TOXIC SUBSTANCES MONITORING PROGRAM

1991 DATA REPORT

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1993

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Field and Laboratory Operations Conducted by the
Water Pollution Control Laboratory
California Department of Fish and Game

STATE WATER RESOURCES CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

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LIST OF ABBREVIATIONS

DBP	Dichlorobenzophenone
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DDMS	Dichlorodiphenylmonochlorosaturatedethane
DDMU	Dichlorodiphenylmonochlorounsaturatedethane
DFG	California Department of Fish and Game
d/s	Downstream
EDL	Elevated Data Level(s)
FDA or (USFDA)	United States Food and Drug Administration
HCB	Hexachlorobenzene
HCH	Hexachlorocyclohexane
MIS	Median International Standard(s)
MTRL	Maximum Tissue Residue Level(s)
NAS	National Academy of Sciences
PAHs	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
ppb	Parts Per Billion (ng/g)
ppm	Parts Per Million (ug/g)
Regional Water Boards	California Regional Water Quality Control Boards
State Water Board or SWRCB	California State Water Resources Control Board
TSMP	Toxic Substances Monitoring Program
USEPA	United States Environmental Protection Agency
u/s	Upstream

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Introduction

The Toxic Substances Monitoring Program (TSMP) was initiated in 1976 by the California State Water Resources Control Board (State Water Board). The TSMP was organized to provide a uniform statewide approach to the detection and evaluation of the occurrence of toxic substances in fresh, estuarine, and marine waters of the State through the analysis of fish and other aquatic life. The TSMP primarily targets water bodies with known or suspected impaired water quality and is not intended to give an overall water quality assessment. The California Department of Fish and Game (DFG) carries out the statewide TSMP for the State Water Board by collecting and analyzing samples. The State Water Board provides funding for the program under an ongoing interagency agreement with the DFG. Sampling stations are selected primarily by the nine Regional Water Quality Control Boards (Regional Water Boards) which are identified on the inside back cover.

The DFG reports annual sampling results to the State Water Board. The information is transmitted to the Regional Water Boards and to other federal, State, and local agencies in the form of an annual TSMP report. The report provides information on the statewide occurrence and levels of toxic substances and the data can be used by the Regional Water Boards and other agencies to identify waters impacted by toxic pollutants and to eventually abate such problems. This report presents the results of the 1991 sampling and analysis program. The raw data from the 1991 sampling program has already been released to the Regional Water Boards, other State agencies, and to the interested public. This report is the formal report on the 1991 program. The TSMP reports are routinely transmitted to the Office of Environmental Health Hazard Assessment of the California Environmental Protection Agency, which has responsibility for evaluating pollutant levels based on human health concerns and issuing fish consumption health advisories if indicated.

TSMP results are used by the State and Regional Water Boards in the statewide Water Quality Assessment/Clean Water Strategy. Water bodies are classified from good to impaired water quality relative to each other and ranked according to this classification and resource value. TSMP results are used to assist in the ranking process. For example, water bodies that exceed human health criteria are considered more impaired than water bodies that only exceed environmental protection criteria. TSMP results are also used in the regulatory activities of the Regional Water Boards and the Department of Pesticide Regulation.

Summary

Table 1 at the end of this section lists the 108 stations (94 water bodies) sampled in 1991 including 15 stations sampled as part of a special urban lake survey in Region 4. Fifty-six of the stations were sampled for the first time. A total of 159 samples were analyzed for trace elements (metals), pesticides, and PCBs (Appendix A). Fish were collected at all but five of the stations. Crayfish were collected at five stations in Regions 4, 5, and 8. A spiny soft shelled turtle was collected at the Westmorland station on the New River in Region 7. Along with aquatic organisms, sediment was analyzed from five stations in

Regions 1 and 3 (Appendices B and C). Arroyo chub, speckled dace, prickly sculpin, and Santa Ana sucker were collected and analyzed for the first time in the TSMP. Species collected in 1991 are listed in Table 2 (freshwater fish), Table 3 (marine fish), and Table 4 (non-fish species) at the end of this section.

Sampling results were compared to criteria such as Maximum Tissue Residue Levels (MTRLs), U.S. Food and Drug Administration (FDA) action levels, Median International Standards (MIS), and the National Academy of Sciences (NAS) recommended guidelines for predator protection (see Administrative and Comparative Criteria section). MTRLs are a new criterion developed from water quality objectives in the November 1992 *California Inland Surface Waters Plan* (SWRCB 1992). MTRLs were exceeded at 13 water bodies from Regions 3, 4, 6, 7, and 9 (Appendix D). The FDA action level for mercury was exceeded in white bass from two stations on Lake Nacimiento in Region 3 (Appendix E). The FDA action level for chlordane was exceeded in a carp sample from Harbor Park Lake in Region 4 (Appendix F). Mercury exceeded the MIS at seven water bodies in Regions 1, 4, and 5 (Appendix E). Selenium exceeded the MIS at 2 stations; Suisun Bay in Region 2 and Lindero Lake in Region 4 (Appendix E). The NAS guidelines for organic chemicals were exceeded at 17 stations (15 water bodies) in Regions 3, 4, 7, and 8 (Appendix F). In addition to the regular chemical scan, four samples from Region 1 were analyzed for PCP and TCP and one sample of arroyo chub from the Valencia station on the Santa Clara River (Region 4) were analyzed for polynuclear aromatic hydrocarbons (PAHs). PCP and TCP results can be found in Appendix G. PAHs were not detected at the Valencia station.

The pesticide diazinon was found at the three highest concentrations found to date statewide. Diazinon was detected at 260 and 180 ppb in whole samples of red shiner from San Diego Creek near Michelson Drive in Region 8. Diazinon was also found at 180 ppb in another whole sample of red shiner from Peters Canyon Channel, a tributary to San Diego Creek. The previous high diazinon value was 140 ppb in a 1990 whole sample of red shiner from Peters Canyon Channel. The second highest levels of arsenic, lead, and dieldrin were also found in 1991. A liver sample of grey smoothhound shark from Mugu Lagoon (Region 4) contained 20.9 ppm arsenic. Grey smoothhound shark collected from this station in 1988 contained the highest level of arsenic at 29 ppm. Lead was found at 1.2 ppm in a whole sample of fathead minnow from Belvedere Park Lake, an urban lake in Region 4. This concentration is second only to a whole sample of California killifish collected in 1990 from Famosa Slough in Region 9. Dieldrin was found at the second and third highest levels (1,100 and 1,000 ppb) in whole samples of threespine stickleback from Blanco Drain near the Salinas River in Region 3. The highest concentration of dieldrin (1,700 ppb) occurred in a whole sample of threespine stickleback from Watsonville Slough (Region 3) in 1984. DDT continues to be found in high concentrations with the third and fourth highest concentrations yet detected in the TSMP. The two stickleback samples from Blanco Drain contained 13,019 and 12,299 ppb DDT. The highest DDT concentration found statewide is 19,270 ppb in a 1989 goldfish filet sample from Rio de Santa Clara in Region 4.

Additional tabular summaries of chemistry data are provided in Appendices H through N. Marine fish samples exceeding criteria are summarized in Appendix H (trace elements) and Appendix I (organic chemicals). Lipid weight data ascendances are summarized in Appendix J (freshwater) and Appendix K (marine). Summaries of all chemistry data are provided in Appendix L (trace elements), Appendix M (organic chemicals), and Appendix N (lipid weight data). A complete TSMP sampling history is provided in Appendix O. Station location descriptions and latitude and longitude information can be found in Appendices P and Q, respectively. Regional maps showing 1991 station locations are in Appendix R.

TABLE 1

1991 Toxic Substances Monitoring Program

Station Name	Sample		Collection Date	Analyses
	Region 1			
Beaughton Creek/d/s Highway 97 Bridge	Brown Trout	(BN)	09/19/91	Metals, Organics, PCP, TCP
Carrville Pond*	Sediment	(SED)	09/18/91	Metals, Organics
Estero Americano*	Pacific Staghorn Sculpin	(STG)	07/16/91	Cu, Hg
Estero de San Antonio*	Prickly Sculpin	(PCP)	07/16/91	Metals
Klamath River/d/s Iron Gate Reservoir*	Speckled Dace	(DC)	09/19/91	Metals, Organics, PCP, TCP
Lake Mendocino	Largemouth Bass	(LMB)	09/09/91	Hg
Lake Pillsbury	Largemouth Bass	(LMB)	09/10/91	Metals
Lake Sonoma	Largemouth Bass	(LMB)	09/09/91	Hg
Lost River/Tule Lake	Tui Chub	(TC)	09/20/91	Metals, Organics
McDaniel Slough	Threespine Stickleback	(STB)	09/16/91	Metals
Russian River/Duncans Mills*	Prickly Sculpin	(PCP)	07/17/91	Metals, Organics
Shasta River	Speckled Dace	(DC)	09/19/91	Metals, PCP, TCP
Trinity River/d/s Burnt Ranch	Rainbow Trout	(RBT)	09/17/91	Organics
Trinity River/East Fork	Rainbow Trout	(RBT)	09/18/91	Metals, Organics, PCP, TCP
Trinity River/Willow Creek	Sculpin	(SCP)	09/16/91	Metals, Organics
	Region 2			
Alameda Creek/Niles Canyon Road*	Sculpin	(SCP)	07/09/91	Metals, Organics
Napa River/Napa	Hitch	(HCH)	07/11/91	Hg, Se, Organics
Stevens Creek	Rainbow Trout	(RBT)	07/09/91	Metals, Organics
Suisun Bay	White Sturgeon	(WST)	01/12/92	Metals, Organics
Walker Creek*	Pacific Staghorn Sculpin	(STG)	07/16/91	Metals, Organics
Walnut Creek*	Green Sunfish	(GSF)	07/10/91	Metals, Organics
	Region 3			
Aptos Creek*	Prickly Sculpin	(PCP)	08/07/91	Metals, Organics
Blanco Drain/Salinas River	Threespine Stickleback	(STB)	09/04/91	Organics
Carmel Lagoon	Threespine Stickleback	(STB)	08/01/91	Metals, Organics
	Sediment	(SED)	08/01/91	Metals, Organics
Corcoran Lagoon*	Pacific Staghorn Sculpin	(STG)	08/07/91	Metals, Organics
El Estero*	Bluegill	(BG)	08/02/91	Metals, Organics
Lake Nacimiento/Dip Creek	White Bass	(WHB)	07/31/91	Metals
	Sediment	(SED)	07/31/91	Metals
Lake Nacimiento/Las Tablas	White Bass	(WHB)	07/31/91	Metals
	Sediment	(SED)	07/31/91	Metals
Moran Lake*	Threespine Stickleback	(STB)	08/06/91	Metals, Organics
Neary's Lake*	Sacramento Sucker	(SSKR)	08/06/91	Hg, Se, Organics
Roberts Lake*	Sacramento Perch	(SP)	08/01/91	Metals, Organics
Santa Maria River/Mouth*	Sediment	(SED)	07/31/91	Organics
Schwann Lake*	Largemouth Bass	(LMB)	08/07/91	Metals, Organics

* Stations sampled for the first time.

TABLE 1 (continued)

1991 Toxic Substances Monitoring Program

Station Name	Sample		Collection Date	Analyses
	Region 4			
Alamitos Bay*	California Corbina	(CCB)	06/12/91	Metals, Organics
Arroyo Conejo	Green Sunfish	(GSF)	06/19/91	Metals, Organics
Arroyo Simi*	Fathead Minnow	(FHM)	06/19/91	Metals, Organics
Belvedere Park Lake*#	Fathead Minnow	(FHM)	04/18/91	Metals, Organics
Calabasas Lake*#	Largemouth Bass	(LMB)	04/20/91	Metals, Organics
Calleguas Creek	Goldfish	(GF)	06/18/91	Organics
Conejo Creek*	Mosquitofish	(GAM)	06/19/91	Metals, Organics
Echo Park Lake #	Largemouth Bass	(LMB)	04/19/91	Metals, Organics
Eleanor Lake*#	Black Bullhead	(BLB)	04/22/91	As
	Goldfish	(GF)	04/22/91	As, Hg, Se, Organics
El Dorado Park Lake*#	Largemouth Bass	(LMB)	04/21/91	Metals, Organics
Harbor Park Lake #	Carp	(CP)	06/15/91	Organics
Hollenbeck Park Lake*#	Red Swamp Crayfish	(PROI)	04/18/91	Metals, Organics
Legg Lake #	Largemouth Bass	(LMB)	04/17/91	Metals, Organics
Lincoln Park Lake #	Largemouth Bass	(LMB)	04/18/91	Metals, Organics
Lindero Lake*#	Largemouth Bass	(LMB)	04/22/91	Metals, Organics
Los Angeles River/Sepulveda Basin*	Goldfish	(GF)	05/15/91	Hg, Se, Organics
Malibu Creek	Bluegill	(BG)	06/18/91	Metals, Organics
Malibou Lake*#	Largemouth Bass	(LMB)	04/23/91	Metals, Organics
Mugu Lagoon	Gray Smoothhound Shark	(GSS)	06/17/91	Metals
Peck Road Lake #	Largemouth Bass	(LMB)	04/17/91	Metals, Organics
Puddingstone Reservoir #	Largemouth Bass	(LMB)	06/11/91	Metals, Organics
Rio de Santa Clara/Oxnard Drain	Mosquitofish	(GAM)	06/17/91	Organics
San Gabriel River	Mozambique Tilapia	(TLM)	06/16/91	Metals
Santa Clara River/Santa Paula	Santa Ana Sucker	(SAKR)	06/20/91	Hg, Se
Santa Clara River/Valencia*	Arroyo Chub	(AC)	06/11/91	Organics, PAHs
Sherwood Lake*#	Largemouth Bass	(LMB)	04/22/91	Metals, Organics
Ventura River	Carp	(CP)	06/20/91	Metals, Organics
Westlake Lake*#	Largemouth Bass	(LMB)	04/23/91	Metals, Organics
	Region 5			
American River/d/s Folsom Reservoir*	Largemouth Bass	(LMB)	10/03/91	Hg
American River/d/s Watt Avenue Bridge	Sacramento Sucker	(SSKR)	10/16/91	Hg
Feather River/d/s Highway 99 Bridge	Channel Catfish	(CCF)	10/09/91	Hg
Feather River/d/s Oroville Reservoir*	Sucker	(SKR)	11/05/91	Hg
Franks Tract*	Crayfish	(PACI)	10/21/91	Metals
Sacramento River/Hood	White Catfish	(WCF)	10/11/91	Hg
	White Catfish	(WCF)	11/21/91	Hg
	Crayfish	(PACI)	10/21/91	Metals
Sacramento River/u/s I-5 Overcrossing*	Crayfish	(PACI)	10/11/91	Metals
San Joaquin River/Vernalis	Channel Catfish	(CCF)	10/30/91	Hg
Yuba River/N.F./d/s Bullards Bar Res*	Smallmouth Bass	(SMB)	10/15/91	Hg

* Stations sampled for the first time.

Urban Lake Survey

TABLE 1 (continued)

1991 Toxic Substances Monitoring Program

Station Name	Sample		Collection Date	Analyses
	Region 6			
Bishop Creek Canal/d/s Bishop*	Brown Trout	(BN)	07/23/91	Metals, Organics
Carson River/W.F./d/s Paynesville*	Brown Trout	(BN)	09/27/91	Metals, Organics
Donner Lake*	Kokanee	(KOK)	10/23/91	Metals, Organics
Gull Lake*	Sacramento Perch	(SP)	07/24/91	Metals
Haiwee Reservoir*	Smallmouth Bass	(SMB)	07/24/91	Metals
Little Rock Creek Reservoir*	Black Bullhead	(BLB)	08/14/91	Metals
Sabrina Lake*	Brown Trout	(BN)	07/23/91	Metals
Silver Creek*	Sucker	(SKR)	09/27/91	Metals
Silverwood Lake*	Largemouth Bass	(LMB)	08/14/91	Metals
Squaw Creek	Brown Trout	(BN)	10/22/91	Metals, Organics
	Region 7			
Colorado River/Needles	Carp	(CP)	08/20/91	Hg, Se, Organics
Colorado River/u/s Imperial Dam	Largemouth Bass	(LMB)	08/18/91	Metals, Organics
Fig Drain	Sailfin Molly	(MOL)	08/17/91	Se, Organics
Mayflower Drain*	Mosquitofish	(GAM)	08/16/91	Se, Organics
New River/International Boundary	Carp	(CP)	12/18/91	Se, Hg, Organics
New River/Westmorland	Channel Catfish	(CCF)	08/15/91	Se, Organics
	Spiny Soft Shelled Turtle	(SST)	08/15/91	Se, Organics
Orange Drain*	Mosquitofish	(GAM)	08/17/91	Se, Organics
Palo Verde Outfall Drain	Carp	(CP)	08/19/91	Se, Organics
Peach Drain*	Mosquitofish	(GAM)	08/17/91	Se
Reservation Main Drain	Redbelly Tilapia	(TLZ)	08/18/91	Se, Organics
Rose Drain	Mosquitofish	(GAM)	08/17/91	Se, Organics
Salton Sea/North	Orangemouth Corvina	(ORC)	05/30/91	Metals, Organics
	Orangemouth Corvina	(ORC)	06/18/91	Se, Organics
	Sargo	(SAR)	05/30/91	Metals, Organics
Salton Sea/South	Orangemouth Corvina	(ORC)	05/15/91	Metals, Organics
	Region 8			
El Modena Channel/u/s Walnut Avenue Brg*	Red Shiner	(PRS)	05/16/91	Metals, Organics
Huntington Harbour/Anaheim Bay	White Croaker	(WCK)	11/21/91	Metals, Organics
Newport Bay	Spotted Sand Bass	(SSB)	06/20/91	Metals, Organics
Peters Canyon Channel	Red Shiner	(PRS)	05/16/91	Metals, Organics
San Diego Creek/Barranca Parkway	Red Shiner	(PRS)	05/16/91	Metals, Organics
San Diego Creek/Michelson Drive	Red Shiner	(PRS)	05/16/91	Metals, Organics
Santa Ana River/Prado Dam	Largemouth Bass	(LMB)	05/14/91	Metals, Organics
	Red Swamp Crayfish	(PROI)	05/14/91	Metals, Organics
Santa Ana River/USGS Gage	Santa Ana Sucker	(SAKR)	05/14/91	Hg, Se

* Stations sampled for the first time.

TABLE 1 (continued)

1991 Toxic Substances Monitoring Program

Station Name	Sample		Collection Date	Analyses
	Region 9			
Chollas Creek/Main Street*	Longjaw Mudsucker	(LJM)	06/14/91	Metals, Organics
Keys Creek*	Green Sunfish	(GSF)	06/13/91	Metals, Organics
Rainbow Creek*	Black Bullhead	(BLB)	06/14/91	Metals, Organics
San Luis Rey River/Foussat Road*	Largemouth Bass	(LMB)	06/13/91	Metals, Organics
San Luis Rey River/Highway 15*	Largemouth Bass	(LMB)	06/13/91	Metals, Organics
San Luis Rey River/Highway 76*	Largemouth Bass	(LMB)	06/13/91	Metals, Organics
Santa Margarita River/Willow Glen Road*	Green Sunfish	(GSF)	06/14/91	Metals, Organics

* Stations sampled for the first time.

TABLE 2

Toxic Substances Monitoring Program

1991 Freshwater Fish Code List*

Species Code	Common Name	Species Name	Family Name
AC	Arroyo Chub**	*Gila orcutti*	Cyprinidae
BG	Bluegill	*Lepomis macrochirus*	Centrarchidae
BLB	Black Bullhead	*Ameiurus melas*	Ictaluridae
BN	Brown Trout	*Salmo trutta*	Salmonidae
CCF	Channel Catfish	*Ictalurus punctatus*	Ictaluridae
CP	Carp	*Cyprinus carpio*	Cyprinidae
DC	Speckled Dace**	*Rhinichthys osculus*	Cyprinidae
FHM	Fathead Minnow	*Pimephales promelas*	Cyprinidae
GAM	Mosquitofish	*Gambusia affinis*	Poeciliidae
GF	Goldfish	*Carassius auratus*	Cyprinidae
GSF	Green Sunfish	*Lepomis cyanellus*	Centrarchidae
HCH	Hitch	*Lavinia exilicauda*	Cyprinidae
KOK	Kokanee	*Oncorhynchus nerka*	Salmonidae
LJM	Longjaw Mudsucker	*Gillichthys mirabilis*	Gobiidae
LMB	Largemouth Bass	*Micropterus salmoides*	Centrarchidae
MOL	Sailfin Molly	*Poecilia latipinna*	Poeciliidae
PCP	Prickly Sculpin**	*Cottus asper*	Cottidae
PRS	Red Shiner	*Cyprinella lutrensis*	Cyprinidae
RBT	Rainbow Trout	*Oncorhynchus mykiss*	Salmonidae
SAKR	Santa Ana Sucker**	*Catostomus santaanae*	Catostomidae
SCP	Sculpin	*Cottus sp.*	Cottidae
SKR	Sucker	*Catostomus sp.*	Catostomidae
SMB	Smallmouth Bass	*Micropterus dolomieu*	Centrarchidae
SP	Sacramento Perch	*Archoplites interruptus*	Centrarchidae
SSKR	Sacramento Sucker	*Catostomus occidentalis*	Catostomidae
STB	Threespine Stickleback	*Gasterosteus aculeatus*	Gasterosteidae
STG	Pacific Staghorn Sculpin	*Leptocottus armatus*	Cottidae
TC	Tui Chub	*Gila bicolor*	Cyprinidae
TLM	Mozambique Tilapia	*Tilapia mossambica*	Cichlidae
TLZ	Redbelly Tilapia	*Tilapia zillii*	Cichlidae
WCF	White Catfish	*Ameiurus catus*	Ictaluridae
WHB	White Bass	*Morone chrysops*	Percichthyidae
WST	White Sturgeon	*Acipenser transmontanus*	Acipenseridae

* Common and scientific names were obtained from Robins et al. (1991). List includes fish that inhabit both fresh and estuarine waters.

** Collected for the first time.

TABLE 3

Toxic Substances Monitoring Program

1991 Marine Fish Code List*

Species Code	Common Name	Species Name	Family Name
CCB	California Corbina	*Menticirrhus undulatus*	Sciaenidae
GSS	Gray Smoothhound Shark	*Mustelus californicus*	Carcharhinidae
ORC	Orangemouth Corvina	*Cynoscion xanthulus*	Sciaenidae
SAR	Sargo	*Anisotremus davidsoni*	Haemulidae
SSB	Spotted Sand Bass	*Paralabrax maculatofasciatus*	Serranidae
WCK	White Croaker	*Genyonemus lineatus*	Sciaenidae

*Common and scientific names were obtained from Robins et al. (1991).

TABLE 4

Toxic Substances Monitoring Program

1991 Non-Fish Species Code List

Species Code	Common Name	Species Name	Family Name
PACI	Crayfish	*Pacifastacus leniusculus*	Astacidae
PROI	Red Swamp Crayfish	*Procambarus clarki*	Astacidae
SST	Spiny Soft Shelled Turtle	*Trionyx spiniferus*	Trionychidae

FIELD AND LABORATORY OPERATIONS

The presence of many toxic substances in fresh waters is determined by analyzing tissues from fish and other aquatic organisms. Concentrations of these substances in water are often too low or transitory to be reliably detected through the more traditional methods of analysis of water samples. Also, many toxic substances are not water soluble, but can be found associated with sediment or organic matter. Fish and other aquatic organisms are sampled because they bioaccumulate and bioconcentrate toxic substances to levels which may be many hundreds of times the levels actually in the water. This concentration factor facilitates detection of toxic pollutants. The following is a general overall discussion of field and laboratory procedures. A detailed discussion is provided in Appendix S.

Substances Measured

A total of 10 trace elements (metals) and 45 pesticides and PCBs (organic chemicals) are analyzed in the TSMP on a regular basis. Additional substances, such as polynuclear aromatic hydrocarbons (PAHs), pentachlorophenol (PCP), and tetrachlorophenol (TCP), are looked for on a request basis only. Not every sample is analyzed for all metals or organic chemicals. Each sample at each station is handled individually. The requesting agency, usually the Regional Water Boards, will specify the type of analysis for each sample. All metals, except mercury and selenium, are routinely analyzed in liver tissue. Mercury, selenium, and all organic chemicals are analyzed in muscle tissue (filet). When only very small fish are available, metal or organic chemical analysis is performed on a whole-body composite of larger than usual numbers of individual fish.

Sample Size

Composite samples, using six fish of each species, are collected whenever possible. The number and size uniformity of the fish in each composite depends upon their availability. Replicate composites are collected and analyzed to measure the variability of toxicant concentrations in single species composites collected at the same time and place. Collection of the same species from all stations is desirable to minimize possible variation in the data due to differences in pollutant uptake between species. However, this is not possible over the entire State due to the variety of habitat sampled and limited collection time available in the program. All reasonable efforts are made to maintain both station-to-station and year-to-year uniformity in collections. In general, predator fish are desired from all stations. Forage fish are desired as supplemental samples at stations where pollution problems are known to exist, or as substitute samples where predatory fish are not available.

Wet and Lipid Weight Measurements

Tissue concentrations of metals and organic chemicals are measured on a wet weight basis. Metal data are presented in parts per million (ppm), while organic chemical data are presented in parts per billion (ppb). In addition to wet weight measures, organic chemicals are also expressed on a lipid weight basis. Lipid

weight measurements offer several advantages. Because chlorinated hydrocarbons are much more soluble in lipids (fat tissues) than in water, they partition into lipid-rich tissues of aquatic organisms (Stout and Beezhold 1981). Animals with higher proportions of lipid in their tissue usually have had higher concentrations of chlorinated hydrocarbon pollutants (Phillips 1980). Factors such as season, water temperature, health of the organism, stress on the organism, and type of species can affect the lipid levels of samples collected for analysis and can, therefore, cause variability in results. Use of lipid weight measurements may reduce this source of variability, although disadvantages have also been noted (Phillips 1980). As a result, lipid weight values may represent a more realistic measure of environmental availability of chlorinated hydrocarbons than wet weight values. Wet weight measures, however, remain the preferred measure for most readers because all standards for human health and for predator protection are based on wet weight measures. Also, wet weight measures better reflect the exposure of predators or humans to the actual concentration in freshly caught fish.

Station Numbers

Each TSMP station is identified by a unique seven digit number derived from the State Water Board's hydrologic basin planning maps. The first digit of a station number signifies one of the nine Regional Water Boards. The second and third digits represent a hydrologic area, while the fourth and fifth digits identify a hydrologic subarea. The sixth and seventh digits represent the distance in miles above the downstream hydrologic boundary. For example, station 519.21.01 is in Region 5, hydrologic area 19, subarea 21, and is one mile upstream from the hydrologic unit boundary. Not all mileage indicators are accurate, however. In certain instances, it was necessary to assign an arbitrary mileage indicator. For example, the arbitrary designation is used when two or more stations within the same hydrologic subarea are located within the same number of miles of the hydrologic boundary, resulting in the same station number. In this case, one or more of the stations is arbitrarily assigned a mileage designator from 90 to 99.

ADMINISTRATIVE AND COMPARATIVE CRITERIA

In this report, as in previous TSMP reports, the term "criteria" is used to refer to the criteria against which a particular metal or organic chemical is being compared. As more than one criterion may apply to any one metal or organic compound, a hierarchy was established. The intent of the hierarchy is to compare data against the more important criterion. In general, FDA action levels and the "Median International Standards" (MIS), human health-related criteria, are considered more important or critical. Following human health criteria are NAS guidelines, predator protection criteria. Last in the hierarchy are "elevated data levels" (EDL). New to this report are Maximum Tissue Residue Levels (MTRLs), also human health related criteria. All appropriate 1991 data will be compared separately to MTRLs in addition to following the usual hierarchy. The criteria mentioned above are discussed below.

In interpreting the TSMP data by any of the criteria provided, the reader is cautioned that there is no simple relationship between concentrations of toxic substances observed in tissue samples and actual concentrations in water. Different aquatic organisms tend to bioaccumulate a given toxic substance in water to different levels; however, the differences usually do not prevent a general interpretation of the data. The reader is cautioned that the limited number of samples obtained and analyzed at each station in a single year is generally too small to provide a statistically sound basis for making absolute statements on toxic substance concentrations. The values reported herein should be accepted as indicators of relative levels of toxic pollution in water, not as absolute values. In this sense, trends over time and ranking values of a toxic substance in a particular species provide only an indication of areas where fish are evidently accumulating concentrations which are above "normal".

Maximum Tissue Residue Levels (MTRLs)

MTRLs were developed from human health water quality objectives in Table 2 of the State Water Board's November 1992 *California Inland Surface Waters Plan* (SWRCB 1992). The objectives represent concentrations in water that protect against drinking water and consuming fish or shellfish that contain substances at levels which could result in significant human health problems. MTRLs are used as alert levels or guidelines indicating water bodies with potential human health concerns and are an assessment tool and not compliance or enforcement criteria. MTRLs are compared only to filet or edible tissue samples and should not be compared to whole body or liver samples. Table 5 at the end of this section lists MTRLs for those substances monitored in the TSMP. The MTRLs for 10 of the 15 carcinogens listed in Table 5 are below the current tissue detection limit for those substances. Only MTRLs for arsenic, DDT, HCB, gamma-HCH, and PCP are above the detection limits.

The MTRLs were calculated by multiplying the human health water quality objectives by the bioconcentration factor (BCF) for each substance as recommended in the USEPA *Draft Assessment and Control of Bioconcentratable Contaminants in Surface Waters* (USEPA 1991). BCFs were taken from the USEPA 1980 Ambient Water Quality Criteria Documents for each substance. MTRLs were not calculated for objectives that are based on maximum contaminant levels (MCLs) or taste and odor criteria.

FDA Action Levels and NAS Guidelines

The U.S. Food and Drug Administration (FDA) has established maximum concentration levels for some toxic substances in human foods (USFDA 1985). The levels are based on specific assumptions of the quantities of food consumed by humans and upon the frequency of their consumption. The FDA limits are intended to protect humans from the chronic effects of toxic substances consumed in foodstuffs. The National Academy of Sciences (NAS) has established recommended maximum concentrations of toxic substance concentrations in freshwater fish tissue (NAS 1973). They were established not only to protect the organisms containing the toxic compounds, but also to protect the species that consume these contaminated organisms. The specific action levels and guidelines used in this report are shown in Table 6 at the end of this section.

Median International Standards (MIS) for Trace Elements

The Food and Agriculture Organization of the United Nations has published a survey of health protection criteria used by member nations (Nauen 1983). These criteria vary somewhat in the tissues to be analyzed or the level of protection desired, but may be compared qualitatively. Table 7 at the end of this section summarizes these standards as an indication of what other countries have determined to be unsafe levels of trace elements. Though the standards do not apply within the United States, they provide an indication of what other nations consider to be an elevated concentration of trace elements in fish tissues. Even so, the reader is reminded that most TSMP metal analyses are done in liver, rather than in edible portions. To date, only mercury and selenium are routinely measured in edible portions in the TSMP. Measurements in liver should not be compared to Median International Standards. A description of how the Median International Standards were compiled is provided in Appendix T.

Elevated Data Levels

The "elevated data level" (EDL) was introduced in 1983 as an internal comparative measure which ranks a given concentration of a particular substance with previous data from the TSMP. The EDL is calculated by ranking all of the results for a given chemical from the highest concentration measured down to and including those records where the chemical was not detected. From this, a cumulative distribution is constructed and percentile rankings are calculated. For example, the 50^{th} percentile corresponds to the median or "middle" value rather than to the mean. With a large number of records, the median can be approximately compared to the mean.

Starting in 1990, EDL calculations were modified to reflect the growing number of marine species analyzed in the TSMP. In the past, EDL calculations for wet weight measures were grouped by similar tissue types, such as filet or whole-body samples. In 1990, the EDL calculations were further split into freshwater and marine fish types. Now when any sample is compared to an EDL, it is compared to the EDL calculated from the same fish and tissue types (i.e. freshwater fish filets are compared only to other freshwater fish filets, etc.). The substance most affected by the change in the EDL calculations was arsenic. The EDL criteria for arsenic in freshwater fish livers and whole samples were lowered by approximately half from 1978-1989 calculations. A separate copper EDL is calculated for salmonid liver tissue because trout are known to accumulate copper to higher levels than other species. White bass also seem to accumulate copper and other trace elements to higher levels. Starting in 1988, white bass are not included in the EDL

calculations. White bass are found only in a few locations in California and further sampling of this species will be avoided whenever possible. In calculating the EDLs for lipid weight measures of organic chemicals, all tissue types are combined because lipid weight measures in different tissue types tend to be far more similar than wet weight measures (Phillips 1980). However, like wet weight measures, EDL lipid weight calculations were also split into freshwater and marine fish types. The 1978-1991 EDLs and the number of data points used to calculate each EDL are provided in Tables 8 through 16 at the end of this section.

The 85th percentile (EDL 85) was chosen as an indication that a chemical is elevated from the median. The 85th percentile corresponds to measures used by the U.S. Fish and Wildlife Service in their National Contaminant Biomonitoring Program and would represent approximately one and one-half standard deviations from the mean, if the data were normally distributed. The 95th percentile (EDL 95) was chosen to indicate values that are highly elevated above the median. The 95th percentile would represent two standard deviations from the mean, if the data were normally distributed. When used along with other information, these measures provide a useful guideline to determine if a chemical has been found in unusually high concentrations. A more detailed description of EDL rankings is provided in Appendix U. The reader is again cautioned that EDLs are not directly related to potentially adverse human or animal health effects; they are only a way to compare findings in a particular area with the larger data base of findings from all over the state.

TABLE 5

Toxic Substances Monitoring Program

Maximum Tissue Residue Levels (MTRLs) for Carcinogens in Inland Surface Waters

Substance	Water Quality Objective [a] (µg/l)	BCF [b] (l/kg)	MTRL [c] (µg/kg, ppb)
aldrin	0.00013	**d**	0.05
arsenic	5.0 [e]	44	200.0 (0.2 ppm)
chlordane (total)	0.00008	14100	1.1
DDT (total)	0.00059	53600	32.0
dieldrin	0.00014	4670	0.65
heptachlor	0.00016	11200	1.8
heptachlor epoxide	0.00007	11200	0.8
hexachlorobenzene (HCB)	0.00066	8690	6.0
hexachlorocyclohexane (HCH), alpha	0.0039	130	0.5
hexachlorocyclohexane (HCH), beta	0.014	130	1.8
hexachlorocyclohexane (HCH), gamma	0.019	130	2.5
PAHs (total)	0.0028	30	0.08
PCBs (total)	0.00007	31200	2.2
pentachlorophenol (PCP)	0.28	11	3.1
toxaphene	0.00067	13100	8.8

Maximum Tissue Residue Levels (MTRLs) for Non-carcinogens in Inland Surface Waters

Substance	Water Quality Objective [a] (µg/l)	BCF [b] (l/kg)	MTRL [c] (µg/kg, ppb)
cadmium	0.01	64	0.64
endosulfan (total)	0.0009	270	0.25 (250 ppb)
endrin	0.0008	3970	3.0 (3,000 ppb)
mercury	0.000012	**f**	1.0
nickel	0.6	47	28.0

a. From Table 2, Human Health Water Quality Objectives, "California Inland Surface Waters Plan" (SWRCB 1992). MTRLs were not developed for objectives based on maximum contaminant levels (MCLs) or taste and odor criteria.

b. Bioconcentration Factors taken from the USEPA 1980 Ambient Water Quality Criteria Documents for each substance.

c. MTRLs were calculated by multiplying the Water Quality Objective by the BCF, except for aldrin, arsenic, and mercury.

d. Aldrin MTRL is derived from a combination of aldrin and dieldrin risk factors and BCFs as recommended in the USEPA 1980 "Ambient Water Quality Criteria for Aldrin/Dieldrin" (USEPA 1980).

e. Arsenic MTRL was calculated from the formula NSRL ÷ (WI/BCF) + FC = MTRL. [NSRL (California's No Significant Risk Level for arsenic) = 10 µg/d, WI (Water Intake) = 2 l/d, FC (daily fish consumption) = 0.0065 kg/d].

f. The MTRL for mercury is the FDA action level. The water quality objective for mercury in the Inland Surface Waters Plan is based on the FDA action level as recommended in the USEPA 1985 "Ambient Water Quality Criteria for Mercury" (USEPA 1985).

TABLE 6

NAS Guidelines and FDA Action Levels for Toxic Chemicals in Fish
(wet weight)

Chemical	NAS[a] Recommended Guideline for Freshwater Fish (Whole Fish) ug/g (ppm)	NAS[a] Recommended Guideline for Freshwater Fish (Whole Fish) ng/g (ppb)	FDA[b] Action Level for Freshwater and Marine Fish (Edible Portion) ug/g (ppm)	FDA[b] Action Level for Freshwater and Marine Fish (Edible Portion) ng/g (ppb)
Mercury	0.5	500	1.0[d]	1,000
DDT (total)	1.0	1,000	5.0	5,000
PCB (total)	0.5	500	2.0[e]	2,000
aldrin	0.1[c]	100	0.3	300
dieldrin	0.1[c]	100	0.3	300
endrin	0.1[c]	100	0.3	300
heptachlor	0.1[c]	100	0.3	300
heptachlor epoxide	0.1[c]	100	0.3	300
chlordane (total)	0.1[c]	100	0.3	300
lindane	0.1	100	-	-
hexachlorocyclo-hexane (total)	0.1[c]	100	-	-
endosulfan (total)	0.1[c]	100	-	-
toxaphene	0.1[c]	100	5.0	5,000

a National Academy of Sciences-National Academy of Engineering. 1973. Water Quality Criteria, 1972 (Blue Book). U.S. Environmental Protection Agency, Ecological Research Series.

b U. S. Food and Drug Administration. 1984. Shellfish Sanitation Interpretation: Action Levels for Chemical and Poisonous Substances, June 21, 1984. U.S.F.D.A., Shellfish Sanitation Branch, Washington, D.C.

c Individually or in combination. Chemicals in this group under NAS Guidelines are referred to as Chemical Group A in this report.

d As methyl mercury.

e A tolerance, rather than an action level, has been established for PCBs (21CFR 109, published May 29, 1984). An action level is revoked when a regulation establishes a tolerance for the same substance and use.

TABLE 7

Median International Standards for Trace Elements
in Freshwater Fish and Marine Shellfish [a]
(edible portion, ppm, wet weight)

Element	Fish	Shellfish	Range	Number of Countries with Standards
Antimony	1.0	1.0	1.0 to 1.5	3
Arsenic	1.5	1.4	0.1 to 5.0	11
Cadmium	0.3	1.0	0.05 to 2.0	10
Chromium	1.0	1.0	1.0	1
Copper	20.0	20.0	10 to 100	8
Fluoride	150.0	-	150.0	1
Fluorine	17.5	-	10 to 25	2
Lead	2.0	2.0	0.5 to 10.0	19
Mercury	0.5	0.5	0.1 to 1.0	28
Selenium	2.0	0.3	0.3 to 2.0	3
Tin	150.0	190.0	50 to 250	8
Zinc	45.0	70.0	40 to 100	6

a Based on: Nauen, C. C., Compilation of Legal Limits for Hazardous Substances in Fish and Fishery Products, Food and Agriculture Organization of the United Nations, 1983.

TABLE 8. TSMP EDL 85 AND EDL 95 for Trace Elements in Fish Livers
Calculated Using 1978 - 1991 Data.
(ppm, wet weight)

Freshwater Fish

Element	Fish Type*	EDL 85	EDL 95	Number of Samples
Arsenic	ALL	0.22	0.74	498
Cadmium	ALL	0.36	1.00	512
Chromium	ALL	0.03	0.08	495
Copper	SALMO	170.00	230.00	113
Copper	NON	13.00	32.00	400
Lead	ALL	0.10	0.20	493
Nickel	ALL	<0.10	0.31	496
Selenium**	ALL	3.44	4.98	104
Silver	ALL	0.25	0.68	496
Zinc	ALL	28.00	38.00	494

Marine Fish

Element	EDL 85	EDL 95	Number of Samples
Arsenic	7.10	18.94	28
Cadmium	1.15	3.38	28
Chromium	<0.02	0.03	26
Copper	17.20	25.00	28
Lead	<0.10	0.16	28
Nickel	<0.10	0.16	28
Selenium**	ID	ID	3
Silver	0.18	0.69	28
Zinc	40.00	44.60	28

* Non = Includes all non-salmonid species. Salmo = Salmonids.
All=All fish species.

