# Civil Engineering Expert Witness for Water, Wastewater, and Stormwater Disputes

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septic system failures



forensic and expert witness experience

BERKELEY, CA, UNITED STATES, September 3, 2026 /EINPresswire.com/ -- Water, wastewater, sanitary sewer, septic, and stormwater disputes can involve technical questions about system design, maintenance, hydraulic conditions, construction, property drainage, and engineering practices. Bonneau Dickson, PE, provides forensic engineering, consulting, and expert witness services involving these systems, drawing on more than four decades of experience studying, designing, constructing, and evaluating water, wastewater, and stormwater facilities in the United States and abroad.

Based in Berkeley, California, Dickson has worked independently as a consulting sanitary engineer since 1993. His practice combines engineering analysis with experience in design, project management, construction, inspection, operation, and maintenance. This background allows him to evaluate technical questions that arise in legal and insurance matters and explain engineering findings to attorneys, insurance professionals, property owners, juries, and other audiences without specialized engineering backgrounds.

Forensic Engineering and Expert Witness Services

In legal and insurance matters, Dickson analyzes the technical circumstances surrounding an incident or disputed condition. Depending on the assignment, his work can include reviewing engineering drawings, inspection records, maintenance documents, photographs, videos, reports, operating procedures, regulatory requirements, and other technical information.


Pump stations


drainage investigations

He may also inspect physical facilities or properties and evaluate whether the available evidence is consistent with a particular failure mechanism. His role is to provide engineering analysis and explain the technical basis for his conclusions rather than make legal determinations.

Dickson has served as a technical expert in cases involving sewer blockages, inadequate sewer hydraulic capacity, backflow prevention systems, sewer maintenance programs, septic system failures, leach field construction, water system failures, and stormwater drainage conditions. His website documents experience in legal cases involving water, wastewater/sewage, stormwater, and related subjects.

Septic System Failures and Property Disclosure
Dickson's septic-system work has included investigations of failed septic tanks and leach fields, inadequate inspections, leakage, surfacing effluent, drainage problems, and questions concerning the design and standard of care for onsite wastewater systems.

He has also provided technical advice in matters involving septic systems associated with residential property transactions. In these assignments, the engineering question may involve whether a septic system was adequately inspected, whether known problems were properly evaluated, or whether the system's condition was consistent with representations made concerning the property.

His professional background includes the design of approximately 100 septic tank and leach field systems, as well as forensic and expert witness experience involving septic-system cases. This combination of design and forensic experience provides a basis for evaluating both how a system was intended to operate and what may have contributed to its subsequent failure.

Sewage Backups, Sewer Overflows, and Sewer Pipe Failures
Sewer-related disputes can require an examination of system capacity, elevations, blockages, maintenance practices, flow conditions, pipe conditions, and the relationship between a public sewer and private property.

Dickson has investigated cases involving sewage backups into private residences, stores, apartments, and other buildings. His analysis can include determining whether a blockage, inadequate hydraulic capacity, sewer sag, unusual flow condition, or maintenance issue contributed to an overflow.

In one documented case involving a San Mateo County residence, Dickson evaluated a sewer backup in which the issues included the adequacy of the sewer maintenance program, existing sewer sags, unusual flow volume, and the need for a backflow prevention device. In another case involving a Southern California residence, he evaluated a sewer backup associated with a trunk sewer and considered hydraulic capacity and maintenance of an existing backflow prevention valve.

These types of assignments demonstrate why sewer disputes can require examination of more than the damaged property alone. The broader system, including upstream and downstream conditions, elevations, flow paths, maintenance history, and facility configuration, may need to be considered.

Pump Stations and Wastewater Facilities
Pump stations are another significant part of Dickson's engineering and forensic practice. He has been involved in one capacity or another with more than 300 water and wastewater pump stations.

In one New England case, six large wastewater pumps began failing after approximately four months of service. Dickson provided expert engineering advice and documented the technical basis for the city's decision to replace the pumps rather than continue repairing them. The assignment illustrates how engineering analysis can be used to compare repeated repair with replacement when equipment performance does not meet expectations.

His broader design experience includes wastewater treatment facilities, pump stations, sewers, water facilities, and stormwater infrastructure. He has participated in approximately 300 water, wastewater, and stormwater projects, ranging from individual septic tanks and wells to a 120-million-gallon-per-day pure oxygen wastewater treatment plant.

## Water Distribution and Potable Water Systems

Forensic assignments involving water systems can involve questions such as whether a water main was properly identified, whether valves were accessible and operable, how quickly water flow was stopped following a break, or whether the operation and maintenance of a public water system met applicable engineering expectations.

