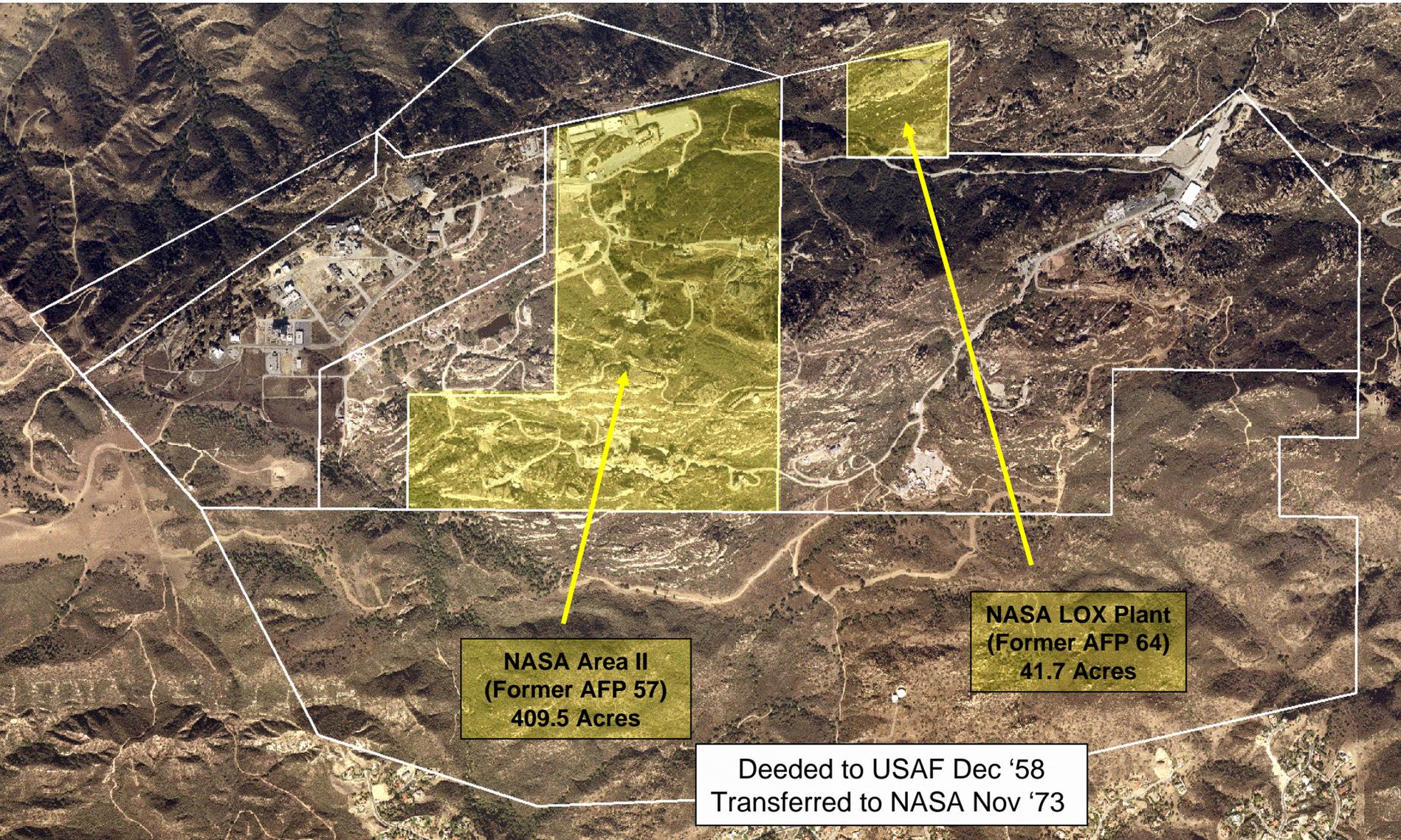




# SSFL Site Tour April 25, 2008

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# Ownership



**NASA Area II  
(Former AFP 57)  
409.5 Acres**

**NASA LOX Plant  
(Former AFP 64)  
41.7 Acres**

Deeded to USAF Dec '58  
Transferred to NASA Nov '73

# Historical Uses



- Area II of the SSFL has been active in the research, development, and testing of important propulsion components for the American space program since at least the early 1950s.
- Major human spaceflight programs include:
  - Mercury
  - Gemini
  - Apollo
  - Skylab
  - Space Shuttle