** Selenium analysis in liver was discontinued starting in 1985.

< = EDL lies below the indicated detection limit.

ID = Insufficient number of data points to calculate the EDL.

TABLE 9. TSMP EDL 85 AND EDL 95 for Trace Elements in Whole Fish
Calculated Using 1978 - 1991 Data.
(ppm, wet weight)

Freshwater Fish

Element	EDL 85	EDL 95	Number of Samples
Arsenic	0.48	0.85	93
Cadmium	0.08	0.15	93
Chromium	0.19	0.34	93
Copper	3.41	4.14	93
Lead	0.20	0.77	93
Mercury	0.08	0.15	94
Nickel	0.20	0.46	94
Selenium	1.50	2.06	114
Silver	0.03	0.04	93
Zinc	40.00	44.35	93

Marine Fish

Element	EDL 85	EDL 95	Number of Samples
Arsenic	ID	ID	2
Cadmium	ID	ID	2
Chromium	ID	ID	2
Copper	ID	ID	4
Lead	ID	ID	2
Mercury	ID	ID	4
Nickel	ID	ID	2
Selenium	ID	ID	2
Silver	ID	ID	2
Zinc	ID	ID	2

ID = Insufficient number of data points to calculate the EDL.

TABLE 10. TSMP EDL 85 AND EDL 95 for Trace Elements in Fish Filets
Calculated Using 1978 - 1991 Data.
(ppm, wet weight)

Freshwater Fish

Element	EDL 85	EDL 95	Number of Samples
Arsenic	0.10	0.20	30
Cadmium	<0.01	0.01	16
Chromium	<0.02	<0.02	16
Copper	0.70	0.81	16
Lead	<0.10	<0.10	16
Mercury	0.83	1.80	1070
Nickel	<0.10	<0.10	16
Selenium	1.10	2.00	384
Silver	<0.02	<0.02	16
Zinc	23.40	32.80	16

Marine Fish

Element	EDL 85	EDL 95	Number of Samples
Arsenic	ID	ID	2
Cadmium	ID	ID	1
Chromium	ID	ID	1
Copper	ID	ID	1
Lead	ID	ID	1
Mercury	0.17	0.68	28
Nickel	ID	ID	1
Selenium	3.64	3.96	44
Silver	ID	ID	1
Zinc	ID	ID	1

< = EDL lies below the indicated detection limit.
ID = Insufficient number of data points to calculate the EDL.

TABLE 11

TSMP EDL 85 AND EDL 95 For Organic Chemicals in Freshwater Fish Filets
Calculated Using 1978 - 1991 Data.
(ppb, wet weight)

Chemical	EDL 85	EDL 95	Number of Samples
Aldrin	<5.0	<5.0	682
Chemical Group A	439.0	1263.6	702
Chlordene, Alpha	<5.0	<5.0	578
Chlordene, Gamma	<5.0	<5.0	578
Cis-chlordane	14.0	38.0	687
Cis-nonachlor	6.1	18.2	578
Oxychlordane	<5.0	<5.0	686
Trans-chlordane	8.5	21.0	687
Trans-nonachlor	19.0	45.0	658
Total Chlordane	43.0	121.6	687
Chlorpyrifos	<10.0	19.0	682
Dacthal	12.0	316.0	688
DDD, o,p'	12.0	36.0	687
DDD, p,p'	95.8	260.0	687
DDE, o,p'	<5.0	25.7	687
DDE, p,p'	636.0	2000.0	688
DDMS, p,p'	<30.0	<30.0	687
DDMU, p,p'	<15.0	43.3	687
DDT, o,p'	<10.0	18.0	685
DDT, p,p'	31.0	120.0	687
Total DDT	823.6	2534.2	688
Diazinon	<50.0	<50.0	663
Dichlorobenzophenone, p,p'	ID	ID	6
Dicofol (Kelthane)	<100.0	<100.0	682
Dieldrin	11.0	37.5	669
Endosulfan I	<5.0	25.0	688
Endosulfan II	<70.0	94.2	228
Endosulfan sulfate	<85.0	126.0	228
Total Endosulfan	5.5	63.2	688
Endrin	<15.0	<15.0	685
HCH, Alpha	<2.0	<2.0	685
HCH, Beta	<10.0	<10.0	685
HCH, Delta	<5.0	<5.0	685
HCH, Gamma (Lindane)	<2.0	3.6	685
Total HCH	*	5.1	685
Heptachlor	<5.0	<5.0	682
Heptachlor Epoxide	<5.0	<5.0	682
Hexachlorobenzene	<2.0	6.3	685
Methoxychlor	<15.0	<15.0	680
Oxadiazon	<5.0	11.8	148
Parathion, Ethyl	<10.0	<10.0	663
Parathion, Methyl	<10.0	<10.0	663
PCB-1248	<50.0	<50.0	717
PCB-1254	<50.0	161.5	717
PCB-1260	66.0	191.5	717
Total PCB	137.8	372.6	717
Pentachlorophenol	2.8	5.0	20
2,3,5,6-tetrachlorophenol	<2.0	1.7	20
Toxaphene	270.0	1100.0	700

< = EDL lies below the indicated detection limit.
ID = Insufficient number of data points to calculate the EDL.
* = EDL lies below the detection limit.

TABLE 12

TSMP EDL 85 AND EDL 95 For Organic Chemicals in Marine Fish Filets
Calculated Using 1978 - 1991 Data.
(ppb, wet weight)

Chemical	EDL 85	EDL 95	Number of Samples
Aldrin	<5.0	<5.0	33
Chemical Group A	7.6	36.8	33
Chlordene, Alpha	<5.0	<5.0	32
Chlordene, Gamma	<5.0	<5.0	32
Cis-chlordane	<5.0	<5.0	33
Cis-nonachlor	<5.0	8.5	32
Oxychlordane	<5.0	<5.0	33
Trans-chlordane	<5.0	<5.0	33
Trans-nonachlor	<5.0	13.1	33
Total Chlordane	*	23.4	33
Chlorpyrifos	<10.0	<10.0	33
Dacthal	21.4	30.7	33
DDD, o,p'	<10.0	<10.0	33
DDD, p,p'	16.0	20.1	33
DDE, o,p'	<10.0	<10.0	33
DDE, p,p'	222.0	288.0	33
DDMS, p,p'	<30.0	<30.0	33
DDMU, p,p'	<15.0	<15.0	33
DDT, o,p'	<10.0	<10.0	33
DDT, p,p'	<10.0	<10.0	33
Total DDT	236.8	308.9	33
Diazinon	<50.0	<50.0	33
Dichlorobenzophenone, p,p'	ID	ID	0
Dicofol (Kelthane)	<100.0	<100.0	33
Dieldrin	<5.0	<5.0	33
Endosulfan I	<5.0	<5.0	33
Endosulfan II	<70.0	<70.0	20
Endosulfan sulfate	<85.0	<85.0	20
Total Endosulfan	*	*	33
Endrin	<15.0	<15.0	33
HCH, Alpha	<2.0	<2.0	33
HCH, Beta	<10.0	<10.0	33
HCH, Delta	<5.0	<5.0	33
HCH, Gamma (Lindane)	<2.0	<2.0	33
Total HCH	*	*	33
Heptachlor	<5.0	<5.0	33
Heptachlor Epoxide	<5.0	<5.0	33
Hexachlorobenzene	<2.0	<2.0	33
Methoxychlor	<15.0	<15.0	33
Oxadiazon	<5.0	<5.0	16
Parathion, Ethyl	<10.0	<10.0	33
Parathion, Methyl	<10.0	<10.0	33
PCB-1248	<50.0	<50.0	33
PCB-1254	<50.0	141.0	33
PCB-1260	59.8	127.0	33
Total PCB	96.2	266.6	33
Pentachlorophenol	ID	ID	0
2,3,5,6-tetrachlorophenol	ID	ID	0
Toxaphene	<100.0	<100.0	33

< = EDL lies below the indicated detection limit.
ID = Insufficient number of data points to calculate the EDL.
* = EDL lies below the detection limit.

TABLE 13

TSMP EDL 85 AND EDL 95 For Organic Chemicals in Whole Freshwater Fish
Calculated Using 1978 - 1991 Data.
(ppb, wet weight)

Chemical	EDL 85	EDL 95	Number of Samples
Aldrin	<5.0	<5.0	119
Chemical Group A	1716.1	3751.0	119
Chlordene, Alpha	<5.0	5.5	119
Chlordene, Gamma	6.5	10.1	119
Cis-chlordane	48.0	70.2	119
Cis-nonachlor	20.1	30.2	119
Oxychlordane	14.0	20.0	119
Trans-chlordane	28.1	40.0	119
Trans-nonachlor	52.3	82.2	119
Total Chlordane	162.6	246.6	119
Chlorpyrifos	34.3	82.9	119
Dacthal	120.0	483.5	119
DDD, o,p'	59.8	240.5	119
DDD, p,p'	360.0	1200.0	119
DDE, o,p'	28.1	61.2	119
DDE, p,p'	2145.0	5365.0	119
DDMS, p,p'	<30.0	<30.0	119
DDMU, p,p'	80.2	182.5	119
DDT, o,p'	56.2	190.5	119
DDT, p,p'	201.5	729.0	119
Total DDT	3568.6	7348.7	119
Diazinon	<50.0	84.8	118
Dichlorobenzophenone, p,p'	ID	ID	0
Dicofol (Kelthane)	<100.0	<100.0	119
Dieldrin	126.0	584.0	118
Endosulfan I	13.0	56.1	119
Endosulfan II	<10.0	84.0	80
Endosulfan sulfate	180.0	240.0	80
Total Endosulfan	127.4	328.7	119
Endrin	<15.0	58.0	119
HCH, Alpha	<2.0	2.0	119
HCH, Beta	<10.0	<10.0	119
HCH, Delta	<5.0	<5.0	119
HCH, Gamma (Lindane)	3.1	8.0	119
Total HCH	4.1	9.6	119
Heptachlor	<5.0	<5.0	119
Heptachlor Epoxide	5.4	13.1	119
Hexachlorobenzene	4.8	10.1	119
Methoxychlor	<15.0	<15.0	119
Oxadiazon	331.0	1800.0	53
Parathion, Ethyl	<10.0	<10.0	118
Parathion, Methyl	<10.0	<10.0	118
PCB-1248	<50.0	<50.0	120
PCB-1254	180.0	520.0	120
PCB-1260	100.0	210.0	120
Total PCB	283.0	840.0	120
Pentachlorophenol	ID	ID	5
2,3,5,6-tetrachlorophenol	ID	ID	5
Toxaphene	1200.0	2465.0	119

< = EDL lies below the indicated detection limit.
ID = Insufficient number of data points to calculate the EDL.

TABLE 14

TSMP EDL 85 AND EDL 95 For Organic Chemicals in Whole Marine Fish
Calculated Using 1978 - 1991 Data.
(ppb, wet weight)

Chemical	EDL 85	EDL 95	Number of Samples
Aldrin	ID	ID	1
Chemical Group A	ID	ID	1
Chlordene, Alpha	ID	ID	1
Chlordene, Gamma	ID	ID	1
Cis-chlordane	ID	ID	1
Cis-nonachlor	ID	ID	1
Oxychlordane	ID	ID	1
Trans-chlordane	ID	ID	1
Trans-nonachlor	ID	ID	1
Total Chlordane	ID	ID	1
Chlorpyrifos	ID	ID	1
Dacthal	ID	ID	1
DDD, o,p'	ID	ID	1
DDD, p,p'	ID	ID	1
DDE, o,p'	ID	ID	1
DDE, p,p'	ID	ID	1
DDMS, p,p'	ID	ID	1
DDMU, p,p'	ID	ID	1
DDT, o,p'	ID	ID	1
DDT, p,p'	ID	ID	1
Total DDT	ID	ID	1
Diazinon	ID	ID	1
Dichlorobenzophenone, p,p'	ID	ID	0
Dicofol (Kelthane)	ID	ID	1
Dieldrin	ID	ID	1
Endosulfan I	ID	ID	1
Endosulfan II	ID	ID	1
Endosulfan sulfate	ID	ID	1
Total Endosulfan	ID	ID	1
Endrin	ID	ID	1
HCH, Alpha	ID	ID	1
HCH, Beta	ID	ID	1
HCH, Delta	ID	ID	1
HCH, Gamma (Lindane)	ID	ID	1
Total HCH	ID	ID	1
Heptachlor	ID	ID	1
Heptachlor Epoxide	ID	ID	1
Hexachlorobenzene	ID	ID	1
Methoxychlor	ID	ID	1
Oxadiazon	ID	ID	0
Parathion, Ethyl	ID	ID	1
Parathion, Methyl	ID	ID	1
PCB-1248	ID	ID	1
PCB-1254	ID	ID	1
PCB-1260	ID	ID	1
Total PCB	ID	ID	1
Pentachlorophenol	ID	ID	0
2,3,5,6-tetrachlorophenol	ID	ID	0
Toxaphene	ID	ID	1

ID = Insufficient number of data points to calculate the EDL.

TABLE 15

TSMP EDL 85 AND EDL 95 for Organic Chemicals in
Filet and Whole Freshwater Fish
Calculated Using 1980 - 1991 Lipid Data
(ppb, lipid weight)

Chemical	EDL 85	EDL 95	Number of Samples
Aldrin	*	*	721
Chemical Group A	26256.8	101486.2	742
Chlordene, Alpha	*	*	694
Chlordene, Gamma	*	106.1	694
Cis-chlordane	928.7	2456.6	727
Cis-nonachlor	326.8	1105.1	694
Oxychlordane	*	237.8	727
Trans-chlordane	452.0	1214.5	727
Trans-nonachlor	1453.3	4041.0	727
Total Chlordane	3481.4	8295.0	727
Chlorpyrifos	*	1855.7	721
Dacthal	1530.2	19636.9	728
DDD, o,p'	748.5	3015.3	727
DDD, p,p'	6620.7	22038.7	727
DDE, o,p'	182.3	1082.5	727
DDE, p,p'	51040.1	140072.5	728
DDMS, p,p'	*	*	727
DDMU, p,p'	490.8	2623.9	727
DDT, o,p'	*	1895.5	726
DDT, p,p'	785.6	5313.2	726
Total DDT	63165.6	185564.2	728
Diazinon	*	*	701
Dichlorobenzophenone, p,p'	ID	ID	6
Dicofol (Kelthane)	*	*	721
Dieldrin	823.2	3675.1	708
Endosulfan I	189.0	1830.5	728
Endosulfan II	*	2680.9	307
Endosulfan sulfate	*	10571.4	307
Total Endosulfan	350.4	6496.8	728
Endrin	*	*	725
HCH, Alpha	*	*	725
HCH, Beta	*	*	725
HCH, Delta	*	*	725
HCH, Gamma (Lindane)	*	289.4	725
Total HCH	41.7	601.8	725
Heptachlor	*	*	721
Heptachlor Epoxide	*	*	721
Hexachlorobenzene	51.5	442.4	725
Methoxychlor	*	*	720
Oxadiazon	*	3984.0	202
Parathion, Ethyl	*	*	702
Parathion, Methyl	*	*	702
PCB-1248	*	*	756
PCB-1254	2258.9	10877.2	756
PCB-1260	2143.9	13999.5	756
Total PCB	7949.5	37288.3	756
Pentachlorophenol	253.6	376.4	19
2,3,5,6-tetrachlorophenol	*	234.3	19
Toxaphene	14557.0	76808.6	740

ID = Insufficient number of data points to calculate the EDL.
* = EDL lies below the detection limit.

TABLE 16

TSMP EDL 85 AND EDL 95 for Organic Chemicals in
Filet and Whole Marine Fish
Calculated Using 1980 - 1991 Lipid Data
(ppb, lipid weight)

Chemical	EDL 85	EDL 95	Number of Samples
Aldrin	*	*	34
Chemical Group A	537.4	1611.9	34
Chlordene, Alpha	*	*	33
Chlordene, Gamma	*	*	33
Cis-chlordane	*	284.4	34
Cis-nonachlor	*	317.3	33
Oxychlordane	*	*	34
Trans-chlordane	*	182.8	34
Trans-nonachlor	*	390.4	34
Total Chlordane	*	1155.2	34
Chlorpyrifos	*	*	34
Dacthal	1761.7	2433.5	34
DDD, o,p'	*	*	34
DDD, p,p'	936.1	1841.7	34
DDE, o,p'	*	*	34
DDE, p,p'	28582.9	36517.9	34
DDMS, p,p'	*	*	34
DDMU, p,p'	*	499.3	34
DDT, o,p'	*	*	34
DDT, p,p'	*	*	34
Total DDT	30431.6	36517.9	34
Diazinon	*	*	34
Dichlorobenzophenone, p,p'	ID	ID	0
Dicofol (Kelthane)	*	*	34
Dieldrin	*	*	34
Endosulfan I	*	*	34
Endosulfan II	*	*	21
Endosulfan sulfate	*	*	21
Total Endosulfan	*	*	34
Endrin	*	*	34
HCH, Alpha	*	*	34
HCH, Beta	*	*	34
HCH, Delta	*	*	34
HCH, Gamma (Lindane)	*	*	34
Total HCH	*	*	34
Heptachlor	*	*	34
Heptachlor Epoxide	*	*	34
Hexachlorobenzene	*	*	34
Methoxychlor	*	*	34
Oxadiazon	*	*	16
Parathion, Ethyl	*	*	34
Parathion, Methyl	*	*	34
PCB-1248	*	*	34
PCB-1254	*	5274.3	34
PCB-1260	3753.0	20741.1	34
Total PCB	8519.5	26018.3	34
Pentachlorophenol	ID	ID	0
2,3,5,6-tetrachlorophenol	ID	ID	0
Toxaphene	*	*	34

ID = Insufficient number of data points to calculate the EDL.
* = EDL lies below the detection limit.

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APPENDIX A

Summary of 1991 Species Data

APPENDIX A

Toxic Substances Monitoring Program

Summary of 1991 Species Data

Station Number	Station Name	Species Code	Common Name	Sample Date	Sample Number	Age (Yr.)	Weight* (g)	Size* (mm)	Percent Water			Percent Lipid	
									F**	W**	L**	F**	W**
105.36.10	Klamath R/d/s Iron Gate Res	DC	Speckled Dace	09/19/91	20	3-5	4.2	70.9		72.1			7.96
105.50.04	Shasta River	DC	Speckled Dace	09/19/91	12	3-6	7.9	88.3		71.5			
105.50.35	Beaughton Cr/d/s HWY 97 Brg	BN	Brown Trout	09/19/91	11	1-2	61.4	162.0	78.7		81.2	1.01	
105.92.01	Lost R/Tule Lake	TC	Tui Chub	09/20/91	55	0-2	1.8	54.7		80.0			2.56
105.92.01	Lost R/Tule Lake	TC	Tui Chub	09/20/91	54	0-2	1.8	56.5		79.5			3.00
106.12.03	Trinity R/Willow Creek	SCP	Sculpin	09/16/91	3	NA	76.6	164.0	77.8		NA	1.22	
106.13.06	Trinity R/d/s Burnt Ranch	RBT	Rainbow Trout	09/17/91	10	0-2	36.9	142.0	77.4			1.38	
106.40.16	Trinity R/East Fork	RBT	Rainbow Trout	09/18/91	7	1-3	92.3	198.0	77.6		80.9	1.65	
110.00.90	McDaniel Slough	STB	Threespine Stickleback	09/16/91	60	0-3	1.5	49.7		81.5			
110.00.90	McDaniel Slough	STB	Threespine Stickleback	09/16/91	60	0-3	1.5	49.5		81.0			
111.63.14	Lake Pillsbury	LMB	Largemouth Bass	09/10/91	5	3-6	1583.8	415.0	77.9		77.2		
114.11.05	Russian R/Duncans Mills	PCP	Prickly Sculpin	07/17/91	10	2-5	8.1	82.3		75.0			6.35
114.24.12	Lake Sonoma	LMB	Largemouth Bass	09/09/91	6	2-3	501.6	292.0	78.3				
114.32.00	Lake Mendocino	LMB	Largemouth Bass	09/09/91	6	2-4	868.7	349.0	77.6				
115.30.02	Estero de San Antonio	PCP	Prickly Sculpin	07/16/91	12	5-8	26.4	118.0	78.8		NA		
115.30.04	Estero Americano	STG	Pacific Staghorn Sculpin	07/16/91	10	0-2	8.6	85.9		81.4			
115.30.04	Estero Americano	STG	Pacific Staghorn Sculpin	07/16/91	11	0-2	8.4	84.9		80.8			
201.12.01	Walker Creek	STG	Pacific Staghorn Sculpin	07/16/91	13	0-2	7.0	80.5		81.8			1.04
204.30.11	Alameda Cr/Niles Canyon Rd	SCP	Sculpin	07/09/91	14	NA	6.3	74.9		77.3			4.42
205.50.94	Stevens Creek	RBT	Rainbow Trout	07/09/91	7	0-2	56.8	159.0	78.9		NA	0.99	
206.50.14	Napa R/Napa	HCH	Hitch	07/11/91	11	0-2	22.8	115.0	80.6			0.43	
207.10.90	Suisun Bay	WST	White Sturgeon	01/12/92	4	3-8	2548.0	721.0	81.8		78.4	0.27	
207.32.06	Walnut Creek	GSF	Green Sunfish	07/10/91	2	4-6	145.4	174.0	79.7		NA	0.15	
304.12.90	Schwann Lake	LMB	Largemouth Bass	08/07/91	31	0-1	2.0	54.5		79.5			1.13
304.12.91	Neary's Lake	SSKR	Sacramento Sucker	08/06/91	6	6-9	848.6	401.0	79.4			2.04	
304.13.90	Corcoran Lake	STG	Pacific Staghorn Sculpin	08/07/91	10	0-2	17.7	112.0	80.9		NA	0.41	
304.13.91	Moran Lake	STB	Threespine Stickleback	08/06/91	29	0-3	1.3	48.7		80.6			0.79
304.13.92	Aptos Creek	PCP	Prickly Sculpin	08/07/91	7	3-5	12.4	93.7		77.2			2.79
307.00.01	Carmel Lagoon	STB	Threespine Stickleback	08/01/91	41	0-3	1.6	51.8		76.9			3.28
307.00.01	Carmel Lagoon	STB	Threespine Stickleback	08/01/91	40	0-3	1.7	51.9		76.2			3.75
309.10.01	Roberts Lake	SP	Sacramento Perch	08/01/91	5	1-3	41.2	130.0	80.6		NA	0.19	
309.10.09	Blanco Drain/Salinas R	STB	Threespine Stickleback	09/04/91	40	0-3	1.6	47.8		76.4			6.41
309.10.09	Blanco Drain/Salinas R	STB	Threespine Stickleback	09/04/91	39	0-3	1.4	44.9		76.6			6.27
309.50.01	El Estero Lake	BG	Bluegill	08/02/91	3	3-6	251.4	187.0	81.3		NA	0.13	
309.82.04	Lake Nacimiento/Dip Cr	WHB	White Bass	07/31/91	6	1-3	808.7	345.0	72.7		61.1		

* Weight and Size are either individual or mean values as indicated by sample number. Size = the fork length of fish, total length of other organisms.

** F = Filet. L = Liver. W = Whole Body.

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APPENDIX A

Toxic Substances Monitoring Program

Summary of 1991 Species Data

Station Number	Station Name	Species Code	Common Name	Sample Date	Sample Number	Age (Yr.)	Weight* (g)	Size* (mm)	Percent Water F**	Percent Water W**	Percent Lipid L**	Percent Lipid F**	Percent Lipid W**
309.82.08	Lake Nacimiento/Las Tablas	WHB	White Bass	07/31/91	6	1-3	767.4	336.0	73.9		61.2		
402.10.02	Ventura River	CP	Carp	06/20/91	15	5-8	4.9	65.3		83.8			1.36
403.11.02	Rio de Santa Clara/Oxnard Drain	GAM	Mosquitofish	06/17/91	15	0-1	1.9	48.9		76.7			3.76
403.11.91	Mugu Lagoon	GSS	Gray Smoothhound Shark	06/17/91	6	NA	1220.3	706.0	NA		NA		
403.12.06	Calleguas Creek	GF	Goldfish	06/18/91	10	1-5	95.0	162.0	80.0			0.40	
403.12.07	Conejo Creek	GAM	Mosquitofish	06/19/91	33	0-1	2.2	50.8		76.2			4.04
403.21.05	Santa Clara R/Santa Paula	SAKR	Santa Ana Sucker	06/20/91	14	NA	25.5	121.0	78.6				
403.51.05	Santa Clara R/Valencia	AC	Arroyo Chub	06/11/91	17	1-4	5.6	74.1		79.3			1.83
403.64.02	Arroyo Conejo	GSF	Green Sunfish	06/19/91	8	2-6	62.8	131.0	79.4		80.5	0.24	
403.67.04	Arroyo Simi	FHM	Fathead Minnow	06/19/91	20	0-2	4.3	66.1		79.3			1.95
404.21.01	Malibu Creek	BG	Bluegill	06/18/91	1	3-4	190.2	176.0	77.6		NA	0.31	
404.21.07	Malibou Lake	LMB	Largemouth Bass	04/23/91	6	2-5	1039.4	372.0	79.3		80.0	0.55	
404.23.04	Lindero Lake	LMB	Largemouth Bass	04/22/91	7	2-3	624.8	318.0	78.9		78.7	0.28	
404.25.01	Westlake Lake	LMB	Largemouth Bass	04/23/91	6	3-5	1157.2	391.0	78.8		78.2	0.38	
404.26.00	Eleanor Lake	BLB	Black Bullhead	04/22/91	2	NA	27.7	122.0			NA		
404.26.00	Eleanor Lake	GF	Goldfish	04/22/91	1	NA	528.9	267.0	79.4			3.80	
404.26.01	Sherwood Lake	LMB	Largemouth Bass	04/22/91	6	2-4	778.5	356.0	78.7		78.4	0.36	
405.12.00	Alamitos Bay	CCB	California Corbina	06/12/91	6	NA	148.4	212.0	76.4		67.9	3.21	
405.12.90	Harbor Park Lake	CP	Carp	06/15/91	6	3-5	2790.0	516.0	69.3			13.40	
405.15.02	El Dorado Lake	LMB	Largemouth Bass	04/21/91	6	2-5	1108.0	382.0	79.3		79.2	0.74	
405.15.04	San Gabriel River	TLM	Mozambique Tilapia	06/16/91	8	NA	42.3	126.0	79.8		NA		
405.15.24	Echo Park Lake	LMB	Largemouth Bass	04/19/91	6	1-2	271.3	244.0	79.1		78.5	0.42	
405.15.97	Belvedere Park Lake	FHM	Fathead Minnow	04/18/91	48	0-2	2.0	51.8		79.1			4.70
405.15.97	Belvedere Park Lake	FHM	Fathead Minnow	04/18/91	46	0-2	2.0	51.3		79.7			3.60
405.15.98	Hollenbeck Park Lake	PROI	Red Swamp Crayfish	04/18/91	24	NA	12.5	40.5		82.4			3.70
405.15.99	Lincoln Park Lake	LMB	Largemouth Bass	04/18/91	12	0-2	82.3	165.0	79.2		76.9	0.38	
405.21.03	Calabasas Lake	LMB	Largemouth Bass	04/20/91	6	2-3	441.5	306.0	79.4		80.3	0.22	
405.21.16	Los Angeles R/Sepulveda Basin	GF	Goldfish	05/15/91	8	1-5	62.4	132.0	80.3			0.68	
405.41.01	Legg Lake	LMB	Largemouth Bass	04/17/91	6	2-3	551.4	318.0	78.4		78.8	0.24	
405.41.08	Peck Road Lake	LMB	Largemouth Bass	04/17/91	7	0-2	29.6	126.0	79.5		NA	0.37	
405.52.01	Puddingstone Res	LMB	Largemouth Bass	06/11/91	6	3-5	1030.4	380.0	78.7		78.9	0.73	
510.00.30	Sacramento R/Hood	WCF	White Catfish	10/11/91	1	4	171.7	227.0	77.6				
510.00.30	Sacramento R/Hood	PACI	Crayfish	10/21/91	7	NA	13.2	39.1	84.0				
510.00.30	Sacramento R/Hood	PACI	Crayfish	10/21/91	7	NA	12.9	38.1	83.2				
510.00.30	Sacramento R/Hood	PACI	Crayfish	10/21/91	7	NA	12.9	38.9	84.6				

* Weight and Size are either individual or mean values as indicated by sample number. Size = the fork length of fish, total length of other organisms.

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Toxic Substances Monitoring Program

Summary of 1991 Species Data

Station Number	Station Name	Species Code	Common Name	Sample Date	Sample Number	Age (Yr.)	Weight* (g)	Size* (mm)	Percent Water			Percent Lipid	
									F**	W**	L**	F**	W**
510.00.30	Sacramento R/Hood	WCF	White Catfish	11/21/91	1	6	384.6	289.0	81.8				
510.00.30	Sacramento R/Hood	WCF	White Catfish	11/21/91	1	5	275.2	263.0	81.2				
510.00.30	Sacramento R/Hood	WCF	White Catfish	11/21/91	1	8	438.9	305.0	81.1				
515.40.31	Feather R/d/s Oroville Res	SKR	Sucker	11/05/91	1	7	991.2	435.0	79.8				
515.40.31	Feather R/d/s Oroville Res	SKR	Sucker	11/05/91	1	9	1486.0	494.0	76.5				
515.40.31	Feather R/d/s Oroville Res	SKR	Sucker	11/05/91	1	6	960.6	415.0	80.1				
515.40.31	Feather R/d/s Oroville Res	SKR	Sucker	11/05/91	1	6	783.5	392.0	76.5				
515.40.31	Feather R/d/s Oroville Res	SKR	Sucker	11/05/91	1	6	971.5	420.0	78.2				
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	Smallmouth Bass	10/15/91	1	0-1	64.6	168.0	77.8				
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	Smallmouth Bass	10/15/91	1	1-2	148.4	212.0	78.0				
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	Smallmouth Bass	10/15/91	1	1-2	127.5	210.0	78.3				
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	Smallmouth Bass	10/15/91	1	0-1	62.8	160.0	77.4				
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	Smallmouth Bass	10/15/91	1	0-1	52.6	156.0	77.5				
519.21.09	American R/d/s Watt Ave Brg	SSKR	Sacramento Sucker	10/16/91	1	6	991.9	405.0	79.9				
519.21.09	American R/d/s Watt Ave Brg	SSKR	Sacramento Sucker	10/16/91	1	9	1634.4	483.0	77.2				
519.21.09	American R/d/s Watt Ave Brg	SSKR	Sacramento Sucker	10/16/91	1	9	1279.4	465.0	77.9				
519.21.09	American R/d/s Watt Ave Brg	SSKR	Sacramento Sucker	10/16/91	1	6	939.6	401.0	71.5				
519.21.09	American R/d/s Watt Ave Brg	SSKR	Sacramento Sucker	10/16/91	11	10	1860.0	517.0	79.2				
519.21.19	American R/d/s Folsom Res	LMB	Largemouth Bass	10/03/91	1	0-2	46.4	145.0	78.8				
519.21.19	American R/d/s Folsom Res	LMB	Largemouth Bass	10/03/91	1	0-2	72.6	172.0	79.1				
519.21.19	American R/d/s Folsom Res	LMB	Largemouth Bass	10/03/91	1	0-2	57.2	155.0	79.7				
519.21.19	American R/d/s Folsom Res	LMB	Largemouth Bass	10/03/91	1	0-2	60.9	155.0	78.9				
519.21.19	American R/d/s Folsom Res	LMB	Largemouth Bass	10/03/91	1	0-2	74.8	165.0	78.8				
519.22.04	Sacramento R/u/s I-5 Overcross	PACI	Crayfish	10/11/91	5	NA	32.5	49.2	84.9				
519.22.04	Sacramento R/u/s I-5 Overcross	PACI	Crayfish	10/11/91	5	NA	32.6	49.1	84.5				
519.22.04	Sacramento R/u/s I-5 Overcross	PACI	Crayfish	10/11/91	5	NA	28.0	48.0	85.1				
519.22.90	Feather R/d/s HWY 99 Brg	CCF	Channel Catfish	10/09/91	1	NA	2025.3	510.0	77.8				
519.22.90	Feather R/d/s HWY 99 Brg	CCF	Channel Catfish	10/09/91	1	4-5	639.4	360.0	73.7				
519.22.90	Feather R/d/s HWY 99 Brg	CCF	Channel Catfish	10/09/91	1	NA	1536.2	490.0	77.7				
519.22.90	Feather R/d/s HWY 99 Brg	CCF	Channel Catfish	10/09/91	1	NA	1443.9	452.0	78.4				
519.22.90	Feather R/d/s HWY 99 Brg	CCF	Channel Catfish	10/09/91	1	NA	1631.4	505.0	78.1				
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	NA	1050.1	421.0	79.6				
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	4-5	527.8	331.0	78.5				
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	2-4	289.6	293.0	80.3				
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	3-5	312.0	308.0	81.2				

* Weight and Size are either individual or mean values as indicated by sample number. Size = the fork length of fish, total length of other organisms.

** F = Filet. L = Liver. W = Whole Body.

NA = Not Analyzed. Missing data indicate data not applicable to the sample or the analysis.

APPENDIX A

Toxic Substances Monitoring Program

Summary of 1991 Species Data

Station Number	Station Name	Species Code	Common Name	Sample Date	Sample Number	Age (Yr.)	Weight* (g)	Size* (mm)	Percent Water			Percent Lipid	
									F**	W**	L**	F**	W**
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	4-5	611.0	363.0	78.7				
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	2-4	290.4	287.0	79.1				
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	4-5	476.0	330.0	79.3				
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	4-5	597.1	358.0	77.3				
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	4-5	730.8	380.0	78.7				
541.10.90	San Joaquin R/Vernalis	CCF	Channel Catfish	10/30/91	1	2-3	226.9	262.0	79.1				
544.00.11	Franks Tract	PACI	Crayfish	10/21/91	5	NA	44.0	58.1	84.7				
544.00.11	Franks Tract	PACI	Crayfish	10/21/91	5	NA	31.8	52.2	85.1				
544.00.11	Franks Tract	PACI	Crayfish	10/21/91	5	NA	41.3	59.3	84.				
601.00.02	Gull Lake	SP	Sacramento Perch	07/24/91	15	1-3	92.7	165.0	80.3		81.0		
603.20.24	Bishop Creek Canal/d/s Bishop	BN	Brown Trout	07/23/91	6	1-3	304.8	284.0	77.2		80.6	2.81	
603.20.41	Sabrina Lake	BN	Brown Trout	07/23/91	1	2-3	363.4	300.0	79.2		NA		
603.30.05	Haiwee Reservoir	SMB	Smallmouth Bass	07/24/91	6	2-4	579.5	313.0	78.0		78.8		
626.80.03	Little Rock Creek Res	BLB	Black Bullhead	08/14/91	6	NA	143.9	208.0	81.1		81.0		
626.80.03	Little Rock Creek Res	BLB	Black Bullhead	08/14/91	6	NA	150.6	215.0	81.9		81.0		
628.20.02	Silverwood Lake	LMB	Largemouth Bass	08/14/91	6	1-3	361.1	270.0	79.1		78.4		
632.10.15	Silver Creek	SKR	Sucker	09/27/91	5	1-2	14.8	110.7		75.8			
633.10.03	Carson R/W.F./d/s Paynesville	BN	Brown Trout	09/27/91	8	1-3	119.5	210.0	77.2		81.7	1.70	
635.20.04	Donner Lake	KOK	Kokanee	10/23/91	7	3-4	499.3	343.0	78.0		80.3	3.03	
635.20.28	Squaw Creek	BN	Brown Trout	10/22/91	12	1-3	79.1	190.0	78.8		81.8	1.00	
713.30.90	Colorado R/Needles	CP	Carp	08/20/91	6	2-5	1955.0	447.0	74.2			7.38	
715.40.08	Palo Verde Outfall Drain	CP	Carp	08/19/91	6	2-3	981.3	368.0	77.8			2.68	
715.50.90	Colorado R/u/s Imperial Dam	LMB	Largemouth Bass	08/18/91	7	1-2	157.4	213.0	79.6		80.3	0.08	
723.10.02	New R/Westmorland	CCF	Channel Catfish	08/15/91	3	NA	418.5	331.0	78.5			2.43	
723.10.02	New R/Westmorland	SST	Spiny Soft Shelled Turtle	08/15/91	7	NA	4317.0	417.0	79.5			0.10	
723.10.15	Mayflower Drain	GAM	Mosquitofish	08/16/91	17	0-1	1.6	45.6		76.6			2.32
723.10.20	Rose Drain	GAM	Mosquitofish	08/17/91	28	0-1	0.9	38.0		78.5			1.99
723.10.22	Orange Drain	GAM	Mosquitofish	08/17/91	30	0-1	1.6	46.1		78.6			2.41
723.10.28	Peach Drain	GAM	Mosquitofish	08/17/91	6	0-1	0.5	30.5		77.5			
723.10.58	New R/Inter Boundary	CP	Carp	12/18/91	2	3-4	2104.0	462.0	75.8			5.21	
723.10.91	Fig Drain	MOL	Sailfin Molly	08/17/91	8	0-1	6.0	65.4		73.8			2.28
727.00.03	Reservation Main Drain	TLZ	Redbelly Tilapia	08/18/91	6	1-3	92.5	150.0	80.6			0.16	
728.00.90	Salton Sea/South	ORC	Orangemouth Corvina	05/15/91	4	NA	929.0	454.0	76.6		61.5	0.67	
728.00.92	Salton Sea/North	ORC	Orangemouth Corvina	05/30/91	1	NA	3588.8	705.0	76.7			1.64	
728.00.92	Salton Sea/North	ORC	Orangemouth Corvina	05/30/91	6	NA	1291.8	517.0	76.4		65.7	1.95	

* Weight and Size are either individual or mean values as indicated by sample number. Size = the fork length of fish, total length of other organisms.

