

Speaking of The Santa Susana Field Laboratory

The Former Sodium Disposal Facility



Number 3

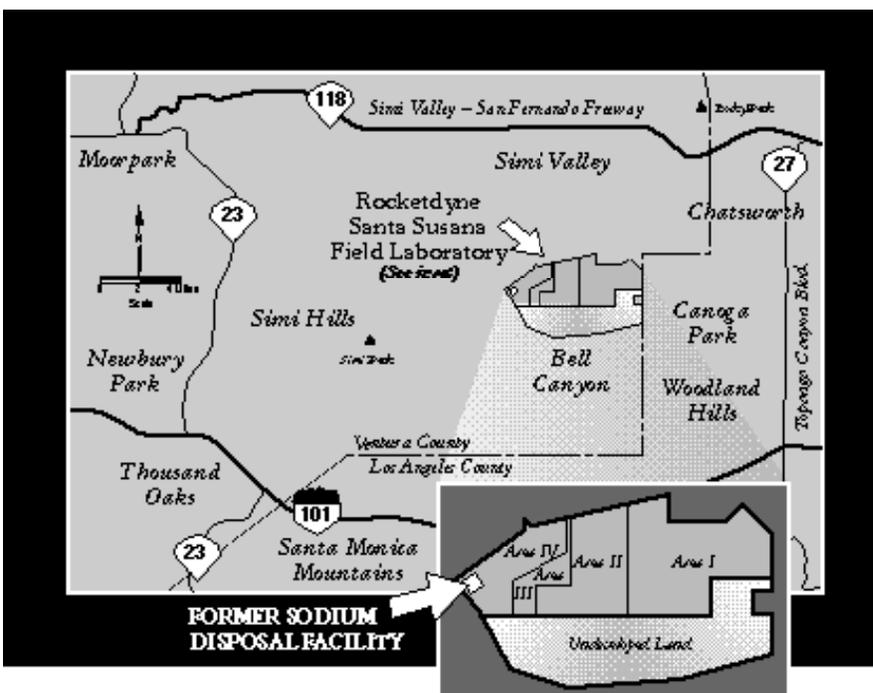
August 1996

Our Commitment

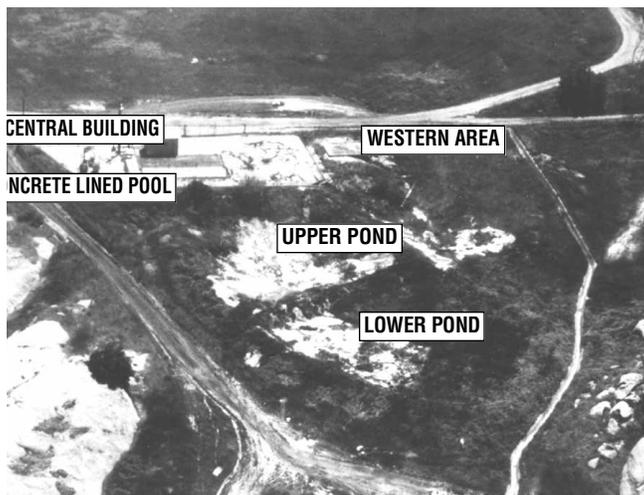
Safety and environmental compliance are critical to our success. We're determined to make Rocketdyne a model of safety and environmental management. An integral part of that commitment is to provide you with information about our environmental activities at the Santa Susana Field Laboratory. This fact sheet is to inform you about our efforts to clean up the Former Sodium Disposal Facility.

Background

We used the Former Sodium Disposal Facility, located at the western end of the Santa Susana Field Laboratory (see map at right), from the late 1950s to the mid 1970s to remove sodium and potassium from equipment prior to disposal. Sodium and potassium-containing compounds were used as the heat transfer fluids in equipment that was being tested for use in advanced nuclear reactors. The facility consisted of a control



building, a concrete pad where we handled and cleaned equipment, a concrete-lined water-filled pool, and steam cleaning equipment. Adjacent to the building was an area containing two man-made ponds (see figure below).



