

Resumé
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Education

Attended Humboldt State College, Arcata, CA, 1967 to 1969
B.S. Civil Engineering, 1971
University of California
Davis, CA
M.S. Environmental Science and Engineering, 1974
Ph.D. Environmental Science and Engineering, 1979
Rice University
Houston, TX

Positions Held

Director, UNM Water Resources Program, 2005-present
Full Professor, 1994 to present, CE Dept. Graduate Advisor, 1999-2005
Associate Professor, 1982 to 1994
Assistant Professor, 1978 to 1982
Department of Civil Engineering
University of New Mexico
Albuquerque, NM 87131
Visiting Professor, Aug. 1985 to Aug. 1986
Environmental Engineering Branch
HQ Air Force Engineering and Services Center
Tyndall AFB, FL 32403
Visiting Assistant Professor, 1977 to 1978
Instructor, 1977
Graduate Fellow, 1974 to 1977
Department of Environmental Science and Engineering
Rice University
Houston, TX 77001
Environmental Engineer, 1973 to 1974
U.S. Environmental Protection Agency, Region IX
San Francisco, CA

Elected Public Office

District 5 Director, Albuquerque Metropolitan Arroyo Flood Control Authority
(AMAFCA), elected 11/10/10

Sabbatical Leaves

1985-1986 – Environics Laboratory, HQ Air Force Engineering & Services Center, Tyndall AFB, FL

1995-1996 – Sandia National Laboratories, Albuquerque, NM

Honors and Awards

NM Earth Science Achievement Award, NM Energy Minerals and Natural Resources Department, 2010

Appointed Regents Professor, University of New Mexico, 2003

Senior Faculty Research Excellence Award, UNM School of Engineering, 2002

Students' Faculty Recognition Award, Dept. of Civil Engr., University of New Mexico, 1996, 1997

Faculty Scholar, University of New Mexico, Fall 1989

Fellowship, NATO Committee on the Challenges of Modern Society, 1987

Fanny and John Hertz Fellowship - Rice University, 1975 to 1977

USEPA Traineeship - Rice University 1974 to 1975

Elected to Sigma Xi - Rice University, 1976

B.S. Degree with Honors - University of California, 1971

Elected to Phi Kappa Phi - University of California, 1970

Elected to Tau Beta Pi - University of California, 1970

Licensed Professional Engineer, NM Registration No. 7131

Books and Book Chapters

Thomson, B. (2011 in press). "Water Resources of New Mexico," chapter in New Mexico Water Policy, Brookshire, D., Matthews, O., Gupta, H. (editors), Resources for the Future, 37 p.

DeJonghe, P.A., Clarke, A.N., Exner, J.H., Hansen, K.F., Lighty, J.S., Samelson, R.J., Steindler, M.J., Thomson, B.M., (1999). The State of Development of Waste Forms for Mixed Wastes, Natl. Academy Press, Washington, D.C., 129 p.

Reith, C.C., Thomson, B.M., (editors), (1992). Deserts As Dumps?: The Disposal of Hazardous Materials in Arid Ecosystems, University of New Mexico Press, Albuquerque, NM, 330 p.

Journal Publications:

Lee, O., Howe, K., Thomson, B. (2011). Ozone and Biofiltration as an Alternative to Reverse Osmosis for Removing PPCPs and EDCs, from Wastewater, accepted for publication in Water Research.

Hardeman, S., Thomson, B., Chermak, J., Himmelberger, H. (2010). A Cost-Benefit Analysis of Leak Detection and the Potential for Real Water Savings, submitted to J. American Water Works Association.

Liang, H.C.; Thomson, Bruce M. (2009). Minerals and Mine Drainage, Water Environment Research, Literature Review, vol. 81, no. 10, pp. 1615-1663

Liang, H.C.; Thomson, Bruce M. (2008). Minerals and Mine Drainage, Water Environment Research, Literature Review, 1481-1509.

- Brown, K.D., Kulis, J., Thomson, B., Chapman, T.H., Mawhinney, D.B. (2006). "Occurrence of antibiotics in hospital, residential, and dairy effluent, 2 municipal wastewater, and the Rio Grande in New Mexico, Science of the Total Environment, vol. 336, pp. 772-783.
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- Frost, F.J., Muller, T., Petersen, H.V., Thomson, B., Tollestrup, K. (2003). "Identifying US Populations for the Study of Health Effects Related to Drinking Water Arsenic," J. of Exposure Analysis and Environmental Epidemiology, vol. 13, pp. 231-239.
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- Bitner, K., Thomson, B., Chwirka, J. (2001). "The Cost of Compliance with a New Drinking Water Standard for Arsenic in New Mexico," New Mexico Geology, vol. 23, no. 1, pp. 10-12.
- Thomson, B.M., E.E. Smith, M.D. Siegel, (2002). "Adsorption of Arsenic, Copper and Uranium on Manganese Oxyhydroxide Surfaces," Radioactive Waste Management and Environmental Remediation, vol. 22, pp. 260-281.
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- Morris, C.E., Thomson, B.M., Stormont, J.C., "Design of Dry Barriers for Containment of Contaminants in Unsaturated Soils," Ground Water Monitoring and Remediation, vol. 19, no. 3, pp. 145-156, (1999).
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- Shomaker, S.H., Greiner, J.F., Gillham, R.W., Thomson, B.M., and others (1996). "Permeable Reactive Barriers," Section 11 in Assessment of Barrier Containment Technologies, (R.R. Rumer and J.K. Mitchell, editors), Nation Technical Information Service, Springfield, VA, pp. 301-354.
- Pringle, S., Morris, C.E., Thomson, B., Stormont, J., "Tensiometric Barriers for Containment at Waste Sites," Intl. J. of Envir. Conscious Design & Manuf., vol. 4, no. 3-4, pp. 59-64, (1995).
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- Thomson, B.M., Turney, W.R., "Minerals and Mine Drainage," Water Environment Research, vol. 67, no. 4, pp. 527-529, (1995).
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- Thomson, B.M., "Radioactive Wastes," Water Environment Research, vol. 64, no. 4, pp. 479-492, (1992).
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Reports and Presentations