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APPENDIX A

Toxic Substances Monitoring Program

Summary of 1991 Species Data

Station Number	Station Name	Species Code	Common Name	Sample Date	Sample Number	Age (Yr.)	Weight* (g)	Size* (mm)	Percent Water			Percent Lipid	
									F**	W**	L**	F**	W**
728.00.92	Salton Sea/North	SAR	Sargo	05/30/91	4	NA	597.3	291.0	73.1		74.1	5.19	
728.00.92	Salton Sea/North	ORC	Orangemouth Corvina	06/18/91	1	NA	3227.0	675.0	76.9			0.68	
801.11.00	Huntington Harbour/Anaheim Bay	WCK	White Croaker	11/21/91	6	NA	195.0	233.0	75.9		73.8	3.73	
801.11.07	San Diego Cr/Michelson Dr	PRS	Red Shiner	05/16/91	34	2-3	3.0	58.6		72.6			8.48
801.11.07	San Diego Cr/Michelson Dr	PRS	Red Shiner	05/16/91	33	2-3	3.0	58.5		72.3			9.52
801.11.09	San Diego Cr/Barranca Pkwy	PRS	Red Shiner	05/16/91	38	2-3	2.6	57.1		74.8			7.47
801.11.16	El Modena Ch/u/s Walnut Ave Brg	PRS	Red Shiner	05/16/91	28	2-3	3.5	60.6		73.9			6.90
801.11.96	Peters Canyon Channel	PRS	Red Shiner	05/16/91	32	2-3	2.9	57.6		72.1			9.54
801.11.97	Newport Bay	SSB	Spotted Sand Bass	06/20/91	5	NA	430.5	283.0	76.4		60.9	1.52	
801.21.09	Santa Ana R/USGS Gage	SAKR	Santa Ana Sucker	05/14/91	14	NA	42.2	136.0	79.2				
801.25.00	Santa Ana R/Prado Dam	LMB	Largemouth Bass	05/14/91	6	0-2	121.6	185.0	78.6		79.0	0.17	
801.25.00	Santa Ana R/Prado Dam	PROI	Red Swamp Crayfish	05/14/91	26	NA	15.1	41.7		82.3			0.19
902.22.03	Rainbow Creek	BLB	Black Bullhead	06/14/91	6	NA	54.2	158.0	82.4		NA	0.73	
902.22.04	Santa Margarita R/Willow Glen Rd	GSF	Green Sunfish	06/14/91	11	2-4	38.2	120.0	80.1		79.9	0.09	
903.11.05	San Luis Rey R/Foussat Rd	LMB	Largemouth Bass	06/13/91	6	0-2	67.9	155.0	78.6		79.0	0.23	
903.11.11	San Luis Rey R/HWY 76	LMB	Largemouth Bass	06/13/91	2	1-2	226.0	226.0	79.2		78.5	0.26	
903.12.06	Keys Creek	GSF	Green Sunfish	06/13/91	4	4-6	146.7	182.0	80.0		81.3	0.15	
903.12.07	San Luis Rey R/HWY 15	LMB	Largemouth Bass	06/13/91	3	1-3	455.8	283.0	80.3		81.1	0.22	
908.22.01	Chollas Creek/Main Street	LJM	Longjaw Mudsucker	06/14/91	25	0-2	3.8	66.8		80.2			2.94

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APPENDIX B

Summary of 1991 Data

Trace Elements in Sediment

(ppm, dry weight)

APPENDIX B

Toxic Substances Monitoring Program
Summary of 1991 Data: Trace Elements in Sediment
(ppm, dry weight)

Station Number	Station Name	Sample Type	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
106.40.12	Carrville Pond	Sediment	09/18/91	6.20	0.07	320.00	62.00	0.90	0.11	790.00	0.15	0.06	25.0
307.00.01	Carmel Lagoon	Sediment	08/01/91	0.28	0.23	4.00	2.30	0.57	0.03	2.50	0.06	<0.04	8.0
309.82.04	Lake Nacimiento/Dip Cr	Sediment	07/31/91	1.70	0.37	44.00	10.00	14.00	0.09	39.00	0.20	<0.04	36.0
309.82.08	Lake Nacimiento/Las Tablas	Sediment	07/31/91	4.10	0.41	63.00	18.00	12.00	0.48	67.00	0.34	0.07	53.0

< = Below Indicated Detection Limit.

APPENDIX C

Summary of 1991 Data

Organic Chemicals in Sediment

(ppb, dry weight)

APPENDIX C

Toxic Substances Monitoring Program

Summary of 1991 Data:Organic Chemicals in Sediment (ppb, dry weight)

STATION NUMBER	STATION NAME	SAMPLE TYPE	SAMPLE DATE	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
106.40.12	Carrville Pond	Sediment	09/18/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
307.00.01	Carmel Lagoon	Sediment	08/01/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
312.10.00	Santa Maria R/Mouth	Sediment	07/31/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0

STATION NUMBER	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
106.40.12	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
307.00.01	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
312.10.00	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

STATION NUMBER	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl-Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
106.40.12	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
307.00.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
312.10.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND

NA Means that the sample was not analyzed for the chemical.

N Means that the chemical was not detected.

< Means that the chemical was not detected above the indicated limit of detection.

APPENDIX D

Summary of 1991 Data

Organic Chemicals in Freshwater Fish Exceeding

Maximum Tissue Residue Levels (MTRLs)

(ppb, wet weight)

APPENDIX D

Toxic Substances Monitoring Program

Summary of 1991 Data:Organic Chemicals in Freshwater Fish Exceeding Maximum Tissue Residue Levels (MTRLs)

(ppb, wet weight)

Station Number	Station Name dane	Species Code	Sample Date	Tissue Type	Total Chlor-	Total DDT	Dieldrin	Hexa-chloro-benzene	gamma-HCH (Lindane)	Total PCB	Toxaphene
304.12.91	Neary's Lake	SSKR	08/06/91	F	123.0	83.0				340.0	
403.12.06	Calleguas Creek	GF	06/18/91	F	5.9	1170.0					440.0
404.21.07	Malibou Lake	LMB	04/23/91	F						54.0	
404.25.01	Westlake Lake	LMB	04/23/91	F	6.6						
404.26.00	Eleanor Lake	GF	04/22/91	F		35.0					
405.12.90	Harbor Park Lake	CP	06/15/91	F	370.4	492.0	15.0			600.0	
405.41.08	Peck Road Lake	LMB	04/17/91	F	14.1	39.0					
405.52.01	Puddingstone Res	LMB	06/11/91	F	16.1					54.0	
635.20.04	Donner Lake	KOK	10/23/91	F	26.2					165.0	
713.30.90	Colorado R/Needles	CP	08/20/91	F	22.0	37.0					
715.40.08	Palo Verde Outfall Drain	CP	08/19/91	F		226.0					130.0
723.10.02	New R/Westmorland	CCF	08/15/91	F		510.0	7.0			64.0	300.0
723.10.58	New R/Inter Boundary	CP	12/18/91	F	103.0	620.0	11.0	7.6	9.5	176.0	
903.11.05	San Luis Rey R/Foussat Rd	LMB	06/13/91	F		34.0					

F = Filet. Species codes are listed in Table 2.

APPENDIX E

Summary of 1991 Data

Trace Elements in Freshwater Fish Exceeding Selected Criteria

(ppm, wet weight)

APPENDIX E

Toxic Substances Monitoring Program

Summary of 1991 Data:Trace Elements in Freshwater Fish Exceeding Selected Criteria

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury (N/M/F)	Nickel	Selenium (E/M)	Silver	Zinc
105.36.10	Klamath R/d/s Iron Gate Res	DC	W	09/19/91										51.00**
105.50.04	Shasta River	DC	W	09/19/91										62.00**
106.12.03	Trinity R/Willow Creek	SCP	L	09/16/91										40.00**
106.40.16	Trinity R/East Fork	RBT	L	09/18/91			0.03*							
110.00.90	McDaniel Slough	STB	W	09/16/91				3.80*			0.30*		0.03*	
110.00.90	McDaniel Slough	STB	W	09/16/91			0.22*	3.60*			0.40*		0.03*	
111.63.14	Lake Pillsbury	LMB	F	09/10/91						0.79***				
111.63.14	Lake Pillsbury	LMB	L	09/10/91				13.00*						28.00*
114.11.05	Russian R/Duncans Mills	PCP	W	07/17/91							1.20**			
114.24.12	Lake Sonoma	LMB	F	09/09/91						0.87***				
115.30.02	Estero de San Antonio	PCP	L	07/16/91	0.40*									35.00*
204.30.11	Alameda Cr/Niles Canyon Rd	SCP	W	07/09/91							0.20*			
205.50.94	Stevens Creek	RBT	L	07/09/91			0.04*						0.32*	
207.10.90	Suisun Bay	WST	F	01/12/92								2.40***		
207.10.90	Suisun Bay	WST	L	01/12/92	1.50**	1.00**	0.05*	51.00**			1.20**		0.80**	63.00**
304.13.91	Moran Lake	STB	W	08/06/91	0.98**			4.00*						61.00**
307.00.01	Carmel Lagoon	STB	W	08/01/91				3.90*						44.00*
309.50.01	El Estero	BG	L	08/02/91		0.80*								
309.82.04	Lake Nacimiento/Dip Cr	WHB	F	07/31/91						1.20##				
309.82.04	Lake Nacimiento/Dip Cr	WHB	L	07/31/91	0.99**			150.00**					0.48*	29.00*
309.82.08	Lake Nacimiento/Las Tablas	WHB	F	07/31/91						1.30##				
309.82.08	Lake Nacimiento/Las Tablas	WHB	L	07/31/91	1.10**			200.00**					0.68*	28.00*
402.10.02	Ventura River	CP	W	06/20/91										43.00*
403.12.07	Conejo Creek	GAM	W	06/19/91									0.06**	
403.64.02	Arroyo Conejo	GSF	L	06/19/91		0.44*								
403.67.04	Arroyo Simi	FHM	W	06/19/91			0.34**				0.20*	2.20**	0.04*	44.00*

W = Whole Body. F= Filet. L = Liver. * = Equals or exceeds EDL 85. ** = Equals or exceeds EDL 95. *** = Equals or exceeds MIS.
# = Equals or exceeds NAS recommended guideline. ## = Equals or exceeds FDA action level. Species codes are listed in Table 2.
(N/M/F) means that whole body samples were compared to NAS criteria and filet samples were compared to MIS and FDA criteria.
(E/M) means that whole body samples were compared to EDL 85 and EDL 95 and filet samples were compared to MIS.
Results for all other trace elements were compared to EDL 85 and EDL 95.

APPENDIX E

Toxic Substances Monitoring Program

Summary of 1991 Data:Trace Elements in Freshwater Fish Exceeding Selected Criteria

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury (N/M/F)	Nickel	Selenium (E/M)	Silver	Zinc
404.21.01	Malibu Creek	BG	L	06/18/91		0.64*								
404.21.07	Malibou Lake	LMB	L	04/23/91		0.40*		33.00**						29.00*
404.23.04	Lindero Lake	LMB	F	04/22/91								2.10***		
404.25.01	Westlake Lake	LMB	L	04/23/91		0.48*								
404.26.01	Sherwood Lake	LMB	F	04/22/91						0.70***				
405.15.04	San Gabriel River	TLM	L	06/16/91			0.06*						0.56*	
405.15.97	Belvedere Park Lake	FHM	W	04/18/91			0.19*	4.20**	1.10**					44.00*
405.15.97	Belvedere Park Lake	FHM	W	04/18/91				3.90*	1.20**					45.00**
405.21.03	Calabasas Lake	LMB	L	04/20/91				17.00*						
405.52.01	Puddingstone Res	LMB	F	06/11/91						0.51***				
405.52.01	Puddingstone Res	LMB	L	06/11/91	0.67*									
510.00.30	Sacramento R/Hood	WCF	F	11/21/91						0.54***				
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	F	10/15/91						0.56***				
519.21.09	American R/d/s Watt Ave Brg	SSKR	F	10/16/91						0.75***				
519.21.09	American R/d/s Watt Ave Brg	SSKR	F	10/16/91						0.55***				
601.00.02	Gull Lake	SP	L	07/24/91	0.27*									
603.20.24	Bishop Creek Canal/d/s Bishop	BN	L	07/23/91				230.00**					0.38*	32.00*
603.20.41	Sabrina Lake	BN	L	07/23/91			0.08**						0.36*	
603.30.05	Haiwee Reservoir	SMB	L	07/24/91	0.43*	0.44*		84.00**						34.00*
628.20.02	Silverwood Lake	LMB	L	08/14/91	0.72*									
632.10.15	Silver Creek	SKR	W	09/27/91	0.53*		0.26*				0.30*			
633.10.03	Carson R/W.F./d/s Paynesville	BN	L	09/27/91									0.29*	29.00*
635.20.04	Donner Lake	KOK	L	10/23/91									0.49*	41.00**
635.20.28	Squaw Creek	BN	L	10/22/91									0.69**	34.00*
715.50.90	Colorado R/u/s Imperial Dam	LMB	L	08/18/91			0.03*							
723.10.15	Mayflower Drain	GAM	W	08/16/91								2.20**		

W = Whole Body. F= Filet. L = Liver. * = Equals or exceeds EDL 85. ** = Equals or exceeds EDL 95. *** = Equals or exceeds MIS.
# = Equals or exceeds NAS recommended guideline. ## = Equals or exceeds FDA action level. Species codes are listed in Table 2.
(N/M/F) means that whole body samples were compared to NAS criteria and filet samples were compared to MIS and FDA criteria.
(E/M) means that whole body samples were compared to EDL 85 and EDL 95 and filet samples were compared to MIS.
Results for all other trace elements were compared to EDL 85 and EDL 95.

APPENDIX E

Toxic Substances Monitoring Program

Summary of 1991 Data:Trace Elements in Freshwater Fish Exceeding Selected Criteria

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury (N/M/F)	Nickel	Selenium (E/M)	Silver	Zinc
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91								1.60*		
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91								1.60*		
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	05/16/91		0.08*						1.60*		40.00*
801.11.16	El Modena Ch/u/s Walnut Ave Brg	PRS	W	05/16/91		0.31**								
801.11.96	Peters Canyon Channel	PRS	W	05/16/91		0.15**								
801.25.00	Santa Ana R/Prado Dam	LMB	L	05/14/91			0.13**							
902.22.04	Santa Margarita R/Willow Glen Rd	GSF	L	06/14/91			0.03*							
903.12.07	San Luis Rey R/HWY 15	LMB	F	06/13/91								2.00***		
903.12.07	San Luis Rey R/HWY 15	LMB	L	06/13/91				15.00*						29.00*
908.22.01	Chollas Creek/Main Street	LJM	W	06/14/91	0.56*				0.30*					

W = Whole Body. F= Filet. L = Liver. * = Equals or exceeds EDL 85. ** = Equals or exceeds EDL 95. *** = Equals or exceeds MIS.
# = Equals or exceeds NAS recommended guideline. ## = Equals or exceeds FDA action level. Species codes are listed in Table 2.
(N/M/F) means that whole body samples were compared to NAS criteria and filet samples were compared to MIS and FDA criteria.
(E/M) means that whole body samples were compared to EDL 85 and EDL 95 and filet samples were compared to MIS.
Results for all other trace elements were compared to EDL 85 and EDL 95.

APPENDIX F

Summary of 1991 Data

Organic Chemicals in Freshwater Fish Exceeding Selected Criteria

(ppb, wet weight)

APPENDIX F

Toxic Substances Monitoring Program

Summary of 1991 Data:Trace Elements in Freshwater Fish Exceeding Selected Criteria

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Total Chlordane (N/F)	Chlor-pyrifos (EDL)	Dacthal (EDL)	Total DDT (N/F)
304.12.91	Neary's Lake	SSKR	F	08/06/91	123.0#			
309.10.09	Blanco Drain/Salinas R	STB	W	09/04/91	168.0#			13019.0#
309.10.09	Blanco Drain/Salinas R	STB	W	09/04/91	152.0#			12299.0#
403.11.02	Rio de Santa Clara/Oxnard Drain	GAM	W	06/17/91	333.8#			5744.0#
403.12.06	Calleguas Creek	GF	F	06/18/91			30.0*	1170.0#
403.12.07	Conejo Creek	GAM	W	06/19/91			120.0*	2422.0#
404.23.04	Lindero Lake	LMB	F	04/22/91				
405.12.90	Harbor Park Lake	CP	F	06/15/91	370.4##			
405.15.97	Belvedere Park Lake	FHM	W	04/18/91	151.1#			
405.15.97	Belvedere Park Lake	FHM	W	04/18/91	161.7#			

Station Number	Diazinon (EDL)	Dieldrin (N/F)	Total Endosulfan (N/F)	Hexa-chloro-benzene (EDL)	Oxadiazon (EDL)	Total PCB (N/F)	Toxaphene (N/F)	Chemical Group A (N)
304.12.91								123.0#
309.10.09		1000.0#				850.0#	6000.0#	7242.0#
309.10.09	120.0**	1100.0#				1010.0#	4000.0#	5318.0#
403.11.02						858.0#	1200.0#	1695.8#
403.12.06							440.0#	445.9#
403.12.07			210.0#				2000.0#	2306.9#
404.23.04					17.0**			
405.12.90					36.0**	600.0#		385.4#
405.15.97								177.1#
405.15.97								189.7#

* = Equals or exceeds the EDL 85. ** = Equals or exceeds the EDL 95. # = Equals or exceeds NAS recommended guideline.
= Equals or exceeds FDA action level. (EDL) means that the results were compared to EDL 85 and EDL 95 values.
(N) means that the results were compared to NAS criteria only. (N/F) means that the results were compared to NAS and FDA criteria.
F = Filet.W = Whole Body. Species codes are listed in Table 2.

APPENDIX F (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data:Trace Elements in Freshwater Fish Exceeding Selected Criteria

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Total Chlordane (N/F)	Chlor-pyrifos (EDL)	Dacthal (EDL)	Total DDT (N/F)
405.52.01	Puddingstone Res	LMB	F	06/11/91			13.0*	
715.40.08	Palo Verde Outfall Drain	CP	F	08/19/91		92.0**		
723.10.02	New R/Westmorland	CCF	F	08/15/91		27.0**		
723.10.15	Mayflower Drain	GAM	W	08/16/91		53.0*		1710.0#
723.10.20	Rose Drain	GAM	W	08/17/91			390.0*	
723.10.22	Orange Drain	GAM	W	08/17/91				
723.10.58	New R/Inter Boundary	CP	F	12/18/91	103.0#		57.0*	
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91			120.0*	
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91			120.0*	
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	05/16/91				

Station Number	Diazinon (EDL)	Dieldrin (N/F)	Total Endosulfan (N/F)	Hexa-chloro-benzene (EDL)	Oxadiazon (EDL)	Total PCB (N/F)	Toxaphene (N/F)	Chemical Group A (N)
405.52.01					16.0**			
715.40.08							130.0#	172.0#
723.10.02							300.0#	307.0#
723.10.15			211.0#				400.0#	640.6#
723.10.20			110.0#					149.0#
723.10.22							230.0#	277.0#
723.10.58				7.6**				140.5#
801.11.07	180.0**						130.0#	190.4#
801.11.07	260.0**						160.0#	220.1#
801.11.09					350.0*		180.0#	222.3#

* = Equals or exceeds the EDL 85. ** = Equals or exceeds the EDL 95. # = Equals or exceeds NAS recommended guideline.
= Equals or exceeds FDA action level. (EDL) means that the results were compared to EDL 85 and EDL 95 values.
(N) means that the results were compared to NAS criteria only. (N/F) means that the results were compared to NAS and FDA criteria.
F = Filet.W = Whole Body. Species codes are listed in Table 2.

APPENDIX F (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data:Trace Elements in Freshwater Fish Exceeding Selected Criteria

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Total Chlordane (N/F)	Chlor-pyrifos (EDL)	Dacthal (EDL)	Total DDT (N/F)
801.11.16	El Modena Ch/u/s Walnut Ave Brg	PRS	W	05/16/91	157.0#		550.0**	3986.0#
801.11.96	Peters Canyon Channel	PRS	W	05/16/91	109.0#		670.0**	2179.0#
902.22.03	Rainbow Creek	BLB	F	06/14/91				

Station Number	Diazinon (EDL)	Dieldrin (N/F)	Total Endosulfan (N/F)	Hexa-chloro-benzene (EDL)	Oxadiazon (EDL)	Total PCB (N/F)	Toxaphene (N/F)	Chemical Group A (N)
801.11.16				8.2*			500.0#	677.6#
801.11.96	180.0**						550.0#	677.0#
902.22.03					530.0**			

* = Equals or exceeds the EDL 85. ** = Equals or exceeds the EDL 95. # = Equals or exceeds NAS recommended guideline.
= Equals or exceeds FDA action level. (EDL) means that the results were compared to EDL 85 and EDL 95 values.
(N) means that the results were compared to NAS criteria only. (N/F) means that the results were compared to NAS and FDA criteria.
F = Filet. W = Whole Body. Species codes are listed in Table 2.

APPENDIX G

Summary of 1991 Data

PCP and TCP in Freshwater Fish

(ppb, wet weight)

APPENDIX G

Toxic Substances Monitoring Program
Summary of 1991 Data: PCP and TCP in Freshwater Fish (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	PCP	TCP
105.36.10	Klamath R/d/s Iron Gate Res	DC	W	09/19/91	2.8	<4.0
105.50.04	Shasta River	DC	W	09/19/91	<2.0	<4.0
105.50.35	Beaughton Cr/d/s HWY 97 Brg	BN	F	09/19/91	<2.0	<4.0
106.40.16	Trinity R/East Fork	RBT	F	09/18/91	<2.0	<4.0

W = Whole Body. F = Filet. < = Below Indicated Detection Limit.
Species codes are listed in Table 2.

APPENDIX H

Summary of 1991 Data

Trace Elements in Marine Fish Exceeding Selected Criteria

(ppm, wet weight)

APPENDIX H

Toxic Substances Monitoring Program

Summary of 1991 Data: Trace Elements in Marine Fish Exceeding Selected Criteria

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury (EDL/F)	Nickel	Selenium	Silver	Zinc
304.13.90	Corcoran Lagoon	STG	L	08/07/91										44.00*
403.11.91	Mugu Lagoon	GSS	L	06/17/91	20.90**	3.50**							0.67*	
728.00.90	Salton Sea/South	ORC	L	05/15/91				18.00*						
728.00.92	Salton Sea/North	ORC	L	05/30/91				19.00*						40.00*
728.00.92	Salton Sea/North	SAR	L	05/30/91										45.00**
801.11.00	Huntington Harbour/Anaheim Bay	WCK	L	11/21/91							0.20**			

W = Whole Body. F= Filet. L = Liver. * = Equals or exceeds EDL 85. ** = Equals or exceeds EDL 95. ## = Equals or exceeds FDA action level.
(EDL/F) means that whole body samples were compared to EDL 85 and EDL 95 values and filet samples were compared to FDA criteria.
Results for all other trace elements were compared to EDL 85 and EDL 95. Species codes are listed in Table 3.

APPENDIX I

Summary of 1991 Data

Organic Chemicals in Marine Fish Exceeding Selected Criteria

(ppb, wet weight)

APPENDIX I

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Marine Fish Exceeding Selected Criteria

(ppb, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Total Chlordane (EDL/F)	Chlor-pyrifos (EDL)	Dacthal (EDL)	Total DDT (EDL/F)
405.12.00	Alamitos Bay	CCB	F	06/12/91				
728.00.92	Salton Sea/North	ORC	F	05/30/91			30.0*	
728.00.92	Salton Sea/North	ORC	F	05/30/91			32.0**	
728.00.92	Salton Sea/North	SAR	F	05/30/91			30.0*	
801.11.00	Huntington Harbour/Anaheim Bay	WCK	F	11/21/91	42.8**			368.0**
801.11.97	Newport Bay	SSB	F	06/20/91				

Station Number	Total Endosulfan (EDL/F)	Hexa-chloro-benzene (EDL)	Oxadiazon (EDL)	Total PCB (EDL/F)	Toxaphene (EDL/F)	Chemical Group A (EDL)
405.12.00				279.0**		17.9*
728.00.92						
728.00.92						
728.00.92						
801.11.00				260.0*		42.8**
801.11.97				135.0*		

* = Equals or exceeds the EDL 85. ** = Equals or exceeds the EDL 95. ## = Equals or exceeds FDA action level.

(EDL) means that the results were compared to EDL 85 and EDL 95 values.

(EDL/F) means that whole body samples were compared to EDL 85 and EDL 95 values and filet samples were compared FDA criteria.

F = Filet. W = Whole Body. Species codes are listed in Table 3.

APPENDIX J

Summary of 1991 Data

Organic Chemicals in Freshwater Fish

Exceeding Lipid Weight EDL 85 and EDL 95

(ppb, lipid weight)

APPENDIX J

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Freshwater Fish Exceeding Lipid Weight EDL 85 and EDL 95

(ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Total Chlordane	Chlor-pyrifos	Dacthal	Total DDT	Dieldrin
304.12.91	Neary's Lake	SSKR	F	08/06/91	6029.4*				
309.10.09	Blanco Drain/Salinas R	STB	W	09/04/91			1716.1*	203104.5**	15600.6**
309.10.09	Blanco Drain/Salinas R	STB	W	09/04/91			1563.0*	196156.3**	17543.9**
403.11.02	Rio de Santa Clara/Oxnard Drain	GAM	W	06/17/91	8877.7**			152766.0*	1781.9*
403.12.06	Calleguas Creek	GF	F	06/18/91			7556.7*	294710.3**	
403.12.07	Conejo Creek	GAM	W	06/19/91			2970.3*		965.3*
403.67.04	Arroyo Simi	FHM	W	06/19/91					
404.21.07	Malibou Lake	LMB	F	04/23/91					
404.23.04	Lindero Lake	LMB	F	04/22/91					
405.15.97	Belvedere Park Lake	FHM	W	04/18/91	4197.2*				
405.41.08	Peck Road Lake	LMB	F	04/17/91	3810.8*				

Station Number	Total Endosulfan	Hexa-chloro-benzene	gamma-HCH (Lindane)	Total HCH	Oxadiazon	Total PCB	Toxaphene	Chemical Group A
304.12.91						16666.7*		
309.10.09		64.0*				13260.5*	93603.8**	112979.7**
309.10.09		68.6*				16108.5*	63795.9*	84816.6*
403.11.02	2526.6*					22819.2*	31914.9*	45101.1*
403.12.06							110831.2**	112317.4**
403.12.07	5198.0*			195.5*		8811.9*	49504.9*	57101.5*
403.67.04			379.5**	379.5*				
404.21.07						9818.2*		
404.23.04					6071.4**			
405.15.97								
405.41.08								

F = Filet. W = Whole Body. * = Equals or exceeds the EDL 85. ** = Equals or exceeds the EDL 95.

Species codes are listed in Table 2.

APPENDIX J (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Freshwater Fish Exceeding Lipid Weight EDL 85 and EDL 95

(ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Total Chlordane	Chlor-pyrifos	Dacthal	Total DDT	Dieldrin
405.52.01	Puddingstone Res	LMB	F	06/11/91			1780.8*		
715.40.08	Palo Verde Outfall Drain	CP	F	08/19/91		3432.8**			
723.10.02	New R/Westmorland	CCF	F	08/15/91					
723.10.15	Mayflower Drain	GAM	W	08/16/91		2284.5**		73706.9*	
723.10.20	Rose Drain	GAM	W	08/17/91			19598.0*		1959.8*
723.10.22	Orange Drain	GAM	W	08/17/91			3941.9*		1950.2*
723.10.58	New R/Inter Boundary	CP	F	12/18/91					
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	05/16/91					
801.11.16	El Modena Ch/u/s Walnut Ave Brg	PRS	W	05/16/91			7971.0*		
801.11.96	Peters Canyon Channel	PRS	W	05/16/91			7023.1*		
902.22.03	Rainbow Creek	BLB	F	06/14/91					

Station Number	Total Endosulfan	Hexa-chloro-benzene	gamma-HCH (Lindane)	Total HCH	Oxadiazon	Total PCB	Toxaphene	Chemical Group A
405.52.01								
715.40.08	1567.2*							
723.10.02		177.0*						
723.10.15	9094.8**			185.3*			17241.4*	27612.1*
723.10.20	5527.6*							
723.10.22								
723.10.58		145.9*		182.3*				
801.11.09					4685.4**			
801.11.16		118.8*						
801.11.96								
902.22.03					72702.3**			

F = Filet. W = Whole Body. * = Equals or exceeds the EDL 85. ** = Equals or exceeds the EDL 95.

Species codes are listed in Table 2.

APPENDIX K

Summary of 1991 Data

Organic Chemicals in Marine Fish

Exceeding Lipid Weight EDL 85 and EDL 95

(ppb, lipid weight)

APPENDIX K

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Marine Fish Exceeding Lipid Weight EDL 85 and EDL 95

(ppb, lipid weight)

Station Number	Station Name	Species	Tissue Code	Sample Date	Total Chlordane	Chlor-pyrifos	Dacthal	Total DDT	Dieldrin
405.12.00	Alamitos Bay	CCB	F	06/12/91					
728.00.90	Salton Sea/South	ORC	F	05/15/91			3139.0**		
728.00.92	Salton Sea/North	ORC	F	05/30/91			1829.3*		
728.00.92	Salton Sea/North	ORC	F	06/18/91			1775.1*		
801.11.00	Huntington Harbour/Anaheim Bay	WCK	F	11/21/91					
801.11.97	Newport Bay	SSB	F	06/20/91					

Station Number	Total Endosulfan	Hexa-chloro-benzene	gamma-HCH (Lindane)	Total HCH	Oxadiazon	Total PCB	Toxaphene	Chemical Group A
405.12.00						8691.6*		557.6*
728.00.90								
728.00.92								
728.00.92								
801.11.00								1147.5*
801.11.97						8881.6*		

F = Filet. W = Whole Body. * = Equals or exceeds the EDL 85. ** = Equals or exceeds the EDL 95.

Species codes are listed in Table 3.

APPENDIX L

Summary of 1991 Data

Trace Elements in Fish, Crayfish, and Turtles

(ppm, wet weight)

APPENDIX L

Toxic Substances Monitoring Program

Summary of 1991 Data: Trace Elements in Fish, Crayfish, and Turtles

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
105.36.10	Klamath R/d/s Iron Gate Res	DC	W	09/19/91	0.07	<0.01	<0.02	0.97	<0.10	0.06	<0.10	0.15	<0.02	51.00
105.50.04	Shasta River	DC	W	09/19/91	0.06	<0.01	0.03	1.20	<0.10	0.19	0.10	0.22	<0.02	62.00
105.50.35	Beaughton Cr/d/s HWY 97 Brg	BN	F	09/19/91	NA	NA	NA	NA	NA	<0.02	NA	0.11	NA	NA
105.50.35	Beaughton Cr/d/s HWY 97 Brg	BN	L	09/19/91	<0.05	0.03	<0.02	52.00	<0.10	NA	<0.10	NA	0.17	27.00
105.92.01	Lost R/Tule Lake	TC	W	09/20/91	0.12	<0.01	0.03	0.78	<0.10	<0.02	<0.10	0.15	<0.02	25.00
105.92.01	Lost R/Tule Lake	TC	W	09/20/91	0.13	<0.01	<0.02	0.86	<0.10	<0.02	<0.10	0.14	<0.02	28.00
106.12.03	Trinity R/Willow Creek	SCP	F	09/16/91	NA	NA	NA	NA	NA	0.23	NA	0.31	NA	NA
106.12.03	Trinity R/Willow Creek	SCP	L	09/16/91	0.10	0.18	<0.02	2.90	<0.10	NA	<0.10	NA	<0.02	40.00
106.40.16	Trinity R/East Fork	RBT	F	09/18/91	NA	NA	NA	NA	NA	0.13	NA	0.14	NA	NA
106.40.16	Trinity R/East Fork	RBT	L	09/18/91	<0.05	0.04	0.03	13.00	<0.10	NA	0.19	NA	0.15	23.00
110.00.90	McDaniel Slough	STB	W	09/16/91	0.36	<0.01	0.22	3.60	<0.10	0.05	0.40	0.22	0.03	37.00
110.00.90	McDaniel Slough	STB	W	09/16/91	0.35	<0.01	0.13	3.80	<0.10	0.04	0.30	0.22	0.03	38.00
111.63.14	Lake Pillsbury	LMB	F	09/10/91	NA	NA	NA	NA	NA	0.79	NA	0.36	NA	NA
111.63.14	Lake Pillsbury	LMB	L	09/10/91	0.07	0.19	<0.02	13.00	<0.10	NA	<0.10	NA	<0.02	28.00
114.11.05	Russian R/Duncans Mills	PCP	W	07/17/91	0.16	<0.01	0.09	1.00	<0.10	0.26	1.20	0.21	<0.02	5.60
114.24.12	Lake Sonoma	LMB	F	09/09/91	NA	NA	NA	NA	NA	0.87	NA	NA	NA	NA
114.32.00	Lake Mendocino	LMB	F	09/09/91	NA	NA	NA	NA	NA	0.32	NA	NA	NA	NA
115.30.02	Estero de San Antonio	PCP	F	07/16/91	NA	NA	NA	NA	NA	0.29	NA	NA	NA	NA
115.30.02	Estero de San Antonio	PCP	L	07/16/91	0.40	0.02	<0.02	3.20	<0.10	NA	<0.10	NA	<0.02	35.00
115.30.04	Estero Americano	STG	W	07/16/91	NA	NA	NA	2.00	NA	0.06	NA	NA	NA	NA
115.30.04	Estero Americano	STG	W	07/16/91	NA	NA	NA	2.40	NA	0.06	NA	NA	NA	NA
201.12.01	Walker Creek	STG	W	07/16/91	0.30	<0.01	0.21	2.30	<0.10	0.16	0.20	0.24	<0.02	12.00
204.30.11	Alameda Cr/Niles Canyon Rd	SCP	W	07/09/91	0.15	0.01	0.12	1.90	<0.10	0.09	0.20	0.48	<0.02	17.00
205.50.94	Stevens Creek	RBT	F	07/09/91	NA	NA	NA	NA	NA	0.27	NA	0.88	NA	NA
205.50.94	Stevens Creek	RBT	L	07/09/91	<0.05	0.03	0.04	44.00	<0.10	NA	<0.10	NA	0.32	24.00
206.50.14	Napa R/Napa	HCH	F	07/11/91	NA	NA	NA	NA	NA	0.29	NA	0.23	NA	NA
207.10.90	Suisun Bay	WST	F	01/12/92	NA	NA	NA	NA	NA	0.20	NA	2.40	NA	NA
207.10.90	Suisun Bay	WST	L	01/12/92	1.50	1.00	0.05	51.00	<0.10	NA	1.20	NA	0.80	63.00
207.32.06	Walnut Creek	GSF	F	07/10/91	NA	NA	NA	NA	NA	0.34	NA	0.23	NA	NA
207.32.06	Walnut Creek	GSF	L	07/10/91	<0.05	0.08	<0.02	1.70	<0.10	NA	<0.10	NA	<0.02	21.00
304.12.90	Schwann Lake	LMB	W	08/07/91	0.08	<0.01	<0.02	0.77	0.10	0.04	<0.10	0.15	<0.02	31.00
304.12.91	Neary's Lake	SSKR	F	08/06/91	NA	NA	NA	NA	NA	0.12	NA	0.30	NA	NA

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Tables 2, 3, and 4.

APPENDIX L (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Trace Elements in Fish, Crayfish, and Turtles

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
304.13.90	Corcoran Lagoon	STG	F	08/07/91	NA	NA	NA	NA	NA	0.08	NA	0.16	NA	NA
304.13.90	Corcoran Lagoon	STG	L	08/07/91	1.00	0.04	<0.02	8.30	<0.10	NA	<0.10	NA	<0.02	44.00
304.13.91	Moran Lake	STB	W	08/06/91	0.98	0.01	0.04	4.00	0.20	0.06	<0.10	0.16	0.02	61.00
304.13.92	Aptos Creek	PCP	W	08/07/91	0.06	0.03	0.06	0.98	<0.10	0.14	<0.10	0.53	<0.02	17.00
307.00.01	Carmel Lagoon	STB	W	08/01/91	0.25	0.04	0.04	3.90	<0.10	0.18	<0.10	0.98	0.02	44.00
307.00.01	Carmel Lagoon	STB	W	08/01/91	0.25	0.04	0.06	3.40	<0.10	0.17	<0.10	0.93	0.02	39.00
309.10.01	Roberts Lake	SP	F	08/01/91	NA	NA	NA	NA	NA	0.07	NA	0.15	NA	NA
309.10.01	Roberts Lake	SP	L	08/01/91	<0.05	0.09	<0.02	2.20	<0.10	NA	<0.10	NA	<0.02	14.00
309.50.01	El Estero	BG	F	08/02/91	NA	NA	NA	NA	NA	0.10	NA	0.36	NA	NA
309.50.01	El Estero	BG	L	08/02/91	<0.05	0.80	<0.02	1.70	<0.10	NA	<0.10	NA	<0.02	22.00
309.82.04	Lake Nacimiento/Dip Cr	WHB	F	07/31/91	NA	NA	NA	NA	NA	1.20	NA	0.98	NA	NA
309.82.04	Lake Nacimiento/Dip Cr	WHB	L	07/31/91	0.99	0.20	0.02	150.00	<0.10	NA	<0.10	NA	0.48	29.00
309.82.08	Lake Nacimiento/Las Tablas	WHB	F	07/31/91	NA	NA	NA	NA	NA	1.30	NA	0.97	NA	NA
309.82.08	Lake Nacimiento/Las Tablas	WHB	L	07/31/91	1.10	0.19	<0.02	200.00	<0.10	NA	<0.10	NA	0.68	28.00
402.10.02	Ventura River	CP	W	06/20/91	<0.05	0.05	0.07	0.82	<0.10	0.03	<0.10	0.54	<0.02	43.00
403.11.91	Mugu Lagoon	GSS	F	06/17/91	NA	NA	NA	NA	NA	0.55	NA	0.39	NA	NA
403.11.91	Mugu Lagoon	GSS	L	06/17/91	20.90	3.50	0.02	3.40	<0.10	NA	<0.10	NA	0.67	14.00
403.12.07	Conejo Creek	GAM	W	06/19/91	<0.05	0.02	0.05	1.30	<0.10	0.09	<0.10	0.61	0.06	32.00
403.21.05	Santa Clara R/Santa Paula	SAKR	F	06/20/91	NA	NA	NA	NA	NA	0.04	NA	0.83	NA	NA
403.64.02	Arroyo Conejo	GSF	F	06/19/91	NA	NA	NA	NA	NA	0.19	NA	0.97	NA	NA
403.64.02	Arroyo Conejo	GSF	L	06/19/91	0.10	0.44	<0.02	1.70	<0.10	NA	<0.10	NA	<0.02	20.00
403.67.04	Arroyo Simi	FHM	W	06/19/91	0.07	0.04	0.34	0.90	<0.10	0.11	0.20	2.20	0.04	44.00
404.21.01	Malibu Creek	BG	F	06/18/91	NA	NA	NA	NA	NA	0.06	NA	1.10	NA	NA
404.21.01	Malibu Creek	BG	L	06/18/91	<0.05	0.64	<0.02	1.80	<0.10	NA	<0.10	NA	<0.02	23.00
404.21.07	Malibou Lake	LMB	F	04/23/91	0.06	NA	NA	NA	NA	0.09	NA	1.60	NA	NA
404.21.07	Malibou Lake	LMB	L	04/23/91	0.14	0.40	<0.02	33.00	<0.10	NA	<0.10	NA	<0.01	29.00
404.23.04	Lindero Lake	LMB	F	04/22/91	<0.05	NA	NA	NA	NA	0.14	NA	2.10	NA	NA
404.23.04	Lindero Lake	LMB	L	04/22/91	<0.05	0.26	<0.02	3.80	<0.10	NA	<0.10	NA	<0.01	21.00
404.25.01	Westlake Lake	LMB	F	04/23/91	<0.05	NA	NA	NA	NA	0.33	NA	1.60	NA	NA
404.25.01	Westlake Lake	LMB	L	04/23/91	<0.05	0.48	<0.02	12.00	<0.10	NA	<0.10	NA	<0.01	24.00
404.26.00	Eleanor Lake	BLB	L	04/22/91	<0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA
404.26.00	Eleanor Lake	GF	F	04/22/91	0.06	NA	NA	NA	NA	0.28	NA	0.08	NA	NA

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APPENDIX L (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Trace Elements in Fish, Crayfish, and Turtles

