

Edward Squires, R.P.G.

EDUCATION

M.S. Interdisciplinary Hydrogeology, 1992, Boise State University, Boise, Idaho.

Advisors: Dr. S.H. Wood (BSU) and Dr. J.L. Osiensky (U of I).

B.S. Geology, groundwater emphasis, cum laude, 1990, Boise State University, Boise, Idaho.

Advisor: Dr. C. M. White.

Thesis: Hydrogeologic Framework of the Boise Aquifer System, Ada County, Idaho.

REGISTRATION

Registered Professional Geologist, since 1999, Idaho Certificate No. 968

Registered Professional Geologist, since 2010, Arizona Certificate No. 51268

Professional Well Log Analyst, since 1995

Idaho Certified Water Right Examiner, Certification No. 18-125



OVERVIEW

Ed Squires is the President and Managing Hydrogeologist for Hydro Logic, Inc. of Boise, Idaho. Before starting his own consulting firm in 1999, he served for 6 years as Manager of the Geosciences Department and Company Hydrogeologist for United Water Idaho, Inc. In that capacity, Mr. Squires has consulted on a variety of water resource projects to the United Water Resources group of companies around the United States. He has been part of the adjunct graduate faculty at Boise State University's Department of Geosciences since 1995, regularly teaching a curriculum course in Field Hydrogeology and serving as a guest lecturer for other water-related coursework. Prior to his tenure at United Water Idaho, Mr. Squires worked as a hydrogeologist for S.H. Wood and Associates and has over twenty-five years of hands-on groundwater and geophysical experience.

Mr. Squires' professional career and current practice emphasizes all aspects of responsible groundwater development, water rights, and resource protection. He has conducted extensive research and published several reports on the groundwater and subsurface hydrogeology of the Boise River Valley since publication of his Masters Thesis, entitled "Hydrogeologic Framework of the Boise Aquifer System, Ada County, Idaho". Mr. Squires served three years on the Technical Advisory Committee of the Treasure Valley Hydrologic Project and has been a member of the Southeast Boise Groundwater Management Area Committee, formed as a result of his research in Southeast Boise, since 1994. He served on the Technical Advisory Committee for the Hydrogeologic Framework and Computer Modeling Project for the Boise Front Geothermal Groundwater Management Area and was appointed by the Director to the Negotiated Rulemaking Committee to draft new administrative rules for well drilling in the State of Idaho. Ed currently is an active member of the 2nd (2018) Technical Advisory Committee for the Treasure Valley Hydrologic Project ground water numerical model at IDWR at the request of several of Ed's municipal clients.

Mr. Squires has designed and supervised the construction of over 300 large bore, high capacity water supply wells averaging 500 feet deep in sedimentary and volcanic aquifers. He has designed, supervised the construction, developed, and tested more than 60 deep (500-to-1000 feet) exploratory test/observation wells in addition to multiple geothermal and irrigation well development projects. In addition to new well installations, Mr. Squires has run down hole camera surveys and borehole geophysical logs in hundreds of wells throughout the Western States and has been in charge of rehabilitative maintenance/reconstruction of over 100 older wells.

Mr. Squires is a registered Professional Geologist (No. 968) in Idaho and a Professional Well Log Analyst. He is a member of the National Groundwater Association, the Association of Ground Water Scientists and Engineers, and is a Certified Water Rights Examiner in the State of Idaho (18-125).

