Well Water Testing for 2000 Confirm Trends!

Private Well Owners Testing Results Reconfirm County Trends in Nitrate Elevation.

Finally! The lengthy process of compiling and analyzing all the data from the May 5th, National Drinking Water Week - Private Well Owners Water Testing Program are in. The 403 participants and their shared findings provide interesting insight of Yavapai Counties ground water.

There are approximately 20,000 privately owned wells in Yavapai County. Currently, a booming real estate market and the County being one of the most rapidly growing places in Arizona, there is an ever-increasing demand for potable ground water.

Compounding the problem of possible well water contamination, there are also over 5,000 licensed, on-site, waste water (septic) systems. Septic systems are potentially one of the greatest possible sources of elevated nitrates in the Counties ground water aquifers.

For the past four years the UA- Cooperative Extension Office has provided Free or "Almost-Free" cost-recovery well water testing to Yavapai residents. As of this date, 981 (5%) of privately owned wells in Yavapai county wells have been tested one or more times in our program.

We have attempted to move the responsibility (well owners have sole responsibility of testing their wells water) toward private owners, rather than being dependent upon a "government" program. Note: The current program has been grant-funded for all four years.

Updated Septic System Information Packet Available to Owners!

The new and revised Home Owner’s Guide to Septic Systems has just arrived for local septic system owners. The packet contains all the information needed to “love and care” for your septic system (especially pertaining to AZ) in a handy organizational folder... AND the cost-recovery price is affordable. $3.00 if you come by and pick one up at our Prescott or Cottonwood Offices or $4.00 if you would prefer to have it mailed.

WhatAboutWaterAnd

..............................................You?????

Water is unique. It’s more than H₂O; a chemical formula of hydrogen and oxygen.

If one can remember nothing else, there are three thing ..., three paradigms...which are critical and essential.
WHAT ABOUT WATER AND... from 1

First, water is one of the "life-as-we-know-it" necessities. All life on earth is composed of and contains some specific portion of water molecules.

Second, there is absolutely no substitute for water, as far as life is concerned. No other liquid will serve as a satisfactory replacement.

Third, water is recyclable. Nature's water cycle assures all living things there will be water in the future...... but there is and will be a finite amount of water from this process.

There is a challenge in using these three bits of information. How do we use them? There is very little we can do to alter the reality of the first two. It is the way it was in the beginning and probably will remain.

The third seems to have been left with an opportunity for human discretion. Human beings seem to have divorced themselves from nature and specifically nature's methods of accountability.

Our behaviors, in the long run (i.e. waste, pollution, over-use, etc.), will probably only affect the finite amount of water available to humans AND other living things, at a given time. If we ever reach a stage where we exceed "our needs", Nature's accountability will intervene...... will you and I be prepared for the consequences?

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TRY OUR WEB SITE!
The University of Arizona
Cooperative Extension Offices
of Yavapai County
http://ag.arizona.edu/yavapai

Quote of the Month:
"Every child deserves to grow up with water that is pure to drink, lakes that are safe for swimming, rivers that are teeming with fish"

- President Clinton

Water Resources and Water Shed
Campout held at Watson Lake,
October 21-22

CampOut! FloodOut! Washout! Whatever! Cold, rain, sleet and near-freezing temperatures failed to dampen the spirits of two dozen high school students from Prescott's Tri-City Academy and Kingman, AZ High School. The winter, wet, weather was challenging but so was the content of the water resources education program provided by Yavapai / Mohave / La Paz County Extension Staff, the UA-Project "WET" State Coordinator, and UA Faculty Members from Yuma, U.S. Forest Service, and Yavapai College.

Between (and during) occasional, near-freezing, rain showers, students chased the elusive water molecule from water cycles, to watersheds, to runoff as surface water, to groundwater, chemical content, to consumer and environment. Water's value and importance as a major resource was the primary emphasis with a little political problem thrown in at the end. A great, new (first-time CampOut) effort to bring the water message home to local youth and an opportunity to taste some spectacular campfire cooking and comradery.

A special thanks to the City of Prescott Parks Department for our access to the Watson Lake Facilities, TriCity Academy for the "emergency" housing and "dry-out" space and the tolerant, enduring teachers and chaperones.

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SkyView Charter Middle School
Explores Water Resources by Connie Berlin

SkyView Middle School students have been immersed in studies about drinking water, aquifers, ground water, and watersheds of Arizona. Throughout this semester, students have engaged in testing and examining water via classroom and field experiences.

Water resource experts from the local UA-Cooperative Extension and Prescott College have provided insight, hands-on, student-centered, classroom activities to enhance students awareness of water resources, limnology and riparian habitats. Water test kits, ground water models and student-constructed watershed models were provided and facilitated by Cooperative Extension staff.

These activities have motivated and encouraged students to work in small cooperative groups to collect, test and observe water samples from throughout the state. Other groups have directly observed riparian habitats in the area.

In keeping with state AIMS standards for science, our students have performed scientific experiments for the purpose of identifying and solving community water problems.

Current studies will culminate in our visit to Kartchner Caverns......hoping to look at a watershed from the inside out.

