

Winter 2019



## AMERICAN GROUND WATER TRUST NEWSLETTER

*Water issues programs and education since 1986*

### COMMUNICATION, EDUCATION AND OUTREACH IN 2018

2018 was another successful year of American Ground Water Trust outreach and education. Much of our advice and guidance is via phone and e-mail where well-owners and citizens with concerns related to groundwater contact us for non-commercial objective information. Our water well video has now reached 3.3 million views on YouTube.

In addition to our annual groundwater issues conferences in Florida, Colorado, Texas, New Mexico and California, we completed workshops on PFAS challenges, solutions to emerging groundwater contaminants, the economic benefits of riverbank filtration for water supply, how well design impacts pumping costs, strategies for local commissions and utilities to protect aquifer integrity and, for teachers, how to integrate groundwater topics into school curricula.

A special thank you to our \$1000+ supporters for making these 2018 programs possible!



### 2019 CALENDAR Some of the events scheduled for the first part of the year.

**Groundwater & Coal  
Combustion  
Residuals**  
Atlanta, GA  
January 16

**Water Well & Pumping  
Technology**  
Salinas, CA  
January 25

**AGWA-AGWT  
Annual Groundwater  
Issues Conference**  
Ontario, CA  
February 11-12

**PFAS Workshops**  
Pittsburgh, PA  
March 4  
~and~  
Philadelphia, PA  
March 6

**Source Water Protection**  
Concord, NH  
May 16

**Teacher Institute**  
Nebraska City, NE  
May 29-30

**Aquifer Conference**  
Austin, TX  
June 12-13

**Groundwater Issues  
Conference**  
Albuquerque, NM  
July 22-23

To exhibit or sponsor  
call 800-423-7748

[www.agwt.org/events](http://www.agwt.org/events)

### AMERICAN GROUND WATER TRUST GOES TO COLLEGE

Hartnell College in Salinas, California was the location of an AGWT workshop program on water well technology (January 2019). The focus of

the workshop was on well design and groundwater data management technology. The Salinas Valley is the salad capital of the nation. According to the Monterey Farm Bureau, the Valley produces 61% of leaf lettuce, 57% of celery, 56% of head lettuce, 48% of broccoli grown in the US. The area's \$4+ billion agricultural economy is very dependent on wells for its irrigation source water. If a well is properly designed and constructed it can last for many decades. Pumps can be replaced, but with some deep wells costing \$1 million, it is important to optimize well life and well yield in order for growers to get the best return on investment.

The workshop program had an emphasis on the water supply needs of the irrigation industry and brought together well and pump experts, health department officials, well contractors and companies offering software platforms for integrated water management of every element of the hydrologic, geologic, pumping, plant growth and irrigation management systems. The AGWT provided students and faculty from the college with complimentary registrations for the program. A second Salinas program is already in the planning stages for 2020.



**HARTNELL  
COLLEGE**



## AGWT CORPORATE SUPPORTER CORNER



### FEATURING WELLINTEL

WellIntel is a Milwaukee-based technology company that serves the groundwater industry nation-wide. The company began commercial operations in 2015. Using non-invasive acoustic technology and local internet connections, WellIntel turns domestic and agricultural wells into real-time monitoring points, taking timed as well as pump influence & recovery measurements. The cloud platform, Analytics Dashboard, provides tools for data analysis and decision-making and makes data ready for easy transfer to other platforms. WellIntel is an annual supporter of the American Ground Water Trust's education mission.