REPRESENTATIVE PROJECT EXPERIENCE

Groundwater Development

- 1) Design, construction oversight, development, and testing of over 300 large bore, high capacity production supply wells for public drinking water systems, municipalities, and private utilities.
- 2) Designed, organized, and supervised 14 regional scale, long-term aquifer tests using the wells of: the State of Idaho Department of Corrections, United Water Idaho, Inc., Water District 63-S, Mesa Water Corporation, Capital Water Corporation, Tamarack Resort, Crane Creek Country Club, J.R. Simplot, Town of Wickenburg, AZ, City of Meridian, City of Kuna, City of Caldwell, and City of Eagle.
- 3) Conducted and interpreted borehole geophysical logs in newly drilled wells and provided design information for hundreds of well projects for industrial, commercial, agricultural, domestic, and municipal wells in the western U.S.
- 4) Testing/analysis of United Water Idaho's infiltration galleries (Ranney Collectors) along the Boise River.
- 5) Pumping test analysis and pumping plant design of municipal supply wells for the Cities of Caldwell, Meridian, Kuna, and Garden City and for many irrigation and commercial clients.
- 6) Ground water quality and water geochemistry evaluations for the Cities of Meridian, Caldwell, Kuna, and Garden City, United Water Idaho, Capitol Water Corp., Tamarack Resort, Pepsico USA, SSI Food Industries, Idaho Power Company, Wickenburg Ranch, Tusayan, AZ, The Terteling Company, Inc., and numerous other agricultural, commercial, water company, and subdivision clients.
- 7) Hydrogeologic and geophysical investigations for groundwater supply projects for the Idaho cities of Boise, Meridian, Caldwell, Mountain Home, Nampa, Greenleaf, Kuna, Marsing, Buhl, Rupert, Eagle, Cascade, Donnelly, Victor, Star, Emmett, Glenns Ferry, and Notus. Also the Cities of Hawthorne NV, Mt. Vernon OR, LaGrande OR, Island City OR, and Walla Walla WA and the towns of Tusayan AZ and Wickenburg AZ.

Geothermal

- 1) Water-level monitoring and data analysis of the BWSWD Well #3, Kanta-Yanke, Behrman, Quarryview Park, Koch, and BLM geothermal wells 1984-1987.
- 2) Water-level monitoring of the Terteling Ranch and Flora Nursery geothermal wells 1993- present.
- 3) Geophysical investigations of the BWSWD #1 and #2, Kanta, BLM, Terteling (6 wells) Ranch, UWID Cartwright, Crane Creek Country Club, Simplot Ranch, Jeker Ranch wells.
- 4) Large scale, 11-well aquifer test of the Stewart Gulch geothermal aquifer using the Terteling Windsock well as the pumping well. Basis for IDWR Order changing Water District 63-S boundary (1994).

- 5) Large scale, long-term aquifer testing of the Stewart Gulch geothermal wells using the Quail Hollow Golf Course well as the pumping well (1993).
- 6) Six-well, aquifer testing of the Crane Creek area geothermal wells using the Simplot Ranch, Crane Creek GC, and UWID wells as pumping wells. Settled UWID/Simplot water rights dispute – (194-1995).
- 7) Specific capacity testing of the Flora Nursery and Edwards Nursery geothermal wells 2000-2002.
- 8) Conducted and interpreted down hole camera surveys of the BWSWD, Flora, Crane Creek Country Club, Terteling Ranch wells.
- 9) Project manager for design, drilling, completion, and testing of the Peaceful Cove Nursery and Tom Terteling residence deep geothermal supply wells in Stewart Gulch – 1994 & 1995).
- 10) Project manager for the rehabilitation of the Terteling Ranch Pool, Motorcycle Club, and Windsock geothermal wells – 1990's.
- 11) Evaluation of historical weir flow data and geothermal water use at Flora Nursery – 1921- 2002.
- 12) Project manager for reconstruction, and sealing of the Flora Nursery Silkey geothermal well. 2001.
- 13) Co-leader of the Treasure Valley Hydrologic Project Foothills Field Trip to view exposed geothermal aquifer rocks along the Boise Front 1998.
- 14) Project manager Stewart Gulch seismic profiling project to site, drill, and complete a new cold-water irrigation well above the geothermal aquifer – 1996
- 15) Conducted geophysical surveys for the J.R. Simplot Co.'s Aquaculture Project in Caldwell, ID.
- 16) Expert witness for Flora Nursery during protested geothermal Transfer application 2001-2002.
- 17) Expert witness for The Terteling Company during protested Petition by the City of Boise to increase geothermal water withdraws from the Boise Geothermal Aquifer 2002.
- 18) Hydrogeologic Framework Refinement and Simulation of Hydraulic Head and Temperature in the Boise Geothermal Aquifer -Technical Advisory Committee member 2002.
- 19) Co-author of the Boise Front Geothermal Aquifer Monitoring Plan June 2002.
- 20) Project manager for the geothermal exploration drilling and seismic reflection surveys project at Tamarack Resort 2005.
- 21) Seismic data interpretation and site selection for a new deep geothermal heating well for T-7 Ltd. – 2012

