

# Tom O'Connor, PE

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EDUCATION            University of Missouri-Columbia, Bach. Sci. Electrical Engineering    1989  
                         University of Missouri-Columbia, Master of Business Administration    1992

## PROFESSIONAL EXPERIENCE

- 1993 - present:        Engineer / Owner, H<sub>2</sub>O'C Engineering, Columbia, Missouri
- design, evaluation, optimization, and modeling of water, wastewater and energy systems
  - business management and operations--planning, marketing, accounting, IT, record-keeping, etc.
  - special engineering projects/reports for public and private entities
  - preparing and teaching classes for water, wastewater, and distribution system operators
  - presentations to government entities and environmental professionals
- 1990 - 1992:            Environmental Engineer (part-time), City of Columbia, MO, Department of Public Works
- landfill groundwater quality monitoring; composting facilities construction; special projects

SOCIETIES            American Water Works Association  
                         Chair of Sustainability Committee, Missouri Section AWWA  
                         Missouri Water and Wastewater Conference

AWARDS                Dr. Warren A. Kramer Award, Missouri Section, AWWA, 2002  
                         Dr. Warren A. Kramer Award, Missouri Section, AWWA, 2009

LICENSURE            Professional Engineer, State of Missouri, E-2002003396  
                         Missouri Certified Water Treatment Plant Operator, Number 6800

## INSTRUCTION AND UTILITY OPERATOR TRAINING

Secured funding for and taught classes to water and wastewater operators in Missouri and Illinois to meet certification and continuing education requirements. Topics included all aspects of water supply, wastewater treatment, and pollution control.

Classes have been funded by Missouri Section, American Water Works Association; Missouri Water and Wastewater Conference; University of Missouri-Columbia Technical Assistance Center, individual communities and utilities.

## PUBLICATIONS

- Bart Murphy, John T. O'Connor and Thomas L. O'Connor  
Willmar, Minnesota Battles Copper Corrosion  
Part 1: The Problem and the Search for Effective Treatment Alternatives  
Part 2: Nitrification, Bacteria and Copper Corrosion in Household Plumbing  
Part 3: Results of Pilot Plant Column and Copper Pipe Test Loop Studies  
*Public Works*, V. 128, Nos. 11-13, October, November, December, 1997.
- Bart Murphy, John T. O'Connor and Thomas L. O'Connor  
Willmar, Minnesota Controls Nitrification in the Distribution System:  
Part 1: Ozonation  
Part 2: Breakpoint Ammonium Reduction Treatment  
*Public Works*, V. 129, September, October, 1998.
- Thomas L. O'Connor, John T. O'Connor and Steve Gerdes  
Water Quality Deterioration in Water Distribution Systems:  
Part 1. Presence of Methane in Illinois Well Water Supplies  
Part 2. Removal of Methane at Normal, IL  
Part 3. Studies of Methane Removal by Aeration  
Part 4. Alternatives for Removal of Microbial Nutrients  
*Water Engineering and Management*, V. 146, Nos. 3-6, March-June, 1999.
- Thomas L. O'Connor and John T. O'Connor  
Stream Biomonitoring Assesses the Impact of Large-Scale Livestock Production  
*Water Engineering and Management*, V. 146, No. 10, October, 1999.
- Thomas L. O'Connor and John T. O'Connor  
Water Quality Deterioration in Distribution Systems:  
Part 1: Recognition of the Role of Microorganisms  
Part 2: Microbial Processes in Distribution Mains  
Part 3: Microbially-Mediated Deterioration in Ground Water Supplies  
Part 4: Microbially-Mediated Deterioration in Surface Water Supplies  
*Water Engineering and Management*, V. 147, 148; Nos. 10-12, 1;  
October, November, December 2000; January, 2001.
- Thomas L. O'Connor, Bart Murphy and John T. O'Connor,  
Controlling Nitrification in a Water Distribution System Using Sodium Chlorite  
*Water Engineering and Management*, V. 148, No. 9, September, 2001.

