



SWS Enews



Water Solutions in Perspective

February 2007

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AquiferTest Pro 4.1
Now Released!

Expand the scope of your pumping test and slug analysis

[Learn what's new in AquiferTest Pro 4.1!](#)

Order your 2007 Calendar Today!

[Click here to order your 2007 Groundwater & Environmental Professionals Calendar!](#)

Product News

AquiferTest Pro Version 4.1 Now Released!

The industry choice for pumping test and slug test data analysis

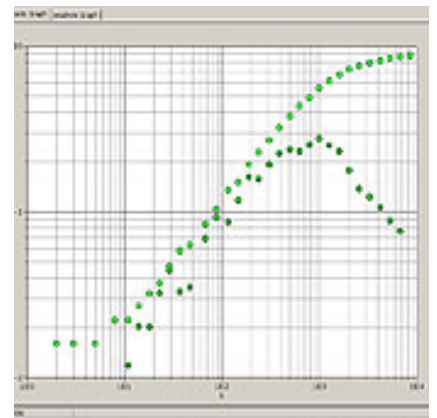
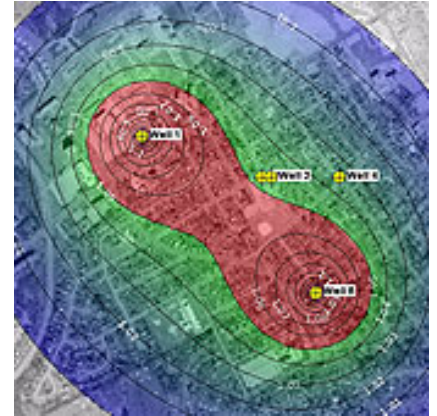
AquiferTest Pro*, a popular software package available for graphical analysis and reporting of pumping test and slug test data, now includes more functionality and more features requested from our users. Designed by hydrogeologists for hydrogeologists, AquiferTest Pro expands the available solution methods and improves communication with groundwater dataloggers.

AquiferTest Pro now incorporates several high-demand analysis methods, along with increased functionality which now offer you the ability to expand the scope of your pumping test and slug analysis including the:

- **Theis recovery** analysis method, a traditional pumping test method with fixed assumptions
- **Cooper-Jacob** analysis method (Time-Drawdown, Distance-Drawdown, and Time-Distance Drawdown) which allows the user to show the Cooper-Jacob validity line
- **Boulton** analysis method for the analysis of pumping tests in unconfined aquifers, anisotropic or isotropic, with fully or partially penetrating wells
- quick **import of .MON files** from Diver* dataloggers directly into AquiferTest Pro saving you time
- display statistics of the automatic fit, show the quality of the fit, export to .txt or .xls file formats, and copy or print.

Upgrade today from only \$295 US by calling 519-746-1798 or shop online at www.waterloohydrogeologic.com.

Upgrade to version
4.1 Today!
From only **US\$ 295.00**




**Download a FREE
Demo Today!**

[Download the AquiferTest Pro 4.1
Demo Today!](#)

For more information, contact us:
Phone: +1-519-746-1798
Email: sws-sales@slb.com
Website: [Visit our AquiferTest web page](#)

Efficiently Analyze and Report Groundwater Data with Diver Dataloggers and AquiferTest Pro Software

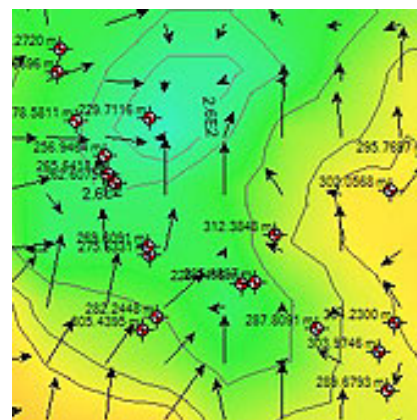
Continuous groundwater monitoring has become the industry norm when assessing water resources, protecting the terrain housing the monitoring network and planning for sustainable water supplies in communities with growing populations. Advanced groundwater monitoring instruments and data analysis software offer today's water professionals the tools necessary for accurate and cost-effective management of aquifers around the world.

Diver* Dataloggers and AquiferTest Pro*, developed by Schlumberger Water Services, are now available as the "**Aquifer Pumping Test Bundle**" - saving you time and money throughout all phases of your groundwater monitoring projects.



What's included with the Aquifer Pumping Test Bundle?

