EPA Office of Water
Recent Water Research
January-June 2015 No. 2015-1

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Protecting Aquatic Life and Human Health From Chemicals and Microbes in Water

From EPA

Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources. EPA-600-R-15-047. Synthesis of available scientific literature and data on the potential for hydraulic fracturing to impact drinking water resources.

Go to Report or www.epa.gov/ncea/

Evaluation of Current Water Treatment and Distribution System Optimization to Provide Safe Drinking Water From Various Source Water Types and Conditions. Latham, M., and **Mash**, H., 2015. EPA-600-F-14-353. Three studies to improve understanding of propagation of contaminants through drinking water treatment, and to identify best approaches for removal.

Go to Report or nepis.epa.gov

Adherence of Chemical, Biological, and Radiological Contaminants to Sediments Found in Water Storage Tanks. EPA-600-R-14-222. Evaluation of adherence of non-radioactive cesium (Cs-133), lindane, Escherichia coli, and Bacillus anthracis Sterne (BaS) onto sediments collected from drinking water storage tanks across the U.S.

Go to Report or cfpub.epa.gov/si

From Collaborators

Formation of Nitrosamines and Perfluoroalkyl Acids During Ozonation in Water Reuse Applications. Dickenson, E., 2015. Study to evaluate nitrosamines and perfluoroalkyl acids occurrence, factors affecting formation, and potential mitigation strategies.

Go to Report or www.watereuse.org

WEF – Identifying Research Gaps and Tools for Cost-Effective Implementation of the Revised Ammonia Ambient Water Quality Criteria: Ammonia Criteria Implementation Stakeholders Meeting (WERF3C14). 2015. Workshop summary: recommendations for federal regulators to implement criteria based on a common set of principles.

Go to Report or news.wef.org/ammonia-criteria-implementation-workshop-findings-released/

USGS – The Quality of our Nation's Waters—Water Quality in Principal Aquifers of the United States. DeSimone, L.A., et al., 2015. USGS Circular 1360. Findings: contaminants with potential human-health concern in 1/5 of wells sampled; geology, hydrology, geochemistry, and chemical use explain vulnerability; changes to groundwater flow altered groundwater quality.

Go to Report

USGS – Trends in Hydraulic Fracturing Distributions and Treatment Fluids, Additives, Proppants, and Water Volumes Applied to Wells Drilled in the United States From 1947 Through 2010—Data Analysis and Comparison to the Literature. Gallegos, T.J., and Varela, B.A., 2015. USGS Scientific Investigations Report 2014–5131. Water-intensive drilling increased from 6% of new wells in 2000 to 42% in 2010. HF materials and methods are contributing to development of previously inaccessible oil and gas production in shale and tight-sand reservoirs.

Go to Report

WRF – Drought Management in a Changing Climate: Using Cost-Benefit Analyses to Assist Drinking Water Utilities. Blue, J., et al., 2015. WRF Report 4546. Specifies system vulnerabilities to droughts; guide to assessing total possible costs of drought, and benefits of drought management and risk mitigation.

Go to Report or www.waterrf.org

WRF – Hydraulic Fracturing Workshop: Developing Water and Oil & Gas Sector Partnerships. 2015. WRF Report 4544. Workshop aimed to identify communication needs and opportunities for collaboration between drinking water and oil and gas industries; participants developed strategies, action items for emergency response, water quality monitoring, and water management operations.

Go to Report or www.waterrf.org

WEF – Nutrient Roadmap Version 1.0. 2015. Primer offers overview of longer book; challenges water resource recovery facilities to net zero impacts with nutrient discharges by 2040.

Go to Report or www.wef.org/nutrientroadmap/

WRF – Reducing Volatile Disinfection By-Products in Treated Drinking Water Using Aeration Technologies. Ghosh, A., et al., 2015. WRF Report 4441. Best practices for understanding elevated TTHM issues, evaluation of treatment site and reservoir constraints, and selection of appropriate aeration technology / design.

Go to Report or www.waterrf.org

WRF – Detection and Quantification of EDCs/PPCPs in Waters Containing Organic Matter. Chorover, J., et al., 2015. WRF Report 4269. Examines effects of dissolved and colloidal organic matter sources and constituent fractions on EDC/PPCP detection and quantification.

