MASIH BARI, PHD, PE

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EXPERT WITNESS | WATER RESOURCES, HYDROLOGY AND ENVIRONMENTAL SYSTEMS

Dr. Masih Bari, PE (formerly Akhbari) is a Civil and Environmental Engineer with over 20 years of experience in water resources, hydrology, hydraulics, stormwater, groundwater, and environmental compliance. He has been retained as an expert in groundwater, hydrology, surface-water transport, water-quality, and regulatory matters, with experience providing sworn testimony, preparing expert reports and rebuttals, evaluating opposing expert analyses, and supporting counsel in complex environmental litigation. His engineering practice includes stormwater BMPs, drainage and infiltration systems, hydrologic and hydraulic modeling, water-quality analysis, and independent technical review of public infrastructure.

EXPERT WITNESS DESIGNATION & ENGAGEMENTS

Retained Lead Expert – Hydrology & Water Resources
Confidential Water Resources & Environmental Litigation Matter, Nevada 2026–Present

- Retained as lead expert to evaluate hydrologic, hydraulic, and water-quality issues associated with an alleged discharge and downstream receiving-water impacts.
- Evaluating discharge characteristics, stormwater conveyance and flow pathways, hydrologic connectivity, downstream transport, and receiving-water conditions.
- Reviewing engineering records, monitoring data, technical analyses, and regulatory information in support of independent expert opinions.
- Leading and coordinating multidisciplinary technical review involving hydrology, water resources, and environmental/water-quality expertise.
- Supporting counsel in development of technically defensible expert analyses and opinions.

Retained Testifying Expert – Groundwater Litigation
Equus Beds Groundwater Management District #2 vs. City of Wichita (Kansas) Jan 2019 – Mar 2020

- Retained as expert in groundwater litigation involving aquifer management and regulatory compliance
- Evaluated groundwater simulation models for technical validity, assumptions, and regulatory implications
- Analyzed Aquifer Storage and Recovery (ASR) permit modification in context of model outputs and legal standards
- Authored expert report and rebuttal addressing opposing expert opinions
- Provided sworn testimony before the Kansas Division of Water Resources
- Supported legal counsel in developing technically defensible case strategy

AREAS OF EXPERTISE

Expert Witness & Litigation

- Expert reports and rebuttals
- Evaluation of opposing expert analyses
- Deposition and trial preparation
- Attorney–client privileged technical analysis

Technical Expertise

- Hydrologic and hydraulic modeling
- Groundwater systems and water supply analysis
- Water quality and mixing zone modeling
- Regulatory frameworks (NPDES, SGMA, Title 22)

PROFESSIONAL EXPERIENCE

The Bari Consulting Inc., Founder & Principal, Santa Monica, CA Jun 2025 – Present

Founded and lead a specialized water resources and environmental consulting practice providing expert witness, litigation support, technical advisory, and engineering services to legal, public-sector, and private clients.

- Perform independent technical review of engineering analyses, models, monitoring data, design assumptions, and regulatory documentation.

- Evaluate hydrologic and hydraulic systems, stormwater BMPs, drainage and infiltration infrastructure, wet-weather flow, and water-quality issues.
- Advise attorneys, public agencies, and engineering teams on technical defensibility, regulatory compliance, risk, and infrastructure planning.
- Lead multidisciplinary technical assignments and coordinate specialized engineering and environmental expertise.