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
404.26.01	Sherwood Lake	LMB	F	04/22/91	0.05	NA	NA	NA	NA	0.70	NA	0.22	NA	NA
404.26.01	Sherwood Lake	LMB	L	04/22/91	0.08	0.13	<0.02	4.30	<0.10	NA	<0.10	NA	<0.01	21.00
405.12.00	Alamitos Bay	CCB	F	06/12/91	NA	NA	NA	NA	NA	0.05	NA	0.26	NA	NA
405.12.00	Alamitos Bay	CCB	L	06/12/91	1.60	0.15	<0.02	8.60	<0.10	NA	0.10	NA	0.08	26.00
405.15.02	El Dorado Park Lake	LMB	F	04/21/91	<0.05	NA	NA	NA	NA	0.47	NA	0.10	NA	NA
405.15.02	El Dorado Park Lake	LMB	L	04/21/91	0.10	0.03	<0.02	6.00	<0.10	NA	<0.10	NA	<0.01	23.00
405.15.04	San Gabriel River	TLM	F	06/16/91	NA	NA	NA	NA	NA	0.02	NA	0.49	NA	NA
405.15.04	San Gabriel River	TLM	L	06/16/91	0.20	0.07	0.06	7.90	<0.10	NA	0.20	NA	0.56	17.00
405.15.24	Echo Park Lake	LMB	F	04/19/91	0.06	NA	NA	NA	NA	0.15	NA	0.48	NA	NA
405.15.24	Echo Park Lake	LMB	L	04/19/91	0.08	0.07	<0.02	10.00	<0.10	NA	<0.10	NA	<0.01	24.00
405.15.97	Belvedere Park Lake	FHM	W	04/18/91	0.16	0.04	0.18	3.90	1.20	<0.02	<0.10	0.30	<0.01	45.00
405.15.97	Belvedere Park Lake	FHM	W	04/18/91	0.08	0.02	0.19	4.20	1.10	<0.02	0.10	0.30	<0.01	44.00
405.15.98	Hollenbeck Park Lake	PROI	W	04/18/91	0.12	<0.01	0.05	8.50	0.20	<0.02	<0.10	0.22	0.01	14.00
405.15.99	Lincoln Park Lake	LMB	F	04/18/91	<0.05	NA	NA	NA	NA	0.03	NA	0.42	NA	NA
405.15.99	Lincoln Park Lake	LMB	L	04/18/91	<0.05	0.03	<0.02	1.10	<0.10	NA	<0.10	NA	<0.01	15.00
405.21.03	Calabasas Lake	LMB	F	04/20/91	0.05	NA	NA	NA	NA	0.04	NA	0.25	NA	NA
405.21.03	Calabasas Lake	LMB	L	04/20/91	0.10	0.17	<0.02	17.00	<0.10	NA	<0.10	NA	<0.01	24.00
405.21.16	Los Angeles R/Sepulveda Basin	GF	F	05/15/91	NA	NA	NA	NA	NA	0.08	NA	0.51	NA	NA
405.41.01	Legg Lake	LMB	F	04/17/91	<0.05	NA	NA	NA	NA	0.07	NA	0.33	NA	NA
405.41.01	Legg Lake	LMB	L	04/17/91	0.06	0.03	<0.02	4.60	<0.10	NA	<0.10	NA	<0.01	22.00
405.41.08	Peck Road Lake	LMB	F	04/17/91	0.11	NA	NA	NA	NA	0.08	NA	0.32	NA	NA
405.41.08	Peck Road Lake	LMB	L	04/17/91	0.13	0.16	<0.02	2.00	<0.10	NA	<0.10	NA	<0.01	19.00
405.52.01	Puddingstone Res	LMB	F	06/11/91	NA	NA	NA	NA	NA	0.51	NA	0.21	NA	NA
405.52.01	Puddingstone Res	LMB	L	06/11/91	0.67	0.15	<0.02	6.50	<0.10	NA	<0.10	NA	<0.02	19.00
510.00.30	Sacramento R/Hood	WCF	F	10/11/91	NA	NA	NA	NA	NA	0.14	NA	NA	NA	NA
510.00.30	Sacramento R/Hood	PACI	F	10/21/91	0.18	0.05	0.02	13.00	<0.10	0.05	<0.10	0.15	0.03	14.00
510.00.30	Sacramento R/Hood	PACI	F	10/21/91	0.13	0.05	0.02	11.00	<0.10	0.07	<0.10	0.15	0.02	14.00
510.00.30	Sacramento R/Hood	PACI	F	10/21/91	0.20	0.06	0.09	9.50	<0.10	0.07	<0.10	0.14	0.02	13.00
510.00.30	Sacramento R/Hood	WCF	F	11/21/91	NA	NA	NA	NA	NA	0.43	NA	NA	NA	NA
510.00.30	Sacramento R/Hood	WCF	F	11/21/91	NA	NA	NA	NA	NA	0.30	NA	NA	NA	NA
510.00.30	Sacramento R/Hood	WCF	F	11/21/91	NA	NA	NA	NA	NA	0.54	NA	NA	NA	NA
515.40.31	Feather R/d/s Oroville Res	SKR	F	11/05/91	NA	NA	NA	NA	NA	0.34	NA	NA	NA	NA

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APPENDIX L (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Trace Elements in Fish, Crayfish, and Turtles

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
515.40.31	Feather R/d/s Oroville Res	SKR	F	11/05/91	NA	NA	NA	NA	NA	0.41	NA	NA	NA	NA
515.40.31	Feather R/d/s Oroville Res	SKR	F	11/05/91	NA	NA	NA	NA	NA	0.31	NA	NA	NA	NA
515.40.31	Feather R/d/s Oroville Res	SKR	F	11/05/91	NA	NA	NA	NA	NA	0.21	NA	NA	NA	NA
515.40.31	Feather R/d/s Oroville Res	SKR	F	11/05/91	NA	NA	NA	NA	NA	0.35	NA	NA	NA	NA
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	F	10/15/91	NA	NA	NA	NA	NA	0.56	NA	NA	NA	NA
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	F	10/15/91	NA	NA	NA	NA	NA	0.27	NA	NA	NA	NA
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	F	10/15/91	NA	NA	NA	NA	NA	0.33	NA	NA	NA	NA
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	F	10/15/91	NA	NA	NA	NA	NA	0.41	NA	NA	NA	NA
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	SMB	F	10/15/91	NA	NA	NA	NA	NA	0.31	NA	NA	NA	NA
519.21.09	American R/d/s Watt Ave Brg	SSKR	F	10/16/91	NA	NA	NA	NA	NA	0.75	NA	NA	NA	NA
519.21.09	American R/d/s Watt Ave Brg	SSKR	F	10/16/91	NA	NA	NA	NA	NA	0.55	NA	NA	NA	NA
519.21.09	American R/d/s Watt Ave Brg	SSKR	F	10/16/91	NA	NA	NA	NA	NA	0.13	NA	NA	NA	NA
519.21.09	American R/d/s Watt Ave Brg	SSKR	F	10/16/91	NA	NA	NA	NA	NA	0.30	NA	NA	NA	NA
519.21.09	American R/d/s Watt Ave Brg	SSKR	F	10/16/91	NA	NA	NA	NA	NA	0.42	NA	NA	NA	NA
519.21.19	American R/d/s Folsom Res	LMB	F	10/03/91	NA	NA	NA	NA	NA	0.14	NA	NA	NA	NA
519.21.19	American R/d/s Folsom Res	LMB	F	10/03/91	NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA
519.21.19	American R/d/s Folsom Res	LMB	F	10/03/91	NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA
519.21.19	American R/d/s Folsom Res	LMB	F	10/03/91	NA	NA	NA	NA	NA	0.18	NA	NA	NA	NA
519.21.19	American R/d/s Folsom Res	LMB	F	10/03/91	NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA
519.22.04	Sacramento R/u/s I-5 Overcross	PACI	F	10/11/91	0.24	0.18	0.06	10.00	<0.10	0.09	<0.10	0.16	<0.02	14.00
519.22.04	Sacramento R/u/s I-5 Overcross	PACI	F	10/11/91	0.22	0.21	0.09	12.00	0.20	0.08	0.10	0.16	<0.02	15.00
519.22.04	Sacramento R/u/s I-5 Overcross	PACI	F	10/11/91	0.20	0.15	0.04	9.60	<0.10	0.09	<0.10	0.14	<0.02	14.00
519.22.90	Feather R/d/s HWY 99 Brg	CCF	F	10/09/91	NA	NA	NA	NA	NA	0.24	NA	NA	NA	NA
519.22.90	Feather R/d/s HWY 99 Brg	CCF	F	10/09/91	NA	NA	NA	NA	NA	0.34	NA	NA	NA	NA
519.22.90	Feather R/d/s HWY 99 Brg	CCF	F	10/09/91	NA	NA	NA	NA	NA	0.18	NA	NA	NA	NA
519.22.90	Feather R/d/s HWY 99 Brg	CCF	F	10/09/91	NA	NA	NA	NA	NA	0.38	NA	NA	NA	NA
519.22.90	Feather R/d/s HWY 99 Brg	CCF	F	10/09/91	NA	NA	NA	NA	NA	0.27	NA	NA	NA	NA
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.42	NA	NA	NA	NA
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.09	NA	NA	NA	NA
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.16	NA	NA	NA	NA
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.10	NA	NA	NA	NA

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APPENDIX L (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Trace Elements in Fish, Crayfish, and Turtles

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.12	NA	NA	NA	NA
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.09	NA	NA	NA	NA
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.09	NA	NA	NA	NA
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.10	NA	NA	NA	NA
541.10.90	San Joaquin R/Vernalis	CCF	F	10/30/91	NA	NA	NA	NA	NA	0.06	NA	NA	NA	NA
544.00.11	Franks Tract	PACI	F	10/21/91	0.23	0.05	<0.02	13.00	<0.10	0.06	<0.10	0.12	0.02	16.00
544.00.11	Franks Tract	PACI	F	10/21/91	0.22	0.06	0.02	11.00	<0.10	0.05	<0.10	0.12	0.02	15.00
544.00.11	Franks Tract	PACI	F	10/21/91	0.24	0.08	<0.02	8.30	<0.10	0.07	<0.10	0.13	0.02	16.00
601.00.02	Gull Lake	SP	F	07/24/91	NA	NA	NA	NA	NA	0.17	NA	1.00	NA	NA
601.00.02	Gull Lake	SP	L	07/24/91	0.27	0.10	0.02	2.40	<0.10	NA	<0.10	NA	<0.02	16.00
603.20.24	Bishop Creek Canal/d/s Bishop	BN	F	07/23/91	NA	NA	NA	NA	NA	0.12	NA	0.30	NA	NA
603.20.24	Bishop Creek Canal/d/s Bishop	BN	L	07/23/91	0.13	0.02	0.02	230.00	<0.10	NA	<0.10	NA	0.38	32.00
603.20.41	Sabrina Lake	BN	F	07/23/91	NA	NA	NA	NA	NA	0.10	NA	0.18	NA	NA
603.20.41	Sabrina Lake	BN	L	07/23/91	<0.05	0.07	0.08	19.00	<0.10	NA	<0.10	NA	0.36	26.00
603.30.05	Haiwee Reservoir	SMB	F	07/24/91	NA	NA	NA	NA	NA	0.12	NA	0.27	NA	NA
603.30.05	Haiwee Reservoir	SMB	L	07/24/91	0.43	0.44	<0.02	84.00	<0.10	NA	<0.10	NA	<0.02	34.00
626.80.03	Little Rock Creek Res	BLB	F	08/14/91	NA	NA	NA	NA	NA	0.28	NA	0.06	NA	NA
626.80.03	Little Rock Creek Res	BLB	F	08/14/91	NA	NA	NA	NA	NA	0.31	NA	0.07	NA	NA
626.80.03	Little Rock Creek Res	BLB	L	08/14/91	<0.05	0.01	<0.02	2.30	<0.10	NA	<0.10	NA	<0.02	20.00
626.80.03	Little Rock Creek Res	BLB	L	08/14/91	<0.05	<0.01	<0.02	2.50	<0.10	NA	<0.10	NA	<0.02	20.00
628.20.02	Silverwood Lake	LMB	F	08/14/91	NA	NA	NA	NA	NA	0.22	NA	0.39	NA	NA
628.20.02	Silverwood Lake	LMB	L	08/14/91	0.72	0.06	<0.02	2.00	<0.10	NA	<0.10	NA	<0.02	20.00
632.10.15	Silver Creek	SKR	W	09/27/91	0.53	0.04	0.26	1.20	0.10	0.07	0.30	0.07	<0.02	24.00
633.10.03	Carson R/W.F./d/s Paynesville	BN	F	09/27/91	NA	NA	NA	NA	NA	0.05	NA	0.11	NA	NA
633.10.03	Carson R/W.F./d/s Paynesville	BN	L	09/27/91	<0.05	0.04	<0.02	64.00	<0.10	NA	<0.10	NA	0.29	29.00
635.20.04	Donner Lake	KOK	F	10/23/91	NA	NA	NA	NA	NA	0.05	NA	0.12	NA	NA
635.20.04	Donner Lake	KOK	L	10/23/91	0.07	0.04	<0.02	120.00	<0.10	NA	<0.10	NA	0.49	41.00
635.20.28	Squaw Creek	BN	F	10/22/91	NA	NA	NA	NA	NA	0.10	NA	0.36	NA	NA
635.20.28	Squaw Creek	BN	L	10/22/91	0.06	0.08	<0.02	93.00	<0.10	NA	<0.10	NA	0.69	34.00
713.30.90	Colorado R/Needles	CP	F	08/20/91	NA	NA	NA	NA	NA	0.04	NA	1.40	NA	NA
715.40.08	Palo Verde Outfall Drain	CP	F	08/19/91	NA	NA	NA	NA	NA	NA	NA	0.67	NA	NA
715.50.90	Colorado R/u/s Imperial Dam	LMB	F	08/18/91	NA	NA	NA	NA	NA	0.04	NA	1.20	NA	NA

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APPENDIX L (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Trace Elements in Fish, Crayfish, and Turtles

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
715.50.90	Colorado R/u/s Imperial Dam	LMB	L	08/18/91	0.18	0.06	0.03	3.20	<0.10	NA	<0.10	NA	<0.02	22.00
723.10.02	New R/Westmorland	CCF	F	08/15/91	NA	NA	NA	NA	NA	NA	NA	1.00	NA	NA
723.10.02	New R/Westmorland	SST	F	08/15/91	NA	NA	NA	NA	NA	NA	NA	1.10	NA	NA
723.10.15	Mayflower Drain	GAM	W	08/16/91	NA	NA	NA	NA	NA	NA	NA	2.20	NA	NA
723.10.20	Rose Drain	GAM	W	08/17/91	NA	NA	NA	NA	NA	NA	NA	1.20	NA	NA
723.10.22	Orange Drain	GAM	W	08/17/91	NA	NA	NA	NA	NA	NA	NA	1.20	NA	NA
723.10.28	Peach Drain	GAM	W	08/17/91	NA	NA	NA	NA	NA	NA	NA	1.20	NA	NA
723.10.58	New R/Inter Boundary	CP	F	12/18/91	NA	NA	NA	NA	NA	0.47	NA	1.20	NA	NA
723.10.91	Fig Drain	MOL	W	08/17/91	NA	NA	NA	NA	NA	NA	NA	0.84	NA	NA
727.00.03	Reservation Main Drain	TLZ	F	08/18/91	NA	NA	NA	NA	NA	NA	NA	0.20	NA	NA
728.00.90	Salton Sea/South	ORC	F	05/15/91	NA	NA	NA	NA	NA	0.02	NA	2.40	NA	NA
728.00.90	Salton Sea/South	ORC	L	05/15/91	2.00	<0.01	<0.02	18.00	<0.10	NA	<0.10	NA	0.08	34.00
728.00.92	Salton Sea/North	ORC	F	05/30/91	NA	NA	NA	NA	NA	0.03	NA	2.50	NA	NA
728.00.92	Salton Sea/North	ORC	F	05/30/91	NA	NA	NA	NA	NA	NA	NA	3.00	NA	NA
728.00.92	Salton Sea/North	ORC	L	05/30/91	2.30	0.02	<0.02	19.00	<0.10	NA	<0.10	NA	0.06	40.00
728.00.92	Salton Sea/North	SAR	F	05/30/91	NA	NA	NA	NA	NA	0.03	NA	2.10	NA	NA
728.00.92	Salton Sea/North	SAR	L	05/30/91	1.90	0.07	<0.02	3.70	<0.10	NA	<0.10	NA	<0.02	45.00
728.00.92	Salton Sea/North	ORC	F	06/18/91	NA	NA	NA	NA	NA	NA	NA	2.90	NA	NA
801.11.00	Huntington Harbour/Anaheim Bay	WCK	F	11/21/91	NA	NA	NA	NA	NA	0.08	NA	0.26	NA	NA
801.11.00	Huntington Harbour/Anaheim Bay	WCK	L	11/21/91	1.30	0.18	<0.02	8.80	0.10	NA	0.20	NA	0.12	30.00
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91	0.13	0.06	0.03	0.72	<0.10	0.05	<0.10	1.60	<0.02	39.00
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91	0.10	0.06	<0.02	0.69	<0.10	0.05	<0.10	1.60	<0.02	33.00
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	05/16/91	0.10	0.08	0.02	0.80	<0.10	0.04	<0.10	1.60	<0.02	40.00
801.11.16	El Modena Ch/u/s Walnut Ave Brg	PRS	W	05/16/91	<0.05	0.31	0.03	1.10	<0.10	0.08	<0.10	1.10	<0.02	38.00
801.11.96	Peters Canyon Channel	PRS	W	05/16/91	0.10	0.15	<0.02	1.10	<0.10	0.04	<0.10	1.20	<0.02	38.00
801.11.97	Newport Bay	SSB	F	06/20/91	NA	NA	NA	NA	NA	0.18	NA	0.45	NA	NA
801.11.97	Newport Bay	SSB	L	06/20/91	1.90	0.35	<0.02	1.90	0.10	NA	<0.10	NA	<0.02	24.00
801.21.09	Santa Ana R/USGS Gage	SAKR	F	05/14/91	NA	NA	NA	NA	NA	0.17	NA	0.20	NA	NA
801.25.00	Santa Ana R/Prado Dam	LMB	F	05/14/91	NA	NA	NA	NA	NA	0.19	NA	0.25	NA	NA
801.25.00	Santa Ana R/Prado Dam	LMB	L	05/14/91	<0.05	0.10	0.13	3.80	<0.10	NA	<0.10	NA	<0.02	19.00
801.25.00	Santa Ana R/Prado Dam	PROI	W	05/14/91	<0.05	<0.01	<0.02	7.90	<0.10	0.07	<0.10	0.16	0.04	13.00
902.22.03	Rainbow Creek	BLB	F	06/14/91	NA	NA	NA	NA	NA	0.08	NA	0.25	NA	NA
902.22.03	Rainbow Creek	BLB	L	06/14/91	<0.05	0.04	<0.02	11.00	<0.10	NA	<0.10	NA	0.04	25.00

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Tables 2, 3, and 4.

APPENDIX L (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Trace Elements in Fish, Crayfish, and Turtles

(ppm, wet weight)

Station Number	Station Name	Species Code	Tissue	Sample Date	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
902.22.04	Santa Margarita R/Willow Glen Rd	GSF	F	06/14/91	NA	NA	NA	NA	NA	0.11	NA	0.58	NA	NA
902.22.04	Santa Margarita R/Willow Glen Rd	GSF	L	06/14/91	0.17	0.08	0.03	1.80	<0.10	NA	<0.10	NA	<0.02	16.00
903.11.05	San Luis Rey R/Foussat Rd	LMB	F	06/13/91	NA	NA	NA	NA	NA	0.06	NA	0.56	NA	NA
903.11.05	San Luis Rey R/Foussat Rd	LMB	L	06/13/91	0.14	0.06	<0.02	2.00	<0.10	NA	<0.10	NA	<0.02	19.00
903.11.11	San Luis Rey R/HWY 76	LMB	F	06/13/91	NA	NA	NA	NA	NA	0.09	NA	0.61	NA	NA
903.11.11	San Luis Rey R/HWY 76	LMB	L	06/13/91	0.10	0.08	<0.02	9.80	<0.10	NA	<0.10	NA	0.06	23.00
903.12.06	Keys Creek	GSF	F	06/13/91	NA	NA	NA	NA	NA	0.09	NA	0.60	NA	NA
903.12.06	Keys Creek	GSF	L	06/13/91	0.07	0.06	<0.02	2.00	<0.10	NA	<0.10	NA	<0.02	17.00
903.12.07	San Luis Rey R/HWY 15	LMB	F	06/13/91	NA	NA	NA	NA	NA	0.08	NA	2.00	NA	NA
903.12.07	San Luis Rey R/HWY 15	LMB	L	06/13/91	<0.05	0.22	<0.02	15.00	<0.10	NA	<0.10	NA	0.06	29.00
908.22.01	Chollas Creek/Main Street	LJM	W	06/14/91	0.56	0.02	0.06	0.88	0.30	<0.02	<0.10	0.32	<0.02	22.00

L = Liver. F = Filet. W = Whole Body. < = Below Indicated Detection Limit. NA = Not Analyzed.

Species codes are listed in Tables 2, 3, and 4.

APPENDIX M

Summary of 1991 Data
Organic Chemicals in Fish, Crayfish, and Turtles
(ppb, wet weight)

APPENDIX M

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Fish, Crayfish, and Turtles (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
105.36.10	Klamath R/d/s Iron Gate Res	DC	W	09/19/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
105.50.35	Beaughton Cr/d/s HWY 97 Brg	BN	F	09/19/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
105.92.01	Lost R/Tule Lake	TC	W	09/20/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
105.92.01	Lost R/Tule Lake	TC	W	09/20/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
106.12.03	Trinity R/Willow Creek	SCP	F	09/16/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
106.13.06	Trinity R/d/s Burnt Ranch	RBT	F	09/17/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
106.40.16	Trinity R/East Fork	RBT	F	09/18/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
114.11.05	Russian R/Duncans Mills	PCP	W	07/17/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
201.12.01	Walker Creek	STG	W	07/16/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
204.30.11	Alameda Cr/Niles Canyon Rd	SCP	W	07/09/91	<5.0	<5.0	8.2	<5.0	<5.0	9.3	<5.0	<5.0	17.5	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
105.36.10	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
105.50.35	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
105.92.01	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
105.92.01	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
106.12.03	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
106.13.06	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
106.40.16	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
114.11.05	<5.0	<10.0	<10.0	<10.0	16.0	<10.0	<10.0	<15.0	<30.0	16.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
201.12.01	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
204.30.11	<5.0	<10.0	<10.0	<10.0	10.0	<10.0	<10.0	<15.0	<30.0	10.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachloro-benzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
105.36.10	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
105.50.35	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
105.92.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
105.92.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
106.12.03	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
106.13.06	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
106.40.16	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
114.11.05	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
201.12.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
204.30.11	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	21.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	17.5

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Tables 2, 3, and 4.

APPENDIX M (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Fish, Crayfish, and Turtles (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
205.50.94	Stevens Creek	RBT	F	07/09/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
206.50.14	Napa R/Napa	HCH	F	07/11/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
207.10.90	Suisun Bay	WST	F	01/12/92	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
207.32.06	Walnut Creek	GSF	F	07/10/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
304.12.90	Schwann Lake	LMB	W	08/07/91	<5.0	<5.0	5.0	<5.0	<5.0	<5.0	6.1	<5.0	11.1	<10.0	<5.0
304.12.91	Neary's Lake	SSKR	F	08/06/91	<5.0	<5.0	42.0	<5.0	21.0	33.0	27.0	<5.0	123.0	<10.0	<5.0
304.13.90	Corcoran Lagoon	STG	F	08/07/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
304.13.91	Moran Lake	STB	W	08/06/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
304.13.92	Aptos Creek	PCP	W	08/07/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
307.00.01	Carmel Lagoon	STB	W	08/01/91	<5.0	<5.0	7.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.0	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
205.50.94	<5.0	<10.0	<10.0	<10.0	14.0	<10.0	<10.0	<15.0	<30.0	14.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
206.50.14	<5.0	<10.0	<10.0	<10.0	6.7	<10.0	<10.0	<15.0	<30.0	6.7	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
207.10.90	<5.0	<10.0	<10.0	<10.0	31.0	<10.0	<10.0	<15.0	<30.0	31.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
207.32.06	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
304.12.90	<5.0	<10.0	<10.0	<10.0	18.0	<10.0	<10.0	<15.0	<30.0	18.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
304.12.91	<5.0	<10.0	<10.0	<10.0	83.0	<10.0	<10.0	<15.0	<30.0	83.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
304.13.90	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
304.13.91	<5.0	<10.0	<10.0	<10.0	10.0	<10.0	<10.0	<15.0	<30.0	10.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
304.13.92	<5.0	<10.0	<10.0	<10.0	7.7	<10.0	<10.0	<15.0	<30.0	7.7	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
307.00.01	<5.0	<10.0	<10.0	<10.0	34.0	<10.0	<10.0	<15.0	<30.0	34.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachloro-benzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
205.50.94	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
206.50.14	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
207.10.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
207.32.06	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
304.12.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	11.1
304.12.91	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	170.0	170.0	340.0	<100.0	123.0
304.13.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
304.13.91	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
304.13.92	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
307.00.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	7.0

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Tables 2, 3, and 4.

APPENDIX M (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Fish, Crayfish, and Turtles (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
307.00.01	Carmel Lagoon	STB	W	08/01/91	<5.0	<5.0	5.2	<5.0	<5.0	<5.0	<5.0	<5.0	5.2	<10.0	<5.0
309.10.01	Roberts Lake	SP	F	08/01/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
309.10.09	Blanco Drain/Salinas R	STB	W	09/04/91	<5.0	<5.0	57.0	<5.0	20.0	26.0	51.0	14.0	168.0	16.0	110.0
309.10.09	Blanco Drain/Salinas R	STB	W	09/04/91	<5.0	<5.0	57.0	<5.0	20.0	23.0	39.0	13.0	152.0	19.0	98.0
309.50.01	El Estero	BG	F	08/02/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
402.10.02	Ventura River	CP	W	06/20/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
403.11.02	Rio de Santa Clara/Oxnard Drain	GAM	W	06/17/91	<5.0	<5.0	22.0	5.8	16.0	67.0	170.0	53.0	333.8	<10.0	15.0
403.12.06	Calleguas Creek	GF	F	06/18/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.9	<5.0	5.9	<10.0	30.0
403.12.07	Conejo Creek	GAM	W	06/19/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	37.0	13.0	50.0	<10.0	120.0
403.51.05	Santa Clara R/Valencia	AC	W	06/11/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
307.00.01	<5.0	<10.0	<10.0	<10.0	29.0	<10.0	<10.0	<15.0	<30.0	29.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
309.10.01	<5.0	<10.0	<10.0	<10.0	14.0	<10.0	<10.0	<15.0	<30.0	14.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
309.10.09	1000.0	500.0	2300.0	79.0	7700.0	210.0	2000.0	230.0	<30.0	13019.0	<100.0	NA	84.0	<5.0	<70.0	<85.0	ND	74.0
309.10.09	1100.0	360.0	2400.0	69.0	7500.0	190.0	1600.0	180.0	<30.0	12299.0	<100.0	NA	120.0	<5.0	<70.0	<85.0	ND	66.0
309.50.01	<5.0	<10.0	<10.0	<10.0	13.0	<10.0	<10.0	<15.0	<30.0	13.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
402.10.02	<5.0	<10.0	<10.0	<10.0	8.4	<10.0	<10.0	<15.0	<30.0	8.4	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
403.11.02	67.0	121.0	1000.0	41.0	3400.0	72.0	1000.0	110.0	<30.0	5744.0	<100.0	NA	69.0	<5.0	<70.0	95.0	95.0	<15.0
403.12.06	<5.0	12.0	100.0	<10.0	950.0	20.0	88.0	<15.0	<30.0	1170.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
403.12.07	39.0	10.0	95.0	29.0	1700.0	56.0	480.0	52.0	<30.0	2422.0	<100.0	NA	64.0	<5.0	<70.0	210.0	210.0	<15.0
403.51.05	<5.0	<10.0	<10.0	<10.0	22.0	<10.0	<10.0	<15.0	<30.0	22.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachloro-benzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
307.00.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	5.2
309.10.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
309.10.09	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	4.1	<15.0	<5.0	<10.0	<10.0	<50.0	570.0	280.0	850.0	6000.0	7242.0
309.10.09	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	4.3	<15.0	<5.0	<10.0	<10.0	<50.0	680.0	330.0	1010.0	4000.0	5318.0
309.50.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
402.10.02	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
403.11.02	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	800.0	58.0	858.0	1200.0	1695.8
403.12.06	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	440.0	445.9
403.12.07	<2.0	<10.0	<5.0	7.9	7.9	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	302.0	54.0	356.0	2000.0	2306.9
403.51.05	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	54.0	54.0	108.0	<100.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Tables 2, 3, and 4.

APPENDIX M (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Fish, Crayfish, and Turtles (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
403.64.02	Arroyo Conejo	GSF	F	06/19/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
403.67.04	Arroyo Simi	FHM	W	06/19/91	<5.0	<5.0	6.6	<5.0	<5.0	<5.0	11.0	<5.0	17.6	<10.0	11.0
404.21.01	Malibu Creek	BG	F	06/18/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
404.21.07	Malibou Lake	LMB	F	04/23/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
404.23.04	Lindero Lake	LMB	F	04/22/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
404.25.01	Westlake Lake	LMB	F	04/23/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6.6	<5.0	6.6	<10.0	<5.0
404.26.00	Eleanor Lake	GF	F	04/22/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
404.26.01	Sherwood Lake	LMB	F	04/22/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.12.00	Alamitos Bay	CCB	F	06/12/91	<5.0	<5.0	<5.0	<5.0	5.9	<5.0	12.0	<5.0	17.9	<10.0	<5.0
405.12.90	Harbor Park Lake	CP	F	06/15/91	<5.0	9.4	93.0	13.0	70.0	53.0	120.0	12.0	370.4	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
403.64.02	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
403.67.04	<5.0	<10.0	<10.0	<10.0	60.0	<10.0	<10.0	<15.0	<30.0	60.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
404.21.01	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
404.21.07	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
404.23.04	<5.0	<10.0	<10.0	<10.0	6.5	<10.0	<10.0	<15.0	<30.0	6.5	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
404.25.01	<5.0	<10.0	<10.0	<10.0	12.0	<10.0	<10.0	<15.0	<30.0	12.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
404.26.00	<5.0	<10.0	12.0	<10.0	23.0	<10.0	<10.0	<15.0	<30.0	35.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
404.26.01	<5.0	<10.0	11.0	<10.0	11.0	<10.0	<10.0	<15.0	<30.0	22.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.12.00	<5.0	<10.0	17.0	12.0	180.0	<10.0	<10.0	26.0	<30.0	235.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.12.90	15.0	17.0	140.0	23.0	260.0	<10.0	<10.0	52.0	<30.0	492.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachloro-benzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
403.64.02	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
403.67.04	<2.0	<10.0	<5.0	7.4	7.4	<5.0	<5.0	<2.0	<15.0	37.0	<10.0	<10.0	<50.0	54.0	<50.0	54.0	<100.0	25.0
404.21.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
404.21.07	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	54.0	<50.0	54.0	<100.0	ND
404.23.04	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	17.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
404.25.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	6.6
404.26.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
404.26.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
405.12.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	180.0	99.0	279.0	<100.0	17.9
405.12.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	36.0	14.0	<10.0	150.0	230.0	220.0	600.0	<100.0	385.4

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Tables 2, 3, and 4.

APPENDIX M (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Fish, Crayfish, and Turtles (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
405.15.02	El Dorado Park Lake	LMB	F	04/21/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.15.24	Echo Park Lake	LMB	F	04/19/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.15.97	Belvedere Park Lake	FHM	W	04/18/91	<5.0	5.3	55.0	9.8	31.0	<5.0	50.0	<5.0	151.1	<10.0	<5.0
405.15.97	Belvedere Park Lake	FHM	W	04/18/91	<5.0	<5.0	62.0	9.7	40.0	<5.0	50.0	<5.0	161.7	<10.0	<5.0
405.15.98	Hollenbeck Park Lake	PROI	W	04/18/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.15.99	Lincoln Park Lake	LMB	F	04/18/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.21.03	Calabasas Lake	LMB	F	04/20/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.21.16	Los Angeles R/Sepulveda Basin	GF	F	05/15/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.41.01	Legg Lake	LMB	F	04/17/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
405.41.08	Peck Road Lake	LMB	F	04/17/91	<5.0	<5.0	5.7	<5.0	<5.0	<5.0	8.4	<5.0	14.1	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
405.15.02	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.15.24	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.15.97	26.0	<10.0	10.0	<10.0	58.0	<10.0	<10.0	<15.0	<30.0	68.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.15.97	28.0	<10.0	12.0	<10.0	58.0	<10.0	<10.0	<15.0	<30.0	70.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.15.98	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.15.99	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.21.03	<5.0	<10.0	<10.0	<10.0	28.0	<10.0	<10.0	<15.0	<30.0	28.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.21.16	<5.0	<10.0	<10.0	<10.0	9.1	<10.0	<10.0	<15.0	<30.0	9.1	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.41.01	<5.0	<10.0	<10.0	<10.0	5.1	<10.0	<10.0	<15.0	<30.0	5.1	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
405.41.08	<5.0	<10.0	<10.0	<10.0	28.0	<10.0	11.0	<15.0	<30.0	39.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachloro-benzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
405.15.02	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
405.15.24	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
405.15.97	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	7.6	<10.0	<10.0	<50.0	64.0	94.0	158.0	<100.0	177.1
405.15.97	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	8.4	<10.0	<10.0	<50.0	62.0	73.0	135.0	<100.0	189.7
405.15.98	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
405.15.99	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
405.21.03	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
405.21.16	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
405.41.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
405.41.08	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	7.7	12.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	14.1

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Tables 2, 3, and 4.

APPENDIX M (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Fish, Crayfish, and Turtles (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
405.52.01	Puddingstone Res	LMB	F	06/11/91	<5.0	<5.0	6.1	<5.0	<5.0	<5.0	10.0	<5.0	16.1	<10.0	13.0
603.20.24	Bishop Creek Canal/d/s Bishop	BN	F	07/23/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
633.10.03	Carson R/W.F./d/s Paynesville	BN	F	09/27/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
635.20.04	Donner Lake	KOK	F	10/23/91	<5.0	<5.0	<5.0	<5.0	<5.0	10.0	8.4	7.8	26.2	<10.0	<5.0
635.20.28	Squaw Creek	BN	F	10/22/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
713.30.90	Colorado R/Needles	CP	F	08/20/91	<5.0	<5.0	7.7	<5.0	6.0	<5.0	8.3	<5.0	22.0	<10.0	<5.0
715.40.08	Palo Verde Outfall Drain	CP	F	08/19/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	92.0	<5.0
715.50.90	Colorado R/u/s Imperial Dam	LMB	F	08/18/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
723.10.02	New R/Westmorland	CCF	F	08/15/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	27.0	<5.0
723.10.02	New R/Westmorland	SST	F	08/15/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
405.52.01	<5.0	<10.0	<10.0	<10.0	25.0	<10.0	<10.0	<15.0	<30.0	25.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
603.20.24	<5.0	<10.0	<10.0	<10.0	16.0	<10.0	<10.0	<15.0	<30.0	16.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
633.10.03	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
635.20.04	<5.0	<10.0	<10.0	<10.0	23.0	<10.0	<10.0	<15.0	<30.0	23.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
635.20.28	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
713.30.90	<5.0	<10.0	<10.0	<10.0	37.0	<10.0	<10.0	<15.0	<30.0	37.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
715.40.08	<5.0	<10.0	26.0	<10.0	200.0	<10.0	<10.0	<15.0	<30.0	226.0	<100.0	NA	<50.0	42.0	<70.0	<85.0	42.0	<15.0
715.50.90	<5.0	<10.0	<10.0	<10.0	27.0	<10.0	<10.0	<15.0	<30.0	27.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
723.10.02	7.0	<10.0	<10.0	<10.0	510.0	<10.0	<10.0	<15.0	<30.0	510.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
723.10.02	<5.0	<10.0	<10.0	<10.0	68.0	<10.0	<10.0	<15.0	<30.0	68.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachloro-benzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
405.52.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	16.0	<10.0	<10.0	<50.0	<50.0	54.0	54.0	<100.0	16.1
603.20.24	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
633.10.03	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
635.20.04	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	100.0	65.0	165.0	<100.0	26.2
635.20.28	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
713.30.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	22.0
715.40.08	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	130.0	172.0
715.50.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
723.10.02	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	4.3	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	64.0	64.0	300.0	307.0
723.10.02	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Tables 2, 3, and 4.

APPENDIX M (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Fish, Crayfish, and Turtles (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
723.10.15	Mayflower Drain	GAM	W	08/16/91	<5.0	<5.0	<5.0	<5.0	<5.0	9.3	<5.0	<5.0	9.3	53.0	12.0
723.10.20	Rose Drain	GAM	W	08/17/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	390.0
723.10.22	Orange Drain	GAM	W	08/17/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	95.0
723.10.58	New R/Inter Boundary	CP	F	12/18/91	<5.0	<5.0	44.0	<5.0	45.0	14.0	<5.0	<5.0	103.0	16.0	57.0
723.10.91	Fig Drain	MOL	W	08/17/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
727.00.03	Reservation Main Drain	TLZ	F	08/18/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
728.00.90	Salton Sea/South	ORC	F	05/15/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	21.0
728.00.92	Salton Sea/North	ORC	F	05/30/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	30.0
728.00.92	Salton Sea/North	ORC	F	05/30/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	32.0
728.00.92	Salton Sea/North	SAR	F	05/30/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	30.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
723.10.15	16.0	28.0	100.0	<10.0	1500.0	<10.0	82.0	<15.0	<30.0	1710.0	<100.0	NA	<50.0	11.0	<70.0	200.0	211.0	<15.0
723.10.20	39.0	<10.0	59.0	<10.0	400.0	<10.0	25.0	<15.0	<30.0	484.0	<100.0	NA	<50.0	10.0	<70.0	100.0	110.0	<15.0
723.10.22	47.0	<10.0	30.0	<10.0	910.0	<10.0	35.0	<15.0	<30.0	975.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
723.10.58	11.0	60.0	260.0	<10.0	300.0	<10.0	<10.0	<15.0	<30.0	620.0	<100.0	NA	95.0	17.0	<70.0	<85.0	17.0	<15.0
723.10.91	10.0	<10.0	<10.0	<10.0	100.0	<10.0	<10.0	<15.0	<30.0	100.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
727.00.03	<5.0	<10.0	<10.0	<10.0	8.2	<10.0	<10.0	<15.0	<30.0	8.2	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
728.00.90	<5.0	<10.0	<10.0	<10.0	52.0	<10.0	<10.0	<15.0	<30.0	52.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
728.00.92	<5.0	<10.0	<10.0	<10.0	63.0	<10.0	<10.0	<15.0	<30.0	63.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
728.00.92	<5.0	<10.0	<10.0	<10.0	81.0	<10.0	<10.0	<15.0	<30.0	81.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
728.00.92	7.1	<10.0	12.0	<10.0	140.0	<10.0	<10.0	<15.0	<30.0	152.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
723.10.15	<2.0	<10.0	<5.0	4.3	4.3	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	400.0	640.6
723.10.20	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	149.0
723.10.22	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	230.0	277.0
723.10.58	<2.0	<10.0	<5.0	9.5	9.5	<5.0	<5.0	7.6	<15.0	<5.0	<10.0	<10.0	<50.0	88.0	88.0	176.0	<100.0	140.5
723.10.91	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	10.0
727.00.03	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
728.00.90	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
728.00.92	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
728.00.92	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
728.00.92	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	7.1

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Tables 2, 3, and 4.

