



# 2015 YEAR in REVIEW

## Advancement, Enhancement

### Highlight JPL Groundwater Cleanup Project in 2015

This 2015 Year in Review helps NASA meet its ongoing objective to keep the public informed about the progress of groundwater cleanup efforts at and in the vicinity of NASA's Jet Propulsion Laboratory (JPL).

#### BACKGROUND

The groundwater chemicals being addressed are volatile organic compounds (VOCs) and the chemical compound perchlorate. The chemicals originated from long-discontinued liquid and solid waste disposal practices during the 1940s and 1950s when wastes from JPL drains and sinks were disposed of in brick-lined seepage pits – a waste management practice that was common at the time.

In 2015, NASA took important steps to advance and enhance its decades-long process of restoring water resources in the vicinity of JPL.

#### Proposed Plan Comment Period Extended into March 2015

The year began with a second extension of a public comment period on NASA's Proposed Plan for final cleanup of the groundwater chemicals originating at JPL. The Plan described and analyzed in detail NASA's "Preferred Alternative" for that cleanup – continued operation of three NASA-funded treatment systems and NASA's extensive system of groundwater monitoring along with the use of institutional controls (non-engineering measures that are administrative or legal in nature) to restrict access to chemicals in groundwater. Until the final cleanup is achieved, no one can access the deep groundwater unless the water is treated first. Major elements of the Plan and a Responsiveness Summary addressing all public comments received will be part of a Record of Decision (ROD) detailing the "final remedy" for the cleanup.

#### Throughout the year, groundwater cleanup continued at the three NASA-funded treatment plants.

**On JPL property** at the "source area." By the end of 2015, the system had removed more than 1852 pounds of perchlorate and more than 44 pounds of VOCs from source area groundwater since startup in January 2005. Because of the ongoing California drought and low water levels affecting the aquifer, NASA's most shallow extraction well at the JPL source area treatment plant was shut down in 2015. The remaining two extraction wells, somewhat deeper, are still operating.

**In the Arroyo Seco**, near four Pasadena drinking water wells that draw from the aquifer known as the Monk Hill Basin. By year's end 2015, The Monk Hill Treatment System, located approximately in the middle of the affected area, had removed more than 1020 pounds of perchlorate and more than 113 pounds of VOCs since startup in January 2011.

**At two Lincoln Avenue Water Company (LAWC)** drinking water wells in Altadena, at the outer edges of the affected area. By the end of 2015, more than 1140 pounds of perchlorate and more than 252 pounds of VOCs had been removed from groundwater by the LAWAC treatment plant since startup in July 2004.

## NASA Constructs New LAWC Well to Enhance Cleanup

To augment containment of the leading edge of groundwater chemicals originating at JPL, NASA worked in 2015 on a new groundwater extraction well at the LAWC. The well will remove chemicals in deeper levels of the aquifer and will also serve as a modern, reliable backup for the LAWC, ensuring continued clean drinking water supplies for its customers. During the well development phase, extraction of approximately 8.9 million gallons of water from the deep aquifer was required. Normally, this well development water would be treated to remove chemicals and then discharged to a stormwater drain. Given the severe California drought, having to “waste” that water simply did not make sense. Instead, NASA worked with the California State Water Resources Control Board’s Division of Drinking Water to develop and implement a plan to treat the water twice – first by a temporary treatment plant followed by a second treatment at the existing, permitted LAWC system. This effort enabled a valuable resource to be saved and put to beneficial use as drinking water. After the well development process is completed, NASA in 2016 will install permanent underground pipelines and electric service and construct a building to house the well. Finally, NASA will grade and re-pave the LAWC parking lot at the well-head.

## Continued Groundwater Monitoring

With 25 monitoring wells on and in the vicinity of JPL, NASA engineers are confident that the systems in place were effective in remediating the affected groundwater during 2015. Quarterly monitoring reports continued to be filed in 2015 and posted at <http://jplwater.nasa.gov>.

## Community Outreach – During 2015, NASA...

- Published a 2014 Year in Review document
- Published an updated factsheet/overview of the overall JPL groundwater cleanup project
- Updated the public via the project website on a variety of aspects of the cleanup, including the Proposed Plan and its comment period extension
- Initiated development of the Proposed Plan Responsiveness Summary
- Responded to inquiries from the community about NASA’s cleanup efforts
- Project Director Steve Slaten was interviewed and provided images to support JPL in preparation of a video for science teachers
- On the LAWC well construction project, NASA...

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Maintained close contact with neighbors near the construction site and other stakeholders including Altadena Town Council members

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Prepared and distributed a letter to the neighbors located near the JPL East Gate and Behner Treatment Plant regarding truck traffic associated with managing and transporting initial “development water”

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Sent an e-mail to JPL employees noting the need for traffic safety in the construction area

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Coordinated with the California State Water Resources Control Board’s Division of Drinking Water on a JPL Cleanup website update on beneficial use of the well development water

## For information, contact

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