

# 2022 YEAR in REVIEW

## NASA SANTA SUSANA FIELD LABORATORY

NASA administers 451.2 acres in two areas of the Santa Susana Field Laboratory (SSFL) used historically for the research, development, and testing of rocket engines associated with programs such as Apollo and the Space Shuttle. This Year in Review is intended to present highlights from the work accomplished at SSFL over the past year as NASA continues to work toward achieving a cleanup that is fully protective of public health and preserves the site's natural, historic and Native American cultural resources for future generations.

### DEMOLITION

In 2022, NASA completed Phase 5 of NASA's demolition program, with the demolition of the two Bravo Test Stands and the associated Control House. During the first quarter of the year, NASA finished removing the test stand structures and throughout the remainder of the year, NASA's demolition team implemented erosion control measures and stormwater best management practices (BMPs) in the Bravo Test Area. These measures included the placement of gravel and wattles to decrease the potential for erosion, and the application of a specialized hydroseed mix of plants native to SSFL to promote natural habitat restoration. NASA also coordinated with the U.S. Army Corps of Engineers (USACE), which is overseeing all demolition fieldwork, to complete the procurement process for the next phase of demolition in the Coca Test Area, where NASA will remove the Coca Test Stands and the associated control house. Coca Test Area is expected to begin in early 2023. During the entirety of Phase Bravo demolition, over 4,000 tons of hazardous and non-hazardous waste were documented and safely transported offsite for proper disposal at waste facilities, per state and federal guidelines. In addition, NASA transported more than 2,600 tons of unimpacted steel offsite for recycling.



*Looking southwest at the Bravo Test Area following completion of demolition.*



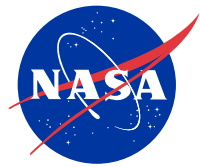
*NASA's cultural resources team coordinated the transfer of the historic flare stacks from the Bravo Test Stands at SSFL to Edward's Air Force Base, where they will ultimately be displayed at the Air Force Flight Test Museum.*

NASA continued to prioritize its stewardship and protection of the cultural resources at SSFL, including the Native American elements and the historic rocket testing features. Following the completion of the demolition of the Bravo Test Stand structures, NASA completed the transfer of the historic Bravo flare stacks, also known as the "tiki torches" for display at the Air Force Flight Test Museum, located at Edward's Air Force Base.

During the latter part of the year, NASA also made preparations for next year's planned demolition of the Coca Test Area. NASA's Cultural Resources Management team reviewed and identified potential items for display offsite from the Coca Test Stands and associated Control House. NASA will work with Marshall Space Flight Center and NASA Headquarters to ensure these potential items are reviewed and considered by NASA's Artifacts Working Group for future preservation. NASA also stabilized and maintained the Alfa Test Stands, which the agency has retained in accordance with the 2014 Programmatic Agreement.

Additionally, NASA continued to actively consult with the Native American community on a wide range of cultural resource management concerns. A local Native American monitor was present during all ground-disturbing activities such as demolition and well-drilling activities in NASA areas of SSFL. NASA also continued to await the signature of the California State Historic Preservation Officer (SHPO) on the revised nomination of the Traditional Cultural Property (TCP), approved by the California State Historic Resources Commission in 2020. Following that approval, the nomination was returned by the Keeper of the NRHP for a technical revision, specifically related to the physical description and the integrity of the property. The revisions were made and submitted to the SHPO in early 2021.

### CULTURAL RESOURCES



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### GROUNDWATER & SOILS

Throughout 2022, NASA continued to work with DTSC under the 2007 Consent Order for Corrective Action to develop a final, comprehensive groundwater cleanup plan for NASA-administered areas at SSFL. As part of this endeavor, NASA installed and tested two groundwater and two vapor monitoring wells under the DTSC-approved work plans to fill data gaps for groundwater and vadose zone remedial planning, including groundwater monitoring wells in both the Bravo and Delta Test Areas and two 50-ft vapor monitoring wells in the Alfa Test Area. In addition, NASA collaborated with DTSC to complete the Coca/Delta Area of Impacted Groundwater specific fate and transport model to support the groundwater Corrective Measure Study (CMS) and Corrective Measures Implementation (CMI). NASA also continued to support the operation of the Groundwater Extraction Treatment System (GETS) at SSFL, which pumped and treated over eight million gallons of groundwater.

NASA also made progress with two important groundwater pilot studies. For the enhanced in-situ bioremediation (EISB) study, NASA obtained a Waste Discharge Requirement (WDR) permit from the Los Angeles Regional Water Quality Control Board. In addition, NASA installed and tested six wells for the injection, extraction, and monitoring needs for the study. For the BVE pilot study, NASA received DTSC approval for the work plan, as well as obtained permits for construction and operation from Ventura County. During the year, NASA installed six vapor extraction and vapor monitoring wells and performed baseline vapor sampling. NASA also completed and placed the mobile solar panel array that will be used to power the system. Both pilot studies are expected to formally begin in 2023.

With regard to NASA's soil cleanup at SSFL, NASA and the Department of Toxic Substances Controls (DTSC) technical teams began ongoing discussions focused on the technical challenges associated with the 2010 Administrative Order on Consent (AOC) cleanup and the 2013 Look-Up Table values. The objective of these discussions is for NASA to be able to begin the final, comprehensive soil cleanup soon as the state finalizes its Programmatic Environmental Impact Report (PEIR), issues a decision document, and approves NASA's cleanup plans.



*Workers prepare the high-density polyethylene pipeline (HDPE) for the Bedrock Vapor Extraction pilot study system in the Alfa Test Area.*

### FOR MORE INFORMATION

Visit <https://ssfl.msfc.nasa.gov> or contact:

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