APPENDIX M (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Fish, Crayfish, and Turtles (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
728.00.92	Salton Sea/North	ORC	F	06/18/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	12.0
801.11.00	Huntington Harbour/Anaheim Bay	WCK	F	11/21/91	<5.0	<5.0	10.0	<5.0	6.8	11.0	15.0	<5.0	42.8	<10.0	<5.0
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91	<5.0	<5.0	15.0	<5.0	9.2	8.4	18.0	<5.0	50.6	<10.0	120.0
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91	<5.0	<5.0	14.0	<5.0	9.3	8.2	20.0	<5.0	51.5	<10.0	120.0
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	05/16/91	<5.0	<5.0	12.0	<5.0	7.8	<5.0	13.0	<5.0	32.8	<10.0	100.0
801.11.16	El Modena Ch/u/s Walnut Ave Brg	PRS	W	05/16/91	<5.0	<5.0	40.0	<5.0	22.0	<5.0	85.0	10.0	157.0	18.0	550.0
801.11.96	Peters Canyon Channel	PRS	W	05/16/91	<5.0	<5.0	28.0	<5.0	16.0	27.0	28.0	10.0	109.0	16.0	670.0
801.11.97	Newport Bay	SSB	F	06/20/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.4	<5.0	5.4	<10.0	<5.0
801.25.00	Santa Ana R/Prado Dam	LMB	F	05/14/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
801.25.00	Santa Ana R/Prado Dam	PROI	W	05/14/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
728.00.92	<5.0	<10.0	<10.0	<10.0	88.0	<10.0	<10.0	<15.0	<30.0	88.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
801.11.00	<5.0	<10.0	28.0	<10.0	340.0	<10.0	<10.0	<15.0	<30.0	368.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
801.11.07	9.5	12.0	92.0	<10.0	500.0	17.0	36.0	19.0	<30.0	676.0	<100.0	NA	260.0	<5.0	<70.0	<85.0	ND	<15.0
801.11.07	8.9	12.0	95.0	<10.0	490.0	17.0	32.0	21.0	<30.0	667.0	<100.0	NA	180.0	<5.0	<70.0	<85.0	ND	<15.0
801.11.09	9.5	10.0	77.0	<10.0	600.0	15.0	34.0	18.0	<30.0	754.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
801.11.16	15.0	41.0	170.0	32.0	3200.0	190.0	280.0	73.0	<30.0	3986.0	<100.0	NA	<50.0	5.6	<70.0	<85.0	5.6	<15.0
801.11.96	18.0	31.0	160.0	20.0	1600.0	73.0	250.0	45.0	<30.0	2179.0	<100.0	NA	180.0	<5.0	<70.0	<85.0	ND	<15.0
801.11.97	<5.0	<10.0	12.0	<10.0	98.0	<10.0	<10.0	<15.0	<30.0	110.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
801.25.00	<5.0	<10.0	<10.0	<10.0	15.0	<10.0	<10.0	<15.0	<30.0	15.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
801.25.00	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachloro-benzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
728.00.92	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
801.11.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	120.0	140.0	260.0	<100.0	42.8
801.11.07	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	2.1	<15.0	240.0	<10.0	<10.0	<50.0	120.0	66.0	186.0	160.0	220.1
801.11.07	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	240.0	<10.0	<10.0	<50.0	140.0	79.0	219.0	130.0	190.4
801.11.09	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	350.0	<10.0	<10.0	<50.0	100.0	54.0	154.0	180.0	222.3
801.11.16	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	8.2	<15.0	250.0	<10.0	<10.0	<50.0	280.0	82.0	362.0	500.0	677.6
801.11.96	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	2.3	<15.0	330.0	<10.0	<10.0	<50.0	<50.0	64.0	64.0	550.0	677.0
801.11.97	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	78.0	57.0	135.0	<100.0	5.4
801.25.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
801.25.00	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Tables 2, 3, and 4.

APPENDIX M (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Organic Chemicals in Fish, Crayfish, and Turtles (ppb, wet weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxychlordane	Total Chlordane	Chlorpyrifos	Dacthal
902.22.03	Rainbow Creek	BLB	F	06/14/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
902.22.04	Santa Margarita R/Willow Glen Rd	GSF	F	06/14/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
903.11.05	San Luis Rey R/Foussat Rd	LMB	F	06/13/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
903.11.11	San Luis Rey R/HWY 76	LMB	F	06/13/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
903.12.06	Keys Creek	GSF	F	06/13/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
903.12.07	San Luis Rey R/HWY 15	LMB	F	06/13/91	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	ND	<10.0	<5.0
908.22.01	Chollas Creek/Main Street	LJM	W	06/14/91	<5.0	<5.0	6.0	<5.0	<5.0	10.0	10.0	<5.0	26.0	<10.0	<5.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	DBP	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
902.22.03	<5.0	<10.0	<10.0	<10.0	13.0	<10.0	<10.0	<15.0	<30.0	13.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
902.22.04	<5.0	<10.0	<10.0	<10.0	7.0	<10.0	<10.0	<15.0	<30.0	7.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
903.11.05	<5.0	<10.0	<10.0	<10.0	34.0	<10.0	<10.0	<15.0	<30.0	34.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
903.11.11	<5.0	<10.0	<10.0	<10.0	12.0	<10.0	<10.0	<15.0	<30.0	12.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
903.12.06	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
903.12.07	<5.0	<10.0	<10.0	<10.0	<5.0	<10.0	<10.0	<15.0	<30.0	ND	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0
908.22.01	<5.0	<10.0	13.0	<10.0	24.0	<10.0	<10.0	<15.0	<30.0	37.0	<100.0	NA	<50.0	<5.0	<70.0	<85.0	ND	<15.0

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma HCH (Lindane)	Total HCH	Heptachlor	Heptachlor-epoxide	Hexachloro-benzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene	Chemical Group A
902.22.03	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	530.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
902.22.04	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
903.11.05	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
903.11.11	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
903.12.06	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
903.12.07	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	<50.0	<50.0	ND	<100.0	ND
908.22.01	<2.0	<10.0	<5.0	<2.0	ND	<5.0	<5.0	<2.0	<15.0	<5.0	<10.0	<10.0	<50.0	96.0	60.0	156.0	<100.0	26.0

NA Means that the sample was not analyzed for the chemical.
ND Means that the chemical was not detected.
< Means that the chemical was not detected above the indicated limit of detection.

F = Filet.
W = Whole Body.
Species codes are listed in Tables 2, 3, and 4.

APPENDIX N

Summary of 1991 Data

Lipid Data in Fish

(ppb, lipid weight)

APPENDIX N

Toxic Substances Monitoring Program

Summary of 1991 Data: Lipid Data in Fish (ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxy-Chlordane	Total Chlordane	Chlorpyrifos	Dacthal
105.36.10	Klamath R/d/s Iron Gate Res	DC	W	09/19/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105.50.35	Beaughton Cr/d/s HWY 97 Brg	BN	F	09/19/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105.92.01	Lost R/Tule Lake	TC	W	09/20/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105.92.01	Lost R/Tule Lake	TC	W	09/20/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106.12.03	Trinity R/Willow Creek	SCP	F	09/16/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106.13.06	Trinity R/d/s Burnt Ranch	RBT	F	09/17/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106.40.16	Trinity R/East Fork	RBT	F	09/18/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
114.11.05	Russian R/Duncans Mills	PCP	W	07/17/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
201.12.01	Walker Creek	STG	W	07/16/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
204.30.11	Alameda Cr/Niles Canyon Rd	SCP	W	07/09/91	ND	ND	185.5	ND	ND	210.4	ND	ND	395.9	ND	ND

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
105.36.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105.50.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105.92.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105.92.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106.12.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106.13.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106.40.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
114.11.05	ND	ND	ND	ND	252.0	ND	ND	ND	ND	252.0	ND	ND	ND	ND	ND	ND	ND
201.12.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
204.30.11	ND	ND	ND	ND	226.2	ND	ND	ND	ND	226.2	ND	ND	ND	ND	ND	ND	ND

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene A	Chemical Group
105.36.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105.50.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105.92.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
105.92.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106.12.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106.13.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
106.40.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
114.11.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
201.12.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
204.30.11	ND	ND	ND	ND	ND	ND	ND	ND	475.1	ND	ND	ND	ND	ND	ND	ND	395.9

NA means that the sample was not analyzed for the chemical.
ND means that the chemical was not detected.
Species codes are listed in Tables 2 and 3.

F = Filet.
W = Whole Body.

APPENDIX N (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Lipid Data in Fish (ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxy-Chlordane	Total Chlordane	Chlorpyrifos	Dacthal
205.50.94	Stevens Creek	RBT	F	07/09/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
206.50.14	Napa R/Napa	HCH	F	07/11/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
207.10.90	Suisun Bay	WST	F	01/12/92	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
207.32.06	Walnut Creek	GSF	F	07/10/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
304.12.90	Schwann Lake	LMB	W	08/07/91	ND	ND	442.5	ND	ND	ND	539.8	ND	982.3	ND	ND
304.12.91	Neary's Lake	SSKR	F	08/06/91	ND	ND	2058.8	ND	1029.4	1617.6	1323.5	ND	6029.4	ND	ND
304.13.90	Corcoran Lagoon	STG	F	08/07/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
304.13.91	Moran Lake	STB	W	08/06/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
304.13.92	Aptos Creek	PCP	W	08/07/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
307.00.01	Carmel Lagoon	STB	W	08/01/91	ND	ND	186.7	ND	ND	ND	ND	ND	186.7	ND	ND

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
205.50.94	ND	ND	ND	ND	1418.4	ND	ND	ND	ND	1418.4	ND	ND	ND	ND	ND	ND	ND
206.50.14	ND	ND	ND	ND	1550.9	ND	ND	ND	ND	1550.9	ND	ND	ND	ND	ND	ND	ND
207.10.90	ND	ND	ND	ND	11481.5	ND	ND	ND	ND	11481.5	ND	ND	ND	ND	ND	ND	ND
207.32.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
304.12.90	ND	ND	ND	ND	1592.9	ND	ND	ND	ND	1592.9	ND	ND	ND	ND	ND	ND	ND
304.12.91	ND	ND	ND	ND	4068.6	ND	ND	ND	ND	4068.6	ND	ND	ND	ND	ND	ND	ND
304.13.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
304.13.91	ND	ND	ND	ND	1262.6	ND	ND	ND	ND	1262.6	ND	ND	ND	ND	ND	ND	ND
304.13.92	ND	ND	ND	ND	276.0	ND	ND	ND	ND	276.0	ND	ND	ND	ND	ND	ND	ND
307.00.01	ND	ND	ND	ND	906.7	ND	ND	ND	ND	906.7	ND	ND	ND	ND	ND	ND	ND

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene A	Chemical Group
205.50.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
206.50.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
207.10.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
207.32.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
304.12.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	982.3
304.12.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	8333.3	8333.3	16666.7	ND	6029.4
304.13.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
304.13.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
304.13.92	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
307.00.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	186.7

NA means that the sample was not analyzed for the chemical.
ND means that the chemical was not detected.
Species codes are listed in Tables 2 and 3.

F = Filet.
W = Whole Body.

APPENDIX N (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Lipid Data in Fish (ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxy-Chlordane	Total Chlordane	Chlorpyrifos	Dacthal
307.00.01	Carmel Lagoon	STB	W	08/01/91	ND	ND	158.5	ND	ND	ND	ND	ND	158.5	ND	ND
309.10.01	Roberts Lake	SP	F	08/01/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
309.10.09	Blanco Drain/Salinas R	STB	W	09/04/91	ND	ND	889.2	ND	312.0	405.6	795.6	218.4	2620.9	249.6	1716.1
309.10.09	Blanco Drain/Salinas R	STB	W	09/04/91	ND	ND	909.1	ND	319.0	366.8	622.0	207.3	2424.2	303.0	1563.0
309.50.01	El Estero	BG	F	08/02/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
402.10.02	Ventura River	CP	W	06/20/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
403.11.02	Rio de Santa Clara/Oxnard Drain	GAM	W	06/17/91	ND	ND	585.1	154.3	425.5	1781.9	4521.3	1409.6	8877.7	ND	398.9
403.12.06	Calleguas Creek	GF	F	06/18/91	ND	ND	ND	ND	ND	ND	1486.1	ND	1486.1	ND	7556.7
403.12.07	Conejo Creek	GAM	W	06/19/91	ND	ND	ND	ND	ND	ND	915.8	321.8	1237.6	ND	2970.3
403.51.05	Santa Clara R/Valencia	AC	W	06/11/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
307.00.01	ND	ND	ND	ND	884.1	ND	ND	ND	ND	884.1	ND	ND	ND	ND	ND	ND	ND
309.10.01	ND	ND	ND	ND	7179.5	ND	ND	ND	ND	7179.5	ND	ND	ND	ND	ND	ND	ND
309.10.09	15600.6	7800.3	35881.4	1232.4	120124.8	3276.1	31201.3	3588.1	ND	203104.5	ND	1310.5	ND	ND	ND	ND	1154.4
309.10.09	17543.9	5741.6	38277.5	1100.5	119617.2	3030.3	25518.3	2870.8	ND	196156.3	ND	1913.9	ND	ND	ND	ND	1052.6
309.50.01	ND	ND	ND	ND	10400.0	ND	ND	ND	ND	10400.0	ND	ND	ND	ND	ND	ND	ND
402.10.02	ND	ND	ND	ND	617.6	ND	ND	ND	ND	617.6	ND	ND	ND	ND	ND	ND	ND
403.11.02	1781.9	3218.1	26595.7	1090.4	90425.5	1914.9	26595.7	2925.5	ND	152766.0	ND	1835.1	ND	ND	2526.6	2526.6	ND
403.12.06	ND	3022.7	25188.9	ND	239294.7	5037.8	22166.3	ND	ND	294710.3	ND	ND	ND	ND	ND	ND	ND
403.12.07	965.3	247.5	2351.5	717.8	42079.2	1386.1	11881.2	1287.1	ND	59950.5	ND	1584.2	ND	ND	5198.0	5198.0	ND
403.51.05	ND	ND	ND	ND	1202.2	ND	ND	ND	ND	1202.2	ND	ND	ND	ND	ND	ND	ND

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene A	Chemical Group
307.00.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	158.5
309.10.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
309.10.09	ND	ND	ND	ND	ND	ND	64.0	ND	ND	ND	ND	ND	8892.4	4368.2	13260.5	93603.8	112979.7
309.10.09	ND	ND	ND	ND	ND	ND	68.6	ND	ND	ND	ND	ND	10845.3	5263.2	16108.5	63795.9	84816.6
309.50.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
402.10.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
403.11.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	21276.6	1542.6	22819.2	31914.9	45101.1
403.12.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	110831.2	112317.4
403.12.07	ND	ND	ND	195.5	195.5	ND	ND	ND	ND	ND	ND	ND	7475.2	1336.6	8811.9	49504.9	57101.5
403.51.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2950.8	2950.8	5901.6	ND	ND

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F = Filet.
W = Whole Body.

APPENDIX N (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Lipid Data in Fish (ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxy-Chlordane	Total Chlordane	Chlorpyrifos	Dacthal
403.64.02	Arroyo Conejo	GSF	F	06/19/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
403.67.04	Arroyo Simi	FHM	W	06/19/91	ND	ND	338.5	ND	ND	ND	564.1	ND	902.6	ND	564.1
404.21.01	Malibu Creek	BG	F	06/18/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.21.07	Malibou Lake	LMB	F	04/23/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.23.04	Lindero Lake	LMB	F	04/22/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.25.01	Westlake Lake	LMB	F	04/23/91	ND	ND	ND	ND	ND	ND	1736.8	ND	1736.8	ND	ND
404.26.00	Eleanor Lake	GF	F	04/22/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.26.01	Sherwood Lake	LMB	F	04/22/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.12.00	Alamitos Bay	CCB	F	06/12/91	ND	ND	ND	ND	183.8	ND	373.8	ND	557.6	ND	ND
405.12.90	Harbor Park Lake	CP	F	06/15/91	ND	70.1	694.0	97.0	522.4	395.5	895.5	89.6	2764.2	ND	ND

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
403.67.04	ND	ND	ND	ND	3076.9	ND	ND	ND	ND	3076.9	ND	ND	ND	ND	ND	ND	ND
403.68.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.21.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.21.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.23.04	ND	ND	ND	ND	2321.4	ND	ND	ND	ND	2321.4	ND	ND	ND	ND	ND	ND	ND
404.25.01	ND	ND	ND	ND	3157.9	ND	ND	ND	ND	3157.9	ND	ND	ND	ND	ND	ND	ND
404.26.00	ND	ND	315.8	ND	605.3	ND	ND	ND	ND	921.1	ND	ND	ND	ND	ND	ND	ND
404.26.01	ND	ND	3055.6	ND	3055.6	ND	ND	ND	ND	6111.1	ND	ND	ND	ND	ND	ND	ND
405.12.00	ND	ND	529.6	373.8	5607.5	ND	ND	810.0	ND	7320.9	ND	ND	ND	ND	ND	ND	ND
405.12.90	111.9	126.9	1044.8	171.6	1940.3	ND	ND	388.1	ND	3671.6	ND	ND	ND	ND	ND	ND	ND

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene A	Chemical Group
403.67.04	ND	ND	ND	379.5	379.5	ND	ND	ND	1897.4	ND	ND	ND	2769.2	ND	2769.2	ND	1282.1
403.68.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.21.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.21.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9818.2	ND	9818.2	ND	ND
404.23.04	ND	ND	ND	ND	ND	ND	ND	ND	6071.4	ND	ND	ND	ND	ND	ND	ND	ND
404.25.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1736.8
404.26.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
404.26.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.12.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5607.5	3084.1	8691.6	ND	557.6
405.12.90	ND	ND	ND	ND	ND	ND	ND	ND	268.7	104.5	ND	1119.4	1716.4	1641.8	4477.6	ND	2876.1

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W = Whole Body.

APPENDIX N (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Lipid Data in Fish (ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxy-Chlordane	Total Chlordane	Chlorpyrifos	Dacthal
405.15.02	El Dorado Park Lake	LMB	F	04/21/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.15.24	Echo Park Lake	LMB	F	04/19/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.15.97	Belvedere Park Lake	FHM	W	04/18/91	ND	147.2	1527.8	272.2	861.1	ND	1388.9	ND	4197.2	ND	ND
405.15.97	Belvedere Park Lake	FHM	W	04/18/91	ND	ND	1319.1	206.4	851.1	ND	1063.8	ND	3440.4	ND	ND
405.15.99	Lincoln Park Lake	LMB	F	04/18/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.21.03	Calabasas Lake	LMB	F	04/20/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.21.16	Los Angeles R/Sepulveda Basin	GF	F	05/15/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.41.01	Legg Lake	LMB	F	04/17/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.41.08	Peck Road Lake	LMB	F	04/17/91	ND	ND	1540.5	ND	ND	ND	2270.3	ND	3810.8	ND	ND
405.52.01	Puddingstone Res	LMB	F	06/11/91	ND	ND	835.6	ND	ND	ND	1369.9	ND	2205.5	ND	1780.8

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
405.15.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.15.24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.15.97	722.2	ND	277.8	ND	1611.1	ND	ND	ND	ND	1888.9	ND	ND	ND	ND	ND	ND	ND
405.15.97	595.7	ND	255.3	ND	1234.0	ND	ND	ND	ND	1489.4	ND	ND	ND	ND	ND	ND	ND
405.15.99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.21.03	ND	ND	ND	ND	12727.3	ND	ND	ND	ND	12727.3	ND	ND	ND	ND	ND	ND	ND
405.21.16	ND	ND	ND	ND	1334.3	ND	ND	ND	ND	1334.3	ND	ND	ND	ND	ND	ND	ND
405.41.01	ND	ND	ND	ND	2125.0	ND	ND	ND	ND	2125.0	ND	ND	ND	ND	ND	ND	ND
405.41.08	ND	ND	ND	ND	7567.6	ND	2973.0	ND	ND	10540.5	ND	ND	ND	ND	ND	ND	ND
405.52.01	ND	ND	ND	ND	3424.7	ND	ND	ND	ND	3424.7	ND	ND	ND	ND	ND	ND	ND

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene A	Chemical Group
405.15.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.15.24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.15.97	ND	ND	ND	ND	ND	ND	ND	ND	211.1	ND	ND	ND	1777.8	2611.1	4388.9	ND	4919.4
405.15.97	ND	ND	ND	ND	ND	ND	ND	ND	178.7	ND	ND	ND	1319.1	1553.2	2872.3	ND	4036.2
405.15.99	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.21.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.21.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.41.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
405.41.08	ND	ND	ND	ND	ND	ND	ND	ND	2081.1	3243.2	ND	ND	ND	ND	ND	ND	3810.8
405.52.01	ND	ND	ND	ND	ND	ND	ND	ND	2191.8	ND	ND	ND	ND	7397.3	7397.3	ND	2205.5

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W = Whole Body.

APPENDIX N (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Lipid Data in Fish (ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxy-Chlordane	Total Chlordane	Chlorpyrifos	Dacthal
603.20.24	Bishop Creek Canal/d/s Bishop	BN	F	07/23/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
633.10.03	Carson R/W.F./d/s Paynesville	BN	F	09/27/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
635.20.04	Donner Lake	KOK	F	10/23/91	ND	ND	ND	ND	ND	330.0	277.2	257.4	864.7	ND	ND
635.20.28	Squaw Creek	BN	F	10/22/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
713.30.90	Colorado R/Needles	CP	F	08/20/91	ND	ND	104.3	ND	81.3	ND	112.5	ND	298.1	ND	ND
715.40.08	Palo Verde Outfall Drain	CP	F	08/19/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	3432.8	ND
715.50.90	Colorado R/u/s Imperial Dam	LMB	F	08/18/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
723.10.02	New R/Westmorland	CCF	F	08/15/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	1111.1	ND
723.10.15	Mayflower Drain	GAM	W	08/16/91	ND	ND	ND	ND	ND	400.9	ND	ND	400.9	2284.5	517.2
723.10.20	Rose Drain	GAM	W	08/17/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	19598.0

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
603.20.24	ND	ND	ND	ND	569.4	ND	ND	ND	ND	569.4	ND	ND	ND	ND	ND	ND	ND
633.10.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
635.20.04	ND	ND	ND	ND	759.1	ND	ND	ND	ND	759.1	ND	ND	ND	ND	ND	ND	ND
635.20.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
713.30.90	ND	ND	ND	ND	501.4	ND	ND	ND	ND	501.4	ND	ND	ND	ND	ND	ND	ND
715.40.08	ND	ND	970.1	ND	7462.7	ND	ND	ND	ND	8432.8	ND	ND	1567.2	ND	ND	1567.2	ND
715.50.90	ND	ND	ND	ND	36000.0	ND	ND	ND	ND	36000.0	ND	ND	ND	ND	ND	ND	ND
723.10.02	288.1	ND	ND	ND	20987.7	ND	ND	ND	ND	20987.7	ND	ND	ND	ND	ND	ND	ND
723.10.15	689.7	1206.9	4310.3	ND	64655.2	ND	3534.5	ND	ND	73706.9	ND	ND	474.1	ND	8620.7	9094.8	ND
723.10.20	1959.8	ND	2964.8	ND	20100.5	ND	1256.3	ND	ND	24321.6	ND	ND	502.5	ND	5025.1	5527.6	ND

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene A	Chemical Group
603.20.24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
633.10.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
635.20.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3300.3	2145.2	5445.5	ND	864.7
635.20.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
713.30.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	298.1
715.40.08	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4850.7	6417.9
715.50.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
723.10.02	ND	ND	ND	ND	ND	ND	177.0	ND	ND	ND	ND	ND	ND	2633.7	2633.7	12345.7	12633.7
723.10.15	ND	ND	ND	185.3	185.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	17241.4	27612.1
723.10.20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7487.4

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W = Whole Body.

APPENDIX N (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Lipid Data in Fish (ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxy-Chlordane	Total Chlordane	Chlorpyrifos	Dacthal
723.10.22	Orange Drain	GAM	W	08/17/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3941.9
723.10.58	New R/Inter Boundary	CP	F	12/18/91	ND	ND	844.5	ND	863.7	268.7	ND	ND	1977.0	307.1	1094.1
723.10.91	Fig Drain	MOL	W	08/17/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
727.00.03	Reservation Main Drain	TLZ	F	08/18/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
728.00.90	Salton Sea/South	ORC	F	05/15/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3139.0
728.00.92	Salton Sea/North	ORC	F	05/30/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1829.3
728.00.92	Salton Sea/North	ORC	F	05/30/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1641.0
728.00.92	Salton Sea/North	SAR	F	05/30/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	578.0
728.00.92	Salton Sea/North	ORC	F	06/18/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1775.1
801.11.00	Huntington Harbour/Anaheim Bay	WCK	F	11/21/91	ND	ND	268.1	ND	182.3	294.9	402.1	ND	1147.5	ND	ND

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
723.10.22	1950.2	ND	1244.8	ND	37759.3	ND	1452.3	ND	ND	40456.4	ND	ND	ND	ND	ND	ND	ND
723.10.58	211.1	1151.6	4990.4	ND	5758.2	ND	ND	ND	ND	11900.2	ND	1823.4	326.3	ND	ND	326.3	ND
723.10.91	438.6	ND	ND	ND	4386.0	ND	ND	ND	ND	4386.0	ND	ND	ND	ND	ND	ND	ND
727.00.03	ND	ND	ND	ND	5222.9	ND	ND	ND	ND	5222.9	ND	ND	ND	ND	ND	ND	ND
728.00.90	ND	ND	ND	ND	7772.8	ND	ND	ND	ND	7772.8	ND	ND	ND	ND	ND	ND	ND
728.00.92	ND	ND	ND	ND	3841.5	ND	ND	ND	ND	3841.5	ND	ND	ND	ND	ND	ND	ND
728.00.92	ND	ND	ND	ND	4153.8	ND	ND	ND	ND	4153.8	ND	ND	ND	ND	ND	ND	ND
728.00.92	136.8	ND	231.2	ND	2697.5	ND	ND	ND	ND	2928.7	ND	ND	ND	ND	ND	ND	ND
728.00.92	ND	ND	ND	ND	13017.8	ND	ND	ND	ND	13017.8	ND	ND	ND	ND	ND	ND	ND
801.11.00	ND	ND	750.7	ND	9115.3	ND	ND	ND	ND	9866.0	ND	ND	ND	ND	ND	ND	ND

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene A	Chemical Group
723.10.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9543.6	11493.8
723.10.58	ND	ND	ND	182.3	182.3	ND	145.9	ND	ND	ND	ND	ND	1689.1	1689.1	3378.1	ND	2696.7
723.10.91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	438.6
727.00.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
728.00.90	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
728.00.92	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
728.00.92	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
728.00.92	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	136.8
728.00.92	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
801.11.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3217.2	3753.4	6970.5	ND	1147.5

NA means that the sample was not analyzed for the chemical.
ND means that the chemical was not detected.
Species codes are listed in Tables 2 and 3.

F = Filet.
W = Whole Body.

APPENDIX N (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Lipid Data in Fish (ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxy-Chlordane	Total Chlordane	Chlorpyrifos	Dacthal
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91	ND	ND	157.6	ND	96.6	88.2	189.1	ND	531.5	ND	1260.5
801.11.07	San Diego Cr/Michelson Dr	PRS	W	05/16/91	ND	ND	165.1	ND	109.7	96.7	235.8	ND	607.3	ND	1415.1
801.11.09	San Diego Cr/Barranca Pkwy	PRS	W	05/16/91	ND	ND	160.6	ND	104.4	ND	174.0	ND	439.1	ND	1338.7
801.11.16	El Modena Ch/u/s Walnut Ave Brg	PRS	W	05/16/91	ND	ND	579.7	ND	318.8	ND	1231.9	144.9	2275.4	260.9	7971.0
801.11.96	Peters Canyon Channel	PRS	W	05/16/91	ND	ND	293.5	ND	167.7	283.0	293.5	104.8	1142.6	167.7	7023.1
801.11.97	Newport Bay	SSB	F	06/20/91	ND	ND	ND	ND	ND	ND	355.3	ND	355.3	ND	ND
801.25.00	Santa Ana R/Prado Dam	LMB	F	05/14/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
902.22.03	Rainbow Creek	BLB	F	06/14/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
902.22.04	Santa Margarita R/Willow Glen Rd	GSF	F	06/14/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
903.11.05	San Luis Rey R/Foussat Rd	LMB	F	06/13/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
801.11.07	99.8	126.1	966.4	ND	5252.1	178.6	378.2	199.6	ND	7100.8	ND	2731.1	ND	ND	ND	ND	ND
801.11.07	105.0	141.5	1120.3	ND	5778.3	200.5	377.4	247.6	ND	7865.6	ND	2122.6	ND	ND	ND	ND	ND
801.11.09	127.2	133.9	1030.8	ND	8032.1	200.8	455.2	241.0	ND	10093.7	ND	ND	ND	ND	ND	ND	ND
801.11.16	217.4	594.2	2463.8	463.8	46376.8	2753.6	4058.0	1058.0	ND	57768.1	ND	ND	81.2	ND	ND	81.2	ND
801.11.96	188.7	324.9	1677.1	209.6	16771.5	765.2	2620.5	471.7	ND	22840.7	ND	1886.8	ND	ND	ND	ND	ND
801.11.97	ND	ND	789.5	ND	6447.4	ND	ND	ND	ND	7236.8	ND	ND	ND	ND	ND	ND	ND
801.25.00	ND	ND	ND	ND	8771.9	ND	ND	ND	ND	8771.9	ND	ND	ND	ND	ND	ND	ND
902.22.03	ND	ND	ND	ND	1783.3	ND	ND	ND	ND	1783.3	ND	ND	ND	ND	ND	ND	ND
902.22.04	ND	ND	ND	ND	8216.0	ND	ND	ND	ND	8216.0	ND	ND	ND	ND	ND	ND	ND
903.11.05	ND	ND	ND	ND	14782.6	ND	ND	ND	ND	14782.6	ND	ND	ND	ND	ND	ND	ND

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene A	Chemical Group
801.11.07	ND	ND	ND	ND	ND	ND	22.1	ND	2521.0	ND	ND	ND	1260.5	693.3	1953.8	1680.7	2312.0
801.11.07	ND	ND	ND	ND	ND	ND	ND	ND	2830.2	ND	ND	ND	1650.9	931.6	2582.5	1533.0	2245.3
801.11.09	ND	ND	ND	ND	ND	ND	ND	ND	4685.4	ND	ND	ND	1338.7	722.9	2061.6	2409.6	2975.9
801.11.16	ND	ND	ND	ND	ND	ND	118.8	ND	3623.2	ND	ND	ND	4058.0	1188.4	5246.4	7246.4	9820.3
801.11.96	ND	ND	ND	ND	ND	ND	24.1	ND	3459.1	ND	ND	ND	ND	670.9	670.9	5765.2	7096.4
801.11.97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5131.6	3750.0	8881.6	ND	355.3
801.25.00	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
902.22.03	ND	ND	ND	ND	ND	ND	ND	ND	72702.3	ND	ND	ND	ND	ND	ND	ND	ND
902.22.04	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
903.11.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NA means that the sample was not analyzed for the chemical.
ND means that the chemical was not detected.
Species codes are listed in Tables 2 and 3.

F = Filet.
W = Whole Body.

APPENDIX N (continued)

Toxic Substances Monitoring Program

Summary of 1991 Data: Lipid Data in Fish (ppb, lipid weight)

Station Number	Station Name	Species Code	Tissue Type	Sample Date	Aldrin	alpha-Chlordene	cis-Chlordane	gamma-Chlordene	trans-Chlordane	cis-Nonachlor	trans-Nonachlor	Oxy-Chlordane	Total Chlordane	Chlorpyrifos	Dacthal
903.11.11	San Luis Rey R/HWY 76	LMB	F	06/13/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
903.12.06	Keys Creek	GSF	F	06/13/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
903.12.07	San Luis Rey R/HWY 15	LMB	F	06/13/91	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
908.22.01	Chollas Creek/Main Street	LJM	W	06/14/91	ND	ND	204.1	ND	ND	340.1	340.1	ND	884.4	ND	ND

Station Number	Dieldrin	o,p' DDD	p,p' DDD	o,p' DDE	p,p' DDE	o,p' DDT	p,p' DDT	p,p' DDMU	p,p' DDMS	Total DDT	Dicofol	Diazinon	Endosulfan I	Endosulfan II	Endosulfan Sulfate	Total Endosulfan	Endrin
903.11.11	ND	ND	ND	ND	4545.5	ND	ND	ND	ND	4545.5	ND	ND	ND	ND	ND	ND	ND
903.12.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
903.12.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
908.22.01	ND	ND	442.2	ND	816.3	ND	ND	ND	ND	1258.5	ND	ND	ND	ND	ND	ND	ND

Station Number	alpha-HCH	beta-HCH	delta-HCH	gamma-HCH (Lindane)	Total HCH	Heptachlor Epoxide	Hexachlorobenzene	Methoxychlor	Oxadiazon	Ethyl Parathion	Methyl Parathion	PCB 1248	PCB 1254	PCB 1260	Total PCB	Toxaphene A	Chemical Group
903.11.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
903.12.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
903.12.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
908.22.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3265.3	2040.8	5306.1	ND	884.4

NA means that the sample was not analyzed for the chemical.
ND means that the chemical was not detected.
Species codes are listed in Tables 2 and 3.

F = Filet.
W = Whole Body.