AtkinsRéalis, Senior Engineer II, Los Angeles, CA Jul 2022 – Aug 2025

- Served as Project Manager and Deputy Program Manager on water infrastructure and environmental compliance initiatives, with a focus on technical oversight, regulatory alignment, and multidisciplinary coordination.
- Evaluated hydrologic and hydraulic modeling results including flow distribution, velocities, flood extents, water surface elevations to ensure technical consistency and defensibility
- Evaluated engineering assumptions for regulatory defensibility and technical consistency
- Contributed to management of concurrent projects, aligning technical teams, client priorities and delivery schedules
- Supported delivery of design programs exceeding $100M in construction value
- Coordinated multidisciplinary teams, subconsultants, and client stakeholders
- Delivered technical findings at national industry conferences (e.g. CASQA, WEFTech, StormCon)

Cordoba Corporation, Hydrology and Hydraulics Engineer, Los Angeles, CA June 2021 – July 2022

- Supported water infrastructure and stormwater projects focusing on regulatory compliance and technical analysis
- Contributed to proposal development, client engagement, and project delivery
- Provided project management support for major municipal programs including Title 22 Engineering Reports
- Evaluated compliance alternatives for an oil company site closure, aligning technical work with regulatory risk management under attorney-client privilege.

PROJECT ENGINEER II, Larry Walker Associates, Santa Monica, CA July 2018 – June 2021

- Developed mixing zone and dilution modeling analyses for wastewater discharge compliance and permit renewal
- Supported NPDES permit compliance and reissuance efforts for multiple utilities
- Contributed to development of Groundwater Sustainability Plans under Sustainable Groundwater Management Act
- Prepared Risk and Resiliency Assessment reports in accordance with America's Water Infrastructure Act (AWIA)
- Led technical evaluation of municipal water supply alternatives, including regulatory and feasibility considerations

SENIOR WATER RESOURCES ENGINEER, RTI International, Fort Collins, CO June 2015 – April 2018

- Led hydrologic modeling and simulation efforts for major water resources projects
- Developed reservoir simulation models and forecasting tools
- Supported proposal development and technical project execution

SELECTED PROJECT EXPERIENCE

Pure Water Los Angeles – Hyperion Inflow & Infiltration (I&I) Assessment, Los Angeles Sanitation Bureau (2026–Present)

Technical Lead / Water Resources Advisor

- Leading a technical assessment of I&I and wet-weather flow contributions to one of the nation's largest municipal wastewater collection and treatment systems.
- Reviewing historical storm events, hydraulic modeling, monitoring data, collection-system records, and prior engineering studies to evaluate flow sources, pathways, system response, and limitations of the available evidence.
- Evaluating potential I&I mechanisms and their relationship to peak wet-weather flow, hydraulic loading, system capacity, and treatment-plant operations.
- Assessing existing data and analytical limitations and developing a defensible technical framework for future I&I characterization and quantification.
- Evaluating operational, infrastructure, monitoring, and management considerations for improving wet-weather system resiliency and supporting long-term infrastructure planning.

Lower Las Vegas Wash Stabilization Program – Southern Nevada Water Authority (2022–2025)

Project Manager / Assistant Program Manager

- Managed scope, budget, and multidisciplinary coordination for large-scale erosion control and water quality program
- Led definition and evaluation of ~24 technical alternatives considering feasibility, constructability, and capital constraints

- Supported program optimization reducing potential construction costs while maintaining core objectives

Wilmington Q Street Local Area Urban Flow Management – Los Angeles Bureau of Engineering (2023–2025)
Deputy Project Manager

- Managed scope, schedule, and coordination for a stormwater capture and infiltration project under Safe Clean Water Program
- Reviewed hydrologic/hydraulic analyses supporting NPDES compliance in the Dominguez Channel watershed
- Coordinated with client, subconsultants, and stakeholders on technical deliverables and design integration

Attorney-Client Privileged – PFAS / Site Evaluation, Southern California (2021–2022)
Technical Advisor

- Conducted technical and regulatory evaluation of potential contamination and compliance pathways under privilege
- Reviewed hydrogeologic data, risk considerations, and regulatory frameworks to support legal strategy

MacArthur Lake Stormwater Capture Project – Los Angeles Sanitation & Environment (2021–2022)
Assistant Project Manager

- Supported hydrologic analysis, technical memoranda, and preliminary design documentation
- Performed QA/QC on engineering deliverables and coordinated multidisciplinary teams
- Contributed to regulatory compliance strategy and stormwater capture planning

