

ADRIAN BROWN

EDUCATION

B.E. (Hons), 1966, Civil Engineering, Monash University, Australia
M.S., 1970, Engineering Science, Monash University, Australia
M.B.A., 1974, Administration, Monash University, Australia

REGISTRATION

Registered Professional Engineer, Arkansas, Arizona, California, Colorado, Idaho, Illinois, Kansas, Massachusetts, Montana, Nevada, New Jersey, New Mexico, North Dakota, Pennsylvania, South Dakota, Texas, Utah, Washington, Wyoming
Member, Institute of Engineers, Australia
Registered Professional Engineer, British Columbia, Canada
Member, National Water Well Association
Member, Executive Council, International Mine Water Association

SPECIALIZATION

Adrian Brown is a Civil Engineer who specializes in the solution of groundwater and related earth-science problems in the mining, hazardous waste, water supply, and civil construction industries. Specific areas of expertise are identification, evaluation and remediation of contamination in groundwater and soil; evaluation of fate and transport of contaminants; evaluation and remediation of acid rock drainage; evaluation and control of mine inflow and dewatering; slope stability, groundwater depletion, and groundwater system modification. Mr. Brown provides expert guidance in the planning and execution of investigations of groundwater, contamination, environmental protection, and remediation. He has been retained to provide expert advice and court testimony in a number of legal matters related to groundwater and surface water flow and contamination, impact, remediation, soil contamination, and slope stability.

Mr. Brown's experience spans more than 35 years, and over 400 projects in all areas of groundwater flow and transport, remediation, and slope stability. He has published a number of papers on groundwater flow, contamination, and remediation, and has lectured in the US, Australia, Canada and China. Mr. Brown served for two years as an adjunct professor in groundwater engineering at the Colorado School of Mines.

EXPERIENCE

President, Adrian Brown Consultants, Denver, 1983 - present.

Technical specialist in the areas of groundwater and soil contamination; remediation of contaminated sites; organic and metal contaminant fate and transport;

groundwater flow; mine inflow and dewatering; slope stabilization; and groundwater resource management. Projects performed included studies in contaminant migration, aquifer restoration, acid rock drainage, unsaturated seepage, geohydrologic evaluation, dewatering design, waste containment, groundwater flow and transport modeling, mine inflow, subsidence, permitting, dam stability, and computer program development. Expert witness in groundwater flow, contaminant fate and transport, remediation, and slope control matters, particularly related to mining, processing, and industrial and hydrocarbon projects.

President, Nuclear Waste Consultants, Denver, 1985-1989.

Specialist consultant to the Nuclear Regulatory Commission on geohydrology, geochemistry, and solute transport aspects of regulation of deep geological disposal of nuclear waste.

Founding Vice-President, MidWest Mining Company, Casper, 1986-1989.

Technical director and manager of abandoned mined land projects performed in Wyoming. Designed and implemented 800,000 ton slurry backfill project to stabilize subsidence due to progressive collapse of an abandoned coal mine in Hanna, Wyoming. Directed a range of other investigations into subsidence impact and remediation of underground coal mines.

Golder Associates, Vancouver and Denver, 1974-1983.

Senior Engineer through Principal responsible for development of Golder Associates' geohydrology capability in the areas of slope stabilization, dewatering, contaminant transport and baseline monitoring. Directed and performed a wide range of groundwater flow, groundwater contamination, and slope stability projects in the United States, Australia, South America, and China. Particular emphasis on stability, groundwater control, and environmental protection in soft, low permeability rock masses in the energy minerals industries: coal, lignite, copper, uranium, and oil shale.

State Electricity Commission of Victoria, Australia, 1966-1974.

Geotechnical Engineer in lignite mining division, with responsibility for major open pit lignite mines in the Latrobe Valley, Victoria. This work included design and oversight of dewatering system for major aquifer systems beneath the mines, the analysis and improvement of slope stability conditions in pits and dumps, and analysis and monitoring of local and regional impact of dewatering on aquifers and surface streams.

PROJECTS

Mr. Brown has performed, directed, or been a principal investigator in a wide range of environmental, remediation, hydrology, litigation, geotechnical, regulation, water supply, and computing projects, a partial list of which is provided below.