Go to Report or www.waterrf.org

From Journals

Non-O1/Non-O139 *Vibrio cholerae* Carrying Multiple Virulence Factors and *V-cholerae* O1 in the Chesapeake Bay, Maryland. Ceccarelli, D., et al., 2015. *Applied and Environmental Microbiology,* 81(6), 1909-1918.

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A Practical Approach to Determine Dose Metrics for Nanomaterials. Delmaar, C.J.E., et al., 2015. *Environmental Toxicology and Chemistry,* 34(5), 1015-1122.

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Stream Measurements Locate Thermogenic Methane Fluxes in Groundwater Discharge in an Area of Shale-Gas Development. Heilweil, V.M., et al., 2015. *Environmental Science & Technology,* 49(7), 4057-4065.

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Association Between Lifetime Exposure to Inorganic Arsenic in Drinking Water and Coronary Heart Disease in Colorado Residents. James, K.A., et al., 2015. *Environmental Health Perspectives,* 123(2), 128-134.

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Characterization of Hydraulic Fracturing Flowback Water in Colorado: Implications for Water Treatment. Lester, Y., et al., 2015. *Science of the Total Environment,* 512, 637-644.

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Treatment Options for a Potential cVOC Group Rule. Roth, D.K., et al., 2015. *Journal American Water Works Association,* 107(3), E130-139.

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Recent Water Research

Effects of Chlorination Operating Conditions on Trihalomethane Formation Potential in Polyaluminum Chloride-Polymer Coagulated Effluent. Li, R. H., et al., 2015. *Journal of Hazardous Materials,* 285, 103-108.

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Evaluation of Effects of Potential Group cVOC Regulations on Two Utilities. Roth, D.K., et al., 2015. *Journal American Water Works Association,* 107(6), E321-E327.

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A Framework for Identifying Organic Compounds of Concern in Hydraulic Fracturing Fluids Based on Their Mobility and Persistence in Groundwater. Rogers, J.D., et al., 2015. *Environmental Science & Technology Letters,* 2(6), 158-164.

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Iodine Addition to Drinking Water for Perchlorate Mitigation: Engineering Feasibility. Wildman, C.F., et al., 2015. *Journal American Water Works Association,* 107(6), E282-E291.

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Evaluation of the Final UCMR2 Database: Nationwide Trends in NDMA. Woods, G., et al., 2015. *Journal American Water Works Association,* 107(1), E58-68.

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Modeling Manganese Removal in a Pilot-Scale Postfiltration Contactor. Bierlein, K.A., et al., 2015. *Journal American Water Works Association,* 107(2), E109-119.

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Short-Term Spatial and Temporal Variability of Disinfection By-Product Occurrence in Small Drinking Water Systems. Guilherme, S., and Rodriguez, M. J., 2015. *Science of the Total Environment,* 518, 280-289.

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Assessment of Surface Water Chloride and Conductivity Trends in Areas of Unconventional Oil and Gas Development—Why Existing National Data Sets Cannot Tell us What we Would Like to Know. Bowen, Z.H., et al., 2015. *Water Resources Research,* Published Online January 2015.

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Biocides in Hydraulic Fracturing Fluids: A Critical Review of Their Usage, Mobility, Degradation, and Toxicity. Kahrilas, G.A., et al., 2015. *Environmental Science & Technology,* 49(1), 16-32.

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Controlling Lead and Copper Rule Water Quality Parameters. Cornwell, D., et al., 2015. *Journal American Water Works Association,* 107(2), E86-E96.

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UV/Chlorine Process for Ammonia Removal and Disinfection By-Product Reduction: Comparison With Chlorination. Zhang, X.R., et al., 2015. *Water Research,* 68, 804-811.

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Expanding Metal Mixture Toxicity Models to Natural Stream and Lake Invertebrate Communities. Balistrieri, L.S., et al., 2015. *Environmental Toxicology and Chemistry,* 34(4), 761-776.

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Occurrence of Pharmaceuticals in a Water Supply System and Related Human Health Risk Assessment. Gaffney, V.D., et al., 2015. *Water Research,* 72, 199-208.

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N-Nitrosodimethylamine (NDMA) Formation Potential of Amine-Based Water Treatment Polymers: Effects of in Situ Chloramination, Breakpoint Chlorination, and Pre-Oxidation. Park, S.H., et al., 2015. *Journal of Hazardous Materials,* 282, 133-140.

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Microplastics: Addressing Ecological Risk Through Lessons Learned. Syberg, K., et al., 2015. *Environmental Toxicology and Chemistry,* 34(5), 945-953.

