

Arsenic and other Heavy Metals in Utah Lake and its Tributaries

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Abstract. A recent study (Ferreira 2013) examined concentrations of fluvial As and other heavy metals in Provo and American Fork Rivers, which flow westward across the Wasatch Range and heavily-populated Utah Valley to drain into Utah Lake. Within Utah Valley average fluvial As for Provo River (As = 0.342 mg/L) and American Fork River (As = 0.152 mg/L) exceeded the EPA standards for freshwater streams for acute exposure (As = 0.340 mg/L) and chronic exposure (As = 0.150 mg/L), respectively, which are not unusual for rivers affected by mine tailings. The objective of this study is to measure fluvial As and other heavy metals in Utah Lake itself, as well as in Hobble Creek and Spanish Fork River, the two other tributaries that cross the Wasatch Range to drain into Utah Lake. Both filtered and unfiltered water samples are being collected at 20 sites beneath the ice on Utah Lake and will be re-collected at the beginning of the spring overturn. Similar water samples are also being collected at 40 sites each on Hobble Creek and Spanish Fork River. Dissolved oxygen, pH, water temperature and electrical conductivity are being measured on-site. Concentrations of nitrate, phosphate and sulfate will be measured using the Hach DR-2700 Spectrophotometer. The Optima 8000 ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometer) will be used to measure concentrations of As and associated elements Ag, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Sn, Ti and Zn. Results will be reported at the meeting.