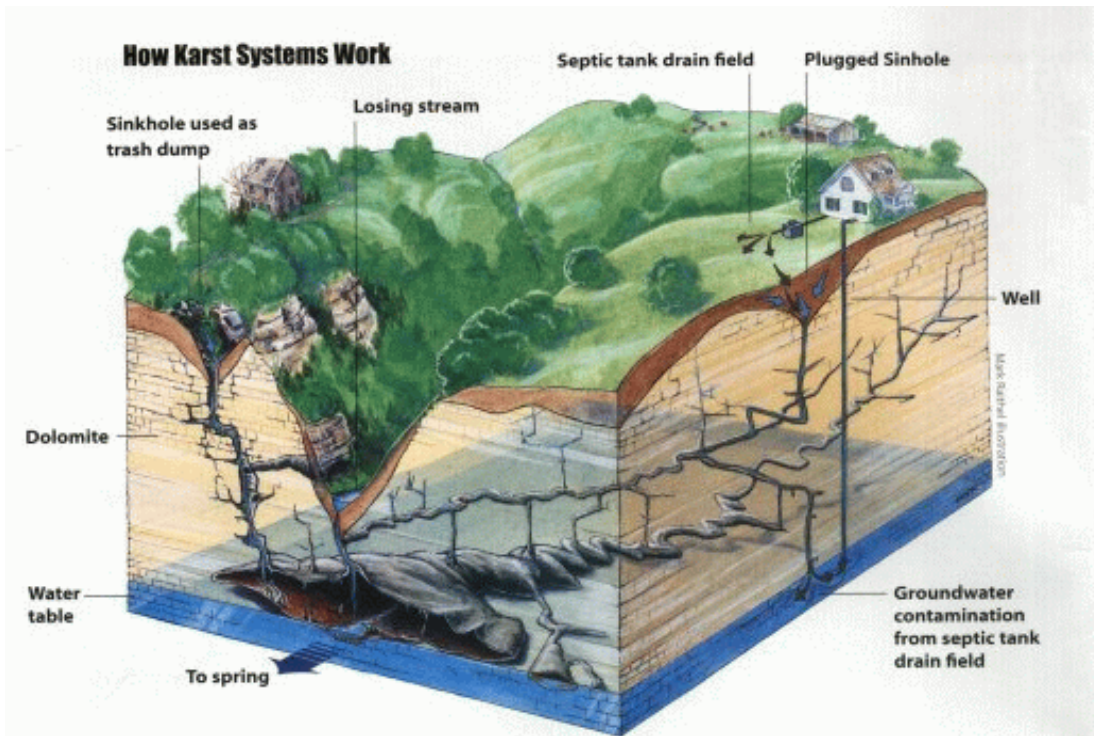
DNR will not tell us (we have asked) what they think caused the contamination. In addition to the trailer park's own sewage lagoon and/or septic system located near poorly cased, shallow wells, another culprit in the Woodcrest boil order could be the 60-year-old Vichy sewage treatment plant located just a short distance away on Spring Creek. Sixty years is very old for a sewer treatment plant, and until the recent upgrade the Vichy plant had gone 32 years since the last renovation. In 1995, the RDN reported a fish kill in Spring Creek from raw sewage spilled in the creek from the Vichy plant. According to the 1995 RDN interview of some residents living near Spring Creek, the creek often reeked of raw sewage and dead fish. At the time, Steve Hargis, Public Works Director, told the Rolla City Council that the Vichy plant needed an upgrade but it would cost about a million dollars. The upgrade was finally done, but that didn't remove decades of ground contamination the chronically malfunctioning sewer plant had already deposited.

The Spreading Stain. College Hills Subdivision, which is also "near Rolla," is a perfect example (there are others) of a boil order waiting to happen. The Stoltz brothers started this septic tank subdivision about 25 years ago before there were many state regulations about such things. Residents of College Hills have been trying to get connected to the city sewage system for years without success. But the city council has provided sewer service since 1994 to the City of Doolittle many miles away. In the mid 70s, due to the increasing density of houses, College Hills joined a public water district because their septic tanks had fouled their private water wells. But finding a source of clean water from a public water district well further from the source of their self-contamination was only a short-term solution. Their poorly functioning septic field systems are still in use and are still dripping into the porous Ozark karst. In years of heavy rainfall the saturated clay soil in that area doesn't absorb and filter all the liquid sewage, it just pools on top of the ground. In addition to the underground migration of some sewage discharge from their field systems, heavy rains can float raw sewage right across man-made city boundary lines. Multiply College Hills x Woodcrest Trailer Park x all the other growing sewage clusters "near Rolla." Add the indifference of the Rolla City Council to basic infrastructure problems and in the future, boil orders may be a regular event in our lives.

The Karst Under our Feet. If you don't live near the northeast part of Rolla, should you be concerned about a boil order in a trailer park way over on the northeast side of town? Yes, you should because we are all living on top of the same huge karst formation, the only barrier between ground contamination and our common source of drinking water.

