Colloidal Borescope

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geotech

AquaVISION Colloidal Borescope

The AquaVISION Colloidal Borescope measures groundwater velocity, direction and particle size in real-time. It accomplishes these difficult tasks by using proprietary hardware and AquaLITE software.

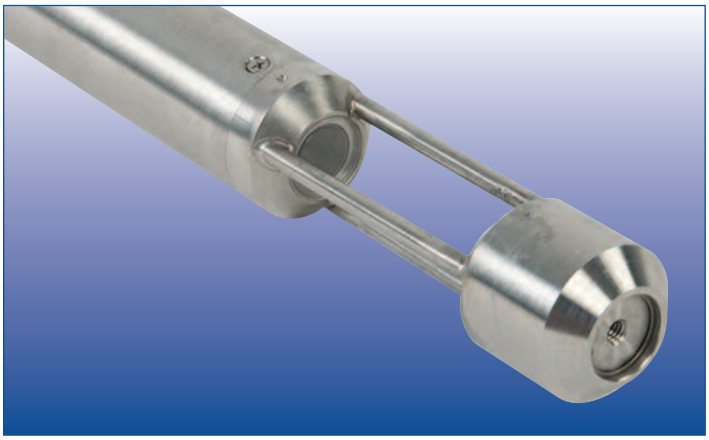
The AquaVISION Colloidal Borescope System accurately determines groundwater velocity, flow direction and particle sizes at depth-specific intervals. The AquaVISION Colloidal Borescope System yields thousands of data points per minute for hours of statistically assured data.

BENEFITS

AquaVISION's Colloidal Borescope System provides a direct means of accurately determining groundwater flow direction and velocity. The Borescope measurement technique uses existing monitoring wells or developed borings for assessment and thus avoids the cost of additional wells and piezometers.

APPLICATIONS

- Assessing groundwater capture zones
- Planning locations for monitoring recovery wells, and injection wells
- Accurately calibrating groundwater models
- Excellent alternative to slug tests and pump tests
- Tidal influences
- Industrial hydrology
- Gathering evidence for groundwater contamination litigations
- Can observe flow at the pore scale which measure velocities ranging from 0 to 30 mm/sec



AquaVISION

Standard Unit
Requires Laptop with Express Card Slot (~54mm)

CALL GEOTECH TODAY (800) 833-7958

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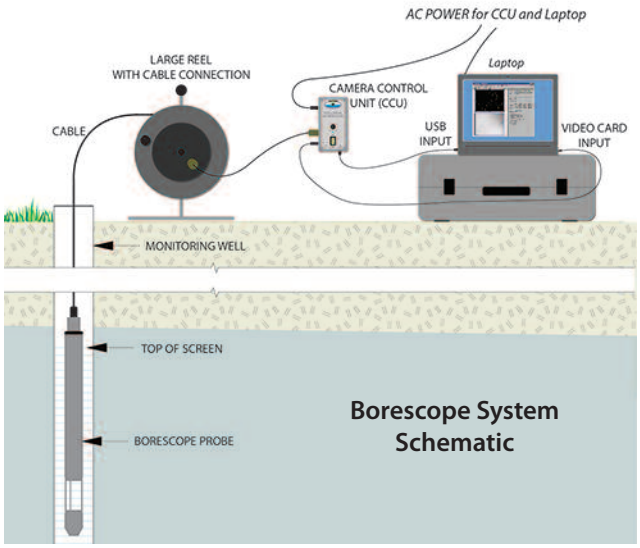
COMPONENTS

- Colloidal view video microscope with magneto-resistive digital compass for viewing of groundwater speed and direction.
- Camera control unit for borescope probe incorporating camera and lighting power supplies, serial data connection for the digital compass (USB), and transmission of live downwell video (Express Card, ~54mm).
- Includes hand reel, carrying case, camera control unit, probe, video card and drivers, relevant cables and connectors.
- AC and DC power cords for convenient, versatile power source operation.
- Reinforced composite video underwater camera cable incorporating Kevlar® longitudinal strain relief and polyurethane outer jacket.
- Cable lengths of 100-1000 feet (200' standard)
- 20' splash proof extension cable for connecting camera control unit to reel on systems 300' and longer.
- AquaLITE software
- Detailed operation manual with full instructions on how to operate the instrument.

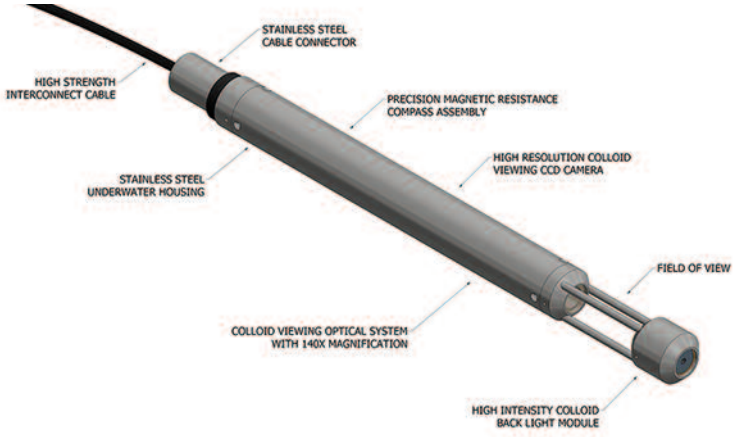
SPECIFICATIONS

Applications	2" (5.8cm) or larger well diameter
Maximum Operating Depth	1,000'
Maximum Water Pressure	3,000' water column
AC Power Requirements*	90-240 VAC 47 to 63 Hz. 7 Watts. Service requirement <1 amp.
DC Power Requirements*	10 to 16V DC @ <1 amp.
Probe Size	21.25" L x 1.75" OD
Probe Weight	5 lbs.
Probe Housing Material	300 series stainless steel
Optional Window Material	Sapphire
Camera Control Unit Size	3.98" W x 7.89" L x 3.16" H
Camera Control Unit Weight	2 lbs.
Cable Size	.32" OD (customer specified length from 100' to 1000')
Cable Jacket Material	Urethane (composite cable material ROHS compliant)
Electrical Component Material	Non-ROHS compliant (dispose of properly)
Operating Temperature Range	-10° to 45° C (14° to 113° F)
Camera Field of View	2.7mm x 2mm
Depth of Focus	.2mm
Minimum Velocity	0 mm/s
Maximum Velocity	30 mm/s
Minimum Particle Size	10µm
Maximum Particle Size	Within camera field of view