- 22) Lost pumping plant extraction and inspection/evaluation of the Boise Warm Springs Water District flowing artesian geothermal Well #1 - 2014
- 23) Project manager for the deep geothermal exploration well and water rights for Double Anchor Ranches, Cold Springs Creek, Glenn's Ferry, Idaho – July and August, 2017

Aquifer Recharge

- 1) Project manager for the United Water Idaho, Inc.'s Swift Aquifer Storage and Recovery project (aquifer recharge) in West Boise, Idaho, 1996-1999.
- 2) Consulting hydrogeologist to United Water Resources for various aquifer recharge projects along the east coast 1996-1999.
- 3) Geophysical and hydrogeological consultant to the State of Idaho Department of Water Resources' Managed Recharge Project including providing open-hole geophysical logs and borehole video 2000.
- 4) In-situ Aquifer Storage and Recovery project for dissolved iron concentrations in ground water in the Tamarack Resort municipal supply Well #7 ; successful elimination of iron 2004.
- 5) Attended two international ASR conferences and two recharge conferences in the US.
- 6) City of Meridian ASR Evaluation for City Well #23, 2009.
- 7) Member of the National Groundwater Association's ASR Task Force, 2009-2014

Surface Water

- 1) Five-year stream flow and surface water-geochemistry/water-quality monitoring of four mountain streams in the Tamarack Resort area of Valley County Idaho including establishment of baseline data and statistical analysis.
- 2) Three-year stream flow monitoring of three spring-fed perennial streams in the Squaw Ridge area near Ola, Idaho including an evaluation for two administrative futile water calls and associated water rights.
- 3) Monitoring and demonstration of water rights futile call and expert witness for Cold Springs Creek and Ryegrass Creek near Glenn's Ferry, ID, 2014.
- 4) Ground and Surface Water Resources Management Plan for Clagstone Meadows area of north Idaho including 3 exploratory test bores, surface water stream monitoring for flow and geochemistry. Surface water rights evaluation, adjudication claims, and new applications.

Water rights

- 1) Preparation, filing, and follow-through of numerous water right transfers and water right permit applications and transfers for public utilities, municipalities, the State of Idaho, commercial, and agricultural water users in Idaho.
- 2) Evaluation of surface water rights and filing of transfer applications in Little Salmon River Valley.
- 3) Expert witness in Basinwide Issue #5 – Conjunctive Management of Water Resources in Idaho.
- 4) Expert witness in all manner of water right disputes, protests, and well interference issues before the Idaho Department of Water Resources and in the Idaho courts including groundwater/surface water

interactions.

- 5) Evaluations and filing of claims in the Snake River Basin Adjudication.
- 6) Certified Water Right Examiner in the State of Idaho regularly conducting field licensing examinations and evaluations of pumping systems including determination of historical use.
- 7) Continual involvement in the interpretation and application of the tenets of the State of Idaho Water Code with respect to groundwater resource development and management.
- 8) Project manager for United Water Idaho, Inc. concerning the implementation of the 1996 Municipal Water Rights Statute 1994-1999.
- 9) Successful "Municipal" water rights application for the Idaho Dept. of Transportation for its Issac's Canyon Rest Area near Boise. 1st use of 1996 Municipal Water Rights Statute for the State of Idaho.
- 10) Co-author of the first successful municipal "future needs" (RAFN) water right application in Idaho and three pending subsequent future needs applications.
- 11) Water rights consultant to the Idaho Department of Corrections for several facility locations.