APPENDIX O

Station Sampling History

APPENDIX O

Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Region 1															
Beaughton Creek	105.50.36	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
Beaughton Creek/d/s Highway 97 Bridge	105.50.35	--	--	--	--	--	--	--	--	--	--	TO	TOTM	TM	TOTM
Big Lagoon	108.10.00	--	--	--	--	--	--	--	--	TOTM	--	--	TM	TM	--
Big Sulfur Creek	114.26.00	--	--	--	--	--	--	--	--	--	--	--	TM	--	--
Carrville Pond	106.40.12	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Claire Engle Lake	106.40.06	--	--	--	--	--	--	--	--	--	--	--	TM	--	--
Eel River/Scotia	111.12.01	TOTM	TOTM	TM	TOTM	--	--	TOTM	--	TM	TO	--	--	--	--
Estero Americano	115.30.04	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Estero de San Antonio	115.30.02	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Hardscrabble Creek	103.30.05	--	--	--	--	--	--	TM	--	--	--	--	TM	--	--
Indian Creek	105.32.00	--	--	--	--	TOTM	TOTM	TM	--	--	--	--	TM	--	--
Indian Tom Lake	105.91.90	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Iron Gate Reservoir	105.37.02	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Janes Creek	110.00.91	--	--	--	--	--	--	--	--	--	--	--	TOTM	TM	--
Klamath River/Copco Reservoir	105.38.03	--	--	TOTM	--	--	--	--	--	--	--	--	--	--	--
Klamath River/d/s Iron Gate Reservoir	105.36.10	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Klamath River/Klamath Glen	105.11.08	TOTM	TOTM	TM	TOTM	--	TM	TM	--	--	--	--	--	TM	--
Laguna de Santa Rosa/Stony Point	114.21.10	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Lake Mendocino	114.32.00	--	--	--	--	--	--	--	--	--	--	--	TM	TM	TM
Lake Pillsbury	111.63.14	--	--	--	TOTM	--	--	--	--	--	--	TM	TM	--	TM
Lake Sonoma	114.24.12	--	--	--	--	--	--	--	--	--	--	--	TOTM	TM	TM
Lost River/Tule Lake	105.92.01	--	--	--	--	--	--	--	--	--	TO	--	--	--	TOTM
Mad River	109.10.06	--	--	--	TOTM	TOTM	--	TO	TOTM	--	--	--	--	--	--
Mark West Creek	114.23.00	--	--	--	--	--	--	--	--	--	--	--	TOTM	TM	--
McDaniel Slough	110.00.90	--	--	--	--	--	--	--	--	--	--	--	TOTM	TM	TM
Rowdy Creek	103.12.00	--	--	--	--	--	--	--	TM	--	--	--	--	--	--
Russian River/Duncans Mills	114.11.05	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Russian River/Hacienda Bridge	114.11.12	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Russian River/Odd Fellows Park Bridge	114.11.16	TOTM	TOTM	TM	TOTM	--	--	--	TOTM	--	--	--	TOTM	TM	--
Russian River/Russian River Estates	114.31.10	--	--	--	--	--	--	--	--	--	TO	--	--	--	--
Russian River/Wohler Bridge	114.11.23	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Santa Rosa Creek/Willowside Road	114.22.90	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Shasta River	105.50.04	--	--	--	--	--	--	--	--	--	--	--	TOTM	TM	TM
Smith River	103.11.12	--	--	TOTM	--	--	TM	TM	--	--	--	--	TM	--	--
Trinity River/d/s Burnt Ranch	106.13.06	--	--	--	--	--	--	--	--	--	TO	TO	--	--	TO
Trinity River/East Fork	106.40.16	--	--	--	--	--	--	--	--	--	--	--	--	TM	TOTM
Trinity River/Willow Creek	106.12.03	TOTM	TOTM	TM	TOTM	--	--	--	--	--	--	--	--	--	TOTM
Van Duzen River/Mouth	111.21.01	--	--	--	--	--	--	--	--	--	TO	--	--	--	--
Yager Creek/Mouth	111.21.02	--	--	--	--	--	--	--	--	--	TO	--	--	--	--
Region 2															
Alameda Creek/Niles Canyon Road	204.30.11	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Alameda Creek/Shinn Pit	204.30.00	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
Alamitos Creek/d/s Almaden Reservoir	205.40.17	--	--	--	--	--	--	--	--	TM	TM	TM	--	--	--
Almaden Reservoir	205.40.18	--	--	--	--	--	--	--	--	--	--	TM	TM	TM	--
Anderson Reservoir	205.30.30	--	--	--	--	TM	--	--	--	--	--	--	--	--	--
Bear Gulch Reservoir	205.50.08	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Calabazas Creek/d/s Tasman Drive	205.50.07	--	--	--	--	--	--	--	--	--	TOTM	TOTM	TOTM	--	--
Calero Reservoir	205.40.16	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Coyote Creek/Brokaw Road	205.30.08	--	--	--	--	--	--	--	--	TO	TOTM	TOTM	TOTM	--	--
Coyote Creek/Percolation Pond	205.30.18	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
Coyote Creek/u/s Montague Expressway	205.30.07	--	--	--	TOTM	TOTM	TOTM	TOTM	--	--	--	--	--	--	--
Coyote Reservoir	205.30.37	--	--	--	--	--	TM	--	--	--	--	--	--	--	--
Dry Creek	206.50.24	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
Elmhurst Creek/Mouth	204.20.00	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Guadalupe Creek/d/s Guadalupe Reservoir	205.40.13	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Guadalupe Reservoir	205.40.14	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Guadalupe River/Howard Street	205.50.09	--	--	--	TOTM	TOTM	TOTM	TOTM	--	--	--	--	--	--	--
Guadalupe River/Percolation Pond	205.40.08	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
Lake Chabot	206.50.03	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Lake Herman	207.21.03	--	--	--	--	--	--	--	TOTM	TM	--	--	--	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Lake Merced	202.10.01	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
Los Gatos Creek	205.40.02	--	--	--	--	--	--	--	--	--	--	TM	--	--	--
Napa River/Napa	206.50.14	TOTM	TOTM	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM
New York Slough	207.10.12	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
San Leandro Creek/Highway 17 Bridge	204.20.01	--	--	--	--	--	--	--	--	TOTM	TOTM	--	--	--	--
San Pablo Creek	206.60.01	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
Stevens Creek	205.50.94	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM
Stevens Creek Reservoir	205.50.10	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Suisun Bay	207.10.90	--	--	--	--	--	--	--	--	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM
Vasona Lake	205.40.01	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	--
Walker Creek	201.12.01	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Walnut Creek	207.32.06	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Region 3															
Alisal Slough/u/s Tembladero Slough	309.10.91	--	--	--	--	--	--	--	--	--	--	TO	--	--	--
Alisal Slough/West Salinas	309.10.10	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Aptos Creek	304.13.92	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Bean Creek/Conference Drive	304.12.11	--	--	TM	--	--	--	--	--	--	--	--	--	TOTM	--
Bean Creek/Graham Hill Road	304.12.08	--	--	TM	--	--	--	--	--	--	--	--	TOTM	TOTM	--
Big Sur River	308.00.01	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
Bixby Creek	308.00.03	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
Blanco Drain/Hitchcock Road	309.10.15	--	--	--	--	--	--	--	TO	--	--	--	--	--	--
Blanco Drain/Salinas River	309.10.09	--	--	--	--	--	--	TO	--	--	--	--	--	--	TO
Blanco East/Pump Station	309.10.11	--	--	--	--	--	--	TO	--	--	--	--	--	--	--
Blanco Road Tributary/Armstrong Road	309.10.40	--	--	--	--	--	--	TO	--	--	--	--	--	--	--
Blanco West/Pump Station	309.10.92	--	--	--	--	--	--	TO	--	--	--	--	--	--	--
Calcagno No. 4	306.00.90	--	--	--	--	--	--	--	--	--	TO	--	--	--	--
Carbonera Creek	304.12.03	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Carmel Lagoon	307.00.01	--	--	--	--	--	--	--	--	--	--	TM	--	--	TOTM
Carpinteria Marsh	315.34.00	--	--	--	--	--	TO	TO	--	--	--	TO	--	--	--
Chorro Creek	310.22.01	--	--	--	--	--	--	--	--	TM	--	--	--	TOTM	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Corcoran Lagoon	304.13.90	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
El Estero	309.50.01	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Elkhorn Slough	306.00.06	--	--	--	--	--	--	--	--	--	--	TO	--	--	--
Espinosa Slough	309.10.08	--	--	--	--	--	--	TO	--	--	--	TO	--	--	--
F Dolan No. 4	306.00.91	--	--	--	--	--	--	--	--	--	TO	--	--	--	--
Goleta Slough East/Atascadero Creek	315.31.90	--	--	--	--	--	--	--	--	--	--	--	TM	--	--
Goleta Slough West/Tecolotico Creek	315.31.01	--	--	--	--	--	--	--	--	--	--	TM	TM	--	--
Harkins Slough/u/s Watsonville Slough	305.10.04	--	--	--	--	--	--	--	TO	--	--	TO	--	--	--
Jameson Lake	314.51.22	--	--	--	--	TM	--	--	--	--	--	--	TOTM	--	--
Lake Cachuma	314.52.02	--	--	--	--	TM	--	--	--	--	--	--	--	--	--
Lake Gibralter	314.51.10	--	--	--	--	TM	--	--	--	--	--	--	--	--	--
Lake Hernandez/d/s Dam	305.50.59	--	--	--	--	--	--	TM	--	--	--	--	--	--	--
Lake Hernandez/San Benito River	305.50.60	--	--	--	--	--	TM	TM	--	--	--	--	--	--	--
Lake Nacimiento/Bee Rock Cove	309.82.05	--	--	--	--	--	--	TM	--	--	--	--	--	--	--
Lake Nacimiento/Cantinas Creek	309.82.11	--	--	--	--	--	TM	--	--	--	--	--	--	--	--
Lake Nacimiento/Dip Creek	309.82.04	--	--	--	--	--	--	TM	--	--	--	--	--	--	TM
Lake Nacimiento/Inlet	309.82.13	--	--	--	--	--	--	TM	--	--	--	--	--	--	--
Lake Nacimiento/Las Tablas	309.82.08	--	--	--	TOTM	TM	TM	TM	TM	--	--	--	--	--	TM
Lake Nacimiento/Snake Creek	309.82.03	--	--	--	--	TM	TM	--	--	--	--	--	--	--	--
Lake Nacimiento/Tobacco Creek	309.82.18	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Lake San Antonio/Harris Creek	309.83.10	--	--	--	--	TM	TM	TM	TOTM	--	--	--	--	--	--
Lake San Antonio/San Antonio River	309.83.12	--	--	--	--	--	--	TM	--	--	--	TM	TM	--	--
Little Sur River	308.00.00	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
Loch Lomond	304.12.16	--	--	--	--	TM	--	--	--	--	--	--	--	--	--
Lower Tembladero Slough	309.10.02	--	--	--	--	--	TO	TO	--	--	--	--	--	--	--
Mission Creek/Highway 101	315.32.01	--	--	--	--	--	--	--	--	--	--	TM	--	--	--
Monterey Harbor	309.50.90	--	--	--	--	--	--	--	--	--	TM	TM	TM	TOTM	--
Moran Lake	304.13.91	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Moss Landing Harbor	306.00.00	--	--	--	--	--	--	--	--	--	TO	TOTM	TOTM	TOTM	--
Neary's Lake	304.12.91	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Newell Creek	304.12.12	--	--	TM	--	--	--	--	--	--	--	--	--	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Old Salinas River/Molera Road	309.10.03	--	--	--	--	--	--	TO	--	--	--	--	--	--	--
Old Salinas River/Monterey Dunes Way Brg	309.10.04	--	--	--	--	--	TO	TO	--	--	--	--	--	--	--
Pajaro River/d/s Highway 1 Bridge	305.10.03	--	--	TOTM	TO	TOTM	TO	--	--	--	--	--	--	--	--
Pajaro River/Highway 129 Bridge	305.20.00	--	--	TOTM	--	--	--	--	--	--	--	--	--	--	--
Roberts Lake	309.10.01	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Salinas Rec Canal/u/s Tembladero Slough	309.10.06	--	--	--	--	--	--	--	--	--	--	TO	--	--	--
Salinas Reclamation Canal/Airport Road	309.10.17	--	--	--	--	--	--	--	--	TO	TO	--	--	--	--
Salinas Reclamation Canal/Davis Road	309.10.13	--	--	--	--	--	--	TO	TO	TO	TO	--	--	--	--
Salinas River Lagoon	309.10.00	--	--	--	--	--	TO	--	--	--	--	--	--	--	--
Salinas River No. 2	309.10.90	--	--	--	--	--	--	--	--	--	TO	--	--	--	--
Salinas River/Blanco Drain	309.10.05	--	--	--	--	--	TO	TO	--	--	--	--	--	--	--
Salinas River/Blanco Road	309.10.07	--	--	--	--	--	TO	TO	--	--	--	--	--	--	--
Salinas River/Gonzales	309.30.00	TOTM	TOTM	TOTM	--	TOTM	--	--	--	--	--	--	--	--	--
Salinas River/Mouth	309.10.18	--	--	--	--	TOTM	--	--	--	--	--	--	--	--	--
Salmon Creek	308.00.02	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
San Antonio River/Highway G19	309.81.14	--	--	--	--	--	--	TM	--	--	--	--	--	--	--
San Clemente Reservoir	307.00.19	--	--	--	--	TM	--	--	--	--	--	--	--	--	--
San Lorenzo River/Big Trees	304.12.06	TOTM	TOTM	TM	TOTM	--	--	--	--	--	--	--	TOTM	--	--
San Lorenzo River/Graham Hill Road	304.12.09	--	--	TM	--	--	--	--	--	--	--	--	--	--	--
San Lorenzo River/Zayante Creek	304.12.10	--	--	TM	--	--	--	--	--	--	--	--	--	--	--
San Luis Obispo Creek/d/s SLO	310.24.02	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	--
San Luis Obispo Creek/u/s SLO	310.24.32	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	--
Santa Maria River/Mouth	312.10.00	--	--	--	--	--	--	--	--	--	--	--	--	--	TO
Santa Rosa Creek	310.14.03	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Schwann Lake	304.12.90	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Waddel Creek	304.10.02	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
Watsonville Slough/Harkins Slough Road	305.10.06	--	--	--	--	--	--	--	--	TO	--	--	--	--	--
Watsonville Slough/Lee Road	305.10.07	--	--	--	--	--	--	--	--	--	--	TO	--	--	--
Watsonville Slough/San Andreas Road	305.10.02	--	--	--	--	--	--	TO	TOTM	--	--	--	--	--	--
Watsonville Slough/u/s Harkins Slough	305.10.05	--	--	--	--	--	--	--	TO	--	--	--	--	--	--
Whale Rock Reservoir	310.17.01	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Region 4															
Alamitos Bay	405.12.00	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Arroyo Conejo	403.64.02	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM
Arroyo Simi	403.67.04	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Belvedere Park Lake	405.15.97	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Calabasas Lake	405.21.03	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Calleguas Creek	403.12.06	--	--	--	--	--	--	--	TOTM	TOTM	TO	TOTM	TOTM	TOTM	TO
Casitas Lake	402.20.02	--	--	--	--	--	--	--	--	--	--	TO	--	--	--
Conejo Creek	403.12.07	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Echo Park Lake	405.15.24	--	--	--	--	--	--	--	--	--	TO	--	--	--	TOTM
El Dorado Park Lake	405.15.02	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Eleanor Lake	404.26.00	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Hansen Dam Lake	405.21.11	--	--	--	--	--	TM	--	--	--	--	--	--	--	--
Harbor Park Lake	405.12.90	--	--	--	--	--	TOTM	TOTM	TOTM	TO	TO	TO	TOTM	TOTM	TO
Hollenbeck Park Lake	405.15.98	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Legg Lake	405.41.01	--	--	--	--	--	--	TOTM	--	--	--	TOTM	--	--	TOTM
Lincoln Park Lake	405.15.99	--	--	--	--	--	TOTM	--	--	--	--	--	--	--	TOTM
Lindero Lake	404.23.04	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Los Angeles River	405.12.03	--	--	--	--	--	TOTM	--	--	--	--	--	--	--	--
Los Angeles River/Sepulveda Basin	405.21.16	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Malibu Creek	404.21.01	--	--	--	--	--	--	--	TOTM	--	--	TOTM	--	--	TOTM
Malibou Lake	404.21.07	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Mugu Lagoon	403.11.91	--	--	--	--	--	--	--	--	--	TO	TOTM	TOTM	TOTM	TM
Peck Road Lake	405.41.08	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	TOTM
Puddingstone Reservoir	405.52.01	--	--	--	--	--	--	--	--	TOTM	TO	TO	--	--	TOTM
Revolon Slough	403.11.04	--	--	--	--	--	--	--	TO	TOTM	TOTM	--	TOTM	TOTM	--
Rio de Santa Clara/Oxnard Drain	403.11.02	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	TO
San Gabriel River	405.15.04	--	--	--	--	--	TOTM	--	TM	--	--	TOTM	TOTM	TOTM	TM
Santa Clara River/Santa Paula	403.21.05	--	--	--	TOTM	--	--	TO	--	--	--	--	--	--	TM
Santa Clara River/Valencia	403.51.05	--	--	--	--	--	--	--	--	--	--	--	--	--	TO
Sherwood Lake	404.26.01	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Venice Canals/Sherman Avenue	405.13.02	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
Ventura River	402.10.02	--	--	--	--	TOTM	TOTM	TO	--	--	--	--	TOTM	TOTM	TOTM
Westlake Lake	404.25.01	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Region 5															
American River/d/s Folsom Reservoir	519.21.19	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
American River/d/s Highway 160 Bridge	519.21.01	--	--	--	--	--	--	--	--	--	TOTM	TOTM	--	--	--
American River/d/s Watt Avenue Bridge	519.21.09	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	--	--	--	--	--	--	TOTM	TM
American River/N.F./Highway 49	514.51.00	--	--	--	TOTM	TM	--	--	--	--	--	TM	--	--	--
American River/S.F./Highway 49	514.32.14	--	--	--	TOTM	TM	--	--	--	--	--	--	--	--	--
Arcade Creek/u/s Marysville Blvd	519.21.03	--	--	--	--	--	--	--	--	TO	--	--	--	--	--
Beach Lake	510.00.90	--	--	--	--	--	--	--	TOTM	TOTM	TOTM	--	--	--	--
Bear River	515.10.12	--	--	--	--	TOTM	--	--	--	--	--	--	--	--	--
Black Butte Reservoir	522.12.01	--	--	--	--	--	--	TM	TM	--	--	--	--	--	--
Bounde Creek/Norman-Princeton Road	520.21.96	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Bullards Bar Res/WIllow Cr	517.51.06	--	--	--	--	--	--	--	--	--	--	--	TOTM	TM	--
Butte Creek/Colusa Highway	520.10.90	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Cache Creek	511.30.18	TOTM	TOTM	TOTM	TOTM	TM	--	--	--	--	--	TM	--	--	--
Cache Creek/d/s Davis Creek	513.32.00	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Camp Far West	516.31.01	--	--	--	--	--	--	--	--	--	TM	--	--	TM	--
Camp Far West/Rock Creek Arm	516.31.02	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
Central Drain/Norman-Princeton Road	520.21.94	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Clear Lake/Lower Lake	513.52.01	--	--	TM	--	--	TM	--	--	--	--	--	--	--	--
Clear Lake/Rattlesnake Isle	513.52.16	--	--	TM	TOTM	TM	TM	--	--	--	--	--	--	--	--
Clear Lake/Rodman Slough	513.52.19	--	--	TM	--	--	TM	--	--	--	--	--	--	--	--
Colusa Drain/Abel Road	520.21.91	--	--	TOTM	TOTM	--	--	--	--	--	--	TOTM	--	--	--
Colusa Drain/Knights Landing	520.21.90	--	--	--	TOTM	--	--	TO	TO	--	TOTM	--	--	--	--
Colusa Drain/Yolo-Colusa County Line	520.21.92	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Cosumnes River	532.21.01	--	--	--	--	TOTM	--	--	--	--	--	--	--	--	--
Courtright Reservoir/Dusy Creek	552.33.17	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Cross Canal	519.22.01	--	--	--	--	--	--	--	--	TOTM	TOTM	TM	--	TM	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Dallas Warner Reservoir	535.40.02	--	--	--	--	--	--	--	--	--	--	--	TM	--	--
Davis Creek Reservoir	513.32.09	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Don Pedro Reservoir/Moccasin Creek	536.31.16	--	--	--	--	--	--	TM	TM	TM	TM	--	--	--	--
Don Pedro Reservoir/Tuolumne River	536.31.15	--	--	--	--	--	--	--	--	TM	TM	--	--	--	--
Don Pedro Reservoir/Woods Creek	536.31.08	--	--	--	TOTM	--	--	--	--	--	--	--	--	--	--
Dry Creek/Spenceville	516.20.01	--	--	--	--	--	--	--	--	--	TM	--	--	TM	--
East Park Reservoir	522.33.00	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Fall River	526.41.06	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
Feather River/d/s Highway 99 Bridge	519.22.90	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	--	--	TOTM	TM	--	TO	TM
Feather River/d/s Oroville Reservoir	515.40.31	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Feather River/Gridley	515.40.21	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Feather River/N.F./Belden	518.43.05	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Feather River/N.F./Pulga	518.42.02	--	--	TO	--	--	--	--	--	--	--	--	--	TO	--
Feather River/N.F./Rich Bar	518.51.04	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Feather River/S.F./Forbestown	518.22.10	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Feather River/S.F./Golden	518.22.06	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Feather River/S.F./Woodleaf	518.22.16	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Folsom Lake	514.23.01	--	--	--	TOTM	--	--	--	--	--	--	--	--	--	--
Franks Tract	544.00.11	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Glenn-Colusa Canal	520.22.00	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Granite Creek/W.F.	540.40.28	--	--	--	--	--	TM	--	--	--	--	--	--	--	--
Huntington Lake/Rancherio Creek	540.26.07	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Indian Valley Reservoir	513.40.22	--	--	--	--	--	--	--	TM	--	--	--	--	--	--
Kern River/Bakersfield	558.90.08	TO	TOTM	TOTM	--	--	--	--	--	--	--	--	--	--	--
Kesterson N.W.R./Pond 2	541.20.93	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
Kesterson N.W.R./Pond 5	541.20.92	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
Kings River	551.60.02	TOTM	TOTM	TOTM	--	--	--	TOTM	--	--	--	--	--	--	--
Kings River/S.F./Tulare Lake Basin	551.90.06	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
Lake Almanor/Hamilton Branch	518.41.07	--	--	--	--	--	--	--	TO	--	--	--	--	--	--
Lake Amador	532.40.00	--	--	--	--	--	--	--	--	--	TM	--	--	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Lake Berryessa/Capell Creek	512.21.12	--	--	--	--	--	--	--	TM	--	--	--	--	--	--
Lake Berryessa/Pope Creek	512.21.16	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
Lake Berryessa/Putah Creek	512.21.18	--	--	--	--	--	--	--	TM	--	--	--	--	--	--
Lake Kaweah	553.44.01	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Lake McClure/Main Body	537.22.00	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Lake McClure/Merced River Arm	537.22.13	--	--	--	--	--	--	TM	--	--	--	--	--	--	--
Lake Wildwood	517.20.14	--	--	--	--	--	--	--	--	--	TM	--	--	TM	--
Logan Creek/Norman-Princeton Road	520.21.93	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
McCloud River/McCloud River Bridge	506.10.00	TOTM	TOTM	TM	--	--	--	TOTM	TM	--	TM	--	--	--	--
Mendota Pool	551.20.00	--	--	--	--	--	--	--	--	TOTM	--	TOTM	--	--	--
Merced River/Briceburg	537.30.12	--	--	--	--	--	TM	--	--	--	--	--	--	--	--
Merced River/East Side Drain	535.70.90	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Merced River/Hagaman County Park	535.80.00	TOTM	TOTM	TOTM	TOTM	--	TOTM	--	--	--	--	--	--	--	--
Merced River/Hatfield St Recreation Area	535.70.03	--	--	--	--	--	--	TOTM	TO	--	--	--	TM	--	--
Merced River/McConnell State Park	535.80.09	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Mokelumne River/Lodi Lake	531.20.15	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
Mokelumne River/Woodbridge	531.20.14	TOTM	TOTM	TOTM	TOTM	--	--	--	--	--	--	--	--	--	--
Mud Slough	541.20.16	--	--	TO	--	--	--	--	TOTM	--	TOTM	--	TM	TM	--
Natomas E Main Drain/d/s W El Camino Ave	519.21.90	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
Natomas East Main Drain/Arcade Creek	519.21.02	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
New Hogan Reservoir	533.10.05	--	--	--	--	--	--	--	--	--	--	--	TM	--	--
New Melones Reservoir/Angel Creek	534.21.06	--	--	--	--	--	--	--	--	--	TM	--	--	--	--
O'Neill Forebay/California Aqueduct	541.20.40	--	--	TOTM	TOTM	--	--	TOTM	--	--	--	--	--	--	--
Old River	544.00.16	--	--	--	--	--	--	TOTM	--	--	TOTM	--	--	--	--
Paradise Cut/Tracy	544.00.32	--	--	--	--	--	--	--	--	TOTM	TOTM	TO	TO	TO	--
Pardee Reservoir	532.60.06	--	--	--	--	--	--	TM	TM	--	--	--	TM	--	--
Pit River/d/s Highway 299 Bridge	526.63.10	--	--	--	--	--	--	--	--	--	TO	--	--	--	--
Pit River/Pit 7 Powerhouse	526.14.00	--	--	TOTM	--	--	--	--	--	--	--	--	--	--	--
Putah Creek	511.20.30	TOTM	TOTM	TM	--	--	--	--	--	--	--	--	--	--	--
Reclamation Slough	520.10.03	--	--	TOTM	TOTM	TOTM	--	--	--	--	--	--	--	TO	--
Rollins Reservoir	516.34.03	--	--	--	--	--	--	TM	TM	--	--	--	TM	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Sacramento River/d/s Shasta Dam	524.40.06	--	--	--	--	--	--	--	TM	--	--	--	--	--	--
Sacramento River/Hamilton City	504.20.03	--	--	--	TOTM	--	--	--	--	--	--	--	--	--	--
Sacramento River/Hood	510.00.30	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TM
Sacramento River/Keswick	508.10.42	--	--	TOTM	TOTM	--	TM	TOTM	TM	TM	TOTM	TM	TM	TM	--
Sacramento River/Keswick Dam	508.10.45	--	--	--	--	TM	--	--	--	--	--	--	--	--	--
Sacramento River/Rio Vista	510.00.12	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Sacramento River/u/s I-5 Overcrossing	519.22.04	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Sacramento Slough	520.30.01	--	--	--	--	--	--	--	--	--	--	--	TM	--	--
Salt Slough	541.20.07	--	--	TO	--	--	--	--	TO	--	TOTM	--	TM	TOTM	--
San Joaquin River/Fremont Ford	541.20.90	--	--	--	--	--	--	--	TO	--	--	--	--	--	--
San Joaquin River/French Camp Slough	544.00.92	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
San Joaquin River/Highway 152 Bridge	541.20.91	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
San Joaquin River/Newman	541.10.91	--	--	--	--	--	--	--	TO	--	--	--	TM	--	--
San Joaquin River/Orestimba Cr/Bell Road	541.10.09	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
San Joaquin River/Orestimba Creek	541.10.01	--	--	TO	--	--	--	--	--	--	--	--	--	TO	--
San Joaquin River/Skaggs Bridge	551.30.04	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
San Joaquin River/Twitchell Island	544.00.91	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
San Joaquin River/Vernalis	541.10.90	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	--	TOTM	TM
Shasta Lake/Squaw Creek Arm	506.10.03	--	--	--	TOTM	--	--	--	--	--	--	--	--	--	--
Stanislaus River	535.10.91	TOTM	TOTM	TOTM	TOTM	TOTM	TO	TOTM	--	--	--	--	--	TO	--
Stockton Deep Water Channel	531.30.91	--	--	--	--	--	--	--	--	TOTM	--	--	--	TO	--
Stony Gorge Reservoir	522.22.02	--	--	--	--	--	--	--	TM	--	--	--	--	--	--
Sutter Bypass	520.10.04	--	--	--	TOTM	TOTM	TO	TO	--	--	--	--	--	--	--
Sycamore Slough/Knights Landing	520.10.00	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Sycamore Slough/Yolo-Colusa County Line	520.10.14	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Tuolumne River/Modesto	535.30.91	--	--	--	--	--	--	--	TO	--	--	--	--	--	--
Tuolumne River/San Joaquin River	535.30.90	TOTM	TOTM	TOTM	TOTM	TOTM	TO	TOTM	--	--	--	--	--	--	--
Walker Slough	544.00.20	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
White Slough/Lodi	544.00.09	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
Willow Creek/Norman-Princeton Road	520.21.95	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Wishon Reservoir/N.F./Kings River	552.33.13	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Woods Creek	536.31.14	--	--	--	--	--	TM	--	--	--	--	--	--	--	--
Yuba River/M.F./Highway 49	517.41.00	--	--	TM	--	--	--	--	--	--	--	--	--	--	--
Yuba River/Marysville	515.30.02	TOTM	TOTM	TM	TOTM	--	--	--	--	--	TOTM	--	--	--	--
Yuba River/N.F./d/s Bullards Bar Res	517.51.02	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Yuba River/N.F./d/s Highway 49	517.53.01	--	--	TM	--	--	--	--	--	--	--	--	--	--	--
Yuba River/N.F./Sawmill Creek	517.54.02	--	--	TM	--	--	--	--	--	--	--	--	--	--	--
Yuba River/S.F./Bridgeport	517.31.01	--	--	TM	--	--	--	--	--	--	--	--	--	--	--
Region 6															
Bishop Creek Canal/d/s Bishop	603.20.24	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Carson River/E.F./Markleeville	632.10.12	--	--	--	--	TOTM	TOTM	--	--	TM	--	--	--	--	--
Carson River/W.F./d/s Paynesville	633.10.03	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Crowley Lake	603.10.06	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Deep Creek/u/s Mojave River	628.20.29	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Donner Lake	635.20.04	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Eagle Lake	637.32.09	--	--	--	--	--	--	--	--	TM	--	TM	TM	--	--
East Walker River/Bridgeport	630.10.07	--	--	TOTM	--	--	TOTM	TOTM	TM	TM	TOTM	TOTM	TM	--	--
Grant Lake	601.00.91	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Grass Valley Lake	628.20.36	--	--	--	--	--	--	--	--	TOTM	TM	TOTM	TOTM	--	--
Gull Lake	601.00.02	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Haiwee Reservoir	603.30.05	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Hot Creek	603.10.22	--	--	--	--	--	--	--	TM	--	--	TM	--	--	--
Little Rock Creek Reservoir	626.80.03	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Long Valley Creek/Honey Lake	637.10.90	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Lundy Lake	601.00.90	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
Martis Creek/d/s Martis Creek Reservoir	635.20.12	--	--	--	--	--	--	--	--	--	--	TM	--	--	--
Monitor Creek	632.10.13	--	--	--	--	--	--	--	--	--	--	TM	TM	--	--
Mono Lake	601.00.00	--	--	--	--	--	--	--	--	--	--	--	--	TM	--
Owens River	603.30.01	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
Owens River Gorge	603.20.52	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Pine Creek/Bishop	603.20.43	--	--	--	--	--	--	--	--	--	TM	--	TM	TM	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Sabrina Lake	603.20.41	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Silver Creek	632.10.15	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Silverwood Lake	628.20.02	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Slinkard Creek	631.20.01	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Squaw Creek	635.20.28	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM
Stampede Reservoir	636.00.06	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Susan River/d/s Piute Creek	637.20.25	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Susan River/Honey Lake	637.20.01	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
Susan River/Litchfield	637.20.22	--	--	--	TOTM	--	TOTM	--	--	--	--	--	--	--	--
Topaz Lake	631.10.00	--	--	--	--	--	--	--	--	--	--	--	TM	--	--
Truckee River/Gray Creek	635.20.05	--	--	TO	--	--	--	--	--	--	--	--	--	--	--
Truckee River/Hirschdale	635.20.06	--	--	TO	--	--	--	--	--	--	TM	--	--	--	--
Truckee River/u/s Farad Powerhouse	635.10.00	TOTM	TOTM	TOTM	TOTM	--	TM	TOTM	--	--	--	--	--	--	--
Twin Lakes	630.40.12	--	--	--	--	--	--	--	--	--	--	TM	--	--	--
West Walker River	631.40.02	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
Region 7															
Alamo River/Calipatria	723.10.01	TOTM	TOTM	TOTM	TOTM	TOTM	TO	TO	TOTM	--	TOTM	TOTM	TO	TOTM	--
Alamo River/International Boundary	723.10.47	--	--	--	--	--	--	--	TOTM	--	TOTM	TO	--	--	--
Central Drain	723.10.30	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Coachella Canal	723.10.90	--	--	--	--	--	--	--	--	--	TM	--	--	--	--
Coachella Valley Stormwater Channel	719.47.00	--	--	--	--	--	--	--	--	TOTM	TOTM	--	--	--	--
Colorado River/Cibola	715.50.34	TOTM	TOTM	TOTM	TOTM	--	--	--	--	--	--	--	--	--	--
Colorado River/International Boundary	727.00.00	--	--	--	--	--	--	--	TOTM	--	--	TOTM	--	--	--
Colorado River/Needles	713.30.90	--	--	--	--	--	--	--	--	--	TM	TOTM	--	--	TOTM
Colorado River/Picacho	715.50.20	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
Colorado River/u/s Imperial Dam	715.50.90	--	--	--	--	--	--	--	--	--	TM	--	TOTM	--	TOTM
Dixie Drain No. 1	723.10.46	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Dixie Drain No. 3	723.10.52	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Dixie Drain No. 5	723.10.49	--	--	--	--	--	--	--	--	TM	--	--	--	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Fig Drain	723.10.91	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	TOTM
Fig Lake	723.10.45	--	--	--	--	--	--	--	TOTM	--	--	--	TOTM	TOTM	--
Fig Lake Outlet	723.10.43	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Forgetmenot Drain	723.10.50	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Greeson Drain	723.10.48	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
Holtville Main Drain	723.10.21	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	--
Lake Cahuilla	719.47.90	--	--	--	--	--	--	--	--	--	TM	--	--	--	--
Lake Havasu	714.00.90	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Mayflower Drain	723.10.15	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
New River/International Boundary	723.10.58	--	--	--	--	--	--	TO	TOTM	--	TOTM	--	TOTM	TOTM	TOTM
New River/Westmorland	723.10.02	TOTM	TOTM	TOTM	TO	TOTM	TO	TO	TOTM	TOTM	TOTM	TO	TO	TOTM	TOTM
Orange Drain	723.10.22	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Palo Verde Outfall Drain	715.40.08	--	--	--	--	--	--	--	--	TOTM	TOTM	--	--	--	TOTM
Peach Drain	723.10.28	--	--	--	--	--	--	--	--	--	--	--	--	--	TM
Pumice Drain	723.10.92	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Reservation Main Drain	727.00.03	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	TOTM
Rice Drain 3	723.10.35	--	--	--	--	--	--	--	TO	TO	--	--	--	--	--
Rose Drain	723.10.20	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	TOTM
Salt Creek Slough	723.10.44	--	--	--	--	--	--	--	TOTM	TOTM	--	--	--	--	--
Salt Creek/Mouth	725.00.00	--	--	--	--	--	--	--	--	--	TM	--	--	--	--
Salton Sea/North	728.00.92	--	--	--	TO	--	--	--	--	--	--	--	--	--	TOTM
Salton Sea/South	728.00.90	--	--	TO	TO	--	--	--	TOTM	--	TOTM	--	TOTM	--	TOTM
Salton Sea/West Shore	728.00.91	--	--	--	--	--	--	TOTM	--	TOTM	--	--	--	--	--
San Felipe Creek/d/s Highway 86 Bridge	722.20.04	--	--	--	--	--	--	--	--	--	TM	--	--	--	--
San Felipe Creek/San Sebastion Marsh	722.20.07	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
South Central Drain	723.10.31	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Trifolium Drain 7	723.10.29	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
Verde Drain	723.10.36	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Warren Drain	723.10.33	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	--
West Side Drain	723.10.51	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
Wiest Lake	723.10.12	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Region 8															
Anza Channel	801.26.03	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	--
Big Bear Lake	801.71.10	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	--	--
Big Bear Lake/Boulder Bay	801.71.08	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
Bolsa Chica Channel/Westminster Ave	801.11.08	--	--	--	--	--	--	--	--	TO	TM	TO	--	--	--
Canyon Lake	802.12.01	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Carbon Canyon Park Lake	801.13.90	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Chino Creek/d/s Euclid Ave	801.21.02	--	--	--	--	--	--	TOTM	TOTM	TO	--	TOTM	--	--	--
Chino Creek/u/s Pine Ave	801.21.03	--	--	--	--	--	--	--	--	TO	--	--	--	--	--
Craig Park Lake	845.61.91	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Cucamonga-Mill Creek/McCarty Road	801.21.04	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Delhi Channel	801.11.05	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
E.G.G. Wintersburg Channel/Beach Blvd	801.11.90	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
E.G.G. Wintersburg Channel/Gothard St	801.11.02	--	--	--	--	--	--	--	--	TO	--	TO	--	--	--
El Modena Channel/u/s Walnut Avenue Brg	801.11.16	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Huntington Harbour/Anaheim Bay	801.11.00	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM
Irvine Park Lake	801.12.01	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Lake Elsinore	802.31.00	--	--	--	--	--	TOTM	TOTM	--	--	--	--	--	--	--
Lake Evans	801.26.01	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
Lake Mathews	801.33.00	--	--	--	--	--	--	--	--	TOTM	--	--	--	--	--
Los Coyotes Park Lake	845.61.90	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Mason Park Lake	801.11.93	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Mile Square Park Lake No. 1	801.11.94	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Mile Square Park Lake No. 2	801.11.95	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Newport Bay	801.11.97	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM
Ocean View Channel/Beach Blvd	801.11.03	--	--	--	--	--	--	--	--	TO	TOTM	--	--	--	--
Ocean View Channel/Brookhurst Street	801.11.91	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Ocean View Channel/Newhope Street	801.11.92	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Peters Canyon Channel	801.11.96	--	--	--	--	--	--	--	--	--	--	--	TOTM	TOTM	TOTM
Prado Lake	801.21.90	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--

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APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
San Diego Creek/Barranca Parkway	801.11.09	--	--	--	--	--	--	--	--	--	TOTM	--	--	TOTM	TOTM
San Diego Creek/Laguna Road	801.11.13	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
San Diego Creek/Michelson Drive	801.11.07	--	--	--	--	--	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM
San Diego Creek/Upper Newport Bay	801.11.04	--	--	--	--	--	--	TOTM	TOTM	TO	--	--	--	--	--
Santa Ana River/Featherly Park	801.13.03	--	--	--	--	--	--	--	TO	--	--	--	--	--	--
Santa Ana River/Hamner Ave	801.21.05	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Santa Ana River/Imperial Highway Bridge	801.13.00	--	--	--	--	--	--	--	TO	--	--	--	--	--	--
Santa Ana River/Prado Dam	801.25.00	TOTM	TOTM	TOTM	TOTM	TO	TOTM	TOTM	TOTM	TOTM	--	TOTM	TOTM	TOTM	TOTM
Santa Ana River/USGS Gage	801.21.09	--	--	--	--	--	--	--	TO	--	--	TO	--	--	TM
Westminster Channel/Graham Street	801.11.01	--	--	--	--	--	--	--	--	TO	TM	--	--	--	--
Yorba Park Lake	801.13.91	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Region 9															
Alvarado Creek	907.11.09	--	--	--	--	--	--	--	--	--	TOTM	--	--	TOTM	--
Buena Vista Lagoon	904.21.02	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
Cannon Lake/Carlsbad	904.40.01	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Chollas Creek/Main Street	908.22.01	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Escondido Creek	904.61.02	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
Famosa Slough	907.11.00	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Guajome Lake	903.11.08	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Keys Creek	903.12.06	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Laguna Niguel Park Lake	901.13.01	--	--	--	--	--	--	--	--	--	TOTM	--	--	--	--
Lake Hodges	905.21.02	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Lake Mission Viejo	901.20.12	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Los Penasquitos Creek	906.10.02	--	--	--	--	--	--	--	--	TM	--	--	--	--	--
O'Neill Lake	902.13.02	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Oso Reservoir	901.20.14	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Otay River	910.20.01	--	--	--	--	TOTM	TOTM	--	--	--	--	--	--	--	--
Otay River/Apache Service Pond	910.20.05	--	--	--	--	--	--	--	--	--	--	--	TOTM	--	--
Penasquitos Lagoon	906.10.01	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--

* -- = Not Sampled. TO = Trace Organics Only. TM = Trace Metals Only. TOTM = Trace Organics and Trace Metals.

APPENDIX O (continued)
Toxic Substances Monitoring Program
Station Sampling History

Station Name	Station Number	SAMPLE YEAR* 1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Rainbow Creek	902.22.03	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Rose Creek	906.40.02	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
San Diego River/Fashion Valley	907.11.04	--	--	--	--	--	--	TOTM	--	--	--	--	--	--	--
San Diego River/Old Mission Dam	907.12.02	--	TOTM	TOTM	--	--	TOTM	--	--	TOTM	--	TOTM	--	--	--
San Diego River/Riverford Road	907.12.08	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
San Diego River/Stadium Way	907.11.07	--	--	--	--	--	--	--	--	--	TO	--	--	--	--
San Dieguito Lagoon	905.11.00	--	--	--	--	--	--	--	--	--	TOTM	TOTM	TM	--	--
San Luis Rey River/Foussat Road	903.11.05	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
San Luis Rey River/Highway 15	903.12.07	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
San Luis Rey River/Highway 76	903.11.11	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
San Marcos Creek	904.51.03	--	--	--	--	--	--	--	--	TOTM	--	--	--	TO	--
Santa Margarita River/Oceanside	902.11.02	--	TO	--	--	--	--	--	--	--	--	--	--	--	--
Santa Margarita River/Willow Glen Road	902.22.04	--	--	--	--	--	--	--	--	--	--	--	--	--	TOTM
Santee Lake No. 5	907.12.01	--	--	--	--	--	--	--	--	--	--	TOTM	--	--	--
Sweetwater Marsh	909.12.01	--	--	--	--	--	--	--	--	TOTM	TOTM	--	--	TOTM	--
Sweetwater Reservoir	909.21.09	--	--	--	--	--	--	--	--	--	--	--	--	TOTM	--
Tecolote Creek	906.50.02	--	--	--	--	--	--	--	TOTM	--	--	--	--	--	--
Tijuana Estuary	911.11.00	--	--	--	--	--	--	TOTM	TOTM	TOTM	TOTM	TOTM	TOTM	--	--

* -- = Not Sampled. TO = Trace Organics Only. TM = Trace Metals Only. TOTM = Trace Organics and Trace Metals.

APPENDIX P

1991

Station Descriptions

APPENDIX P

Toxic Substances Monitoring Program
1991 Station Descriptions

Station Number	Station Name	County	Description
105.36.10	Klamath R/d/s Iron Gate Res	Siskiyou	Station located at "R" Ranch campground about 3 miles down stream from Iron Gate Dam.
105.50.04	Shasta River	Siskiyou	Station located from Highway 263 upstream ¾ mile.
105.50.35	Beaughton Cr/d/s HWY 97 Brg	Siskiyou	Station located about 3/4 mile downstream from Highway 97 Bridge.
105.92.01		Lost R/Tule Lake	Modoc Station located from about 1/2 mile north of the East/West Road Bridge to the ridge.
106.12.03	Trinity R/Willow Creek	Humboldt	Station located about 1/4 mile north of the confluence of the Trinity River and Willow Creek, adjacent to State Highway 96 and the local airport.
106.13.06	Trinity R/d/s Burnt Ranch	Trinity	Station located in about 200 yards of riffle at Gray Ranch which is about 1/2 mile downstream from Gray Falls Campground.
106.40.12	Carrville Pond	Trinity	Station located about 1/10 mile west of intersection of Highway 3 and East Side Road.
106.40.16	Trinity R/East Fork	Trinity	Station located at Alpine Cellars Bridge at the end of the county road approximately 2 miles upstream of East Fork Road.
110.00.90	McDaniel Slough	Humboldt	Station located at the pool just above the tide gate at Arcata Bay.
111.63.14	Lake Pillsbury	Lake	Station located near Lake Pillsbury Resort.
114.11.05	Russian R/Duncans Mills	Sonoma	Station located at the Moscow Road bridge crossing of the Russian River at Duncans Mills.
114.24.12	Lake Sonoma	Sonoma	Station located from the Rockpile Road Bridge upstream 1/2 mile in the Warm Springs Creek arm.
114.32.00	Lake Mendocino	Mendocino	Station located in the Marina off Highway 20 on the north end of the lake.
115.30.02	Estero de San Antonio	Marin	Station located at Valley Ford - Franklin School Road crossing.
115.30.04	Estero Americano	Sonoma Marin	Station located at Valley Ford - Franklin School Road crossing.
201.12.01	Walker Creek	Marin	Station located between Highway 1 Bridge and Camp Tomales Bridge.

APPENDIX P (continued)
Toxic Substances Monitoring Program
1991 Station Descriptions

Station Number	Station Name	County	Description
204.30.11	Alameda Cr/Niles Canyon Rd	Alameda	Station located about 1/2 mile upstream of Highway 238.
205.50.94	Stevens Creek	Santa Clara	Station located adjacent to and upstream of the Santa Clara County Park below Stevens Creek Dam.
206.50.14	Napa R/Napa	Napa	Station located on Oak Knoll Avenue off Highway 29 north of the city of Napa.
207.10.90	Suisun Bay	Solano	Station located throughout Suisun Bay.
207.32.06	Walnut Creek	Contra Costa	Station located off North Main Street at the Lincoln Street Bridge crossing.
304.12.90	Schwann Lake	Santa Cruz	Station located at East Cliff Drive and 9th Street in Santa Cruz.
304.12.91	Neary's Lake	Santa Cruz	Station located at Bay Street and California Street in Santa Cruz.
304.13.90	Corcoran Lagoon	Santa Cruz	Station located north of East Cliff Drive between 22nd avenue and 24th Avenue in Santa Cruz.
304.13.91	Moran Lake	Santa Cruz	Station located north of East Cliff Drive between Baker Street and Lake Avenue.
304.13.92	Aptos Creek	Santa Cruz	Station located in the County Park at Soquel Drive and Aptos Creek Road in Aptos.
307.00.01	Carmel Lagoon	Monterey	Station located near the cliffs at the west end.
309.10.01	Roberts Lake	Monterey	Station located at Roberts Avenue and Del Monte Boulevard in Sand City.
309.10.09	Blanco Drain/Salinas R	Monterey	Station located in the 100-yard stretch immediately upstream of the drain's confluence with the Salinas River.
309.50.01	El Estero	Monterey	Station located at the bridge at 3rd Street and Camino Aquaito.
309.82.04	Lake Nacimiento/Dip Cr	San Luis Obispo	Station located on Dip Creek arm of Lake Nacimiento.
309.82.08	Lake Nacimiento/Las Tablas	San Luis Obispo	Station located on Las Tablas Creek arm of Lake Nacimiento.
312.10.00	Santa Maria R/Mouth	Santa Barbara	Station located just above the beach area at the mouth of the river.
402.10.02	Ventura River	Ventura	Station located about 1-1/2 miles upstream from the Main Street Bridge in San Buenaventura.