- 5 x Diver dataloggers
- 1 x Baro-Diver* (measures barometric pressure)
- 1 x license of AquiferTest Pro
- 5 x 30ft of Diver Data Cable (DDC)
- 1 x 3ft of Diver Data Cable (DDC) for Baro-Diver
- 1 x DDC to PC Interface cable
- 1 x LoggerDataManager* software
- 1 x Pocket-Diver Manager* acquisition, storage, and transfer PDA software



Monitoring Network

Aquifer Pumping Test Bundle benefits:

- Minimize the need for continuous site visits - a major cost savings!
- Optimize your test results via with more data points and greater accuracy
- Diver dataloggers offer a robust, proven technology for collecting groundwater data
- Customize your pumping tests or use pre-determined pumping tests programmed within the Diver
- Efficiently analyze and report your pumping test or slug test data for quick, accurate results
- Variety of analysis methods available for added convenience



Cera-Diver

Realize the meaning of your groundwater data using the Aquifer Pumping Test Bundle!

Learn more about Diver dataloggers - [Click here](#)

Learn more about AquiferTest Pro - [Click here](#)

Aquifer Pumping Test Bundle Special Includes...

SOFTWARE:

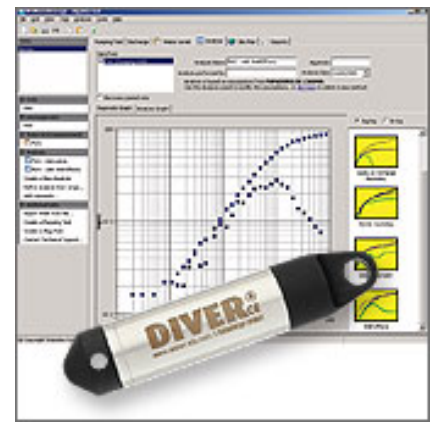
AquiferTest Pro, Pocket-Diver & LoggerDataManager Software

HARDWARE:

5 - Diver dataloggers + 1 Baro-Diver

ACCESSORIES:

5 x 30ft - Diver Direct Cable (DDC), 1 x 3ft DDC for Baro-Diver, 1 x DDC to PC Interface cable



Aquifer Pumping Test Bundle!
AquiferTest Software + Diver Dataloggers!

[Contact us](#) to quote your **Monitoring Network Bundle** today!

* - conductivity only available with CTD-Diver



Fill out our [online form](#) to receive your complimentary Monitoring Services CDROM!

For more information, contact us:

Phone: +1-519-746-1798

Email: sws-diver@slb.com

Website: [Visit website](#)

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Consulting Services News

Monitoring Groundwater Resources for Municipalities - Guelph, Ontario, Canada

The City of Guelph is located in south western Ontario, Canada with a growing population of over 110,000. Currently, Guelph relies one hundred percent on groundwater as their source of water supply. In April of 2006, the City of Guelph Waterworks Department was approached to participate in a pilot study developed by Schlumberger Water Services. The study was intended to evaluate the effectiveness of Diver* dataloggers and to quantify the benefit of electronic data collection solutions for environmental monitoring.

Highlights of this project included:

- deploying automated data acquisition sensors to support water supply studies
- determining the effectiveness of automated sensors versus manual and frequent data collection
- utilizing sensors to correct and compensate for changes to climatic conditions
- applying 3D visualization software for displaying and mapping water elevations



[Click here to read the full case study.](#)

SWS Exhibiting at Workshops & Conferences Around the World

Upcoming Events

- **AquaTerra 2007**
Dates: Feb 7-9, 2007
Location: Amsterdam, Netherlands
- **3rd Annual Growth Management & Environmental Permitting Short Course**
Dates: February 21-23, 2007
Location: Daytona Beach, Florida
Booth Number: 14
- **2nd International Conference and Exhibition on Geo-Resources in the Middle East and North Africa**
Dates: February 24-28, 2007
Location: Conference Center, Cairo University, Egypt
- **American Water Works Association 2007 Customer Service and Information Management & Technology Conference and Exhibition**
Dates: March 4-7, 2007



[Learn more about our Consulting Services!](#)

Location: Austin Convention Center, Austin, Texas

For more information, please contact:

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Training News

Environmental and Groundwater Modeling Course Line-Up

Waterloo Hydrogeologic has finalized its calendar of training course locations and dates for 2007. We will be offering a full suite of Professional Short Courses on topics ranging from groundwater modeling using finite differences (Visual MODFLOW) and finite elements (FEFLOW), to GIS data management for environmental professionals, aquifer performance test analysis, water quality data management, contaminated site risk assessment and regulatory review of hydrogeology studies. We will also be offering some specific customized courses that were tailored to meet the needs of specific industry sectors. As in other years, we will be offering all of our standard WHI "Open Enrolment" courses at our training facilities in Waterloo, Ontario, Canada as well as at various selected venues around the world.