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- Paker, C., Thomson, B., Hart, K., Stormont, J., Stone, M. (2012). Analysis of Coal Combustion By-Product Disposal Practices in Arid Climates: Leachate Water Quality, World Environmental and Water Resources Congress 2012: Crossing Boundaries, E. Loucks (ed), © ASCE 2012 2714-2723.
- Kowalchuk, E., Thomson, B., Howe, K., Chwirka, J. (2011). Selective Fluoride Removal by Aluminum Precipitation & Membrane Filtration, Final Report to Construction Programs Bureau, NM Environment Department.
- Thomson, B., Ali, A.-M. (editors) (2011). Water Resources Assessment of the Rito Peñas Negras, Final Report, Water Resources Program, University of New Mexico, Albuquerque, NM, 54 p.
- Thomson, B. M. (2011). Water Resources of the Middle Rio Grande: Issues and Challenges, seminar to Civil Engineering Department, University of New Mexico, Albuquerque, NM
- Thomson, B.M. (2010). Interbasin Transfer Projects: Impacts on Communities & Ecosystems, proc. New Mexico Water Conference, New Mexico Water Resources Research Institute, Las Cruces, NM, in press.
- Marsee, Megan, Thacher, Jennifer, Thomson, Bruce, Chermak, Janie, Himmelberger, Heather (2010). Integrating External Costs in Water Utility Asset Management: An Application of the threshold Break Rate Model, Poster Presentation, 2010 New Mexico Water Research Symposium: Resource Interdependence, New Mexico Tech, Sorrero, NM.

- Thacher, J., Marsee, M., Pitts, H., Chermak, J., Thomson, B. (2010). Customer Willingness To Pay for Water System Improvements, final report to Water Research Foundation (formerly American Water Works Association Research Foundation – AwwaRF), Denver, CO, 254 p.
- Goldman, Joshua, Howe, Kerry, Thomson, Bruce (2010). Selective Recovery of Desalination Concentrate Salts Using Interstage Ion Exchange, Presentation, 2010 New Mexico Water Research Symposium: Resource Interdependence, New Mexico Tech, Sorro, NM.
- Thomson, B., Shomaker, J. (2009). Municipal Water Reuse Isn't Necessarily Conservation, New Mexico Water Dialog, Santa Fe, NM, NM Water Dialogue, fall 2009 issue, pp. 3-4.
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- Thomson, B, Howe, K. (2009). Saline Water – Considerations for Future Supply in New Mexico, Water, Natural Resources, and the Urban Landscape: The Albuquerque Region, L.G. Price et al. editors, NM Bureau of Geology and Mineral Resources, Socorro, NM p. 120-126.
- Lee, C.O., Howe, K.J., Thomson, B.M. (2009). State of Knowledge of Pharmaceutical, Personal Care Products, and Endocrine Disrupting Compound Removal During Municipal Wastewater Treatment, report to New Mexico Environment Department, University of New Mexico, Albuquerque, NM, 64 p.
- Thomson, B. (2008). Brackish Water Can't Sustain N.M., Guest Editorial, Albuquerque Journal, Nov. 30, 2008, page B3.
- Thomson, B., Howe, K. (2008). Brackish Ground Water Desalination: Challenges to Inland Desalination Technologies, Nonrenewable Ground Water Resources, conference sponsored by the National Ground Water Association, Portland, OR, Oct. 14, 2008.
- Thomson, B., Shafike, N., Hawley, J. (2008). Inland Saline Water Sources for Public Supply: Sustainable Future or Delayed Disaster?, Nonrenewable Ground Water Resources, conference sponsored by the National Ground Water Association, Portland, OR, Oct. 14, 2008
- Jim, R, E.L. Field, B.M. Thomson, K.J. Howe, R. Kottenstette, and M. Cappelle. (2008). "Optimization of the MBR-RO Process for Treatment and Reuse of Municipal Wastewater: Field Studies." Poster presented at the *New Mexico Water Resources Research Institute Research Symposium*, Socorro, NM. August 12, 2008.
- Jim, R. K.J. Howe, and B.M. Thomson (2008). "Investigation of Cleaning Methods of RO Membranes Utilized in Wastewater Treatment Processes." Presented at the *5th Annual Rocky Mountain Region WEF/AWWA Student Conference*. May 13, 2008.
- Thomson, B.M. and K.J. Howe (2008). "Technical Considerations in Wastewater Reuse." Presented at the *NMMIC Reuse Committee Workshop*. August 28, 2008.
- Thomson, B, Howe, K., Jim, R., Field, E. (2008). Optimization of the MBR-RO Process for Treatment and Reuse of Municipal Wastewater: Field Studies, Final Report submitted to Sandia National Laboratories, Albuquerque, NM 150 p

- Thomson, B., Thomas, C. (2006). Indirect Reuse of Reclaimed Wastewater for Potable Supply: Regulatory Considerations, Proc. Annual Conf., Universities Council on Water Resources, Increasing Freshwater Supplies, UCOWR, Carbondale, IL, 5 p.
- James L. Krumhansl, Kathleen C. Holt, Heather Himmelberger, Susan Butler, Matt Ziegler, and Bruce Thomson (2006). Summary of resources available to small water systems for meeting the 10 ppb arsenic drinking water limit. Sandia National Laboratories Report, SAND2006-6943, Albuquerque, NM 55 p.
- Lowry, J., Clifford, D., Ghurye, G., Karori, S., Marasimhan, R., Thomson, B. (2005). Arsenite Oxidation by Solid-Phase Media or a UV-Sulfite Process," Final report submitted to Am. Water Works Assoc. Res. Found., Denver, CO, 138 p.
- Thomson, B., Hall, G., Stormont, J., Peterson, J., Hanson, A. (2004). "Prospecting for Ground Water Contamination from On-Site Wastewater Systems in New Mexico," Proceedings, 13th Ann. Tech. Conference, National Onsite Wastewater Recycling Association, Albuquerque, NM, 26 p.
- Thomson, B., Aragon, A., Anderson, J., Chwirka, J., Brady, P. (2004). "Development of a Rapid Method of Evaluating Adsorbents for Arsenic Removal from Drinking Water," Final Report submitted to Am. Water Works Assoc. Res. Foundation, Proj. No. 2823, Denver, CO, 123 p.
- Lowry, J., Clifford, D., Ghurye, G., Karori, S., Narasimhan, R., Thomson, B. (2004). "New Technologies for Arsenite Oxidation," Final Report submitted to Am. Water Works Assoc. Res. Found., Denver, CO.
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- Thomson, B., Aragon, A., Anderson, J. (2003). Development of a Rapid Small Scale Column Testing Procedure for Arsenic Adsorption Media, Final Report to WERC, A Consortium for Environmental Education and Technology Development, Las Cruces, NM, 30 p.
- Thomson, B., Aragon, A., Anderson, J., Chwirka, J., Carlson, M. (2003). "Development of a Rapid Method of Evaluating Adsorbents for Arsenic Removal from Drinking Water," Proc. of Natl. Conf., Am. Water Works Assoc., Anaheim, CA.
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- Thomson, B.M., K. Fox, M. O'Grady, "Arsenic Removal by Point-Of-Use Treatment Systems at San Ysidro, New Mexico," proc. Natl. Conf. of Am. Water Works Assoc., Denver, CO, June 2000.
- Thomson, B.M., (2000). Book Review - "Ground Water Contamination: Transport & Remediation," by Bedient, Rifai, & Newell, Ground Water, vol. 38, no. 5, pg. 646.
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- Thomson, B.M., "Groundwater Movement in Geo-Energy Environments," In-situ energy recovery technology short course, Dept of Chem. and Nucl. Engr., UNM, Albuquerque, NM, (1981).
- Thomson, B.M., Matthews, J.R., "Water and Wastewater Treatment Alternatives for the Uranium Mining Industry in New Mexico," final report to NM Envi. Improvement Div., Santa Fe, NM, (1981).
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- Thomson, B.M., "Ozonation of Nitrotriacetic Acid (NTA) in Aqueous Solutions," Ph.D. thesis, M.B. Tomson and M.A. Kessick advisers, Rice University, Houston, TX, (1979).
- Thomson, B.M., "pH and Buffer Calculations for Laboratory Use," seminar presented to the Chemistry Div., Phys. Sciences Branch, Alberta Research Council, Edmonton, Alberta, Canada, (1977).
- Thomson, B.M., "Oxidation of Aqueous Sulfides in the Presence of Manganese Dioxide," M.S. thesis, M.A. Kessick adviser, Rice University, Houston, TX, (1974).

