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JPL seeks water treatment

Lab wants to pay $1 million for treatment expansion to clean aquifer of toxic materials.

By Vince Lovato
News-Press and Leader

LA CAÑADA FLINTRIDGE — Jet Propulsion Laboratory is proposing to expand a water treatment program to hasten the removal of perchlorate and other toxic materials from underground aquifers contaminated in the 1940s and 1950s, when the U.S. Army dumped jet fuel and solvents in the ground.

Perchlorate is used in rocket fuel and when ingested at significant levels, can disrupt the proper functioning of the thyroid gland, according to the state Department of Health Services.

But neighboring La Cañada Flintridge residents should not be alarmed, said Mark Ripperda, who manages the cleanup of hazardous waste projects for the U.S. Environmental Protection Agency.

The water under the plant site is not feeding into drinking water wells that affect La Cañada Flintridge residents, he said.

But contaminated groundwater has been seeping southeast toward Pasadena through the Arroyo Seco area, prompting the shutdown of wells in Pasadena until a treatment project can be implemented, Ripperda said.

JPL has been "very, very successful and the future project looks great," Ripperda said. "La Cañada is safe because it's up-gradient and wells that are up-gradient are not affected. The Pasadena wells were turned off so nobody is exposed to that water.

The NASA-funded space exploration campus spent about $4 million in NASA clean-up funds to construct a water treatment plant, an extraction well and an injection well on the contaminated area in 2004, said Steve Slaten, remedial project manager for JPL.

"For several years we've been studying what the problem was and what was the best way to fix it," Slaten said. So last year we constructed the plant," Slaten said. "It worked so well we proposed expanding it to accelerate the removal of [contaminants] from the ground water."

The facility pumps contaminated water out of the

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underground aquifer, treats it then pumps it back into the ground, Slaten said.

It has been so effective over the last nine months that JPL engineers decided to expand the facility by adding another injection well, another extraction well and the pipelines to connect them to the existing plant, Slaten said.

The expansion will cost another $1 million and will increase the plant's treatment capacity from 160 gallons of water to 350 gallons of water daily, Slaten said.

It will cost about $1 million to operate the plant annually and Slaten expects the project to continue for about a decade.

When the U.S. Army operated the site in the 1940s and 1950s, personnel disposed of fuels by dumping them in pits then flushing the waste with water. The waste eventually made its way to the aquifers, Slaten said.

"We're removing common cleaning solvents that were disposed in those days in the pits," Slaten said. "It is in an important drinking water area so it was necessary to protect the drinking water source."

The treatment plant already extracted 400 pounds of perchlorate and 10 pounds of other volatile organic chemicals from the underground water, Slaten said.

The 10-acre site runs southeast to Altadena through Arroyo Seco, he said.

About two-thirds of all the disposed contaminants are still in the area.

JPL will take public comments during a public hearing from 7 to 9 p.m. Nov. 16 at the Altadena Community Center, 730 E. Altadena Drive.

If plans fall into place, expansion should start early next year and be completed a few months later, Slaten said.

"The treatment plant is already built so [the expansion] makes this a permanent solution," Slaten said who said there could be a second extraction well constructed during expansion.

"It will affect the water quality in the local area," Slaten said. "We are taking out water that has chemicals in it and re-injecting clean water that has no chemicals so it will flush out that area and push contaminated water to the extraction wells. We've already seen better quality in last few months."

JPL is also co-operating a treatment project with the Lincoln Avenue Water Company in Altadena, he said, and is working with the city of Pasadena's Water and Power Department on another treatment project.

Certain populations, such as pregnant women and their fetuses, may be particularly susceptible to adverse health effects when thyroid disruption persists.

Despite reports on the ill-effects of perchlorate, the state Developmental and Reproductive Toxicant Identification Committee, a panel of independent scientists administered by the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment, concluded in August that available scientific information on perchlorate was not sufficient for placing the substance on a list of chemicals known to the to cause birth defects or other reproductive harm.

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