U.S. Environmental Protection Agency

NEWS Update

February 2011
Issue No. 1

Radiological Studies at the Santa Susana Field Laboratory

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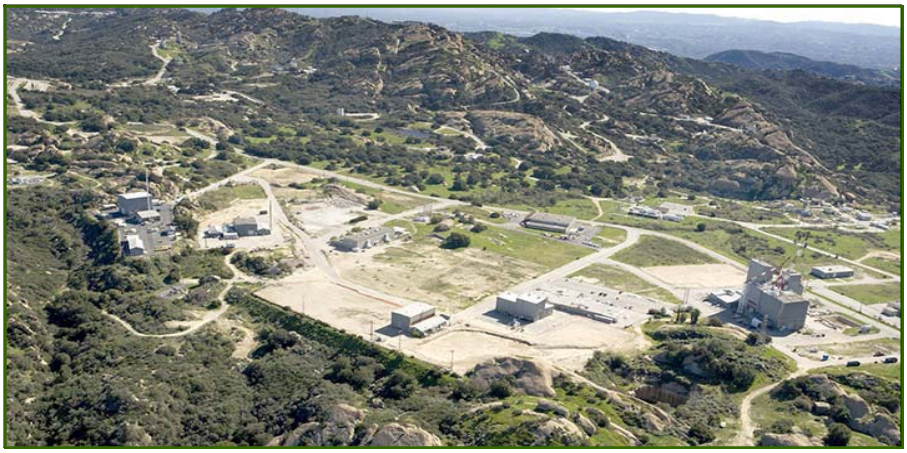


Santa Susana Field Laboratory, Ventura County, California

The purpose of these EPA News Updates is to provide periodic updates concerning the status of EPA's work at Santa Susana Field Laboratory (SSFL).

Site Location

The SSFL is located in the Simi Hills area of Ventura County, approximately 30 miles north-west of downtown Los Angeles.

The site consists of four administrative areas previously used for research, development, and test operations, and buffer areas on the southern and northern boundaries of the facility.

Site History

In 1948, North American Aviation (a predecessor company of Boeing) began development of the land in the northeast section of the site. This area eventually became known as the SSFL, where rocket engine testing was performed to support virtually every major space program in U.S. history, from the earliest satellite launches to the Space Shuttle.

The Rocketdyne Division of North American Aviation and the Rockwell International Corporation operated the site through 1996. Since 1996, operations at the site have been conducted by Boeing. Site property is owned by Boeing, except for a portion owned by the Federal government and operated by NASA.

Over the life of the site, thousands of tests were performed, but rocket engine testing declined in the 1980s and 1990s, and ended in 2005. In addition to rocket engine testing, the SSFL was used for nuclear energy research and testing. These operations were conducted on a 90 acre section of the site known as the Energy Technology Engineering Center (ETEC), which was located within Area IV. The ETEC property was leased to the Department of Energy (DOE) and operated by Atomics International (a division of North American Aviation) and Rockwell International Corporation from the 1950s to the early 1980s.

Site Contamination

Primary past operations include the development and testing of liquid fuel rocket motors, nuclear reactors and related facilities. These operations resulted in the chemical and radiological contamination in soil and ground-water.

All nuclear reactors and fuel elements have been removed from the site. The ongoing cleanup of chemical contamination is currently being conducted by Boeing, NASA and DOE under the regulatory oversight of the State of California Department of Toxic Substances Control (DTSC).

Sign outside of EPA Field Office at SSFL.

EPA Role at SSFL

The lead regulatory agency at SSFL is the State of California, DTSC. They are responsible for site cleanup and overall site management. EPA's role consists of conducting radiological technical studies and acting as technical advisor during site cleanup.

In 2008, a Federal Appropriations Law (HR2764) directed DOE and EPA to cooperate on a joint comprehensive radioactive site characterization of Area IV of the SSFL in accordance with the Comprehensive Environmental Response, Compensation & Liability Act (CERCLA). An Interagency Agreement was signed whereby DOE gave EPA $41.5 million to conduct a Background Radiological Study for the SSFL and a Radiological Study of Area IV and the Northern Buffer Zone. The majority of the funds ($38.3 million) for EPA's study comes from funding allocated to DOE under the American Recovery and Reinvestment Act of 2009.

In December 2010, DTSC and DOE finalized an Administrative Order of Consent under which EPA will act as a radiological technical advisor to the parties during cleanup of Area IV and the Northern Buffer Zone.

