How goes that flow?

The USGS website will let curious folks look at “realtime” and historical flow from waterways equipped with a gauging station. To find one in your area, go to http://www.usgs.gov/ and select “Real-Time Map of U.S. Streamflow, Highlighting Areas of Floods and Droughts”. A map similar to the one below will appear:

![Map of US Streamflow](image)

Each dot on the map represents a gauging station. Click on North Carolina to better see the NC stations:

![North Carolina Map](image)

Select a station that interests you, and choose among the data options. For example, the following is an example of the flow during the past 548 days at the gauging station in Onslow County, using a logarithmic scale:

![Logarithmic Scale Graph](image)

Has your well had a checkup lately?

Ground Water Awareness Week is March 16-22. The National Ground Water Association (NGWA), is encouraging well owners to have an annual well checkup by a licensed or certified groundwater contractor. According to NGWA, a well checkup should include:

- A flow test to determine system output, along with a check of the water level before and during pumping (if possible), pump motor performance (check amp load, grounding, and line voltage), pressure tank and pressure switch contact, and general water quality (odor, cloudiness, etc.);
- An inspection of well equipment to assure that it is sanitary and meets local code requirements;
• A test for coliform bacteria and nitrates (and items of local concern, such as iron, manganese, hardness, sulfides, and other constituents that cause problems with plumbing, staining, water appearance, and odor).

The North Carolina Department of Agriculture performs a “Solution Analysis” for $4.00 per sample. This includes the constituents listed above, EXCEPT for the bacteria. Your local Cooperative Extension office can help you with the form and sending the sample. Just collect a water sample in a clean (well rinsed) 16 ounce soda bottle and take it to your local Cooperative Extension office.

Other steps to maintain your well:
• Keep hazardous chemicals (paint, fertilizer, pesticides, motor oil, etc.) far away from your well. Also, always maintain proper separation between your well and buildings, waste systems (human or animal), or chemical storage areas.
• Periodically check the well cover or well cap on top of the casing (well) to ensure it is in good repair and securely attached. Its seal should keep out insects and rodents.
• Keep your well records in a safe place. These include the construction report, and annual water well system maintenance and water testing results. These will be important if health issues arise or you wish to sell the property.

Get your water tested anytime there is a change in taste, odor or appearance, or when the system is serviced. For more information, visit the NGWA consumer web site (www.wellowner.org). Additional information is also available by calling NGWA customer service at (800) 551-7379.

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**Nemonic devices in science & math:**

Order of operation (mathematics):

Please excuse my dear Aunt Sally
parentheses, exponents, multiplication, division,
addition, and subtraction

Order of Planets:
My very excellent mother just served us nine pizzas:
Mercury, Venus, Earth, Mars, Jupiter, Saturn,
Uranus, Neptune, Pluto

Moh's hardness scale (geology):
Texas girls can flirt and other quiet things can do
talc, gypsum, calcite, fluorite, orthoclase,
quartz, topaz, corundum, and diamond

Trigonometry:
SOH CAH TOA:
\[
\sin = \text{opposite over hypotenuse}, \\
\cos = \text{adjacent over hypotenuse}, \\
\tan = \text{opposite over adjacent}
\]

Rainbow colors (in order):
Roy G. Biv:
red, orange, yellow, green, blue, indigo, & violet

Geologic time scale:
Camels often sit down carefully, perhaps their joints creak, perhaps early oiling might prevent permanent rheumatism.

Can you fill in the time periods?? Hint:
(http://www.geol.ucsb.edu/Outreach/TimeScale/TimeScale.html)

Sincerely,
Diana M.C. Rashash, PhD
Extension Area Specialized Agent
Natural Resources-Environmental Education