Invited Presentations and Seminars

- Water Resources of Middle Rio Grande: Issues & Challenges – Rotary Club of Albuquerque, Albuquerque Master Gardeners Association, 2011
- Water Treatment Technologies for Arsenic & Other Oxyanions – Metals & Metalloids Colloquium, University of New Mexico, 2011
- Water Resources & Issues in the Middle Rio Grande – NM Involvement Committee, 2010
- Decision Makers Conference – Future Challenges in NM, 2009
- University of Oklahoma Dept. of Civil Engineering, 2002
- UNM Dept. of Earth & Planetary Sciences – 2002
- Am. Water Works Association, Desert Mtn. Section, El Paso, TX – 2002

UNM Dept. of Civil Engineering - 1997, 1998, 2000, 2001, 2002
NM Conference on the Environment – 1997, 2000, 2001
Los Alamos National Laboratory - 1994
Southwest & Rocky Mtn. Region of Am. Assoc. for Advancement of Science,
Tucson - 1992
NM Environmental Health Assoc., Albuquerque, NM - 1992
Univ. Council on Water Resources, Albuquerque, NM - 1991
WERC Research Seminar Series, Albuquerque, NM - 1991, 1992, 1993
NM State University, Las Cruces, NM - 1990
NM Hazardous Waste Management Society, Albuquerque, NM - 1987
NM Institute of Mining and Technology, Socorro, NM - 1987, 1993, 1998
Texas A & M University, College Station, TX - 1986
US Air Force, Environics Division, Tyndall AFB, FL - 1985, 1992
NM Section AWWA-WPCA, Albuquerque, NM - 1983, 1992, 1997

Advanced Courses Taught in Last Ten Years:

WR-571 – Contemporary Issues in Water Resources
WR-572 – Models in Water Resources Management
WR-573 – Field Methods in Water Resources Management
CE-436/536 - Biological wastewater treatment
CE-437/537 - Aqueous environmental chemistry and analysis (with lab)
CE-440/540 - Design of hydraulic systems
CE-441/541 - Groundwater engineering
CE-543 - Introduction to groundwater and contaminant transport modeling
CE-534 - Environmental engineering chemistry
CE-598 - Special topics – Water Reuse (2007, 2009)
CE 598 – Special topics - Geochemistry of mine waste management (spring
2000)
CE 598 – Special topics – Water Resources of New Mexico (fall 2010)
CE 539/ChNE 539 – Radioactive Waste Management (with B. Busch)

Short Courses Taught

Arsenic Chemistry and Treatment – 1 day short course, American Water Works
Association, 2001-2007
Environmental Geochemistry of Ore Deposits - 3 day short course with Ingar
Walder (SARB Consulting, Inc.), 1996-2003
Statistics in Environmental Sampling - 3 day short course, with A. Hanson
(NMSU) and N. Khandan (NMSU), 1995-1998.
Radioactive Waste Management - 8 part televideo conference series funded by
U.S. Dept. of Energy, Technical Advisor for entire program and Coordinator
of Programs 1 and 5, 1993. (This course and another also produced by
UNM were recognized by US Distance Learning Association by receiving a
national award for "Most Outstanding Distance Education Network for
1993").
Southwestern Judges' Conference on Environmental Law, sponsored by the
UNM Inst. of Public Law - Faculty Member, 1993.

Groundwater Hydrology and Geochemistry - 3 day short course, with M. Campana (UNM) and L. Crossey, 1993.
Soil and Groundwater Remediation - 3 day short course, with A. Hanson (NMSU) and N. Khandan (NMSU), 1992-1996.
Hazardous/Radioactive Waste Management Program 10: Radioactive and Mixed Waste Management II - Lead Presenter, 1991.
Workshop on Groundwater Engineering - 2 day short course, with R. Heggen (UNM) and J. Shomaker (Shomaker & Assoc.), 1988

Appointed Positions

Wastewater Technical Advisory Committee, NM Environment Department, 2009-present (appointed by Secretary, NMED)
NM Petroleum Storage Tank Committee, NM Environment Department, 2009-present (appointed by Governor)
NM Environment Department Dairy Discharges Regulations Advisory Committee, Ground Water Bureau, 2009 (appointed by Secretary, NMED)
Technical Standards Committee, City of Albuquerque, 2001-2007 (appointed by Mayor)
NM Mining Commission, 2000-2003 (appointed by Governor)
Albuquerque/Bernalillo County Water Protection Advisory Board (Chairman 1998-2000, 2005-2007, 2009-2010), 1998-2010 (appointed by Mayor & County Commission)
NM State Liquid Waste Task Force, 1999-2001, 2009-present (Appointed by Sec., NM Environ. Dept.)
Subcommittee on Mixed Waste, National Research Council, 1997 - 1999
NM State Underground Storage Tank Committee - 1990 – 1999 (appointed by Governor)
Albuquerque Groundwater Protection Advisory Committee - 1990 – 1995 (appointed by Mayor)
City of Albuquerque Consultant Selection Advisory Board - 1990 – 1995 (appointed by Mayor)
City of Albuquerque Wetlands Study Task Force - 1993 – 1995 (appointed by Dir. Public Works)
Governor's Technology Evaluation Committee, Subcommittee on Environmental Technology - 1992. Appointed by Governor, committee prepared report on opportunities in areas of environmental science & engineering technologies.

