



Palos Verdes Shelf Superfund Site

U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • April 2010

EPA Signs Interim Record of Decision Remedial Work Begins

On September 30, 2009, U.S. Environmental Protection Agency (EPA) Region IX Superfund Assistant Director Michael M. Montgomery signed an interim Record of Decision (IROD) that selected a cleanup strategy for the Palos Verdes Shelf Superfund site (PV Shelf). This fact sheet discusses the selected remedy and EPA's next steps toward remedy implementation.

Last June, EPA issued a proposed plan describing its preferred alternative for addressing the contaminated sediment on the PV Shelf. During the formal public comment from June 15 to July 15, 2009, EPA held three open houses and public meetings to talk about our proposal and hear public comments. The meetings received media coverage and were well attended. The comments received during the meetings coupled with written comments received at EPA's office are addressed in a responsiveness summary, which is part of the IROD document. The IROD, responsiveness

summary and proposed plan are all available online at www.epa.gov/Region9/superfund/pvshelf.

The selected remedy is an interim action that follows an iterative approach to remediation. The remedy includes:

- Placement of an in situ isolation cap over the erosive edge of the deposit that also contains the most highly contaminated sediment,
- Continuation of the Institutional Controls (ICs) program, and
- Monitoring natural recovery to determine when sediment, water and fish will reach cleanup levels.

After assessing the implementability and effectiveness of the interim remedy, EPA will decide whether additional actions are warranted and include those in a final Record of Decision.

Baseline Monitoring

Immediately after signing the IROD, EPA partnered with the Sanitation Districts of Los Angeles County (LACSD) to collect sediment samples across Palos Verdes Shelf. See Figure 1. Sixty-eight sediment cores were collected from 59 locations. Most of the sampling locations form a grid pattern across PV Shelf that will be sampled periodically to measure natural recovery. The other 25 locations clustered around the outfalls will provide important information to assist with cap design and placement.

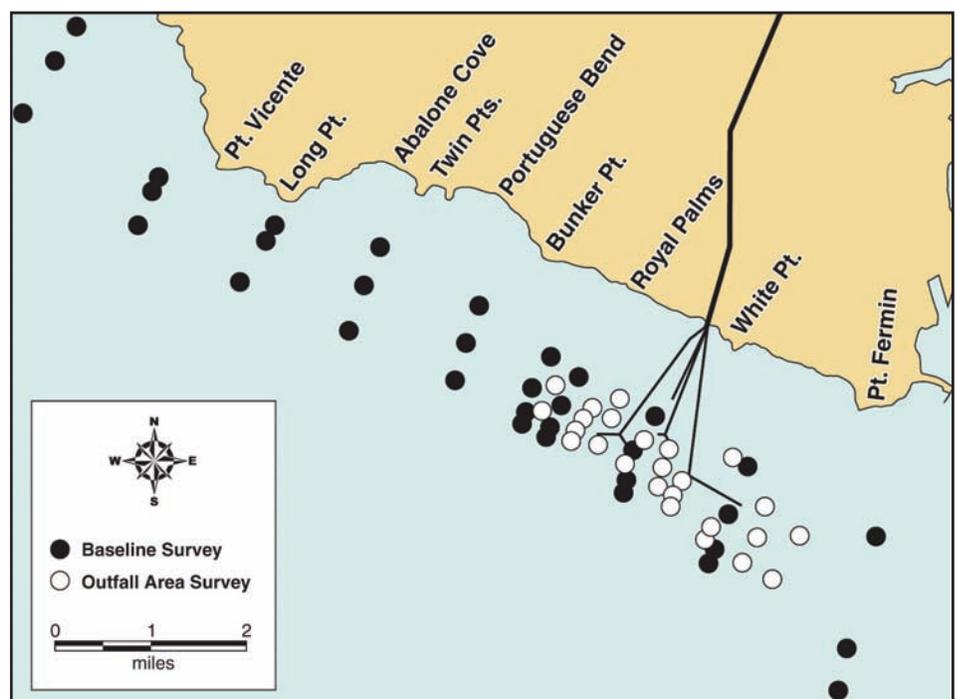


Figure 1: Sediment sampling locations. Figure courtesy LACSD

Sediment cores will be analyzed for PCBs and DDT breakdown products, including DDMU and DDNU. This baseline monitoring represents the most comprehensive sampling of the contaminated sediment deposit since the 1992 Natural Resource Damage Assessment.

