

**CALIFORNIA COASTAL COMMISSION**

45 FREMONT STREET, SUITE 2000  
 SAN FRANCISCO, CA 94105-2219  
 VOICE AND TDD (415) 904-5200



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**W 20c****STAFF RECOMMENDATION****ON CONSISTENCY DETERMINATION**

Consistency Determination No.	CD-104-05
Staff:	MPD-SF
File Date:	10/18/2005
60 <sup>th</sup> Day:	12/17/2005
75 <sup>th</sup> Day:	1/7/2005
Commission Meeting:	11/16/2005

**FEDERAL AGENCY:** National Oceanic and Atmospheric Administration

**DEVELOPMENT****LOCATION:**

Various locations in the Southern California Bight, including Santa Barbara Island and Santa Cruz Island, Santa Barbara, Ventura, and Los Angeles Counties and offshore areas (Exhibit 1)

**DEVELOPMENT****DESCRIPTION:**

Habitat restoration actions under the Montrose Settlement Restoration Program (MSRP) Final Resolution Plan (FRP)

**SUBSTANTIVE FILE****DOCUMENTS:**

See page 10.

**EXECUTIVE SUMMARY**

The National Oceanic and Atmospheric Administration (NOAA) has submitted a consistency determination for a restoration program on behalf of the federal and state agency trustees of the Montrose Settlement Restoration Program (MSRP). The restoration activities covered in this consistency determination are intended to restore natural resources injured through the 1947-1982 dumping of heavy concentrations of DDTs and PCBs into the Palos Verdes shelf area through Los Angeles County's wastewater system outfall. The Commission previously reviewed a pilot capping program intended to determine whether the site could be remediated (CD-52-00). A summary of the results of the pilot project is attached as Exhibit 3. EPA is continuing to study alternatives and has not yet arrived at a final remediation plan.

The activities proposed in the subject consistency determination would consist of:

1. Providing Public Information to Restore Lost Fishing services;
2. Augmenting Funds for Implementing Marine Protected Areas in California;
3. Monitoring the Recovery of Peregrine Falcons on the Channel Islands;
4. Restoring Alcids to Santa Barbara Island;
5. Restoring Seabirds to Scorpion and Orizaba Rocks on Santa Cruz Island; and
6. Restoring Seabirds to Baja California Pacific Islands.

The activities are intended to protect and restore, where feasible, marine resources and environmentally sensitive habitat, and to protect human health and benefit commercial and recreational fisheries. The activities would provide net habitat benefits, include monitoring efforts, and future coordination with the Commission where appropriate. NOAA has agreed to consult with the Commission staff before using any herbicides in its invasive species eradication efforts. The project is therefore consistent with the applicable marine resource and environmentally sensitive habitat protection policies (Sections 30230 and 30240), and with the commercial and recreational fishing policies (Sections 30234 and 30234.5) of the Coastal Act.

The project also includes enforcement of an existing access and recreation restriction, around Scorpion and Orizaba Rocks (located on the northeast side of Santa Cruz Island). Although these islets are officially closed to the public, kayakers occasionally land on the island, which results in flushing of roosting seabirds (e.g., brown pelicans and cormorants) and harassment of nesting birds. According to NOAA, trespassers have also been documented opening the nest boxes on Scorpion Rock, leading to abandonment of nests and decreased productivity. The proposed access restrictions would not be new, and as the Coastal Act provides, management of access in a manner reflecting, among other things, protection of fragile coastal resources and the need to protect natural resource areas from overuse, is warranted under the Coastal Act. The project is therefore consistent with the public access and recreation policies (Sections 30210-30214) of the Coastal Act.

#### **STAFF SUMMARY AND RECOMMENDATION**

**I. Project Description.** NOAA has submitted a consistency determination for a restoration program on behalf of the federal and state agency trustees of the Montrose Settlement Restoration Program. The trustee agencies are National Oceanic and Atmospheric Administration, National Park Service, U.S. Fish and Wildlife Service, California Department of Fish and Game, California Department of Parks and Recreation, and the State Land Commission. The restoration activities covered in this consistency determination (part of a larger FRP plan) consist of six out of the 11 restoration activities ultimately contemplated in the overall FRP. The six currently proposed actions are as follows:

1. Provide Public Information to Restore Lost Fishing Services. This goal of this action is to provide information to people whose fishing experience may be affected by state fish consumption advisories and other consequences of DDTs and PCBs in ocean fish within the Southern California Bight (SCB). The Trustees would conduct various public outreach and education programs designed to help people make knowledgeable choices about where to fish, what to fish for, and how to prepare fish for consumption. Public feedback and reaction would be the primary means of monitoring the success of the outreach and educational activities of this program. The program will require the periodic updating and replacement of outreach materials to be effective over time due to the dynamic nature of contamination levels in the fish and changes in state fish consumption advisories.

2. Augment Funds for Implementing Marine Protected Areas in California. The goal of this action is to improve fish habitat function in the SCB by augmenting funds to administer the management plan for the Channel Islands network of Marine Protected Areas (MPAs). These MPAs are currently managed and monitored by state and federal agencies, academic institutions, and non-governmental organizations. MSRP funds distributed under the DRP would likely be used to help improve currently existing subtidal fish monitoring, law enforcement, remotely operated vehicle surveys, and groundfish tagging projects. Monitoring and evaluation of this project would take place within the ongoing evaluation of the Northern Channel Island MPAs being carried out by the California Department of Fish and Game (CDFG), which has developed specific performance criteria. The Trustees would adopt these criteria.

3. Monitor the Recovery of Peregrine Falcons on the Channel Islands. This action would include monitoring and observation of peregrine falcons as well as contaminant analysis of addled eggs and eggshell measurements.