Memberships in Professional Societies

American Chemical Society
American Society of Civil Engineers
Association of Environmental Engineering and Science Professors
Water Environment Federation

Regional and National Professional Society Activities

Member, Executive Committee, Middle Rio Grande Endangered Species Collaborative, 2009-present

Member, Executive Committee, Middle Rio Grande Water Assembly, 2009-present
Technical program coordinator, NM section AWWAWEA, 2006 – present
Co-Chairman Technical Program, Regional Conference, AWWA & WEA Rocky Mountain Section annual conference, 2004, 2009
Reviewer: Envir. Engr. (ASCE), Water Environ. Research, Envir. Sci. & Tech., Natl. Sci. Found.
Reviewer: USEPA Research Grants program, 1996
Reviewer: Institute for Regulatory Science, 1998-present
Chairman, New Mexico Membership Involvement Committee, Rocky Mtn. Section AWWAWPCA, 1986-1987.
Member of Research, Groundwater, and Standard Methods Committees, Water Pollution Control Federation, 1986-1995
Coordinator of Latin American Programs, Association of Environmental Engineering Professors, 1993

University and College Service

UNM Faculty Senate Graduate Committee – 2002 – 2006
SOE Centennial Engineering Building Planning Committee (Chair) – 2000-2007
SOE Graduate Committee – 1999-2006
WERC Scholarship Committee (Chair) – 2000-2004
UNM Campus Development Advisory Committee - 1999-2010
Civil Engineering Graduate Advisor - 1999-2006
UNM Library Committee - 1995-1996
KUNM Radio Board - 1993-1997
WERC Research Director - 1991-1993
College of Engineering Policy Committee - 1990-1992 (Chair, 1990-1992)
University Research Policy Committee - 1984-1986
University Faculty Senate - 1979-1983

Graduate Student Supervision with Thesis or Project Title

Lameman-Austin, Terri (MWR – 2012)
Friedman, Rachel (MWR – 2012)
Parker, Cheryl (MSCE – 2011) Analysis of Coal Combustion By-Product Disposal Practices in Arid Climates
Kowalchuk, Emily (MSCE – 2011) Selective Fluoride Removal by Aluminum Precipitation & Membrane Filtration
Coats, Chance (MWR - 2011) Impacts of Potential Development on Groundwater Resources in the Community of Cutter, New Mexico.
Zemlick, Katie, 2011
Gunning, Christian, 2010
Tulley, Crystal – Use of Polymer Ligand Films for Rapid Radiochemical Analyses, WRP Prof. Project, 2011
Young, Rick. Performance of a Green Roof Lysimeter in an Arid Climate. WRP Prof. Project, 2010

Chudnoff, Sara – A Water Quality Assessment of the Rio Katari River and its Principle Tributaries, Bolivia, WRP Prof. Project, 2009

Martinez, Louis – Utility Response to Drought: Business of Water Management Practices & Function in View of Decreased Consumption, WRP Prof. Project, 2009

Keleher, Christina – Nitrate Contaminated Groundwater in Albuquerque's South Valley: Is Monitored Natural Attenuation an Appropriate Strategy, WRP Prof. Project, 2008

Tuite, Sarah – Stability of Arsenic Residuals Exposed to Chemical & Microbial Leaching, M.S. Thesis, 2009

Hardeman, Shawn – A Cost-Benefit Analysis of Leak Detection and the Potential of Real Water Savings for New Mexico Water Systems, WRP Prof. Project, 2008

Meadows, Jake – Comparison of Predicted and Observed Flood Flows in Pajarito Canyon Following the 2000 Cerro Grande Fire, WRP Prof. Project, 2008

Wollak, Jordan – Modeling Capture Zones to Determine Potential Threats to Public Water Supply Wells, WRP Prof. Project, 2008

Schultz, Krista – Modeling Road Erosion in the Upper Torreon Wash, New Mexico, WRP Prof. Project, 2008

Chavez, Patrick – Investigation of Stability of Arsenic Bearing Solid Residuals, M.S. Thesis, 2007

Price, Lynda – The Response of Shallow Groundwater Levels to Fuel Reduction in the Middle Rio Grande Bosque, WRP Prof. Project, 2007

Torres, Leanna – Habitat Availability for Rio Grande Silvery Minnow (*Hybognathus amarus*), Pena Blanca, Rio Grande, New Mexico, WRP Prof. Project, 2007

Johnson, Dave – Identifying Fe and Mn Removal Technologies, M.S. Project, 2006.

Anderson, Jeremy – Investigation of Microbial Leaching of Arsenic from Water Treatment Residuals, M.S. Thesis, 2006.

Skanske, Jennie – Evaluation of Constructed Wetland Performance in New Mexico, WRP Prof. Project, 2007

Falk, Sarah – Estimated Ground-Water Age and Rate of Recharge in the Southern High Plains Aquifer, Cannon Air Force Base, Curry County, New Mexico 2004, M.S. Thesis, 2005.

Longstaff, John – Development of A Prioritization Program for Health Care Facilities, Indian Health Service – M.S. Project 2005

Ambrogi, Brian J. – Wastewater Reuse at Raton, NM: Regulatory and Technical Consideration – M.S. Project 2005.

Robinson, Eric – Point-Of-Use Water Treatment Using Solar Pasteurization, Master of Water Resources Professional Project, 2005

Sanchez, Blane – Chical Area On-site Wastewater Treatment System Management, Pueblo of Isleta, New Mexico, Master of Water Resources Professional Project, 2005.

