



Vista Clara's
Javelin
Miniaturized Logging NMR Tool for
Near-Surface Investigations and
Aquifer Characterization



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VISTA CLARA INC.
21ST CENTURY GEOPHYSICS

Javelin: Direct Down-Hole Detection and Characterization of Groundwater

A revolution in groundwater science, Javelin is the first tool to deliver economical NMR logging measurement in boreholes as small as 2 inches diameter for groundwater investigations. NMR has proven to be an invaluable tool in oil and gas exploration, but the large size and high cost of oil-field tools has limited the use of NMR logging in near-surface applications, until now.

Javelin Measurements Provide:

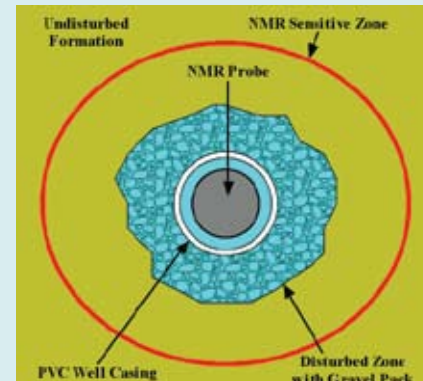
- Direct detection and quantification of groundwater
- Quantification of bound versus unbound water
- Precise determination of porosity and water content
- Estimation of hydraulic conductivity, specific yield, and pore-size distribution
- Investigation to 600 feet depth with sub-meter resolution
- Measurements in holes as small as 2 inches diameter
- Compatible with Geoprobe® systems

Javelin Applications Include:

- Groundwater exploration and well site selection
- Detailed characterization of aquifers properties and parameterization of groundwater models
- Delineation of small-scale geologic features including flow barriers and preferential flow zones.
- Integration of logging and surface NMR data
- Evaluation of subsurface engineering and soil stability
- Detection of hydrocarbons

Designed for Sensitivity within the Undisturbed Zone

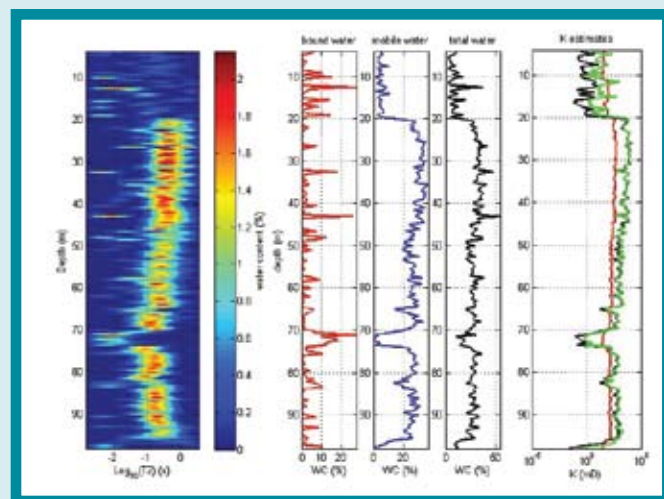
The Javelin probe operates in a borehole like an inside-out MRI scanner. The tool projects a magnetic field several inches beyond the borehole, creating a cylindrical “sensitive region” from which the groundwater NMR signal is directly detected. The sensitive region is designed to be located within the undamaged region of the formation, where the rocks and sediments have not been disturbed by drilling.



Enabling Direct Aquifer Characterization

Fast Processing Software

User-friendly software package enables real-time monitoring of data quality and to rapid processing of measurements while logging. Analysis tools yield decay-time distributions, water content, and estimated hydrogeologic parameters.



Small Diameter Probes

Javelin probes are optimally designed for small diameter wells and boreholes common in near-surface applications. One probe is designed for combination with a Geoprobe® system for minimally-invasive surveying.

Advanced Noise Cancellation

Vista Clara’s noise cancellation methods (patent pending) limits the influence of cultural noise. This feature is critical for measurements at shallow depths, which are often of greatest interest in groundwater studies.

Javelin Specifications:

Interchangeable
Connectorized probes

Operates in open or
PVC-cased holes

Minimum Echo-time: 1.5 ms

Operating Frequency
250 kHz-300kHz

Power Supply 120 V AC
(60Hz) or generator

Available in three sizes
(other probe sizes available
by special order)

	Micro Operating 2 inch PVC boreholes	Mole Combinable with Geoprobe® system	Slim Maximum sensitivity and resolution
Outer Diameter	1.67 in	2.5 in	3.5 in
Length	7 ft	5 ft	4.5 ft
Vertical Resolution	3 ft	1.5 ft	1.5 ft
Radial DOI	4.5 in	5.75 in	7.5 in

Javelin System and Accessories:

Single Javelin Probe
(additional interchangeable
probes optional)

Surface Power/Electronic Unit
with shock mounted weather-
proofed enclosure

Custom 600 ft. Logging Cable

Mount Sopris 4WNA
Motorized Winch and
3WCA Winch Controller

Panasonic Toughbook
Field Computer

