

- Education Workshop -

PUBLIC HEALTH, GROUND WATER AND WATER WELLS

SMALL WATER SYSTEMS, PRIVATE WELLS
AND ONSITE WASTEWATER DISPOSAL

presented by

American Ground Water Trust



Workshop Program Sponsors:

Analytical Services, Inc.

Cooperating and Presenting Organizations Include:

American Society of Home Inspectors

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National Association of Home Inspectors, Inc.

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Olver Incorporated

United States Geological Survey

VA Department Of Health

VA Water Well Association

Water Quality Association

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TUESDAY, MAY 23, 2006

8:10 AM - 4:40 PM

HOLIDAY INN – I-64 (WEST END/CROSSROADS)

2000 STAPLES MILL ROAD

RICHMOND, VA 23230

804-359-6061

CONTINUING EDUCATION CREDIT AVAILABLE

What's It All About?

The Trust has presented this education workshop program in Connecticut, Florida, Massachusetts, New Hampshire, New York, South Carolina and Wisconsin. The workshop will provide a unique opportunity for specialists involved with water supply and public health in Virginia to learn about important technical and regulatory issues relating to drinking water, public health, ground water protection, well construction and water systems. *The complete aquifer to tap picture in one workshop.*

Virginia's ground water is an important water supply source for homes, communities, schools and many other users such as shops, restaurants, campgrounds, etc. There are more than half-a-million private wells in the state, and ground water will always be an important and viable water source for Virginia's citizens, industry and agriculture.

Who Should Attend?

Environmental Health Professionals, Home Inspectors, Septic Tank Contractors, Real Estate Agents, Home Builders and Developers, Operators/Owners of Water Systems, Water Well Contractors, Town Officials (Conservation, Zoning, Planning), Water Testing Specialists, Water Conditioning Specialists, Conditioning Equipment Sales Staff.

Why Should I Attend?

Many different specialists are involved in providing and maintaining safe drinking water. Even though most professionals work independently, success results from a team effort. This workshop will bring you up to speed with the whole spectrum of technical issues that lie behind providing safe and reliable drinking water.

Water Professionals - You will gain insight to the complete water supply picture: geology, drilling, well design, conditioning equipment, water testing, health issues, legal liabilities, regulatory requirements, source water protection, etc. The better you understand the "whole" the more effective you can be in providing your "part" of the vital service of a safe water supply.

Town Officials, Regulators, Health Professionals - Many town regulations, codes and ordinances are based on drinking water related health concerns. This workshop will provide you with an overview of ground water, wells and water systems. It will be a one of a kind source of information to help you support community efforts to maintain safe drinking water supplies.

Real Estate Professionals, Developers, and Home Inspectors - The Trust has made presentations on the practical nuts and bolts of obtaining and protecting drinking water from wells to the National Association of REALTORS®, the American Society of Home Inspectors, the Florida Association of Building Inspectors. Discerning home buyers need the assurance that private well water supply is safe and reliable. This workshop will be a great learning opportunity for all professionals involved in property descriptions and real estate transactions.

Workshop Program

7:30 am to 8:10 am **Registration (Coffee & Donuts)**

8:10 am to 8:30 am **Welcome and Introduction to Program**

Garret W. Graaskamp, P.G., Ground Water Specialist, American Ground Water Trust, Concord, NH

8:30 am to 8:50 am **Drinking Water and Public Health Basics**

- Who is responsible for citizen and community public health in Virginia?
- How does the State assess water related health concerns?
- What services are offered by State and County Agencies?
- How serious are health issues related to water quality in Virginia?

Daniel "Duke" Price, Ed.D., Division Of Sewage and Water Services,
Virginia Dept of Health, Richmond, VA

8:50 am to 9:40 am **Ground Water Basics**

- Where is the State's ground water?
- How to choose a drilling site for a well
- How do aquifers, springs and natural ground water systems work?
- What is a karstic limestone aquifer?
- Summary of potential threats to ground water quality

David Nelms, Ground Water Specialist, United States Geological Survey,
Richmond, VA

9:40 am to 10:20 am **Water Quality Basics**
How Do I Know My Water is OK?