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Methadone Contributes to N-Nitrosodimethylamine Formation in Surface Waters and Wastewaters During Chloramination. Hanigan, D., et al., 2015. *Environmental Science & Technology Letters,* 2(6), 151–157.

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Proximity to Natural Gas Wells and Reported Health Status: Results of a Household Survey in Washington County, Pennsylvania. Rabinowitz, P.M., et al., 2015. *Environmental Health Perspectives,* 123(1), 21–26.

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Derivation of Human Health-Based Ambient Water Quality Criteria: A Consideration of Conservatism and Protectiveness Goals. Tatum, V., et al., 2015. *Integrated Environmental Assessment and Management,* 11(2), 298-305.

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A Review on Emerging Contaminants in Wastewaters and the Environment: Current Knowledge, Understudied Areas and Recommendations for Future Monitoring. Petrie, B., et al., 2015. *Water Research,* 72, 3-27.

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Arsenic Cycling in Hydrocarbon Plumes: Secondary Effects of Natural Attenuation. Cozzarelli, I.M., et al., 2015. *Groundwater,* Published Online January 2015.

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Aerobic Biodegradation of Selected Polybrominated Diphenyl Ethers (PBDEs) in Wastewater Sewage Sludge. Stiborova, H., et al., 2015. *Chemosphere,* 118, 315-321.

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Occurrence and Analysis of Endocrine-Disrupting Compounds in a Water Supply System. Carvalho, A.R.M., et al., 2015. *Environmental Monitoring and Assessment,* 187:139.

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Increased Frequency of Nontuberculous Mycobacteria Detection at Potable Water Taps Within the United States. Donohue, M., **Mistry**, J., **Donohue**, J., **O'Connell**, K., **King**, D., **Byran**, J., Covert, T and S. **Pfaller**, 2015. *Environmental Science & Technology,* 49(10), 6127-6133.

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Why Endocrine Disrupting Chemicals (EDCs) Challenge Traditional Risk Assessment and How to Respond. Fuhrman, V.F., et al., 2015. *Journal of Hazardous Materials,* 286, 589-611.

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Contribution and Removal of Watershed and Cationic Polymer N-Nitrosodimethylamine Precursors. Hanigan, D., et al., 2015. *Journal American Water Works Association,* 107(3), E152-163.

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Iodide, Bromide, and Ammonium in Hydraulic Fracturing and Oil and Gas Wastewaters: Environmental Implications. Harkness, J.S., et al., 2015. *Environmental Science & Technology,* 49(3), 1955-1963.

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Evaluation of Watershed Susceptibility to Contaminants of Emerging Concern. Park and Park, 2015. *Journal American Water Works Association,* 107(4), E174-E186.

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Residential Tap Water Contamination Following the Freedom Industries Chemical Spill: Perceptions, Water Quality, and Health Impacts. Whelton, A.J., et al., 2015. *Environmental Science & Technology,* 49(2), 813-823.

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Evaluating a Groundwater Supply Contamination Incident Attributed to Marcellus Shale Gas Development. Llewellyn, G.T., et al., 2015. *Proceedings of the National Academy of Sciences,* 112(20), 6325-6330.

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Spatial and Temporal Variation in De Facto Wastewater Reuse in Drinking Water Systems Across the USA. Rice, J., and Westerhoff, P., 2015. *Environmental Science & Technology,* 49(2), 982-989.

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Sources of Endocrine-Disrupting Compounds in North Carolina Waterways: A Geographic Information Systems Approach. Sackett, D.K., et al., 2015. *Environmental Toxicology and Chemistry,* 34(2), 437-445.

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Seasonal Evaluation of the Presence of 46 Disinfection By-Products Throughout a Drinking Water Treatment Plant. Serrano, M., et al., 2015. *Science of the Total Environment,* 517, 246-258.

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Anticipating the Effects of Green Buildings on Water Quality and Infrastructure. Rhoads, W.J., et al., 2015. *Journal American Water Works Association,* 107(4), 50-61.

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Chlorate Challenges for Water Systems. Alfredo, K., et al., 2015. *Journal American Water Works Association,* 107(4), E187-E196.

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Disparity in Disinfection Byproducts Concentration Between Hot and Cold Tap Water. Liu, B.N., and Reckhow, D.A., 2015. *Water Research,* 70, 196-204.