*"We are pleased to continue our support for AGWT's education work because they engage all groundwater stakeholders and focus on increasing understanding and improving management and sustainability of this critical resource." says WellIntel CEO Marian Singer.*

## GROUNDWATER ISSUES IN SOUTHERN CALIFORNIA

Ontario, CA ~ February 11 & 12



The Association of Ground Water Agencies and the American Ground Water Trust have held a joint annual groundwater conference in



California every February since 2000. This annual event provides an information exchange and networking opportunity for California's water agencies, utilities and water districts and for all water professionals (scientific, engineering, managerial, legal, environmental, regulatory), end-users of water, and local and state elected officials involved with water policy issues. The 2019 two-day conference features thirty presenters all in plenary sessions. Conference topics include:

- Contaminants of emerging concern (CECs)
- First jury trial over groundwater rights in California
- The "cloud" & water resources management
- Extending well data networks beyond the wellfield
- Software for GSAs to achieve sustainability
- Technology for groundwater pumping, recharge and water quality control
- Challenges for groundwater supply in rural areas
- Effectiveness of communication, outreach and education initiatives
- Geophysics at the fresh water/salt water interface
- SGMA fees: How to fund GSA implementation, GSP projects etc.



**Regional Recycled Water**  
Advanced Purification Center

The Conference also offers a third day tour option to the Advanced Purification Center at Carson. This is a new demonstration facility that tests an innovative process to purify wastewater for groundwater replenishment. It could lead to a full-scale program that purifies 150 million gallons per day and replenishes four groundwater basins in Southern California, making it one of the largest of its kind in the world.

[Registration for the Ontario conference: [www.agwt.org/events](http://www.agwt.org/events)]

**National Groundwater Awareness Week** provides an opportunity for communities and agencies concerned with source water protection to focus their outreach and education initiatives on groundwater. Collective efforts nationwide can help consolidate the message about the importance of groundwater to the nation's economy and environment. The AGWT fully supports Groundwater Awareness Week and encourages all organizations to get creative in highlighting groundwater issues in their community and among their members.



AGWT will participate in the annual New England Water Well Association Conference & Trade Show. This year's event will be at the Best Western Conference Center, Marlborough, MA, on Friday & Saturday, March 8-9. For more details: <https://www.newwassoc.org/> This annual event attracts well contractors, manufacturers and groundwater professionals from all the New England states, the Canadian Maritime Provinces and from New Jersey & New York.

**[www.agwt.org/events](http://www.agwt.org/events) - For program details, registration and sponsor & exhibit opportunities for all AGWT education/conference/workshop programs**



**AMTROL, Inc., Rhode Island**

AMTROL products include water system solutions for storage, treatment, heating, expansion and flow control

**STETSON ENGINEERING Inc., California**

Stetson Engineers provides engineering, legal and environmental solutions in the water management field

**BAROID DRILLING PRODUCTS, Texas**

Baroid manufactures, sells and services drilling fluid products for the exploration and production of water

**FLEXCON INDUSTRIES, Massachusetts**

Flexcon Industries is a leading manufacturer of pressure vessels for the water well industry

Since 1989 the American Ground Water Trust has awarded a total of \$145,500 for scholarships. Scholarships are for entry level college students intending to pursue a career in the field of groundwater. Application forms and the criteria for the awards are listed on the AGWT web-site. [www.agwt.org/scholarships](http://www.agwt.org/scholarships)

If your company/organization is interested in offering a scholarship in your name we will be pleased to hear from you. The AGWT manages all aspects of scholarship administration with 100% pass-through of corporate funding.

## GROUNDWATER — COAL ASH FROM POWER GENERATION

This Landsat 8/NASA photograph from space shows plumes of sediment, impacted by fine coal ash washed into the Atlantic Ocean on North Carolina's coast. Last September, the drenching rain from Hurricane Florence caused flooding of coal ash ponds adjacent to rivers and released tons of coal ash, a.k.a. coal combustion residuals (CCR). It is easy to see these plumes in surface water, but what about the effects on groundwater in aquifers below and adjacent to the sites in the US where CCRs are stored?



