SITE CHARACTERIZATION
Schlumberger offers a full suite of sophisticated geophysical well logging technologies, data acquisition instrumentation, and geological modeling software designed to characterize subsurface environments.

- Identify porosity distribution, hydraulic conductivity, and capillary pressure
- Estimate water-flow porosity
- Define rock porosity and lithology
- Continuously measure upward and downward flow velocity and rate
- Log bulk matrix geometry and anisotropy
- Identify fracture orientation and aperture
- Resolve a comprehensive view of the subsurface environment

FIELD MONITORING
Our high-quality field instrumentation is integrated with sophisticated data transfer and data management technologies. Qualified field technicians characterize, assess, and optimize injection, recovery and groundwater monitoring technologies for your site.

- Multiwell field systems maintain any number of zones in a single borehole
- Measure pressure and electric field conditions
- Sample fluids without repeated purging
- Conduct pressure transient testing
- Determine long-term quality of containment, temperature, and depth
- Monitor compact design to accommodate small-diameter wells
- Capture sub-surface corrosion resistance in most environments
- Real-time, wireless data transfer in a centralized information management system

ADVANCED MODELING
Our high-quality field instrumentation is integrated with sophisticated data transfer and data management technologies. Qualified field technicians characterize, assess, and optimize injection, recovery and groundwater monitoring technologies for your site.

- Provides comprehensive solutions for water management problems
- Simulate fluid flow and transport in porous media
- Predict groundwater levels and contaminant movement
- Assess the impact of development activities on groundwater resources
- Evaluate the effectiveness of remediation strategies
- Assess the sensitivity of groundwater resources to various stressors

ANALYSIS AND MANAGEMENT
Field data, analytical data, and spatial data are all critical components of a successful groundwater management strategy. We can help you integrate, analyze, and report on these many data types.

- QA/QC functionality ensures accurate and reliable data
- GIS capabilities provide spatial and temporal distribution of data
- Cross-section interpretations of geologic and hydrogeologic data validate conceptual models
- Advanced borehole logs highlight geologic features critical to subsurface characterization
- Reports present project data to meet compliance guidelines and client needs

Our people deliver your success
Managing the world’s water resources is no small task. We tackle global water challenges with our worldwide network of hydrologists, geologists, and environmental experts. Combined with powerful and cost-effective technologies, we are successfully managing the world’s water resources, for now and the future.

Advanced technologies for innovative solutions

Oilfield Water Management

www.water.slb.com
www.water.slb.com
www.water.slb.com
www.water.slb.com
Oilfield Water Management

Solutions to optimize your productivity

Schlumberger is the world’s leading oilfield services company, supplying technology, integrated project management, and information solutions to optimize reservoir performance. The company is truly global, with employees representing 140 nationalities working in approximately 80 countries.

For many oil and gas production projects, the development of water sources for enhanced oil recovery, provision and recycling of frac water, and management, treatment, and disposal of produced water comprise a significant cost burden.

Cost-effective techniques for managing oilfield water require a comprehensive understanding of reservoir characteristics, production volumes, hydrogeology, engineering design and environmental considerations.

Schlumberger Water Services specializes in designing and managing projects to minimize the costs associated with oilfield water and to help our clients comply with regulatory requirements. Our expertise in oilfield services, combined with our team of water professionals and water-specific technologies, provide our clients with integrated project solutions for oilfield water that incorporate conveyance, pumping, treatment, and disposal.

We are committed to providing cost-effective solutions for water projects. We achieve this by applying our unparalleled experience and technologies.

TECHNOLOGY DIFFERENTIATION
More than 80 years ago, the Schlumberger brothers invented wireline logging as a technique for obtaining downhole data. Today, our dedication to technology, innovation, and quality remain our guiding principles and provide Schlumberger Water Services with a competitive advantage. Through practical application of our technology, from surface and downhole geophysics to deep, multilevel water well completions, and high resolution water sensors, we provide cost-effective project solutions to our clients.

OUR PEOPLE – OUR COMMITMENT
The Schlumberger global network of water professionals has unparalleled expertise and experience in applying practical solutions to water related projects, and is committed to delivering projects on time and on budget. Our employees are dedicated to technical excellence and safety. We invest heavily in professional development, and all employees receive dedicated training through our Quality and HSE (Health, Safety, and Environment) programs. Our commitment to best practices, every time, and all the time, is paramount in every aspect of a project – ensuring our clients are confident and secure in our standards of work.

