



## NASA JPL GROUNDWATER CLEANUP WELL OPTIMIZATION

This fact sheet describes improvements NASA is making to the [Lincoln Avenue Water Company](#) groundwater treatment system operating in Altadena.

**NASA continues to make progress** on the cleanup of groundwater beneath and near the Jet Propulsion Laboratory (JPL). As part of that effort, three NASA-funded groundwater extraction and above-ground treatment systems are operating today. One is located at Lincoln Avenue Water Company (LAWC) in Altadena; one is the Monk Hill Treatment System (MHTS) in Pasadena; and another is on JPL property. All systems are operating effectively and are protective of human health and the environment. NASA is committed to ensuring the successful operation of these systems and is taking extra steps to further enhance their performance.

NASA has worked with Lincoln Avenue Water Company to treat groundwater – removing volatile organic compounds (VOCs) since the early 1990s and perchlorate since 2004 – chemicals that originated from long-discontinued waste disposal practices of JPL. Two LAWC-owned water production wells (LAWC #3, installed in 1924, and LAWC #5, installed in 1971) extract the groundwater to be treated. These wells are located at the leading edge of the chemicals migrating from JPL. Groundwater monitoring and computer modeling data suggest that improving well production capability in the vicinity of LAWC #5 will have several benefits that include:

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**Improved** treatment system reliability to effectively contain the leading edge chemicals.

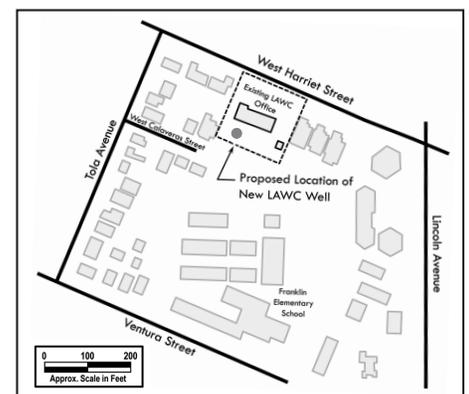
**Increased** rate at which chemicals can be removed shortening the time needed to meet NASA's cleanup goal.

**Improved** chemical capture via screening at greater depths in the affected area.

**Increased** flexibility in the system by having a third well available should a backup ever be needed.

**Improved** infrastructure for LAWC. Specifically, the new well and associated piping, power, and equipment will be available for use by LAWC after NASA's cleanup is complete.

NASA will install a new extraction well on LAWC-owned property in the existing parking lot next to the LAWC office. Limited open or undeveloped land is available for the construction of a new production well. The proposed well site is well situated in the vicinity of affected groundwater and it was selected for a number of advantages it offers. The selected location has the required infrastructure, including appropriate power service, close proximity to existing water pipelines, site access and security, appropriate zoning, and necessary space. NASA will be working with LAWC staff, as well as State and local agencies on all approvals necessary to begin construction in the fall of 2014. Well installation activity is expected to take approximately 6 months to complete.



With a proven record of collaborating on groundwater treatment efforts, NASA and LAWC will coordinate schedules, construction activities, and safety measures. Following receipt of permits and approvals, sound barriers will be erected. Then, NASA will bring in the equipment and set up the work site. A drill rig will be on site for approximately three to four weeks when drilling the well will occur continuously. When well drilling is finished, a process known as well development and testing will occur during normal work hours. Drilling and development will use large diesel engines for power. These engines are similar to those used in a semi-truck. A concrete pedestal will be poured on which a small enclosure will be built for the new pump. Security fencing and lighting will be installed, and a new pipe will connect the well to the treatment plant. Once this work is done, construction equipment will be removed from the site and the new water production well will be ready to operate.



Photo courtesy of Layne Christensen

Similar drill rig and sound wall.

NASA recognizes that construction activity will be taking place within a neighborhood and it is important to work in ways that minimize disturbances.

Safety has always been and will continue to be NASA's first priority. NASA will have an approved traffic plan that will be strictly enforced to ensure traffic safety related to construction equipment and workers' vehicles accessing and exiting the site. As with any construction activity, machinery and equipment will be used and elevated noise levels are expected. Some machinery noise can be dampened by using sound blankets and NASA will adhere to Los Angeles County noise ordinances during construction. Additionally, NASA will build a thick wooden wall that surrounds the entire work site. The 24-foot-high wall will be insulated with noise-absorbing material. It will be removed once the project is completed.

To reduce the potential for dust and exhaust, NASA will require construction contractors use equipment in good operating condition with clean burning diesel engines, and will containerize and/or cover soil generated during construction. This will control dust and assist NASA in meeting requirements for controlling stormwater runoff during construction. After the well is installed it will be tested and any wastewater generated will be monitored and handled appropriately. Once construction is finished, the parking lot area will be resurfaced with new asphalt. NASA anticipates the well to begin operating in early 2015.

NASA is committed to keeping the public informed about progress being made.

Updates will be posted on our Groundwater Cleanup Program website at <http://jplwater.nasa.gov>.

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