Calkins, Mark – Soil Evaluation Techniques for the Design of Onsite Wastewater Disposal Facilities, M.S. Project, 2004

Drummond, Robert – San Xavier Indian Health Service Wastewater System Selection Process, M.S. Project, 2004

Luna, Damian – Evaluation of Inflow and Nuisance Flows to the Jemez Pueblo Wastewater Collection System, M.S. Project, 2004

Alicia Aragon – Development of a Rapid Small Scale Column Testing Procedure for Arsenic Adsorbents – Ph.D. Dissertation, 2004

Teresa Hofheins – Evaluation of the Landfill Cap at the Los Alamos National Laboratory, Technical Area 54, Material Disposal Area J., M.S. Thesis, 2004

Brown, Kathy – Pharmaceutically Active Compounds in Residential and Hospital Effluent, Municipal Wastewater, and the Rio Grande in Albuquerque, New Mexico, Master of Water Resources Project, 2004.

Bradley, Chris – Implementation Considerations for Compliance with the Arsenic Rule in the Pueblos of New Mexico, M.S. Project, 2003.

Etcitty, Andy – Assessment of Stream Restoration by Comparing Meandering and Straightened Channel Through Ground Water Modeling – M.S. Thesis, 2002

Cathey, George – The Generation and Stability of Microbially Immobilized Uranium – M.S. Thesis, 2002.

Shean, Frederic – A Water Balance Model of Albuquerque's South Valley Area – Master of Water Resources Project, 2002

Simonton, D. Scott – Long Term Stability of Metals Reduced by Microbial Reduction – Ph.D. Dissertation, 2001.

Schiavo, Nick – Water & Wastewater Master Plan for North Albuquerque Acres, M.S. Project, 2001

Verhage, Kathy – Pit Lake Remediation Laboratory Study – M.S. Project, 2001

Diehl, Danielle – Stability of Microbially Immobilized Uranium – Master of Water Resources Project, 2001

MarcAurele, Mike – Use of an Electronic Data Logger for Calibrating Pipe Network Models – M.S. Project, 2001.

Cotter, Jeff – Point-of-Use Treatment of Arsenic by Activated Alumina – Master of Water Resources Project, 2001.

Pringle, Scott – Investigation of Fluid Instabilities in Concentration Gradient Driven Double Diffusive Flow Fields (co-advisor with Bob Glass, SNL) – Ph.D. Dissertation, 2001

Vardaro-Charles, Patricia – Evaluation of Silica Removal/Sequestration Technologies for Cooling Tower Systems – Master of Water Resources Project, 2001

Don Fox – Pressure Saturation Relations in a Horizontal Unsaturated Fracture and the Evaluation of Phase Structure (co-advisor with Bob Glass, SNL) – M.S. Thesis, 2001

Mark Dimsha - Long-Term Stability of Chromium Subjected to Microbial Reduction - M.S. Thesis, 2000

Kelly Bitner - Cost of Compliance with a Lower Arsenic Drinking Water Standard in New Mexico - Master of Water Resources Project, 2000.

Robert Warder - Removal of Arsenic from Groundwater Using Iron Oxide Coated Sand and Activated Alumina - M.S. Thesis, 2000

Mario Valdez - Evaluation of Stabilization Alternatives for Waste from a Radioactive Wastewater Treatment Facility - M.S. Project, 2000

Nancy J. Gillard - Analysis of Environmental Problems Associated with the Dry Cleaning Industry in NM - Master of Water Resources Project, 2000.

Holly O'Grady - Design of Risk Communication for Three Public Concerns of Utilities - M.S. Project, 2000

Gwinn Hall - Impact of On-Site Wastewater Disposal Systems on Ground Water Quality in Sandia Heights, Albuquerque, NM - M.S. Thesis, 1999.

Vince Fusconi - Gas Tracer Test Evaluation of the Mound OU-1 AS/SVE Well Field - M.S. Project, 1999.

Steven J. Dykstra - Hydraulic Analysis of the Farmington-Shiprock Water Transmission Line - M.S. Project, 1999.

Richard M. Renn - Assessment and Management of the Arroyo del Coyote Watershed and Environs, New Mexico - Master Water Resources Project, 1999.

Christy L. Anderson-Smith - Removal of Metals and Radionuclides Using Apatite and Other Natural Sorbents, M.S. Thesis, 1998

Mike Brewer - Factors Influencing Arsenic Removal from Drinking Water by the Process of Coagulant Enhanced Microfiltration, M.S. Thesis, 1998

Carolyn Holloway - M.S. Project, 1997

Elizabeth Smith - Adsorption of Arsenic, Copper and Uranium on Manganese Oxyhydroxide Surfaces, M.S. Thesis, 1997

Vener M. Mustafin - Performance Evaluation of Constructed Wetlands at Los Padillas Elementary School, M.S. Project, 1997

Tanya J. Gallegos, - Evaluation of Properties of Alternative Forms of Zero Valent Iron for Use in Subsurface Permeable Barriers, M.S. Thesis, 1997

Robert B. Galloway - Evaluation of X-Ray Fluorescence Analyses for Site Screening, M.S. Project, 1997

John M. Stomp - City of Albuquerque Pilot Constructed Wetlands Project: Preliminary Performance Evaluation, M.S. Project, 1997

Mark D. Tucker - Dissimilatory Reduction of Molybdenum and Other metals by Suspended and Immobilized Cells of *Desulfovibrio Desulfuricans* (DSM 642), Ph.D. Dissertation, 1997

James Kelsey - Dry Barrier with Coarse Layer Storage: Field Scale Evaluation, M.S. Thesis, 1996

Missy Klem - Investigation of Microbial Degradation of Trichloroethylene and Polychlorinated Biphenyls by Methanotrophic Organisms, M.S. Project, 1996

Milind Thombre - Permeable Biological Reaction Barrier for Groundwater Remediation at a Uranium Mill Tailings Remedial Action (UMTRA) Site: A Study to Identify Candidate Barrier Materials, M.S. Thesis, 1996

Karen Steenhoudt - Bioreduction of Uranium by the Strain *Enterococcus Faecalis*, M.S. Thesis, 1996

Kathy Bower - A Numerical Model of Hydro-Thermo-Mechanical Coupling in a Fractured Rock Mass, Ph.D. Dissertation, 1996

Curtis Cherne - Stabilization and Solidification of Chrome (VI) Contaminated Soil, M.S. Thesis, 1996

