



Leaving no stone unexamined...
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Energy Technology Engineering Center
Area IV, Santa Susana Field Laboratory

CleanUpdate

June 2010



Findings: plethora of western toads; no red-legged frogs.
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USEPA initiates radiological studies

The U.S. Environmental Protection Agency (USEPA) has initiated an evaluation of potential radionuclide contaminants in soil and water in Area IV at the Santa Susana Field Laboratory (SSFL). The purpose of the study is to identify radiological contamination that the U.S. Department of Energy (DOE) must clean up.

Concurrently, the USEPA is conducting a “background study” of soils outside the SSFL. (See text box, page 3.)

HSA links past with present

As part of the on-site study, USEPA is preparing an independent *Historical Site Assessment (HSA)* focusing on radiological operations in Area IV and the Northern Undeveloped Lands. This *HSA* will be the result of USEPA’s review of the thousands of documents DOE, its predecessors, and their contractors prepared over the decades of operations. The purpose of this review is to identify from historical records areas where USEPA should focus particular attention during the upcoming radiological studies in Area IV and the Northern Undeveloped Lands.

In addition, USEPA conducted detailed analyses of a series of aerial photographs taken beginning in 1939 before the SSFL was established until after the main DOE facilities were closed at SSFL (2005). USEPA is using analyses of these photos to identify locations where contaminants may have been disposed at the site. USEPA will augment this information with interviews of former workers who may be able to offer insight into potential contamination that is not documented in other records.

USEPA will present this extensive historical information in a series of technical memoranda. USEPA posted the first Technical Memorandum on its website in late April. You may access this memorandum by entering this address in your browser: <http://www.epa.gov/region09/SantaSusana>, and then scrolling down to “Investigation and Cleanup Activities.”



Cart with 4-inch by 4-inch by 16-inch Sodium Iodide Detector, one of several instruments USEPA will use to conduct the Gamma scan. It’s a small, maneuverable wheel-mounted transport system allowing access to some areas that will be cramped by rock outcrops or trees.

USEPA will use the information to guide future sampling for the study of radiological contamination.

Preparatory work nears completion

USEPA has established a field office on federal land within Area II to coordinate Area IV studies. In addition, it has signed an Administrative Order on Consent with Boeing that requires Boeing to allow USEPA access to the site.

Another key preparatory activity is to document how USEPA will protect threatened and endangered species and cultural resources while it conducts its work at the SSFL. It has prepared a *Biological Assessment*, which it submitted to the U.S. Fish and Wildlife Service (USFWS).

Greetings to the SSFL community:

We are delighted with the positive steps now underway toward cleanup of SSFL, particularly the initiation of the USEPA's radiological survey of both Area IV and the Northern Undeveloped Lands. In addition, we have completed initial screening calls to 300 former workers in preparation for extensive interviews. The interviews will help DOE understand how work was done over the years and may even help us find contamination that we don't yet know about. The interviews are in full swing.

Meanwhile, we hosted two tours of Fernandeno Tataviam tribal members and conducted biological and cultural surveys in the first quarter of 2010. See associated photos and notes below and on page 4.

With so much to share with you, we decided that *is* our message this issue – lots going on, with real progress toward shared goals we have for SSFL cleanup.

As always, however, we encourage your feedback – if you have suggestions, questions, or comments, please contact us by email at Stephanie.Jennings@emcbc.doe.gov or call us at 818 466 8898.

Sincerely,



William H. Backous, P.E., ETEC Federal Project Director



Stephie Jennings, DOE NEPA Document Manager

Cultural resources survey completed



Checking under every rock. Archaeologists from CRM Tech walked methodically across the entire Northern Undeveloped Lands searching for evidence of early human activity during the cultural resources survey, April 19-21, 2010. They donned snake gaiters, trekked through chest-high grass, and examined all accessible rock outcrops. During the survey, they recorded three prehistoric lithic reduction sites, which are locations where stone tools were manufactured. No rock art or habitation sites were discovered.

Close scrutiny. CRM Tech archaeologists record an isolated stone grinding tool during the cultural resources survey. This tool was identified as a “bifacial mano” or handstone, used for grinding food items including seeds and nuts. The archaeologists, who are based in southern California and have extensive experience identifying southern California archaeological sites, will analyze their findings and prepare a report on the results. DOE will put this report on the ETEC website when it has been completed.



USEPA Initiates Radiological Studies (CONTINUED FROM PAGE 1)

The SSFL *Biological Assessment* lists threatened, endangered, proposed threatened, and proposed endangered species that could be in the area; describes how each might be affected during the study; and details how USEPA will protect them during each phase of the work. These phases include vegetation cutting that may be necessary, the gamma survey, and soil and water sampling.