Concurrent with the sediment sampling, EPA will sample water quality across the Shelf. EPA's cleanup levels for DDT and PCBs in water are 0.22 ng/L and 0.064 ng/L, respectively. These concentrations are very low--less than one drop in a trillion. Standard water sampling techniques are unlikely to detect such low concentrations; therefore, EPA will use passive samplers that absorb DDT and PCBs. Water samplers will be analyzed for the same list of PCBs and DDTs used in sediment analysis. Passive samplers will be deployed at locations used for sediment sampling in order to measure the contaminant flux from the sediment.

The baseline monitoring program will also quantify contaminant concentrations in fish. White croaker is the most contaminated fish found on PV Shelf; however, contaminant concentrations in white croaker vary widely. In order to gain a better understanding of the relationship between concentrations of DDT and PCBs in sediment and concentrations in white croaker, EPA will undertake a fish tracking study that will provide valuable information on white croaker foraging habits and home ranges for use in a food web model.

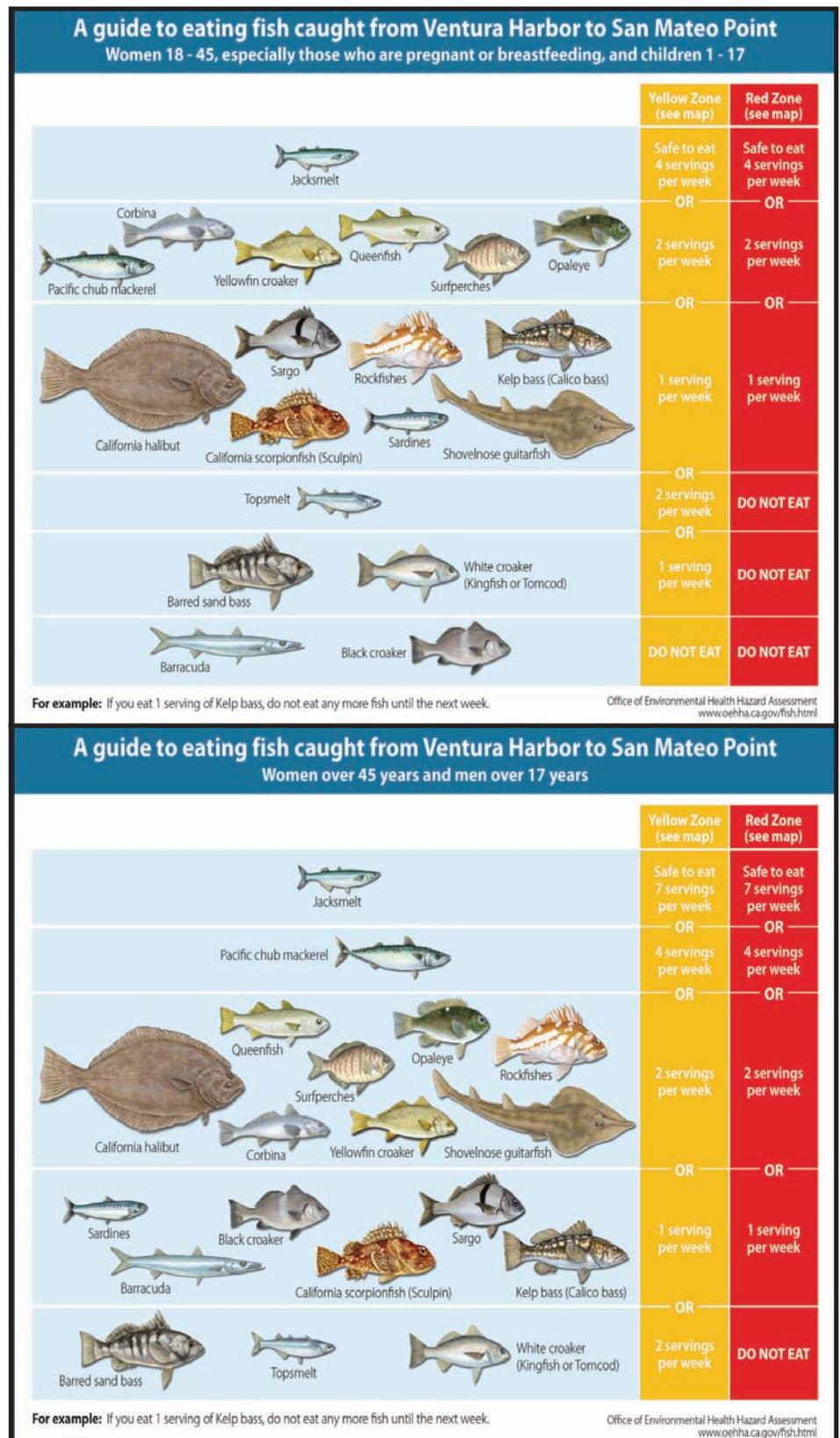


Figure 2-1: OEHA Health Advisory

