

## Appendix D

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# **SAMPLING AT SEA**

During the past year. Project personnel conducted or participated in 131 cruises involving over 356 man-days at sea. The cruises are described below:

Underwater television survey of Hyperion 5-mile outfall, MARINE SURVEYOR, 1 and 7 July 1976.

Test of "flying" television sled in Santa Monica Bay, MARINE SURVEYOR, 13 July 1976.

Collection of mussels from buoy off Palos Verdes for study of trace metals uptake, 16-ft outboard, 14 July 1976.

Test of underwater pan-and-tilt television system and 35-mm baited camera on Farnsworth Bank, 26-29 July 1976.

Collection of mussels from buoy off Orange County for study of trace metals uptake, 16-ft outboard, 30 July 1976.

Collection of mussels from buoy off Palos Verdes for study of trace metals uptake, 16-ft outboard, 11 August 1976.

Collection of live Dover sole and crabs off Whites Point, MARINE SURVEYOR, 12 August 1976.

Test of underwater television equipment in Santa Monica Bay, MARINE SURVEYOR, 13 August 1976.

Underwater television survey and collection of grab samples with a modified Van Veen grab off Point Loma, MONITOR II, 16-17 August 1976.

Underwater pan-and-tilt television survey of Hyperion 7-mile outfall, MARINE SURVEYOR, 20 August 1976.

Survey of initial dilution near Point Loma outfall, using nephelometer, MONITOR II, 26-27 August 1976.

Collection of Van Veen grab samples north and south of Hyperion 7-mile outfall for survey of PCB's, MARINE SURVEYOR, 31 August 1976.

Trawl for live fish and crabs off Dana Point, MARINE SURVEYOR, 2 September 1976.

Trawl for Dover sole off Palos Verdes for fish disease study, MARINE SURVEYOR, 23 September 1976.

Trawl for Dover sole (control fish for disease study) and collection of data on all fish and invertebrates from a previously unsampled area—Point Dume, MARINE SURVEYOR, 28 September 1976.

Trawl in deep water (500 meters) off Palos Verdes, MARINE SURVEYOR, 29 September 1976.

Measurement of initial dilution near Point Loma outfall, using nephelometer, MONITOR II, 4-5 October 1976.

Test of water sampling pump and motor at depth in Santa Monica Bay, MARINE SURVEYOR, 7 October 1976.

Measurement of initial dilution near Orange County outfall, using nephelometer, ENCHANTER IV, 12 October 1976.

Measurement of initial dilution near Hyperion 5-mile outfall, using nephelometer, MARINE SURVEYOR, 19 October 1976.

Measurement of initial dilution near Whites Point outfall system, using nephelometer, SEA-S-DEE, 21 October 1976.

Collection of purple-hinged rock scallops from Point Dume and Dana Point for survey of trace metals in sport fish, 21-ft Glastron, 28-29 October 1976.

Collection of black abalone and red sea urchins from Whites Point area for survey of trace metals in sport fish, 21-ft Glastron, 31 October 1976.

Trawl for live Dover sole and collection of Van Veen grab samples and water quality data off Palos Verdes, MARINE SURVEYOR, 5 November 1976.

Deepwater survey (500 meters) of fishes and invertebrates off Palos Verdes, MARINE SURVEYOR, 9 November 1976.

Collection of purple-hinged scallops off Whites Point for study of trace metals uptake, 21-ft outboard, 10 November 1976.

Measurement of initial dilution near Whites Point outfall system, using nephelometer, SEA-S-DEE, 10 and 12 November 1976.

Trawl for Dover sole and collection of Van Veen grab samples and water quality data off Dana Point, MARINE SURVEYOR, 18 November 1976.

Deepwater trawl survey (200 meters and deeper) of fishes and invertebrates off Dana Point, VAN TUNA, 19 November 1976.

Collection of sediment samples (grab and core) in Santa Monica Bay for survey of trace contaminants, MARINE SURVEYOR, 2 December 1976.

Underwater television survey off Orange County with pan-and-tilt camera, ENCHANTER IV, 7-8 December 1976.

Participation in Los Angeles County Sanitation Districts' semiannual monitoring survey off Palos Verdes, SEA-S-DEE, 8-10 and 14 December 1976.

Underwater television fathometer survey of Hyperion 7-mile outfall area, MARINE SURVEYOR, 10 December 1976.

Collection of live scallops off Palos Verdes, 21-ft outboard, 13 December 1976.

Fathometer survey of Hyperion 7-mile outfall area, MARINE SURVEYOR, 15 December 1976.