Karst is a type of topography caused by solution of carbonate rock or gypsum and characterized by features such as caves, bedrock pinnacles, losing stream segments, sinkholes, and solutionally enlarged joints and bedding planes. Karst looks like microscopic Swiss cheese. Tiny, microscopic holes provide a natural, slow water filter and prevent dangerous little microscopic bacteria from swan diving straight into our underground water supply. But the bad news is that in some cases - and this is more typical of the Ozarks - the holes are not uniformly microscopic. We have an abundance of cracks, fissures, springs, sinkholes, "losing" streams* and big cave systems that let contaminated surface runoff and untreated sewage pass through quickly without being filtered much, if at all. When that happens, bacterial and other toxic contaminants can easily reach a pumping zone and be pumped right back up into our drinking water in a very potent state. That's your water, my water, everyone's water, not just the water for someone on the other side of town.

Our fractured geology is easy to see, particularly when going south on I-44. The cuts where the roadbed was lowered show the thick and thin rock layers. You can clearly see small to large pockets where they cut through a hollow space or "baby" cave. Concrete patches in the face often indicate a large hole or cave entrance that the highway department had to seal up. Springs or seeping groundwater are visible trickling or sometimes pouring out of the cracks and fissures in the rock layers. In some places a layer or section of "soft," finely fractured rock or gravel pockets will be spilling down the face of the cut. It's a roadside classroom and belies any claim that our underlying limestone is a perfect filter.



***What's a "losing" stream?** Many of the streams in Phelps County are officially classified as losing streams. A losing stream is dry (called a dry creek) except when it is carrying runoff after a rain. Losing streams, or so-called "dry" creeks, after a rain will have less water flow or go dry quicker than the upstream part. This is because there are cracks, sinkholes or caves right under the streambed. Dirty surface water, in that

case, drains down instead of draining away. This illustration from the March issue of the Missouri Conservationist is the best way to see the relationship between what we dump and pump and how it affects our drinking water.

The illustration above is from an article, "Karst Groundwater" by Tom Aley in the March 2000 issue of the "Missouri Conservationist." Whatever nasties go down in one part of town can come up in any other part of town and land in your next shower, ice cube or cooking water. The article explains that, "**Natural cleansing** (slow percolation through dense "solid" limestone) **can be a misleading term - in many cases the underground openings are larger than the bacteria or parasites that cause waterborne illnesses in people and animals. Some discrete recharge zones**

(those are dry creeks, sinkholes and other localized openings) **cannot even filter out large materials such as acorns, walnuts, cans and pieces of Styrofoam."**

The Ozarks are famous for caves and sinkholes. Phelps County has from 100 to 200 caves; no one even tries to count the sinkholes. Caves, springs and sinkholes cause groundwater to move very fast - and that's not a good thing. The article explains that groundwater travel rates in karst areas of Missouri are often in the range of a mile per day - that's dangerously fast. In non-karst areas, groundwater travel rates are commonly only a few feet per year. One losing stream that was studied **"...made slurping sounds as it transported over a million gallons per day of poorly treated industrial sewage into the regional karst groundwater system. Contaminants sinking through this stream polluted rural wells and springs in a 60 square mile area."** Tom Aley also points out that, **"Suburban and urban developments increase the quantity and decrease the quality of storm runoff water that reaches losing streams. When a storm hits, the vast majority of the contaminants are concentrated in the first quarter to half inch of storm runoff water. This 'first flush' storm water runoff, often similar in quality to raw city sewage, enters our karst groundwater supplies through sinkholes or losing streams."** This is a description of the water that recharges the Ozark aquifer - our only source of drinking water.

In Part 4: **Rolla's Shrinking Aquifer.**

- **"Karst Groundwater"** by Tom Aley, pg.8-11, Missouri Conservationist, March 2000
- **" Below Missouri Karst"** by William R. Elliot, pg. 4-7, Missouri Conservationist, March 2000.

Reading from previous articles in the "Water, Water Everywhere?" series:

- **Groundwater Contamination and Sinkhole Collapse Induced by Leaky Impoundments in Soluble Rock Terrain** by Thomas J. Aley, James H. Williams and James W. Massello, 1972. Missouri Department of Natural Resources, Division of Geology and Land Survey, P.O. Box 250, Rolla, MO.
- **"Missouri State Water Plan Series Volume 1, Surface Water Resources of Missouri"**, by James E. Vandike, 1995. Missouri Department of Natural Resources, Division of Geology and Land Survey, P.O. Box 250, Rolla, MO.
- **"Missouri's Natural Resources, A 1999 progress report on our water, air and land."** Missouri Department of Natural Resources, Division of Geology and Land Survey, P.O. Box 250, Rolla, MO.

Decisions are made by those who show up!

SILENCE EQUALS CONSENT

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