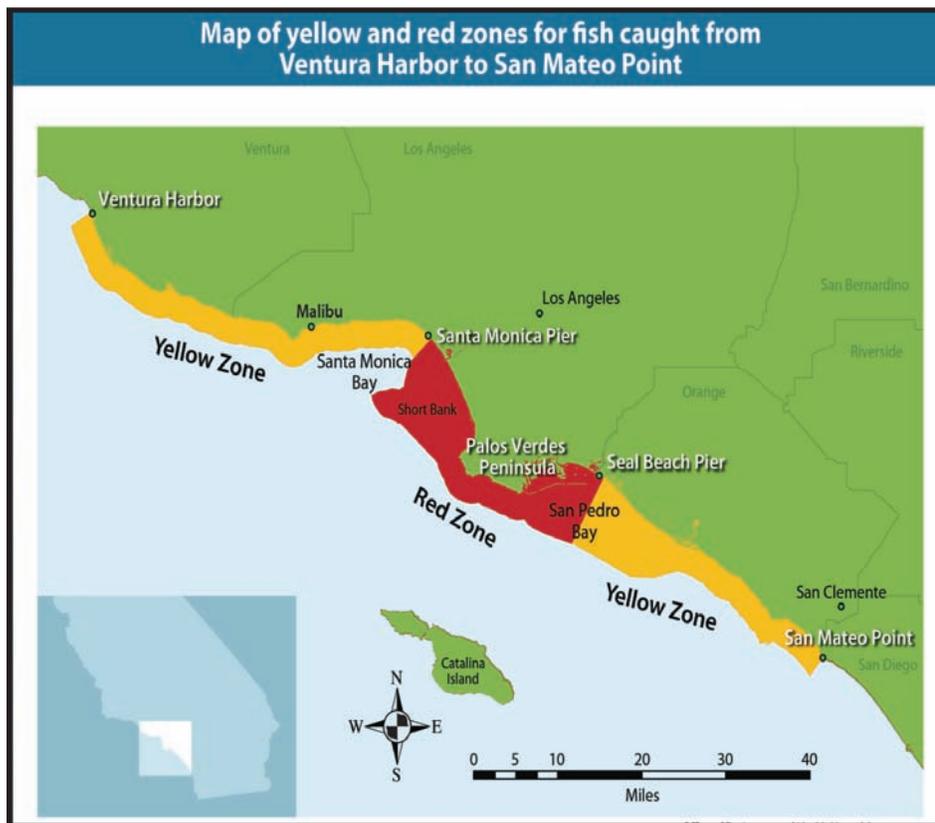


Figure 2-2: OEHHA Health Advisory

New Fish Consumption Advisory

Among the agencies and organizations that belong to the FCEC is the State of California Office of Environmental Health Hazard Assessment (OEHHA). OEHHA issues health advisories for various regions of California. In June 2009, OEHHA issued a health advisory and safe eating guidelines for fish caught from coastal areas of southern California from Ventura Harbor to San Mateo Point. The new advisory includes PV Shelf and can be accessed at www.oehha.ca.gov/fish.html. It concluded anglers should not consume white croaker, barred sand bass or topsmelt caught between Santa Monica Pier and Seal Beach Pier. Pages 2 and 3 show the advisory.

Institutional Controls Component

One of the first actions EPA took at PV Shelf to protect the public was to put in place an Institutional Controls (ICs) Program. The program has three major elements that focus on public outreach and education, monitoring, and enforcement. The ICs program relies on partnerships with other federal, state, and local agencies as well as community-based organizations and non-profits to reduce exposure to consumers from PV Shelf contaminated fish.