Trawl and underwater television survey of Hyperion 7-mile outfall area, MARINE SURVEYOR, 21-22 December 1976.

Participation in Orange County Sanitation Districts' quarterly monitoring survey of fish and invertebrates in outfall area, and collection of Dover sole and crabs for survey of trace contaminants, VAN TUNA, 5 January 1977.

Charting of Hyperion 7-mile outfall area, following known compass course, MARINE SURVEYOR, 11 January 1977.

Collection of mussels from buoy off Palos Verdes for study of trace metals uptake, 21-ft inboard 17 January 1977.

Test of sediment corer in Hyperion 7-mile outfall area, MARINE SURVEYOR, 21 January 1977.

Underwater television survey of Redondo Canyon, MARINE SURVEYOR, 9 February 1977.

Collection of water samples near intake and discharge pipes of Ormond Beach Electrical Generating Station for survey of metals in cooling waters, 21-ft inboard, 17 February 1977.

Trawl survey off Coal Oil Point and on Tanner Bank, VELERO IV, 6-9 March 1977.

Collection of water samples near intake and discharge pipes of El Segundo Electrical Generating Station for survey of metals in cooling waters, 21-ft inboard, 8 March 1977.

Collection of water samples near intake and discharge pipes of Huntington Beach Electrical Generating Station for survey of metals in cooling waters, 21-ft inboard, 15 March 1977.

Trawl survey off San Miguel Island and Point Conception, VELERO IV, 18-20 March 1977.

Collection of water samples near intake and discharge pipes of Redondo Beach Electrical Generating Station for survey of metals in cooling waters, 21-ft inboard, 22 March 1977.

Measurement of initial dilution near Point Loma outfall, using nephelometer, MONITOR II, 24 March 1977.

Trawl for starry flounder and collection of grab samples and water quality data in Duwamish River Estuary, Puget Sound, for survey of diseased fish in three areas, MALKA, 30 March 1977.

Collection of water samples near intake and discharge pipes of San Onofre Electrical Generating Station for survey of metals in cooling waters, 21-ft inboard, 5 April 1977.

Deepwater survey (640-meters) of fishes and invertebrates in Santa Monica Bay, MARINE SURVEYOR, 6-7 April 1977.

Participation in Orange County Sanitation Districts' quarterly monitoring survey near outfall, VAN TUNA, 12 April 1977. Deepwater Trawl survey off Palos Verdes, MARINE SURVEYOR, 14 April 1977.

Trawl survey at six depths, ranging from 25 to 640 meters, in Santa Monica Bay, MARINE SURVEYOR, 15 March 1977.

Day/night survey off Palos Verdes, using baited 35-mm color camera, SEA-S-DEE, 20-21 April 1977.

Deepwater trawl survey (500 meters) of Dover sole populations between the Hyperion and Whites Point outfalls, MARINE SURVEYOR, 27 April 1977.

Trawl survey at 60-meter depths in Santa Monica Bay, MARINE SURVEYOR, 28 April 1977.

Participation in Orange County Sanitation Districts' quarterly monitoring survey, VAN TUNA, 2 May 1977.

Trawl survey at 60-meter depths off Orange County, FURY II, 10-11 May 1977.

Participation in Los Angeles County Sanitation Districts' semiannual monitoring survey, SEA-S-DEE, 11-12 and 17-19 May 1977.

Trawl survey at 60-meter depths between Point Conception and Point Dume, MARINE SURVEYOR, 1-3 June 1977.

Day/night survey off Orange County, using baited 35-mm color camera, ENCHANTER IV, 2-3 June 1977.

Trawl survey in New York Bight for study of diseased fish in three areas, DELAWARE II, 6 June 1977.

Day/night survey in Redondo Canyon, using baited 35-mm color camera, STRAIGHT ARROW II, 8-9 June 1977.

Diving survey of rocky bottom communities off Palos Verdes, 21-ft inboard, 8-9 June 1977.

Trawl survey in New York Bight for study of diseased fish in three areas, RORQUAL, 9 June 1977.

Collection of water samples near intake and discharge pipes of Huntington Beach Electrical Generating Station for survey of trace metals in cooling waters, 21-ft inboard, 14 June 1977.

Day/night survey in Santa Monica Bay, using baited 35-mm color camera, 16-17 June 1977.

Collection of water samples near intake and discharge pipes of Redondo Beach Electrical Generating Station for survey of trace metals in cooling water, 21-ft inboard, 20 June 1977.

Trawl survey at 60-meter depths between Dana Point and U.S./Mexico border,  
FURY II, 21-23 June 1977.