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Vectorial Role of *Acanthamoeba* in *Legionella* Propagation in Water for Human Use. Magnet, A., et al., 2015. *Science of the Total Environment,* 505, 889-895.

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Mixing Zone and Drinking Water Intake Dilution Factor and Wastewater Generation Distributions to Enable Probabilistic Assessment of Down-the-Drain Consumer Product Chemicals in the US. Kapo, K. E., et al., 2015. *Science of the Total Environment,* 518, 302-309.

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Factors Triggering Cyanobacteria Dominance and Succession During Blooms in a Hypereutrophic Drinking Water Supply Reservoir. Fernandez, C., et al., 2015. *Water Air and Soil Pollution,* 226(3).

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Spatial and Seasonal Variability of Tap Water Disinfection By-Products Within Distribution Pipe Networks. Charisiadis, P., et al., 2015. *Science of the Total Environment,* 506, 26-35.

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Formation of Disinfection By-Products in the Ultraviolet/Chlorine Advanced Oxidation Process. Wang, D., et al., 2015. *Science of the Total Environment,* 518, 49-57.

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A Costly Endeavor: Addressing Algae Problems in a Water Supply. Dunlap, C.R., et al., 2015. *Journal American Water Works Association,* 107(5), E255-E262.

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Sharing Important Research Topics With the Drinking Water Community. De Haan, M., and Owen, C., 2015. *Journal American Water Works Association,* 107(3), 38-47.

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Automated Method for Determination of Dissolved Organic Carbon–Water Distribution Constants of Structurally Diverse Pollutants Using Pre-Equilibrium Solid-Phase Microextraction. Ripszam, M., and Haglund, P., 2015. *Environmental Toxicology and Chemistry,* 34(2), 266-274.

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Perchlorate in US Drinking Water: Is a Federal Regulation Needed to Protect Public Health? Cotruvo, J.A., 2015. *Journal American Water Works Association,* 107(6), 66-71.

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Redox Gradients in Distribution Systems Influence Water Quality, Corrosion, and Microbial Ecology. Masters, S., et al., 2015. *Water Research,* 68, 140-149.

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The Cumulative Risk to Human Health of Pharmaceuticals in New Jersey Surface Water. Roden, N.M., et al., 2015. *Human and Ecological Risk Assessment,* 21(1), 280-295.

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Impact of Water Heaters on the Formation of Disinfection By-products. Liu, B., and Reckhow, D.A., 2015. *Journal American Water Works Association,* 107(6), E328-E338.

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Dissolved Oxygen Sensors Predict Seasonal Manganese Increases. Malkov, V.B., 2015. *Opflow,* 41(1), 14-16.

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Recent and Upcoming Meetings

RECENT:

NGWA Conference on Hydrology and Water Quality in the Southwest. February 23-24, 2015 in Albuquerque, NM.

Go to Meeting Page or www.ngwa.org

Water Week 2015. April 12-18, 2015 in Washington, DC.

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Water Microbiology Conference 2015. May 18-22, 2015 in Chapel Hill, NC.

Go to Meeting Page or waterinstitute.unc.edu/

GWPC Annual Forum. September 27-30, 2015 in Oklahoma City, OK.

Go to Meeting Page or www.gwpc.org

WaterPro Conference. September 28-30, 2015 in Oklahoma City, OK.

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2015 NAWC Water Summit. October 4, 2015 in Scottsdale, AZ.

Go to Meeting Page or www.nawc.org

UPCOMING:

ASDWA 2015 Annual Conference. October 20-23, 2015 in Fort Worth, TX.

Go to Meeting Page or www.asdwa.org

APHA Annual Meeting and Exposition. October 31-November 4, 2015 in Chicago, IL.

Go to Meeting Page or www.alpha.org

SETAC North America 36th Annual Meeting. November 1-5, 2015 in Salt Lake City, UT.

Go to Meeting Page or www.setac.org

NWRA Annual Conference. November 4-6, 2015 in Denver, CO.

Go to Meeting Page or www.nwra.org

Groundwater 15 Expo. December 15-17, 2015 in Las Vegas, NV.

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2016 UIC Conference. February 23-25, 2016 in Denver, CO.

Go to Meeting Page or www.gwpc.org

NGWA Groundwater Summit 2016. April 24-27, 2016 in Denver, CO.

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Innovative and Affordable Tools and Technologies for Sustainable Public Health Protection

From Collaborators

WRF – Hexavalent Chromium Treatment With Strong Base Anion Exchange. Seidel, C., et al., 2014. Results support design of full-scale treatment installations and address operational questions that impact capital and lifecycle costs for strong base anion exchange (SBA-IX) and chemical reductive media (CRM) technologies.