The American Ground Water Trust has just completed its first information-exchange conference on CCR and groundwater. The program held at the State Bar in Atlanta Georgia addressed scientific, engineering, regulatory and legal aspects of how best to deal with legacy CCR issues. There are close to 250 facilities in the US that generate CCR and approximately 700 places where combustion residuals are stored in landfills, disposal sites and ponds. All of these

sites have the potential to contaminate groundwater. The power generation industry is working to remediate contamination, excavate leaking pits and ensure that current and future disposals sites are engineered for groundwater protection. However, the extent of contamination and the national magnitude of the problem is still a "work in progress." The AGWT plans to play an ongoing role in providing information-exchange opportunities for all parties to find economically feasible solutions to mitigate past contamination, engineer storage solutions and promote CCR reuse technology and markets.

Continue to follow AGWT updates, as we plan to offer more programs on CCR and groundwater in 2019.

## PHOTO GALLERY



What is wrong with this picture?  
The electrical wire conduit has separated from the well cap. Now insects and/or mice have a good place to hide



Not the usual image of the water table !



Spring flow at Badwater,  
Death Valley, California  
282 ft (86 m) below sea level



## AMERICAN GROUND WATER TRUST

**The AGWT mission is to increase awareness about water resources issues, particularly those that involve groundwater**

By convening and organizing conferences, workshops and focused training programs, the AGWT:

- Promotes efficient and effective groundwater management
- Showcases groundwater science and technology solutions
- Increases citizen, community and decision-maker awareness
- Facilitates stakeholder participation in water resource decisions
- Communicates the environmental and economic value of groundwater
- Provides a safe haven to discuss "difficult" issues

## WAYS TO SUPPORT GROUNDWATER EDUCATION

AGWT has been providing objective information about groundwater and water resources for over 30 years. Because it is a hidden resource, groundwater is often misunderstood and undervalued. The AGWT mantra is "science as the basis for policy." In local, state and national issues regarding water policy, allocation authority and protection regulations there can sometimes be an atmosphere of exaggeration and spin from vested interests. In framing the issues for our education programs and in inviting presenters, the AGWT strives to maintain balance and inclusion of all points of view.

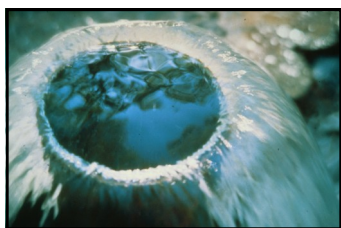
Some of our educational outreach is grant funded, but in order to meet our mission and provide an independent voice over groundwater issues, we also rely on the generosity of individuals and companies. You can help increase our educational impact in several different ways.

- Becoming an individual or corporate member
- Sponsoring and exhibiting at an AGWT event
- Hosting a program for teachers (We have trained over 2,000)
- Sponsoring a scholarship in the name of your company/organization
- Underwriting specific direct costs such as computers, web-site maintenance, printing, travel etc.

## What does it mean? – ARTESIAN

The adjective artesian describes water that flows naturally from underground to the surface. The word comes from the French phrase puits artésien, "wells of Artois," a province in France where wells constructed in the Middle Ages near the old Roman city of Artesium produced naturally flowing water. Some people incorrectly use the term artesian well to refer to any well drilled into bedrock. The scientific requirement for calling a well artesian is when water in an aquifer is under pressure and rises vertically in the well. A flowing artesian well occurs when the pressure level in the aquifer is greater than the land surface elevation. According to the United States Geological Survey the word artesian refers to situations where the water is confined under pressure below layers of relatively impermeable rock.

For more information: <https://water.usgs.gov/edu/gwartesian.html>



Artesian flow at 200 gallons per minute from a 6 inch diameter well drilled into granite bedrock in Fayette County, Georgia.



Printing and distribution of this issue of this American Ground Water Trust Newsletter has been sponsored by Cotey Chemical Corp., Lubbock, TX "Solving Water Well Production Problems Since 1949"

## INVEST IN THE AMERICAN GROUND WATER TRUST

A 501(c)(3) non-profit education organization

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(Investors at \$5000+ level)



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**If your organization would like to sponsor a future AGWT Newsletter, please contact Catherine@agwt.org**

(The electronic version has a nation-wide circulation of over 30,000)