

NASA Jet Propulsion Laboratory, Pasadena, California

Challenge

The National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL) needed to implement an Expanded Treatability Study for the treatment of perchlorate and chlorinated solvent impacted groundwater. The expanded treatability study was performed in the source zone defined within Operable Unit 1 IOU-1 at NASA in Pasadena, California.

Solution

Envirogen Technologies, Inc. (Envirogen) was subcontracted to provide the design, manufacture and startup/installation support for a 250-gallon per minute (GPM) fluidized bed reactor (FBR) system. Envirogen also provided additional process control/integration support and continued quarterly maintenance support for the system.

The system is designed to meet the treatment objectives for the anticipated influent contaminant concentrations and provide additional water quality criteria for groundwater re-injection.

The scope of equipment supply consisted of a 250-GPM system with one FBR with FBR media and proprietary inoculum, two FBR fluidization pumps, one post aeration system, chemical feed assembly, trident multi-media sand filter, and one PLC-based control system.

Envirogen also provided for the integration of process controls into the FBR Process Control System Panel. This includes integrating the pumping system motor controls and instrumentation to provide for a single operator interface. This will allow for the groundwater treatment system to be controlled from one centralized panel.

The FBR system continues to operate today, successfully removing perchlorate from up to 350 gpm, a 40 percent increase in feed flow compared to the design value.