Groundwater Development Feasibility Studies

- 1) 2006-2011 Project Manager for \$1.5 M hydrogeologic characterization and ground water development potential studies of the Upper Hassayampa Basin for the 3,000-unit Wickenburg Ranch planned development community near the town of Wickenburg, Arizona.
- 2) 2006-2011 Project Manager for \$2M hydrogeologic characterization and ground water development potential studies for the 6,000-unit Spring Valley planned development community in the Eagle, Idaho foothills.
- 3) Design, construction oversight, development, water quality testing, and monitoring of over 50 deep (500-1000 feet) exploratory test-well and piezometer nest installations for municipal and industrial water providers in Southwest Idaho..
- 4) Groundwater Feasibility Study For Idaho Power Co.'s Pahsimeroi Fish Hatchery, Lemhi, County, Idaho.
- 5) Reconnaissance Level Groundwater Feasibility Study for the Idaho Power Company's Oxbow Fish Hatchery at the Confluence of Pine Creek With the Snake River in the Hells Canyon Reach, Baker County, Oregon.
- 6) Hydrogeologic Evaluation of Groundwater Quality and Yield Beneath the Idaho Power Company's Pahsimeroi Fish Hatchery – Upper Facility.
- 7) Analysis of the 2001 Aquifer Testing for the Municipal Water Supply of the Proposed Tamarack Resort, Donnelly, Valley County, Idaho.

- 8) Groundwater Conditions and Hydraulic Testing of the Boise Fan-Aquifer of Southeast Boise River Valley, Ada County, Idaho.
- 1) Evaluation of the Hydrogeologic Framework and Groundwater Production Potential of the Kings River Valley, Nevada.

Resource Protection

- 1) Investigation, design and oversight of the decommissioning and proper abandonment of 49 aging and unsealed large-bore production well using perforate-and-pressure grouting techniques.
- 2) Design and oversight of the pressure grout sealing and rehabilitation of four high-yield unsealed wells for the defunct United Dairymen of Idaho Creamery in downtown Meridian, Idaho prior to building a new City Hall facility on the site.
- 3) Development and implementation of a baseline (pre-development) surface water quality monitoring plan for the proposed Tamarack Resort, Donnelly, ID.
- 4) Served two years (2008-2010) representing the City's of Meridian, Caldwell, and Kuna on the negotiated rulemaking committee for revision of Idaho's administrative rules for well drilling at request of the Director of the Department of Water Resources.
- 5) Served one year (1995-1996) representing United Water Idaho, Inc. on a negotiated rulemaking committee for revision of Idaho's administrative rules for well drilling at request of the Manager of the Western Regional office of the Department of Water Resources.

Expert Witness Testimony (entity represented underlined – all winning outcomes):

- 1) Idaho Department of Corrections versus Tyson Fine Foods
- 2) The Terteling Company, Inc. versus Edwards Greenhouses, LLC.
- 3) Naylor Farms versus Latah County et al
- 4) Ivey versus Russell
- 5) North Ada County Ground Water Users Association versus M3 Eagle, LLC.
- 6) Round Valley water users and well owners versus Ringel.
- 7) Edwards Greenhouses versus The Terteling Company, Inc.
- 8) Idaho Power Company versus group of Pahsimeroi Valley water users and well owners.
- 9) Carlock, McKenzie, and Redmon versus Mooers - Squaw Creek Idaho.
- 10) The Terteling Company versus the City of Boise.
- 11) City of Caldwell versus United Water Idaho, Inc.
- 12) City of Meridian versus United Water Idaho, Inc.
- 13) The Terteling Company, Inc. versus United Water Idaho, Inc.
- 14) Tamarack Resort versus Henry's North Forty, LLC.
- 15) Thompson versus George Bryant Drilling.
- 16) Micron Technology, Inc. versus United Water Idaho, Inc.
- 17) Jardine versus Inland Crane

- 18) Brenegar versus City of Meridian.
- 19) Double Anchor Ranches versus Casa del Norte
- 20) United Water Idaho, Inc. versus Idaho Department of Corrections
- 21) McNabb versus United Water Idaho, Inc.
- 22) General Water Works Corporation versus Intel, Corporation.
- 23) Idaho Public Utilities Commission versus Mesa Water Company.
- 24) Duspiva versus Filmore Supreme Court case over well drilling procedures.

