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EDUCATION

- 2001 Master of Science Degree, Department of Earth and Planetary Sciences,
University of New Mexico (UNM), Albuquerque, NM.
- 1996 Bachelor of Science Degree, Bucknell University, Lewisburg, PA.
Major: Environmental Geology.

PROFESSIONAL SOCIETIES AND CERTIFICATIONS

- American Institute of Hydrology, Certified and Registered as a Professional Hydrogeologist (05-HG-1633)
- American Geophysical Union, Member
- New Mexico Geological Society, Member

PROFESSIONAL ACTIVITIES

- 3/07 to present Hydrogeologist, Hydrology Bureau, New Mexico Office of the State Engineer. Duties include providing hydrologic assessments of water rights applications, and hydrologic support for other agency needs.
- 8/00 – 2/07 Staff/Project Hydrogeologist, John Shomaker and Associates, Inc., Albuquerque, NM. Responsible for a range of tasks including: developing and operating ground-water flow models; performing hydrogeologic investigations and siting water wells; assessing water resources for planning purposes; and performing aquifer-test data collection, and ground-water sampling.
- 6/99 - 9/99 State Government Intern, New Mexico Environment Department, Groundwater Quality Bureau, Santa Fe, NM. Evaluated reports pertaining to alternative abatement standards, ground-water quality monitoring schedules, and statistical analyses of ground-water quality trends.
- 3/99 – 11/99 Contract Geologist, New Mexico Bureau of Mines and Mineral Resources, Albuquerque, NM. Compiled and interpreted well logs for a geologic map of San Pedro, New Mexico, 7.5 minute quadrangle.
- 9/97 – 6/00 Teaching/Research Assistant, University of New Mexico, Albuquerque, NM. Responsibilities included teaching physical geology laboratory classes, assisting

with instruction of a summer field geology course, and grading physical hydrology and hydrogeology homework assignments.

2/97 – 7/97 Geologist, STV, Inc. New York City, NY. Assisted Environmental Division with a Phase II, soil and ground-water investigation.

CONTINUING EDUCATION

- The MODFLOW Course. National Ground Water Association, Princeton, NJ. October 25-28, 2005. Instructors: Robert Cleary, Nilson Guiguer, and Miln Harvey.
- Model Calibration, Uncertainty Analysis and Optimization. Environmental Simulations, Inc., Herndon, Virginia, November 5-7, 2003. Instructor: James Rumbaugh
- Rotary Districts 4110 and 5520 Group Study and Scientific Exchange between Mexico and the United States April 20, to May 19, 2002. The following report was prepared in September 2002 by the group study exchange teams: *Water Issues Along the International Borders of New Mexico, Far West Texas, and Chihuahua: Findings and Recommendations to Rotary International and the Rotary Foundation.*
- MODFLOW Short Course, International Ground-Water Modeling Center, Golden, CO, September 8-11, 2001. Instructors: Eileen Poeter and Evan Anderman

PUBLIC REPORTS AND TECHNICAL MEMORANDA

Petronis, L.H., 2009, Hydrologic evaluation of Application Nos. B-28-S-207 and B-28-S-323 for Permit Change Location of Well and Application No. B-28-S-386 to B-28-S-429 to Drill Supplemental Wells to Supplement Ground Water or Surface Water in the Bluewater Underground Water Basin of the State of New Mexico: OSE Memorandum to Uday Joshi, Administrative Litigation Unit and Jeff Peterson and Wayne Canon, Water Rights Division, dated February 1, 2010.

Petronis, L.H., 2009, A summary of the additional hydrologic evaluation provided as part of the mediation process for Application RG-23884 and RG-23884-S into RG-304-S for Permit to Change Location of Well and Place and/or Purpose of Use of Underground Water: OSE Memorandum to Mary Young, Water Rights Division, and Barbara Brill, Administrative Litigation Unit, dated October 22, 2009.

Petronis, L.H., 2009, Comments on Applicant's Exhibit T: Analysis of the Corda Application, dated October 29, 2008, by Dr. William M. Turner (Turner, 2008). Submitted in support of application SP-1380 & 1380-A into RG-7767-G, RG7767-G-S and RG-7767G-S-2, Application to Change Point of Diversion and Place and/or Purpose of Use from Surface to Ground Water: OSE Memorandum to Bruce Richardson, Water Rights Division and Chris Lindeen, Administrative Litigation Unit, dated June 18, 2009.

