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soil sampling winds down
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SSFL Area IV EIS: Where We Are and Where We're Headed

Over 100 community members attended recent scoping meetings for the Environmental Impact Statement (EIS) that the U.S. Department of Energy (DOE) is preparing to evaluate cleanup for Area IV of the Santa Susana Field Laboratory (SSFL).

At the scoping meetings, held in late February and early March in Simi Valley and Calabasas, California, DOE conducted an open house and presented information about the EIS, the Proposed Action, and next steps. Afterward, DOE invited the public, government agencies, Native American tribes, organizations, and interest groups to present spoken and written comments. Fifty-two individuals offered oral comments.

The scoping period, which ran from February 7 through April 2, 2014, provided an opportunity for community members to offer suggestions on the scope and focus of the EIS. During this period, 309 persons submitted comments, including those made at the scoping meetings.

All comments received during this process will be considered in the development of the Draft EIS.

During the scoping meetings, DOE presented the Purpose and Need statement, a critical component of any EIS, which describes what DOE is trying to achieve and explains why taking action is necessary:

DOE needs to complete remediation of the SSFL Area IV and the Northern Buffer Zone (NBZ) to comply with applicable requirements for radiological and hazardous contaminants. These requirements include regulations, orders, and agreements, including the 2007 Consent Order, as applicable, and the 2010 Administrative Order on Consent (AOC).

To this end, DOE needs to remove the remaining DOE structures in Area IV of the Santa Susana Field Laboratory and clean up the affected environment in Area IV and the NBZ in a manner that is protective of the environment and the health and safety of the public and workers.

In addition, DOE outlined the Proposed Action, which describes activities that DOE believes would accomplish these goals – activities that will be evaluated in the EIS, for their anticipated effectiveness in cleaning up the site and the potential impact on the environment.

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DEC 2015* Record of Decision

OCT 2015* Final EIS



FEB 2015* Draft EIS available for public comment

FEB-APR 2014 Scoping and public comment period

FEB 2014 Amended Notice of Intent to prepare EIS

MAY/JUNE 2012 Community Alternatives Development Workshop

2008-2013 EIS work curtailed until characterization studies completed; active community engagement continued

MAY-AUG 2008 Initial scoping and public comment period

MAY 2008 Notice of Intent to prepare EIS

OCT 2007 Advanced Notice of Intent to prepare EIS

MAY 2007 Court order to complete EIS

Step-by-step to EIS completion

* estimated



Peeling Away the Layers of Area IV

Geographic Information Systems (GIS) is one of the many essential tools used for EIS analysis

