

# Charles E. Brockway, P.E., Ph.D.

**Brockway Engineering  
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## **Present title:**

**Senior Member** – Brockway Engineering P.L.L.C

**Formerly-Research Professor** – Civil and Agricultural Engineering: Supervision of research conducted by the University Water Resources Research Institute and the College of Engineering at Kimberly, Idaho. Graduate student supervision and directed studies instruction in Water Management and Water Resources related subjects.

**Associate Director** – Idaho Water Resources Research Institute

## **Summary of education beyond high school:**

### Institution, Degree, Year

University of Idaho 1955-1959, B.S.-Civil Engineering, 1959

California Institute of Technology 1959-1960, M.S. – Civil Engineering, 1960

University of Colorado, Denver, Colorado, Management, 1963

University of Denver; Denver, Colorado, Civil Engineering, 1964

Utah State University, Ph.D.-Water Resources Engineering, 1977

## **Number of years service on U of I faculty: 32**

Date of original appointment: 1965

Dates of advancement in rank:

Associate Research Professor: 1974

Professor – 50% Agricultural Engineering, 50% Civil Engineering: 1978

## **Subjects and courses taught:**

CE 500, CE 600, CE 502

## **Summary of academic experience:**

University of Idaho – Research Professor–Civil and Agricultural Engineering, 1978

University of Idaho – Associate Research Professor, Civil Engineering, 1974-1978

University of Idaho – Assistant Research Professor, Civil Engineering, 1965-1974

Boise College – Instructor in Engineering, 1961-1963

## **Summary of other experience:**

Senior Member, Brockway Engineering P.L.L.C. Water Resources Engineering

University of Idaho – USAID Pakistan Project on Irrigation Systems Management Research, 1984

U.S. Bureau of Reclamation – Hydraulic Research Laboratory, Denver, Colorado – Hydraulic Research Engineer, 1963-1965

U.S. Bureau of Reclamation – Boise, Idaho – Hydraulic Engineer, 1961-1963

Converse Foundation Engineering, Inc. – Pasadena, California – Foundation Engineer, 1960-1961



California Institute of Technology – Pasadena, California – Assistant Project Engineer,  
U.S. Public Health Services Research Project, 1959-1960

**Partial Client List:**

Twin Falls Canal Company – Twin Falls, Idaho – Hydrology and water use  
 North Side Canal Company – Jerome, Idaho – Hydrology and water use  
 Micron Technology – Ground water and water supply  
 J.R. Simplot Company – Land disposal of processing waste, water supply, water rights  
 City of Twin Falls – Water supply and hydrology  
 Idaho Trout Processors – Hydraulics and water supply  
 Cedar Mesa Reservoir and Canal Co– Water Management Consultant  
 Clear Springs Trout Company, Buhl, Idaho – Water supply and distribution systems  
 Idaho Power Company, Boise, Idaho – Relationships of groundwater and surface water  
 – Upper Snake River Basin – water right adjudication  
 Idaho Department of Fish and Game – Evaluation of groundwater stream relationship for  
 litigation – Parma vicinity  
 Blaine County, Idaho – Waste disposal systems for high-density rural subdivisions  
 City of Mountain Home, ID. Water Rights, hydrologic analysis  
 Rinker Company, Long Beach, CA Hydrology, water rights  
 U.S. Bureau of Reclamation (was Maricopa County Water District) – Arizona Flood  
 Study  
 Office of Technology Assessment – U.S. Congress – Irrigation Distribution Systems  
 U.S. Department of Justice – Indian Water Rights  
 Montgomery Engineers – Ground water quality evaluations  
 J.U.B. Engineers, Twin Falls, Idaho – Groundwater and hydraulics  
 Amalgamated Sugar Company, Idaho – Hydrology and waste disposal  
 Pioneer Irrigation District, Idaho Water rights and hydrology  
 Aries Development Co. Subdivision water rights  
 Eagle View Farms, Castleford ID-Water rights and irrigation system  
 Rim View Trout Company, Wendell ID- Hydraulics

**Registered Professional Engineer:**

Idaho, Colorado and Washington

**Special Awards or Honors:**

Honorary Membership ASTM, 1959  
 U.S. Army National Defense Transportation Award, 1958  
 Distinguished Military Graduate – University of Idaho  
 Top Ten Graduating Senior – University of Idaho, 1959  
 No. 2 in graduating class of 889, University of Idaho, 1959  
 Representative of USBR Division of Research at 1963 Intergovernmental Training  
 Program, Denver, 1964  
 Scholarship – University of Denver, Graduate School of Management, 1964  
 National Science Foundation Fellowship – Utah State University, 1967-1968  
 Outstanding Young Engineer Award for Idaho, National Society of Professional  
 Engineers, 1968  
 Engineer of the Year, 1997 American Society of Agricultural Engineers  
 Idaho Water Users Hall of Fame - 1998

**Membership in professional and scholarly organizations:**

National Society of Professional Engineers, 1967- present

Idaho Society of Professional Engineers, 1967- present: President 1978

American Society of Civil Engineers – Irrigation & Drainage Division Committee

Chairman:

- 1.) Operation and Maintenance of Irrigation and Drainage Systems, 1975-1981
- 2.) Water Quality Committee, 1980-1984, Chairman
- 3.) Task Committee on Guidelines for Erosion and Sediment Control in Irrigated Agriculture, 1980-1983, Chairman
- 4.) Publications Committee, 1985-1992

Research Society of America

National Council of Examiners for Engineering and Surveying, 1981-1991

Idaho Board of Professional Engineers and Professional Land Surveyors, 1981-1991, Chairman