GLOBAL EXPERIENCE
Globally, we are helping clients overcome the most challenging obstacles in water management. Schlumberger provides solutions for both conventional and unconventional development, including water supply, injection wells for produced water disposal, treatment schemes for beneficial reuse, recycling options for frac flow backwater, and many other industry needed services. Whether you require a full-scale turnkey solution or a single project service, Schlumberger brings the technology and expertise to make it a success.
Oilfield Water Management

Solutions to optimize your productivity

Schlumberger is the world’s leading oilfield services company, applying technology, integrated project management, and information solutions to optimize reservoir performance. The company is in global, with employees representing 200 countries working in approximately 80 countries.

For many oil and gas production projects, the development of water sources for enhanced oil recovery, provision and recycling of frac water, and management, treatment, and disposal of produced water comprise a significant cash burden.

Cost-effective techniques for managing oilfield water require a comprehensive understanding of internal characteristics, flow volumes, hydrology, engineering design and environmental considerations.

Schlumberger Water Services specializes in developing and managing projects that incorporate well characterized oilfield water to help our clients comply with regulatory requirements. Our expertise in the oilfield water sector, combined with our team of water management, environmental, and water-specific technologies, provides our clients with integrated project solutions for oilfield water that incorporate conveyance, pumping, treatment, and disposal.

GLOBAL EXPERIENCE

More than 80 years ago, the Schlumberger brothers invented cementing as a technique for cementing downhole data. Today, our dedication to technology, innovation, and quality remain our guiding principles and provide Schlumberger Water Services with a competitive advantage. Through practical application of our technologies, from surface and downhole geophysics to deep, multilevel water well completions, and high resolution water sensors, we provide cost-effective solutions to our clients.

OUR PEOPLE – OUR COMMITMENT

The Schlumberger global network of water professionals has unparalleled experience and expertise in applying practical solutions to water-related projects, and is committed to delivering projects on time and on budget. Our employees are dedicated to technical excellence and safety. We invest heavily in professional development, and all employees receive dedicated training through our Quality and HSE (Health, Safety, and Environment) programs. Our commitment to productivity, every time, and all the time, is paramount in every aspect of a project – ensuring our clients are confident and secure in our standards of work.

HSE (Health, Safety, and Environment) programs. Our commitment to productivity, every time, and all the time, is paramount in every aspect of a project – ensuring our clients are confident and secure in our standards of work.

TECHNOLOGY DIFFERENTIATION

Schlumberger Water Services provides the following services:

SUPPLY

- Construction management
- Conveyance design
- Subsurface characterization
- Well design
- Site and permitting
- Conveyance design
- Pump evaluation
- Construction management

TREATMENT

- Backfilling of frac floodback water
- Subsurface characterization
- Well design
- Site and permitting
- Conveyance design
- Pump evaluation
- Construction management

To identify and mitigate your water management challenges and reduce your total water management costs, Schlumberger provides the know-how and expertise to:

- Water supply and disposal
- Injection well optimization
- Groundwater hydrology and engineering
- Implantation and design of injection wells
- Treatment assessment and design
- Environmental compliance and protection

SERVICES

- Detailed site characterization to reduce risk
- Water management strategies
- Evaluation of water management alternatives
- Optimization of technologies on a cost-per-barrel basis
- Design and construction of surface facilities and conveyance systems
- Optimize placement, design, and construction of injection wells
- Site, design, and maintenance of water injection projects
- Assessment and design of water treatment systems
- Evaluation and design of managed and dewater irrigation systems
- Permitting and compliance
- Water rights and resource marketing

Disposal

- Uninterrupted productivity

Uninterrupted productivity

Through decades of experience, and deep understanding of the oil and gas environment, Schlumberger experts have the know-how to manage the most complex water management issues facing the energy industry.

We are committed to providing cost-effective solutions for water projects.

We achieve this by applying our unparalleled experience and technologies.

