California Environmental Protection Agency
Regional Water Quality Control Board

SLAC National Accelerator Laboratory
Environmental Restoration Project
Fact Sheet 6 –May 2010

Introduction

The California Regional Water Quality Control Board (Water Board) invites the public to review and comment on the ***Draft Remedial Action Plan for the Groundwater VOC Operable Unit*** (RAP). The RAP was prepared to detail the proposed clean up actions in four areas at the SLAC National Accelerator Laboratory (SLAC) located at 2575 Sand Hill Road in Menlo Park, San Mateo County, California.

This is the sixth in a series of fact sheets to inform you about site cleanup work being conducted at SLAC. The draft RAP is available to the general public at the local Information Repository established in the reference section at the **Menlo Park Public Library, located at 800 Alma Street in Menlo Park**, as well as at the **Water Board office at 1515 Clay Street, Suite 1400 in Oakland, California.** An electronic version of this report is also available on the State's data management website at **http://www.geotracker.swrcb.ca.gov.** Open the website and click the "Advanced Search" link that is located under "TOOLS" on the left-hand side of the screen. Enter "2179.7052" (without the quotation marks) into the "CASE ID/GLOBAL ID" field and click the "Search" button at the bottom of the form. On the next screen, click "Report," then the tab labeled "Site Maps/Documents." Finally, click on the *Draft Remedial Action Plan for the Groundwater VOC Operable Unit*. We encourage you to review the draft RAP and provide any comments to this Board no later than June 4, 2010.

The Groundwater VOC Operable Unit (GW VOC OU) consists of soil and groundwater polluted principally by volatile organic chemicals (VOCs) to depths of approximately 35 to 40 feet below the surface (more details are provided below). The VOCs were historically released into the soil and groundwater from past industrial operations at SLAC. Site characterization data and risk assessments completed as part of remedial investigation reports indicate that these releases to the soil and groundwater do not pose a human health risk to nearby residents or workers at SLAC. However, under certain future land use scenarios, the past chemical releases could pose a risk to persons at the site if those VOCs were not cleaned up. Under the RAP, these risks would be reduced, eliminated or otherwise mitigated. The RAP is the primary document delineating what will occur at the site. This Fact Sheet provides background information about SLAC, summarizes the content of the draft RAP, and provides information about the public comment period.

PUBLIC COMMENT PERIOD AND PUBLIC MEETING

The Regional Water Quality Control Board invites the public to comment on the draft RAP for the Groundwater VOC OU. The 30-day public comment period begins on **May 5, 2010 and ends on June 4, 2010**. All written and email comments must be postmarked or received no later than 5:00 pm on June 4, 2010.

Send comments to:
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The Regional Water Quality Control Board will hold a public meeting **Monday May 17, 2010** starting at 6:00 p.m. to provide the community with information and answer questions on the draft RAP. The **Public Meeting** will be held at the following location:

Menlo Park Public Library Public Meeting Room (Ground Level)
800 Alma Street
Menlo Park, California 94025
(650) 330-2501

SLAC Background and Location

SLAC Site History: Founded in 1962, SLAC is sited on property owned by Stanford University and leased to the U.S. Department of Energy (DOE) (see Figure 1). SLAC is operated by Stanford University under a contract with DOE. SLAC is home to a two-mile long linear accelerator—the longest in the world. Originally a particle physics research center, SLAC is now a multipurpose laboratory for astrophysics, photon science, particle accelerator and particle physics research. The Water Board is the lead administering regulatory agency for the State of California overseeing the Environmental Restoration Project at SLAC under Site Cleanup Requirements Order (Order) R2-2009-0072, re-issued to Stanford University and DOE in October 2009. The Order addresses the characterization and cleanup of historical releases of chemicals from past operations and materials management, and consolidates remedial activities and requirements into a consistent regulatory framework.