Environmental:

Allied Signal Burbank Plant Solvent Contamination Evaluation	California
Arsenau Petroleum Spill Evaluation.....	Illinois
Arsenic Waste Disposal Pond Design	British Columbia
Barrick Goldstrike Seepage Reinjection Evaluation	Nevada
Barrick Goldstrike Spring Impact Evaluation.....	Nevada
Battle Mountain Gold Mine Cyanide Evaluation	Nevada
Baxter Springs/Treece RI/FS Evaluation	Kansas
Betz Gasoline Station Evaluation.....	Colorado
Bolinder Well (Tooele) Contamination Litigation.....	Utah
Breckenridge Minesite Evaluation.....	Colorado
Brookhurst CERCLA Site Evaluation	Wyoming
Bullwackers Casino Environmental Evaluation.....	Colorado
C-a Oil Shale Seepage Study	Colorado
Carbon Creek Coal Environmental Hydrology Study	British Columbia
Carson Hill Gold Leach Pad Decommissioning	California
Chula Vista Phase I Evaluation.....	California
Cinola Gold Geohydrology Permitting Support.....	British Columbia
Cleveland Mill CERCLA Remediation/Evaluation.....	New Mexico
Climax Molybdenum Tailings Pond Evaluation.....	Colorado
Coal Mine Groundwater Permitting Review	Kentucky
Cobre Hanover Mine EIS Hydrology and Pit Lake Quality Evaluation	New Mexico
Copper Flat Mine EIS Hydrology Evaluation	New Mexico
Cow Camp Coal Mine Geohydrology Permitting.....	Colorado
Cripple Creek Mine ARD Testing and Evaluation.....	Colorado
Dacono Landfill Permitting Hydrology Evaluation.....	Colorado
DePue Zinc Plant Remedial Investigation.....	Illinois
ECS Composites TCE Impact Evaluation.....	Oregon
Elitch Gardens Relocation Environmental Review	Colorado
Elk Mountain Coal Project Permitting Hydrology Evaluation	Colorado
Elkhorn Gold Mine Hydrology/Geochemical Evaluation	Montana
Empire Gold Mine Hydrology Permitting Study	Colorado
Estes Rocket Facility Site Evaluation Review.....	Colorado
Galena Lead/Zinc Mining Area CERCLA Suit	Kansas
Georgetown Tailings Site Redevelopment Permitting	Colorado
Getchell Gold Mine Groundwater Quality Study	Nevada
Glenwood/Dotsero Salinity Reduction Project	Colorado

Golden Reward Nitrate Impact Evaluation.....	South Dakota
Grassy Valley Environmental Evaluation.....	Colorado
Hanna Backfilling UIC Permit.....	Wyoming
Hanson Uranium Minesite Evaluation.....	Colorado
Indian Bend (Tempe) Superfund Site Evaluation	Arizona
Keystone Mine Groundwater Permitting Study.....	South Dakota
Lakewood Equipment Site Evaluation	Colorado
Lincoln Landfill Geohydrology Review	Nebraska
Lisbon Uranium Mine Salinity Evaluation.....	Utah
Lisbon Valley Copper Project EIS Hydrology Evaluation	Utah
Lowry Chemical Waste Facility Groundwater Review	Colorado
Loy Yang Lignite Mine Hydrology Review	Victoria, Australia
Macdonald Industrial Products Solvent/Metal Groundwater Cleanup.....	Michigan
Mactung Tungsten Contaminant Fate Study	N.W.T., Canada
Midcontinent Coal NPDES Permit Renewal	Colorado
Midwest Mine EIS Groundwater Evaluation	Saskatchewan
Mouat Facility Chromium Remediation Study.....	Montana
Mountain Coals Acid Mine Drainage Study	Kentucky
Mountain Pass Rare Earth Water Management Study	California
Mule Creek Gold Mine Environmental Hydrology.....	Nevada
Neodesha Refinery Hazardous Waste Cleanup.....	Kansas
Ohio Commons Site Evaluation	Colorado
Oilfield Brine Disposal Evaluation	Colorado
Old Dominion Mine Impact Evaluation.....	Arizona
Ortiz Mine Pit Refill Water Quality/ARD Evaluation	New Mexico
Pitch Uranium Water Quality Study	Colorado
Priest Drive (Tempe) Landfill Investigation	Arizona
Quartz Mountain Gold Project EIS Project	Oregon
Quintette Coal Ground and Surface Water Study	British Columbia
Revenue Virginius Mine Impact Evaluation	Colorado
Rose Park Hazardous Waste Cleanup Project.....	Utah
San Roberto Mine Tailings Impact Evaluation.....	Zacatacas, Mexico
Schwartzwalder Uranium Groundwater Contamination	Colorado
Shattuck Chemical Groundwater Impact Evaluation	Colorado
Silver Engineering Facility Environmental Study	Colorado
Sukunka Coal Environmental Hydrology Study.....	British Columbia
Summitville Gold Project Groundwater Study.....	Colorado
Tiger Gold Mine Remedial Evaluation	Colorado
Twin Buttes Tailings Facility Closure Study	Arizona
Uravan Tailings Disposal Third Party EIS Review.....	Colorado
Waukegan Asbestos Plant Closure	Illinois
West Metro Landfill Permitting Evaluation	Colorado
Wharf Resources Cyanide Impact Evaluation	South Dakota
Wharf Resources Gold Project Permitting Support	South Dakota
Wharf Resources Ross Creek Nitrate Control.....	South Dakota

