

Barbara Butler, Environmental Engineer in EPA's National Risk Management Research Laboratory

Land and Materials Management Division

[Mailing Address](#)

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Areas of Expertise: Water quality sampling and analysis, and mitigation and remediation of inorganics (metals, metalloids, non-metals) from industrial activities, primarily mining. Commonly my work involves evaluating potential treatment technologies or methods for suitability in treating or mitigating mine drainage originating from mine workings or mining wastes based on site-specific characteristics as compared to a method's or technology's capability. Technologies evaluated include those that are active (i.e., require constant human intervention) and passive/semi-passive (i.e., less frequent human intervention), conventional and innovative. Research has included laboratory studies to understand the behavior of metals associated with mining-influenced streambed sediments when placed under conditions differing from their current environment (e.g., mimicking disposal, mimicking removal of mine water inputs) to aid in deciding how to manage metals-laden streambed sediments when remediating mining-influenced watersheds. Recently I have begun researching technologies for source control of mining wastes. I am also interested in the development and application of technologies for recovery of resources from treatment residuals and mining wastes or the beneficial reuse of these materials.

Select Publications:

Butler, B.A. and Ford, R.G., 2018. [Evaluating relationships between total dissolved solids \(TDS\) and total suspended solids \(TSS\) in a mining-influenced watershed](#). *Mine Water and the Environment*, 37:18-30.

Pinto, P.X., Al-Abed, S.R., Balz, D.A., **Butler, B.A.**, Landy, R.B, and Smith, S.J., 2016. [Bench-scale and pilot-scale treatment technologies for the removal of total dissolved solids from coal mine water: a review](#). *Mine Water and the Environment*, 35:94-112.

Butler, B.A., 2014, [Pilot-scale treatment of Virginia Canyon mine drainage in Idaho Springs, Colorado, USA using Octolig®](#). EPA 600-R-14-249. National Risk Management Research Laboratory, Cincinnati, OH.

Butler, B.A., 2014. [Appendix I: Conventional Water Quality Mitigation Practices for Mine Design, Construction, Operation, and Closure](#). In: *An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska. Final Report*. EPA 910-R-14-001A-C. Washington, DC.

Butler, B.A., Smith, M.E., Reisman, D.J., and Lazorchak, J.M., 2011. [Metal removal efficiency and ecotoxicological assessment of field-scale passive treatment biochemical reactors \(BCRs\)](#). *Environmental Toxicology and Chemistry*, 30(2):385-392.

Butler, B.A. 2011. [Effect of imposed anaerobic conditions on metals release from acid-mine drainage contaminated streambed sediments.](#) *Water Research*, 45(1):328-336.

View more research publications by [Barbara Butler](#).

Education:

- Ph.D., Colorado School of Mines, Golden, CO; Environmental Science and Engineering, Chemistry (minor), 2005
- M.S., Colorado School of Mines, Golden, CO; Environmental Science and Engineering, 1997
- B.S., University of Colorado at Colorado Springs, CO; Chemistry, 1996

Professional Experience:

Workgroup/Project Leads

- SHC StRAP 2019-2022: participating in development of research needs and outputs associated with mining
- SSWR StRAP 2016-2019: Co-lead for writing team Project 1.3 (Protecting water while developing energy and mineral resources)
- SSWR StRAP 2012-2016: Team member for development of Project 2.4 (Mitigating impacts of subsurface land use practices), Project Lead, Task Lead, and Researcher

Committees and Board Memberships

- Member EPA Response Corps (2009 – present)
- President Cincinnati Federal Chapter of Sigma Xi (2013-2014); Vice-President (2011-2013); Treasurer/Secretary (2009 – 2011)
- Co-Founder and Co-Chair of the Network of Cincinnati EPA Trainees – an organization to facilitate networking and training amongst postdoctoral and student researchers in the agency (2007 – 2009)
- Peer-reviewer for Springer, Elsevier, ACS, SETAC, ASMR
- Volunteer and planning committee member for Earth Week and Earth Day events with the EPA in Cincinnati (2007 – 2009)

Awards and Honors

- Award from OLEM for technical support (2017)
- EPA National Honor Awards: Gold Medal for Exceptional Service – Team (2014)
- ORD Honor Award: Exceptional/Outstanding ORD Technical Assistance to the Regions or Program Offices - Team (2014)
- ORD Honor Award: Bronze Medal for Commendable Service (2014)
- USEPA Scientific and Technological Achievement Award (STAA) Honorable Mention (2013)
- ORD Honor Awards: Bronze Medal for Commendable Service (2012)
- Spirit of Interdependence Award [contract's office for excellence in teamwork] (2010)