Since its inception in 2001, the ICs program has evolved and expanded. Today, the program limits human exposure to contaminated fish through an aggressive outreach and education program that is carried out by the EPA-sponsored Fish Contamination Education Collaborative (FCEC). The FCEC targets anglers, at-risk ethnic communities, and commercial fishing operations and markets. The group's website, www.pvsfish.org, provides timely information and materials regarding seafood safety.

The ICs monitoring component consists of monitoring contaminant levels in fish (particularly white croaker) at selected locations in the ocean, markets, landing areas and piers. Monitoring data support IC actions by enabling the FCEC to strategically target areas that may benefit from greater outreach and enforcement.

Wardens from the California Department of Fish and Game patrol the commercial white croaker no-take zone and enforce the recreational daily catch limit of 10 white croaker. CDFG works with local health agencies that inspect retail food facilities, and enforces market protocol under the California Health & Safety Code.

Monitored Natural Recovery Component

The third component of the interim remedy is monitored natural recovery (MNR). During the remedial investigation it became clear that, across the shelf, contaminant concentrations are dropping. Natural recovery processes include dispersion and burial and, in the case of DDT, degradation.

The MNR component includes the following additional studies to improve modeling of contaminant fate and transport: transformation of DDE; rates of contaminant loss; and the fish tracking study that will provide site-specific data on fish habitat that can be used to improve EPA's food web model. After these studies are completed, EPA will assess whether natural recovery processes are sufficient to reduce contaminant concentrations to cleanup levels or if there are additional actions EPA can take to accelerate recovery.

Site Background

The Palos Verdes Shelf Superfund site (PV Shelf) is a large area of contaminated sediment on the continental shelf and slope off the coast of Los Angeles, California. PV Shelf is Operable Unit 5 of the Montrose Chemical Superfund site. See Figure 3. At one time, the Montrose Chemical Corporation of California, Inc.

operated the nation's largest DDT manufacturing plant. The former plant property is now the core of the Montrose Chemical Superfund site in Los Angeles County, near Torrance, California. Waste from the manufacturing plant has contaminated soil and groundwater in the vicinity of the former plant property as well as the waters and sediment within the Port of Los Angeles and in the ocean, off the Palos Verdes Peninsula.

Since 1937, the main wastewater treatment plant of the Sanitation Districts of Los Angeles County (LACSD) has sent treated industrial and municipal wastewater (effluent) to ocean outfalls at White Point on the Palos Verdes Peninsula. From the 1950s to 1971, the Montrose manufacturing plant released tons of DDT and associated waste into the sewer system to be treated then discharged from the outfalls at White Point. Until polychlorinated biphenyls (PCBs) were banned in 1976, PCBs from local industries also formed part of the waste stream discharged to the sewer system and, after treatment, to PV Shelf. Peak mass emissions of effluent solids, DDT and PCBs occurred in 1971. Since 1971, the heavily contaminated sediment has been gradually buried by less contaminated effluent and natural sediment. This has created a layer of cleaner sediment on top of the DDT- and PCB-contaminated sediment.