## BOOKS:

- Thomas L. O'Connor, and O'Connor, John T.,  
Chapter 3: Microbially-Mediated Corrosion and Water Quality Deterioration, pp. 23-50  
John T. O'Connor, and O'Connor, Thomas L.  
Chapter 8: Rapid Sand Filtration, pp. 127-148, ISBN 0-7844-00635-9  
*Control of Microorganisms in Drinking Water, American Society of Civil Engineers, 2002*
- John T. O'Connor, and O'Connor, Tom, and Rick Twait  
*Water Treatment Plant Performance Evaluations and Operations, John Wiley & Sons, 2009*

## CONSULTING ENGINEERING PROJECTS AND REPORTS

Caterpillar, Morton, IL, 1996	Control of Biological Growths in the Water Distribution System
Clinton, MO, 1997	Removal of Organic Matter: PAC and Enhanced Coagulation for Reduction of TOC, TTHM and TTHMFP
Willmar, MN, 1995-97	Studies of Copper Corrosion Control: 1. Mitigation of Copper Corrosion: Alternative Treatment Processes 2. Ozonation for Ammonium Ion Removal and Copper Corrosion Control 3. Investigation of Alternatives for pH Control
PSF/MDNR, 1996-2000	Biomonitoring of North-Central Missouri Streams for Aquatic Invertebrates to Assess Impact of Large-Scale Livestock Production Facilities on Stream Habitat Stream Habitat Assessment, Semi-Quantitative Lotic Macroinvertebrate Sampling
Bloomington, IL, 1997	Total Bacterial Cell Count and Microscopic Particle Analysis: Application of Direct MPA for Evaluation of Lake Bloomington Source Water and Seasonal Water Treatment Plant Particle Removal Efficiency following Installation of GAC-Capped Filters
Normal, IL, 1997-98	Well Water, Treatment Process and Distribution System Evaluations: <i>Phase 1.</i> Evaluation of Treatment Plant Performance and Dist. System <i>Phase 2.</i> Control of Water Quality Deterioration During Distribution
Bloomington, IL, 1999	Application of Electronic Particle Counting, Turbidity Measurement, and Direct Microscopic Particle Analysis to Assess Particle Entrainment and Removal by Coagulation, Lime Softening, and Filtration Evaluation of Flow Ramping to Improve Filter Performance following Backwash
Gladstone, MO, 1999	Evaluation of Treatment Process and Distribution System Water Quality Remediation of Build-up of Calcium Carbonate in Distribution Mains
Cleveland, MO, 1999	Evaluation of Total Water System: Mapping, Computer Modeling, and Design of Future Improvements to Distribution and Storage
Morton, IL, 1999-2000	Septic Odors due to Microbial Growths in the Distribution System; Treatment Modifications for Remediation of Water Quality Deterioration
Sauget, IL, 2000:	Performance Evaluation of the Physical-Chemical Wastewater Treatment Plant; Wastewater Treatment Plant Operator's Training Course (in-house)
Willmar, MN, 2000:	Evaluation of Sodium Chlorite for the Control of Nitrification in the Distribution System
Kansas City, MO, 2000:	Evaluation of Plant Performance and the Use of Magnesium as a Recycled Coagulant; Seasonal Variations in Softening and TOC Removal
Bloomington, IL, 2001-2003:	Evaluation of Upflow Contact Clarifiers (ClariCones) Performance; Plant Performance with respect to TOC Reduction; Establishment of Laboratory Program for Plant Process Evaluation; Development of Acidification Protocol for Turbidity Measurement
Kearney, MO, 2001-2002:	Remediation of Copper Pitting Corrosion in Household Plumbing
OSU, Stillwater, OK, 2002:	Depletion of Disinfectant Residuals in the Distribution System

