

Statement of Qualifications

BROCKWAY ENGINEERING, PLLC

*Idaho's water resources engineers,
scientists, and consultants.*



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The Firm

Brockway Engineering, PLLC offers consulting engineering services in all areas of hydraulics, hydrology, and environmental water resources. We are a team of professionals, striving to provide advice and solutions based on top-notch science and state-of-the-art analysis techniques. Our projects range from small and simple to large and complex, but all our clients are equally important and receive the same high degree of service.

Integrity is our highest goal. As professionals, we will maintain the highest ethical standards. Our clients will always receive the most objective, unbiased opinions we can provide.

The firm's senior partner, **Dr. Charles E. Brockway, P.E.** is a Professor Emeritus at the University of Idaho. From the early 1970s through the present, Dr. Brockway has been instrumental in the characterization and analysis of water resources throughout southern Idaho and the Northwest. He headed a team of university researchers who developed the first numerical groundwater model of the Eastern Snake Plain Aquifer. He is an author of more than 100 publications, including many important reference works used by governmental agencies and private consultants. He has worked on a team that helped develop irrigation systems for water authorities in Pakistan. He is a former chairman of the Idaho Board of Professional Engineers and Professional Land Surveyors.

Dr. Charles G. Brockway, P.E. is the managing partner of the firm. He studied at the renowned Iowa Institute of Hydraulic Research at the University of Iowa under the Hunter Rouse Fellowship. Dr. Brockway's principal expertise is in computer modeling of physical systems, statistical hydrology, hydraulic design, water rights transactions, and land use issues including water supply and wastewater disposal evaluation.

Zachary B. Latham, M.S. completed his graduate education at the University of Nevada at Reno in connection with the Desert Research Institute. Mr. Latham is a hydrologist with expertise in geochemistry and surface water quality issues, soils evaluations, GIS analysis, and water right transactions.

G. Erick Powell, Ph.D., P.E. is a resident engineer for the firm. Mr. Powell completed his doctoral work in Agricultural Engineering at The Ohio State University with studies related to stream geomorphology and water quality modeling. His expertise includes groundwater modeling, flood plain evaluations, stream bank restoration and protection, surface water quality modeling, and water right transactions.

Hattie R. Zobott, P.E. is a resident engineer for the firm. Ms. Zobott is an Idaho native with expertise in fish passage structures, water rights, surface water hydrology, and stream ecohydrology.

Support Staff. In addition to the engineering, Brockway Engineering offers a staff of designers and drafters who specialize in AutoCAD drawing generation, GIS mapping utilizing ArcView and ArcMap, and digital image creation, processing, and transformation in support of projects for the firm.

Services

Brockway Engineering, PLLC

Hydrologic Science

Hydrology, the science of predicting, characterizing, and managing water resources, plays an important part in nearly all water projects throughout the West. Some projects require statistical and deterministic analyses to make the most of a limited supply, while others involve managing an excess of water. Through both research activities and practical experience, Brockway Engineering has an unmatched knowledge of the hydrology of southern Idaho and the surrounding areas.

Some of the services Brockway Engineering offers are listed below.

- Rainfall-runoff analyses
- Stormwater management
- Instrumentation programs
- Snow hydrology
- Urban and small watershed hydrology
- Statistical analysis and risk assessment
- Flood frequency characterization
- HEC-2 modeling of flood plains and floodways
- Design of control structures
- River network and accounting models
- Aquifer recharge and recovery projects
- Dewatering systems design and implementation
- Geothermal resource investigations

Hydraulic Design

Brockway Engineering is a full-service firm offering design and analysis of water conveyance, control, and measurement systems. Our staff of professional engineers has extensive expertise in classical design techniques and advanced computer modeling of complex systems.

Some of the services Brockway Engineering offers are listed below.

- Pipelines and control devices
- Pipeline network analysis
- Computer modeling of pipeline transients
- Dams and hydropower facilities
- Pump systems and controls
- Diversion structures
- Flow measuring and monitoring devices
- Irrigation systems
- Surface water and underground collection systems
- Sewage transport systems
- Storm Drainage design
- Canal and water conveyance systems design
- Culvert analysis & design

Water Supply and Wastewater

Locating and developing a reliable water supply is vital for municipalities, residential developments, commercial facilities, and industry. Brockway Engineering has assisted many water users with determinations of water requirements and development of surface water and groundwater sources.

After being used, environmentally safe disposal of water is paramount to protecting groundwater resources. Brockway Engineering can provide design services for on-site disposal systems and commercial / industrial treatment systems. We also provide liaison with all state and local permitting agencies.

Some of the services Brockway Engineering offers are listed below:

- Domestic, Municipal, & Irrigation well evaluation & design
- Aquifer studies for well location acceptability analysis
- Water supply planning and peak demand estimating
- Hydraulic system analysis for commercial & domestic developments
- Hydraulic troubleshooting and engineered solutions for water supply
- On-site wastewater treatment analysis and design
- Injection well design and aquifer analysis
- Private on-site disposal system analysis and design.
- Permitting support for water source development and waste treatment systems.
- Professional expert testimony for water disputes

Groundwater Studies

Throughout Idaho and the western states, groundwater supplies a significant percentage of irrigation and other water supplies. Characterizing and predicting the behavior of these aquifers is becoming extremely important with increasing development of the resource.

Dr. Brockway, Sr. has been on the forefront of aquifer research with the University of Idaho since the 1970s. He was instrumental in developing the first numerical groundwater model of the Eastern Snake Plain aquifer, and is one of the most knowledgeable individuals in the state of Idaho regarding groundwater resources.

Brockway Engineering is continuing the tradition of groundwater analysis by developing new groundwater models and implementing existing models to predict the behavior of aquifers under various conditions.