EMPLOYMENT

- 1999-present Founder, President, and Managing Hydrogeologist; Hydro Logic, Inc.
- 1995-present Adjunct graduate faculty; Boise State University Department of Geosciences.
- 1994-1999 Sr. Hydrogeologist (RPG) United Water Idaho, Inc.; Geosciences Department Head.
- 1992-1994 Consulting Hydrogeologist. S.H. Wood and Associates, Boise, Idaho.
- 1990-1993 Staff Technician; Geophysical Well-logging Unit, Boise State University.
- 1989 summer Idaho Geological Survey; Idaho Initiative. Albion Range field-mapping.
- 1989 Internship; Boise Water Corp.; Digital Data Acquisition for Groundwater Studies.
- 1988 summer White/Naslund National Science Foundation Research Expedition to Kangarslugsuaag region of arctic East Greenland. Team member in charge of field mapping.
- 1987 summer Research assistant at BSU on hydrogeological studies. Design, construction, and operation of Boise State University's truck-mounted geophysical well-logging unit. Thin-section and X-ray diffraction laboratory manager.

PUBLICATIONS AND REPRESENTATIVE PROFESSIONAL REPORTS

- City of Meridian, Idaho Request to the Director of the Idaho Department of Water Resources for a Designation of an Area of Drilling Concern with Supporting Scientific Data and Case Studies, April 2015 (through designation in 2017).
- Evaluation of Changing Ground Water Geochemistry in the Meridian Municipal Well #25, 2014, Investigation of radionuclides in groundwater and causative factors behind elevated levels of uranium in Meridian ground water.
- Aquifer Insights Gained from a Seventeen-Year Water Level Monitoring Record of a Rapidly Developing Municipal Well Field in Meridian, Idaho, 2013, Results and analysis of a long-term, designated ground water-level monitoring well network and the implications to future resource sustainability, a report prepared for the City of Meridian Public Works Department
- An Evaluation of the Pumping Plant, Ground Water geochemistry, Hydrogeology, and Current Condition of the City of Meridian Municipal Supply Well #24, a Ninth Year Check-Up, 2012, Prepared for the City of Meridian
- Understanding the Boise River Valley Aquifers: the Hydrogeology Depends on the Geology, Modeling Depends on Good Data, 2012, Abstract and presentation for Law Seminars International.
- The Artesian Wells of the City of Meridian, Idaho, March 17, 2012, municipal well data base and report to City of Meridian Public Works Department.
- Evaluation of Elevated Concentrations of Dissolved Radionuclides in Ground water from the City of Meridian Municipal Well #20-B, 2011, prepared for the City of Meridian Public Works Department
- Hydrogeologic Characterization and Demonstration of Physical Availability of Groundwater for an Assured and Adequate Water Supply Application for Wickenburg Ranch, Yavapai County, Arizona, October 11, 2010.
- Geologic Framework of the Congress Basin Groundwater Resources, Yavapai County, Central Arizona, July 4, 2010.
- City of Meridian Source Water Protection Plan Update, 2009, second edition after 2003.
- Options For Improving Groundwater Quality in the City of Meridian Well #23, May 5, 2009 Technical memorandum to Public Works Director Tom Barry including a detailed evaluation for the potential for Aquifer Storage and Recovery.
- Hydrogeologic Framework and Evaluation of the Ground Water Development Potential Beneath The City of Meridian's Test Well #28 Site, April 1, 2009.
- A Nine-Day Constant-Rate-Discharge Aquifer Test of the SVR #7 Test Well In Big Gulch, North Ada County, Idaho.

Consultant's report issued January 20, 2009

Thirteen-Day Constant-Discharge Aquifer Test of the Wickenburg Ranch Supply Well #7, January 8, 2009, a Demonstration of Assured and Adequate Water Supply for the Upper Hassayampa Basin, AZ to the Arizona Department of Water Resources.