After testing, we brought equipment and piping to this site for cleaning. The first step in the cleaning process was to steam clean the equipment to remove the sodium that was easy to reach. The components were then placed in the concrete pool so they could react with water. In the final step, we placed the parts in the ponds to gradually remove any

remaining sodium over time. This was particularly effective in removing sodium trapped in crevices and other difficult-to-reach places.

Over time, other materials, such as oil, solvents and mercury were also disposed of here. Unfortunately, equipment contaminated with low-level radioactivity was also brought to this facility. The site wasn't designed for this.

When the Former Sodium Disposal Facility was in operation, it was the acceptable method of cleaning sodium-contaminated hardware. Use of the Former Sodium Disposal Facility ended in 1976. We built a facility in the mid 1970s that better managed the cleaning process. It essentially

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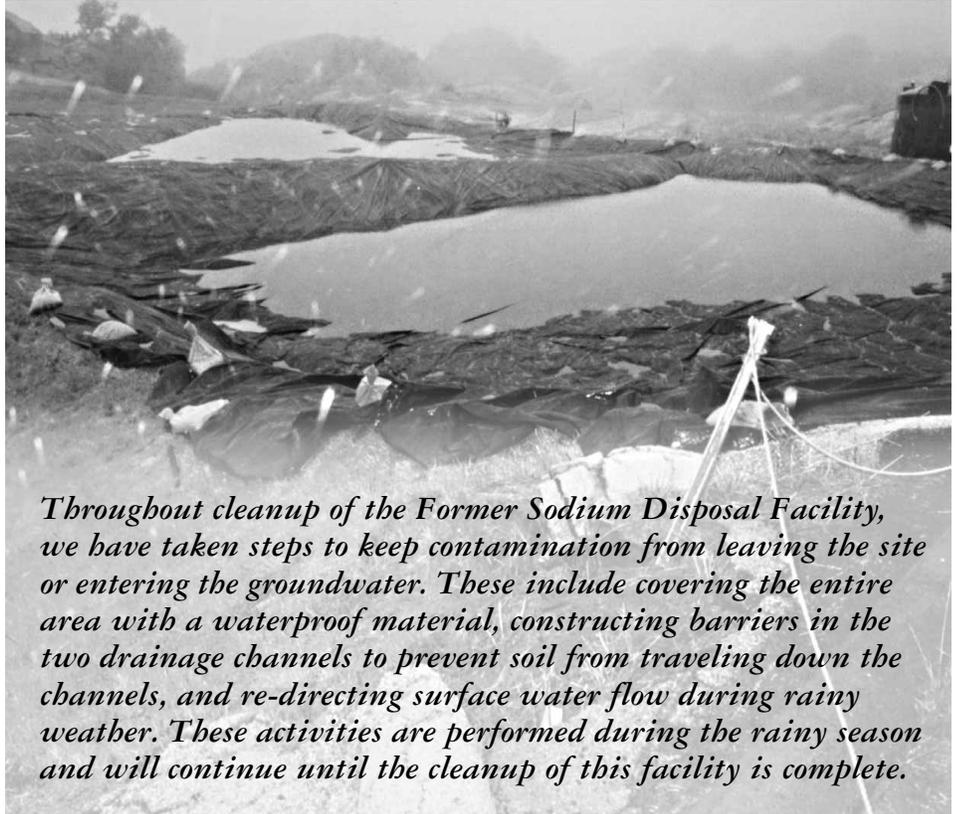
When water comes in contact with sodium, it produces a chemical “reaction” that generates hydrogen gas. Under some conditions, it can generate sufficient heat to ignite and burn the hydrogen. As a result of this “reaction” the facility was also known as the *Sodium Burn Pit*.