Mark Nasi - Acidizing Water Wells with Hydrochloric Acid, M.S. Project, 1996

Tom Brandt - Drinking Water Sampling Waiver Algorithm, M.S. Project, 1995

Rosa Cisneros - Evaluation of Mixed Oxidants for Destruction of Hydrogen Sulfide Gas - M.S. Project, 1995

Lawrence Barela - Performance Assessment of High Density Polyethylene (HDPE) Geomembranes Exposed to 10 Mrads in Air - M.S. Project, 1995

Sally P. Reeves - Lattice Gas Automata (LGA) Model of Flow in Alveolated Channels -M.S. Thesis, 1995

Connor Boyle - Sorption Studies on Geologic Media - M.S. Thesis, 1995

Eric J. Henry - A Feasibility Study of the Application of Permeable Barriers for Groundwater Remediation at an UMTRA Site - M.S. Thesis, 1995

W. Daniel Boivin - Evaluation of Constructed Wetland Performance in New Mexico, M.S. Thesis, 1995

Sharon C. Chong - Study of Soil and Groundwater Remediation Technologies in New Mexico - M.S. Project, 1995

Mark A. Haag - Air Exposure Due to Radon Removal from Groundwater - M.S. Project, 1995

Dawn S. Kristensen - Evaluation of Native Soils for Use as a Subtitle D Infiltration Barrier Layer - M.S. Project, 1995

Bernie Lauctes - Evaluation of Vacuum Slug Test for Measurement of Aquifer Characteristics - M.S. Project, 1995

James A. Chiasson - Laboratory Investigations of Tensiometric Barrier Performance - M.S. Thesis, 1995

Daniel C. Goodman - Assessment of the Water Rights at Capulin Monument - M.S. Project, 1994

Matthew Dixon - Land Application Treatment and Disposal of Treated Municipal Wastewater Effluent on the Navajo Indian Reservation of Northwestern New Mexico - M.S. Project, 1994

Joe Trumm - SCOLA Characterization and Analysis of the Products of Brine Electrolysis - M.S. Thesis, 1994

Scott E. Pringle - Tensiometric Barriers for Containment at Waste Sites: Quantification of Transport Phenomena at Interface of Dual Media Soil Drying - M.S. Thesis, 1995

Carl E. Morris - Dry Barriers: A Study of the Soil Physics Associated with Moisture and Assessment of the Feasibility of Installing a Subsurface System - Ph.D. Dissertation, 1994

Mitchell W. Constant - Pilot Study Comparison of a Mound and Intermittent Sand Filter for Domestic On-Site Wastewater Treatment and Disposal - M.S. Project, 1994

Mark D. Tucker - Determination of Kinetic Coefficients for the Reduction of Uranium by the *Desulfovibrio desulfuricans* Bacteria - M.S. Project, 1994

Mathew O'Grady - An Evaluation of the Point of Use Water Treatment System in San Ysidro, New Mexico - M.S. Project, 1994

Robert S. Houck - An Experiment Designed to Aid the Actinide Source Term Waste Test Program - M.S. Project, 1994

Jeffrey S. Schleher - The Impact of Climate Year Selection in New Mexico Air Quality Control Permit Applications - M.S. Project, 1994

Wu-Ching Cheng - Batch Sorption and Column Transport Studies for Li and Br on Wedron 510 Sand - M.S. Project, 1993

Martin C. Price - Wastewater Treatment to Remove Transuranic Contaminants - M.S. Project, 1993

Herold Gerbrandt - An Integrated Investigation of Lead Corrosion in Water Systems - Ph.D. Thesis, 1993.

Michael DuMond - Comparison of Models for Airborne Transport of Radionuclides - M.S. Project, 1993.

Daniel McLaughlin - Sequestration of Iron Using Polyphosphates - M.S. project, 1993.

Raghu Rudra - Environmental Effects of Alternative Deicing Agents - M.S. project, 1992.

James. H. Ludington - Biological Sealing of Wastewater Lagoon Soils - M.S. project, 1992.

Nicole R. Seguin - Water Quality Modeling of the Middle Rio Grande - M.S. project, 1992.

William R. Turney - Gaseous Chlorination of Cyanides in Heap Leach Residue - M.S. thesis, 1992.

Deborah J. Finrock - Field Evaluation of Permeable Barriers to Remove Groundwater Contaminant - M.S. thesis, 1992

Dana Baer - Biological Sealing of Soil in Wastewater Treatment Lagoons - M.S. project, 1992

Kenneth Evans - Sludge Accumulation Rates in Wastewater Treatment Lagoons - M.S. project, 1992

Michael E. Lee - The Beginning of a New Era: The Restrictions on Chlorofluorocarbons, Halons, and Solvents: Impacts and Opportunities for New Mexico Industry - M.S. project, 1992.

Kelvin C.D. Evans - The Relationship Between Porosity and Soil-Water Diffusivity for Flyash Material - M.S. project, 1992.

Julie Petrocco-Samora - Reuse of Wastewater: A Survey in the State of New Mexico - M.S. project, 1992.

Thomas M. Plumer - Techniques for Calibrating Hydraulic Models of Rural Water Systems - M.S. project, 1992.

Patrick A. Longmire - Hydrogeochemical Investigations at Uranium Mill Tailings Site, Maybell, Colorado - Ph.D. Dissertation (co-advisor with D.G. Brookins, Geology), 1991

Shiv Goel - Impact of Carbon Monoxide Mitigation Programs in Albuquerque - M.S. project, 1991.

Allan K. Porter - Adsorption of Benzene, Toluene, and o-Xylene From Aqueous Solution Using Sphagnum Peat - M.S. thesis, 1991.

Curtis P. McHaley - Combined Air Stripping and Biodegradation of Benzene, Toluene, and Xylenes in Permeable Barriers - M.S. thesis, 1991.

Margaret Krebs-Jespersen - Cobalt Removal from EDTA Complexes in a Waste Stream - M.S. project, 1990.

Peter Fant - Silica Removal in a High Purity Water Treatment System - M.S. thesis, 1990.

Philip L. Baca - The Effect of Soil Oxygen Diffusion and Microbial Concentration on the Transport and Nitrification of Ammonium - M.S. thesis (co-advisor with D.M. Smith in Chem. Engr.), 1989.

Dwight J. Stockham - Solid Waste Management Unit (SWMU) Closure - M.S. project, 1989.