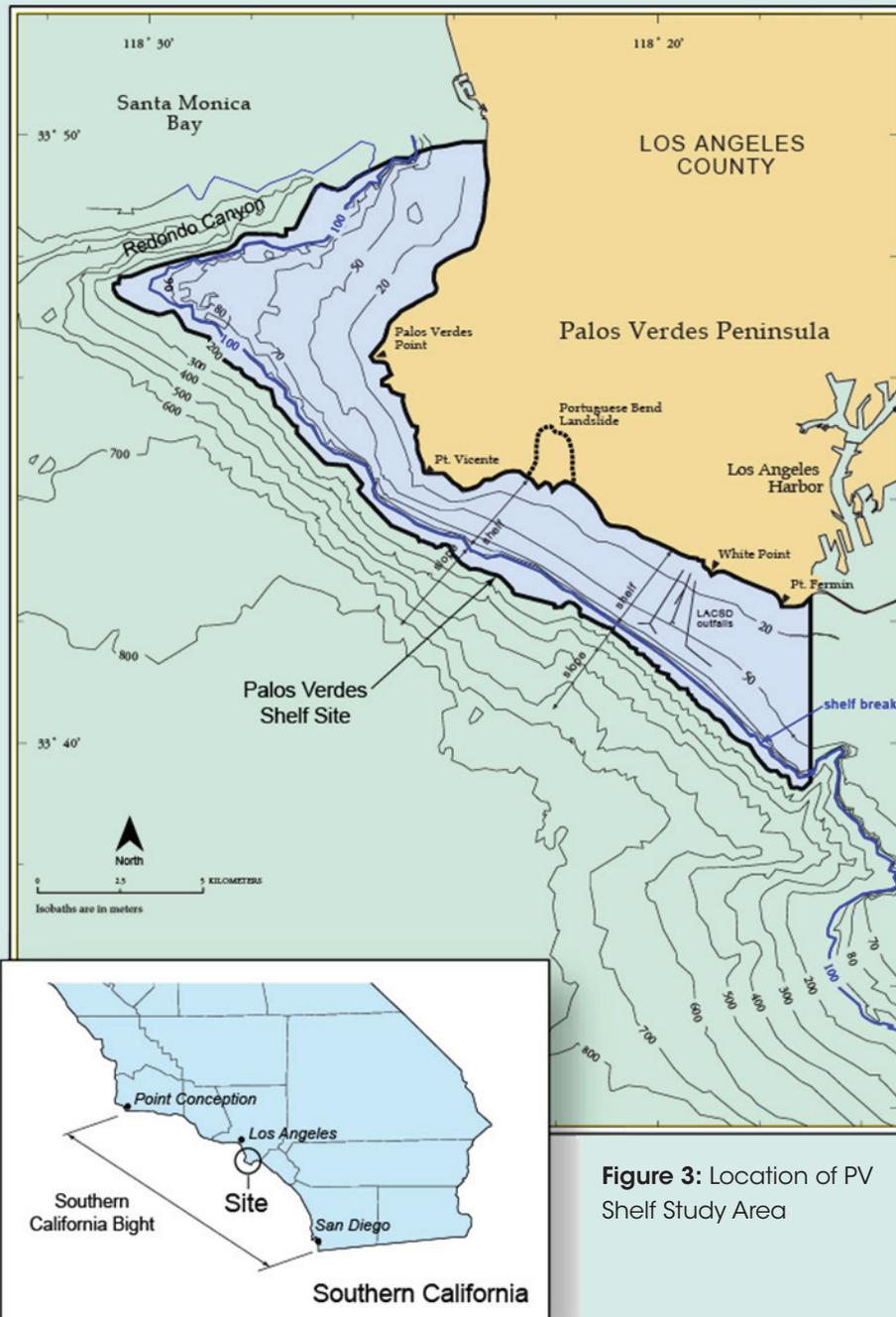


Figure 3: Location of PV Shelf Study Area

Capping the Contaminated Sediment

The selected remedy will place a cap of clean sediment over the area near the outfalls where surface concentrations of DDTs and PCBs are highest. See Figure 4. The cap will bury the contaminated sediment under clean silty sand; this will prevent erosion occurring in that area and limit contaminant flux or transport.

The sediment cores collected last fall around the outfalls are being analyzed for geotechnical properties as well as chemistry. This information is essential for EPA to proceed with cap design. EPA will use the 45-cm cap design prepared in *Options for In Situ Capping* (Palermo et al., 1999) as the starting point for a reassessment of optimum cap thickness and placement techniques. Cap placement will be difficult because the sediment deposit is 150 to 300 ft. deep and consists of soft mud. Additionally, care must be taken to avoid damaging the outfalls. Capping design includes selection of material and placement techniques. This work will begin after EPA completes its baseline studies.