- Petronis, L.H., 2009, Hydrologic evaluation of application SP-1380 & SP-1380-A into RG-7767-G, RG-7767-G-S, and RG-7767-G-S-2, Application to Change Point of Diversion and Place and/or Purpose of Use from Surface to Ground Water: OSE Memorandum to Bruce Richardson, Water Rights Division and Chris Lindeen, Administrative Litigation Unit, dated May 7, 2009.
- Petronis, L.H., 2009, Calendar Year 2008 San Juan–Chama Project water accounting: hydrologic impacts on the Rio Grande due to 1972 – 2008 Buckman well field pumping, RG-20516 et al.: OSE Memorandum to Kevin Flanigan, Interstate Stream Commission, dated February 16, 2009.
- Petronis, L.H., 2009, Calendar Year 2008 hydrologic impacts on the Rio Pojoaque-Nambe, Rio Tesuque, and La Cienega springs due to Buckman well field pumping, RG-20516 et al.: OSE Memorandum to Jim Sizemore, Director, Water Rights, Water Resource Allocation Program, dated February 16, 2009.
- Petronis, L.H., 2009, Evaluation of the Grants-Bluewater area water-level monitoring network: OSE Memorandum to Doug Rappuhn, Hydrology Bureau, dated January 13, 2009.
- Petronis, L.H., 2009, Additional Comments on the hydrologic evaluation of Application RG-5840 into RG-1139 and RG-1139-S for Permit to Change Location of Well and Place and/or Purpose of Use of Underground Water: OSE Memorandum to Steve Mastovich, Water Rights Division, dated January 9, 2009.
- Petronis, L.H., 2008, Hydrologic evaluation of applications SD-03001 into B-136 & B-137 and SD-03007 into B-136 & B-137 for permits to change point of diversion and place and/or purpose of use of surface waters within the Bluewater Basin: OSE Memorandum to Barbara Brill, Administrative Litigation Unit and Lorrie Gallegos and Joseph Fields, Water Rights Division, dated October 31, 2008.
- Petronis, L.H. 2008, Estimated pumping amount that will limit net impacts to the La Cienega area for Application RG-5840 into RG-1139 and RG-1139-S for Permit to Change Location of Well and Place and/or Purpose of Use of Underground Water: OSE Memorandum to Steve Mastovich, Water Rights Division, dated September 9, 2008.
- Petronis, L.H., 2008, Hydrologic evaluation of application SD-0869 into RG-24042 into RG-20516 et al., Application for Permit to Change Location of Well and Place and/or Purpose of Use of Underground Water: OSE Memorandum to Mary Young, Water Rights Division, dated September 4, 2008.
- Petronis, L.H., 2008, Estimated Natural Streamflow at the Western Boundary of the Acoma Pueblo and Western Boundary and Northern Areas of the Laguna Pueblo in the Rio San Jose Basin, New Mexico: Prepared for the State of New Mexico, Office of the State Engineer, *STATE EX REL. STATE ENGINEER v KERR-MCGEE, ET AL.* Cause No. CB-83-190-CV & CB-83-220-CV (Consolidated), Subproceeding 1., dated September 4, 2008.
- Petronis, L.H., 2008, Comments on exhibits submitted in support of application RG-29242 and RG-29242-S et al., Application for Permit for Supplemental Wells and to Change Place and Purpose of Use of Underground Water: OSE Memorandum to Dan Rubin and Chris Lindeen, Administrative Litigation Unit and Mary Young, Water Rights Division, dated July 16, 2008.