Kylene J. Partin - Modeling Acid Migration Through Soils - M.S. thesis (co-advisor with D.M. Smith in Chem. Engr.), 1988.

Robert M. Lowy - In Situ Aeration Technology for Stripping Volatile Organic Contaminants from Shallow Ground Water Systems - M.S. project, 1988.

Richard T. Crocker - A Computer Model of an Anaerobic Upflow Reactor - M.S. project, 1987.

David Tomasko - A Model of Heat Flow in a Strategic Petroleum Reserve Cavern - Ph.D. Thesis, 1985.

Elizabeth Miller Wroblewski - Determination of the Suitability of State Lands for Land Disposal of Solid Wastes -M.S. project, 1985.

Steve Zeiger - Analysis of Time-of-Day Electric Rate Schedules on Water Distribution System Design - M.S. project, 1985.

Dora Cortijo de Arbildo - Migration of an Acid Front Through Soil - M.S. project, 1983.

Norman Fairbanks - Design of a Land Application System for Zuni Pueblo, NM - M.S. project, 1983.

Research Support

NM Dept. of Energy, Minerals and Natural Resources – Investigation of impacts of coal combustion byproducts disposal on ground water, with J. Stormont (Co-PI) \$136,000, 2010-2011

Sandia National Laboratories – Energy & Water Research, \$24,000, 2010-2011

Albuquerque Bernalillo County Water Utility Authority – Investigation of Corrosion Inhibitors on Distribution System – with A. Schuler (PI), \$55,000, 2009-2011.

Governor’s Water Innovation Fund – Development of a Process to Selectively Remove Fluoride, with K. Howe (Co-PI), \$75,000, 2009-2011

Water Reuse Foundation - Selective Recovery of Desalination Concentrate Salts Using Interstage Ion Exchange, with K. Howe (PI), \$350,000, 2008-2011

American Water Works Association Research Foundation (AWWARF) – Customer Willingness To Pay for Water System Improvements with J. Thacher (PI), J. Chermak, \$350,000, 2007-2010

Sandia National Laboratories – Technical Assistance Contract for Arsenic Treatment in Small Communities, \$20,000, 2005-2006.

Sandia National Laboratories – Investigation of the Long Term Stability of Arsenic Treatment Residuals,” (cost share to WERC project) with K. Howe (Co-PI), \$39,000, 2004-2005

WERC – “Investigation of the Long Term Stability of Arsenic Treatment Residuals,” with K. Howe (Co-PI), \$60,000, 2004-2005.

USEPA Region VI – “Investigation of Arsenic Treatment for Rural Water Systems,” \$50,000, with H. Himmelberger (PI), 2001-2002.

American Water Works Association Research Foundation (AWWARF) – “Development of A Rapid Method of Evaluating Adsorbents for Arsenic Removal from Drinking Water,” \$150,000, 2001-2002.

U.S. Dept. of Energy, WERC, “Development of a Rapid Small Scale Column Testing Procedure for Arsenic Adsorption Media”, \$60,000, 2001-2002.

Los Alamos National Laboratory, “Investigation of Stabilization Methods for Wastewater Treatment Plant Residuals”, \$30,000, 2000.

U.S. Dept. of Energy, Natural and Accelerated Bioremediation (NABIR) - Determination of Long-Term Stability of metals Immobilized by In-Situ Microbial Remediation Processes,” \$750,000, 1999-2001

City of Albuquerque/Bernalillo County, “Evaluation of Onsite Wastewater Treatment and Disposal: Determination of Groundwater Contamination and Demonstration of Alternative Technologies,” with A. Hanson, W. Zacharitz (NMSU), \$350,000, 1997-2000.

U.S. Dept. of Energy, Waste-management Education & Research Consortium, “Investigation of Manganese Oxyhydroxides for Removal of Radionuclides from Waste Streams,” \$60,000, 1996-1997.

U.S. Dept. of Energy, Waste-management Education & Research Consortium and Rocky Mtn. Remediation Service, “Investigation of Apatite for Removal of Radionuclides from Waste Streams,” with R. Busch, \$70,000, 1996-1997.

U.S. Dept. of Energy, Waste-management Education & Research Consortium, “Development of Permeable Barriers for Ground Water Remediation at a Uranium Mill Tailings Site,” with J. Stormont, R. Bowman, S. Semken, D. Marozas, B. Dwyer, \$55,000, 1996-1997.

Bernalillo County, “Evaluation of the Bifar Wastewater Treatment Process,” \$30,000, 1995-1996.

Sandia National Laboratories, “Investigation of Microbial Degradation of Organic Compounds by Methanotrophic Organisms,” \$36,000, 1995-1996.

Bernalillo County, “Evaluation of Constructed Wetland Performance in New Mexico,” \$11,000, 1994-1995.

Sandia National Laboratories, “Evaluation of Dry Barriers for Groundwater Remediation,” \$40,000, 1992-1993.

U.S. Dept. of Energy, Waste-management Education & Research Consortium, “Development of Tensiometric Barriers for Containment and Remediation at Waste Sites,” \$59,000, 1993-1994.

U.S. Dept. of Energy, Waste-management Education & Research Consortium, “Control of Uranium Migration by Microbial Action,” with L. Barton, \$60,000, 1993-1994.

City of Albuquerque, “Lead Evaluation Research Project,” with T. Moore, \$148,000, 1991-1992.

U.S. Environmental Protection Agency, “Evaluation of Point-Of-Use Water Treatment Systems,” \$14,000, 1993.

U.S. Dept. of Energy, Waste-management Education & Research Consortium, "Development of Permeable Barriers for Aquifer Restoration," with J. Hernandez, \$149,000, 1990-1993.

N.M. State Highway & Transportation Department, "Evaluation of Lead Mobility from Road Material Using Different Paving Alternatives," \$10,000, 1992.

Pegasus Gold Corporation/Lac Minerals, "Remediation of Gold Mill Tailings Containing Cyanide," \$25,000, 1990-1992.

U.S. Fish and Wildlife Service, "Development of Integrated Water Budget Models," with T. Moore, \$35,000, 1991-1992.

Sandia National Laboratories, "Evaluation of Innovative Waste Management Alternatives," \$10,000, 1991-1992.

U.S. Dept. of Energy, Waste-management Education & Research Consortium, "A Study to Identify and Evaluate the Geochemical Behavior of Uranium Tailings Leachate in the Subsurface," with D. Brookins, \$96,000, 1990-1992.