We achieve this by applying our unparalleled experience and technologies.
SITE CHARACTERIZATION
Schlumberger offers a full suite of sophisticated geophysical well logging technologies, data acquisition instrumentation, and geological modeling software designed to characterize subsurface environments.
- Identify pore size distribution, hydraulic conductivity, and capillary pressure
- Estimate water-filled porosity
- Define total porosity and lithology
- Continuously measure upward and downward flow velocity and rate
- Log bulk matrix geochemistry and mineralogy
- Identify fracture orientation and aperture
- Receive a comprehensive view of the subsurface environment

FIELD MONITORING
Our high-quality field instrumentation is integrated with sophisticated data transfer and data management technologies. Qualified field technicians characterize, assess, and optimize injection zone and groundwater monitoring technologies for your site.
- Multilevel well systems monitor any number of zones in a single borehole
- Measure pressure under shut-in conditions
- Sample fluids without repeated purging
- Conduct pressure transient testing
- Frequent long-term measuring of conductivity, temperature, and depth
- Robust compact design to accommodate small diameter wells
- Ceramic housing offers corrosion-resistance in most environments
- Real-time, wireless data transfer to centralized information management systems

ADVANCED MODELING
Advanced modeling software address geologically complex site conditions that extend beyond traditional flow and transport modeling. Our software provide the highest degree of accuracy possible.
- Hydrogeologic conceptual models are developed directly within the data management system to support input for various numeric models
- Model input incorporates multi-phase flow, density-dependent flow, air flow, discrete fractures, surface water, and groundwater interactions
- Aqueous geochemical analysis and modeling predict changes to water quality
- Model results are optimized and calibrated to site conditions
- Finite element, finite difference, and finite volume gridding capabilities provide the numerical power to address any modeling project
- 3D visualization tools reveal spatial and temporal trends

ANALYSIS AND MANAGEMENT
Field data, analytical data, and spatial data are all critical components of a successful groundwater management strategy. We can help you integrate, analyze, and report on these many data types.
- QA/QC functionality ensures data is accurate and within acceptable ranges
- GIS capabilities provide the spatial and temporal distribution of field parameters
- Cross section interpretations of geologic and hydrogeologic data validate conceptual models
- Advanced borehole logs highlight geologic features critical to subsurface characterization
- Reports present project data to meet compliance guidelines and client needs
Our people deliver your success

Managing the world’s water resources is no small task. We tackle global water challenges with our worldwide network of hydrologists, geologists, and environmental experts. Combined with powerful and cost-effective technologies, we are successfully managing the world’s water resources, for now and the future.

SITE CHARACTERIZATION
Schlumberger offers a full suite of sophisticated geophysical well logging technologies, data acquisition instrumentation, and geological modeling software designed to characterize subsurface environments.
- Identify pore size distribution, hydraulic conductivity, and capillary pressure
- Enumerate water- and oil-bearing zones
- Define net porosity and lithology
- Continuously measure upward and downward flow velocity and rate
- Log bulk matrix geochemistry and mineralogy
- Identify fracture orientation and aperture
- Receive a comprehensive view of the subsurface environment

FIELD MONITORING
Our high-quality field instrumentation is integrated with sophisticated data transfer and data management technologies. Qualitative field techniques characterize, assess, and optimize injection rate and groundwater monitoring technologies for your site.
- Multilevel well systems monitor any number of zones in a single borehole
- Measure pressure and water table conditions
- Sample fluids without repeated purging
- Conduct pressure transient testing
- Perform long-term monitoring of conductivity, temperature, and depth
- Build compact design to accommodate small-diameter wells
- Ensure housing offers corrosion resistance in most environments
- Feature, wireless data transfer to centralized information management systems

ADVANCED MODELING
Advanced modeling software addresses geologically complex site conditions that extend beyond traditional flow and transport modeling. Our software provide the highest degree of accuracy possible.
- Hydrogeologic conceptual models are developed directly within the data management system to support input for various numeric models
- Model inputs incorporate multi-phase flow, density-dependent flow, air flow, discrete fractures, surface water, and groundwater interactions
- Apply petrophysical analysis and modeling predict changes to water quality
- Model results are optimized and calibrated to site conditions
- Finite element, finite difference, and finite volume cell modeling provide the numerical power to address any modeling project
- 3D visualization tracks spatial and temporal trends

ANALYSIS AND MANAGEMENT
Field data, analytical data, and spatial data are all critical components of a successful groundwater management strategy. We can help you integrate, analyze, and report on these many datasets.
- GIS functionality ensures data is accurate and within acceptable ranges
- GIS capabilities provide the spatial and temporal distribution of fluid parameters
- Cross section interpretations of geologic and hydrogeologic data validate conceptual models
- Advanced borehole logs highlight geologic features critical to subsurface characterization
- Reports present project data to meet compliance guidelines and client needs

Advanced technologies for innovative solutions

Oilfield Water Management

Oilfield Water Management
Expertise, Technology, Solutions