



FORESTRY, FIRE & STATE LANDS REQUEST FOR PROPOSALS Cover Sheet



Project Title	Mapping and hydrodynamic modeling of selenium plumes along the south shore mixing zone, Great Salt Lake, Utah		
Lead Project Sponsor	U.S. Geological Survey		
Project Contact	David L. Naftz		
	U.S. Geological Survey, 2329 W. Orton Circle, Salt Lake City, UT 84119		
	Phone: 801-908-5053		
	Fax: 801-908-5001		
	Email: dlnaftz@usgs.gov		
Project Description / Abstract	<p>The south shore area of Great Salt Lake (GSL) has been under increasing scrutiny by concerned citizens, as well as State and Federal regulators, because of elevated concentration of selenium inputs to this part of the ecosystem. Based on a study conducted by UDEQ/DWQ and the USGS during 2006-08, this part of GSL consistently receives some of the most elevated concentrations of selenium from natural and anthropogenic inflows. Recently completed work by the USGS in cooperation with UDNR/UDFFSL measured surface seeps along the south shore of GSL with selenium concentrations exceeding 5 µg/L. Daily selenium inputs from a currently permitted discharge in the south shore mixing zone can exceed 50 µg/L. To date (2011), no data have been collected on how current and future water inputs with elevated selenium concentrations may or may not persist in the south shore mixing zone as a function of varying lake levels, salinities, input sources/concentrations, lake currents, and wind speed and direction. The proposed project will include three objectives to address these issues: (1) utilize dye tracing techniques to map the vertical and horizontal movement and corresponding selenium concentrations of the KUCC plume as it enters and mixes along the south shore of GSL; (2) utilize results from objective 1 to calibrate a three-dimensional hydrodynamic model to simulate the vertical and horizontal movement of the KUCC plume as it enters and mixes along the south shore of GSL; and (3) utilize the calibrated model from objective 2 to simulate the extent and concentration of selenium plumes under a variety of future selenium input scenarios, including, but not limited to fully permitted selenium loads from the Jordan Valley and KUCC pipelines under a variety of lake-level and other environmental conditions.</p>		
Project Funding	Amount Requested	Matching Funds (cash)	Total Project Cost
	\$ 48,629	\$ 32,420	\$ 81,049