



HIGHLIGHTS

**National Risk Management Research Laboratory
Ground Water and Ecosystems Restoration Division
Robert S. Kerr Environmental Research Center
Status Report for the week of January 26, 2015**

TECHNICAL ASSISTANCE

Technical Assistance Region VIII: On January 12, 2015, Dr. Eva Davis (GWERD), provided technical review comments to Andrew Schmidt, Regional Hydrogeologist, and RPM Kathryn Hernandez, on the “Draft Work Plan for the Pilot Test for Steam Enhanced Extraction followed by Biosparging” for the Libby Groundwater Site, in Libby, Montana, dated November 21, 2014. In general, the planned Steam Enhanced Extraction (SEE) pilot test should be able to provide data and other information specific to the objectives listed in the Work Plan, however, it may not be possible to collect definitive data on all objectives. It is less clear that the biosparging portion of the pilot study will produce useable data for the design of a full scale system. Aspects of the Steam Injection System that should be addressed include: Energy Balance, Low permeability zone, Groundwater Modeling, Wellfield layout, Vapor Extraction and Monitoring Wells, Steam Injection Pressures, Steam Injection Screens, and Vapor Extraction. Also, the operational plan should be described in the Work Plan, including criteria for moving from one phase of the pilot study to another. It is not recommended that the pilot study be operated by the calendar, but by achieving the stated goal of each phase of operation. Concerning the above-ground treatment system, recommendations include reviewing all of the specified materials to ensure that they are compatible with creosote and the temperatures they will encounter at their point of use. (15-R08-002) (E. Davis (GWERD) 580-436-8548)

SCIENTIFIC AND TECHNICAL PUBLICATIONS

Jones, Edward H. (Geosyntec Consultants Inc., formerly NRC-GWERD), Chunming Su (GWERD). 2014. Transport and retention of zinc oxide nanoparticles in porous media: Effects of natural organic matter versus natural organic ligands at circumneutral pH. *Journal of Hazardous Materials* 275 (2014) 79-88. (C. Su (GWERD) 580-436-8638)

Wang, Dengjun (University of Chinese Academy of Sciences, Beijing 100049, China), Chunming Su (GWERD), Chongxuan Liu (Pacific Northwest National Laboratory, Richland, WA), Dongmei Zhou (Chinese Academy of Sciences, Nanjing 210008, China). 2014. Transport of Fluorescently Labeled Hydroxyapatite Nanoparticles in Saturated Granular Media at Environmentally Relevant Concentrations of Surfactants. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 457 (2014) 58-66. (C. Su (GWERD) 580-436-8638)

Wang, Dengjun (University of Chinese Academy of Sciences, Beijing 100049, China), Chunming Su (GWERD), Wei Zhang (Michigan State University, East Lansing, MI), Xiuzhen Hao, Long Cang, Yujun Wang, Dongmei Zhou (University of Chinese Academy of Sciences, Beijing 100049, China). 2014. Laboratory Assessment of the Mobility of Water-Dispersed Engineered Nanoparticles in a Red Soil (Ultisol). *Journal of Hydrology* 519 (2014) 1677-1687. (C. Su (GWERD) 580-436-8638)

Harrison, Melanie D., (National Oceanic and Atmospheric Administration, Southwest Region, Protected Resources Division, Santa Rosa, CA. (formerly PhD Student from Univ. of Maryland-Baltimore County at GWERD)), Andrew J. Miller (Univ. of Maryland-Baltimore County, Baltimore, MD), Peter M. Groffman, (Cary Institute of Ecosystem Studies, Millbrook, New York City, NY), Paul M. Mayer (USEPA, Corvallis, OR (formerly GWERD)), Sujay S. Kaushal (Univ. of Maryland, College Park, MD). 2014. Hydrologic Controls on Nitrogen and Phosphorous Dynamics in Relict Oxbow Wetlands Adjacent to an Urban Restored Stream. *Journal of American Water Resources Association (JAWRA)* 1-18. Volume 50, Issue 6, Pages 1365-1382, December 2014. (A. Keeley (GWERD) 580-436-8890) (P. Mayer (USEPA, Corvallis, OR) 541-754-4673)

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