Some of the services Brockway Engineering offers are listed below.

- Numerical modeling of flow and contaminant transport
- Surface water / groundwater interactions
- Well design and analysis
- Well testing and reporting
- Water quality sampling programs
- Remediation programs
- Well impact analysis

Numerical and Analytical Modeling

Brockway Engineering is a leader in modeling surface water and groundwater systems. Using computer models to solve otherwise intractable problems enables more accurate and effective solutions to be developed, and can often lead to long-term cost savings. Models can also be important management tools that can be used to examine various options and provide near-real-time operational guidance.

Some of the areas in which Brockway Engineering offers computer modeling services are listed below.

- GMS-MODFLOW - Groundwater modeling
- MT3D - Aquifer contaminant transport modeling
- HEC-1 - Watershed runoff modeling
- HEC-2 - Water surface profile modeling
- HECRAS – River analysis & floodplain mapping
- HSPF - Continuous watershed modeling
- QUAL2E - River water quality modeling
- HEC-6 - Sediment transport and bed scour
- Winflume – Weir and flume rating & design
- WaterCAD – Pipeline network analysis
- Pipeline transient and control devices
- Unsteady open-channel flow
- Dam break analyses
- River network and accounting models
- Proprietary models developed in-house as needed
- ArcView – GIS mapping software

Water Rights Consulting

Virtually all water projects contain issues concerning water rights. Water rights are the core of development in the West. In Idaho, the ongoing Snake River Basin Adjudication has revealed the complexities of water rights as well and the disputes that continually arise over water issues. Every water right transaction requires hydrologic analysis to ensure that state laws are not violated and owner rights are protected. Brockway Engineering has extensive expertise analyzing water right transactions, and has a very close working relationship with the Idaho Department of Water Resources, the agency which administers water rights throughout Idaho. Brockway Engineering also works closely with many legal firms offering water law support services.

Some of services Brockway Engineering offers are listed below.

- Hydrologic analysis for water right transfers and permits
- Preparation of documents and applications for water right transactions
- IDWR – Groundwater rights transfer impact analysis spreadsheet
- GIS mapping of water rights and evaluation of water right use/non-use
- Development of mitigation programs
- Coordination with IDWR and legal consultants
- Professional expert testimony for water right disputes

River Stabilization and Protection

Rivers and streams are the literal source of life for western development. Increasing encroachment on these waterways has resulted in the need to control, protect, and restore many flood plains and stream banks. In cases where structures or dwellings may be threatened, Brockway Engineering can design structurally sound bank reclamation and protection measures with both aesthetic and functional qualities. In other cases, larger-scale erosion or impending bank failure may require stabilization and erosion-control measures. Where possible, Brockway Engineering recommends a large-scale management approach, rather than a highly localized approach, to controlling and protecting rivers and streams.

Because we are an engineering firm with hydraulic engineering expertise, we can design sound river stabilization programs that will be structurally stable, hydraulically efficient, and aesthetically pleasing. Alteration of stream channels is regulated by federal, state, and some local agencies. Brockway Engineering has extensive working relationships with all pertinent agencies.

Some of the areas in which Brockway Engineering offers services are listed below.

- Hydraulic analysis of bank protection systems
- Computer modeling of the effectiveness of bank protection and control structures
- Design of bank stabilization and protection measures
- Erosion-control plans
- Federal, state, and local permitting

Land Application Design and Management

With the growth of industry comes the need for effective treatment of the wastewater. Many industries are opting to apply their wastewater to irrigated land as a means of treatment. This approach is generally effective, but must be designed properly and managed carefully so that the site remains healthy and groundwater is not adversely affected. Brockway Engineering can provide design, analysis, monitoring, and computer modeling services for land application sites.

Brockway Engineering can provide permitting support for all aspects of land application design and management. We provide consultation engineering evaluation, and permitting from initial site selection and evaluation through preparation of the permitting package. For permitted sites, Brockway Engineering provides permit compliance support to state and federal agencies.

Some of services Brockway Engineering offers are listed below.

- Site evaluation and characterization
- Soil and water sampling and analysis
- Design of monitoring wells
- Unsaturated zone analysis
- Groundwater modeling and impact estimation
- Management assistance with crop rotations, fertilization, water and constituent loadings
- Federal, state, and local permitting
- Permit compliance monitoring & reporting

Major Clients

Brockway Engineering has provided engineering services to hundreds of clients on thousands of projects of all sizes. As a company, we pride ourselves in our large number of repeat clientele who have been pleased with our services. Below is a partial list of clients which have utilized Brockway Engineering

J. R. Simplot Company	Idaho Trout Processors
Rinker Company	Blue Lakes Trout Company
ERO Resources, Inc.	Clear Springs Foods, Inc.
J-U-B Engineers, Inc.	The Valley Club
Galena Engineering, Inc.	Perry Thomas
City of Twin Falls, Idaho	Horizon Dairy, Inc.
City of Rupert, Idaho	J-U-B Engineers, Inc.
City of Carey, Idaho	Keller Associates
City of Mountain Home, Idaho	Idaho Power Company
Thomas O'Gara, Silver Springs Land and Cattle	Basic American Foods
Nick Purdy, Picabo Livestock Company	Conagramalt
Rosholt, Robertson and Tucker	Idaho Dairymen Association
CTI-SSI Food Services, Inc.	Jerome Cheese Company
Twin Falls Canal Company	Magic West Foods
North Side Canal Company	Premier Resorts
Sun Valley Company	Fish Creek Reservoir Company
Rimview Trout Company	Lava Lake Land & Livestock
Young & Young of Idaho, Inc.	Jentzsch-Kearl Farms
	Middle Fork Ranch, Inc.

Résumés

Brockway Engineering, PLLC

Resumes Available Upon Request