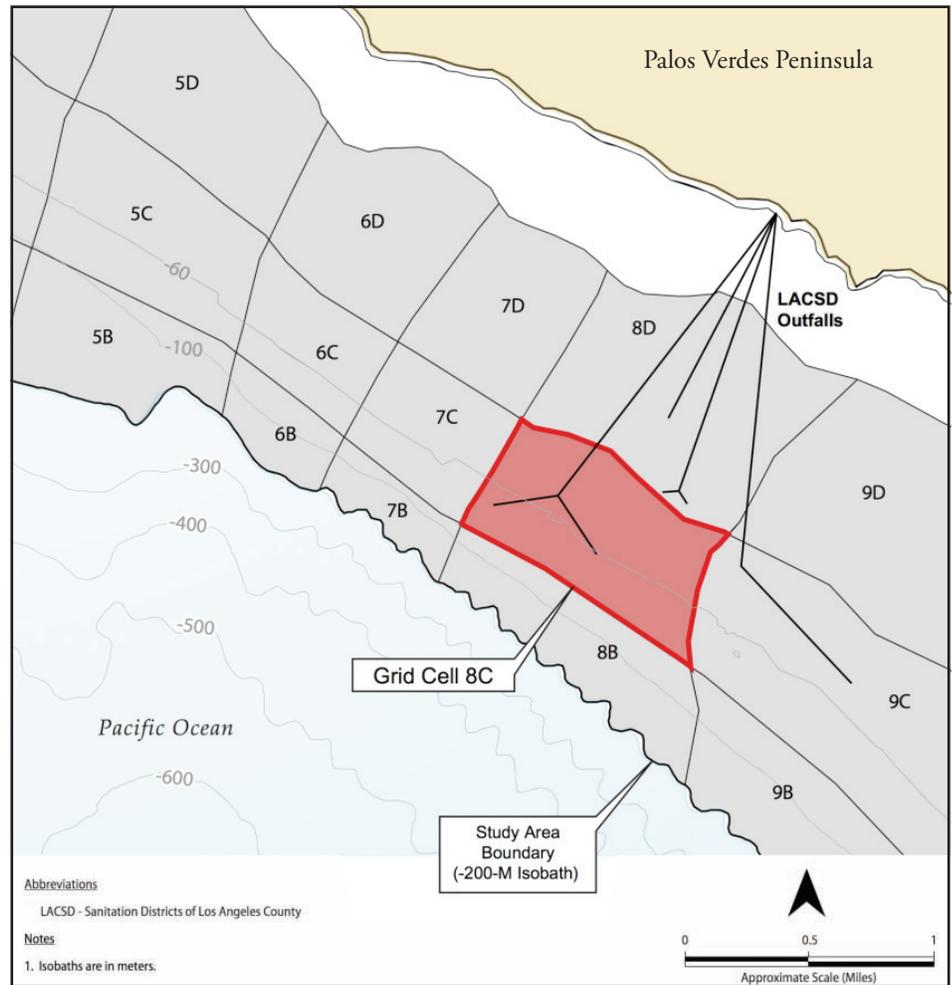


Figure 4: Area to be Capped

Information Site Repositories

The Palos Verdes Shelf Superfund site has information repositories at the following addresses. They house the Administrative Record file, which contains the information the U.S. EPA considered when selecting cleanup actions for the site.

San Pedro Public Library
 931 South Gaffey Street
 San Pedro, CA 90731
 (310) 548-7779

Redondo Beach Public Library
 303 N. Pacific Coast Highway
 Redondo Beach, CA 90277
 (310) 318-0676, Press 3 for
 Adult Reference

Palos Verdes Peninsula District Library
 701 Silver Spur Road
 Rolling Hills, CA 90274
 (310) 377-9584, Press 4, dial
 601 for Reference

Superfund Record Center
 95 Hawthorne Street, 4th Floor
 San Francisco, CA 94105
 (415) 536-2000



Palos Verdes Shelf Superfund Site

EPA Signs Interim Record of Decision – Remedial Work Begins

U.S. EPA Contacts

For further site information on the Palos Verdes Shelf Superfund site, or if you did not receive this fact sheet in the mail and would like to be added to our mailing list, please contact:

Jackie Lane, SFD-6-3
Community Involvement
Coordinator
(415) 972-3236
Toll Free Hotline:
(800) 231-3075
lane.jackie@epa.gov

Sharon Lin, SFD-8-2
Remedial Project Manager
(Public Outreach and Education,
Monitoring and Enforcement)
(415) 972-3446
Toll Free Hotline:
(800) 231-3075
lin.sharon@epa.gov

Carmen White, SFD-8-2
Remedial Project Manager
(Remedial Investigation
and Cleanup)
(415) 972-3010
Toll Free Hotline:
(800) 231-3075
white.carmen@epa.gov

U.S. EPA Region 9
75 Hawthorne Street
San Francisco, CA 94105

For additional site information, visit the U.S. EPA web pages at:

www.epa.gov/region9/Superfund/PVShelf
www.epa.gov/Region9/features/pvshelf/



Printed on 30% Postconsumer  Recycled/Recyclable Paper

United States Environmental Protection Agency
Region 9
75 Hawthorne Street (SFD-6-3)
San Francisco, CA 94105
Attn: Jackie Lane (PVS 4/10)

FIRST-CLASS MAIL
POSTAGE & FEES
PAID
U.S. EPA
Permit No. G-35

Official Business
Penalty for Private Use, \$300

Address Service Requested