NASA Groundwater Cleanup Project
Year in Review for 2025

This Year in Review is one of the ways NASA works to keep the community informed about ongoing investigation and cleanup of groundwater at and in the vicinity of the Jet Propulsion Laboratory. Cleanup is being conducted under the Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly known as Superfund. The groundwater chemicals being addressed are volatile organic compounds (VOCs), the chemical compound perchlorate, and per- and polyfluoroalkyl substances (PFAS) that the U.S. Environmental Protection Agency (EPA) added in 2024 for investigation under CERCLA.

Welcome to the Team

In July, Peter Zorba was named NASA's Groundwater Cleanup Project Manager at JPL. Zorba replaces Steve Slaten, who retired in August, after having served more than 20 years in the lead role. "Steve has done an outstanding job managing the CERCLA Groundwater Cleanup Program and has truly been a part of all environmental efforts at JPL over the last 20 years," said Zorba, "Steve built incredible partnerships with the various agencies involved and he knew the importance of communicating with neighbors. His dedication and experience were pillars of the program." Zorba looks to the future, saying, "Steve has left the program in good shape, and I look forward to carrying on and continuing to move the cleanup forward."

Zorba has extensive environmental experience with NASA where he serves as the NASA Program Director for environmental cleanup at the Santa Susana Field Laboratory (SSFL). Prior to this position, he was NASA's Remediation Project Manager and also the Cultural Resources Manager at SSFL. He has a NASA certification in Advanced Project Management and Advanced Systems Engineering, a Bachelor of Science degree in Soil Science, with a Philosophy Minor from California Polytechnic State University, San Luis Obispo, and is a Registered Environmental Assessor (REA), a professional registration administered by the California Department of Toxic Substances Control. He has a strong background in remediation, having worked on environmental cleanup projects in California, Colorado and Russia. Zorba is a former Marine and served two tours in Iraq before returning to the environmental field in 2006. We welcome Peter to the team!

Despite Challenges, Cleanup Moved Forward

NASA made progress with groundwater cleanup even when faced with challenges in 2025. In early January, the Los Angeles wildfires severely impacted our neighbors in Altadena, also causing damage to Lincoln Avenue Water Company's (LAWC) drinking water infrastructure. The groundwater treatment system, while not damaged, was not operational while LAWC worked to make their necessary repairs. With the State Water Resources Control Board (SWRCB) approval, LAWC resumed system operations at the end of May. Another challenge faced in 2025 was the dry weather conditions. While NASA was able to conduct quarterly groundwater monitoring field work throughout the year, at times, some wells on the JPL facility and in Pasadena could not be sampled because groundwater was lower than the sampling

location in the well. NASA posted all groundwater monitoring results to the JPL groundwater cleanup website (click here). Lastly, despite the federal government shutdown (Oct. 1 – Nov. 12), progress on the JPL groundwater cleanup continued, with all treatment systems operating. In addition, investigations continued including PFAS sampling [see PFAS Investigation Update].

Despite the obstacles 2025 presented, NASA continued to make progress on the groundwater cleanup, as outlined in the 2018 Record of Decision (ROD) approved by federal and state government agencies as the best approach to reaching the cleanup goals and to maintaining protection of human health and the environment.

Treatment Systems Remain Effective

NASA's cleanup efforts include the ongoing removal of unwanted chemicals from groundwater at three NASA-funded treatment plants. All three systems use liquid-phase granular activated carbon (LGAC) technology to remove VOCs and ion exchange (IX) technology to remove perchlorate. These technologies also have been shown to be effective in removing certain PFAS from groundwater. The three treatment systems and the progress being made are described below.

The Source Area Treatment System at JPL continued to operate effectively. The system has removed more than 2,267 lbs. of perchlorate and more than 50 lbs. of VOCs since startup of the system in January 2005. The total amount of unwanted chemicals in groundwater beneath JPL has been reduced by more than 99 percent. While chemical removal has been significant, removing the increasingly lower levels of contaminants is challenging because it takes a long time to flush enough water through the aquifer to achieve the very low (i.e., in parts-per-billion concentration) cleanup goals. Continued system operation is expected to take another five to ten years to achieve groundwater cleanup goals.