White Pine Copper Mine Abandonment Study Michigan
 Whitehorse Copper Mine Reclamation Review Yukon

Remediation:

Aggreko Site UST Removal/Remediation.....Utah
 Black Eagle Mine Tailings Reclamation..... Colorado
 Bonnie Brae Cleaners PCE Remediation Colorado
 Broderick Wood Products Site Remediation..... Colorado
 Bullfrog Mine Waste Rock and Tailings Facility Closure New Mexico
 California Gulch/Stringtown Tailings Remediation..... Colorado
 Canon City Uranium Mill Aquifer Restoration Colorado
 Canon City Zinc Smelting Facility Remediation Colorado
 Cleveland Mill Tailings Remediation/CERCLA New Mexico
 DePue Zinc/Fertilizer Plant Remediation Illinois
 E.W. Bliss Groundwater Remediation.....Michigan
 Eagle Mine ARD Remediation Colorado
 Ferris/Haggarty Mine AML Evaluation/Remediation..... Wyoming
 Flypast Site Platinum Soil and Groundwater Remediation..... South Africa
 Gallium Arsenide Cleanup ProjectUtah
 Gates Rubber Site TCE Remediation Colorado
 Grants Uranium Mill Remediation/Closure New Mexico
 Halaco Metal Recyclers Site Abandonment Review California
 Hanna Coal Mine Subsidence Remediation Project..... Wyoming
 Hanover Tailings Remediation New Mexico
 Holden Mine Reclamation Project..... Washington
 Kennecott Bingham Operation ARD Remediation.....Utah
 KNEnergy Facility Hydrocarbon Remediation Wyoming
 Leadville-California Gulch Tailings Remediation Colorado
 Morse Tool Solvent Remediation Massachussetts
 Ortiz Mine Residue Pile Reclamation New Mexico
 Palmerton Blue Mountain Remediation Pennsylvania
 Paramount Studios Hydrocarbon Remediation California
 PG&E Kettleman Hills Gas Facility Civil Litigation California
 Ports of Call Facility Hydrocarbon Cleanup Colorado
 Riverton UMTRA Uranium Tailings Remediation Wyoming
 Roseville Railyard Hydrocarbon Contamination Remediation..... California
 Ruidoso Diesel Spill Cleanup Review New Mexico
 San Antonio Water System Well System Remediation Texas
 Schwartzwalder Uranium Mine Hydrology/Geochemistry Colorado
 Shasta Mining District ARD Remediation California
 Summitville Mine Plugging/Metal Remediation..... Colorado
 Taylor Forge TCE Remediation New Jersey
 Tracy Railyard Facility Hydrocarbon and Solvent Remediation California
 Trojan Explosives Facility Groundwater Remediation Utah
 Uravan Tailings Remediation Insurance Litigation Colorado

USS Lead Site Remediation Illinois
 Wellington-Oro ARD Remediation Colorado
 West Shasta Mine District Remediation Evaluation..... California

Hydrology:

Amax Phosphate Pit Dewatering Study Florida
 Barrick Goldstrike Dewatering Evaluation..... Nevada
 Bel Aire Tunnel Hydrology Evaluation California
 Big Black Mountain Coal Hydrology..... Kentucky
 Black Thunder Coal Groundwater Permitting Study..... Wyoming
 Bougainville Copper Mine Inflow Study Bougainville
 Brenda Copper Mine Geohydrology British Columbia
 Brohm Gilt Edge Expansion Geohydrology South Dakota
 Burgin U/G Mine Inflow Evaluation Utah
 C-b Tract Oil Shale Mine Inflow Project Colorado
 Chelan County Fish Hatchery Wellfield Study Oregon
 Chimney Creek Gold Section 30 Dewatering Study..... Nevada
 Cigar Lake Uranium Mine Hydrology Review Saskatchewan
 Cinola Gold Mine Inflow Study British Columbia
 Clear Creek Oil Shale Hydrology Permitting Study Colorado
 Cluff Lake Groundwater Inflow Study Saskatchewan
 Copper Flat Mine EIS Groundwater Permitting New Mexico
 Craig Coal Dewatering and Impact Study..... Colorado
 Crandon Project Tailings Pond Permitting Study..... Wisconsin
 Detour Mine Inflow Evaluation/Dewatering Design..... Quebec
 Elliott Lake Uranium Mine Dewatering/Impact..... Ontario
 Falconbridge Nickel Pit Inflow Evaluation Ontario
 Florence Copper Pit Dewatering Evaluation Arizona
 Fording Greenhills Coal Dewatering Study..... British Columbia
 Gays River Lead/Zinc Mine Inflow Prevention..... Nova Scotia
 Getty Oil Shale Hydrology Permitting Project Colorado
 Grant Gold Mine Aquifer Test Evaluation Alaska
 Grassy Mountain EIS Mine Inflow Evaluation..... Oregon
 Green Creek Gold Mine Groundwater Study..... Alaska
 Haile Mine Groundwater/Hydrology Evaluation South Carolina
 Hat Creek Coal Dewatering and Impact Study British Columbia
 Homestake Lead Water Management Study..... South Dakota
 Horse Draw Oil Shale Shaft Inflow Evaluation..... Colorado
 Jerritt Canyon Mine Water Management Study..... Nevada
 K-2 Potash Mine Inflow Evaluation Saskatchewan
 Kennecott Bingham Canyon Groundwater Flow Study Utah
 Key Lake Uranium Mine Dewatering Study Saskatchewan
 Kiena Gold Mine Crown Pillar/Inflow Evaluation..... Quebec
 Lamfoot Mine Hydrology/Geochemistry EIS Evaluation..... Washington
 Lee Ranch Coal Mine Dewatering Study..... New Mexico

Lihir Mine Dewatering Review.....	New Guinea
Mesquite Gold Project Geohydrology	California
Midwest Uranium Mine Inflow/Dewatering.....	Saskatchewan
Minera Carbonifera Mine Dewatering	Mexico
Monkman Pass Coal Dewatering Review Study	British Columbia
Mt. Whaleback Dewatering/Stabilization Study	Western Australia
Narbalek Uranium Water Management Review	Australia
New Castle Coal Mine Inflow and Permitting.....	Colorado
Northair Gold Mine Tailings Review.....	British Columbia
Overlook Mine Portal Plugging.....	Washington
Pan Continental Mine Inflow Evaluation	Australia
Phulbari Coal Mine Groundwater Model Review	Bangladesh
Platoro Underground Gold Mine Inflow Review.....	Colorado
Pogo Gold Mine Inflow/Closure Evaluation.....	Alaska
Pumkin Buttes Uranium Mine Inflow/Baseline Study.....	Wyoming
Ranger Uranium Water Management Review.....	Australia
Ridgeway Gold Dewatering.....	South Carolina
Rosevelt Tunnel Mine Discharge Evaluation	Colorado
Salar de Atacama Brine Evaluation	Chile
Similkameen Copper Tailings Pond Seepage Study.....	British Columbia
Sleeper Gold Mine Dewatering Project.....	Nevada
South Haystack Stability/Environmental Hydrology.....	Wyoming
Sutter Creek Gold Inflow and Impact Study.....	California
Tongue River Coal Bed Methane Hydrology	Montana
Water Management in Oil Shale Mining	Colorado

Litigation:

Abex/Jetway Solvent/Hydrocarbon Discharge.....	Utah
Aerrco Site CERCLA 106 Removal	Colorado
Albertson vs. KNEnergy Toxic Tort Suit.....	Wyoming
American Lumber vs. Dow Solvent Litigation	Colorado
ANR vs. Diamond Parking Remediation Litigation	Utah
Bailey Texaco Gas Station Litigation	Colorado
Baldwin Park Well Impact Litigation	California
Ball Four vs. Sundstrand Contamination Litigation.....	Colorado
Big Dalton Pumping Station Litigation.....	California
Bolinder vs. United States of America Contamination Litigation	Utah
Boulder/Marshall Landfill CERCLA Suit.....	Colorado
Buena Vista Mercury Mine Remediation Expert Witness.....	California
Canon City Mill CERCLA Resource Damage Suit.....	Colorado
CBE vs Tosco MTBE Litigation.....	California
CC&V Gold Mining CWA Litigation	Colorado
Colorado Memory Systems Property Contamination	Colorado
Con Imperial Mine Slope Stability Litigation.....	Nevada

Creede Mining CWA Suit	Colorado
Crown Jewell Project EIS Litigation	Washington
CVY Cleaners PCE Cleanup Litigation	Colorado
Diamond vs. ANR Groundwater Contamination Litigation	Utah
Diamond Cross Coal Bed Methane Impact Litigation.....	Montana
Dodge vs. Cotter Corporation Contamination Litigation	Colorado
Dow vs. Thoro Solvent Contamination Litigation	Colorado
Fresno v. Shell DBCP Contamination Litigation	California
Friends of Santa Fe vs. LAC Minerals Mining Litigation	New Mexico
Green River Hydrocarbon Contamination Litigation	Wyoming
K-2 Mine Inflow Insurance Litigation	Saskatchewan
Kennecott Bingham Operation NRDC Litigation.....	Utah
KNEnergy Insurance Litigation.....	Wyoming
La Puente Well Impact Litigation.....	California
Leadville Mine Insurance Litigation	Colorado
Leviathan Mine Remediation Litigation	California
Lidco/Western Processing Superfund Litigation	Washington
McColl CERCLA Site Insurance Litigation	California
Midvale Tailings Insurance Litigation	Utah
Midvale Tailings Remediation Litigation.....	Utah
Mint Canyon Civil Litigation	California
Montrose Torrance Facility Toxic Tort/Property Damage Litigation	California
Mount Emmons Mine Inflow/Impact Litigation	Colorado
New World Mine Clean Water Litigation	Montana
Newman vs. Stringfellow Toxic Tort Litigation	California
Newmont California Gulch and Idarado Insurance Litigation	Colorado
Ortiz Mine Clean Water Act Litigation	New Mexico
Paramount Communications vs. Horsehead Industries Litigation	Illinois
Peppertree vs. Rohr Groundwater Contamination Litigation.....	California
Polkadot Cleaners Impact Litigation.....	Colorado
Redlands Groundwater Contamination Litigation	California
Reip vs. PG&E Chromium Impact Litigation	California
Ridgeway Gold Mine Permitting Litigation	South Carolina
Rocky Flats Environmental Performance Litigation	Colorado
Rohr vs. U.S. Army Riverside Plant Litigation.....	California
Shasta Mine District Clean Water Act Litigation	California
Sherman Square Environmental Litigation	Colorado
Simpson Paper Landfill Contamination Civil Litigation	California
Sinclair Oil Gas Station Leakage Suit	Colorado
South El Monte Damage Litigation	California
South Lake Tahoe MTBE Litigation	California
Southern Pacific Environmental Insurance Litigation	California
Standard Equipment Environmental Damage Suit	Washington
Stark v. Wymore Building Seepage Litigation.....	Colorado
Stone v. Rockwell Rocky Flats Litigation	Colorado

TH Agriculture vs. ACETO Chemical Co. Contamination Litigation	California
Torrance DDT Plant Toxic Tort Litigation.....	California
Transit Mix CWA Action	Colorado
Trojan Explosives Plant Litigation	Utah
Twins Inn Solvent Contamination Litigation	Colorado
Valenzuela vs. Hughes Aircraft Toxic Tort Suit.....	Arizona
Walker Mine Copper Contamination Litigation	California
Willets Chromium Contamination Litigation	California
Your Valey Cleaners Drycleaning Litigation.....	Colorado