Mixing Zone & Dilution Studies – EBDA, EBMUD, Delta Diablo, SASM (2019–2021)
Lead Modeler

- Conducted near-field dilution modeling (CORMIX) to support NPDES permit compliance and reissuance
- Evaluated discharge scenarios and interpreted results for Regional Water Board decision-making
- Supported development of effluent limitations and compliance strategies for multiple utilities

Groundwater Sustainability Plans (GSP) – Multiple Basins, California (2018–2021)
Technical Lead / Analyst

- Performed hydrologic, statistical, and groundwater quality analyses supporting GSP development
- Developed 50-year implementation roadmaps and sustainability criteria
- Supported stakeholder engagement, regulatory alignment, and technical report preparation

EDUCATION

Ph.D., Civil and Environmental Engineering, Colorado State University 2012
Distinguished International Presidential Fellow

M.S., Civil and Environmental Engineering, Amirkabir University of Technology (Tehran Polytechnic) 2005

B.S. in Civil Engineering, Islamic Azad University 2002

PUBLICATIONS & PRESENTATIONS

BOOKS

Karamouz, M., A. Ahmadi, and M. Akhbari, 2020. "Second Edition: Groundwater Hydrology: Engineering, Planning, and Management" CRC Press, Boca Raton, FL.

Karamouz, M., A. Ahmadi, and M. Akhbari, 2011. "Groundwater Hydrology: Engineering, Planning, and Management," CRC Press, Boca Raton, FL.

Karamouz, M., A. Ahmadi, and M. Akhbari, 2011. "Solution Manual - Groundwater Hydrology: Engineering, Planning, & Management," CRC Press, Boca Raton, FL.

Selected Peer Reviewed Publications

Islami, I., Sadoddin, A., Asgharpour Masoule, A., and M. Akhbari 2017, "Modeling socio-ecological structure of stakeholders' participation in managing livestock drinking water using the agent-based approach," Applied Ecology and Environmental Research, DOI: http://dx.doi.org/10.15666/aeer/1503_11731192.

Farhadi, S., Nikoo, M., Rakhshanderoo, G., Akhbari, M., and M.R. Alizadeh 2016, "An Agent-based-Nash Modeling Framework for Sustainable Groundwater Management: A Case Study," Journal of Agricultural Water Management, DOI: 10.1016/j.agwat.2016.08.018

Akhbari, M. and N. S. Grigg 2015, "Managing Water Resources Conflicts: Modelling Behavior in a Decision Tool," Journal of Water Resources Management, Springer, Vol. 29, Issue 14, Page 5201-5216 DOI: 10.1007/s11269-015-1113-9.

Akhbari, M. and N. S. Grigg 2014. "Water Management Tradeoffs between Agriculture and the Environment: A Multi-objective Approach and Application," Journal of Irrigation and Drainage Eng., ASCE, Vol. 140, Issue 8, DOI: 10.1061/(ASCE)IR.1943-4774.0000737.

Akhbari, M. and N. S. Grigg 2013. "A Framework for an Agent-Based Model to Manage Water Resources Conflicts," Journal of Water Resources Management, Springer, Vol. 27, Issue 11, pp. 4039-4052, DOI: 10.1007/s11269-013-0394-0.

Karamouz, M., M. Akhbari, and A. Moridi, 2011. "Resolving Disputes over Reservoir-River Operation," J. of Irrigation and Drainage Engineering, ASCE, Vol. 137, No. 5, pp. 327-339, DOI: 10.1061/(ASCE)IR.1943-4774.0000292.

Karamouz, M., Kerachian, R., M. Akhbari, and B. Haafez 2009. "Design of river water quality monitoring networks: a case study," J. of Env. Modeling and Assessment, Springers, 14(6), pp. 705-714, DOI: 10.1007/s10666-008-9172-4

Karamouz, M., M. Akhbari, R. Kerachian, and A. Moridi 2006. "A System Dynamics-Based Conflict Resolution Model for River Water Quality Management," Iranian Journal of Environmental Health Science and Engineering, Vol 3, No. 3, pages 147-160.

