

**Steven P. Gardner, Research Environmental Scientist, in EPA's National Exposure Research Laboratory**

Exposure Methods and Measurements Division

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**Area of Expertise:** Impact of historical mining activities on people and ecosystems in the southwestern United States. Historic mining, particularly gold, copper and silver mining from the mid 1800's to the early 1900's, has left numerous abandoned mines and associated mine waste near small, remote towns across the southwest. Because of transportation limitations during the mining era, the workers tended to live close to the mines, and these towns grew up around the workings and mills. Due to the boom and bust cycle of mining, along with the change from underground mining to large open pit and heap leach operations, most of these former boom towns have a much smaller population than in their heyday. The typically underserved and often lower income populations of these small remote towns suggest a closer look is warranted.

**Select Publications:**

WERKEMA, D. D. AND S. P. GARDNER. HIGH RESOLUTION GEOELECTRICAL MEASUREMENTS OF BIODEGRADATION AND SURFACTANT REMEDIATION: LAB AND FIELD STUDIES AND A NEW CHARACTERIZATION TEST CELL FIELD RESEARCH SITE. Presented at High Resolution Site Characterization & Monitoring Symposium, Long Beach, CA, November 14 - 16, 2006.

Denne, J E., L A. Eccles, E J. Englund, S P. Gardner, A T. Mazzella, J M. Nocerino, C G. Rosal, B A. Schumacher, J J. van Ee, AND K E. Varner. RESEARCH AT THE U.S. EPA'S CHARACTERIZATION AND ASSESSMENT PROGRAM. Presented at Invited Presentation for the University of Nevada Water Resources 706 Class, Las Vegas, NV, November 13, 1996.

Gardner, S P. AND J. J. DLugosz. GROUND WATER METHODS STANDARDIZATION. Presented at Groundwater/Engineering Forums (Tech Support Center) General Meeting, Las Vegas, NV, January 1995.

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**Education:**

- B.S. in Geology, University of Utah, 1977
- UNLV, Las Vegas, Nevada, Some graduate level courses

**Professional Experience:**

- Research Environmental Scientist, NERL, US EPA, 1988-present
- Geologist, US Bureau of Reclamation, Upper Colorado Regional Office, Salt Lake City, UT, 1984-1988
- Geologist, USBR, Grand Junction Projects Office, Grand Junction, CO, 1978-1984.