Geotechnical:

Byron Creek Coal Stability and Pollution Study	British Columbia
Cerrejon Coal Stability/Dewatering Evaluation	Columbia
Con Imperial Gold/Silver Mine Stability	Nevada
Cripple Creek Cresson Pit Slope Stability.....	Colorado
Domtar Gravel Depot Stability Evaluation.....	British Columbia
East Cresson Mine Stability Project.....	Colorado
Fushun Coal Slope Stabilization Study.....	China
Hanna Underground Coal Mine Subsidence Mitigation.....	Wyoming
Highland Uranium Stability Evaluation	Wyoming
Kemmerer/Evanston/Gillette/Superior Subsidence	Wyoming
Lornex Copper Slope Stabilization Project	British Columbia
Morwell Open Cut Stability/Dewatering Project	Australia
N.B.H.C. Mine Subsidence Project	Australia
New Castle Coal Mine Stability Study.....	Colorado
OSM Subsidence Control Consulting	Colorado
Paz de Rio Stability Study	Columbia
Pinson Gold Mine Stability Review	Nevada
Summitville Adit Plugging Design	Colorado
Summitville Water Storage/Sediment Dam Stability.....	Colorado
Tonkin Springs Gold Mine Stability Evaluation	Nevada

Regulation:

NRC Nuclear Waste Disposal Technical Assistance.....	D.C.
Center for Nuclear Waste Regulatory Assessment	Texas
Geotechnical Technical Assistance to NRC	Minnesota

Water Supply:

Apex Project Mill Water Supply.....	Utah
Baca Grant Project Groundwater Supply.....	Colorado
Deerwood Park Water Supply Well System	Colorado
Haystack Butte Water Supply	Colorado
Kennecott Bingham Operation Water Supply Well.....	Utah
Minerva Exploration Water Supply.....	South Dakota
Quartz Mountain Water Supply.....	Oregon

Republican River Flow Depletion Colorado
 Ruidoso Well Water Supply Replacement..... New Mexico
 Sleeper Mine Water SupplyNevada
 Tecoma Gold Leach Project Water Supply.....Nevada
 Wood Gulch Gold Project Water Supply.....Nevada

Computing:

Finite Element Groundwater Flow Model Package Colorado
 Finite Element Package Translation to C..... Colorado
 Random Walk Solute Transport Package..... Colorado
 Translation of BLM Groundwater Modeling Package Colorado

Patents

Disposal of Processed Oil Shale Waste Colorado
 Soil Vapor Well Construction Colorado
 Soil Sparge System..... Colorado

PUBLICATIONS

1969 "Earth Movement and Batter Stability in the Latrobe Valley Coalfields", M.Eng.Sci. Thesis, Monash University, Australia.

1974 "The Simulation of Personnel Movements: A Case Study of Two Departments in Bureaucratic, Governmental Hierarchy", Master of Administration Thesis, Monash University, Australia.

1977 Water Management in Oil Shale Mining. Final Report of USBM Contract J0265019. (co-author)

1978 "Water Management for Oil Shale Mining and Retorting in the Piceance Creek Basin, Colorado." Proceedings, Eleventh Oil Shale Symposium, Golden, Colorado.

1979 "Simple Mine Inflow Evaluation for Underground Oil Shale Mines." Chapter 25, Mine Drainage, Miller Freeman.

1980 "A Strategy for Hydrology Investigations for Mining Projects in North America." EMJ, September, 1980, p. 112-117.

1981 "The Influence and Control of Groundwater in Large Slopes." Chapter 3, Stability in Surface Mining, Society of Mining Engineers, Vancouver.

1982 "Water Availability and Use in Wester Colorado - A Consultant's View." Proceedings, Water Use and Availability Seminar, University of Colorado at Denver.

1982 "A Validated Theory of Underground Mine Flooding." Proceedings First International Mine Water Congress, Budapest.

1982 "Toppling-Induced Movements in Large, Relatively Flat Rock Slopes." Proceedings, 23rd Symposium in Rock Mechanics, Berkeley, California.

1982 "A Rational Method of Evaluating Dewatering Requirements to Control Heave in Large Open Pit Mines." SME 1st International Fall Meeting, Honolulu.