- Water quality - isn't there a little bit of something in everything?
- What is "good" drinking water?
- Typical water analyses - you will only find what you test for!
- What is a "bad" test result?
- Why and when should I retest my well water?
- Testing options - do-it-yourself kits, private labs, state labs

Audrey Brubeck, Chemist, Manager of Chemical Services,
Froehling & Robertson, Inc. Laboratory, Richmond, VA

10:20 am to 10:30 am **Break**

10:30 am to 11:10 am Water Wells for Yield and Health

- Well yield - How deep? Use well screens? How to test yield?
- Well health and safety - casing installation. How to avoid frost damage. Sealing the gap between the drilled hole and the casing
- Well maintenance needs for the homeowner, campgrounds, cottages and non-community systems
- Sealing (decommissioning) an abandoned well

James Hall, President, Virginia Water Well Association, New Market, VA
President, Hall and Heflin Septic Tank Service, Warsaw, VA

11:10 am to 11:50 am Water Treatment and Conditioning Basics

- The basics from well to faucet (homes and small systems)
- What conditioning equipment is available?
- When should conditioning equipment be used? What does it cost? Does it work?
- Water system design and system maintenance for schools
- What to do about microorganisms?
- Chlorination: benefits and problems
- Solutions to problems: iron and manganese, radon, arsenic

Mike Heatwole, Water Treatment Specialist, May Supply Co., Harrisonburg, VA

11:50 am to 12:40 pm Lunch

12:40 pm to 1:30 pm Chemicals and Health

- What are chemical toxicity and exposure? Why are they important?
- How is a Maximum Contaminant Level (MCL) determined?
- Common drinking water contaminants - sources and possible health implications
 - Petroleum products and MTBE
 - Tetrachloroethene (dry cleaning solvent and degreaser)
 - Nitrates and Pesticides
- How do Virginia's drinking water standards protect public health?

Khizar Wasti, Ph.D., Director, Div. of Health Hazards Control, VA Dept of Health, Richmond, VA

1:30 pm to 2:20 pm Microorganisms and Health

- Water borne microorganisms - life cycles, habitats and effects on health
- Coliform and non-coliform bacteria
- Health concerns from:
 - fecal coliform bacteria
 - *Escherichia coli* O157:H7
 - *Cryptosporidium*
 - *Giardia*
 - Protozoa
 - Viruses

Michele Monti, Environmental Scientist, Program Director of Waterborne Hazards Control Program,
Virginia Department of Health, Richmond, VA

2:20 pm to 3:10 pm **Onsite Wastewater Disposal Systems**

- What are the design options for on-site wastewater disposal?
- Is ground water quality affected by on-site wastewater disposal systems?
- Septic tanks and leach fields: what they can and cannot do
- What is a failed septic system?
- Can a failing septic system be fixed?
- Routine maintenance needs for on-site waste water systems

Dwayne Roadcap, Project Manager, Office of the Environmental Health Services, Virginia Department of Health, Richmond, VA

3:10 pm to 3:20 pm **Break**

3:20 pm to 4:00 pm **Source Water Protection**

- What are the major threats to drinking water quality that small water systems face?
- What do state and local well code and zoning regulations require
- What are small water systems doing to protect their ground water sources?
- What should small water systems and communities do to protect regional resources?
- What opportunities and resources are available for small waterworks interested in source water protection?

Sandra Warner, Geologist, Project Mgr, Olver Incorporated, Blacksburg, VA

4:00 pm to 4:40 pm **Legal Issues -
Customers, Consumers and Private Wells**

The legal responsibilities and potential liabilities of water supply professionals and equipment manufacturers:

- Small Community, Transient, and Non-transient Water System Operators
- Companies selling water conditioning equipment
- Companies installing wells, pumps and water supply equipment
- Health officials and water system inspectors with advisory or oversight responsibilities
- Developers / Builders / Realtors involved with property transactions

Henry R. Pollard V, Esq., Partner, Christian Barton, LLP, Richmond, VA

- Concluding Remarks and Adjourn -

CONTINUING EDUCATION CREDIT

You MUST bring a photo ID, and your license or certificate number to complete the sign-in/out records that will be submitted to these organizations and agencies to confirm Continuing Education credits. A Certificate of Attendance will be provided to those that want or need the document.

American Society of Home Inspectors, Inc.
International Association for Continuing Education & Training
National Association of Certified Home Inspectors (NACHI)
National Association of Home Inspectors, Inc. (NAHI)
Virginia Authorized Onsite Soil Evaluators
Virginia Water Well Contractors
Water Quality Association

Approved 7.0 ASHI® MRC
Approved 7.0 CE contact hours
Approved 7.0 CE contact hours
Approved 7.0 CE contact hours
Approved 0.70 CEUs (extra fee)
Approved 7.0 CE contact hours
Approved 0.70 CEUs

Other CEU approvals may be available - Call for details

AMERICAN GROUND WATER TRUST
16 Centre Street, Concord, New Hampshire 03301
TEL: 603-228-5444 FAX: 603-228-6557
E-MAIL: agwtHQ@aol.com WEBSITE: www.agwt.org

The Trust is a not-for-profit education organization that partners with national, state and local organizations throughout North America. The mission of the American Ground Water Trust is to protect ground water, promote awareness of the environmental and economic importance of ground water and provide accurate information to assist citizens, communities and decision makers in water resource issues.