

## Dr. Victor M. Heilweil

### Education

B.S., Geology, Duke University, 1984

M.E. Geotechnical Engineering, University of Utah, 1989

Ph.D. Hydrogeology, University of Utah, 2003

### Professional Experience

Research Hydrologist, U.S. Geological Survey, Salt Lake City, UT, 2005-present

Groundwater Specialist, U.S. Geological Survey, Salt Lake City, UT, 2002-present

Hydrologist, U.S. Geological Survey, Salt Lake City, UT, 1988 - 2005

### Short description

Vic Heilweil is a Research Hydrologist and the Ground Water Specialist for the USGS Utah Water Science Center. He is currently the senior scientist on several local to regional-scale groundwater studies, with research focused on both natural and managed aquifer recharge to permeable bedrock in arid settings of the western US and abroad. Specialties include applying both dissolved-gas and isotopic tracers, along with multiphase modeling, for evaluating groundwater flow paths, travel times, and water budgets. He currently serves as treasurer for the U.S. National Chapter of the International Association of Hydrogeologists and is an Adjunct Professor at the University of Utah.

### Selected Publications

Heilweil, V.M., and Brooks, L.E., eds., 2011, Conceptual model of the Great Basin Carbonate and Alluvial Aquifer System, U.S. Geological Survey Scientific Investigations Report 2010-5193, 188 p., 2 pls.

Heilweil VM, Marston TM, 2011, Assessment of managed aquifer recharge at Sand Hollow Reservoir, Washington County, Utah, Updated to conditions in 2010, US Geological Survey Scientific Investigations Report (in press).

Heilweil VM, Watt DE, 2011, Trench infiltration for enhancing artificial recharge to fractured sandstone, Hydrological Processes, 25 (1), 141-151.

Heilweil VM, Solomon DK, Gingerich SB, Verstraeten IM, 2009, Oxygen, hydrogen, and helium isotopes for investigating groundwater systems of the Cape Verde Islands, West Africa, Hydrogeology Journal, 17 (5), 1157-1174.

Heilweil VM, Solomon DK, Ortiz G, 2009, Silt and gas accumulation beneath an artificial recharge spreading basin, southwest Utah, USA, Boletín Geológico y Minero, 120 (2) 185-195.

Heilweil VM, Ortiz G, and Susong DD, 2009, Assessment of artificial recharge at Sand Hollow Reservoir, Washington County, Utah, Updated to conditions through 2007, US Geological Survey Scientific Investigations Report 2009-5050, 20 p.

Heilweil VM, McKinney TS, Zhdanov MS, Watt DE, 2007, Controls on the variability of net infiltration to desert sandstone, Water Resources Research, 43, W07431.

- Heilweil VM, Susong DD, and Cram JC, 2007, Reservoir infiltration to fractured sandstone at Sand Hollow, southwestern Utah, USA, in Fox, P., ed., *Management of Aquifer Recharge for Sustainability*, Acacia Publications, Phoenix, Arizona, 475-483.
- Mhamdi R, Heilweil VM, 2007, A quantitative evaluation of the impacts of artificial recharge to the Mornag aquifer system of northern Tunisia, in Fox, P., ed., *Management of Aquifer Recharge for Sustainability*, Acacia Publications, Phoenix, Arizona, 484-493.
- Heilweil VM, Solomon DK, Gardner, PM, 2007, Infiltration and recharge at Sand Hollow, an upland bedrock basin in southwestern Utah, in Stonestrom, Constantz, Ferré, and Leake, S.A., eds., *Ground-water recharge in the arid and semiarid southwestern United States: U.S. Geological Survey Professional Paper 1703-I*, 221-251.
- Heilweil VM, Susong DD, 2007, Assessment of artificial recharge at Sand Hollow Reservoir, Washington County, Utah, Updated to conditions through 2006, U.S. Geological Survey Scientific Investigations Report 2007-5023, 74 p.
- Heilweil VM, Hsieh PA, 2006, Determining anisotropic transmissivity using a simplified Papadopulos Method, *Ground Water*, 44(5), 749-753.
- Heilweil VM, Solomon DK, Gardner PM, 2006, Borehole environmental tracers to evaluate net infiltration and recharge through desert bedrock, *Vadose Zone*, 5, 98-120.
- Heilweil VM, Susong DD, Gardner, PM, Watt DE, 2005, Pre- and post-reservoir ground-water conditions and assessment of artificial recharge at Sand Hollow, Washington County, Utah, 1995-2005, U.S. Geological Survey Scientific Investigations Report 2005-5185, 74 p.
- Heilweil VM, Solomon DK, Ellett KM, Perkins KS, 2004, Gas-partitioning tracer test to quantify trapped gas during recharge, *Ground Water*, 42 (4), 589-600.
- Heilweil VM, Solomon DK, 2004, Millimeter- to kilometer-scale variations in vadose-zone bedrock solutes: Implications for estimating recharge in arid settings, in Phillips, Scanlon, Hogan, eds., *Groundwater Recharge in a Desert Environment: The Southwestern US*, *Water Sci. and Appl.* 9, Am. Geophys. Union, Wash, D.C., 49-67.

## Recent Invited Talks

- Heilweil VM, 2011, The Great Basin Carbonate and Alluvial Aquifer System, Great Basin Water Forum, Ely, Nevada, USA
- Heilweil VM, 2011, Managed aquifer recharge to fractured sandstone, National Water Research Institute Managed Aquifer Recharge Symposium, Irvine, California, USA
- Heilweil VM, 2011, Evaluation of trapped gas clogging during spreading basin recharge, National Water Research Institute Managed Aquifer Recharge Symposium, Irvine, California, USA
- Heilweil VM, 2009, Managed aquifer recharge to fractured sandstone, International Workshop: Artificial Recharge of Groundwater Management, Palma de Mallorca, Spain
- Heilweil VM and Suflita M, 2009, Managed aquifer recharge: Concepts and considerations, Utah Water Users Workshop, St. George, Utah, USA
- Heilweil VM, 2009, Managed aquifer recharge to permeable bedrock: A case study of the Navajo Sandstone of the western United States, Joint IAH/IAHS International Conference, Hyderabad, India
- Heilweil VM, 2008, A multiple tracer approach for tracking the movement of artificial recharge through desert sandstone, Geological Society of America National Meeting, Houston, Texas, USA