4. Restore Alcids to Santa Barbara Island. The goal of this action is to re-establish an active Cassin's auklet breeding population on Santa Barbara Island through social facilitation and habitat improvement and to improve recruitment and productivity of Xantus's murrelets through the installation of artificial nest boxes and habitat improvement. This action would involve the removal of exotic vegetation from nesting areas, revegetation with native plants, social attraction with vocalization playback systems, and the installation of nest boxes. To quantify the efficacy of the restoration efforts, a minimum of four years of monitoring is proposed. A monitoring plan will be developed to allow the Trustees to evaluate the success of the restoration efforts by collecting simultaneous information on reproductive success, site occupancy, and mortality. Due to the State threatened status and sensitivity to disturbance of Xantus's murrelets, no adults of this species will be handled.

5. Restore Seabirds to Scorpion and Orizaba Rocks. The goal of this action is to restore seabird habitat on Scorpion and Orizaba Rocks. Actions on both Scorpion and Orizaba Rocks would include installation of artificial nest boxes, and disturbance reduction (posting of off-limits signs and an increased NPS enforcement presence). An additional action on Scorpion Rock would be the mechanical removal of exotic vegetation and revegetation with native plants. This action may involve the use of matting or some similar method to stabilize

soil in areas where erosion could prevent native plants from reestablishing themselves. To quantify the efficacy of the restoration efforts, a minimum of four years of monitoring is proposed. A monitoring plan will be developed to evaluate the success of the restoration efforts by collecting simultaneous information on reproductive success, site occupancy, and mortality. Due to the status of Xantus's murrelets and their sensitivity to disturbance, no adults of this species will be handled. For ashy storm-petrels, monitoring will be conducted on the offshore rocks and on Santa Cruz Island in order to compare the effectiveness of this project to other nearby colonies. Monitoring sites will include Bat Cave, Cove of the Bird Eggs, Cavern Point Caves, Dry Sandy Beach Cave, Orizaba Rock (natural and artificial sites) and Scorpion Rock (artificial sites). In addition to monitoring the caves and islets for reproductive effort and success, mist-netting will be employed at Scorpion Rock to collect population (mark/recapture) information. Also the success of the exotic vegetation removal and the survival of the native plants will be monitored using established success criteria for revegetation projects.

6. Restore Seabirds to Baja California Pacific Islands. This action consists of a suite of projects designed to target Cassin's auklet, Brandt's cormorant, the double-crested cormorant, the California brown pelican, the ashy storm-petrel, and Xantus's murrelet. Although different actions would be carried out at different locations, collectively the action would consist of construction of artificial nests, social attraction with decoys and vocalization, disturbance reduction through creation of off-limits nesting areas, and possible construction of boardwalks on San Jeronimo and San Martin Islands.

Future actions *not* currently proposed, and which may trigger future NOAA consistency determinations, would include:

- Construction of artificial reefs and fishing access improvements.
- Restoration of full tidal exchange wetlands.
- Completion of a Feasibility Study and Implementation of Bald Eagle Restoration Actions.
- Restoration of seabirds to San Miguel Island.
- Restoration of seabirds to San Nicolas Island.

Of the six proposed actions, NOAA considered two to not affect the California coastal zone (i.e., monitoring the natural recovery of peregrine falcons on the Channel Islands; and restoring seabirds to Baja California Pacific Islands). NOAA has focused its consistency discussion on the remaining four activities.

**II. Background.** The Palos Verdes Shelf<sup>1</sup> site consists of a 43 square kilometer (17 square mile) area of DDT<sup>2</sup>- and PCB<sup>3</sup>-contaminated sediments in an offshore area between Point Fermin and Point Vicente (Exhibits 2-3). From the late 1940s to the early 1970s, Los Angeles area industries discharged approximately 2,000 metric tons (about 2,200 U.S. tons) of DDTs and PCBs into the ocean waters off the Southern California coast. Almost all of the DDTs

<sup>1</sup> EPA defines the Palos Verdes Shelf as the area where DDT concentrations in the sediment exceed 1 part per million (ppm).

<sup>2</sup> DDT = dichloro-diphenyl-trichloethane

<sup>3</sup> PCB = Polychlorinated biphenyls

released to the Southern California marine environment originated from the Montrose Chemical Corporation (Montrose) manufacturing plant in Torrance, California. The Montrose plant discharged waste into the Los Angeles County Sanitation Districts (LACSD) sewer collection system. Wastewater treatment methods employed at that time did not capture the DDTs prior to being discharged through ocean outfall pipes that empty into the Pacific Ocean off White Point on the Palos Verdes Shelf. Montrose also dumped DDT-contaminated waste from barges into deep ocean waters in the San Pedro Basin near and possibly en-route to Santa Catalina Island. In addition, large quantities of PCBs from numerous sources throughout the Los Angeles Basin were released into ocean waters through the LACSD and City of Los Angeles wastewater outfalls and the regional storm drain systems. Although DDTs were also released into the Southern California Bight through agricultural runoff and atmospheric deposition, these sources were found to be insignificant in comparison to the Montrose discharges. The DDT and PCB deposits cover a large area of the ocean floor between Point Vicente in the northwest and Point Fermin in the southeast (Exhibit 2).

Historically, the waters of the Palos Verdes Shelf have been used extensively by both sport and commercial fishermen. Sport fishermen angle from party boats, private boats, rocky intertidal areas and sandy beaches. To this day, high levels of DDT and PCBs are found in the active biologic zone of the Palos Verdes Shelf sediments, and fish from the Shelf are contaminated with DDT and PCBs. Generally speaking, contaminant levels are highest in bottom-feeding fish such as the white croaker and are significantly lower in fish that live higher up in the water column.

