



# SEISMIC HAZARD INVESTIGATION FOR THE NEW NORTH HAIWEE DAM #2 Owens Valley, California

## **PROJECT DESCRIPTION**

*Earth Consultants International (ECI)* was retained to serve as a Technical Consultant to URS Consultants during their field investigations of several faults and lineaments in the vicinity of the proposed new North Haiwee Dam #2 in southern Owens Valley. The faults were first inferred from aerial photographs as lineaments across an alluvial fan surface, and when field verification of the lineaments identified a series of geomorphically expressed topographic features that indicated potentially active faulting, a subsurface trenching program was undertaken to evaluate the faults' impact on the alluvial stratigraphy. Dr. Tom Rockwell, Senior Partner of *ECI* assisted URS Consultants with interpretation of stratigraphy and structural relations exposed in the trenches, and in age-dating of the stratigraphy and the geomorphic surfaces using Soil Profile Development Indices, Optically Stimulated Luminescence, and radiocarbon. He also assisted in the preparation of their report by providing interpreted graphic logs of the trench exposures and an analysis of the age and recurrence of faulting.



Top Left: Oblique aerial view of the trenching site on the margin of Haiwee Lake.



Left: Photo of the upper part of the fault zone showing the fault graben and the colluvial infill that has not been faulted.



Top: Photo of the entire fault zone exposed, showing the truncation of the Stage IV carbonate horizon. Based on the carbonate stage development, we estimated these deposits at ~100,000 years old.

## **FINDINGS**

The information developed in this study suggests that the fault at the proposed dam site has repeatedly ruptured to the surface in the past 100,000 years, but has not ruptured through a fault graben that filled with colluvium since the last event. The colluvial deposits were estimated to be about 22,000 years old. Based on this finding, the fault was determined to pose a very low risk of surface rupture through the dam area.