If you are interested in one of our courses, or if you would like to discuss a customized "On-site Training Course", simply contact our Training Department at sws-training@slb.com and we will work with you to develop a course that provides the content, topics, laboratory exercises and software that you require.

Can't make it to one of our Open Enrollment Courses? Call us about our On-Site Custom Courses designed to suit your specific needs!



[Download](#) our 2007 Training Course Schedule!

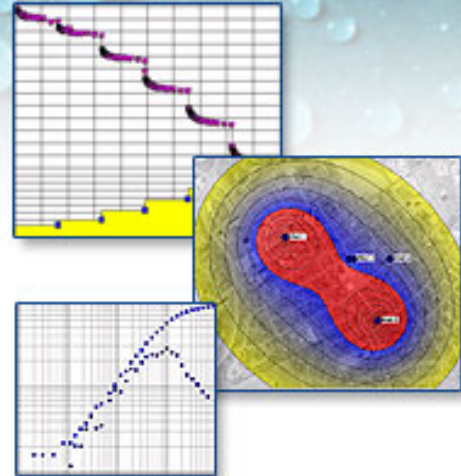
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Aquifer Test Analysis

Principles of Pumping Test Design and Techniques for Data Analysis



A wide variety of techniques can be applied to analyzing aquifer tests. This course covers the theory behind the techniques and provides an opportunity to obtain hands-on experience in analyzing aquifer test data collected from a variety of conditions.



Course Details: [Visit our website for more details](#)

Registration: [Register online today!](#)

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Dont Miss Our Upcoming Courses...

[Applied Groundwater Flow and Contaminant Transport Modeling](#)

[Finite Element Groundwater Modeling](#)

[Making Sense of Environmental Data with HydroGeo Analyst](#)

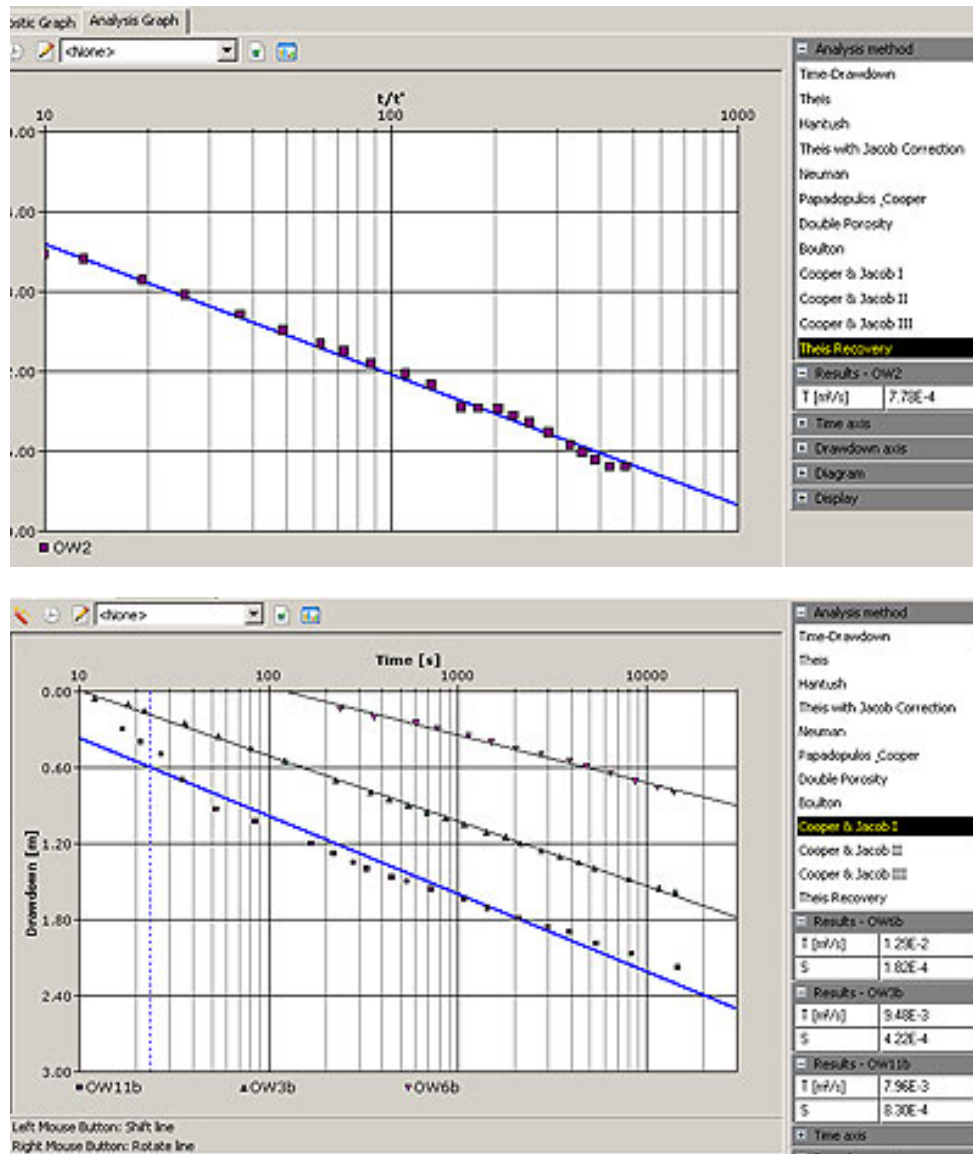
[Water Quality Data Management & Modeling](#)