Go to Report or www.waterrf.org

Equivalency of Advanced Treatment Trains for Potable Reuse: Treatment Train Toolbox. Trussell, R.R., et al., 2015. Toolbox model to calculate efficacy and estimated cost of user-selected treatment alternatives; report provides step-by-step guidance for tool; documents model assumptions, cost tables, model limitations.

Go to Report or www.watereuse.org

Optimizing Conventional Treatment for the Removal of Cyanobacteria and Toxins. Newcombe, G., et al., 2015. WRF Report 4315. Identifies optimum coagulation, flocculation, sedimentation, and filtration conditions for removal of cyanobacteria and their metabolites.

Go to Report or www.waterrf.org

From Journals

USEPA's 2015 Drinking Water Infrastructure Needs Survey. Job, C., and **Barles**, R., 2015. *Journal American Water Works Association,* 107(6), 84-86.

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A Data Management and Publication Workflow for a Large-Scale, Heterogeneous Sensor Network. Jones, A. S., et al., 2015. *Environmental Monitoring and Assessment,* 187(6).

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A Comparison of Iodinated Trihalomethane Formation From Chlorine, Chlorine Dioxide and Potassium Permanganate Oxidation Processes. Zhang, T. Y., et al, 2015. *Water Research,* 68, 394-403.

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Reliability Analysis of Nutrient Removal From Stormwater Runoff With Green Sorption Media Under Varying Influent Conditions. Jones, J., et al., 2015. *Science of the Total Environment,* 502, 434-447.

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Degradation and Mineralization of Bisphenol a (BPA) in Aqueous Solution Using Advanced Oxidation Processes: UV/H2O2 and UV/S2O82- Oxidation Systems. Sharma, J., et al., 2015. *Journal of Environmental Management,* 156, 266-275.

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Comparison of Filter Media Materials for Heavy Metal Removal From Urban Stormwater Runoff Using Biofiltration Systems. Lim, H. S., et al., 2015. *Journal of Environmental Management,* 147, 24-33.

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Analysis of Radium-226 in High Salinity Wastewater From Unconventional Gas Extraction by Inductively Coupled Plasma-Mass Spectrometry. Zhang, T.Y., et al., 2015. *Environmental Science & Technology,* 49(5), 2969-2976.

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Characterizing Phosphorus Speciation of Chesapeake Bay Sediments Using Chemical Extraction, P-31 NMR, and X-Ray Absorption Fine Structure Spectroscopy. Li, W., et al., 2015. *Environmental Science & Technology,* 49(1), 203-211.

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Recent Water Research

Identification of Some Factors Affecting Pharmaceutical Active Compounds (PhACs) Removal in Real Wastewater. Case Study of Fungal Treatment of Reverse Osmosis Concentrate. Badia-Fabregat, M., et al., 2015. *Journal of Hazardous Materials,* 283, 663-671.

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Cellulose Nanomaterials in Water Treatment Technologies. Carpenter, A.W., et al., 2015. *Environmental Science & Technology,* 49(9), 5277-5287.

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Destruction of Microcystins (Cyanotoxins) by UV-254 nm-Based Direct Photolysis and Advanced Oxidation Processes (AOPs): Influence of Variable Amino Acids on the Degradation Kinetics and Reaction Mechanisms. He, X.X., et al., 2015. *Water Research,* 74, 227-238.

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Effect of Fulvic Acid on Adsorptive Removal of Cr(VI) and As(V) From Groundwater by Iron Oxide-Based Adsorbents. Uwamariya, V., et al., 2015. *Water Air and Soil Pollution,* 226(6).

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Modeling Nitrate Removal in a Denitrification Bed. Ghane, E., et al., 2015. *Water Research,* 71, 294-305.

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Absence of a Priming Effect on Dissolved Organic Carbon Degradation in Lake Water. Catalan, N., Kellerman, et al., 2015. *Limnology and Oceanography,* 60(1), 159-168.

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Enhanced Coagulation With Powdered Activated Carbon or MIEX (R) Secondary Treatment: A Comparison of Disinfection By-Product Formation and Precursor Removal. Watson, K., et al., 2015. *Water Research,* 68, 454-466.

