

Aquifer Testing Techniques for Improved Hydrogeologic Site Characterization

Featuring **AQTESOLV™** and the **In-Situ Level TROLL®**

Jan 24 & 25, 2017
TGWA Annual Meeting
San Marcos, Texas

Instructors:

Jim Butler, PhD, PG

Kansas Geological Survey and
Past NGWA Darcy Lecturer

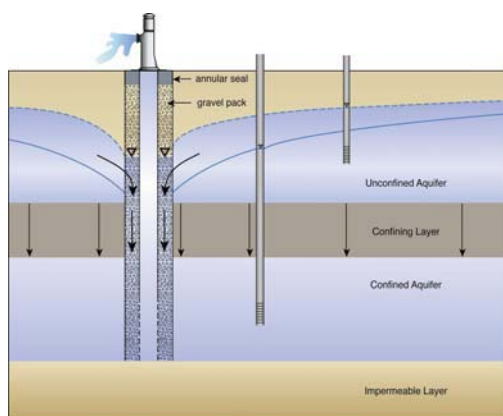
Glenn Duffield

HydroSOLVE, Inc. and
Author of AQTESOLV

Jim Butler is author of "The Design, Performance, and Analysis of Slug Tests" (Lewis Pub., 1998) and the 2007 National Ground Water Association Distinguished Darcy Lecturer. For the last 26 years, he has worked as a research scientist at the Kansas Geological Survey. He holds a M.S. and Ph.D. in Applied Hydrogeology from Stanford University. Jim also serves as a consulting hydrogeologist and is currently an associate editor of the journal of Ground Water.

Glenn Duffield is a hydrogeologist and the president of HydroSOLVE, Inc., with over 25 years of consulting experience in groundwater flow and transport modeling, software development and aquifer test analysis. He is currently an associate editor of Ground Water and the author of AQTESOLV, which for over 23 years has been the world's leading software for the analysis of aquifer tests.

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Even when you are confident of the geologic conditions, you may have difficulty designing effective aquifer tests, running field equipment or selecting the best available model to analyze the test data. Where can you turn to improve your approach and skills for aquifer testing?

The TGWA and Midwest GeoSciences Group can help! We have designed a powerful two-day training course on aquifer testing design, field methods and data analysis techniques featuring AQTESOLV and the In-Situ Level TROLL. This course will provide you with the knowledge to master aquifer testing from beginning to end - using world class field equipment and aquifer test software.

Master State-of-the-Art Field and Analysis Procedures

- Learn to design the most effective aquifer test programs for a wide range of geologic conditions (including low permeability confining units and fractured bedrock)
- Gain an advantage during your next aquifer test by mastering new field and data analysis procedures
- Find out how to differentiate laterally extensive sands from isolated sand bodies
- Discover new techniques for anticipating and resolving problems that may arise in aquifer tests
- Obtain step-by-step instruction for field screening using AQTESOLV computerized analysis

Learn Up-To-Date Slug Testing Procedures

- Learn to select and apply appropriate slug test models for different hydrogeologic settings and well configurations
- Maximize results from tests conducted in wells screened across the water table
- Find out how to recognize and account for the effects of noninstantaneous (noisy) test initiation and wellbore skin
- Discover the latest strategies for designing, conducting and analyzing tests in high-K media including oscillatory responses
- Gain knowledge of new approaches for decreasing test duration in low-K media

Discover Recent Advances in Pumping Test Methods

- Learn to design, conduct and analyze pumping tests in confined, leaky, unconfined and fractured aquifers
- Master strategies for dealing with variable pumping rates, wellbore storage, partial penetration, well losses, wellbore skin and other common issues
- Discover diagnostic methods including derivative analysis that help you select appropriate pumping test models
- Gain an advantage by applying Agarwal's method for analysis of recovery data
- Find out the best procedures for monitoring a pumping test with the In-Situ, Inc. Level TROLL
- Master tips and tricks for using AQTESOLV to analyze constant-rate, step-drawdown and recovery tests



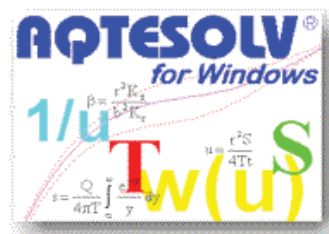
COLORADO SCHOOL OF MINES

16 Contact Hours
(1.6 CEUs)

CEU Certificate Optional

BRING YOUR COMPUTER

Analyze data from a variety of hydrogeologic conditions and well configurations using AQTESOLV. Participants may bring their own project data for analysis help from the instructors.



Advanced registration is necessary for participation in this limited-enrollment short course. Pre-registration is required to reserve space and receive course materials. A confirmation letter and map will be sent within 10 days following your course registration.

REGISTRATION

Aquifer Testing Techniques
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January 24 & 25, 2017

Last Name: _____ First Name: _____

Position: _____

Company: _____

Address: _____

City, State, Postal Code: _____

Phone: _____

Email: _____

Course Fee:

Register Now \$750.00

After Jan 10 \$975.00

Register www.tgwa.org

On-Line: www.midwestgeo.com

☐ Check Enclosed

☐ VISA ☐ MasterCard

VISA / MC NUMBER

CARDHOLDER NAME

☐ Purchase Order _____

*For early registration, payment must be received before Jan 10, 2017. Cancellations may be made up to Jan 10, 2017 however 35% of the fee will be charged. No refunds. Maximum number of 40 registrations for this course. Payments processed by Texas Ground Water Association. For course-related questions, contact Dan Kelleher at 763.607.0092 or email service@midwestgeo.com. For payment and administrative questions, contact Lisa Henley at lhenny@tcwa.org.