APPENDIX P (continued)
Toxic Substances Monitoring Program
1991 Station Descriptions

Station Number	Station Name	County	Description
403.11.02	Rio de Santa Clara/Oxnard Drain	Ventura	Station located upstream of the bridge at Arnold Road.
403.11.91	Mugu Lagoon	Ventura	Station located at the sewage pond bridge and the lagoon bridge.
403.12.06	Calleguas Creek	Ventura	Station located downstream of Lewis Road crossing.
403.12.07	Conejo Creek	Ventura	Station located at Rancho Road crossing southwest of Camarillo.
403.21.05	Santa Clara R/Santa Paula	Ventura	Station located at the road crossing at the Livingston Graham Santa Paula Plant.
403.51.05	Santa Clara R/Valencia	Los Angeles	Station located about 1/2 mile down stream of Castaic Junction.
403.64.02	Arroyo Conejo	Ventura	Station located upstream of second wet crossing of the creek. Access is through the Thousand Oaks Sewage Treatment Plant.
403.67.04	Arroyo Simi	Ventura	Station located upstream of railroad bridge at end of Nogales Avenue in Moorpark.
404.21.01	Malibu Creek	Los Angeles	Station located at Cross Creek Road crossing.
404.21.07	Malibou Lake	Los Angeles	Station located near Lake Vista Drive and Cornell Road.
404.23.04	Lindero Lake	Los Angeles	Station located at Mainsail Cul-de-Sac off Lake Lindero Drive.
404.25.01	Westlake Lake	Los Angeles/ Ventura	Station located at Triunfo Canyon Road and Lindero Canyon Road.
404.26.00	Eleanor Lake	Los Angeles	Station located beside Westlake Blvd. (Highway 23 So.) about 3/4 mile south of Petrero Road.
404.26.01	Sherwood Lake	Ventura	Station located off Petrero Road about 1 1/2 miles east of Westlake Blvd.
405.12.00	Alamitos Bay	Los Angeles	Station located along beach area on the bay side of Ocean Blvd.
405.12.90	Harbor Park Lake	Los Angeles	Station located in the Wilmington area of the City of Los Angeles.
405.15.02	El Dorado Park Lake	Los Angeles	Station located in northern most lake in El Dorado Park
405.15.04	San Gabriel River	Los Angeles/ Orange	Station located in the unlined portion of the riverbed in Long Beach downstream to College Park Drive along the Los Angeles/Orange County Line.

APPENDIX P (continued)
Toxic Substances Monitoring Program
1991 Station Descriptions

Station Number	Station Name	County	Description
405.15.24	Echo Park Lake	Los Angles	Station located in the north end of this urban lake.
405.15.97	Belvedere Park Lake	Los Angeles	Station located between Pomona Blvd. And Highway 60, access behind court House.
405.15.98	Hollenbeck Park Lake	Los Angeles	Station located at 4th Street and St. Louis street adjacent to the Interstate 5.
405.15.99	Lincoln Park Lake	Los Angeles	Station located in the City of Los Angeles approximately two miles northeast of Union Station.
405.21.03	Calabasas Lake	Los Angeles	Station located at Park Serranto off Park Grenada in Calabasas.
405.21.16	Los Angeles R/Sepulveda Basin	Los Angeles	Station located east of Highway 405 at Burbank Blvd.
405.41.01	Legg Lake	Los Angeles	Station located in the western quarter of the northern end of Legg Lake in the Whittier Narrows Recreational Area.
405.41.08	Peck Road Lake	Los Angeles	Station located in the western end of the lake.
405.52.01	Puddingstone Res	Los Angeles	Station located from the middle cove on the west shore and from the inlet cove on the northeast shore.
510.00.30	Sacramento R/Hood	Sacramento/Yolo	Station located in the river stretch from Clarksburg to Courtland along the Sacramento/Yolo County line.
515.40.31	Feather R/d/s Oroville Res	Butte	Station located between Thermalito Afterbay discharge and Highway 70.
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	Yuba	Station located adjacent to Colgate Power House.
519.21.09	American R/d/s Watt Ave Brg	Sacramento	Station located between the Howe Avenue and Watt Avenue Bridges in Sacramento.
519.21.19	American R/d/s Folsom Res	Sacramento	Station located about 1 mile downstream of Rainbow Bridge in Lake Natoma.
519.22.04	Sacramento R/u/s I-5 Overcross	Yolo	Station located about 1/2 mile upstream of the I-5 overcrossing.
519.22.90	Feather R/d/s HWY 99 Brg	Sutter/Yuba	Station located from 1/2 mile below the Highway 99 Bridge and upstream to the confluence with the Bear River.
541.10.90	San Joaquin R/Vernalis	San Joaquin	Station located about 4 miles upstream from South County Park near San Joaquin City.

APPENDIX P (continued)
Toxic Substances Monitoring Program
1991 Station Descriptions

Station Number	Station Name	County	Description
544.00.11	Franks Tract	Contra Costa	Station located along Old River channel about 1/2 mile north of Holland Cut.
601.00.02	Gull Lake	Mono	Station located along the north shore around the tules.
603.20.24	Bishop Creek Canal/d/s Bishop	Inyo	Station located at Warm Springs Road crossing.
603.20.41	Sabrina Lake	Inyo	Station located in southwest end of the lake.
603.30.05	Haiwee Reservoir	Inyo	Station located at the north end of the reservoir along North Haiwee Dam.
626.80.03	Little Rock Creek Res	Los Angeles	Station located along west shore between the campground and the dam.
628.20.02	Silverwood Lake	San Bernardino	Station located in the West Fork Mohave River arm.
632.10.15	Silver Creek	Alpine	Station located about 1 mile above confluence with East Carson River.
633.10.03	Carson R/W.F./d/s Paynesville	Alpine	Station located at the Diamond Valley Road crossing near Paynesville.
635.20.04	Donner Lake	Nevada	Station located about 1 mile west of the dam.
635.20.28	Squaw Creek	Placer	Station located downstream from first bridge above Highway 89 on Squaw Valley Road.
713.30.90	Colorado R/Needles	San Bernardino	Station located 5 miles south of Needles in Beal Slough.
715.40.08	Palo Verde Outfall Drain	Imperial	Station located from Highway 78 to 1/4 mile downstream from C-28 spill. Station moved in 1987 to six miles upstream just above Palo Verde.
715.50.90	Colorado R/u/s Imperial Dam	Imperial	Station located from Squaw Lake boat launch ramp to 1/4 mile north of Senator Lake.
723.10.02	New R/Westmorland	Imperial	Station located at the gauging station about one mile downstream of the Lack Road Bridge near Westmorland.
723.10.15	Mayflower Drain	Imperial	Station located at Highway 115 crossing by Weist Store.
723.10.20	Rose Drain	Imperial	Station located at McConnell Road.
723.10.22	Orange Drain	Imperial	Station located at Highway 115 crossing.
723.10.28	Peach Drain	Imperial	Station located at highway 115 crossing.

APPENDIX P (continued)
Toxic Substances Monitoring Program
1991 Station Descriptions

Station Number	Station Name	County	Description
723.10.58	New R/Inter Boundary	Imperial	Station located up to two miles downstream of the international boundary.
723.10.91	Fig Drain	Imperial	Station located about 1/2 mile downstream of Diehl Road.
727.00.03	Reservation Main Drain	Imperial	Station located at Indian Rock and Fisher Roads.
728.00.90	Salton Sea/South	Imperial	Station located near the mouth of the Alamo River.
728.00.92	Salton Sea/North	Imperial/	Station located offshore at Salton Sea Riverside State Recreation Area near the Imperial/Riverside County line.
801.11.00	Huntington Harbour/Anaheim Bay	Orange	Station located in Anaheim Bay.
801.11.07	San Diego Cr/Michelson Dr	Orange	Station located between MacArthur Boulevard and Michelson Drive Station formerly located at MacArthur Blvd., but moved upstream out of tidewater.
801.11.09	San Diego Cr/Barranca Pkwy	Orange	Station located in the riffle 150 yards upstream from the confluence of San Diego Creek and Peters Canyon Creek.
801.11.16	El Modena Ch/u/s Walnut Ave Brg	Orange	Station located upstream of Walnut Avenue Bridge near confluence with Peters Canyon Channel.
801.11.96	Peters Canyon Channel	Orange	Station located upstream of Moulton Parkway Bridge.
801.11.97	Newport Bay	Orange	Station located in Newport Bay.
801.21.09	Santa Ana R/USGS Gage	Riverside	Station located from the Metropolitan Water District Aqueduct crossing upstream 1/4 mile.
801.25.00	Santa Ana R/Prado Dam	Riverside	Station located immediately below Prado Dam.
902.22.03	Rainbow Creek	San Diego	Station located at Water District road crossing about 1/2 mile upstream of the Santa Margarita River.
902.22.04	Santa Margarita R/Willow Glen Rd	San Diego	Station located about 3/4 mile upstream of Rainbow Creek.
903.11.05	San Luis Rey R/Foussat Rd	San Diego	Station located at Foussat Road crossing.
903.11.11	San Luis Rey R/HWY 76	San Diego	Station located at Highway 76 crossing.
903.12.06	Keys Creek	San Diego	Station located at Highway 15 overcrossing.
903.12.07	San Luis Rey R/HWY 15	San Diego	Station located about 1/2 mile upstream of Highway 15.
908.22.01	Chollas Creek/Main Street	San Diego	Station located at Main Street crossing.

APPENDIX Q

1991

Station Latitudes and Longitudes

APPENDIX Q

Toxic Substances Monitoring Program

1991 Sampling Stations - Latitude and Longitude

Station Number	Station Name	Latitude	Longitude	USGS 7.5' MAP
105.36.10	Klamath R/d/s Iron Gate Res	41°54'53"	122°28'03"	Iron Gate Reservoir
105.50.04	Shasta River	41°54'10"	122°35'20"	Hawkinsville
105.50.35	Beaughton Cr/d/s HWY 97 Brg	41°27'25"	122°36'90"	Weed
105.92.01	Lost R/Tule Lake	41°57'00"	121°30'15"	Hatfield
106.12.03	Trinity R/Willow Creek	40°57'15"	123°38'05"	Willow Creek
106.13.06	Trinity R/d/s Burnt Ranch	40°51'45"	123°29'35"	Ironside Mtn
106.40.12	Carrville Pond	41°43'12"	122°42'00"	Carrville
106.40.16	Trinity R/East Fork	41°02'00"	122°36'05"	Whiskey Bill Peak
110.00.90	McDaniel Slough	40°51'35"	124°07'00'	Arcata South
111.63.14	Lake Pillsbury	39°25'20"	122°57'05"	Lake Pillsbury
114.11.05	Russian R/Duncans Mills	38°27'15"	123°02'55"	Duncans Mills
114.24.12	Lake Sonoma	38°42'35"	123°01'30"	Warm Springs Dam
114.32.00	Lake Mendocino	39°14'10"	123°00'25"	Ukiah
115.30.02	Estero de San Antonio	38°17'43"	122°56'24"	Valley Ford
115.30.04	Estero Americano	38°18'55"	122°56'07"	Valley Ford
201.12.01	Walker Creek	38°14'55"	122°54'52"	Tomales
204.30.11	Alameda Cr/Niles Canyon Rd	37°34'58"	121°57'48"	Niles
205.50.94	Stevens Creek	37°18'15"	122°04'00"	Cupertino
206.50.14	Napa R/Napa	38°22'05"	122°18'10"	Napa
207.10.90	Suisun Bay	38°04'05"	122°02'40"	Vine Hill
207.32.06	Walnut Creek	37°54'03"	122°03'30"	Walnut Creek
304.12.90	Schwann Lake	36°57'45"	121°59'43"	Soquel
304.12.91	Neary's Lake	36°57'49"	122°01'53"	Santa Cruz
304.13.90	Corcoran Lagoon	36°57'38"	121°58'57"	Soquel
304.13.91	Moran Lake	36°57'25"	121°58'36"	Soquel
304.13.92	Aptos Creek	36°58'43"	121°54'13"	Soquel
307.00.01	Carmel Lagoon	36°32'16"	121°55'26"	Monterey
309.10.01	Roberts Lake	36°37'07"	121°51'30"	Seaside
309.10.09	Blanco Drain/Salinas R	36°42'25"	121°44'50"	Salinas
309.50.01	El Estero	36°35'49"	121°52'54"	Monterey
309.82.04	Lake Nacimiento/Dip Cr	35°43'30"	120°55'45"	Lime Mountain
309.82.08	Lake Nacimiento/Las Tablas	35°42'05"	120°57'05"	Lime Mountain
312.10.00	Santa Maria R/Mouth	35°58'18"	120°38'53"	Point Sal
402.10.02	Ventura River	34°30'35"	119°18'10"	Ventura
403.11.02	Rio de Santa Clara/Oxnard Drain	34°06'35"	119°00'35"	Point Mugu
403.11.91	Mugu Lagoon	34°06'05"	119°06'05"	Point Mugu
403.12.06	Calleguas Creek	34°10'45"	119°02'40"	Camarillo
403.12.07	Conejo Creek	34°11'15"	119°00'45"	Camarillo
403.21.05	Santa Clara R/Santa Paula	34°18'25"	119°05'55"	Santa Paula
403.51.05	Santa Clara R/Valencia	34°26'05"	118°36'43"	Newhall
403.64.02	Arroyo Conejo	34°12'25"	118°55'07"	Camarillo
403.67.04	Arroyo Simi	34°17'08"	118°51'47"	Simi Valley West
404.21.01	Malibu Creek	34°02'30"	118°40'55"	Malibu Beach
404.21.07	Malibou Lake	34°06'20"	118°45'20"	Point Dume
404.23.04	Lindero Lake	34°09'00"	118°27'23"	Thousand Oaks

APPENDIX Q (continued)

Toxic Substances Monitoring Program

1991 Sampling Stations - Latitude and Longitude

Station Number	Station Name	Latitude	Longitude	USGS 7.5' MAP
404.25.01	Westlake Lake	34°08'15"	118°49'11"	Thousand Oaks
404.26.00	Eleanor Lake	34°08'00"	118°51'06"	Thousand Oaks
404.26.01	Sherwood Lake	34°08'18"	118°52'12"	Thousand Oaks
405.12.00	Alamitos Bay	33°45'04"	118°07'25"	Los Alamitos
405.12.90	Harbor Park Lake	33°47'15"	118°17'30"	Torrance
405.15.02	El Dorado Park Lake	33°49'30"	118°05'03"	Los Alamitos
405.15.04	San Gabriel River	33°47'45"	118°05'20"	Los Alamitos
405.15.24	Echo Park Lake	34°04'25"	118°15'35"	Hollywood
405.15.97	Belvedere Park Lake	34°02'06"	118°09'26"	Los Angeles
405.15.98	Hollenbeck Park Lake	34°02'22"	118°13'04"	Los Angeles
405.15.99	Lincoln Park Lake	34°04'00"	118°12'05"	Los Angeles
405.21.03	Calabasas Lake	34°09'10"	118°38'20"	Calabasas
405.21.16	Los Angeles R/Sepulveda Basin	34°10'10"	118°29'41"	Van Nuys
405.41.01	Legg Lake	34°02'10"	118°03'40"	El Monte
405.41.08	Peck Road Lake	34°05'55"	118°01'00"	El Monte
405.52.01	Puddingstone Res	34°05'25"	117°48'00"	San Dimas
510.00.30	Sacramento R/Hood	38°22'10"	121°31'10"	Courtland
515.40.31	Feather R/d/s Oroville Res	39°27'15"	121°38'09"	Oroville
517.51.02	Yuba R/N.F./d/s Bullards Bar Res	39°19'50"	121°09'49"	French Corral
519.21.09	American R/d/s Watt Ave Brg	38°33'50"	121°23'40"	Sacramento East
519.21.19	American R/d/s Folsom Res	38°40'09"	121°11'13"	Folsom
519.22.04	Sacramento R/u/s I-5 Overcross	38°40'45"	121°37'50"	Grays Bend
519.22.90	Feather R/d/s HWY 99 Brg	38°54'50"	121°34'35"	Nicolaus
541.10.90	San Joaquin R/Vernalis	37°40'20"	121°15'25"	Vernalis/Ripon
544.00.11	Franks Tract	38°02'15"	121°34'47"	Bouldin Island
601.00.02	Gull Lake	37°46'38"	119°04'54"	June Lake
603.20.24	Bishop Creek Canal/d/s Bishop	37°19'31"	118°23'04"	Bishop
603.20.41	Sabrina Lake	37°12'03"	118°37'12"	Mt. Thompson
603.30.05	Haiwee Reservoir	36°11'17"	117°57'54"	Haiwee Reservoir
626.80.03	Little Rock Creek Res	34°28'52"	118°01'24"	Pacifico Mountain
628.20.02	Silverwood Lake	34°17'27"	117°19'35"	Silverwood Lake
632.10.15	Silver Creek	38°37'35"	119°43'51"	Wolf Creek
633.10.03	Carson R/W.F./d/s Paynesville	38°48'33"	119°46'34"	Woodfords
635.20.04	Donner Lake	39°19'37"	120°15'03"	Norden
635.20.28	Squaw Creek	39°12'30"	120°12'15"	Tahoe City
713.30.90	Colorado R/Needles	34°45'55"	114°31'55"	Needles
715.40.08	Palo Verde Outfall Drain	33°21'10"	114°42'55"	Cibola
715.50.90	Colorado R/u/s Imperial Dam	32°54'00"	114°27'55"	Imperial Reservoir
723.10.02	New R/Westmorland	33°06'15"	115°39'50"	Calipatria SW
723.10.15	Mayflower Drain	33°02'00"	115°27'02"	Wiest
723.10.20	Rose Drain	32°56'20"	115°30'01"	Holtville West
723.10.22	Orange Drain	32°56'56"	115°24'42"	Alamorio
723.10.28	Peach Drain	32°50'48"	115°24'19"	Holtville West
723.10.58	New R/Inter Boundary	32°40'20"	115°31'00"	Heber
723.10.91	Fig Drain	32°46'45"	115°42'10"	Seeley

APPENDIX Q (continued)

Toxic Substances Monitoring Program

1991 Sampling Stations - Latitude and Longitude

Station Number	Station Name	Latitude	Longitude	USGS 7.5' MAP
727.00.03	Reservation Main Drain	32°46'45"	114°36'15"	Bard
728.00.90	Salton Sea/South	33°12'50"	115°37'20"	Niland
728.00.92	Salton Sea/North	33°30'10"	115°55'20"	Mortmar
801.11.00	Huntington Harbour/Anaheim Bay	33°43'45"	118°05'00"	Seal Beach
801.11.07	San Diego Cr/Michelson Dr	33°40'15"	117°50'05"	Tustin
801.11.09	San Diego Cr/Barranca Pkwy	33°41'25"	117°49'25"	Tustin
801.11.16	El Modena Ch/u/s Walnut Ave Brg	33°42'43"	117°48'19"	Tustin
801.11.96	Peters Canyon Channel	33°42'15"	117°48'10"	Tustin
801.11.97	Newport Bay	33°36'55"	117°54'17"	Newport Beach
801.21.09	Santa Ana R/USGS Gage	33°58'05"	117°26'40"	Riverside West
801.25.00	Santa Ana R/Prado Dam	33°53'10"	117°38'25"	Prado Dam
902.22.03	Rainbow Creek	33°24'09"	117°12'28"	Temecula
902.22.04	Santa Margarita R/Willow Glen Rd	33°24'28"	117°12'45"	Temecula
903.11.05	San Luis Rey R/Foussat Rd	33°13'26"	117°20'39"	San Luis Rey
903.11.11	San Luis Rey R/HWY 76	33°15'36"	117°14'11"	Bonsall
903.12.06	Keys Creek	33°19'02"	117°09'02"	Bonsall
903.12.07	San Luis Rey R/HWY 15	33°19'46"	117°09'36"	Bonsall
908.22.01	Chollas Creek/Main Street	32°43'15"	117°07'30"	National City

APPENDIX R

Maps Showing

1991 Station Locations

Appendix R

List of Figures

*** The Tulare Lake Basin was not sampled in 1991. Figure 5c is not included in this report.

FIGURE 1. TSMP Monitoring Stations 1991 (Region 1)

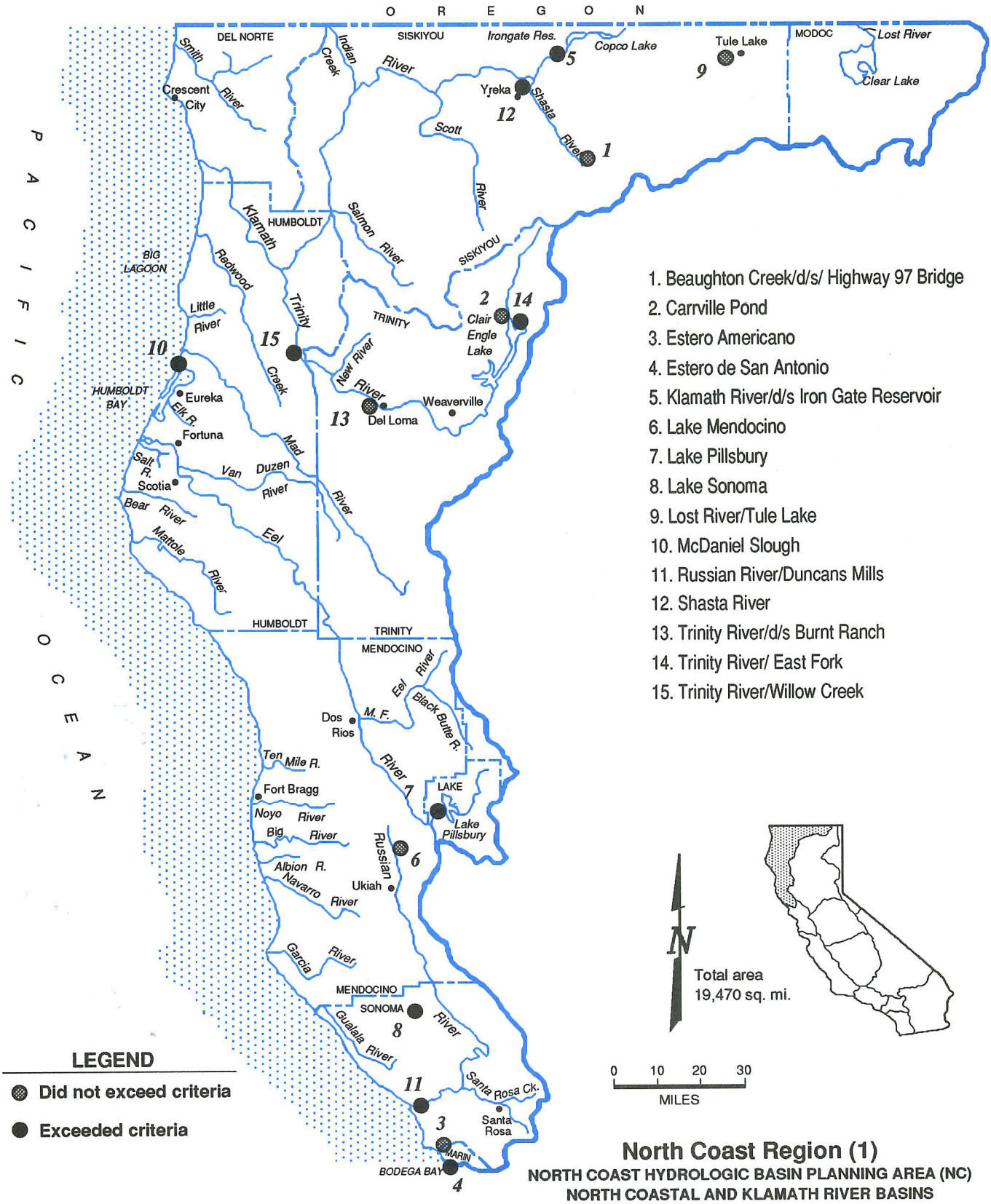
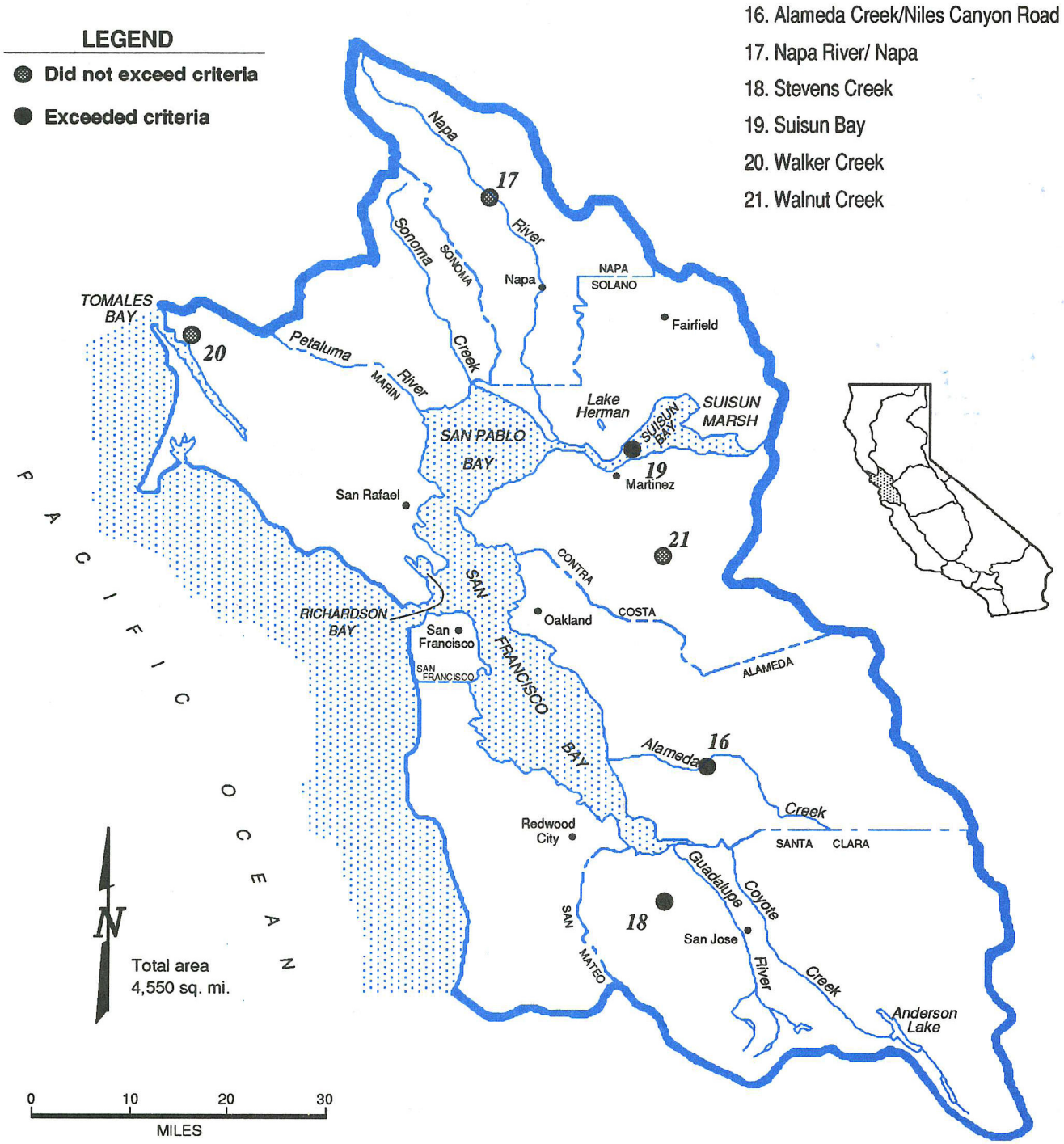


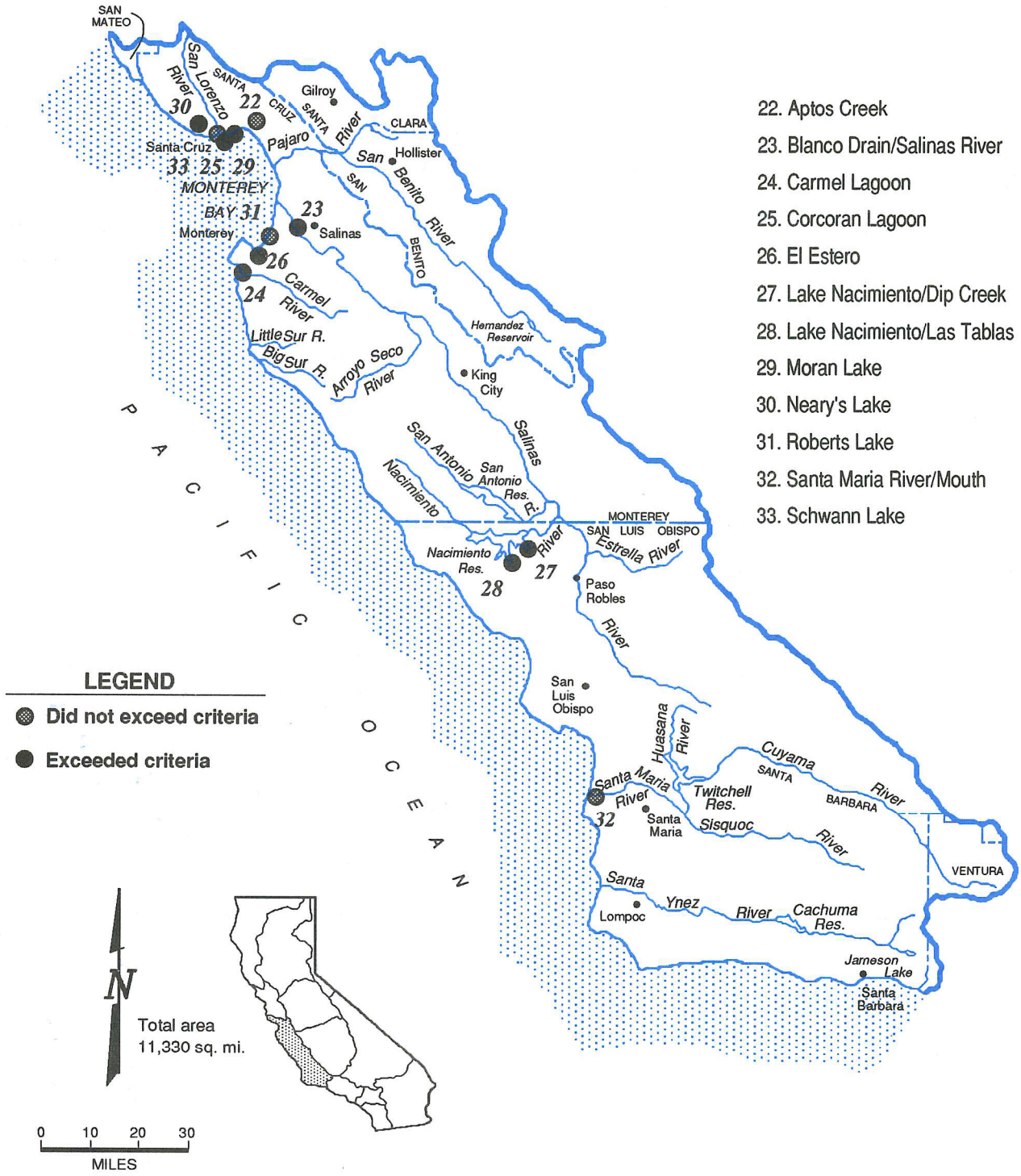
FIGURE 1. TSMP Monitoring Stations 1991 (Region 2)



San Francisco Bay Region (2)

SAN FRANCISCO BAY HYDROLOGIC BASIN PLANNING AREA (SF)

FIGURE 1. TSMP Monitoring Stations 1991 (Region 3)

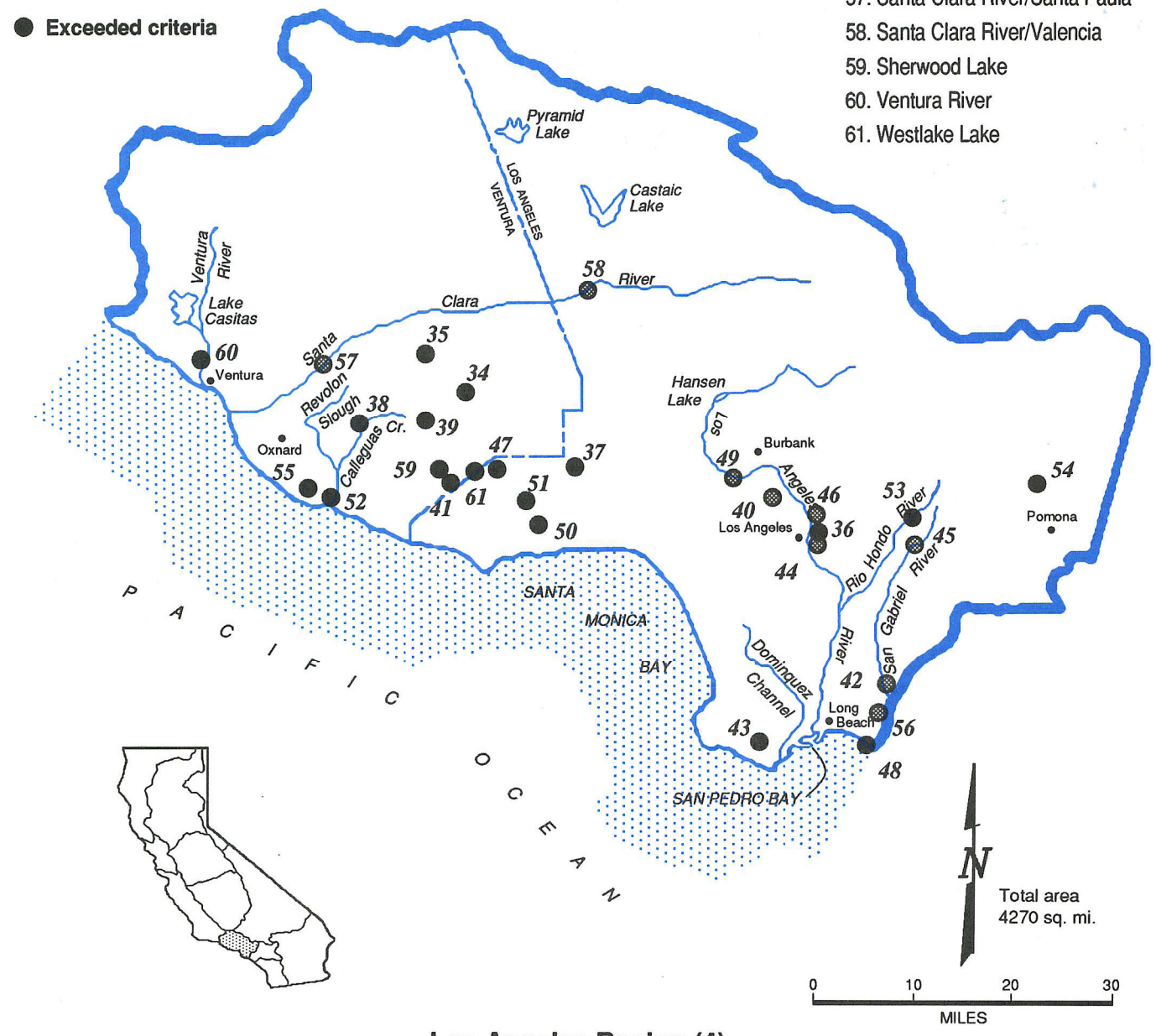


Central Coast Region (3)

CENTRAL COAST HYDROLOGIC BASIN PLANNING AREA (CC)

FIGURE 1. TSMP Monitoring Stations 1991 (Region 4)

34. Arroyo Conejo
35. Arroyo Simi
36. Belvedere Park Lake
37. Calabasas Lake
38. Calleguas Creek
39. Conejo Creek
40. Echo Park Lake
41. Eleanor Lake
42. El Dorado Park Lake
43. Harbor Park Lake
44. Hollenbeck Park Lake
45. Legg Lake
46. Lincoln Park Lake
47. Lindero Lake
48. Alamitos Bay
49. Los Angeles River/Sepulveda Basin
50. Malibou Creek
51. Malibou Lake
52. Mugu Lagoon
53. Peck Road Lake
54. Puddingstone Reservoir
55. Rio de Santa Clara/ Oxnard Drain
56. San Gabriel River
57. Santa Clara River/Santa Paula
58. Santa Clara River/Valencia
59. Sherwood Lake
60. Ventura River
61. Westlake Lake



Los Angeles Region (4)

LOS ANGELES HYDROLOGIC BASIN PLANNING AREA (LA)
SANTA CLARA AND LOS ANGELES RIVER BASINS

FIGURE 1. TSMP Monitoring Stations 1991 (Region 5)

62. American River/d/s Folsom Reservoir
63. American River/d/s Watt Avenue Bridge
64. Feather River/d/s Highway 99 Bridge
65. Feather River/d/s Oroville Rresevoir
66. Sacramento River/Hood
67. Sacramento River/u/s I-5 Overcrossing
68. Yuba River/N. F./d/s Bullards Bar Reservoir