*Not including laptop or PC



Borescope System Schematic



Borescope Probe Detail

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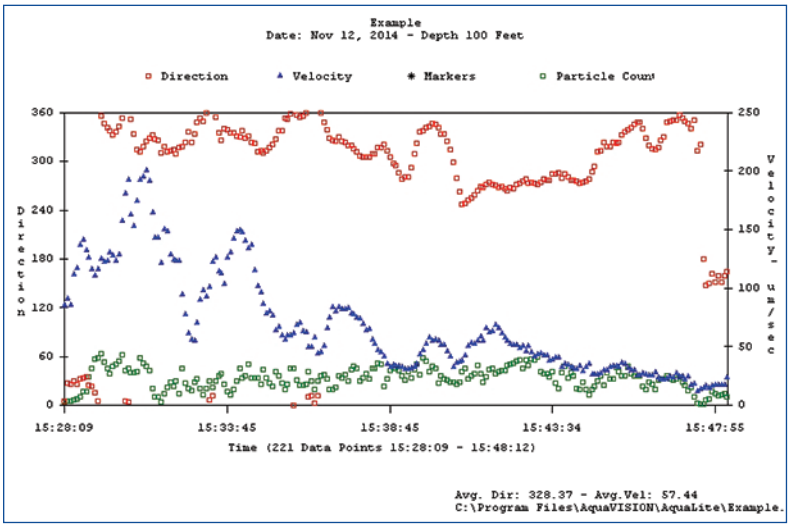
AQUALITE SOFTWARE

The Colloidal Borescope System powered by AquaLITE enables environmental scientists to fully understand the complexity of site hydrology. The Colloidal Borescope can measure groundwater direction and velocity in real-time at depth specific intervals.

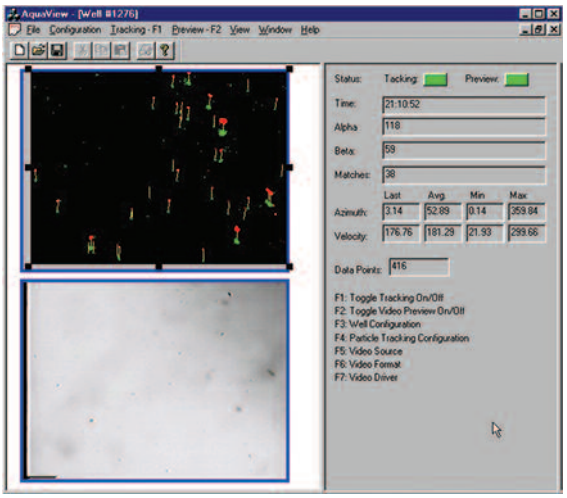
AquaVISION's AquaLITE software allows the user to view both the live video signal from the borescope and a symbolic representation of particle movements at the same time. The software is fully configurable, to allow for changes in video signal quality, groundwater clarity, and other aquifer characteristics.

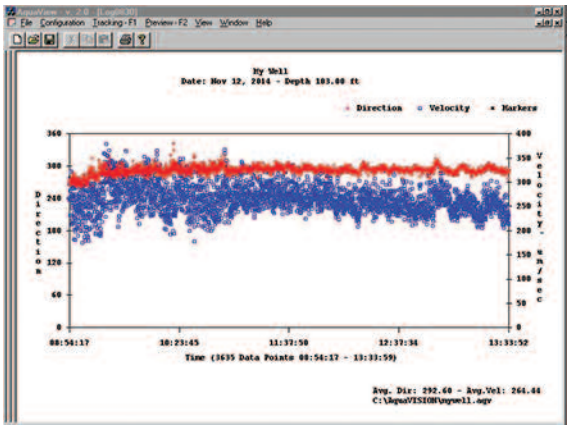
The software also allows the user to view the sampled data in directional, velocity or combined graphs, all in real-time. The graphs are fully customizable. The graph images, as well as the sampled data can be exported for use in other applications and/or presentations.

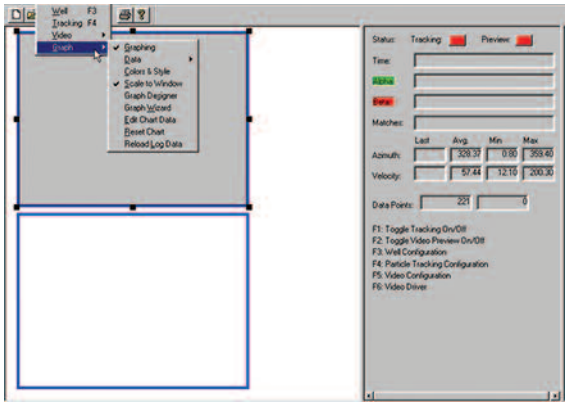
The software offers a statistical summary report for the user and includes well number, date and data information, general statistical analysis, and a vector analysis. The summary report may be exported for use other applications and/or presentations.



Example of graph, showing velocity, direction, and particle count







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