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eliminates release of materials to the environment. Access to the new facility is controlled and treatment is done inside a building. Equipment exists to control emissions during cleaning. There are checks and balances built into the procedures to ensure proper handling and treatment of material. For instance, all equipment is logged in for cleaning by onsite staff who document all steps in the process. The new facility is operated under permits issued by the California Environmental Protection Agency’s Department of Toxic Substances Control (DTSC) and the Ventura County Air Pollution Control District. In addition to our own random audits, the Department of Energy and the DTSC perform annual inspections.



Soil Excavation



Throughout cleanup of the Former Sodium Disposal Facility, we have taken steps to keep contamination from leaving the site or entering the groundwater. These include covering the entire area with a waterproof material, constructing barriers in the two drainage channels to prevent soil from traveling down the channels, and re-directing surface water flow during rainy weather. These activities are performed during the rainy season and will continue until the cleanup of this facility is complete.

Cleanup Activities

Major excavation activities effectively removed all radioactive contamination.

Limited cleanup work was performed at the Former Sodium Disposal Facility in the 1970s and 1980s. In 1991, the California Regional Water Quality Control Board (Water Board) issued an order under the California Toxic Pit Cleanup Act (TPCA) to remove all contaminated material in the lower pond because it was believed to be a potential source of contamination to groundwater. Beginning in 1992, we began extensive cleanup work in the lower pond area by

bedrock. After completion, the Water Board inspected the site and sampled the area to confirm that the contaminated material had been removed. In December 1992, the Water Board issued a letter documenting Rocketdyne’s compliance and removed this site from the TPCA program.

Following completion of the excavation of the lower pond, we continued cleanup of the remaining areas of the site by removing soil and equipment left there during cleaning operations. This work was done under the direction of the California Department of Health Services (DHS) and the DTSC. In total, we removed approximately 9,000 cubic yards of soil from the upper and lower ponds. Each load of the removed soil was screened for any radioactivity and then analyzed for a long list of chemicals and radioisotopes. About 20% of the excavated soil contained either chemical and/or radioactive contamination. This soil was sent to federally-permitted or

Confirmation Sampling

More work is needed to address remaining chemical contamination.

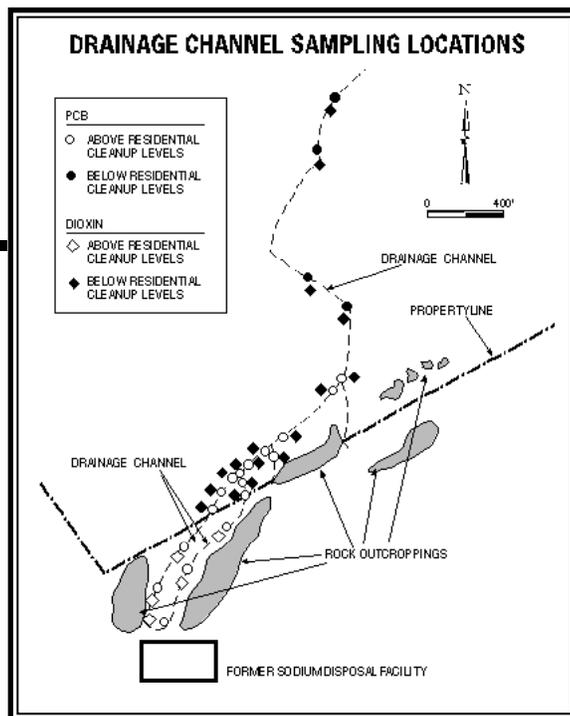
To determine if any chemical or radioactive contamination remained, the entire area of and around the Former Sodium Disposal Facility was surveyed by a third party contractor. Prior to sampling, a work plan, prepared by the contractor, was sent to the DTSC for approval. Over 250 samples were collected from approximately 100 separate sampling locations. Six separate laboratory analyses were performed to look for 300 chemicals including solvents and metals. A total of 78 soil and rock samples were also taken to verify that no radioactive contamination remained.