Since the 1980s and 1990s, the California Department of Fish and Game has been attempting to discourage consumption of white croaker caught in the region, and EPA has been conducting its Superfund<sup>4</sup> investigations and remediation plans for the Palos Verdes Shelf. Under the Superfund litigation, by the end of October 2000, after ten years of litigation, the federal and state governments and the remaining defendants signed the last of a series of settlements. The court approved the final settlement in March 2001. Under the terms of the four separate settlement agreements, Montrose Chemical Corporation and the other defendants agreed to pay \$140.2 million plus interest to the federal and state governments. Of this amount, EPA and the California Department of Toxic Substances Control (DTSC) received \$66.25 million; the Natural Resource Trustees received \$63.95 million; and \$10 million was set aside in a special account (swing money).<sup>5</sup> The Trustees have used \$35 million to reimburse past damage assessment costs and are using the remainder plus the accumulated interest to plan and implement the actions necessary to restore the natural resources and their services<sup>6</sup> that were injured by the DDTs and PCBs.

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<sup>4</sup> Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund," Title 42 United States Code [U.S.C.] Section 9601 et seq.)

<sup>5</sup> The swing money goes to the Natural Resource Trustees in the event that EPA makes a decision not to select any in situ response or remedial action for the Palos Verdes Shelf.

<sup>6</sup> The "services" that a natural resource provides are the functions performed by a natural resource for the benefit of another natural resource and/or the public.

EPA and DTSC are using their recovery funds to address the contaminated sediments offshore and for institutional controls. In reviewing part of this ongoing effort, the Commission previously concurred with an EPA consistency determination for a pilot capping program intended to help determine whether the site could be remediated by capping (CD-52-00). A summary of the results of the pilot project is attached as Exhibit 3. EPA is continuing to study alternatives for the overall remediation and has not yet arrived at a final remediation plan.

**III. Federal Agency's Consistency Determination.** The National Oceanic and Atmospheric Administration has determined the project consistent to the maximum extent practicable with the California Coastal Management Program.

**IV. Staff Recommendation.** The staff recommends that the Commission adopt the following motion:

**MOTION:** I move that the Commission **concur** with consistency determination CD-104-05 that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).

**Staff Recommendation:**

The staff recommends a **YES** vote on the motion. Passage of this motion will result in a concurrence with the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

**Resolution to Concur with Consistency Determination:**

The Commission hereby **concurs** with the consistency determination by the National Oceanic and Atmospheric Administration, on the grounds that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the CCMP.

**V. Findings and Declarations:**

The Commission finds and declares as follows:

**A. Marine Resources, Environmentally Sensitive Habitat, and Commercial and Recreational Fishing.** The marine resources and environmentally sensitive habitat policies of the Coastal Act provide:

*30230 Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy*

*populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

*30240 (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

*(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The commercial and recreational fishing policies provide:

*30234 Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.*

*30234.5 The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

The restoration activities covered in this consistency determination are proposed primarily to restore natural resources injured through the above-referenced dumping of heavy concentrations of DDTs and PCBs into the Palos Verdes shelf. As such the primary project goals are harmonious with and help implement marine resources and sensitive habitat preservation and restoration, as well as protection of fishing efforts. Concerning marine resources, NOAA states:

*The MPA fund augmentation action is designed to improve fish habitat function in the SCB by providing additional support to preexisting MPAs. These MPAs are currently being managed by state and federal agencies, academic institutions, and non-governmental organizations. The Trustees propose to restore fish and their habitats by contributing to four ongoing projects/programs: subtidal fish monitoring, enforcement of MPA regulations by the NPS and CDFG, CDFG remotely operated vehicle surveys, and a GDFG groundfish tagging project.*

*While this project provides specific benefits to fish habitats adjacent to the Northern Channel Islands, the project will also provide longer-term benefits for fish habitats and fishing throughout California by helping to generate sound empirical underpinnings for the site and design of future networks of MPAs*

*Accordingly, while the FRP will have impacts on the marine environment, those impacts will be beneficial ones, designed to maintain, enhance, and restore marine resources consistent with Section 30230. In addition, it is worth noting that the programs that this action would support are largely administered by the State of California; therefore, the Coastal Commission would retain authority over many aspects of project implementation.*

Concerning sensitive land resources, NOAA states:

*The Trustees propose to mechanically remove exotic vegetation from nesting areas on Santa Barbara Island and Scorpion Rock and to revegetate the area with native plants. The removal of invasive, exotic vegetation and planting of native plants would be done during the non-breeding season in both locations to avoid impacts to nesting birds. There is no foreseeable plan to use herbicides at Scorpion Rock; however, there is a remote chance that herbicides would be necessary for plant removal on Santa Barbara Island. Should the use of herbicides become necessary, the Trustees would advise and coordinate with the Commission further before use.*

*There may be short-term impacts to soil from trampling in both locations, resulting in increased soil erosion. However, these impacts are expected to be minimal, and restoration of native plants could have long-term benefits to the physical environment of Santa Barbara Island and Scorpion Rock by stabilizing the soil and decreasing erosion. In addition, the Trustees may implement the use of matting or some similar method to stabilize the soil on Scorpion Rock in certain areas where erosion would normally prevent native plants from being established. Such measures will also limit soil erosion after the removal of invasive plants.*

*In summary, the FRP is consistent with the land resources provisions of the California Coastal Resources Planning and Management Policies in that any short-term impacts would be incurred to ensure that "environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values" (Section 30240(a)).*

The Commission agrees and finds that the proposed activities would protect and restore, where feasible, marine resources and environmentally sensitive habitat. The activities would provide net habitat and fisheries benefits, include monitoring efforts, and future coordination with the Commission where appropriate. Future coordination would include any significant project modifications, additional FRP elements not yet proposed and described, and any use of herbicides in NOAA's proposed invasive species eradication efforts. The project is therefore consistent with the applicable marine resource and environmentally sensitive habitat protection policies (Sections 30230 and 30240), and with the commercial and recreational fishing policies (Sections 30234 and 30234.5) of the Coastal Act.



