

# SEDIMENT CHEMISTRY OF THE COLORADO RIVER DELTA IN LAKE POWELL, UTAH

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**Abstract:** Sediment delta deposits in Lake Powell provide a repository for the potential accumulation of various natural and human-introduced contaminants. The Colorado River delta of Lake Powell extends for more than 50 kilometers from above Hite, Utah, to below Good Hope Bay. The greatest deposition occurs near and upstream from Hite. Owing to current (2005) low reservoir levels, a large segment of the delta is exposed in a reach near the former site of Hite marina near the mouth of the Dirty Devil River.

During the summer of 2001, the U.S. Geological Survey documented concentrations of major ions; trace and minor elements; organic compounds, including organochlorine pesticides, polychlorinated biphenyls, and polycyclic aromatic hydrocarbons; and radionuclides in the delta sediments of the Colorado River.

Three cores and several surface-sediment samples were collected near the Hite marina. Concentrations of major elements, such as calcium, aluminum, and iron, did not show any discernable patterns in concentrations within each core or among the different cores. Concentrations of several trace elements were correlative with sediment color and texture. Elements that are considered to be environmental contaminants, such as arsenic, uranium, selenium, and mercury, were detected in core samples. Some of these elements increased in concentration with core depth. In subsamples of the cores, organochlorine pesticides and polychlorinated biphenyls, except for p,p'-DDE, were not detected in concentrations greater than the laboratory detection limit. A total of 19 parent polycyclic aromatic hydrocarbons and multiple alkyl-polycyclic aromatic hydrocarbons were detected in all 3 core samples. All core samples contained concentrations of gross alpha and gross beta radionuclides; concentrations ranged from 11 to 17 picocuries per gram.