He has provided technical analysis in matters involving water main breaks, property damage caused by water releases, water distribution systems, and questions concerning system operation and maintenance.

His project experience includes participation in the design of an 80-million-gallon-per-day water treatment plant and design work involving wells, water pumping systems, water distribution, and other water infrastructure.

## Stormwater and Drainage Disputes

Dickson's stormwater experience includes stormwater facility design, planning, drainage investigations, detention basin evaluation, and stormwater pump station projects. He has served as project manager for stormwater pump station modifications and evaluated alternatives involving large-diameter sewers, pump stations, catch basins, street improvements, and other drainage infrastructure.

In forensic matters, he can evaluate the engineering aspects of stormwater drainage, including the configuration and capacity of facilities, drainage paths, detention requirements, and the relationship between stormwater infrastructure and flooding conditions.

## Design and Consulting Engineering Experience

Dickson's forensic work is supported by a career that has included substantial hands-on consulting engineering and project management. He has participated in the design of approximately 300 water, wastewater, and stormwater projects. He has served as project manager on approximately 175 projects and has participated as a resident engineer or otherwise worked during the construction phase of approximately 50 water and wastewater projects.

His experience includes the design of wastewater treatment facilities, wastewater pump stations, sewers, potable water facilities, wells, water treatment systems, and stormwater facilities. Earlier in his career, he worked with engineering firms and international development projects, including assignments involving Vietnam, Egypt, Nepal, Malaysia, and other countries.

Dickson spent significant time with Harris & Associates in Concord, California, where he served as Chief Sanitary Engineer from 1979 to 1993 before becoming an independent consulting sanitary engineer.

## Education and Professional Registration

Dickson's engineering education includes a Bachelor of Science in Civil Engineering and a Master of Science in Sanitary Engineering from the Georgia Institute of Technology. He also earned a Master of Arts in Sanitary Engineering from Harvard University and a Master of Business Administration from Harvard Business School.

He is registered as a Civil Engineer in California, License No. 19491. His professional affiliations have included the Water Environment Federation, California Water Environment Association, American Water Works Association, National Onsite Wastewater Association, California Onsite Water Association, and Pipe Users Group of Northern California.

His international engineering experience has contributed to his work involving water and wastewater systems under different physical, institutional, and project conditions. His career has included approximately seven years of work outside the United States, including projects in Vietnam, Egypt, Nepal, Thailand, Malaysia, Tunisia, and Rwanda.

Practical Engineering Analysis for Disputed Infrastructure
The purpose of forensic engineering is to apply engineering knowledge to questions that arise from a disputed event, condition, design, construction project, or system failure. In water and wastewater matters, those questions can span multiple disciplines and may involve infrastructure that was designed or constructed many years before a dispute arose.

Dickson's approach is to examine available technical evidence and relate it to the way a system was designed, constructed, operated, and maintained. Depending on the assignment, this may involve site investigation, engineering calculations, document review, interviews, review of inspection footage, evaluation of maintenance records, and preparation of technical reports or testimony.

For attorneys and insurance professionals, this type of analysis can help clarify the engineering issues that must be addressed in a case. For property-related disputes, it can help distinguish between possible causes of a failure, such as a system deficiency, maintenance issue, drainage condition, construction problem, or other contributing factor.

Key Septic and Sewer System Considerations for Homeowners
From an engineering standpoint, homeowners can reduce the likelihood of certain wastewater problems through routine attention to their systems. For septic systems, regular pumping is one commonly recommended maintenance measure. Dickson generally advises homeowners to have septic tanks pumped approximately every five years, although the appropriate interval can vary depending on the system and usage.

Homeowners connected to public sewers can also ask their sewerage agency about the elevation of the lowest plumbing-connected floor of a property relative to the next upstream manhole. Where the property is vulnerable to sewer backup because of elevation or hydraulic conditions, the agency may be able to provide information or inspection services.

For property transactions involving septic systems, accurate disclosure of the system and known conditions is also important. Questions concerning disclosure are ultimately legal and contractual matters, but from an engineering perspective, documentation of the system's existence, condition, inspection history, and known deficiencies can be important information for evaluating a property.

About Bonneau Dickson, PE
Bonneau Dickson, PE, is an independent consulting sanitary engineer based in Berkeley, California. His practice focuses on water, wastewater, stormwater, and related civil engineering systems and includes forensic engineering, expert witness services, planning, design, project management, and construction-related engineering.

Dickson has more than 40 years of experience in water, wastewater, and stormwater engineering and more than 25 years of forensic and expert witness experience. His documented professional experience includes more than 100 legal cases and approximately 300 water, wastewater, and stormwater projects. He has worked independently since 1993 and has experience with projects ranging from septic systems and wells to major water and wastewater treatment facilities.

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