Curriculum Vitae

David L. Naftz

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University Degrees/Professional Certifications

Ph.D., 1993, Geochemistry, Colorado School of Mines
M.S., 1982, Geochemistry, Colorado School of Mines
B.S., 1980, Geology, University of Southern Colorado
Licensed Professional Geologist (State of Utah)

USGS Position

Research Hydrologist/Water-Quality Specialist ● GS-15 ● Utah Water Science Center
Adjunct Faculty, Utah State University, Department of Aquatic, Watershed, and Earth Resources
Adjunct Faculty, University of Utah, Department of Geology and Geophysics

Awards and Honors

Invited lecturer, USGS National seminar series (2006)
Outstanding USGS Science Contributions (2004)
USDOI Star awards (1997) (1998) (2002-2 awards) (2003-2 awards) (2004) (2006)
USGS/Utah District Author of the Year (1996)
USGS Outstanding Performance Awards (1990) (1992) (1993) (1994) (1995)
Best Paper Award (1993) American Association of Petroleum Geologists
USGS Graduate Training Program (1990-91)
USGS Quality Step Increases (1987) (1988) (2001)
Outstanding Graduate Teaching Assistant (1982) Colorado School of Mines
Summer Internship (1980) Lunar and Planetary Institute, Johnson Space Center
Outstanding Student Award (1980) Rocky Mountain Association of Geologists

Graduate Courses Taught

Aqueous geochemistry for engineers and scientists, Univ. of Utah (2005/2007)

Patents Held

United States Patent No. US 6,428,695 B1, August 6, 2002
Aquifer remediation barrier for removal of inorganic contaminants

United States Patent No. 6,458,271 B1, October 1, 2002
Deep aquifer remediation system

Official USGS International Travel

Tashkent, Uzbekistan (September 1996)
Kangerlussuaq, Greenland (August 2001)
EAWAG, Zurich, Switzerland (June 2005)
EGU, Vienna, Austria (April 2006)
WRI, Kunming, China (August 2007)
EGU, Vienna, Austria (April 2008)

USGS Projects

Coal-Spoil Geochemistry (1984-85)
Upper Colorado River Regional Aquifer System Analysis (1984-87)
Reservoir Trace-Element Mobility Assessment (1987-89)
Irrigation Drainage Biogeochemistry (1988-91)
Wind River Range Ice Coring (1988-2005)
Pattern-Recognition Modeling of Selenium-Producing Areas (1992-96)
Using Environmental Isotopes to Identify Salinity Sources (1992-95)
Coal-Bed Methane (1995-1998)
Field Demonstration of Chemical Barriers to Remove Contaminants from Water (1996-present)
Deep Aquifer Remediation Tool (DART)--Technology Development (1996-2000)
Surface Complexation Modeling of Uranium Transport--Field Demonstration (1998-2001)
Passive Remediation of a Selenium-Contaminated Wetland (2000-2006)

Selenium and Salinity Remediation in the Ashley Creek Area, Utah (2000-2004)
Impacts of Explosives Used for Avalanche Control on Snow Chemistry (2000-2003)
Trace Element and Nutrient Cycling in Great Salt Lake, Utah (2000-present)
Geochemical characterization of abandoned mine lands in Utah (2004-present)
Off-site impacts from an active uranium mill site (2007-present)
Mercury input from wetland complexes surrounding Great Salt Lake (2007-present)

Recent Accomplishments and Publications

Naftz, D.L., Fuller, C.C., Davis, J.A., Morrison, S.J., Feltcorn, E.M., Rowland, R.C., Freethey, G.W., Wilkowske, C., and Piana, M., 2002, Field Demonstration of Three Permeable Reactive Barriers to Control Uranium Contamination in Groundwater, Fry Canyon, Utah, USA, in ***Naftz, D.L****., Morrison, S.J., Davis, J.A., and Fuller, C.C. eds., Handbook of Groundwater Remediation Using Permeable Reactive Barriers: Applications to Radionuclides, Trace Metals, and Nutrients, Academic Press, New York, New York, p. 401-434.*

This handbook was the first book devoted to PRBs utilized for the remediation of inorganic contaminants, mostly in the western United States. In addition to assuming the leadership role in organizing and editing this book, I also authored or co-authored 4 of the 17 chapters in the book that were associated with a USEPA funded demonstration project. The information contained in this book has been critical in assessing the long-term cost effectiveness of PRBs for inorganic contaminant removal throughout the United States and Canada.

Naftz, D.L., Susong, D.D., Schuster, P.F., Cecil, L.D., Dettinger, M.D., Michel, R.L., and Kendall, C., 2002, Ice-core evidence of rapid air temperature increases since 1960 in alpine areas of the Wind River Range, Wyoming, United States: Journal of Geophysical Research, vol. 107, no D13, doi: 10.1029/2001JD000621.

This paper provides significant progress relative to our paper published in 1996 (Little Ice Age evidence from a south-central North American ice core, U.S.A). Using stable isotopes from ice core collected from over 13,000 feet in the Wind River Range of Wyoming, this paper has provided some compelling evidence that higher elevation areas in the western United States may be warming at faster rates.

Naftz, D.L., Yahnke, J., Miller, J., and Noyes, S., 2005, Selenium mobilization during a flood experiment in a contaminated wetland: Stewart Lake Waterfowl Management Area, Utah: Applied Geochemistry, vol. 20, p. 569-585.

The results of this field-based research and associated modeling was used by the Bureau of Reclamation to develop a remediation and operating plan for this critical backwater habitat for endangered fish along Green River, Utah. This provided a much more cost effective remediation alternative than movement and storage of the contaminated soils and is applicable to other Se-contaminated wetland sites in the western United States.

Naftz, D.L., Bullen, T.D., Stolp, B.J., Wilkowske, C.D., 2008, Utilizing geochemical, hydrologic, and boron isotopic data to assess the success of a salinity and selenium remediation project, Upper Colorado River Basin: Science of the Total Environment, vol. 392, p. 1-11.

This paper provided scientific documentation on the success of a multi-million dollar salinity reduction project in the Upper Colorado River Basin by the Bureau of Reclamation and the U.S. Environmental Protection Agency. In addition to documenting this successful reclamation effort, the paper also explained how isotopic tracers could be utilized to document similar remediation efforts at other locations.

Naftz, D.L., Angeroth, C., Kenney, T., Waddell, B., Darnall, N., Silva, S., Perschon, C., and Whitehead, J., 2008, Anthropogenic influences on the input and biogeochemical cycling of nutrients and mercury in Great Salt Lake, Utah, USA: Applied Geochemistry, vol. 23, p. 1731-1744.

This paper documents the influence of nutrients and mercury on the biota of Great Salt Lake, an area of hemispheric importance to migratory waterfowl as well as the brine shrimp aquaculture industry. Our discovery of elevated levels of methyl mercury in this area of the Great Basin resulted in the first ever human consumption warning for ducks issued in the United States. Multiple spin-off projects have resulted from our work, including projects funded by the State of Utah and USEPA.