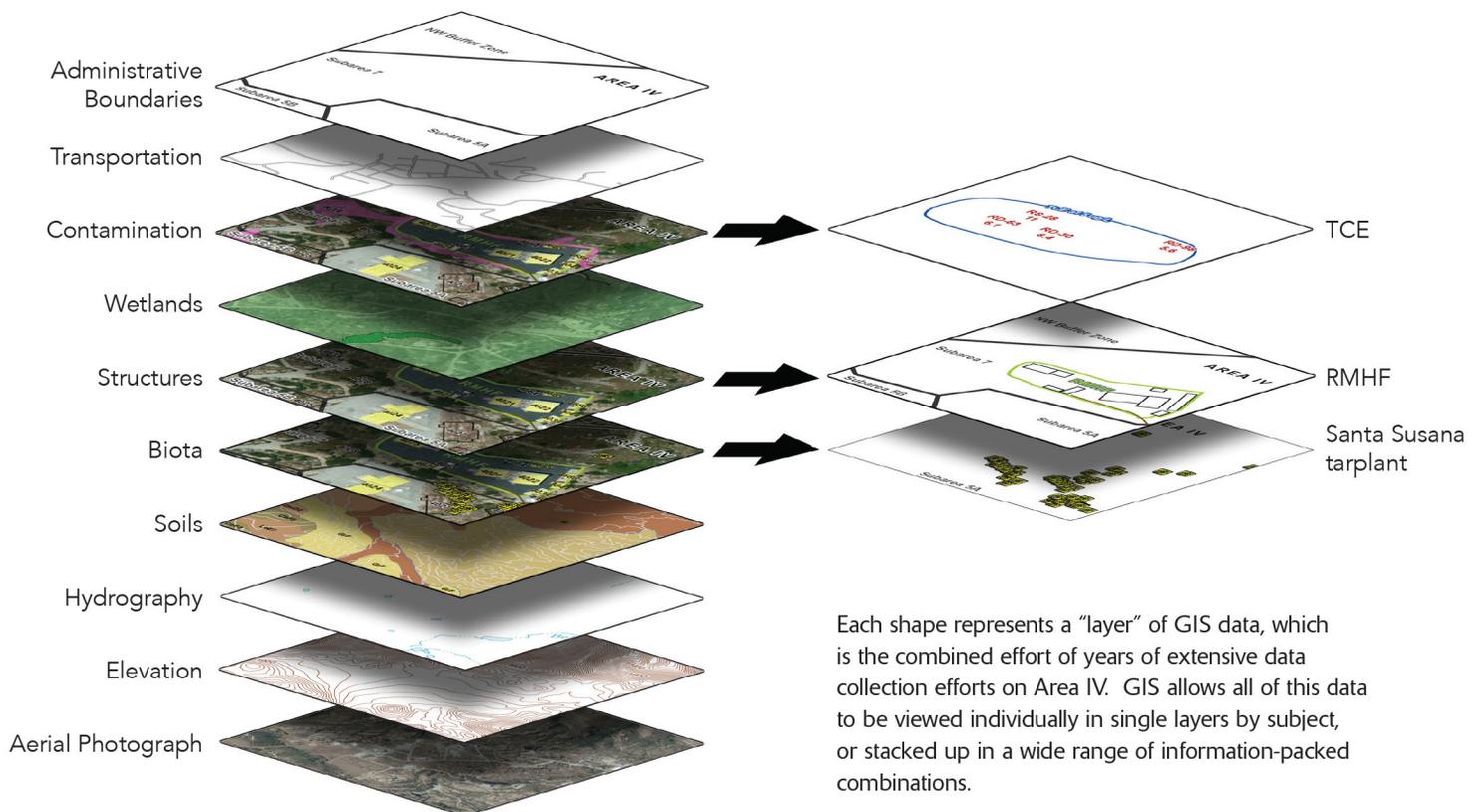
GIS... just a tiny acronym, but one that packs a tremendous boost for ongoing work at Area IV. As DOE begins the EIS appraisal of SSFL Area IV cleanup alternatives, analysts will have at their fingertips access to millions of data points collected over the years by geologists, biologists, engineers and other specialists who have studied the site. How? All this data and more has been recorded and assimilated into GIS.

But what is GIS? Is it a map? A data storage system? A “google-earth” picture of an area? Yes, and so much more. GIS is a computer system capable of storing, managing, analyzing, and displaying geographically-referenced information, which creates a dynamic link between maps (geography) and information (data). GIS is integral to the environmental analysis process because it integrates multiple sources of data, resulting in the ability to “see the big picture.” GIS-generated information will be used to support analysis and conclusions throughout the EIS process.

GIS provides analysts with an interactive “bird’s eye view” of multiple sets of data, such as the size and location of buildings on Area IV to be demolished and removed during cleanup, contaminated area locations, and places where threatened and endangered species, such as the Braunton’s milk-vetch (*Astragalus brauntonii*) or Santa Susana tarplant (*Hemizonia minthornii*) can be found. All this information, and more, has been captured as various “layers” of digital information, which GIS can present as a snapshot all at once, or shave off single sliver, or “layer,” such as the locations of the milk-vetch and tarplant. These specific layers of information can be turned on or off or can be combined in myriad different ways, depending upon what needs to be analyzed. Think of multiple sheets of transparent plastic, each with its own set of information, placed over an aerial photograph (see below). Simply stated, GIS presents information in a way that would be nearly impossible to reproduce with paper maps and photographs.