**B. Public Access and Recreation.** Sections 30210-30212 of the Coastal Act provide for the maximization of public access and recreation opportunities, acknowledging that such access needs to be managed in a manner taking into account natural resource protection needs. Section 30213 provides for the protection of lower cost visitor and recreational facilities. Section 30214 provides that the public access policies of the Coastal Act need to be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case, including environmental sensitivity.

NOAA states:

*The proposed actions include no new restrictions on public access.*

*The Scorpion and Orizaba Rocks seabird restoration project does, however, contain disturbance reduction provisions (additional off-limits postings and enforcement). The waters around Scorpion and Orizaba Rocks are popular destinations for sea kayakers. Although these islets are closed to the public, kayakers occasionally land on the island. This human disturbance results in the flushing of roosting seabirds (e.g., brown pelicans and cormorants) and harassment of nesting birds. Trespassers have also been documented opening the nest boxes on Scorpion Rock. Such disturbance can lead to abandonment of nests and decreased productivity. The FRP disturbance reduction provisions are designed to prevent such harm by bolstering enforcement of preexisting off-limits policies.*

*Since the proposed actions impose no new access restrictions, these actions have no projected public access impacts.*

...

*The proposal to provide public information regarding fishing would involve various types of outreach to recreational anglers. Specifically, the Trustees would provide information to the public that would allow them to make knowledgeable choices about where to fish and what to fish for. This information differs from, and will compliment, the critical information generated by EPA regarding fish species and locations to avoid.*

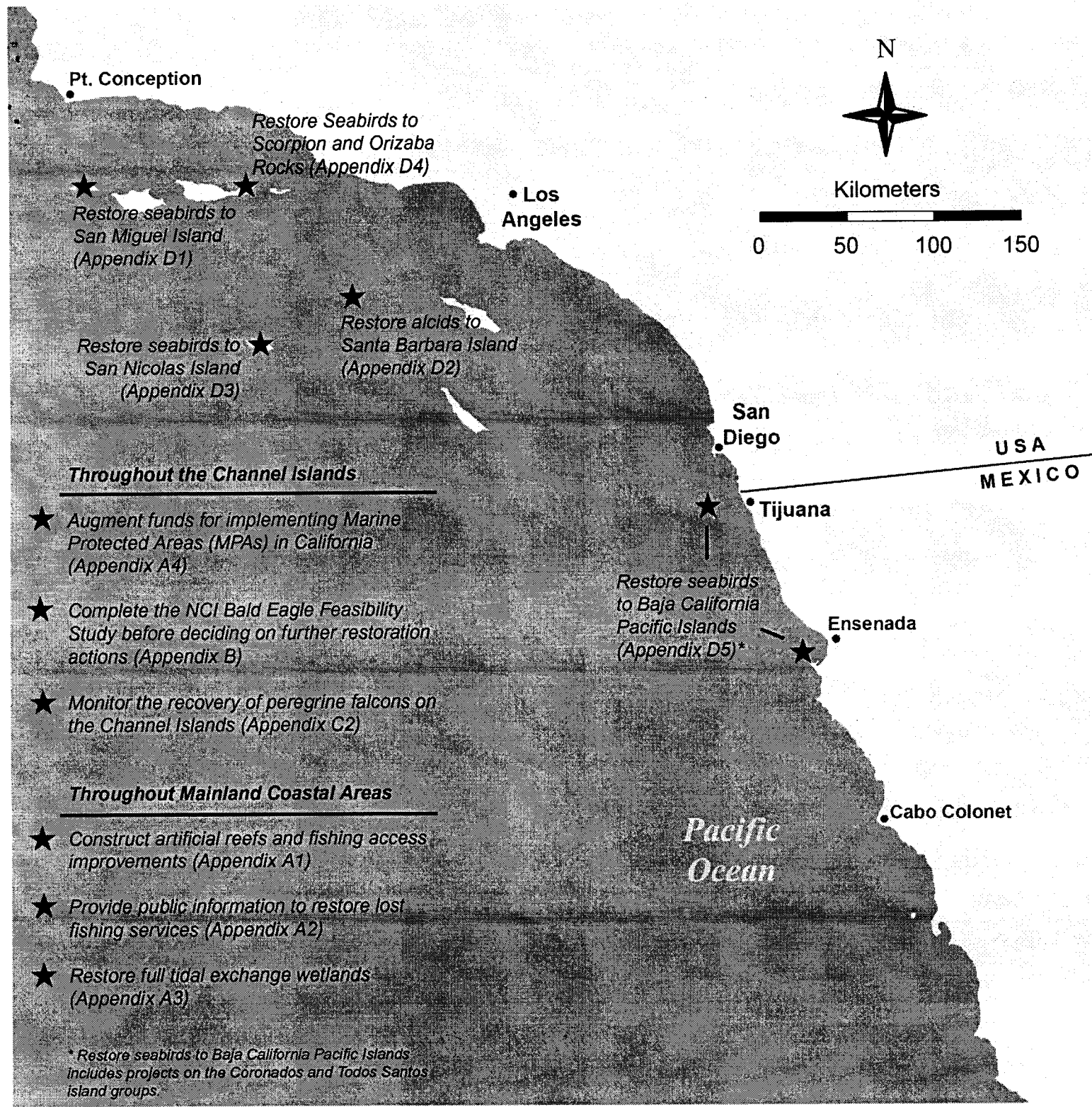
*This action would likely impact recreational use of the coastal zone; however, the impact would be more informed and healthful choices by the public regarding their use of the coastal waters for fishing. This impact would be beneficial and is therefore consistent with the Coastal Resources Planning and Management Policies.*