Ground Water Level Measurements the Northern Ada County Area Including the Proposed M3 Eagle Planned Community, to Dennis E. Owsley of the Idaho Department of Water Resources, Consultant's report issued March, 19. Hydro Logic, Inc., 2008a. Technical Memorandum.

Modeling of Groundwater Flow in the Pierce Gulch Sand Aquifer: Five Models: History, Updates and Predictions of Impacts Caused by Pumping at the M3 Eagle Planned Residential Community, Ada County, Idaho. Consultant's report issued November 26. Hydro Logic, Inc., 2008c.

Re-analysis of 16 Aquifer Tests in the Greater Eagle-Star Area of North Ada County, Idaho. Consultant's report issued July 4, 2008, Utting, M. and Squires, E., 2008.

M3 Eagle Regional Hydrogeologic Characterization, North Ada, Canyon and Gem Counties, Idaho One-Year Progress Report. Consultant's report issued May 4. Squires, E., Utting, M., and Pearson, L.H., 2007.

Baseline Surface Water Quality Estimation For Streams In the Tamarack Resort Area, Donnelly, Valley County, Idaho. March 15, 2007, Streamflow and geochemistry monitoring of four mountain streams 2002-2007.

Movement of Dissolved Constituents From Surface to Groundwater and Analysis of Hydrochemical Trends in the Boise Aquifer, 2006, research paper in preparation with D. Glanzman.

Baseline Surface Water Quality Estimation For Streams In the Tamarack Resort Area, Donnelly, Valley County, Idaho:

2006, a four-year study to develop baseline geochemical signatures and annual flow rates/volumes for six area streams using the Probability Plot Analysis method.

Hydrogeologic Evaluation of the Feasibility for Ground Water Development Beneath the Miller Gulch Area of the Terteling

Ranch in the Boise Foothills, Ada County, Idaho With Emphasis on Water Quality / Geochemistry: 2005, a report on the drilling, design, construction, and sampling of the Miller Gulch exploratory test-well bore and piezometer nest.

Options for Additional Ground Water Development and Replacement of the City of Caldwell's #7 Supply Well: 2005, a

report on the drilling, design, construction, and sampling of an exploratory test-well and long-term dedicated piezometer nest/monitoring well at the City of Caldwell's existing municipal water supply well site, prepared for the City of Caldwell, Idaho Department of Public Works.

Boise Valley Groundwater Geochemistry – Origin, Infiltration Rate, and Transport Characteristics: 2005, abstract submitted to the 15th Annual Goldschmidt Meeting of international geochemists, co-author with Dick Glanzman, CH2M Hill Denver.

Treasure Valley Hydrologic Project Seismic Survey and Hydrogeologic Framework Study, 2003, research paper with Dr. S.H. Wood, and Lee Liberty of BSU.

Compilation of Drilling, Geological, Geophysical, Geochemical, and Hydraulic Testing Data for the City of Meridian,

Idaho's Groundwater Supply: Including Detailed Well-Construction Information and Aquifer Pressure

Measurements From a Long-Term Groundwater Monitoring Well Network, 2003, data compilation from a ten-year hydrogeologic study funded by the City of Meridian.

City of Meridian, Idaho Source Water Protection Plan: 2003, prepared for the Idaho Department of Environmental Quality and the City of Meridian Department of Public Works.

Details of Drilling, Construction, and Hydraulic Testing of the Idaho State Correctional Institution #4 Supply Well, 2002, a report prepared for the Idaho Division of Public Works.

Results and Analysis of the 2001 Aquifer Testing for the Municipal Water Supply of the Proposed WestRock Resort,

Donnelly, Valley County, Idaho: 2002, A report prepared for the Idaho Department of Water Resources.

Causative Factors of Detachment of the Mountain Home #1 Municipal Supply Well Pump With Details of the Recovery Effort: 2002, A report prepared for Ringier Clark Chartered Lawyers.