The USFWS has prepared a *Biological Opinion* in response to the USEPA's *Biological Assessment*. These documents are available on USEPA's website at <http://www.epa.gov/region09/SantaSusana>. Scroll about halfway down the home page to "Documents and Reports" and click on "*Biological Assessment...*" or "*Biological Opinion...*" under "Technical Reports."

The gamma scan

The gamma scan of soils in Area IV and the Northern Undeveloped Lands is scheduled to begin in June. For the gamma scan, USEPA scientists will use various transport vehicles (see photo, page 1) and mules to carry sensitive instruments over the ground throughout Area IV and the Northern Undeveloped Lands to detect gamma radioactivity in the soil. Results of this scan will help USEPA identify specific locations to conduct detailed follow-up soil sampling because gamma radioactivity is often found in the presence of other types of radiation. Gamma rays are the most energetic form of electromagnetic radiation.

Once USEPA has identified locations of gamma "hotspots," it will begin sampling the soils around these spots. USEPA estimates the scan of Area IV and the Northern Undeveloped Lands and analyses of results will take about a year.

USEPA plans to use a Trimble Easy Guide 500 to document coverage of the survey. This instrument provides ongoing

displays of coverage and will show any area not surveyed, so the surveyor can stay on course and record locations of obstacles that may require survey by other equipment.

Water and soil sampling

Springs, seeps, and existing water wells will be sampled for radioactive contamination. USEPA will develop a separate list of contaminants of concern (COCs) for the water samples.

USEPA has released a water *Sampling Analysis Plan* (SAP) that discusses COCs, wells, surface water and sediment sample locations. The water sampling results will help fill data gaps in regard to site groundwater. Groundwater sampling will be done from existing monitoring wells.

USEPA plans to begin soil sampling in the fall. A future issue of the *CleanUpdate* will describe these plans.

How it all fits together

Taken together, the findings of all planning studies and surveys should provide a coordinated, comprehensive understanding of site contamination and the species that might be affected by it or by the work to study it.

- DOE has agreed to collect information on biological and cultural resources in Area IV and the Northern Undeveloped Lands and to provide it to USEPA so that USEPA can plan how to avoid damage to these resources during the radiological study.
- USEPA is conducting the radiological and background studies to establish an independent source of information regarding radiological contamination at SSFL Area IV.
- DOE will use the results of USEPA's radiological study in combination with the cultural and biological resource surveys to develop plans for cleaning up contaminants and protecting sensitive resources during cleanup activities.

How can we tell...?

How will we know whether or not any radiological materials USEPA identifies at SSFL are the result of past research activities?

To answer this question, USEPA initiated a radiological background study in October 2009, when it collected 140 soil samples from off-site locations 4 to 5 miles from the SSFL and additional samples at a distance of 10 to 20 miles. These samples have been sent to an analytical laboratory for analysis.

The agency will use the findings of the background study to establish the expected level of radiation for this general geographic area, in locations where no nuclear energy research activities occurred. Radiation identified at SSFL above that expected level may indicate contamination from past nuclear energy research activities.

USEPA plans to release preliminary results of the background study in a Technical Memorandum in June 2010, and a full report on background data in the fall of 2010.

News from Area II neighbors

On a scouting trip to Area II in mid-May, NASA's Merrilee Fellows and Boeing's Kamara Sams happened on this nesting killdeer. Although

killdeer may be observed in many parts of the U.S., Canada, and Mexico, Boeing staff quickly set the area apart with cones to give the expectant mom some privacy and security. Note that her speckled eggs blend in with the low-vegetation areas killdeer seem to frequent for nesting.





Fernandeño Tataviam tribal members tour Areas II and IV

Two groups of Fernandeño Tataviam tribal members toured SSFL in April to visit Area II's Burro Flats Painted Cave – which is included on the National Register of Historic Places – and Area IV. This was the first time that most had the opportunity to visit SSFL, an area considered to have historical significance for local Native Americans. One tribal leader said later, "Thank you for giving our tribe the opportunity to experience this wonderful historic adventure."



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The search for the California red-legged frog

Biologists conducted habitat assessments February 23, 2010, at three ponds with potential habitat for the red-legged frog (*Rana aurora draytonii*). These are Outfall No. 4/SRE pond in Area IV; Silvernale Pond in Area III; and Outfall No. 18 in Area II.

No evidence of this frog, a federally listed threatened species, was found, although all three of the sites investigated have some habitat characteristics suitable to support it, at least seasonally. The distance and isolation of these habitats from existing California red-legged frog locations and aspects of the habitat make occupation by the frog unlikely, the biologists concluded. During the night survey of one site, they did find a large number of breeding western toads (*Bufo boreas*), however, one of which is shown at the top of page 1.

For more information

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

Ms. Stephanie Jennings, DOE NEPA Document Manager
P.O. Box 10300, Canoga Park, CA 91309

Fax: 818 466 8730

email: Stephanie.Jennings@emcbc.doe.gov

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