N.M. Water Resources Research Institute, "Design, Construction & Evaluation of a Constructed Wetland Wastewater Treatment System," with E. Trotter, \$20,000, 1992.

N.M. State Highway & Transportation Department, "Evaluation of Environmental Effects of Alternative Deicing Agents," \$25,000, 1991.

N.M. State Land Office, "Closure Design Assistance for a Large Municipal Solid Waste Facility," \$20,100, 1989-1991.

N.M. Environment Department, "Public Hearings for Lead and Copper Rule," with T. Moore, \$25,000, 1990-1991.

U.S. Army Construction Engineering Research Laboratory, "Permeable Barriers: A New Alternative for Treatment of Contaminated Groundwater," with S. Shelton, \$59,000, 1988-1991.

N.M. Environmental Improvement Division - Pamphlet on on-site drinking water treatment devices, \$3,000, 1988.

Albuquerque Metropolitan Arroyo Flood Control Authority - Sediment transport, with R. Heggen, \$2,000, 1986.

U.S. Air Force, Environics Division - Microbial reduction of metals, \$52,000, 1985-1986

N.M. Highway Department - Hydrology & drainage short course, with J. Brogan, \$8,000, 1985

U.S. Bureau of Mines - Geochemistry of underground disposal of uranium mill tailings, with D. Brookins, \$62,000, 1984-1985.

N.M. Energy and Minerals Department - Backfill disposal of uranium mill tailings, with R.J. Heggen, \$59,000, 1983-1984.

U.S. Dept. of Energy, Sandia National Laboratories - Transport of inorganic contaminants, \$50,000, 1980-1982.

N.M. Environmental Improvement Division - Environmental effects of uranium mining, with J. Matthews, \$25,000, 1979-1980.

City of Albuquerque - Groundwater quality of the North Valley, with R. Heggen, \$3,000, 1979-1980.

Consulting Experience

- Camp Dresser & McKee, Albuquerque, NM (2004-2008)
 - Design of arsenic treatment plant
- Town of Taos/Taos Pueblo, NM (1999-2000)
 - Sewer system arbitration
- CH2M-Hill, Albuquerque, NM (1998 - present)
 - Evaluation of arsenic treatment options
- Smith Engineering Co., Roswell, NM (1999-2000)
 - Design assistance for industrial wastewater treatment facility
- NM State Engineer, Santa Fe, NM (1998- present)
 - Technical assistance in water quality issues
- Daniel B. Stephens & Associates (1999 - present)
 - Review of mine waste closure plans
 - Design of arsenic treatment system
- John Shoemaker & Associates, Albuquerque, NM (1998)
 - Evaluation of wastewater treatment plant performance
- Leedshill Herkenhoff & Associates, Albuquerque, NM (1995-1998)
 - Design of a mixed waste treatment & disposal facility
 - Design of a water treatment system
- SARB Consultants, Albuquerque, NM/Oslo, Norway (1995-present)
 - Geochemistry of mine waste management
- Fundação Educacional de Criciúma (FUCRI), Criciúma, Brazil (1993)
 - Evaluation of water quality problems from coal mining
- Los Alamos Technical Associates, Hanford, WA (1990-1992)
 - Fouling potential of a radioactive waste treatment process
- Pegasus Gold Corporation, Cerrillos, NM (1994-1996)
 - Oxidation of cyanides in a gold mill tailings pile
- Intel Corporation, Rio Rancho, NM
 - Ultra-pure water treatment system
- United Nations Industrial Development Organization, Vienna, Austria
 - Treatment of wastewaters from mining and milling, Chile
- Ted Gordan & Assoc., Santa Fe, NM
 - Design of wastewater treatment systems
- Midkiff & Assoc., Albuquerque, NM
 - Pilot investigation of on-site water treatment processes
- Deuel & Assoc., Albuquerque, NM
 - Wastewater & hazardous waste management
- Sandia National Laboratories, Albuquerque, NM
 - Panel member, Integrated Technology Remediation & Development, 2002
 - Evaluation of arsenic treatment technologies, 2002
 - Mixed waste disposal performance evaluation, 2001
 - Investigation of groundwater contamination from disposal facility
 - Implementation of wastewater collection system monitoring program
- City of Albuquerque, Water Resource Department
 - Water rights application for surface water diversion
 - Anaerobic digester optimization

Review of sludge disinfection alternatives
IT Corporation, Austin, TX, Groundwater remediation technology
U.S. Bureau of Land Management, Santa Fe, NM, Cyanide speciation model,
molybdenum mill wastewater
KOA Campground, Tierra Amarilla, NM, Onsite wastewater disposal system
(1980)
Bohannon-Huston, Inc., Albuquerque, NM (1987)
Wastewater treatment plant design & analysis
Gardner, Mason & Assoc., Albuquerque, NM, Impact of treated wastewater on
golf course pond system
U.S. Army Environmental Policy Institute, Champaign, IL, Depleted uranium
remediation technologies

Litigation Support

Illegal dumping of rendering plant wastewater – Rothstein law firm, Albuquerque,
NM, 2001.
Constructed wetland evaluation - Arnold Padilla - Albuquerque, NM, 1997
Industrial pre-treatment - Hinkle Law Firm - Santa Fe, NM, 1996
Failing septic tank - Sutin, Thayer & Brown -Albuquerque, NM, 1995
Contested patent on air sparging - Miller, Stratvert, Torgerson & Schlenker -
Albuquerque, NM, 1994
Water rights application - Sheehan, Sheehan & Stelzner - Albuquerque, NM,
1994,
Cyanide spill - Miller, Stratvert, Torgerson & Brandt Attorneys - Albuquerque,
NM, 1984
Review of coal mine plan, Texas Water Quality Commission - James Blackburn,
Attorney - Austin, TX, 1983
Odor control - Rody, Dickason, Sloan, Akin & Robb, PA - Albuquerque, NM,
1983
Septic tank waste disposal - Keleher & McLeod, PA - Albuquerque, NM, 1983
Hydrogen sulfide generation problem - Carpenter & Goldberg, PA - Albuquerque,
NM, 1986
Electric generating plant discharge - Rothstein, Bennett, Donatelli, & Hughes -
Santa Fe, NM, 1986

Other Qualifications

Commercial pilot - instrument rated
Basic competence in Spanish
Bi-monthly columnist (1999-present), "Megaband Tune of the Month," New
Mexico Folk Music and Dance Society (www.folkmads.org)