Evaluation, Abandonment, and Proposed Replacement of the Capitol Water Corporation's #5 (Lubkin) Municipal Supply Well 1999-2002: 2001, A report on the history of repair, the occurrence of volatile organic compounds, and the abandonment of an aging supply well in preparation for replacement of the #5 well with a new facility.

Preliminary Evaluation of the Well Construction, Present Down Hole Conditions, and Sustainable Yield of the Garden City #5 Municipal Well: 2001, A report the Garden City Public Works Department.

Stratigraphic Studies of the Boise (Idaho) Aquifer System Using Borehole Geophysical Logs With Emphasis on Facies

Identification of Sand Aquifers: 2000, Report to the Treasure Valley Hydrologic Project, Idaho Department of Water Resources, (co author with Dr. S.H. Wood).

Geophysical signatures of lacustrine facies: Experience from Hydrostratigraphic Studies of temperate Neogene Lake Idaho sediments and aquifers, U.S.A., Abstract of the General symposium, 3-1 Lacustrine Sedimentation, 31st International Geological congress, Rio de Janeiro, Brazil, August 6-11, 2000_Wood, S.H., Liberty, L., and Squires, E.

Hydrogeology, Geochemistry, and Well Construction of the Treasure Valley Hydrologic Project Monitoring Well #1, Ada County, Idaho: , 1999, Final report to the Technical Advisory Committee (co-author).

Supporting Data for the Groundwater Conditions and Aquifer Testing of the Tenmile Ridge Area of South Boise, Ada County, Idaho: 1998.

Implications of Well-Construction to Aquifer Water-Quality: Some Observations: (principal author), 1997, Southwest Idaho Subsection – Pacific Northwest Section of the American Water Works Association; in Southwest Idaho As An Example of Ground Water Development in the Northwest Intermountain Region, Speakers Expanded Abstracts City of Meridian #15 Production Well; Discovery of a New, Good-Quality Aquifer: 1994, Professional report to the City of

Meridian, Idaho.

- Groundwater Conditions and Hydraulic Testing of the Boise-Fan Aquifer of Southeast Boise River Valley, Ada County, Idaho: 1993, Report to Boise Water Corporation. (principal author).
- City of Meridian #14 Production Well: 1993, A new large-capacity municipal-supply well is completed in response to unprecedented 18% growth. Report to City of Meridian, Idaho.
- Hydrogeologic Framework of the Boise Aquifer System, Ada County Idaho: 1992, Project Completion Technical Report, Idaho Water Resources Research Institute, University of Idaho, Moscow, Idaho, 109 pages.
- An Irrigation Well for the Les Bois Invitational Soccer Tournament Incorporated, 1992, professional report to Boise Water Corporation, 42 pages. (sole author)
- Hydrogeologic Investigation for the Proposed State of Idaho, Department of Transportation Blacks Creek Rest Area, Ada County, Idaho: 1992, report to Idaho Department of Transportation, 38 pages. (principal author)
- Investigation of Groundwater in the Tenmile Ridge Area of South Boise, Idaho: 1989. Report to Boise Water Corporation. (principal author)
- Origin of Granophyres in the Vandfalsdalen Macrodiike, East Greenland: 1989, Evidence for Assimilation and Magma Mixing. GSA Abs. with Programs. (co-author)
- Crustal Assimilation and Coexisting Silicic and Mafic Magmas in the Vandfaldalen Macrodiike, East Greenland: Continental Magmatism Abstracts (IAVCEI): New Mexico Bureau of Mines and Mineral Resources Bulletin 131. (co-author)
- Analysis of Historical and Current Water-level and Production Data from the Boise Geothermal System: 1988, Geological Society of America Abstracts. (co-author)
- Preliminary Geology and Hydrogeology of the Mayfield/Orchard Area, Elmore and Ada Counties, Southwest Idaho: 1988, Program and Abstracts, 30th Annual Meeting of the Idaho Academy of Science. (sole author)
- Geologic Study of Groundwater in Deep Wells, Southeast Boise Area: 1987. Report to Boise Water Corporation.