Selected Reports and White Papers

Akhbari, M., Smith, MLou 2016. "Case Studies Highlighting Challenges and Opportunities for Agricultural Water Conservation in the Colorado River Basin," Colorado Water Institute, Special Report No. 27. Available at: http://cwi.colostate.edu/publications/SR/27.pdf

Akhbari, M., Grigg, N. S., and R. Waskom 2014. "Background Paper for the Nexus Workshop: U.S. Perspective on the Water-Energy-Food Nexus," The Nexus Dialogue on Water Infrastructure Solutions Meeting, Golden, Colorado, June 23-24, 2014. Available at: http://www.cwi.colostate.edu/workshops/NEXUS2014/Background.aspx

Akhbari, M., Childress, A. Averyt, K., Barton, J., Bellamy, B., Belt, R., Chartrand, L., Cohen, M., Gilroy, K., Grigg, N., Harto, C., Holzfaster, J., Kryc, K., Laituri, M., Lineberger, J., MacDonnell, L., Macknick, J., Marshall, Z., Radtke, J., Spang, E., Tellenhuisen, S., Tidwell, V., Waskom, R. 2014. "Report from the U.S. Nexus Workshop — Water, Energy, and Food: Mutual Security through a Nexus Approach," in U.S. Perspective on the Water-Energy-Food Nexus, Colorado Water Institute, Information Series No. 116. Available at: http://www.cwi.colostate.edu/workshops/NEXUS2014/Report.aspx

Viers, JH, Rheinheimer, D., Akhbari, M., Peek, R., Yarnell, S., Null, S. 2013. "Considering climate change for hydropower relicensing." Public Interest Energy Research Program White Paper. Prepared for the California Energy Commission.

Selected Talks and Presentations

Bari, M., Peternal, K., and C. Barlow 2024, "A Practical Approach to Obtain a Groundwater Discharge Permit in Support of the Lower Las Vegas Wash Stabilization Project," Nevada Water Resources Association (NWRA), Las Vegas, NV.

Bari, M., Wilkinson, M., and A. Marquez 2024, "Lower Las Vegas Wash Stabilization: An Erosion Control and Flood Mitigation Program for Infrastructure Protection," StormCon, Reno, NV.

Bari, M. 2023, "Stormwater Capture to Enhance Water Resiliency and Sustainability In Southern California, " California Stormwater Quality Association (CASQA) Annual Conference, San Diego, CA.

Akhbari, M., Smith, MLou and R. Waskom 2015, "Saving Agricultural Water in the Colorado River Basin: Drivers and Challenges," American Water Res. Association (AWRA) Annual Conference on Water Resources.

Akhbari, M. 2015 (Invited), Systemic Approaches in Planning and Management of Water, Energy, and Food Resources: Employing Agent-Based Modeling as a Supporting Tool, Shiraz University, Shiraz, Iran.

Akhbari, M., Grigg, N. S., and R. Waskom 2014. "Water-Energy-Food Nexus: Compelling Issues for Geophysical Research," 2014 American Geophysical Union Fall Meeting, San Francisco, California.

Waskom, R., Grigg, N.S., Akhbari, M. 2014. "Report from the U.S. — Water Energy Food Nexus Workshop," 2014 World Water Week, Stockholm, Sweden.

Akhbari, M. (2014), "California Bay-Delta Program," The Nexus Dialogue on Water Infrastructure Solutions Meeting, Golden, Colorado, June 23-24, 2014.

Akhbari, M. and N. S. Grigg 2011. "Conflicts over Water Quality Management in Sacramento-San Joaquin Delta," AGU Hydrology Days, Colorado State University, Fort Collins, Colorado.