The Lincoln Avenue Water Company (LAWC) System treats groundwater extracted from three NASA-funded drinking water wells located at the leading edge of affected groundwater. The third and deepest well installed by NASA in 2017 has become the primary means of containment of the leading edge of affected groundwater. The LAWC system ensures that chemicals in groundwater do not migrate further in the aquifer. As described above, due to the January wildfires, LAWC was forced to shut down on January 7. Groundwater treatment resumed full operation at the end of May. Importantly, monitoring showed that while treatment system operation at LAWC was suspended temporarily, containment of chemicals was maintained and overall groundwater cleanup continued successfully. In all, the system has now removed more than 1,469 pounds of perchlorate and more than 366 pounds of VOCs since startup in 2004. Chemical concentrations in the LAWC groundwater have been reduced by more than 90 percent.

The Monk Hill Treatment System (MHTS) consists of four City of Pasadena drinking water wells in the Arroyo Seco and a treatment plant located on Windsor Avenue. Installation of a new NASA-funded water supply well (called the Explorer Well) located in the northern

portion of the Arroyo was completed by Pasadena Water and Power (PWP) in 2025. Once the aboveground infrastructure is in place, this will enhance groundwater cleanup, supplement Pasadena water production, and expedite the cleanup project. PWP began construction of the well and subsurface improvements in October 2024 and completed them in May 2025. Construction of the above-ground improvements (including the well building and pumping equipment) is anticipated to begin by March 2026 and be completed by March 2027. Groundwater treatment operations at MHTS continue during construction. Since system start up in 2011, the MHTS has removed more than 1,564 pounds of perchlorate from groundwater and more than 270 pounds of VOCs. Chemical levels in groundwater extracted by the MHTS in the Arroyo have been reduced by more than 94 percent.

Continued Groundwater Monitoring

NASA maintains a monitoring network of 24 wells on and in the vicinity of JPL, and regularly samples for chemicals of concern, posting the associated reports to the Groundwater Cleanup Program website (click here). As envisioned under the existing Record of Decision and encouraged by the EPA, NASA is taking the opportunity to evaluate its monitoring program and determine how to optimize monitoring location and frequency based on changing site conditions over time. NASA is currently working with the regulators on the details of the optimized monitoring program and looks to implement the program in 2026.

PFAS Investigation Update

PFAS drinking water standards were established by EPA in April 2024. Additionally, two PFAS compounds (PFOA and PFOS) were listed as hazardous substances under CERCLA in April 2024. The drinking water standards require public water suppliers to determine whether PFAS are in their drinking water, and to take action to notify customers within 30 days if limits known as maximum contaminant levels (MCLs) are exceeded. Water suppliers must reduce PFAS levels to below the MCL by 2031. NASA closely followed these requirements and made progress with PFAS groundwater investigations at JPL in 2025. NASA conducted three rounds of sampling, collecting PFAS data from monitoring wells and the three groundwater treatment systems. Results to date have shown that low levels of PFOA/PFAS were present at some monitoring locations. Importantly, PFAS levels are below the MCL and the October 2025 California notification levels in all production and extraction wells. This suggests no exposure via drinking water, which is the primary exposure route. Going forward, NASA will continue to collect and review monitoring PFAS data from groundwater and evaluate these data as part of the Five-Year Review (beginning in 2026). This will give NASA the information to make informed decisions and determine next steps for groundwater to ensure continued protection of human health and the environment.

Community Outreach

NASA remains committed to ongoing open communication in all groundwater cleanup activities at JPL, and community outreach remains a cornerstone of the program. NASA responds to any stakeholder questions or concerns, including when

people are new to the area and may have questions about the cleanup. NASA also offers project updates and presentations to interested groups and stakeholders.
During 2025, NASA specific community outreach activities included the following:

- 2024 Year in Review was posted to the CERCLA Project website.
- Continued updates and maintenance for the CERCLA website, including document updates, contact updates, and other website content.
- Supported LAWC in responding to stakeholder questions after the fire.
- Responded to questions about groundwater cleanup from the community.

Additional Information
For additional information on NASA activities during 2025, or for general background information regarding the CERCLA Groundwater Project, please see the project website at https://jplwater.nasa.gov or contact:

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