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Microbial Mats as a Biological Treatment Approach for Saline Wastewaters: The Case of Produced Water From Hydraulic Fracturing. Akyon, B., et al., 2015. *Environmental Science & Technology,* 49(10), 6172-6180.

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Rapid Quantification of Viable Legionella in Nuclear Cooling Tower Waters Using Filter Cultivation, Fluorescent in Situ Hybridization and Solid-Phase Cytometry. Baudart, J., et al., 2015. *Journal of Applied Microbiology,* 118(5), 1238-1249.

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Enhanced Biodegradability of Pharmaceuticals and Personal Care Products by Ionizing Radiation. Kim, H.Y., et al., 2015. *Water Environment Research,* 87(4), 321-325.

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Evaluating Fluorescence Spectroscopy as a Tool to Characterize Cyanobacteria Intracellular Organic Matter Upon Simulated Release and Oxidation in Natural Water. Korak, J. A., et al., 2015. *Water Research,* 68, 432-443.

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Controlling the Formation of Nitrosamines. Krasner, S., et al., 2015. *Advances in Water Research,* 25(2), 12-14.

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The Adsorption of Pharmaceutically Active Compounds From Aqueous Solutions Onto Activated Carbons. Rakic, V., et al., 2015. *Journal of Hazardous Materials,* 282, 141-149.

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Microbial Capacitive Desalination for Integrated Organic Matter and Salt Removal and Energy Production From Unconventional Natural Gas Produced Water. Forrestal, C., et al., 2015. *Environmental Science: Water Research & Technology,* 1, 47-55.

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Assessment of a 3D Hydrostatic Model (POM). Nekouee, N., et al., 2015. *Water Air and Soil Pollution,* 226(7).

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Nanofiltration Across Defect-Sealed Nanoporous Monolayer Graphene. O'Hern, S.C., et al., 2015. *Nano Letters,* 15(5), 3254–3260.

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Induced Genotoxicity in Nitrate-Rich Water Treated With Medium-Pressure Ultraviolet Processes. Martijn, B.J., et al., 2015. *Journal American Water Works Association,* 107(6), E301-E312.

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Temperature Diagnostic to Identify High Risk Areas and Optimize *Legionella pneumophila* Surveillance in Hot Water Distribution Systems. Bedard, E., et al., 2015. *Water Research,* 71, 244-256.

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Zebra Mussels *(Dreissena polymorpha*) as a Biomonitor of Trace Elements Along the Southern Shoreline of Lake Michigan. Shoults-Wilson, W.A., et al., 2015. *Environmental Toxicology and Chemistry,* 34(2), 412-419.

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Hexavalent Chromium Removal Through Conventional Filtration Treatment Processes. Liang, S. and Maceiko, S.M., 2015. *Journal American Water Works Association,* 107(4), E210-E223.

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Cointegration VAR and VECM and ARIMAX Econometric Approaches for Water Quality Variates. Ghulam, A., 2015. *Journal of Statistical and Econometric Methods,* 4(1), 1-38.

Go to Article or www.scienpress.com/

Accelerating Cost-Effective Green Stormwater Infrastructure: Learning From Local Implementation. Nylen, N.G, and Kiparsky, M., 2015. *Center for Law, Energy & the Environment, U.C. Berkeley School of Law,* Identifies actions to encourage data collection and information sharing; also recommends learning from local implementation to encourage cost-effective deployment.

Go to Report or www.law.berkeley.edu

Stepwise Information-Filtering Tool (Sift): A Method for Using Risk Assessment Metadata in a Nontraditional Way. Beasley, A., et al., 2015. *Environmental Toxicology and Chemistry,* 34(6), 1436-1442.

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Recent and Upcoming Meetings

RECENT:

Desaltech 2015. August 28-29, 2015 in San Diego, CA.

Go to Meeting Page or www.nwri-usa.org/

30th Annual WateReuse Symposium. September 13-16, 2015 in Seattle, WA.

Go to Meeting Page or www.watereuse.org

WEFTEC 2015. September 26-30, 2015 in Chicago, IL.

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World Water-Tech North America. October 6-8, 2015 in Toronto, ONT.

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Water Smart Innovations 2015. October 7-9, 2015 in Las Vegas, NV.

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UPCOMING:

Water Quality Technology Conference® & Exposition. November 15-19, 2015 in Salt Lake City, UT.

Go to Meeting Page or www.awwa.org

North American Water Loss 2015: Advancing Policies, Tools and Technologies. December 8-9, 2015 in Atlanta, GA.