As discussed above, the project includes enforcement of an existing access and recreation restriction, around Scorpion and Orizaba Rocks (located on the northeast side of Santa Cruz Island)(Exhibits 4-5). Current National Park Service restrictions prohibit landing on all offshore rocks and islets around the island. NOAA notes that while these islets are officially

closed to the public, kayakers occasionally land on the island, causing flushing of roosting seabirds, harassment of nesting birds, and occasional opening the nest boxes on Scorpion Rock, leading to abandonment of nests and decreased productivity. The proposed access restrictions would not be new; in addition, under the Coastal Act (Sections 30210 and, more specifically, 30214), management of access in a manner reflecting, among other things, protection of fragile coastal resources and the need to protect natural resource areas from overuse, is warranted and in fact required under the Coastal Act. The Commission finds that the project poses no additional burdens on public access, and that the proposed enforcement of existing restrictions is necessary to protect sensitive habitat and is consistent with the public access and recreation policies (Sections 30210-30214) of the Coastal Act.

**VI. SUBSTANTIVE FILE DOCUMENTS:**

1. Consistency Determination CD-52-00, Environmental Protection Agency, Palos Verdes Shelf Capping Demonstration Project.

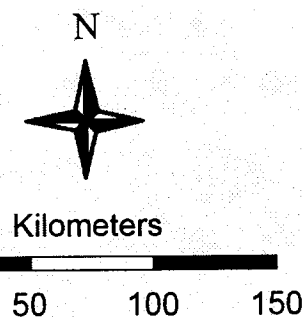


Pt. Conception

Restore Seabirds to Scorpion and Orizaba Rocks (Appendix D4)

★ Restore seabirds to San Miguel Island (Appendix D1)

• Los Angeles



★ Restore seabirds to San Nicolas Island (Appendix D3)

★ Restore alcid to Santa Barbara Island (Appendix D2)

San Diego

USA  
MEXICO

**Throughout the Channel Islands**

- ★ Augment funds for implementing Marine Protected Areas (MPAs) in California (Appendix A4)
- ★ Complete the NCI Bald Eagle Feasibility Study before deciding on further restoration actions (Appendix B)
- ★ Monitor the recovery of peregrine falcons on the Channel Islands (Appendix C2)

★ Tijuana

Restore seabirds to Baja California Pacific Islands (Appendix D5)\*

Ensenada

**Throughout Mainland Coastal Areas**

- ★ Construct artificial reefs and fishing access improvements (Appendix A1)
- ★ Provide public information to restore lost fishing services (Appendix A2)
- ★ Restore full tidal exchange wetlands (Appendix A3)

Pacific Ocean

• Cabo Colonet

\* Restore seabirds to Baja California Pacific Islands includes projects on the Coronados and Todos Santos island groups.