- Petronis, L.H., 2008, Hydrologic evaluation of Application RG-29860 and RG-29860-S into RG-20516 et al. for Permit to Change Location of Well and Place and/or Purpose of Use of Underground Water: OSE Memorandum to Mary Young, Water Rights Division, and Chris Lindeen and Hilary Lamberton, Administrative Litigation Unit, dated June 12, 2008.
- Petronis, L.H., 2008, Hydrologic evaluation of Application RG-5840 into RG-1139 and RG-1139-S for Permit to Change Location of Well and Place and/or Purpose of Use of Underground Water: OSE Memorandum to Steve Mastovich, Water Rights Division, dated May 13, 2008.
- Petronis, L.H., 2008, Hydrologic evaluation of Application RG-29242 and RG-29242-S et al., for Permit for Supplemental Wells and to Change Place and Purpose of Use of Underground Water: OSE Memorandum to Dan Rubin and Chris Lindeen, Administrative Litigation Unit and Mary Young, Water Rights Division, dated May 2, 2008.
- Petronis, L.H. and Rappuhn, D., 2008, Calendar Year 2007 Hydrologic Impacts on the Rio Pojoaque-Nambe, Rio Tesuque, and La Cienega Springs due to Buckman well field pumping, RG-20516 et al., OSE Memorandum to Jim Sizemore, Director, Water Rights, Water Resource Allocation Program, dated May 1, 2008.
- Petronis, L.H. and Rappuhn, D., 2008, Calendar Year 2007 San Juan-Chama Project water accounting: hydrologic impacts on the Rio Grande due to 1972-2007 Buckman well field pumping, RG-20516 et al., OSE Memorandum to Kevin Flanigan, Interstate Stream Commission, dated May 1, 2008.
- Petronis, L.H., 2008, Hydrologic evaluation of Application RG-23884 and RG-23884-S into RG-304-S for Permit to Change Location of Well and Place and/or Purpose of Use of Underground Water: OSE Memorandum to Mary Young, Water Rights Division and Barbara Brill, Administrative Litigation Unit, dated April 16, 2008.
- Petronis, L.H., 2007, Comments on amendment letter for *Water-Availability Assessment for Wild Cherry Farm, Southern Sandoval County, New Mexico*, from Jeffery Parker, John Shomaker & Associates to Mr. Shawn Wallwork, Southwest Build/Design, dated October 31, 2007: OSE Memorandum to Julie Valdez, Water Use and Conservation Bureau, dated November 20, 2007.
- Petronis, L.H., 2007, Comments on San Pedro Overlook Phase III, Table 1. Domestic Wells within 0.5 miles of the San Pedro Overlook Phase III boundary, by Balleau Groundwater, Inc. dated September 28, 2007: OSE Memorandum to Jerry Keller, Water Use and Conservation Bureau dated November 13, 2007.
- Petronis, L.H., 2007, Comments on *Water-Availability Assessment for Wild Cherry Farm, Southern Sandoval County, New Mexico*, by John Shomaker & Associates, Inc. dated February 2007: OSE Memorandum to Julie Valdez, Water Use and Conservation Bureau, dated September 28, 2007.
- Petronis, L.H., 2007, Comments on July 5, 2007 letter from Mr. Casey Cook, Balleau Groundwater to Mr. Jim Lindeman, Campbell Corporation regarding OSE Comment on Overlook Phase III Water Availability: OSE Memorandum to Jerry Keller, Water Use and Conservation Bureau, dated September 12, 2007.

