

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, H₂O'C Engineering, LLC, Columbia, Missouri

- design, evaluation, optimization, and modeling of water, wastewater and pollution control systems
- special engineering projects/reports for Midwestern water and wastewater utilities
- preparing and teaching classes for water, wastewater and distribution system operators
- presentations to government entities and waterworks professionals
- business management and operations--marketing, accounting, IT, record keeping,...

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
Missouri Water and Wastewater Conference
Missouri Waste Control Coalition
Illinois Potable Water Supply Operator's Association

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

REGISTRATION Professional Engineer, State of Missouri, E-2002003396

CERTIFICATION 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.

Book Chapters:

- Control of Microorganisms in Drinking Water, *American Society of Civil Engineers*, 2002
- 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

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: The Search for Alternative Treatment Processes 2. Effect of Ozonation on 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 Microscopic Particle Analysis 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 Distribution 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:	Investigation of 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 '03:	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 and 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
St. Peters, MO, 2007	Design and Selection of Induced Draft Aerators
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 ₂ Tank, Lime Feed Failures
University of Missouri, 2007	Remediation of Corrosion of Fire Protection System Piping