Alexander and Assoc., 2002:	Distribution System Plans and Specifications; Permitting
Gladstone, MO, 2003:	Computer-Based Hydraulic Model of Distribution System
PWSD #9, Boone Co MO 2003:	Strategies for Achieving Compliance with the Radionuclide Rule
Hartsburg, MO, 2002-2003:	Wastewater Capacity Analysis; Replacement of Air Diffusers
Leadwood, MO, 2003-2005:	Evaluation of Existing Treatment Process for Radionuclide Removal
Greenville, IL, 2003-2005:	Investigation of Tastes-and-Odors in the Distribution System; Design, Installation and Optimization of Lake Destratifiers
Missouri Dept. of Corrections	Evaluation of Water and Sewer Rates Charged for Northeast Correctional Center
Monroe City, MO, 2004	Control of Disinfection By-Products; Ammonia Requirements
Callaway #2 Water District	Elimination of Discolored (red) Water and Iron Bacteria in Wells
Columbia, MO, 2004	Effect of Constructed Wetlands on Water Quality and Quantity in Columbia's McBaine Bottoms Wellfield
Gladstone, MO, 2004:	Vulnerability Assessment Report & Emergency Response Plan Update
Cass Co. PWSD #7, 2004	Evaluation of Causes of Clogged Household Plumbing Fixtures
Bloomington, IL, 2004-2005	Preparation of Plant Operations Manual; Evaluation of Replacement of Granular Activated Carbon; Control of Tastes-and-Odors in Evergreen Lake Water
Milan, MO, 2004	Chlorine Safety Planning
St. Peters, MO, 2004-2006	Filtration System Caking and Cementation Problems
Farmington, MO, 2005	Vulnerability Assessment; Emergency Response Plan Update
Boone Co. PWSD #9, 2005	Pilot Plant Evaluation of HMO Process for Removal of Radionuclides
Leadwood, MO, 2005-2007	Design of Reinforced Concrete Wastewater Equalization Basin
Assoc. Electric Coop., 2005	Chloramination for Control of Disinfection By-Products
Economy Metals, 2006	Design and Permitting of Wastewater Treatment Wetlands
Farmington, MO, 2006	Development of Emergency Response Plan
Gladstone, MO, 2006	Development of Emergency Response Plan
St. Peters, MO, 2007	Design of Induced Draft Aerators Strategies for Compliance with Ground Water Rule Initial Distribution System Evaluation
Boone Co. PWSD #9, 2007	Treatment Process Design for Removal of Radionuclides by Adsorption and Filtration
Little Falls, MN, 2007	Control of Nitrification in Water Distribution System
Bloomington, IL, 2007	Emergency Response Procedures: Power Outages; CO <sub>2</sub> Tank, Lime Feed Failures

Bloomington, IL, 2008	Information Capture Project: Standard Operating Procedures; Water Treatment Plant Maintenance
Assoc. Electric Coop., 2008	Design and Permitting of Air-Scour Filtration Upgrade
Hartsburg, MO, 2009	Wastewater System Engineering Report
Cameron, MO, 2009	Engineering Investigation of Alternatives for Compliance with the Disinfectants/Disinfection Byproducts Rule
Gladstone, MO, 2009	Water System Engineering and Sustainability Study
Nat'l Biodiesel Board, 2009-11	Report on Fuel Quality Enforcement; Organized Biodiesel Stakeholder Meeting; Water Quantity and Quality Issues Related to Biodiesel Production (pre- sented at Groundwater Protection Council's Water/Energy Sustainability Conference, Salt Lake City, UT, 2009); represented NBB at IPIECA's Bioenergy and Water workshop (Rome, Italy, 2010) Water Usage in the Production of Biodiesel (presented at National Biodiesel Conference, Grapevine, TX, 2010, EPA CA Air Resources Board, 2011); Biodiesel Sustainability (presented at Energy, Utility, and Environment Conference, 2012)

## REFERENCES

Rick Twait, Superintendent of  
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others available upon request