For example, if analysts were interested in what’s going on around the Radioactive Materials Handling Facility (RMHF) in the northern part of Area IV, GIS can isolate this area and produce a high-resolution snapshot, allowing analysts to view important features individually, or all together in dynamic combinations of their choosing.

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Note: Figure is for illustrative purposes only.

Figure 1: Example GIS layers for Area IV

GIS at work on Area IV

So, what questions could GIS answer as the EIS analysis proceeds? GIS can answer questions about location. For example, if an analyst asked the question: “What buildings are remaining in the vicinity of the RMHF?” GIS can do that. The yellow shapes in the map below show the remaining buildings in and near the RMHF in SSFL Area IV.



Figure 2: Building footprints near the RMHF

Another question GIS could answer: “Where are the locations of Santa Susana tarplants near the RMHF?” The small, dark-yellow squares in the map below show the locations of the tarplants near the RMHF.



Figure 3: Locations of Santa Susana tarplant near the RMHF

GIS can answer questions about the extent and locations of specific types of contamination. If an analyst had a question about sampling well locations and where trichloroethylene (TCE) plumes have been found, GIS has the answer: red dots in the map (Figure 4) represent locations where TCE has been found above the detection limit; the blue circle represents the extent of the TCE plume.



Figure 4: Well locations and TCE plume near the RMHF

Because specific layers of information can be turned “on” or “off,” or combined in different ways, GIS can be used to make certain applicable regulatory requirements are adhered to. For example, SSFL Area IV EIS analysts will want to know whether endangered plants are in the vicinity of buildings slated for removal, and if so, propose actions to lessen or remove any possible impacts. As the cleanup process moves forward, if project staff want to correlate this data with known areas of contamination around the RMHF, they could utilize a map like the one below. Using this map, they could make recommendations, if necessary, on ways to make sure that plants are protected during building demolition and steps are taken to ensure the safety of personnel in the field.



Figure 5: Building footprints, Santa Susana tarplant, and known areas of contamination near the RMHF

GIS is also a powerful tool for filtering and evaluating data while remediation options are considered. For the DOE EIS decision-maker, the SSFL Area IV GIS information can assist in selecting a course of action as alternatives and mitigations are selected and a Record of Decision issued. GIS will be crucial for continuing work on Area IV and ongoing progress towards completing the EIS.

COMMUNITY INVOLVEMENT

PHASE 3 CHEMICAL DATA GAP SAMPLING

In 2013, DOE and the California Department of Toxic Substances Control (DTSC) worked on Phase 3 Chemical Data Gap Investigations for Area IV and the NBZ. Throughout the year, DOE, worked with DTSC, providing several opportunities for the SSFL community to participate in the sampling program, as highlighted below.

Technical and community meetings – DOE participated with DTSC in several meetings throughout 2013 to inform stakeholders of plans for Phase 3 sampling activities in specific subareas. Representatives from DOE, DTSC, and other key agencies gave presentations on progress and future plans. At these interactive meetings, DOE used GIS maps (see article starting on page 2) and stakeholders provided input and feedback. In cooperation with DTSC, DOE provided the following updates at these meetings:

January – DOE attended a DTSC-conducted community meeting to discuss the Development of the Provisional Radiological Look-up Table (LUT).

February – DTSC and DOE held a Chemical Data Gap Sampling Technical Stakeholder Meeting to discuss the proposed chemical data gap sampling locations and provide a tour of Subarea 7, which includes the RMHF.

April – DOE participated in a DTSC-hosted SSFL Community Update Meeting. Representatives from DOE, National Aeronautics and Space Administration (NASA), and Boeing were available to answer questions pertaining to cleanup activities. Staff from DTSC and the Los Angeles Regional Water Quality Control Board provided information on the status of the cleanup actions. Over 100 community members attended this meeting.

