

## Laurie S. McNeill

### EDUCATION:

Ph.D. Civil Engineering, Virginia Tech, August 2000  
M.S. Environmental Engineering, University of Colorado at Boulder, August 1996  
B.S. Chemical Engineering, University of Colorado at Boulder, May 1994  
Passed the Fundamentals of Engineering Exam, April 1994

### WORK EXPERIENCE:

#### Assistant Professor, Utah State University

August 2000 – present: Utah Water Research Laboratory

#### Graduate Research Assistant, Virginia Tech

January 1998 – July 2000: Department of Civil and Environmental Engineering

Completed and interpreted extensive laboratory studies investigating corrosion by-product release in lead, copper, and iron pipes. Experiments demonstrated the effects of phosphate inhibitors, silica, and temperature on iron corrosion.

#### Undergraduate and Graduate Research Assistant, University of Colorado at Boulder

May 1993 – Dec. 1997: Department of Civil, Environmental, and Architectural Engineering

Designed bench- and full-scale experiments to explore removal mechanisms of inorganic arsenic from drinking water. Developed practical models to predict arsenic removal at full-scale treatment plants and outlined strategies to help water utilities optimize arsenic removal.

January 1992 – May 1993: Cooperative Institute for Research in Environmental Sciences

Performed laboratory experiments investigating the depletion of polar stratospheric ozone.

### PEER-REVIEWED PUBLICATIONS:

**McNeill, L.S.** and M. Edwards, “Phosphate Inhibitors and Red Water in Stagnant Iron Pipes,” *Journal of Environmental Engineering*, in press, 2000.

Chen, H-W., Frey, M., Clifford, D., **McNeill, L.S.**, and M. Edwards, “Arsenic Treatment Considerations,” *Journal AWWA*, 91(3), 74-85, March 1999.

Edwards, M., Patel, S., **McNeill, L.S.**, Chen, H-W., Frey, M., Eaton, A.D., Antweiler, R.C., and H. Taylor, “Considerations in As Analysis and Speciation,” *Journal AWWA*, 90(3), 103-113, March 1998.

**McNeill, L.S.** and M. Edwards, “Arsenic Removal During Precipitative Softening,” *Journal of Environmental Engineering*, 123(5), 453-460, May 1997.

**McNeill, L.S.** and M. Edwards, “Predicting Arsenate Removal During Metal Hydroxide Precipitation,” *Journal AWWA*, 89(1), 75-86, January 1997.

**McNeill, L.S.** and M. Edwards, “Soluble Arsenic Removal in Full-Scale Treatment Plants,” *Journal AWWA*, 87(4), 105-113, April 1995.

Middlebrook, A.M., Iraci, L., **McNeill, L.S.**, Koehler, B.G., Wilson, M., Saastad, O., Tolbert, M.A., and D. Hanson, "Fourier Transform-Infrared Studies of Thin H<sub>2</sub>SO<sub>4</sub>/H<sub>2</sub>O Films: Formation, Water Uptake, and Solid-Liquid Phase Changes," *Journal of Geophysical Research: Atmospheres*, 98(11), 20473, Nov. 20 1993.

Koehler, B.G., Middlebrook, A.M., **McNeill, L.S.**, and M.A. Tolbert, "Fourier Transform-Infrared Studies of the Interaction of HCl with Model Polar Stratospheric Cloud Films," *Journal of Geophysical Research*, 98(6), 10563, June 20 1993.

Middlebrook, A.M., Koehler, B.G., **McNeill, L.S.** and M.A. Tolbert, "Formation of Model Polar Stratospheric Cloud Films," *Geophysical Research Letters*, 19(24), 2417-2420, Dec. 24 1992.

#### **MANUSCRIPTS IN PREPARATION:**

**McNeill, L.S.** and M. Edwards, "A Review of Factors That Influence Iron Pipe Corrosion," submitted to *Journal AWWA*, April 2000.

**McNeill, L.S.** and M. Edwards, "The Importance of Temperature In Assessing Iron Pipe Corrosion in Water Distribution Systems," submitted to *Environmental Monitoring and Assessment*, June 2000.

Edwards, M., **McNeill, L.S.**, and D. Gladwell, "Effect of Phosphate Inhibitors on Lead Release From Pipes," submitted to *Journal AWWA*, June 2000.