# Background



- Location – Ventura County, CA
- Acres – 452 (410 in Area II and 42 in Area I)
- Investigation and cleanup is regulated by Cal-EPA's Department of Toxic Substances Control (DTSC) under the Resource Conservation and Recovery Act (RCRA) and 2007 Consent Order
- NASA is responsible for investigation and cleanup in administrative Area II and the former LOX Plant site in Area I
  - 42 total sites grouped into 15 management areas
  - 5 groundwater plumes
  - Primary contaminants include volatile organic compounds (primarily TCE), metals, dioxins, petroleum related compounds (PAHs), and polychlorinated biphenyls (PCBs)

# Cleanups Completed



A number of NASA units have been closed, including:

- Building 231 PCB Storage Facility
- Hazardous Waste Container Storage Area
- Storage Propellant Area (SPA) Impoundments 1 and 2
- Alfa/Bravo Skim Pond (ABSP) and Drainage Pipes
- Delta Skim Pond and Drainage
- Propellant Load Facility (PLF) and the PLF Impoundment
- Building 207 Diesel Underground Storage Tank (UST)
- UST across from Alfa/Bravo Fuel Farm (ABFF)
- Mercury contaminated soil and asbestos debris removals from north drainage areas

# Public Outreach



- Communications Plan
- Coordinating with DOE & Boeing
- Engaging Stakeholders
- Creating Fact Sheets and Displays
- Developing Website



## Santa Susana Field Laboratory

### The Use of Trichloroethylene at NASA's SSFL Sites

This provides information on the cleanup of NASA properties at the Santa Susana Field Laboratory (SSFL).



The Bravo Test Stands (including those pictured above) were among four sites NASA used for testing rocket engines.

NASA owns and administers 450 acres in two areas of the Santa Susana Field Laboratory (SSFL). NASA recognizes the importance of communicating directly with the community regarding our properties, current and former operations at SSFL and the ongoing environmental cleanup taking place throughout the entire 2,850-acre facility. The other areas of SSFL are owned and operated by the Boeing Company.

**What is TCE?**  
Trichloroethylene (TCE) is a non-flammable, colorless liquid that belongs to a group of chemicals known as Volatile Organic Compounds (VOCs). It is used mainly as a solvent for removing grease from metal parts, and in adhesives, paint removers and spot removers. The chemical and physical properties of TCE allow it to quickly evaporate from surface water, but it remains in groundwater for long periods of time. The possibility for health effects from TCE depends on the duration and magnitude of exposure. Over the years, some TCE from SSFL operations moved deep into SSFL groundwater and was absorbed in sandstone fractures. Some TCE also migrated to areas of site of Area II, but still within the boundaries of the SSFL. The groundwater is currently not used for drinking water and, based on our investigation, does not affect any municipal or agricultural water supplies.

The SSFL began operations in 1945 and was divided into four so-called "Administrative Areas" which are flanked on two sides by undeveloped land serving as buffer zones. Initially, Areas I and II were owned by the United States Air Force (USAF) - and administered by the former Rockwell International (and its Rocketdyne Division) - which tested several types of rocket engines for use in defense programs and, with NASA, for the Space Program. The USAF ceased testing in Area I in 1968. In 1973, NASA acquired from the USAF the 42 acres it had owned in Area I and all of Area II. The Area I acreage contained a Liquid Oxygen (LOX) Plant, which operated from 1950 until the late 1960s, when LOX was utilized to test liquid-fueled engines. The plant's buildings and tanks were removed in the 1970s.

NASA used Area II to conduct research, development and testing of rocket engines associated with the Apollo and Space Shuttle Programs. Area II contained four locations known as "test stands," that were built between 1954 and 1957. They were open-framed, metal structures with concrete foundations as well as related buildings. Each of the stands - known as Alfa, Bravo, Coca and Delta - had three or more "test positions" (also often referred to as test stands) for firing the engines. Use of most test stands was largely curtailed after the 1960s, but Coca Test Stand #4 was used extensively in support of Space Shuttle Main Engine research and development in the 1970s and early 1980s.

In 1984, Rockwell International discovered that historical rocket engine testing and cleaning operations throughout the SSFL had resulted in chemicals making their way into soil, surface water and groundwater. For example, in Area II there were several solvents found, predominantly trichloroethylene (TCE). TCE had been used in large quantities by the USAF and NASA to clean liquid-fueled rocket engines both before and after each test. NASA takes full responsibility for the cleanup of its two areas. We believe it is important to let you know about what occurred, and about the cleanup that is taking place - or is planned - in the SSFL areas that NASA administers.



Coca Test Stand #4 was used during Space Shuttle Main Engine testing.

SEE OTHER SITES