June – DTSC and DOE held a joint meeting to discuss the proposed sampling locations for Subarea 8. After the meeting, participants toured Subarea 8 and sampling locations.

August – DOE hosted a Technical Stakeholder Meeting to discuss Subarea 5D and obtain public input on sampling locations. After the meeting, DOE took participants on a bus tour of the locations discussed.

October – DOE participated in a DTSC-hosted SSFL-wide open house to present information on recent accomplishments and discuss upcoming activities at the site. In addition to DOE, DTSC, the Los Angeles Regional Water Quality Control Board, Boeing, and NASA also provided details and answered questions about the progress of the cleanup.

October – DTSC and DOE held a joint meeting to discuss Phase 3 sampling for the NBZ, “Go Back Sampling,” and obtain public input.

As in years past, in 2013 DOE continued to partner with the nature and extent of contamination and seek mitigation to the “Report” provides a summary of the various ways in which as soil treatability investigations, soil sampling, and ground readers to offer feedback on our Annual Report and on our your comments via email to debbie.kramer@emcbc.doe.gov Guardian Street, Suite 160, Simi Valley, CA 93063.

November – Representatives from DOE, along with DTSC, the Los Angeles Regional Water Quality Control Board, Boeing, and NASA provided an on-site briefing regarding the status of the SSFL to Assemblyman Scott Wilk.

Sampling Plans, Work Plans, and Addendums – As DOE completed essential documents for Phase 3 Chemical Data Gap Sampling for Area IV, DTSC provided independent review and approval. Documents approved in 2013 can be found on the Energy Technology Engineering Center (ETEC) website at: http://www.etec.energy.gov/Char_Cleanup/Phase3.html.

SOIL TREATABILITY STUDY

Soil Treatability Investigation Group (STIG)

The STIG, established in 2011 and comprised of more than 30 community members, along with representatives from DOE, NASA and DTSC met at the end of May 2013. At these meetings, the STIG reviewed approaches for identifying SSFL treatability study requirements, and discussed how soil treatability studies will inform future cleanup decisions. Faculty members and graduate students from the University of California-Riverside and California Polytechnic State University, San Luis Obispo presented information about proposed studies on soil partitioning, mercury contamination, natural attenuation, bioremediation, and phytoremediation. In November, STIG members accompanied faculty and students to Area IV to observe seed sampling for the phytoremediation studies and ask questions about methods and techniques. More information about these and other STIG activities can be found on the ETEC website: http://www.etec.energy.gov/Char_Cleanup/Soil_Treatability.html.

Other Studies and Activities

In October 2013, DOE released the Soil Treatability Studies for Area IV of the SSFL Master Work Plan, which details the overall objectives, associated activities, and requirements of the five treatability studies – discussed in May – that

the SSFL community as we refine our understanding of the technologies in Area IV and the NBZ. This "2013 Annual DOE worked with the SSFL community in areas such as water contamination and treatments. DOE encourages our ongoing activities throughout the year. Please send us your comments or by regular mail to Ms. Debbie Kramer, DOE, 4100

Annual Community Involvement Report – As a companion to the first CleanUpdate of each year, DOE publishes the "Annual Community Involvement Report" as an insert. The 2012 Report, which appears in the February 2013 CleanUpdate, highlighted efforts in chemical sampling, EIS alternatives development, technical and community meetings, and STIG activities.

Site Tours – DOE participated in three SSFL community tours that Boeing sponsors on Saturdays between April and November. These tours involved up to 100 interested parties per day. In addition, DOE sponsored site tours for stakeholders interested in observing Phase 3 sampling activities in Area IV, plus the STIG tour described above.

Community Advisory Group (CAG) – The CAG, which DTSC formed and approved in 2012, offers a community forum for discussing and elevating concerns related to the SSFL. DOE personnel attended three CAG meetings in 2013. In December, John Jones and Stephie Jennings updated the CAG on Area IV activities, including completion of Phase 3 soil sampling, details about future sampling plans, and STIG activities.