1983 "Mine Dewatering: A Case History at Les Mines Selbaie". Proceedings: C.I.M. Annual Meeting, Winnipeg.

1984 "An Engineering Approach to the Elimination of Contaminated Seepage from Processed Oil Shale - I," 17th Oil Shale Symposium, Golden, Colorado.

1985 "An Engineering Approach to the Elimination of Contaminated Seepage from Processed Oil Shale - II", 18th Oil Shale Symposium, Golden, Colorado.

1987 "Hydraulic Conductivity of Lurgi Process Oil Shale", 20th Oil Shale Symposium, Golden, Colorado.

1988 "Use of Hydraulic Fill to Stabilize an Abandoned Underground Coal Mine", Proceedings Hydraulic Fill Structures 88, Ft. Collins, Colorado. (co-author)

1988 "Efficient Environmental Hydrology in the Reemerging Mining Industry", Proceedings CMA, Denver, Colorado.

1988 "Achieving the Impossible in Environmental Hydrology", 7th Conference Rocky Mountain Association of Environmental Professionals, Park City, Utah.

1988 "Groundwater Evaluation and Control for Gold Mining Projects", Proceedings: 2nd International Conference on Gold Mining, Vancouver, B.C., Canada.

1989 "Prediction of Groundwater Inflows and Impacts in Mines", Groundwater & Mining, Johannesburg, South Africa.

1990 "Environmentally Driven Design of Disposal Facilities for Acid Generating Materials", Geotechnical Design in Waste Management Practice, American Society of Civil Engineers, Denver, Colorado.

1991 "Towards More Efficient Groundwater Remediation", Rocky Mountain Mineral Law Institute, Salt Lake City, Utah

1991 "Soil Standards for Cleaning Up Mining and Petroleum Sites: A Review", Rocky Mountain Mineral Law Institute, Monterey, California

1991 "Existing In-Service Tailings Dams", CIMM Conference on Environment in Mining, Timmins, Ontario

1992 "Transport Modeling - Technical and Legal Issues", Natural Resources Law Center Conference on "Uncovering the Hidden Resource: Groundwater Law, Hydrology, and Policy in the 1990's", University of Colorado, Boulder, Colorado

1992 "Leaking underground storage tanks", National Center for Preventive Law Conference, "Clean Air, Clean Water, Clean Business", Denver, Colorado

1993 "Groundwater Remediation under Superfund", Environmental Regulation, Albuquerque, New Mexico.

1994 "Packer testing of low permeability rock", IMWA/IAH, Conference on Water Resources at Risk, Denver, Colorado.

1995 "Groundwater Remediation", Utah Water Law Conference, Salt Lake City, UT

1996 "Suppression of sulfide mineral oxidation in mine pit walls. Part I: Hydrologic modeling", Tailings and Mine Waste '97 Conference, Fort Collins, CO

1996 "Suppression of sulfide mineral oxidation in mine pit walls. Part II: Geochemical modeling", Tailings and Mine Waste '97 Conference, Fort Collins, CO

1997 "Groundwater Quantity & Groundwater Quality", Chapter 6 Mining Environmental Handbook, ICP Imperial College Press.

1997 "Environmental Permitting: Defining surface water baseline data requirements and philosophy for surface water resource investigation" Chapter 7, Section 7.3.3, Mining Environmental Handbook, ICP Imperial College Press.

1998 "Influence of tectonic displacement barriers on alluvial aquifer behavior", 50th Annual NGWA Convention and Exposition, Las Vegas, Nevada.

1998 "Reconstructing the Past and Predicting the Future: Environmental and Legal Issues in Groundwater Modeling", 6th Annual Conference on Utah Water Law Ogden, Utah.

1999 "ARD Remediation in Steep Terrain in the Shasta Mining District", California Mining Association, 49'er Mining Conference, South Lake Tahoe, California

2000 "Infiltration And Water Fate In High Altitude Environments", 2000 High Altitude Revegetation Conference, Fort Collins, CO

2001 "Underground Mine Closure And Environmental Control", IMWA Symposium, Belo Horizonte, Brazil

2002 "Infiltration to Groundwater at High Altitude", IMWA Symposium, Freiberg, Germany

2004 "Chemical Grouting of Underground Mines" IMWA Congress, Oveido, Spain