



## HIGHWAY 138 WEST EXPANSION, SAN BERNARDINO COUNTY

**Project Description:** The project was expansion (widening and utility installation) of Highway 138 from Cajon to the Los Angeles County line extending more than 22 linear miles across 4 quadrangles [KP 0.0 – 22.53 (MP 0.0 – 14.0)]. We performed paleontological assessment in 2004 and wrote the mitigation plan for the project. Subsequently we monitored the first half of the project from Lone Pine Canyon Road in Cajon Valley to Fort Tejon Road in Pinon Hills from mid-2006 to mid-2007 as a subcontractor to Applied Earthworks Inc. We completed processing of samples, identification of fossils and the final report as a subcontractor to ECORP Environmental Consultants Inc. from July to December 2007.



**Services Provided:** Cultural Resources Sensitivity Training for all project personnel; Survey; Research; Preparation and submission of a combined Paleontological Identification Report; Paleontological Evaluation Report and Paleontological Mitigation Plan identifying potential impacts and recommending general and specific mitigation measures to minimize the project's impacts to sensitive resources; Paleontological Monitoring; Data Recovery; Sediment Sample Processing for microfossil recovery; Fossil Preparation; Identification and Analysis; and preparation of final report.

**Challenges:** Monitoring was required for all earthmoving on a seasonal schedule but Caltrans wanted to control costs to the extent feasible.

**Solutions:** The Cogstone Mitigation Plan recommended monitoring based on the sensitivity of the deposits. After initial full-time monitoring, two days a week of sample collection and part-time monitoring was substituted based on field evaluation of sediments being impacted (coarse rather than fine). Over 130 test samples were collected for microfossil screening during monitoring. Samples were typically two, five-gallon buckets of matrix processed with orange oil solvent to break down the cemented sediments and then screen washed with water. Bone was then picked out from the rock and sand.



**Results:** During monitoring, six fossils were recovered from six localities. A rodent bone was recovered from Unit 5 of the Cajon Valley Formation (17.5-12.5 million years ago) and a mammal bone from Unit II of the Phelan Peaks Formation (less than 5 million years old). These project fossils were not temporally diagnostic nor do they provide information about paleoecology.

Lizard (Scincidae (*Eumeces?*)) and cottontail rabbit (*Sylvilagus*) were recovered from the Shoemaker Gravels while cottontail rabbit (*Sylvilagus*) and mammal were recovered from the underlying Harold Formation (both 100,000 -10,000 thousand years old). The project fossils represent the first time cottontail rabbit has been reported from these formations and also the first report of a lizard fossil.

**Key Personnel:** Sherri Gust was principal investigator and Kim Scott was the field and lab director. They co-wrote the combined Paleontological Identification Report; Paleontological Evaluation Report and Paleontological Mitigation Plan and the Paleontological Mitigation Report. Subcontractor Dr. Thomas Wake of the UCLA Zooarchaeology Laboratory identified the specimens.