[Regulatory Review of Hydrogeology Studies Studies](#)

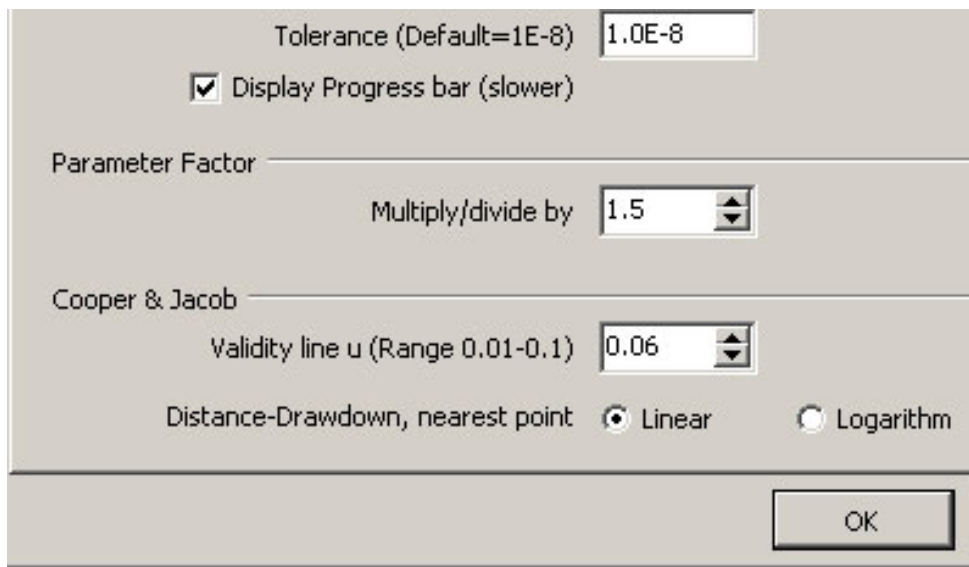
Tips & Tricks

New Features in AquiferTest 4.1

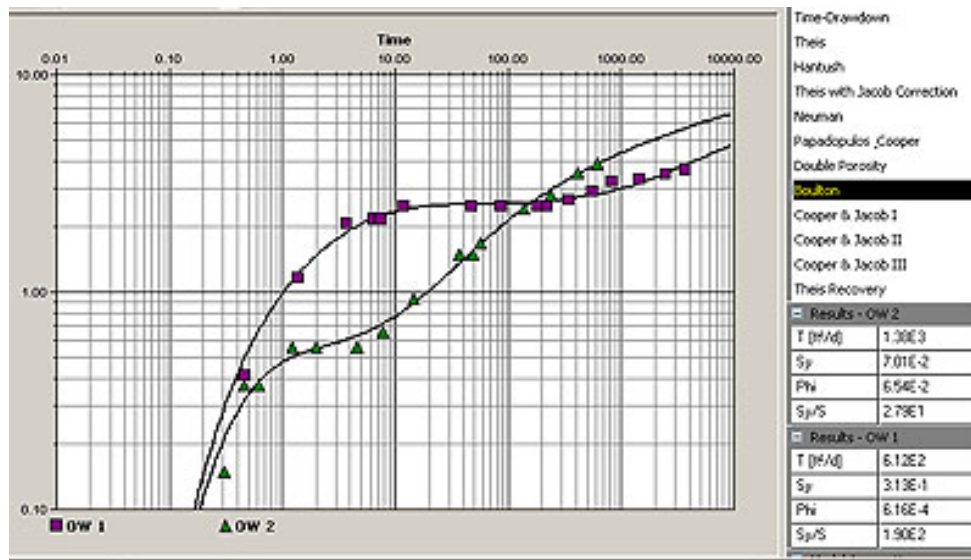
The latest release of [AquiferTest 4.1](#) has introduced new analysis methods to make pumping test analysis even easier. This new release has introduced traditional pumping test methods with fixed assumptions (confined, constant discharge rate, single pumping well, fully-penetrating and isotropic), the Theis Recovery analysis and the Cooper-Jacob (Time-Drawdown, Distance-Drawdown, Time-Distance Drawdown).