American Water Resources Association

**Offices held in such organizations:**

National Society of Professional Engineers

Member – Young Engineers Committee, 1973-1974

Chairman – Young Engineers Committee, 1975-1977

Member – President's Committee on Board of Directors Organization, 1977

Member – Registration and Qualification for Practice Committee, 1979-1981

Chairman – Registration and Qualification for Practice Committee, 1982-1984

Member – Participating Organizations Liaison Committee to NCEE, 1982-1984

Idaho Society of Professional Engineers, President 1978

President - Magic Valley Chapter, 1970-1971

Member – State Ethical Practices Committee, 1966-1977

Member – State Intersociety Relations Committee, 1968

Member – State Nominating Committee, 1975-1976

Member – Board of Directors, 1972-1973

Member – Board of Directors, Past President Chairman – Nominating Committee 1979

State Director – Representative for Idaho NSPE, 1982-1983

Nominating Committee for Idaho Board of Professional Engineers & Land Surveyors Member

American Society of Civil Engineers

Member – Operation and Maintenance of Distribution Systems Committee Irrigation and Drainage Division, 1975-1981

Chairman – Irrigation and Drainage Division, Operations and Maintenance Committee, 1977-1979

Member – Water Quality Committee, Irrigation and Drainage Division, 1980-1984

Chairman – Water Quality Committee, Irrigation and Drainage Division, 1982-1984

Member – Task Committee on Water Measurement, 1980-1983

Chairman – Task Committee on Guidelines for Erosion and Sediment Control in Irrigated Agriculture, 1984 – Present

Member – Publications Committee, 1985 – Present

Corresponding Member – ASCE Irrigation and Drainage Division Committee on Operation and Maintenance of Irrigation Systems

Reviewer – ASCE Irrigation and Drainage Division Committee on Publications  
Idaho Board of Professional Engineers and Land Surveyors Member, 1981  
Vice Chairman, 1983-1984  
Chairman, 1984-1986, 11990-1992  
National Council of Engineering Examiners  
Assistant Vice President, Western Zone  
Member, Professional Examinations Advisory Committee  
Member, Committee on Uniform Procedure and Legislative Guidelines, 1984  
Member, Communications and Publications Committee, 1983  
Member, Uniform Examinations and Qualifications Committee, 1984 – 1986  
Member, Committee on Examination Policies and Procedures, 1987 – 1989  
Member, Advisory Committee on Council Activities, 1986-1987  
Assistant Vice President – Western Zone, 1986-1987  
Member, Fundamentals Examination Review Committee, 1986 1988

### **Scholarly and creative activity:**

#### **Research:**

Development of systems analysis procedures for optimization of irrigation system designs with environmental, physical, and social constraints.  
Evaluation of crop consumptive use, irrigation requirements, and methods of determining basin depletion from agricultural development  
Systems analysis of water use to develop mathematical methods for studying complex ground water-surface water systems – mathematical modeling of aquifers,  
Ground water quality and river system water quality evaluations for nutrient load determination and river system modeling.  
Development of guidelines for design of sediment removal facilities for on-farm and irrigation distribution system waste ways  
Evaluation of attainable impacts on water quality of irrigation return flows due to implementation of best management practices for sediment and nutrient control.  
Evaluation of alternate energy sources for irrigation and municipal needs in Idaho.  
Analysis of operation and maintenance cost of water distribution systems and determination of the relationship of costs to known physical and organizational parameters and water use efficiency.  
Evaluation of the economic potential for use of geothermal hot water and steam in Idaho,  
Study of the movement of water from canals to local water tables under saturated and partially saturated conditions.  
Studies of the mechanisms of microbial action, sedimentation and soil-water-chemical interactions involved in natural sealing phenomenon in canals and reservoirs,  
Evaluation of irrigation management practices for sustained land disposal of geothermal fluids.  
Evaluation of practices and systems for controlling sediment and other pollutant losses from irrigated lands.  
Investigation of the response of aquifer systems to changes in recharge or withdrawal due to change in land use.  
Evaluation of procedures for estimating crop water requirements,

Development of cost effective procedures and equipment for measurement of irrigation diversions and power use in open and closed systems

**Community services and other relevant activities:**

Member – Intermountain District Church of the Nazarene; Camps Board – 1976-1984,  
Board of Church Properties – 1976-1979  
Member and Vice President, Twin Falls Reformed Church Consistory 2000-Present  
Member – Twin Falls City Planning and Zoning Commission 12/1978-9/1979  
Member – College of Southern Idaho Geothermal Energy Commission  
Member – Governor's Committee on Energy Use – 1980-1981  
Member – Idaho Technical Advisory Committee for Sediment in Surface Water  
Chairman – Snake River Technical Advisory Committee – Idaho Legislative Council,  
1983-1985  
Advisor – Governor's Snake River Advisory Committee – 1985  
Member – Water Resources Foundation Board of Directors – 1985  
Chairman – Idaho Technical Committee of Hydrology  
Member – Idaho Department of Health & Welfare Sediment Criteria Committee  
Member – Snake Plain Advisory Committee of Idaho Department of Health & Welfare  
Member – Idaho Water Users Water Quality Committee – 1980  
Member – INEL Dose Evaluation and Risk Assessment Committee  
Member – Columbia River System Operations Review  
Member – Mid Snake River Nutrient Management Advisory Committee  
Member - Mid Snake River Irrigation Water Quality Coordination Committee  
Technical Advisor – Middle Snake River Committee  
Member – Liaison Committee, U.S. Geological Survey National Water Quality  
Assessment Program, Snake River Basin  
Member – Snake River Studies Committee, Idaho Department of Water Resources  
Member – City of Twin Falls Wellhead Protection Committee  
Member-Eastern Snake River Plain Groundwater Modeling Committee

**Publications:**

Dr. Brockway is the author of over 100 technical publications in the water resources engineering field. A full list of publications can be provided at request.