NAS7.010318
NASA-JPL
SSIC No. 9661

JULY 15, 2004 — LA CAÑADA VALLEY SUN

NASA Perchlorate Cleanup to Begin

By Jake Armstrong

The first of three treatment plants that will remove the toxic chemical perchlorate from ground water in Pasadena is scheduled to go online later this month, a NASA official said.

A 2,000-gallon per minute treatment facility to remove perchlorate, a chemical used in solid propellant for rocket fuel, fireworks and missiles that is linked to thyroid problems, is under construction at Lincoln Avenue Water Company in Altadena and is expected to begin operation at the end of July, said Steve Slaten, NASA remedial project manager. Pending city approvals, a 7,000-gallon per minute plant will be constructed at a PWP facility, Slaten said.

NASA initially had planned to construct one treatment plant at Jet Propulsion Laboratory in La Cañada Flintridge, Slaten said. But after discussion NASA, Lincoln Avenue and Pasadena Water and Power officials settled a on a plan to build plants at Lincoln Avenue and PWP locations as well. With only a treatment plant at JPL, two large-diameter pipelines would be constructed across the Arroyo Seco to carry water between JPL and Pasadena for treatment, Slaten said.

The plant at JPL will begin operation later this fall with an emphasis on containing chemicals in groundwater near JPL so the contamination in deep groundwater does not move off-site. The chemical plume is moving in a southeast direction. The system will use biological treatment in which live bacterial cultures digest and destroy the perchlorate in the groundwater, Slaten said.

NASA will fully fund the construction and operation of the systems, which remove the chemical with ion filtration technology, Slaten said.

Developments in ion filtration technology have made treatment for perchlorate contamination more cost effective, Slaten said, and will speed up the operation to return the contaminated water to drinking water standards

"With this approach we're looking at shortening that time down on the order of less than two decades," Slaten said.

According to the California Department of Health Services, perchlorate can interfere with the thyroid gland's iodide uptake, which can lead to decreased production of thyroid hormones needed for prenatal and postnatal growth and development, as well as for normal metabolism and mental function in adults.

The perchlorate and other chemicals are in the groundwater due to underground disposals at JPL in the 1950s, Slaten said. The plume of perchlorate has recently reached PWP and Lincoln Avenue wells, resulting in the closure of nine PWP wells in. Two have since returned to operation after chemical levels fell below state standards. Other chemicals reached the water agencies' wells in the 1980s and have been removed, Slaten said, but the presence of the harder-to-remove perchlorate was detected later.