Information repositories – DOE-SSFL maintains four information repositories in the area and adds physical copies of documents as they are produced. These repositories are located at:

**California State University,
Northridge Oviatt Library**
18111 Nordhoff Street
2nd Floor, Room 265
Northridge, CA 91330
Phone: (818) 677-2832

Simi Valley Library
2969 Tapo Canyon Road
Simi Valley, CA 93063
Phone: (805) 526-1735

**DTSC Chatsworth Regional
Office**
9211 Oakdale Avenue
Chatsworth, CA 91311-6505
Phone: (818) 717-6500

Platt Library
23600 Victory Blvd.
Woodland Hills, CA 91367
Phone: (818) 340-9386

DOE has commissioned the two universities to conduct. The goal of the studies is to identify technologies that can either reduce the levels of Area IV soil contaminants to meet LUT levels or reduce the volume of contaminated soil that needs treatment or disposal. The five study plans have been released: Evaluation of Natural Attenuation of Soil Contaminants, Evaluation of Phytoremediation of Soil Contaminants, Evaluation of Partitioning of Soil Contaminants, Evaluation of Bioremediation of Soil Contaminants, and Evaluation of Mercury Contamination. Copies of these plans and additional soil treatability documents can be found on the Soil Treatability Study Page of the ETEC website.

PUBLIC INFORMATION

DOE continued to use several means to provide information to the public, as described below.

DOE website – The ETEC website provides historical and current information related to Area IV of the SSFL. The DOE website is the primary method for the interested public to search for, review, and download DOE documents. The website can be accessed at: <http://www.etc.energy.gov>.

Email announcements – DOE has an email distribution list of more than 500 people, many of whom live in SSFL neighboring communities. During 2013, DOE issued eight email announcements to provide information about key activities and events, including upcoming meetings, availability of draft and final documents, changes to the ETEC website, and on-site sampling activities.

CleanUpdate Newsletter – DOE's CleanUpdate newsletter provides the local community and other interested parties with updates on Area IV plans, activities, and accomplishments. In 2013, DOE published issues of CleanUpdate in February and June and sent them by regular mail to approximately 4,200 people, emailed them to the 500-plus individuals on DOE's distribution list, and posted them on the ETEC website.

TECHNICAL STUDIES BY THE NUMBERS
SOILS – Number of chemical and radiological soil samples to date: 6,000.
Records in database: 1,100,000.
Acres surveyed in Area IV: more than 350.
Number of acres to be surveyed to declare characterization complete: 50.
Status of treatability studies: Ongoing, target completion December 2014.
GROUNDWATER – Target for completion of groundwater contamination studies: October 1, 2014; sampling will continue indefinitely.
Status of groundwater treatability studies: Ongoing, with target completion December 2015.
CULTURAL AND BIOLOGICAL RESOURCES – Studies are ongoing, and will continue.

SSFL Area IV EIS: Where We Are and Where We're Headed

The key components of the Proposed Action are:

- Demolish the 18 remaining DOE-owned structures and dispose of waste and debris off site (some structures are buildings, some are small sheds, and even a car port). Not all buildings in Area IV are owned by DOE.
- Clean up Area IV and NBZ soil.
- Protect biological and cultural resources.
- Transport soil that cannot be treated on site to permitted disposal facilities.
- Backfill, re-contour, and stabilize soil excavation locations with soil that meets the LUTs in the AOC.
- Mitigate transportation impacts to adjacent communities to the extent practicable, by minimizing truck traffic, limiting disturbances to the local community, using efficient transportation methods, and analyzing alternative approaches to trucks such as conveyer systems.
- Address groundwater contamination through pump and treat technology, chemically enhanced degradation, or monitored natural attenuation, depending on the nature and extent of the groundwater plume.



Cultural and biological survey supports chemical sampling. Dr. Tara Schoenwetter, biological resource expert, surveys the landscape during monitoring activities in Spring 2014.