<b>EXHIBIT NO. 1</b>
<b>APPLICATION NO.</b>
CD-104-05



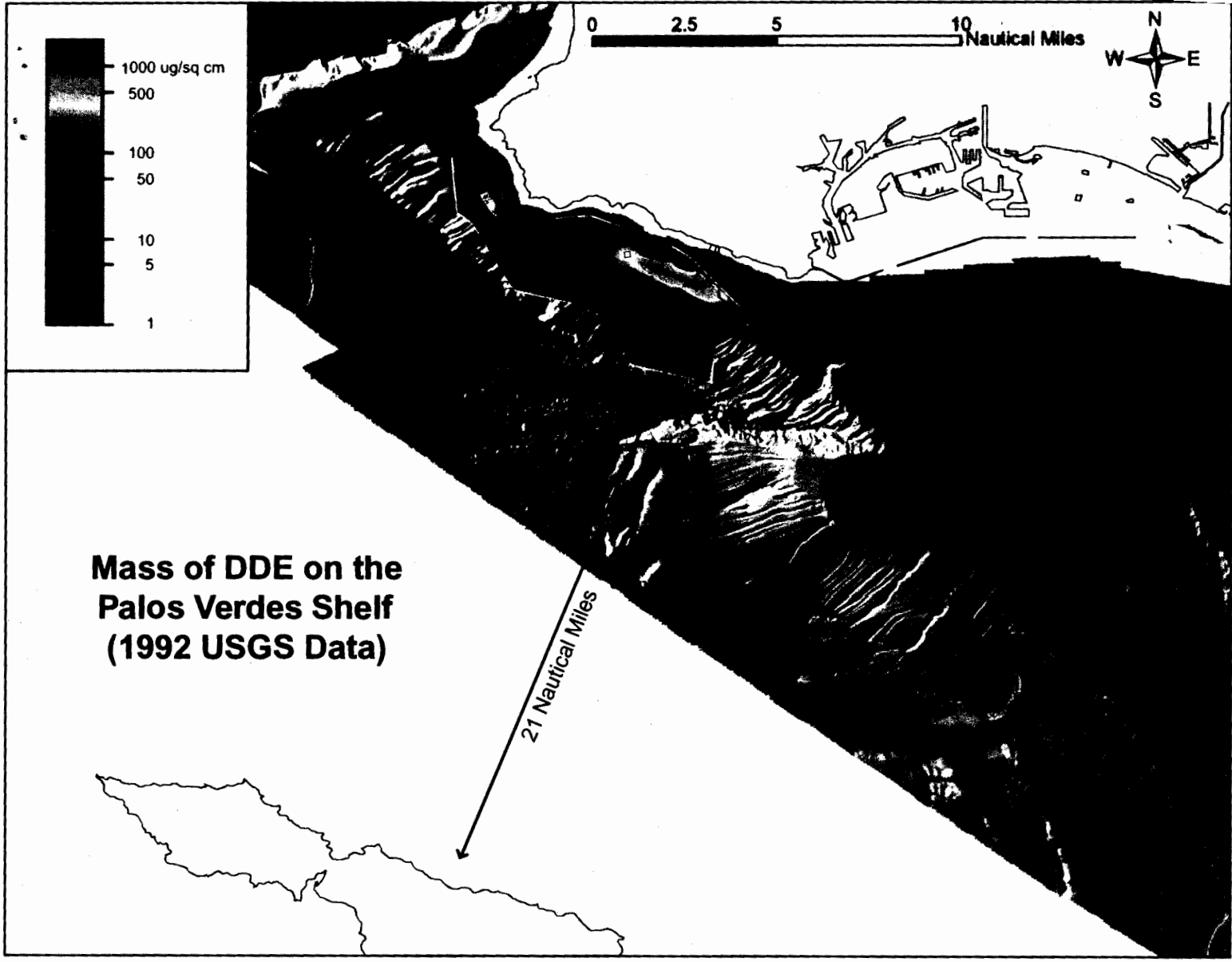


EXHIBIT NO. 2

APPLICATION NO.

CD-104-05





# Palos Verdes Shelf

United States Environmental Protection Agency • Region 9 • October 2002

## EPA Issues Report on Pilot Capping Project

**E**PA recently issued its initial report on the pilot capping project, which was conducted in the summer of 2000 as part of the Superfund investigation of contaminated sediments at the Palos Verdes Shelf site near Los Angeles, CA. EPA undertook the pilot capping study to evaluate the feasibility of placing a layer (or cap) of clean, sandy sediment over the existing deposit of DDT- and PCB-contaminated sediment and also to assess the short-term impacts associated with cap construction. The purpose of a cap is to prevent the DDT and PCBs in the sediment from getting into the food chain and causing adverse effects within the marine ecosystem and posing health risks to people who might eat contaminated fish.

### Highlights

EPA believes that the pilot study showed that it is possible to construct a cap at a water depth of roughly 200 feet without creating significant adverse impacts. In particular, the study found that:

- it is possible to construct a uniform cap layer over the contaminated sediments;
- physical disturbance to the contaminated sediment was limited and can be minimized by careful management of cap placement; and
- there was no evidence of cap or contaminated sediment instability (such as avalanching or mud flows) during or after capping activities.

The pilot study provided useful information on the effects of site conditions, cap material type, and placement methods on cap construction that will be used by EPA in deciding whether to propose a full-scale cap for the site.

The full report can be viewed or downloaded at this web site: [www.wes.army.mil/el/elpubs/pdf/tr02-5.pdf](http://www.wes.army.mil/el/elpubs/pdf/tr02-5.pdf).

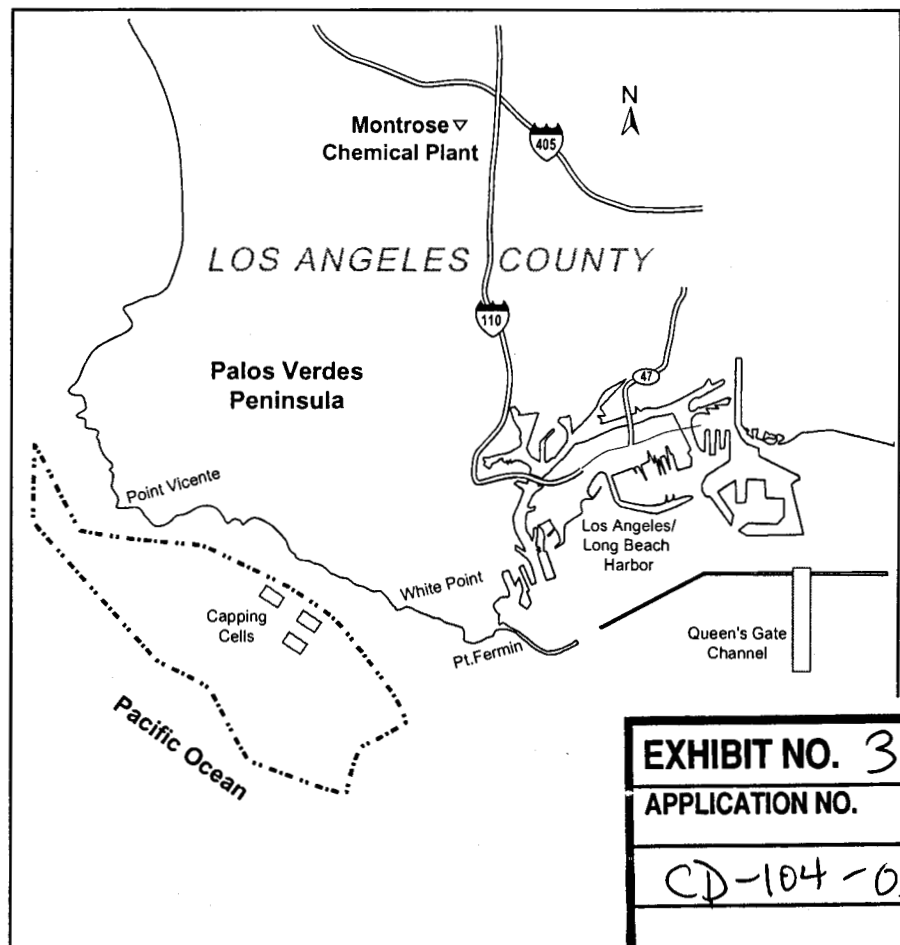


Figure 1: Location map showing pilot capping cells, Queen's Gate entrance channel, and borrow site A-III.