The results of the chemical sampling showed some chemical contamination still remained within the upper pond and in the drainage channels (see figure upper right).

The chemicals detected were mercury, polychlorinated biphenyls (PCBs), and dioxin compounds. Mercury was found in the area of the former upper pond. PCBs and dioxins were found in both the former upper pond and in drainage channels at locations on and off the Rocketdyne property. (The PCBs oils came from the fluids used in electrical components. Dioxins are formed when the PCBs are burned.) The levels of PCBs and dioxins found are highest at the Former Sodium Disposal Facility and lessen with distance from the site. Acceptable residential cleanup levels for these

chemicals have been determined by the U.S. Environmental Protection Agency (EPA). The dioxins are below these levels at the property line. The PCBs are above these levels at the property line but are below acceptable residential levels beyond 300 feet from the property boundary. The off-site channels where PCBs exceed residential cleanup levels are steep uninhabited terrain where exposure is highly unlikely (see table below).

Seventy-eight samples were taken for radionuclides. Three samples identified cesium-137 (up to 0.57 pCi/g or picoCuries per gram) and four samples showed strontium-90 (up to 0.57 pCi/g). These levels are slightly above what is found



Final Closure Activities

Only when the regulatory agency has determined that the site does not pose a health risk will it receive final closure.

The report documenting the results of the third party sampling program has been submitted to the DTSC and to the property owner where the off-site chemicals were found. We have prepared a plan to conduct a risk assessment on the current conditions of the

Former Sodium Disposal Facility and drainage channels. It will be used to ensure that human health and the environment is protected when the facility is released by the DTSC. The risk assessment will be performed by a third party contractor.

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Certain amounts of radioactivity occur naturally in the environment or are the result of fallout from worldwide weapons testing activities in the 1960s. This type of radiation is generally referred to as "background."

For example, average soil concentrations of cesium-137 found locally (at locations from 3-12 miles from the field lab) are about 0.10 pCi/g (picoCuries per gram), with values ranging up to 0.46 pCi/g. The U.S. EPA has found that the typical U.S. background concentration for cesium-137 is 0.7 pCi/g.

naturally in soil locally. However, the concentrations found are well within the range of levels found in soil across the United States, and well below regulatory agency established residential cleanup levels.

CHEMICAL	DETECTED CONCENTRATIONS			U.S. EPA RESIDENTIAL CLEANUP LEVELS
	at FSDF	at Property Line	>300 feet past Property Line	
PCBs (parts per billion, ppb or ug/kg)	25,000	880	38	66
Dioxin (parts per trillion*, ppt or ng/kg)	424	1.1	0.9	3.8

*1000 times smaller than a part per billion



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We have prepared a report of the radioactivity sampling results. This report has been submitted to the DHS with our request to release the facility for unrestricted use. This means there would be no restrictions placed on the use of the facility as a result of the former radioactive contamination.

While awaiting agency approvals, we continue to make plans for the final closure activities at the Former Sodium Disposal Facility. We continue to take steps to prevent contamination from leaving the site or entering the groundwater. Once we receive agency approvals for final closure of the facility, we will fill the excavation areas

with clean soil and seed for vegetation cover. Our goal is to have all work completed to achieve final closure of the facility as quickly as possible. We will continue to work with the regulatory agencies and our neighbors to bring the cleanup activities at the Former Sodium Disposal Facility to a close.

MAILING LIST

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Where To Get More Information

Reports and other documents related to cleanup and closure activities for the Former Sodium Disposal Facility and other environmental projects at the Santa Susana Field Laboratory are available for review at:

Simi Valley Library
2969 Tapo Canyon Road
Simi Valley
805/526-1735

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Keeping You Informed

We are interested in sharing information that you will find useful. We would like to hear from you. Please feel free to call our Environmental Communications Office for more information or to share your thoughts and suggestions:

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