As required by the National Environmental Policy Act (NEPA), the Draft EIS will also evaluate the effects of a No Action Alternative – in other words, not taking any further actions to clean up soil or groundwater or dispose of DOE buildings and structures. The No Action Alternative establishes the baseline against which potential environmental impacts from other analyzed alternatives can be compared.

DOE is incorporating the concepts received from the community in 2012 into its proposed action. These concepts advanced different approaches to cleanup, including:

- Minimizing environmental disturbance.
- Prioritizing cleanup based on potential risk.
- Adhering to AOC agreements regarding schedule and level of cleanup.
- Using green technologies whenever possible.

Next up in the EIS process is preparing the Draft EIS, which is scheduled for publication in February 2015. In the Draft EIS, DOE will analyze the cleanup of soil and removal of buildings to clean up Area IV and the NBZ and will propose mitigations for impacts it identifies. After releasing the Draft EIS, DOE will hold a public comment period with at least one public hearing to collect community input and assist with developing the Final EIS, which is scheduled for publication in October 2015.

The Record of Decision, which documents and finalizes the cleanup approach, is scheduled to be published December 2015. See figure on page 1 for an overview of the schedule. For more information about the EIS, please visit the ETEC website at: http://etec.energy.gov/Char_Cleanup/EIS.html.

SSFL Area IV biologists continue to look out for Area IV plants and animals

Biologists have been hard at work on Area IV. In 2009, they performed field work and research that led to the publication of the *Fall Biological Survey Report for Santa Susana Field Laboratory Area IV and the Northern Undeveloped Land* (2009). This report pinpointed locations of special status plant and animal species and helped ensure DOE compliance with the Endangered Species Act (ESA).

Their ongoing work continued in May 2014 with seasonal biological surveys on Area IV. A team of biologists, under contract to DOE, crisscrossed the site, noting locations of plants, animals, and their habitats that are listed as threatened or endangered under the ESA, the California ESA, or listed in the California Native Diversity Database as regionally declining, rare, or sensitive species. Biologists recorded this data in field logbooks with latitude and longitude of locations noted, and it became part of the GIS database for SSFL Area IV. (See story on page 2).

Dr. Tom Mulroy, who has led the biological team since 2009, said that in addition to the required seasonal surveys, biologists work to ensure soil sampling activities will not disturb plants and animals that call Area IV their home. The team reviews

proposed soil sampling locations for the presence of any sensitive plant species or nesting birds in the vicinity. Some of the soil sampling involves ground-disturbing activities such as soil borings, trenching, and inserting soil vapor probes.

“If we do find any sensitive plants, including Braunton’s milk-vetch (*Astragalus brauntonii*) or the Santa Susana tarplant (*Hemizonia minthornii*), we advise a relocation of that sampling site or modification of the activity to protect the plant and its habitat,” Dr. Mulroy said. “We also check for the presence of nesting birds and when active nests are found, we recommend a best course of action, which might be moving a soil probe, creating a buffer around the nesting location, or postponing the activity until nesting has been completed.” Nesting bird species found recently have included the American Goldfinch (*Carduelis tristis*) and the Phainopepla (*Phainopepla nitens*).

Dr. Mulroy says that efforts are paying off, allowing sampling to move forward while complying with regulations and protecting sensitive species, “Despite three years of nearly unprecedented drought, we’ve found a number of previously unobserved species this year and are preparing an updated survey report.”



Greetings to the SSFL Community:

With your continued participation, we have accomplished a great deal, moving us closer to cleanup. Recently, the scoping period for the Area IV EIS closed, and we are now writing the EIS based on comments received.

In this issue of the CleanUpdate you will learn about the Area IV EIS (starting on page 1), the role of GIS (starting on page 2), a round-up of our 2013 community involvement activities (starting on page 4), and the ongoing efforts of biologists (page 7).

We hope you will find this issue of the CleanUpdate useful. We look forward to your participation as we continue to work toward cleanup at Area IV of SSFL.



John Jones,
Federal Project Director



Stephie Jennings,
Deputy Federal Project Director

For more information

<http://www.etec.energy.gov>

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