- Petronis, L.H., 2007, In the matter of the application by P.T. Productions, Inc. for permit to change location of well within the Roswell Artesian Underground Water Basin in New Mexico. (OSE File No. RA-971-S into RA-465, Hearing No. 07-023): OSE Memoranda (2) to Brent Ellington, Water Rights Division, and Barbara Brill, Administrative Litigation Unit, dated August 10, 2007 and September 13, 2007.
- Petronis, L.H., 2007, Comments on *Geohydrologic Investigation Report, Proposed "Mountain Shadows Subdivision, Socorro County, New Mexico*, by MJDarrconsult, Inc., dated July 2007: OSE Memorandum to Jerry Keller, Water Use and Conservation Bureau, dated August 16, 2007
- Rappuhn, D. and Petronis, L., 2007, Calendar Year 2006 Hydrologic Impacts on the Rio Pojoaque, Rio Tesuque, and La Cienega Springs due to 1972-2006 Buckman well field pumping, RG-20516: OSE Memorandum to Jim Sizemore, Director, Water Rights, Water Resource Allocation Program, dated June 26, 2007.
- Rappuhn, D. and Petronis, L., 2007, Calendar year 2006 San Juan-Chama Project water accounting; hydrologic impacts on the Rio Grande due to 1972 – 2006 Buckman Well Field pumping, RG-20516: OSE Memorandum to Kevin Flanigan, Interstate Stream Commission, dated June 26, 2007.
- Petronis, L.H., 2007, Comments on *Geohydrology and Water Availability at the San Pedro Overlook Phase III, Sandoval County, New Mexico" by Balleau Groundwater, Inc.* dated January 2007: OSE Memorandum to Jerry Keller, Water Use and Conservation Bureau, dated May 4, 2007.
- Miller, S. A., Petronis, L. H., and Peery, R. L., 2007, First semi-annual ground-water monitoring event for the 2007 ground-water monitoring program, Canyon Lumber and Hardware site, Facility #27211, 10902 Highway 4, Canon, New Mexico, January 2007, consultant's report to ZRITE, Inc., Albuquerque, New Mexico, and New Mexico Environment Department, Petroleum Storage Tank Bureau, Albuquerque, New Mexico, 10 p., illus., and appends.
- Petronis, L. H., Finch, S. T., Jr., and Shomaker, J. W., 2006, Ground-water-flow and solute-transport model for the Griggs and Walnut superfund site, Las Cruces, New Mexico, consultant's report to Griggs and Walnut Joint Superfund Project, City of Las Cruces and Dona Ana County, New Mexico, 53 p., illus., and appends.
- Finch, S. T., Jr., and Petronis, L. H., 2006, Hydrogeologic report for the Galisteo Basin Preserve, Santa Fe County, New Mexico, consultant's report to Commonweal Conservancy, Santa Fe, New Mexico, 31 p., illus., and appends.
- Peery, R. L., McCoy, A. M., and Petronis, L. H., 2006, Update of hydrogeologic conditions at the Diamond Tail Subdivision, Sandoval County, New Mexico, consultant's report to Diamond Tail Ranch, Placitas, New Mexico, 42 p., illus., and appends.
- Petronis, L. H., Golden, L. A., and Peery, R. L., 2006, 4th quarterly ground-water monitoring event for the 2005-2006 ground-water monitoring program, Canyon Lumber and Hardware site, facility #27211, 10902 Highway 4, Canon, New Mexico, April 2006, consultant's report to ZRITE, Inc., Albuquerque, New Mexico, and New Mexico Environment Department, Petroleum Storage Tank Bureau, Albuquerque, New Mexico, 11 p., illus., and appends.