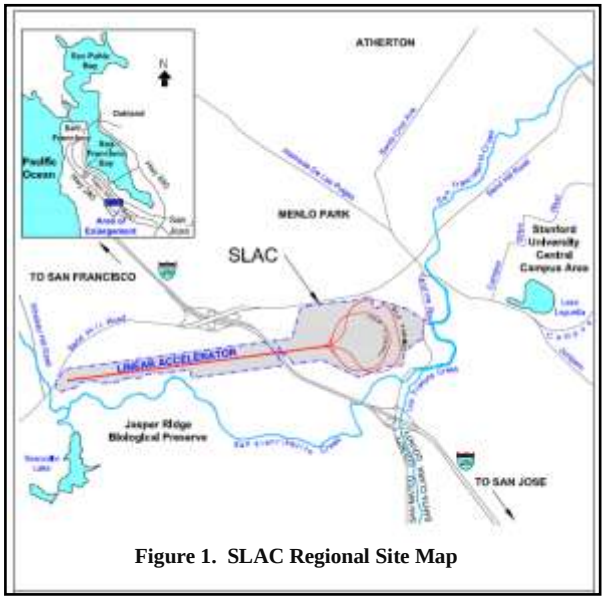

Figure 1. SLAC Regional Site Map

Groundwater VOC Operable Unit

Under the Site Cleanup Order, the GW VOC OU is one of the four designated operable units at SLAC. This operable unit is comprised of the four Investigation Areas (IAs) shown in Figure 2:

- Former Hazardous Waste Storage Area (FHWSA)
- Former Solvent Underground Storage Tank (FSUST) Area
- Plating Shop Area (PSA)
- Test Laboratory/Central Laboratory Area (TL/CL) Area

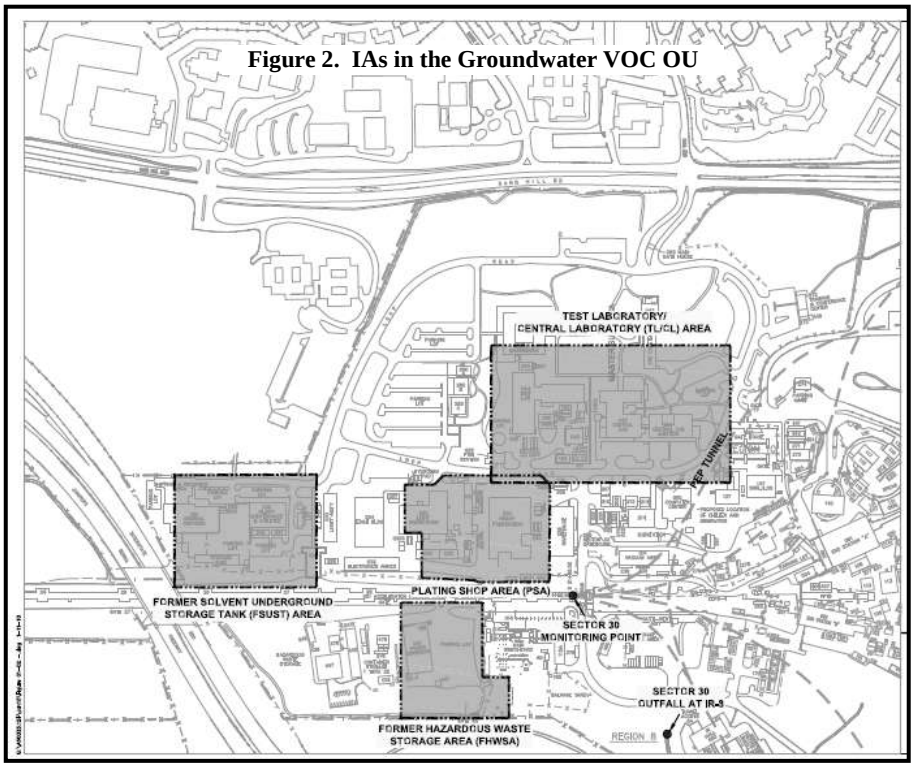

Figure 2. IAs in the Groundwater VOC OU

Pollutants

Chemicals that have been detected in soil, groundwater, or soil vapor samples collected in the GW VOC OU include VOCs, semi-volatile organic compounds (SVOCs), petroleum hydrocarbons, methane, and metals such as lead, molybdenum, and zinc. In addition, low levels of the radionuclide tritium have been detected in groundwater samples collected in a limited area at the PSA. Therefore, while the draft RAP is for the GW VOC OU, it covers both VOCs and non-VOCs, including tritium at the PSA.