**McNeill, L.S.** and M. Edwards, "Temperature Effects on Iron Corrosion," in preparation for *Corrosion*.

Edwards, M., **McNeill, L.S.**, and T.R. Holm, The Role of Phosphate Inhibitors in Mitigating Lead and Copper Corrosion, AWWARF final report, Denver, CO.

#### **AWARDS:**

1999 National Association of Corrosion Engineers (NACE) Old Dominion Section Scholarship  
1998 American Water Works Association (AWWA) Abel Wolman Doctoral Fellowship  
1998 Marion Via Fellowship, CEE Dept, Virginia Polytechnic Institute  
1997 AWWA Academic Achievement Award (M.S.), First Place  
1995-1996 Graduate Assistance in Areas of National Need (GAANN) Fellowship  
1994 Society for Women Engineers National Technical Presentation Competition, First Place  
1994 American Society of Civil Engineers National Technical Paper Contest, Second Place  
1993 Undergraduate Research Opportunities Program Grants (2)

#### **PROFESSIONAL PRESENTATIONS (Presenting author):**

"Effect of Temperature and Silica on Iron Corrosion," AWWA National Conference, Denver, CO, June 2000 (published in conference proceedings).

"The Role of Phosphate Inhibitors in the Corrosion of Iron Pipe Under Stagnant Conditions," invited presentation at AWWA International Distribution Research Symposium, Denver, CO, June 2000.

"Optimizing Arsenic Removal During Conventional Drinking Water Treatment," invited presentation at the AWWA-Minnesota section meeting, Minneapolis, MN, March 2000.

“The Role of Phosphate Inhibitors in Drinking Water Distribution System Iron Pipe Corrosion,” 14<sup>th</sup> International Corrosion Conference, Cape Town, South Africa, September 1999 (keynote address and chair of that session, published in conference proceedings).

“Arsenic Removal via Softening and Conventional Treatment,” AWWA Inorganic Contaminants Workshop, San Antonio, TX, February 1998 (published in conference proceedings).

“Predicting Arsenate Removal During Metal Hydroxide Precipitation,” AWWA National Conference Universities Forum, Toronto, Canada, June 1996 (published in conference proceedings).

“Arsenic Removal in Full-Scale Treatment Plants,” AWWA Water Quality Technology Conference, San Francisco, CA, November 1994 (published in conference proceedings).

“Arsenic Removal by Precipitative Softening,” ASCE National Conference on Environmental Engineering, Boulder, CO, July 1994 (published in conference proceedings).

### **PROFESSIONAL PRESENTATIONS (Contributing author):**

Edwards, M., and **L.S. McNeill**, “Role of Phosphates in Soluble Pb Corrosion By-Product Release,” AWWA International Distribution Research Symposium, Denver, CO, June 2000.

Edwards, M., Hidmi, L., and **L.S. McNeill**, “Role of Water Quality in Pb Corrosion By-Product Release,” 14<sup>th</sup> International Corrosion Conference, Cape Town, South Africa, September 1999 (published in conference proceedings).

### **TEACHING EXPERIENCE:**

#### Instructor, Virginia Tech

Spring 2000, Introduction to Environmental Engineering

Fully responsible for junior-level course with 40 students; overall rating of 3.7 / 4.0.

#### Instructor, Virginia Tech Water Short School

August 1999, Level II Water Lab

Presented a four-hour session, including two lab demos, for water treatment plant operators.

#### Teaching Assistant, University of Colorado at Boulder

August 1994 – December 1994, Introduction to Environmental Engineering

Responsible for weekly help sessions for the 85-student class. Taught one complete lecture.

Jan. 1993 – May 1993, Jan. 1994 – May 1994, Introduction to Chemical Engineering

Organized field trip to a local engineering firm and assisted students with oral presentation.

#### Teaching Seminars

Spring semester 1999, “Preparation for College Teaching” course, Virginia Tech

Discussion of learning theories and teaching strategies for students considering academia.

Spring semester 1996, Faculty Teaching Excellence Program Seminar Series, CU Boulder

Attended bi-weekly sessions on faculty teaching approaches.

### **CONSULTING PROJECTS:**

“Copper Pitting Corrosion in Fire Sprinkler Systems,” (Canadian Copper and Brass Development Association). SEM, XRD, and Microprobe analysis of pitted copper pipe specimens.