- Petronis, L. H., and Peery, R. L., 2005, 1st quarterly ground-water monitoring event for the 2005-2006 ground-water monitoring program, Canyon Lumber and Hardware site, facility #27211, 10902 Highway 4, Canon, New Mexico, July 2005, consultant's report to ZRITE, Inc., Albuquerque, New Mexico, and New Mexico Environment Department, Petroleum Storage Tank Bureau, Albuquerque, New Mexico, 8 p., illus., and appends.
- Petronis, L. H., Golden, L. A., and Peery, R. L., 2005, 2nd quarterly ground-water monitoring event for the 2005-2006 ground-water monitoring program, Canyon Lumber and Hardware site, facility #27211, 10902 Highway 4, Canon, New Mexico, October and November 2005, consultant's report to ZRITE, Inc., Albuquerque, New Mexico, and New Mexico Environment Department, Petroleum Storage Tank Bureau, Albuquerque, New Mexico, 11 p., illus., and appends.
- Petronis, L. H., Golden, L. A., and Peery, R. L., 2005, 3rd quarterly ground-water monitoring event for the 2005-2006 ground-water monitoring program, Canyon Lumber and Hardware site, facility #27211, 10902 Highway 4, Canon, New Mexico, January 2006, consultant's report to ZRITE, Inc., Albuquerque, New Mexico, and New Mexico Environment Department, Petroleum Storage Tank Bureau, Albuquerque, New Mexico, 9 p., illus., and appends.
- Hagan, L. B., and Shomaker, J. W., 2004, Probable hydrologic consequence associated with pumping SJ-120 for use at the proposed el Segundo mine, consultant's report to Lee Ranch Coal Company, Grants, New Mexico, 16 p., illus., and appendix.
- Hagan, L. B., and Peery, R. L., 2004, 4th quarterly ground-water monitoring event, Canyon Lumber and Hardware site, 10902 Highway 4, Canon, New Mexico, February 2004, consultant's report to ZRITE, Inc., Albuquerque, New Mexico, and New Mexico Environment Department, Petroleum Storage Tank Bureau, Albuquerque, New Mexico, 9 p., illus., and appends.
- Hagan, L. B., and Peery, R. L., 2003, 3rd quarterly ground-water monitoring event, Canyon Lumber and Hardware site, 10902 Highway 4, Canon, New Mexico, October-November 2003, consultant's report to ZRITE, Inc., Albuquerque, New Mexico, and New Mexico Environment Department, Petroleum Storage Tank Bureau, Albuquerque, New Mexico, 10 p., illus., and appends.
- Hagan, L. B., and Peery, R. L., 2003, 2nd quarterly ground-water monitoring event, Canyon Lumber and Hardware site, 10902 Highway 4, Canon, New Mexico, July 2003, consultant's report to ZRITE, Inc., Albuquerque, New Mexico, and New Mexico Environment Department, Petroleum Storage Tank Bureau, Albuquerque, New Mexico, 7 p., illus., and appends.
- Shomaker, J. W., and Hagan, L. B., 2003, Hydrologic effects of proposed change of point of diversion and place and purpose of use, file no. 04879 into RG-39276, American Building Supply, Inc. (Waycor), consultant's report prepared for American Building Supply, Inc./Albuquerque Rock Products, Inc., dba Waycor, 9 p., illus., and appends.
- Martinez Rendon, T., Rankin, R., Fernald, A.S., Hagan, L.B., Lowrey, B.G, Guevara, D, Monarrez, J., Gonzales Toledo, J., 2002, Water Issues along the International Borders of New Mexico, far West Texas, and Chihuahua: Findings and Recommendations to Rotary International and the Rotary Foundation: Joint Team Report Rotary Districts 4110 and

5520, Group Study and Scientific Exchange between Mexico and the United States, April 20 to May 19, 2002.

Shomaker, J.W., Galemore, S.B. and Hagan, L.B., 2002, Assessment of the New Mexico Office the State Engineer U.S. Geological Survey Cooperative ground-water level monitoring program, Consultant's report prepared for the New Mexico Office of the State Engineer, dated September 2002, 87p. plus tables, figures, and appendices.

Hagan, L. B., Shomaker, J. W., McCoy, A., and Armour, J., 2001, DRAFT, Ground-water availability in the vicinity of Mt. Taylor Mine, Cibola and McKinley Counties, New Mexico, consultant's report to Daniel B. Stephens and Associates, Inc., Albuquerque, New Mexico, 25 p., illus., and appends.

Hagan, L.B., 2001, Natural and mining-related sources of metal contamination, Red River, northwestern New Mexico: a hydrogeochemical investigation of surface water and groundwater: Thesis (M.S.)--University of New Mexico, Dept. of Earth and Planetary Sciences.

SELECTED CONFERENCE ABSTRACTS AND PAPERS

Shomaker, J.W., Swartwout, R.L., and Hagan, L.B., 2002, Using stored ground water without depleting a fully-appropriated stream: Proceedings: Ground Water Surface Water Interactions: AWRA 2002 Summer Specialty Conference : July 1-3, 2002 Keystone, Colorado.

Hagan, L., Crossey, L., Groffman, A., and Allen, B., 2000, Evaluation of natural and mining-related sources of metal contamination to the Red River system, northern New Mexico (Abstract): Geological Society of America, Abstracts with Programs, v. 32, p. A341.

Hagan, L.B., Allen, B.D., Groffman, A.R., and Crossey, L.J., 1999, Evaluating the environmental impacts to the groundwater and surface-water system of the Red River, northern New Mexico (Abstract). American Geophysical Union Meeting, San Francisco, CA, December, 1999.

Hagan, L.B., Allen, B.D., Groffman, A.R., and Crossey, L.J., 1999, Natural and anthropogenic sources of metal contamination, Red River, northern New Mexico (Abstract): WERC Conference on the Environment, Albuquerque, NM, April, 1999.