EPA's Radiological Studies at SSFL

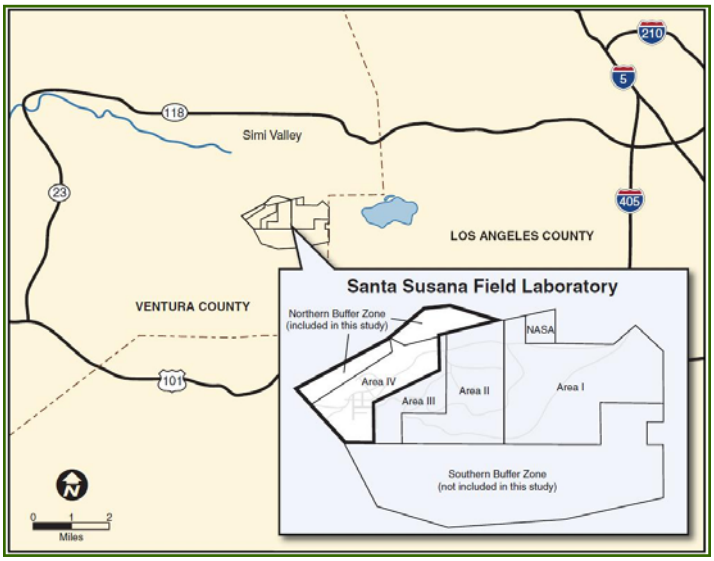
Working under the signed agreement with the U.S. Department of Energy, EPA will perform two radiological studies at SSFL: (1) the Radiological Background Study and (2) the SSFL Area IV Radiological Study.

The purpose of EPA's Radiological Background Study is to determine the level of "ambient" or "background" radioactivity in the soil. The results of the Background Study then will be compared to data collected at SSFL to determine the extent to which operations at SSFL lead to radiological contaminations at Area IV.

The SSFL Area IV Radiological Study combined with the Background Study will provide information concerning areas of elevated radiological contamination in SSFL's Area IV and the Northern Buffer Zone. The Area IV Radiological Study will incorporate four study programs areas (1) Gamma Scanning, (2) Water Testing, (3) Soil Testing, and (4) Historical Site Assessment.

Below is a map identifying the Study Area for EPA's Radiological Studies.

Map of EPA Study Area



EPA Study Area Consists of Area IV and Northern Buffer Zone.

Accomplishments

Radiological Background Study

This study will determine the level of "ambient or background" radioactivity found in soil surrounding the SSFL site.

EPA Project Managers, Nicole Moutoux and Mary Aycock, discuss sampling locations for the Radiological Background Study.

Accomplished:

- Held multiple briefings/meetings with community members during the planning process
- Obtained access to multiple properties outside SSFL
- Collected more than 150 soil samples during two field efforts
- Procured and audited analytical laboratory
- Completed laboratory analysis of all soil samples
- Completed validation of nearly all samples

Upcoming Work for February—April 2011:

- Complete data validation of soil samples
- Release all data in a Technical Memorandum that will be posted to EPA's web site
- Develop statistical approach for calculating background levels
- Hold meetings with Stakeholders to discuss Background Study results

EPA contractors conduct Radiological Background Reference Area Sampling .

Accomplishments, continued

EPA contractor and Radiation Expert, Carl Palladino, performs a gamma scan of a borehole.

EPA's mule-mounted gamma scanning technology at work in Area IV at SSFL.

SSFL Area IV Radiological Study

This study covers Area IV and the Northern Buffer Zone for a total of 490 acres at SSFL. To implement this study, EPA will use the following methodologies: (1) Gamma Scanning, (2) Water Testing, (3) Soil Testing, and (4) Historical Site Assessment.

Gamma Scanning Program

This program consists of a complete scan of the accessible areas of SSFL Area IV and the Northern Buffer Zone to identify locations of elevated gamma radiation.

Accomplished:

- Acquired on-site field office and completed building improvements
- Hired, assembled, and mobilized an expert technical team, including full-time EPA gamma scanning equipment specialists from EPA's radiation laboratory in Las Vegas, Nevada
- Completed environmental compliance and planning under the Endangered Species Act and the National Historical Preservation Act
- Procured and calibrated a variety of gamma scanning equipment including the Enhanced Radiation Ground Scanner (ERGS II)
- Began gamma scanning sections of Area IV (To date, 120 acres have been scanned)
- Provided periodic updates to community members

Upcoming Work for February—April 2011:

- Continue gamma survey work in Area IV
- Continue to collect, process and analyze data

Enhanced Radiation Ground Scanner (ERGS) II gamma scanning technology at work in Area IV at SSFL.

Accomplishments, continued

EPA contractor gauging a well during the August groundwater sampling event.

Soil sampling activities conducted on-site.

Water Testing Program

This program tests for a broad range of potential radioactive contaminants in groundwater and surface water (i.e., streams and natural water seeps).

Accomplished:

- Identified sampling locations and determined staging areas
- Established sampling processing procedures
- Sampled groundwater from 70 on-site wells
- Completed Phase I of the creek drainage sediment sampling (40 samples collected)
- Provided periodic updates to community members

Upcoming Work for February—April 2011:

- Collect groundwater samples from off-site wells
- Collect second round of groundwater samples from on-site wells
- Collect surface water samples from flowing creeks and natural water seeps
- Release data from on-site well testing

Soil Testing Program

This program tests for a broad range of potential radioactive contaminants in surface soil and deeper subsurface soils.

