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Engineering & Scientific Consulting

Sarahann Marie (Dow) Rackl, Ph.D., P.E.

Senior Managing Engineer | Environmental & Earth Sciences
1250 S Capital of Texas Hwy, Bldg 3, Ste 400 | Austin, TX 78746
(916) 306-2682 tel | srackl@exponent.com

Professional Profile

Dr. Rackl is a scientist and environmental engineer with a broad interdisciplinary technical and academic background in the areas of engineering, microbiology, chemistry, and ecology. Her research and work experience since the late 1990s have focused on evaluating technologies and practices related to water and other environmental media. She has applied her expertise to the development of new products; conducting business case analyses; and communicating with boards of directors, investors, regulators, legal counsel and policy makers. Dr. Rackl excels at gathering and interpreting interdisciplinary technical data and information in a wide range of scientific areas and understanding and communicating its relevance to regulators, legal counsel and other and non-technical colleagues. Dr. Rackl also specializes in California and other state-specific science and regulatory matters, including California's "Proposition 65", drinking water quality and supply challenges and agricultural product compliance. Dr. Rackl has particularly extensive expertise in the research, development, manufacturing scale-up and registration of biopesticides.

Whether it be common consumer household and office products to professional products, Dr. Rackl has developed numerous Proposition 65 compliance programs for companies with extensive consumer product lines. Under Proposition 65, Dr. Rackl has worked in projects covering a large array of the listed chemicals including PFOA and PFOS. Dr. Rackl supports companies in developing Proposition 65 supply chain strategies and works with companies to develop tools that enable their regulatory managers to maintain sustainable Proposition 65 compliance programs.

Using the knowledge and skills Dr. Rackl developed while working as product manager and group director of a biopesticide company, she has assisted other biopesticide and antimicrobial companies in product development strategies, regulatory package submissions, communications with the EPA and California Department of Pesticide Regulation (DPR) and numerous registration and regulatory compliance challenges.

With respect to water quality and treatment, Dr. Rackl specializes in evaluating water quality from source to tap and optimizing drinking water quality through advanced treatment technologies. Through numerous projects with the CalFed Water Quality Program, she developed an expertise in water supply and quality and treatment challenges in California. Additionally, Dr. Rackl has assisted numerous clients in her core academic research areas of disinfection optimization and the minimization of disinfection by-products. Dr. Rackl has also evaluated disinfection strategies for control of opportunistic pathogens in drinking water, including Mycobacterium avium complex and Legionella for the evaluation and implementation of microbial control strategies for large facilities such as hotels and hospitals.

Academic Credentials & Professional Honors

Ph.D., Civil/Environmental Engineering, University of Colorado, Boulder, 2004

M.S., Civil/Environmental Engineering, University of Colorado, Boulder, 2002

B.S., Biology, College of William and Mary, 1997

National Water Resources Institute, Fellowship 2002 and 2003

Licenses and Certifications

Licensed Professional Engineer, California, #79732

Licensed Professional Engineer, Texas, #138126

Prior Experience

Senior Regulatory Scientist, TSG Consulting, 2017-2018

Principal Consultant, Sarahann Rackl Consulting, 2015 - 2017

Director Water Technologies/Product Management, Marrone Bio Innovations (MBI), 2009 - 2014

Water Quality and Technology Specialist, Damon S. Williams Associates, LLC, 2008 - 2009

Principle Scientist, Brown and Caldwell Consultants and Engineers, 2004 - 2008

Professional Affiliations

American Water Works Association 2000-present

Patents

US #9,414,590 – Rackl SM, "Chemical and biological agents for the control of molluscs" August 16, 2016.

Publications

Book Chapters

Rackl, Sarahann and Link, Carolyn. (2015). Biology and Management of Invasive Quagga and Zebra Mussels in the Western United States: Zequanox®: Bio-Based Control of Invasive Dreissena Mussels. 515-535.

Peer Reviewed Publications

Hofius, Jessica, Mandella, Catherine and Rackl, Sarahann. (2015). Evaluation of watercraft quagga mussel decontamination in saltwater. Management of Biological Invasions. 6. 277-286.

Whitledge, Gregory, Weber, Megan, Demartini, Jessi, Oldenburg, John, Roberts, Dave, Link, Carolyn, Rackl, Sarahann, Rude, Neil, Yung, Andrew, Bock, Lindsey and Oliver, Devon. (2014). An evaluation Zequanox® efficacy and application strategies for targeted control of zebra mussels in shallow-water habitats in lakes. Management of Biological Invasions. 6.

Meehan, Sara, Shannon, Adam, Gruber, Bridget, Rackl, Sarahann and Lucy, Frances. (2014). Ecotoxicological impact of Zequanox (R), a novel biocide, on selected non-target Irish aquatic species. *Ecotoxicology and environmental safety*. 107C. 148-153

Meehan, Sara, Lucy, Frances, Gruber, Bridget and Rackl, Sarahann. (2013). Comparing a microbial biocide and chlorine as zebra mussel control strategies in an Irish drinking water treatment plant. *Management of Biological Invasions*. 4. 113-122.

Dow, Sarahann, Amy, Gary and Hernandez, Mark. (2007). Flocculation and Re-growth of *Mycobacterium avium* after ozone exposure. *Proceedings of the Water Environment Federation*. 2007. 74-84.

Dow S.M., von Gunten U., Lively, G., Chandrakanth, M, Amy, G., and Hernandez, M. (2006) The Impact of Selected Water Quality Parameters on the Inactivation of *Bacillus subtilis* Spores Using Monochloramine and Ozone, *Water Research*, 40:373. DOI: 10.1016/j.watres.2005.10.018.

Gruden, C. L., Dow S. M., and Hernandez, M. (2001) Fate and Toxicity of Aircraft Deicing Fluid Additives through Anaerobic Digestion. *Water Environment Research*. 73(1):72. DOI:10.2175/106143001X138714.

Presentations

Dow, Sarahann M. Using Conceptual Models for a Systematic Investigation of Drinking Water Quality -- from Source to Tap. CONFERENCE PROCEEDING by American Water Works Association, 11/01/2008

Cruz, Charles J.; Dow, Sarahann M.; Fryer, Wilton B. 2007. Pilot Scale Evaluation of Membrane Filtration for Turlock Irrigation District's New Surface Water Treatment Facility. CONFERENCE PROCEEDING by American Water Works Association.

Chen, Jennifer J.; Dow, Sarahann; Cruz, Charles J.; Fryer, Wilton. Pre-Ozonation Prior to Microfiltration Membranes - A Pilot Scale Evaluation. CONFERENCE PROCEEDING by American Water Works Association, 11/01/2007

Wilson, Daniel; Dow, Sarahann; Chen, Jennifer; Fryer, Wilton B. Evaluation of High-Rate Clarification Processes as a Pretreatment to Microfiltration of a Surface Water. CONFERENCE PROCEEDING by American Water Works Association, 11/01/2007