Verde Watershed Association Offers "GRASSROOTS" Opportunities for Water Resource Issues

The Verde Watershed Association, a non-profit, water resource issue, organization, invites public membership and participation in addressing water issues of the Verde River Drainages, Yavapai and Coconino Counties and the State of Arizona.

General membership meetings are on the 3rd Tuesday evening of each month.

Currently there are opportunities for involvement in VWA as an officer or service on standing committees. The future of the VWA is dependent on public participation in filling these positions. Nominations for officers and committee chairs are currently being sought.

The next scheduled general meeting will be held at 6:00 PM, December, 19th at the Clarksdale Memorial Center.

For those interested in contacting the VWA: 520-284-2032 or on their WEB Site: vwa.southwest-water.org

Reader's Message

Any "Food-for-thought"? We would like to include articles from YOU! Sharing information and ideas are the strengths of public awareness and education.

We encourage you, students, teachers, administrators and community leaders to contribute to this newsletter. Drop us a line!
Well Testing

The program began with clients bringing in water samples and having them processed for three test parameters (pH, nitrates, and T.D.S.) at the UA-MAC laboratory south of Phoenix. This year a "shirt pocket", test-strip, kit was provided, capable of testing for 7 parameters (pH, nitrates, nitrites, alkalinity, hardness, iron and copper). This years kits provided proven reliability and near-certified lab results. As an on-site kit, it was found to be more economical, convenient and provided the well owners with immediate results.

This years results provide enough information to suggest a "typical" well water profile. "Typical" county ground water would have a pH of 7.8; 1.5 ppm of nitrates; 0.14 ppm nitrites; 205 ppm of hardness; 413 ppm of alkalinity; 0.1ppm of iron and 0.04 of copper.

Virtually all county wells have an acceptable pH level from 6.5 to 8.5. PH levels below or above these levels tend to be chemically corrosive to plumbing and distract from water quality and taste.

Six county areas have been identified, through this voluntary program, as having trends toward and/or increased levels of nitrates. Forty four (44) samples this year exceeded 5ppm. In six (6) instances, nitrates exceeded maximum allowed levels (10ppm) and owners were promptly notified. Specific pattern areas of concern (based on this years results and supported by previous testing) include upper Chino Valley, NW Prescott, Clarkdale, Cottonwood-Bridgeport, Dewey-Humboldt, Camp Verde, and Cornville.

No wells demonstrated unacceptable levels of nitrates.

All owners with elevated levels of nitrates were encouraged to have the water tested for coliform bacteria and possible review with a certified laboratory. Historically the UA-Cooperative Extension has assisted / facilitated those well owners in treatment and/or securing safe, potable water, from other sources, if necessary.

Most private wells are "HARD". Hardness and alkalinity levels appear to be two areas of concern, although there are no established standards regarding unacceptable levels of either parameter. Many wells contain excessive "salt" levels that interfere with laundry, spotting of windows, low-suds showers, deposits on, in around water fixtures and successful watering of plants and gardens.

Iron and copper tests revealed no unacceptable levels this year.

All in all, water quality throughout the county appears to be good with a few exceptions. Over the past four years, 981 county participants have tested and/or retested their wells. This represents only 5% of the total number of privately owned wells in the county. It should be noted that 37% of this years participants did not share test results after checking their wells. It is of significant interest only 10% of the responding participants expressed a deterioration/ decline in water quality / quantity.

This program has been provided in an attempt to encourage well owners to take a more pro-active role in monitoring and protecting their water resources and family health. The inexpensive "shirt-pocket" kits were widely praised as easy to use, very convenient AND inexpensive. We would encourage well owners to conduct similar testing on an annual basis. Similar kits are readily available through Internet web-sites and may also be available through hardware stores (No local providers were identified in Yavapai County).

Several web sites have on-site/home water test kits which, in addition to the 7 parameters used this year, also include options to test for arsenic, lead, pesticides and bacteria.

Search Word: water test kits.

It is unsure if our "Almost-free" Well Water Testing program will be available in the future. The current grant funding for this activity has expired and unless alternative funding sources are found, it may not be continued.

If you have questions regarding the program feel free to contact our offices in Prescott or Cottonwood.

University of Arizona
Cooperative Extension
Water Education Resources

Your Cooperative Extension Office can provide assistance and resources for any age level, individual or special interest group.

- Speakers and Displays
- Water and Natural Resources
- Information and Materials
- Classroom / Public Presentations
- Assistance in lesson planning and classroom activities
- Developing Curricula and Projects
- Project "WET" Workshops
- Teacher training
- Ground Water Model
- Septic System Model
- Field Trip Facilitation

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Looking Forward to 2001

As we approach 2001, we are looking forward to providing you with the best informational support and quality assistance available. We also hope you continue to look at us as your access to the World of Extension information.

A seasonal wish list for the year ahead might include:

- Well Owner’s testing water annually.
- Decreasing Nitrate Levels
- Non-Point Source Pollution is addressed.
- Aquifers demonstrate a decline in water mining.
- Greater participation by the general public in Water Issues.
- Development and Growth which complements water resource limitations.
- Water Conservation and Efficiency a priority.

On behalf of The University of Arizona, College of Agriculture and Cooperative Extension Office for Yavapai County, our Faculty and Staff, we all join in wishing you a rewarding and prosperous New Year.