Since these methods use fixed assumptions, the model assumptions available with other analyses cannot be accessed, allowing the user to simply enter the required information and choose the analysis method. The Cooper-Jacob analysis now has an option to display the Cooper Jacob validity line and define different values for μ . This line represents the lower μ value for which the Cooper-Jacob method is valid. The value for μ must be between 0.01 and 0.1 and can be set by selecting Tools>Options and browsing to the Constants tab.



The Boulton method has also been implemented in the latest version of AquiferTest. This method is suitable for unconfined aquifers, anisotropic or isotropic, with fully or partially penetrating wells. The Boulton method has the same assumptions as the Neuman analysis. However, the Neuman analysis can be demanding on your system resources, due to the complex calculations for the anisotropy. In some cases, the Boulton analysis may be a better choice.

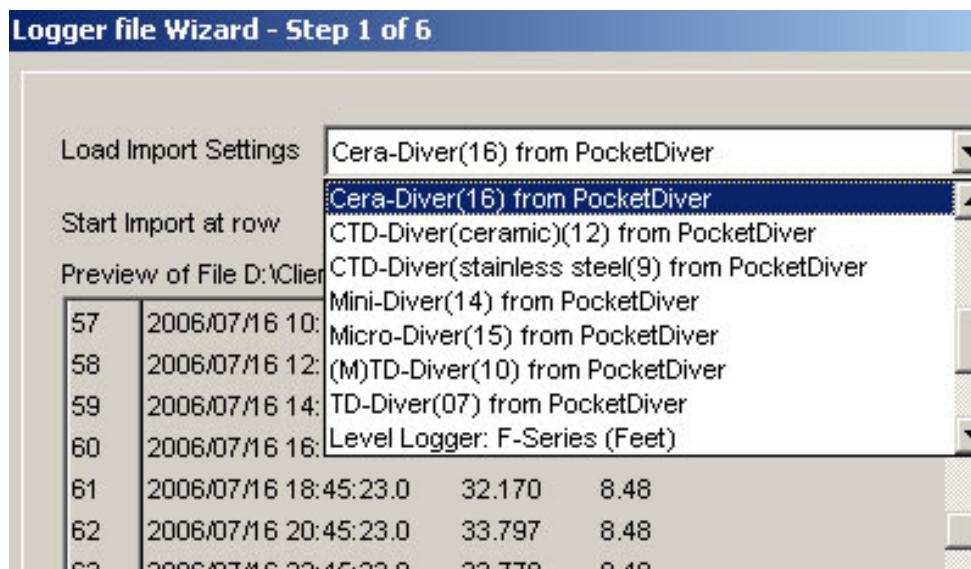


This new version has an added option to display Statistics for the Automatic fit. This feature can be found under the Analysis menu. The statistics report may be saved to .TXT or .XLS file, copied to a clipboard, or printed as is. This option may be loaded by right-clicking on the analysis graph and selecting 'Statistics'. The following Statistics window will appear.

6	Ratio S_y/S	1.90E2		
7				
8	Statistics of the Fit			
9	Mean delta s [m]	0.000		
10	Sum of squared errors [m ²]	0.004		
11	Variance [m ²]	0.000		
12	Standard Deviation [m]	0.016		
13				
14	t [s]	s [m]	s (Model) [m]	delta s [m]
15	30	0.05	0.06	-0.01
16	90	0.14	0.147	-0.007

The summary report contains statistics for the automatic fit, as well as the delta S between the observed drawdown and the drawdown value on the modeled curve.

AquiferTest 4.1 also has added support for [Diver](#) Datalogger format (.MON files). During the data logger wizard import, select Diver Datalogger from the set of pre-defined settings. AquiferTest will automatically map the appropriate columns in the .MON file, and select the appropriate date and time formats.



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