Go to Meeting Page or www.allianceforwaterefficiency.org

Ecological Systems Approach to Protect and Restore Sustainable Water Quality and Water Quantity on a Watershed Basis

From EPA

EPA'S REPORT ON THE ENVIRONMENT (ROE) - *Exclusively on the Web*

The ROE is an interactive resource that presents the best available indicators of national trends in five theme areas of interest to EPA: Air, Water, Land, Human Exposure and Health, and Ecological Condition. 85 ROE indicators address 23 questions within these theme areas. Visit this dynamic tool and use the multi-colored navigation bar at the top of every ROE Web page to explore themes, associated questions, and indicators that help answer these questions.

EPA National Water Program Releases 2014 Highlights of Progress: Responses to Climate Change by the National Water Program. EPA-850-R-15-001. Accomplishments in program areas: water infrastructure; watersheds and wetlands; coastal and ocean waters; water quality; working with Tribes.

Go to Report or www2.epa.gov/climate-change-water-sector

Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence. EPA-600-R-14-475F. Summarizes current understanding of connectivity and how streams and wetlands affect physical, chemical, and biological integrity of downstream waters.

Go to Report or www.epa.gov/ncea/

From Collaborators

Third Report on Federally Funded Ocean Acidification Research and Monitoring Activities. Committee on Environment, Natural Resources, and Sustainability of the National Science and Technology Council, 2015. Summary of recent research and strategic plan for ongoing federal research.

Go to Report or www.whitehouse.gov

USGS – Understanding Nutrients in the Chesapeake Bay Watershed and Implications for Management and Restoration: The Eastern Shore. Ator, S.W., and Denver, J.M., 2015. USGS Circular 1406. Identifies sources of nitrogen and phosphorus on the Eastern Shore and their presence in groundwater and surface waters.

Go to Report

USGS – Occurrence and Distribution of Fecal Indicator Bacteria and Gene Markers of Pathogenic Bacteria in Great Lakes Tributaries, March-October 2011. Brennan, A.K., et al., 2015. USGS Open-File Report 2015–1013. Studied pathogen gene markers (using PCR) and FIB densities (using membrane filtration and serial dilution) in 22 Great Lakes tributaries.

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USGS – Sediment Transport and Capacity Change in Three Reservoirs, Lower Susquehanna River Basin, Pennsylvania and Maryland, 1900-2012. Langland, M.J., 2015. USGS Open-File Report 2014–1235. Sediment loads were greatest in early to mid-1900s when land disturbance activities from coal production and agriculture peaked; loads declined in the 1950s with soil conservation practices; loads were dominated by climatic factors in the 1960s (drought) and 1970s (very wet); declining since the 1980s through 2012.

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USGS – Oil-Particle Interactions and Submergence From Crude Oil Spills in Marine and Freshwater Environments: Review of the Science and Future Research Needs. Fitzpatrick, F.A., et al., 2015. USGS Open-File Report 2015–1076. Identifies need for methods to detect and quantify presence of OPAs and understand effects on containment, recovery.

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Recent Water Research

USGS – Nutrient Attenuation in Rivers and Streams, Puget Sound Basin, Washington. Sheibley, R.W., et al., 2015. USGS Scientific Investigations Report 2015–5074. Identifies themes on instream attenuation of nutrients in Puget Sound; results explained in terms of 4 factors of attenuation: sinuosity, channel slope, specific discharge, and uptake velocity (vf) of reach.

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NRC – Review of the Everglades Aquifer Storage and Recovery Regional Study. 2015. Comprehensive Everglades Restoration Plan (CERP), launched in 2000, is state-federal effort to reverse decline of Everglades ecosystem; includes drilling over 330 aquifer storage and recovery (ASR) wells to store water for dry periods.

Go to Report or www.nap.edu

NOAA, Federal Partners Design 'Early Warning System' for Freshwater Toxic Algal Blooms. 2015. NOAA, NASA, USEPA, and USGS developing early warning system for algal blooms using satellite data; improving understanding of causes and health effects of cyanobacteria and phytoplankton blooms.

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Water Offset Policies for Water-Neutral Community Growth: A Literature Review and Case Study Compilation. Christiansen, B., 2015. Informational first phase by collaborative to support sustainable community growth; seeking additional pilot/partner communities to participate in water offset program.

Go to Report or www.allianceforwaterefficiency.org

From Journals

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