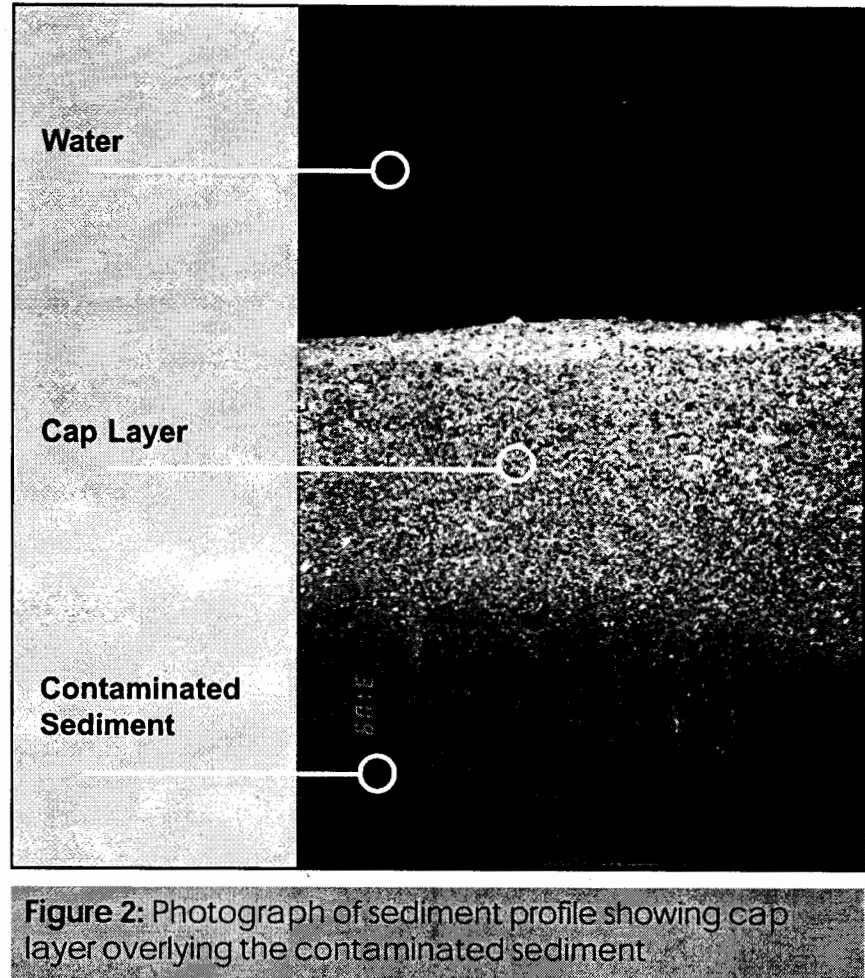
## Background

The pilot capping project on the Palos Verdes Shelf was undertaken by the U.S. Environmental Protection Agency (EPA) as part of the ongoing Superfund investigation of DDT- and PCB-contaminated sediment located on the ocean floor off the coast of the Palos Verdes peninsula near Los Angeles, California.

DDT and PCBs are present in the Palos Verdes sediments largely as a result of historic industrial waste discharges to the sewer system. Wastewater containing significant concentrations of DDT and PCBs flowed to the Joint Water Pollution Control Plant (JWPCP) owned and operated by the County Sanitation Districts of Los Angeles County. Wastewater from the JWPCP is discharged to the Pacific Ocean through submarine outfalls located off White Point on the Palos Verdes peninsula. It is estimated that over 1,700 tons of DDT were discharged through the outfalls from the late 1950s to the early 1970s. The current footprint of DDT-contaminated sediment covers a sea floor surface area of approximately 17 square miles.

The overall objectives of the pilot project were to demonstrate that a cap can be placed on the shelf and to obtain field data on the short-term processes and behavior of the cap as placed. The results of this study will be used by EPA in deciding whether to propose remediation of the contaminated sediments at the PV Shelf by capping.

**Cap Construction** - Field operations and initial monitoring were conducted during the summer of 2000, with follow-up monitoring in March 2001. Over 135,000 cubic yards of capping material (clean sediment) were placed within three 45-acre cells on the PV Shelf (see Figure 1). These three cells represent about 1 percent of the total area of contaminated sediment.



**Figure 2:** Photograph of sediment profile showing cap layer overlying the contaminated sediment.

Dredged sediments from the Queen's Gate entrance channel to the Port of Long Beach and from a nearby sand borrow site were used as the cap material sources for the pilot. A hopper dredge was used for both dredging up cap material and placing it in the pilot capping cells. Cap layers were constructed using both conventional placement (i.e., point dumping) and spreading methods.

**Monitoring** - An extensive monitoring effort was conducted as a part of the pilot project to guide cap construction and assess construction-related impacts. Major monitoring aspects included cap thickness, mixing of cap and contaminated sediments, resuspension of contaminated sediments during cap placement, lateral spread of cap material, and physical and chemical characteristics of the cap and underlying sediments.

EXHIBIT 3, p.2



A number of monitoring technologies were used, including sediment profile and plan view photographs, sediment cores, water samples and water column measurements, current meters, side-scan sonar and sub-bottom acoustic profiling.

The monitoring program also collected data on the cap material sediments prior to placement and tracked where each load of cap material came from and where it was placed.