A Feasibility Study (FS) Report was prepared to evaluate environmental data and develop remedial alternatives for the four IAs in the GW VOC OU. In the FS Report, the remedial alternatives were developed and evaluated based on (a) the ability to achieve remedial action objectives (RAOs), (b) comparison to the evaluation criteria established by the National Oil and Hazardous Substances Pollution Contingency Plan, and (c) evaluations with respect to National Environmental Policy Act values. The FS Report was approved by the Water Board on January 11, 2010 and is also available for review in the information repository listed on this Fact Sheet.

Draft Remedial Action Plan

The purpose of the draft RAP is to select a preferred remedial alternative for each IA, based on the environmental data and remedial alternatives that were developed and evaluated in the FS Report. The remedial alternatives that were evaluated in the FS Report and the basis for selecting a preferred remedial alternative at each IA are summarized in the draft RAP. In addition to selecting a preferred remedial alternative, the draft RAP describes plans for monitoring and evaluating remediation progress, and provides a schedule for implementing the preferred remedial alternatives.

The preferred remedial alternative for all four of the IAs incorporates **Dual Phase Extraction (DPE)** as a major component. DPE is a technology where soil vapors and groundwater are simultaneously extracted from multiple extraction wells. DPE is used to remove VOCs and the SVOC 1,4-dioxane from the unsaturated zone (soil and soil vapor) through soil vapor extraction, and to remove soluble VOCs, SVOCs and metals through groundwater extraction. This action also reduces migration of impacted groundwater and in most cases rapidly shrinks the size of contaminated area. Another important component of the preferred remedial alternative includes **soil excavation** which is an element of the preferred remedy at the FSUST Area and a potential contingency measure of the preferred remedies for the FHWSA, PSA, and TL/CL Area in the event there are localized areas where future data indicate the DPE systems are not effective at attaining the cleanup objectives. At the GW VOC OU, DPE will be implemented as a primary component of the preferred remedy, as summarized above, to remove chemical mass and meet risk-based remediation goals. However, it may be technically impracticable to attain the groundwater goals at certain locations within the GW VOC OU through DPE alone. Another element of the preferred remedies includes **natural attenuation** of VOC and SVOC concentrations in groundwater which can potentially occur through several natural processes. G**roundwater and soil vapor monitoring** will continue to be performed at the site to monitor the progress of DPE remediation, and ultimately to confirm that the cleanup objectives have been achieved.

The remedies proposed above have already been implemented as interim actions at the FSUST Area and the FHWSA and have been demonstrated to be effective in reducing concentrations of VOCs and 1,4-dioxane in the groundwater and soil vapor, as well as preventing migration of the plume. As described in the draft RAP, following construction and startup of the DPE systems at the PSA and TL/CL Area, and the potential expansion of the DPE system at the FHWSA, status reports known as *Remedial Action Implementation Reports* will be prepared and provided to the Water Board. The draft RAP also prescribes that a report will be prepared annually and provided to the Water Board for each DPE system, describing the operations and monitoring during the reporting period, and evaluating progress toward achieving the cleanup objective. In addition, five-year reviews of the remedial systems will be performed, and new technologies evaluated if relevant to meet the cleanup objectives.

Potential Impacts to Local Community

During and following implementation of the RAP, with the exception of negligible increases in local traffic anticipated along Sand Hill Road during the construction of the DPE systems at the PSA and TL/CL Area or the future removal of excavated soil by truck, no other transportation, noise, dust nuisance, or other impacts to the local community are expected.

If there are any questions related to the SLAC facility, please contact:

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To make corrections to or to be removed from the fact sheet mailing list, please contact:

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