Accomplished:

- Established Health and Safety and design of decontamination procedures
- Completed soil sampling of Outfalls #3, #4, and #6
- Surveyed 52 acres in search of buried materials in various sections of Area IV
- Collected approximately 500 surface and subsurface soil samples in sections of Area IV, of which thousands will be collected

Upcoming Work for February—April 2011:

- Continue to conduct stakeholder workshops to ensure community input is incorporated into the sampling plans
- Continue to conduct sampling events in sections of Area IV

Vegetation clearing performed in sections of Area IV at SSFL to allow for proper operation of gamma scanning equipment.

Accomplishments, continued

Historical Site Assessment Report

EPA is conducting an independent review of SSFL documents concerning past radiological and nuclear energy operations. EPA will present its findings in a series of Technical Memoranda identifying a full range of potential radiological contaminants and likely locations where radiation was spilled, dumped and otherwise released to the environment.


SITE DEVELOPMENT PLAN
1977-1981
UNITED STATES
ENERGY RESEARCH
AND
DEVELOPMENT ADMINISTRATION
LIQUID METAL ENGINEERING CENTER
Santa Susana Field Laboratory
Ventura County, California
June 1975
Rockwell International
VOLUME 2

One of approximately 100,000 documents EPA evaluated as part of its independent review of SSFL documents.

Accomplished:

- Requested and received thousands of site documents from Boeing and Department of Energy; commenced review of critical site documents
- Completed report on old aerial photos identifying locations of spills and dumping
- Conducted 30 EPA-only interviews with SSFL former employees concerning past spills and dumping
- Participated in 18 joint DOE and EPA interviews with SSFL former employees regarding previous site activities
- Expanded the Technical Memorandum Reports to include the following information:
  - Spatial information, aerial photo interpretation, soil sampling recommendations, full reference list, and information about potential source areas as obtained from former employee interviews
- Continued analysis of on-going document submittals from Boeing and DOE and updated the Technical Memorandum Reports as appropriate
- Issued two Technical Memoranda on the site history of sections of Area IV

Upcoming Work for February—April 2011:

- Continue to issue Technical Memoranda on the site history of sections of Area IV
- Provide periodic updates to community members

One of many aerial photos reviewed as part the Historical Site Assessment. This photo is of the SSFL facility prior to its deconstruction in approximately 1996.

Community Involvement

Jane Diamond, Superfund Division Director for EPA Region 9, addressed stakeholders and members of the media during the May 12, 2010, Project Kick-Off and Media Event.

EPA hopes its community outreach program will provide opportunities for the public to become actively involved and meet the community's need for information. As part of its community outreach efforts, EPA facilitates and supports the SSFL Interagency Workgroup Meetings, holds Community Meetings, hosts Technical Stakeholder Meetings, and invites community members to visit work being conducted on-site.

Come Visit Our Work... EPA welcomes the general public to come and observe our gamma scanning, soil, and water testing field crews in action. Reservations are required at least 48-hours (if a U.S. Citizen or U.S. Resident Alien) or 96-hours (if you are not a U.S. Citizen or U.S. Resident Alien) before coming on-site.

To visit our work and learn more about when these opportunities are available, please send an e-mail to **visitssflepa@hgl.com**.

Video Clips of Our Work... Attached to the e-mail containing this E-newsletter are two video clips highlighting more of the work EPA is conducting at SSFL. One video clip demonstrates the use of the ERGS II gamma scanning sections of Area IV. The second video clip shows a team EPA contractors conducting soil sampling in November 2010.

SSFL Interagency Workgroup Meetings... The next Workgroup meeting has been scheduled for **May 3, 2011** at **6:30 p.m.** at the Simi Valley Cultural Arts Center, 3050 Los Angeles Avenue, Simi Valley, CA, 93065.

Contact Information

Please direct questions, comments, concerns, and requests to the following EPA staff based on their project responsibilities listed.

Jane Diamond along with EPA Radiological Studies Project Managers, Nicole Moutoux, Mary Aycock, and Craig Cooper (L to R).

EPA Project Manager	Project Responsibilities	Contact Information
Craig Cooper	Historical Site Assessment, Soil Testing, and Environmental Compliance	415-947-4148 (office) cooper.craig@epa.gov
Nicole Moutoux	Background Study and Water Testing	415-972-3012 (office) moutoux.nicole@epa.gov
Mary Aycock	Gamma Scanning and On-site Operations and Logistics	415-972-3289 (office) aycock.mary@epa.gov
David Cooper	Community Involvement Coordination	415-972-3245 (office) cooper.david@epa.gov

EPA can also be reached through the **toll free message line at 800-231-3075**.

Additional Information

For additional information on EPA's Radiological Studies, visit :
http://www.epa.gov/region09/SantaSusana (*Please note the web address is case sensitive.*)