PROJECT TITLE AND LOCATION:
Oxygenated Fuel Release, Eastern Sierra Nevada Mountains

BRIEF DESCRIPTION OF PROJECT:

GSE staff managed the investigation and remedial action activities of a 7,400 gallon UST oxygenated fuel release to fractured bedrock, known for its complex geology and hydrogeology due to faults and seismic activity in the eastern Sierra Nevada Mountains, California. The investigation included unique applications of borehole geophysics in the evaluation of the release (down-hole and surface mapping of fracture and bedding orientation and aperture opening), evaluation of LNAPL and groundwater fracture flow and plume delineation, and development of a site conceptual model for evaluation of potential impacts to the local drinking water supply. Remedial actions included installation of a quick response soil vapor extraction system followed by an expanded SVE system, installation of a groundwater extraction and treatment system using enhanced bioremediation of MTBE and TBA, and high-vacuum dual phase extraction for enhancement of hydrocarbon removal from the soil and groundwater. All systems were monitored and operable via the Internet. Application of this unique biological treatment train resulted in an annual savings of approximately $400,000 to the client. The project included evaluation and modeling of the release from an UST of oxygenate fuel petroleum hydrocarbons into a complex fractured aquifer system; emergency response to mitigate expansion of the groundwater plume and possible impact to local drinking water supplies; aggressive negotiation with the California Regional Water Quality Control Board to expedite the remediation process; and expert witness testimony against multiple defendants pertaining to costs associated with the cleanup and projected costs for the remainder of the cleanup through site closure.