## Pilot Study Conclusions

Based on the results of the pilot project, EPA has concluded that:

- Construction of a clean cap over the PV Shelf contaminated sediments is technically feasible.
- Both conventional placement and spreading methods can be used to construct the desired cap thickness.
- Creating a cap of uniform thickness over the contaminated sediments is possible (see photo of in-place sand cap in Figure 2).
- Physical disturbance of the existing contaminated sediments was limited to a few inches, and disturbance can be minimized by careful management (i.e., overlap) of successive cap placement points. The spreading method of cap placement was less disruptive than conventional placement.
- Bottom sediments that were resuspended in the water column following placement of a load of cap material settled back to the ocean floor fairly quickly, with very little movement in an onshore direction. Plumes of resuspended sediment did not reach nearshore kelp beds.
- No evidence of capping-related sediment instability (such as avalanching or mud flows) was observed.

The pilot study provided valuable information on the feasibility of constructing a cap and the effects of site conditions, material type, and placement methods on cap construction. Results of the pilot study will be used by EPA in its ongoing evaluation of cleanup alternatives and decision on whether to propose a full-scale capping remedy at the site.

## Information Repositories

The full report can be viewed or downloaded at the following web site:

[www.wes.army.mil/el/elpubs/pdf/tr02-5.pdf](http://www.wes.army.mil/el/elpubs/pdf/tr02-5.pdf)

Copies of the report will also be available for viewing at the following information repositories:

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

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

U.S. EPA Superfund Records Center  
95 Hawthorne St., 4<sup>th</sup> Floor  
San Francisco, CA 94105  
(415) 536-2000



EXHIBIT 3, p. 3

Scorpion Rock

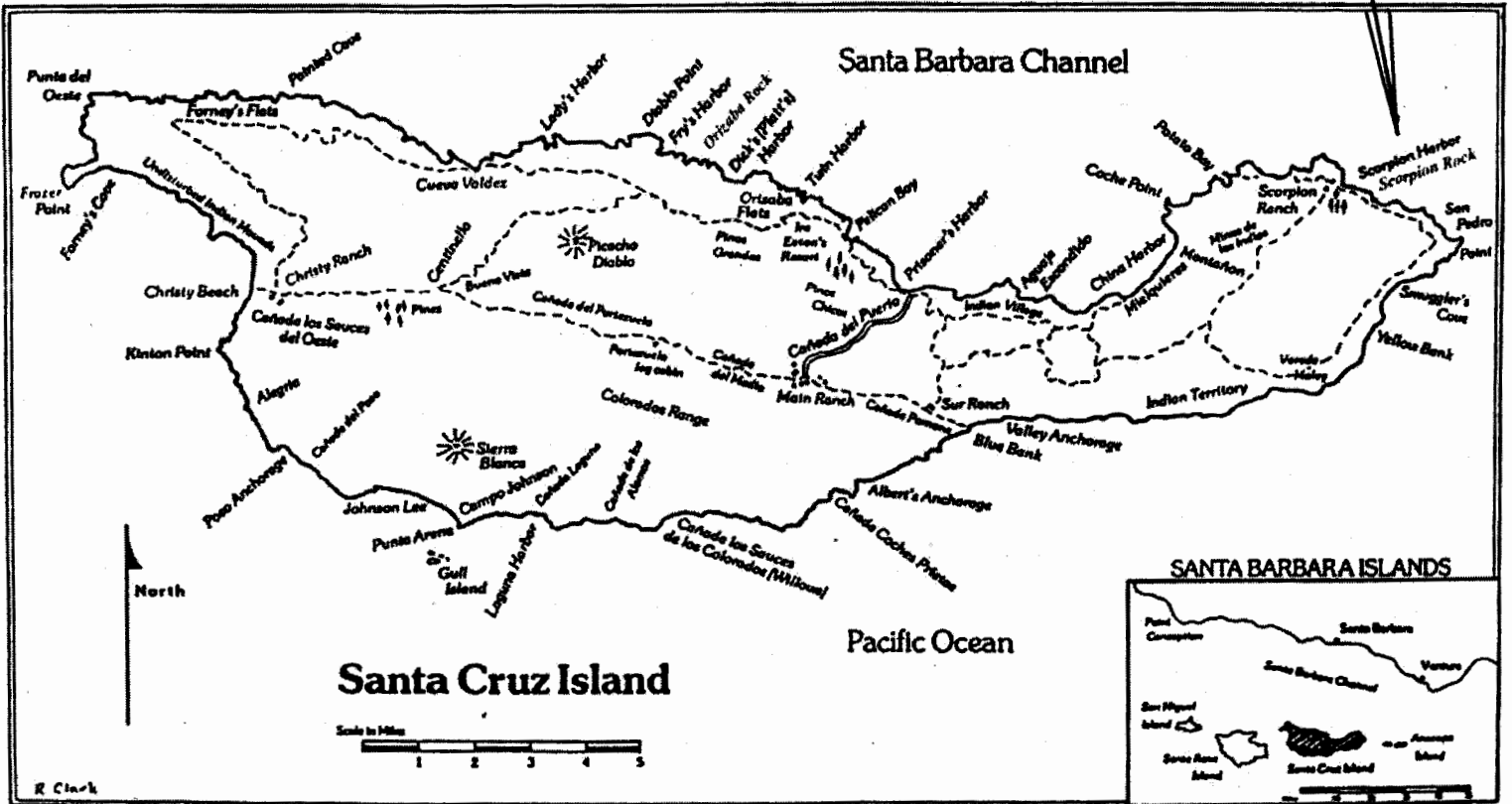


EXHIBIT NO. 4
APPLICATION NO.
CD-104-05