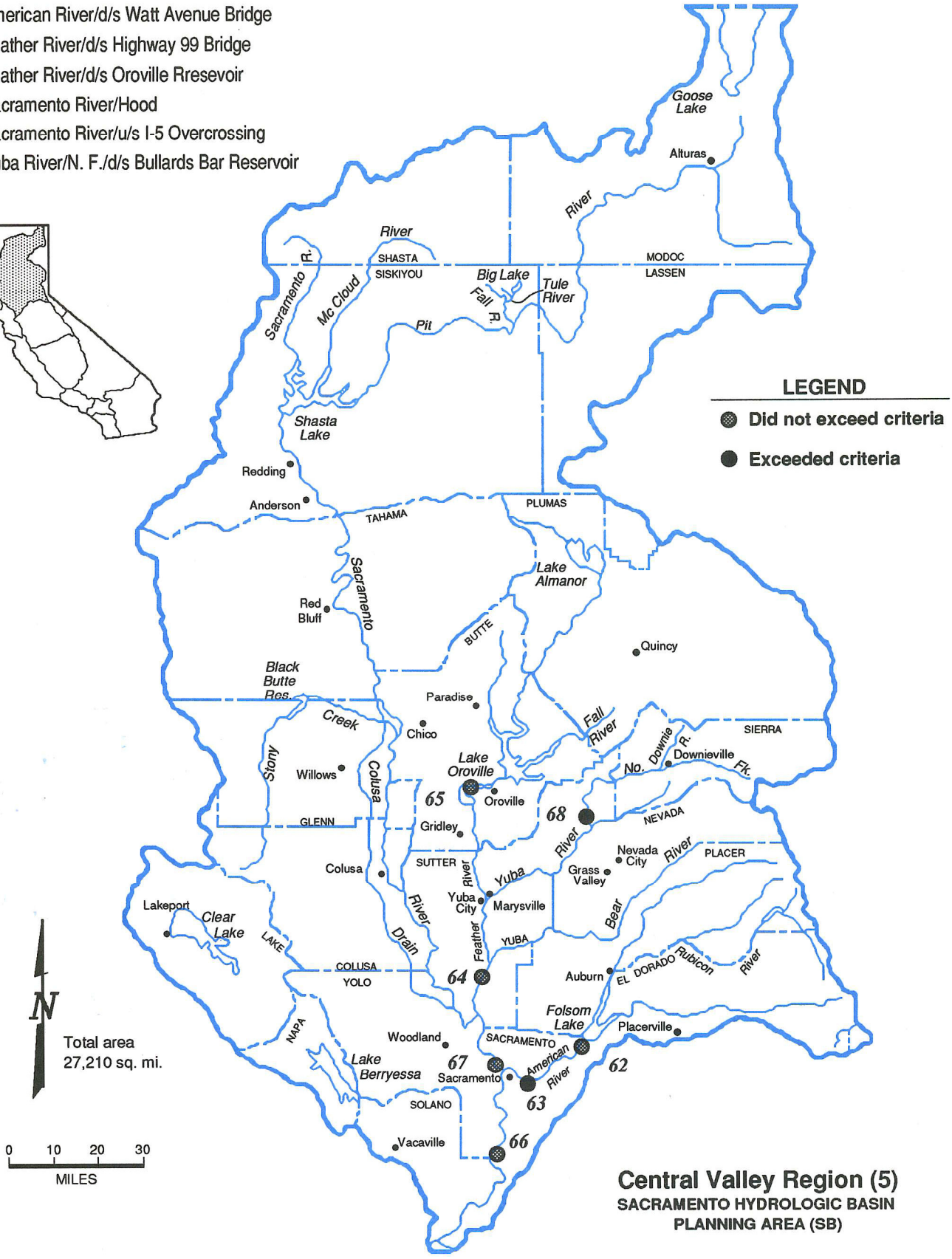
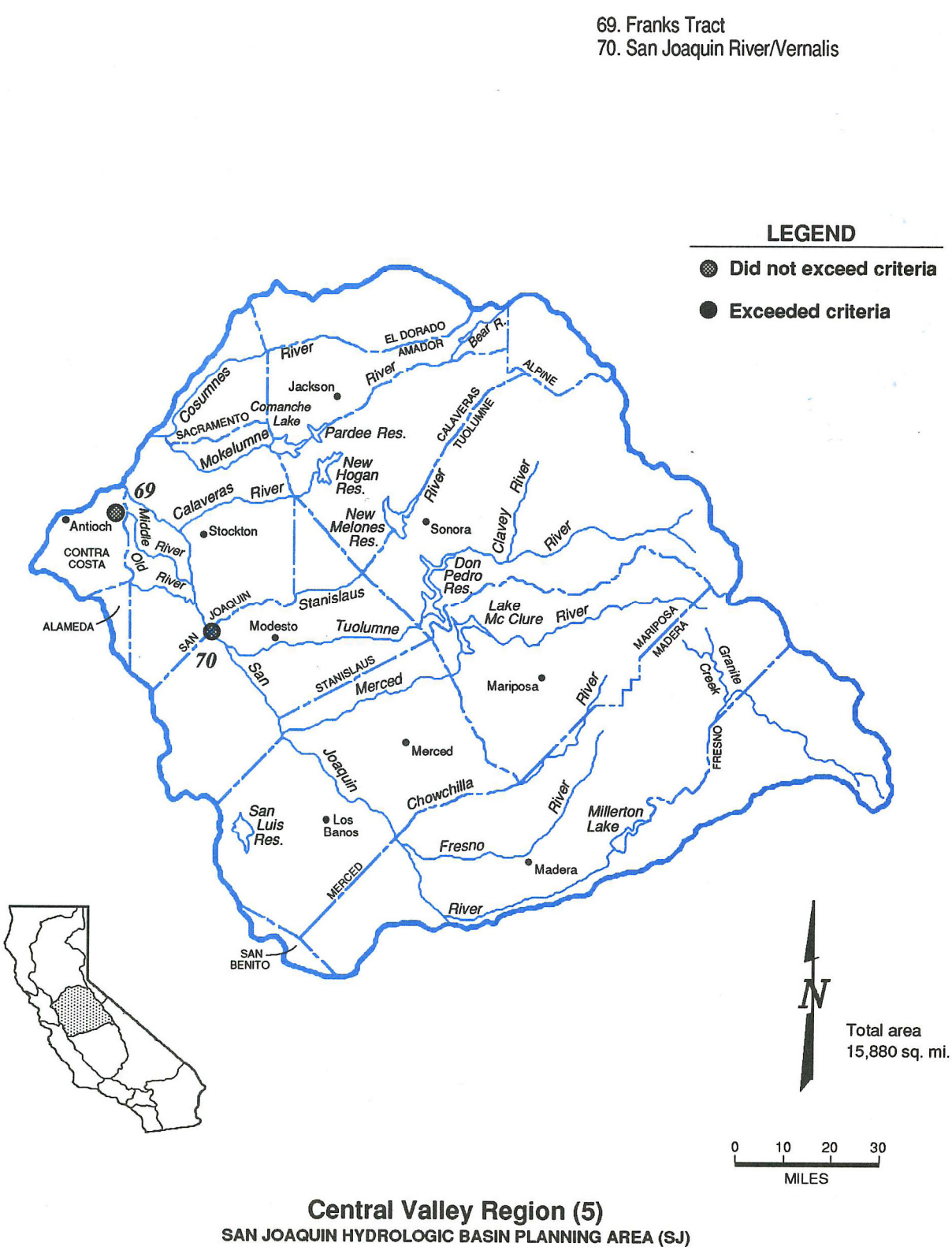
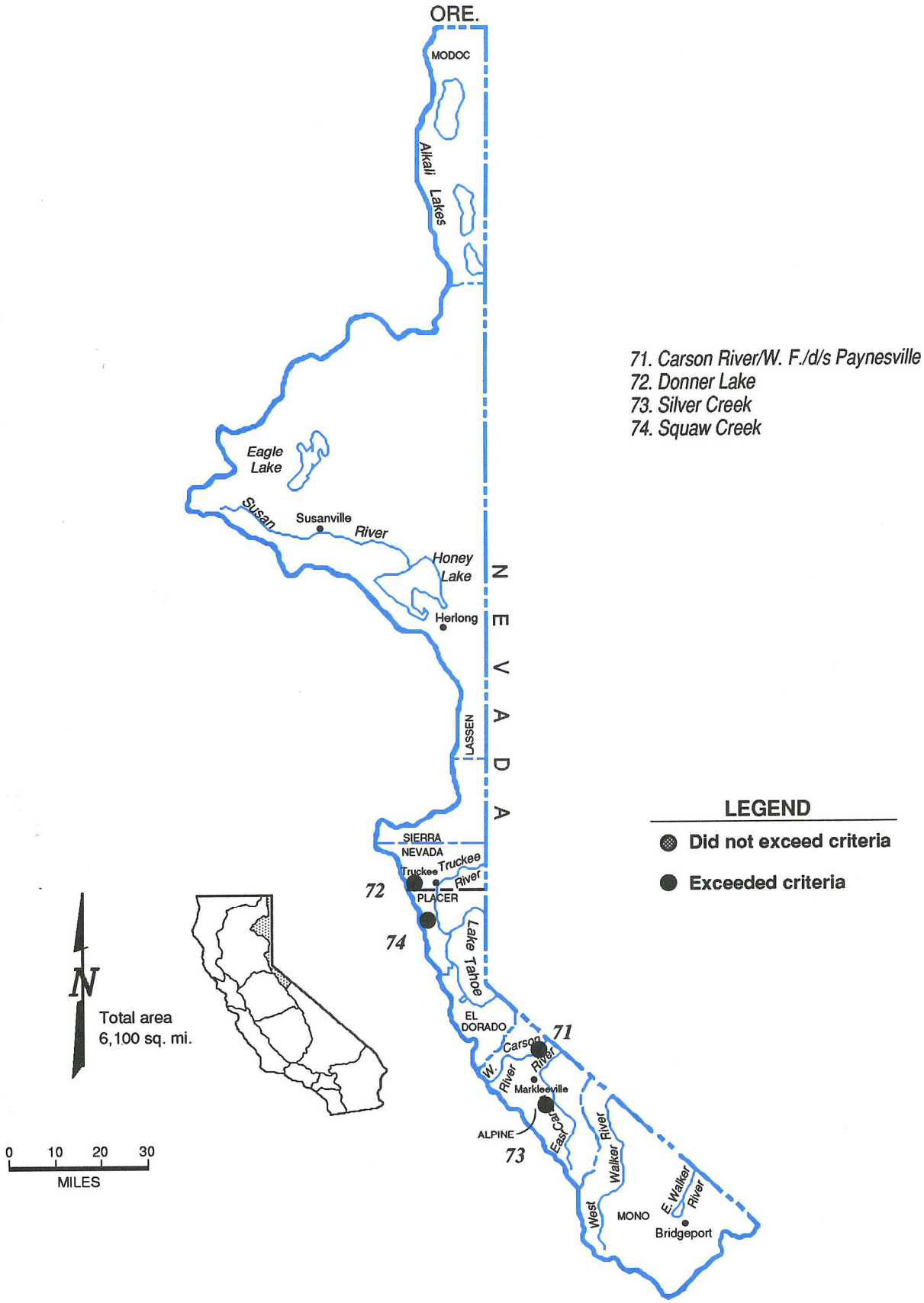


FIGURE 1. TSMP Monitoring Stations 1991 (Region 5)



Central Valley Region (5)
SAN JOAQUIN HYDROLOGIC BASIN PLANNING AREA (SJ)

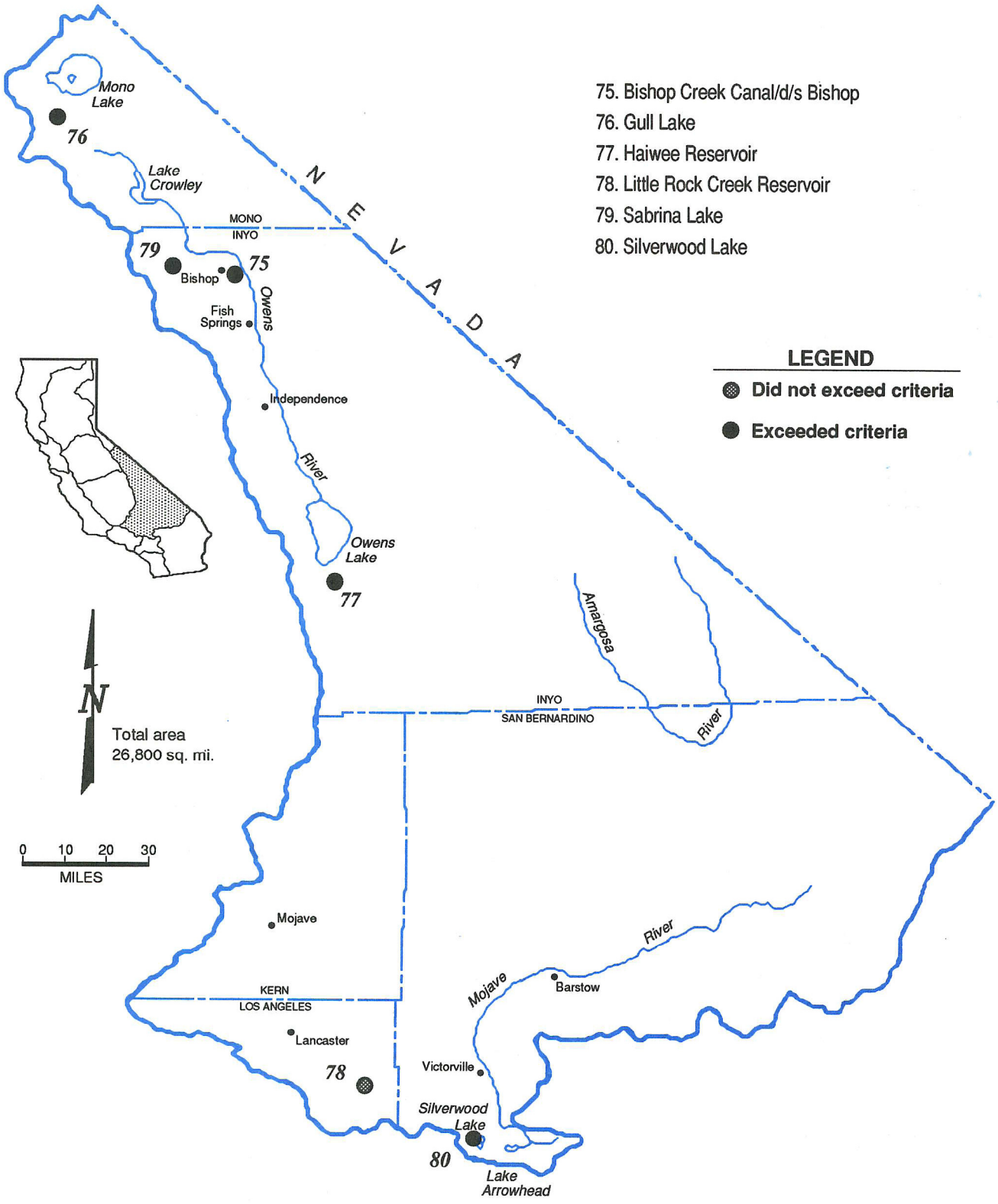
FIGURE 1. TSMP Monitoring Stations 1991 (Region 6)



Lahontan Region (6)

NORTH LAHONTAN HYDROLOGIC BASIN PLANNING AREA (NL)

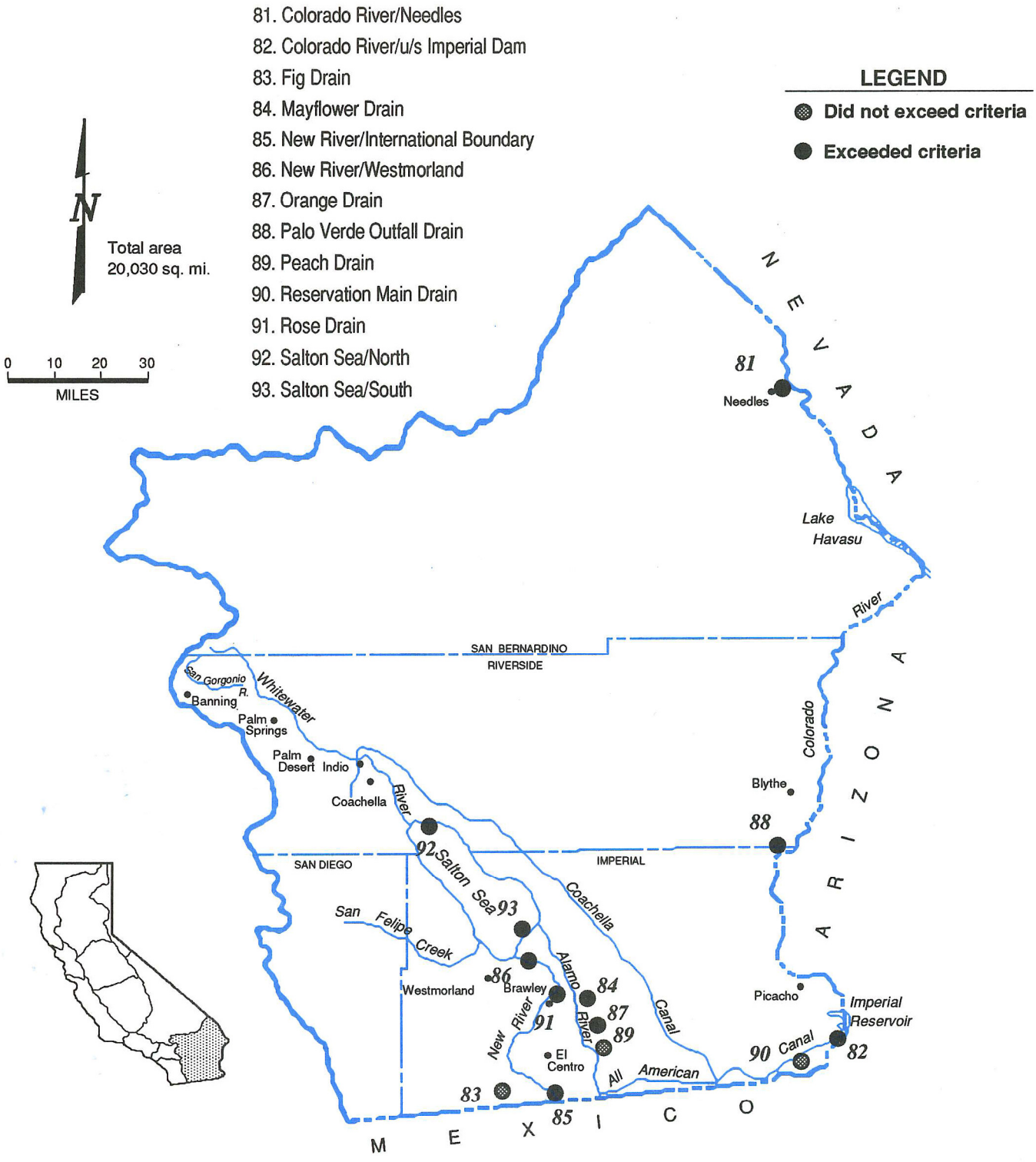
FIGURE 1. TSMP Monitoring Stations 1991 (Region 7)



Lahontan Region (6)

SOUTH LAHONTAN HYDROLOGIC BASIN PLANNING AREA (NL)

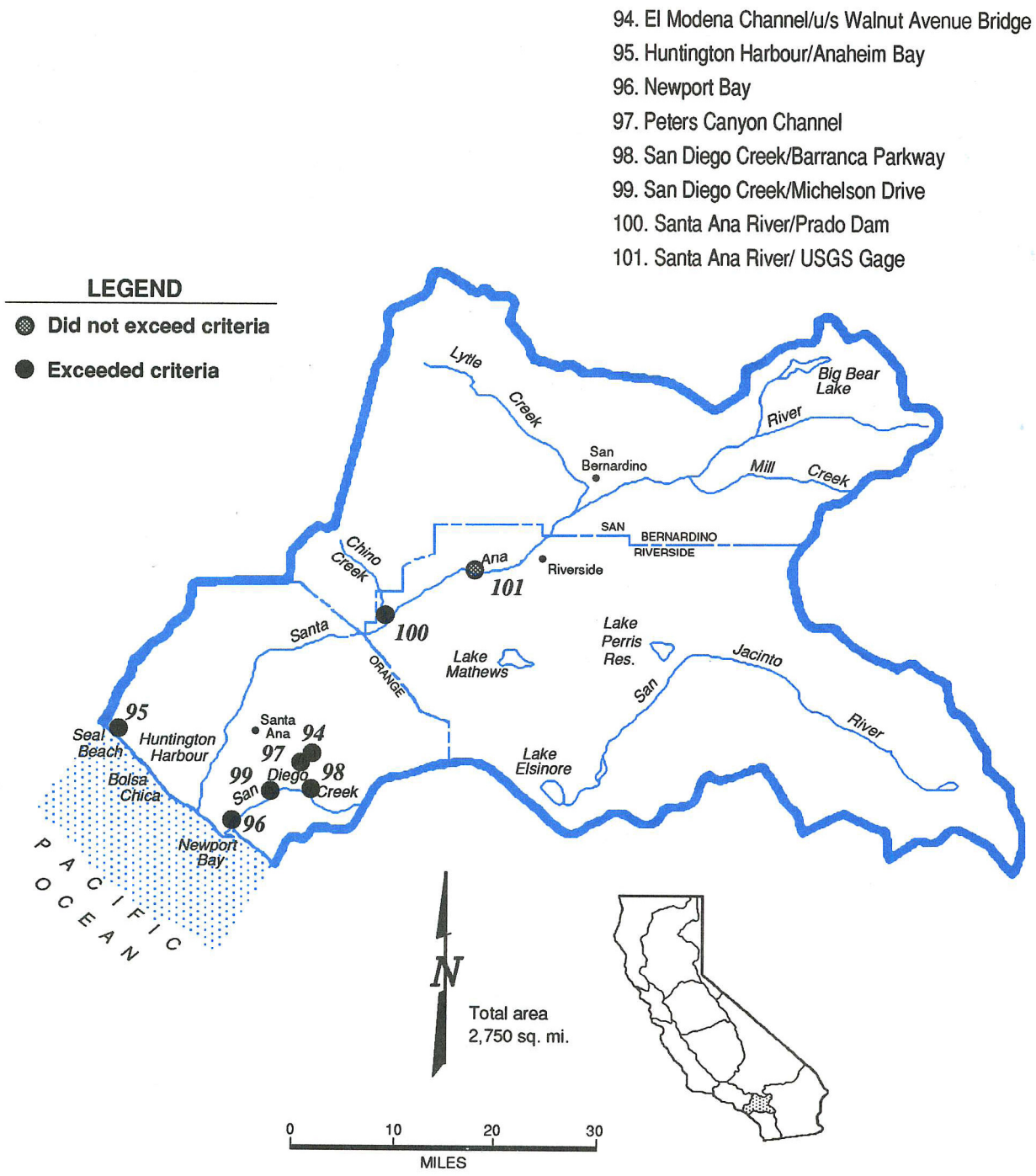
FIGURE 1. TSMP Monitoring Stations 1991 (Region 8)



Colorado River Basin Region (7)

COLORADO RIVER HYDROLOGIC BASIN PLANNING AREA (CR)
WEST COLORADO AND EAST COLORADO RIVER BASINS

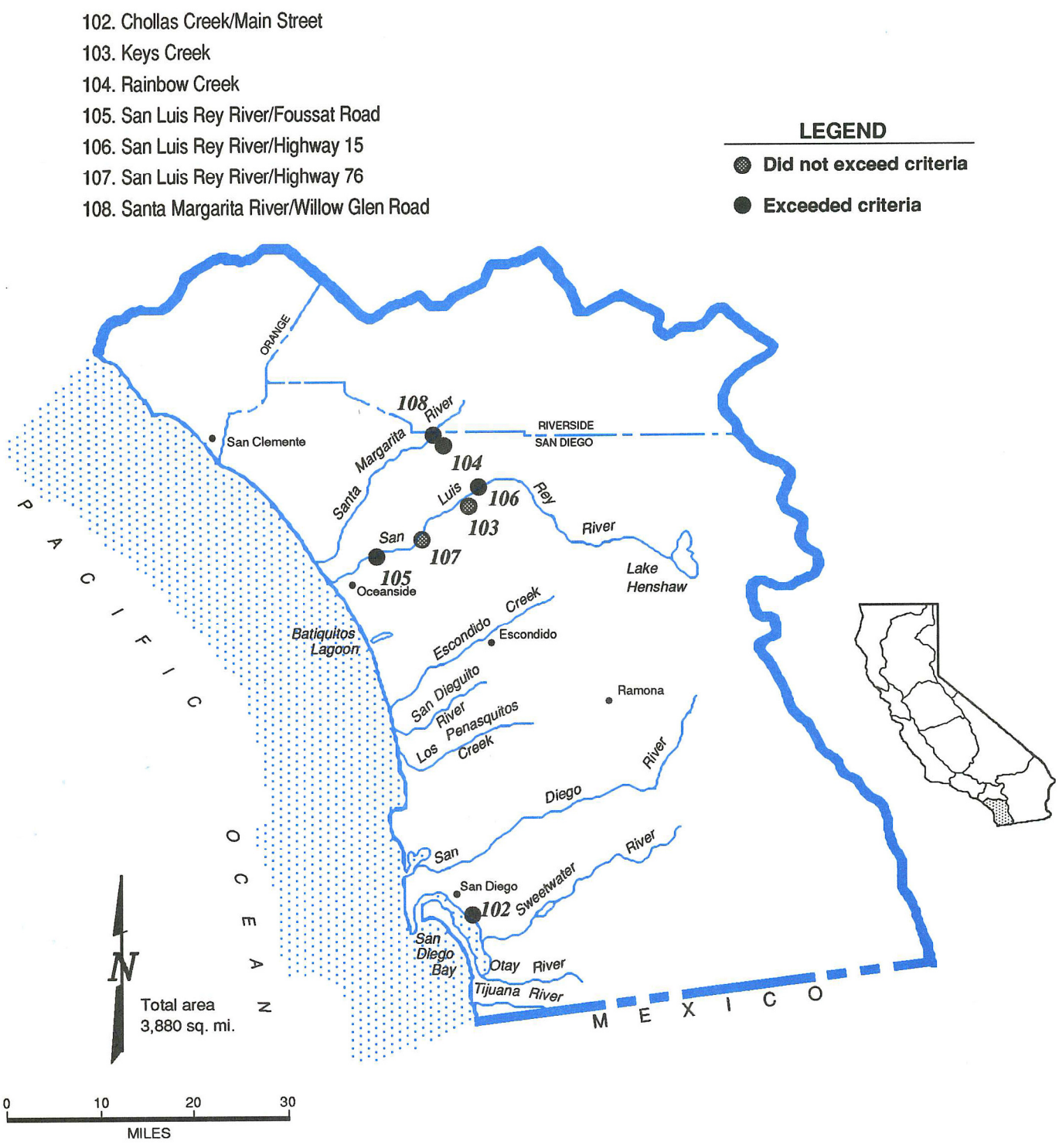
FIGURE 1. TSMP Monitoring Stations 1991 (Region 8)



Santa Ana Region (8)

SANTA ANA HYDROLOGIC BASIN PLANNING AREA (SA)

FIGURE 1. TSMP Monitoring Stations 1991 (Region 9)



San Diego Region (9)

SAN DIEGO HYDROLOGIC BASIN PLANNING AREA (SD)

APPENDIX S

Field and Laboratory Operations

FIELD AND LABORATORY OPERATIONS

Sample Collection

Sample collections were obtained using a Smith-Root Model VII and Model XIA Portable Electrofishers; a Smith-Root SR-16E electrofishing boat; variable mesh, woven, and monofilament gill nets; baited hoop nets measuring three feet in diameter with one inch square mesh; or beach seines of varying lengths, widths, and material. Collected fish were kept in clean stainless steel buckets until they could be double-wrapped in extra-heavy duty aluminum foil (dull side inward), labeled, and packed in dry ice where they were frozen.

Laboratory Analysis

A detailed description of procedures and techniques discussed below can be found in the Department of Fish and Game's (DFG) Laboratory Quality Assurance Program Plan (DFG 1990). The following is a summary of the 1991 Quality Assurance/Quality Control (QA\QC) results provided by the DFG's Water Pollution Control Laboratory. Copies of the Laboratory Quality Assurance Program Plan and QA\QC results are available upon request.

Trace Elements Analytical Techniques in Tissues

A Varian Model Spectra 30 atomic absorption spectrophotometer and a Varian Model VGA-76 Hydride Generator were used for techniques employing conventional (flame) atomic absorption spectrophotometry (copper and zinc), hydride generation (arsenic and selenium), and cold vapor technique for mercury (Adrian 1971; Uthe et al. 1974; and Evans et al. 1986). A Perkin-Elmer Model 3030 Zeeman atomic absorption spectrophotometer equipped with a HGA-600 graphite furnace and an AS-60 autosampler was used for techniques requiring a graphite furnace (cadmium, chromium, nickel, lead, and silver). All analytical values were corrected using procedural blanks. Trace element analytical and digestion techniques along with their detection limits are presented in Table S-1. All digestion techniques, except for mercury, are the same as those used since 1988.

Samples were weighed into pre-cleaned 200mm x 25mm glass tubes which had been checked for trace element contamination. Digestion of the sample was accomplished by adding concentrated nitric acid and heating the tube in an aluminum block to reflux the acid. The acid was allowed to reflux until the evolution of NO_x (brown fumes) were no longer apparent (about 2 hours). The block temperature was increased to reduce the volume in the tube by evaporation. When the volume in the tube reached about 0.5 ml the tube was removed and allowed to cool. The digestate was diluted to 40.0 ml with Type II water. The digestate was mixed on a vortex mixer and transferred to a clean polyethylene bottle.

In addition to routine trace element analyses, 10 percent of the samples were analyzed in duplicate to determine precision. The results of duplicate laboratory sample analyses are presented in Table S-2. To protect sample integrity, all materials contacting samples during laboratory operations were analyzed for trace element content. To ensure accuracy, reference materials from the National Institute of Standards and Technology (NIST) and the National Research Council of Canada were analyzed (Table S-3).

Synthetic Organic Compounds Analytical Techniques in Tissues

A 10 gram sample of the flesh-water (1:1) paste was spiked with nonachlorobiphenyl (PCB congener No. 206) and extracted twice with acetonitrile by shaking for two minutes. The sample extracts were combined, filtered, and partitioned with petroleum ether. An aliquot of the petroleum ether extract was eluted through a Florisil^{R} column. The Florisil^{R} columns were eluted with petroleum ether (Fraction 1), six percent ethyl ether (Fraction 2), and 15 percent ethyl ether (Fraction 3). Fractions 2 and 3 were spiked with nonachlorobiphenyl and all of the fractions were concentrated to an appropriate volume in a Zymark^{R} Turbovap concentrator prior to analysis by gas chromatography. The nonachlorobiphenyl was used as an internal standard to determine relative retention times and gas chromatograph operation. A mixture of synthetic standards was eluted through the Florisil^{R} column to determine the recovery and separation characteristics of the column. The distribution of synthetic organic compounds in the three fractions is listed in Table S-4. The detection levels for synthetic organics in flesh are presented in Table S-5.

At stations where the TSMP had previously detected endosulfan, samples were analyzed for endosulfan I, endosulfan II and endosulfan sulfate. This required an additional elution through Florisil^{R} with 50 percent ethyl ether in petroleum ether (Fraction 4, Table S-4). All other stations were initially analyzed for endosulfan I only. This fraction was also spiked with nonachlorobiphenyl prior to the concentration step. Due to the high lipid content of the fraction all of the 50 percent extracts were diluted with iso-octane by a factor of ten prior to analysis by gas chromatography.

As part of quality control, 10 percent of the samples were duplicated in the laboratory (Table S-6). All materials and solutions contacting the sample after initial extraction were analyzed for organic contamination. To preclude errors due to contamination, a vertical solvent blank was passed through each set of glassware and analyzed before introducing a new sample.

Instrument and Analytical Conditions for Chlorinated Hydrocarbons

1991

Chlorinated hydrocarbons were determined with a Varian Model 3500 gas chromatograph equipped with a model 8035 autosampler, temperature programmable on-column injector, and dual Ni^{63} electron capture detectors. A 30 meter J&W DB1 fused silica capillary column is connected to the temperature programmable injector, the column effluent is split using a press-fit "Y" connector to a 30 meter J&W DB5 and a 30 meter J&W DB17 column. The DB5 and DB17 columns are connected to the electron capture detectors. All three columns have a 0.25 mm ID and a 25 um liquid phase thickness. Helium was used as the carrier gas at a linear velocity of 35 cm/sec and nitrogen was used as the detector makeup gas at a flow of 25 ml/min. Chromatographic data was acquired and processed with a Perkin-Elmer Model 7700 professional computer using Chromatographics 3 software.

All samples were analyzed using a single injection for each extract under the following conditions:

Injector temperature program:	
	Initial temperature - 50 °C
	Program rate - 300 °C/min
	Final temperature - 280°C
	Final temperature hold time - 57 min
Column temperature program:	
	Initial temperature - 50°C
	Program rate 1 - 15°C/min to 210°C
	Program rate 2 - 2°C/min to 280°C
	Final temperature hold time - 0 min
Detector temperature:	330°C

Analytical Techniques for Polynuclear Aromatic Hydrocarbon Compounds (PAHs) in Flesh

Sample extraction procedures for PAHs were similar to those used for chlorinated hydrocarbons and are described below. A 10 gram sample of the flesh water (1:1) paste was homogenized with acetonitrile in an all-glass blender with stainless steel blades and filtered.

Sample extracts were analyzed using a Varian Saturn II Ion Trap GC-MS. One microliter of sample extract was injected into a J&W Scientific DB-5, 30 meter x 0.25 mm I.D. fused silica capillary column having a 0.25 um film thickness. The GC oven temperature was initially held at 70°C for two minutes. The temperature ramp was 15°C per minute until the oven reached 150°C. The second temperature ramp was 2°C per minute to a final temperature of 280°C and held for 5 minutes. Initial injector temperature was 70° and was programmed to 280° at 300°/min immediately after injection. The GC carrier gas was helium at a linear velocity of 37 cm/sec. Detection limits of the PAHs are reported in Table S-7.

Procedure for Lipid Determination

As synthetic organic concentrations in organisms may vary with lipid content, it is customary to provide lipid data when reporting tissue concentrations. A thoroughly homogenized sample weighing approximately 5 g (wet weight) is macerated and dried with anhydrous granular Na_2SO_4. The dried sample is transferred to a blender with 150 ml of petroleum ether and blended for two minutes at high speed. The liquid is vacuum-filtered into a 250 ml filter flask through a 10 cm Buchner funnel containing Whatman #1 filter paper. The sample is blended once more with an additional 150 ml of petroleum ether and filtered. The filtrate is concentrated to approximately 25 ml with heat (steam bath) and nitrogen steam. The remaining filtrate is then quantitatively transferred into a 50 ml pre-weighed planchet. The petroleum ether is evaporated, the planchet containing the residue is reweighed, and the percent lipid is calculated.

TABLE S-1

Toxic Substances Monitoring Program

1991 Digestion Techniques and Detection Limits in Fish Tissue

Element	Digestion Techniques	Instrumental Analysis	Detection Limits (ug/g wet weight)
Arsenic	Dry Ash w/$Mg(NO_3)_2 \cdot 6H_2O$	$NaBH_4$ Reduction A.A.	0.05
Mercury	HNO_3 reflux	Cold Vapor A.A.	0.02
Copper	HNO_3 reflux	Flame A.A.	0.02
Zinc	$HN0_3$ reflux	Flame A.A.	0.05
Cadmium	HNO_3 reflux	Graphite Furnace (Ammonium phosphate/magnesium nitrate)	0.01
Chromium	HNO_3 reflux	Graphite Furnace	0.02
Lead	HNO_3 reflux	Graphite Furnace (Ammonium phosphate/magnesium nitrate)	0.10
Nickel	HNO_3 reflux	Graphite Furnace	0.10
Selenium	Dry Ash w/$Mg(NO_3)_2 \cdot 6H_2O$	$NaBH_4$ Reduction A.A.	0.05
Silver	HNO_3 reflux	Graphite Furnace	0.02

TABLE S-2

Toxic Substances Monitoring Program

Results of Duplicate Sample Analysis: 1991 Trace Metal Quality Control

(ug/g wet weight)

Station Number	Station Name	Code*	Species	Tissue	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
515.40.31	Feather River/D/S Oroville Res.		SKR	F						0.31				
515.40.31	Feather River/D/S Oroville Res.		SKR	F						0.30				
515.40.31	Feather River/D/S Oroville Res.		SKR	F						0.34				
515.40.31	Feather River/D/S Oroville Res.		SKR	F						0.35				
519.22.04	Sacramento R/U/S I-5 Overcross		PACI	F						0.09				
519.22.04	Sacramento R/U/S I-5 Overcross		PACI	F						0.08				
510.00.30	Sacramento River/Hood		PACI	F	0.20							0.14		
510.00.30	Sacramento River/Hood		PACI	F	0.18							0.14		
510.00.30	Sacramento River/Hood		PACI	F		0.05	0.02	11.	<0.1		<0.1		0.02	14.
510.00.30	Sacramento River/Hood		PACI	F		0.05	0.02	11.	<0.1		<0.1		0.02	14.
510.00.30	Sacramento River/Hood		WCF	F						0.54				
510.00.30	Sacramento River/Hood		WCF	F						0.54				
723.10.02	New River/Westmorland		CCF	F								1.0		
723.10.02	New River/Westmorland		CCF	F								1.0		
723.10.58	New River/International Boundary		CP	F						0.47				
723.10.58	New River/International Boundary		CP	F						0.46				
728.00.90	Salton Sea/South		ORC	L	2.0	<0.01	<0.02	18.	<0.1		<0.1		0.08	34.
728.00.90	Salton Sea/South		ORC	L	2.1	<0.01	<0.02	17.	<0.1		<0.1		0.08	34.
309.82.08	Lake Nacimiento/Las Tablas		WHB	F						1.3				
309.82.08	Lake Nacimiento/Las Tablas		WHB	F						1.3				
111.63.14	Lake Pillsbury		LMB	L	0.07									
111.63.14	Lake Pillsbury		LMB	L	0.07									
402.10.02	Ventura River		CP	W	<0.05	0.05	0.07	0.82	<0.1		<0.1	0.54	<0.02	43.
402.10.02	Ventura River		CP	W	<0.05	0.06	0.08	0.83	<0.1		<0.1	0.55	<0.02	41.
405.21.16	Los Angeles R/Sepulveda Basin		GF	F						0.08		0.51		
405.21.16	Los Angeles R/Sepulveda Basin		GF	F						0.08		0.51		

* Tables 2, 3, and 4 list code names for species. L = Liver. F = Filet. W = Whole Body.

TABLE S-2

Toxic Substances Monitoring Program

Results of Duplicate Sample Analysis: 1991 Trace Metal Quality Control

(ug/g wet weight)

Station Number	Station Name	Code*	Species	Tissue	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
903.12.06	Keys Creek		GSF	F								0.60		
903.12.06	Keys Creek		GSF	F								0.61		
903.17.07	San Luis Rey River/HWY 15		LMB	F						0.08				
903.17.07	San Luis Rey River/HWY 15		LMB	F						0.07				
204.30.11	Alameda Creek/Niles Canyon Road		SCP	W		0.01	0.12	1.9	<0.1		0.2		<0.02	17.
204.30.11	Alameda Creek/Niles Canyon Road		SCP	W		0.01	0.10	2.6	<0.1		0.1		<0.02	17.
728.00.03	Reservation Main Drain		TLZ	F								0.20		
728.00.03	Reservation Main Drain		TLZ	F								0.21		
405.52.01	Puddingstone Reservoir		LMB	L	0.67	0.15	<0.02	6.5	<0.1		<0.1		<0.02	19.
405.52.01	Puddingstone Reservoir		LMB	L	0.66	0.15	<0.02	6.9	<0.1		<0.1		<0.02	19.
105.50.35	Beaughton Creek/D/S HWY 97 Bridge		BN	F						<0.02				
105.50.35	Beaughton Creek/D/S HWY 97 Bridge		BN	F						<0.02				
207.10.90	Suisun Bay		WST	L	1.5	1.	0.05	51.	<0.1		1.2		0.80	63.
207.10.90	Suisun Bay		WST	L	1.5	1.	0.05	52.	<0.1		1.2		0.77	63.
403.11.91	Mugu Lagoon		GSS	F								0.39		
403.11.91	Mugu Lagoon		GSS	F								0.39		
403.11.91	Mugu Lagoon		GSS	L	21.	3.5	0.02	3.4	<0.1		<0.1		0.67	14.
403.11.91	Mugu Lagoon		GSS	L	21.	3.5	0.02	3.3	<0.1		<0.1		0.67	15.
114.32.00	Lake Mendocino		LMB	F						0.32				
114.32.00	Lake Mendocino		LMB	F						0.33				
801.11.96	Peters Canyon Channel		PRS	W	0.10							1.2		
801.11.96	Peters Canyon Channel		PRS	W	0.10							1.3		
110.00.90	McDaniel Slough		STB	W	0.36	<0.01	0.22	3.6	<0.1		0.4	0.22	0.03	37.
110.00.90	McDaniel Slough		STB	W	0.36	<0.01	0.16	3.5	<0.1		0.4	0.22	0.03	38.
205.50.94	Stevens Creek		RBT	F								0.88		
205.50.94	Stevens Creek		RBT	F								0.88		
635.20.04	Donner Lake		KOK	L		0.04	<0.02	120.	<0.1		<0.1		0.49	41.
635.20.04	Donner Lake		KOK	L		0.04	<0.02	130.	<0.1		<0.1		0.52	41.

* Tables 2, 3, and 4 list code names for species. L = Liver. F = Filet. W = Whole Body.

TABLE S-2

Toxic Substances Monitoring Program

Results of Duplicate Sample Analysis: 1991 Trace Metal Quality Control

(ug/g wet weight)

Station Number	Station Name	Code*	Species	Tissue	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
304.12.90	Schwann Lake		LMB	W	0.08							0.15		
304.12.90	Schwann Lake		LMB	W	0.08							0.14		
603.20.41	Sabrina Lake		BN	F						0.10				
603.20.41	Sabrina Lake		BN	F						0.11				
603.20.24	Bishop Creek Canal/D/S Bishop		BN	F						0.12				
603.20.24	Bishop Creek Canal/D/S Bishop		BN	F						0.10				
603.20.24	Bishop Creek Canal/D/S Bishop		BN	L	0.13	0.02	0.02	230.	<0.1		<0.1		0.38	32.
603.20.24	Bishop Creek Canal/D/S Bishop		BN	L	0.14	0.01	0.02	240.	<0.1		<0.1		0.39	33.
603.30.05	Haiwee Reservoir		SMB	F						0.12				
603.30.05	Haiwee Reservoir		SMB	F						0.13				
626.80.03	Little Rock Creek Reservoir		BLB	F						0.31		0.07		
626.80.03	Little Rock Creek Reservoir		BLB	F						0.28		0.06		
626.80.03	Little Rock Creek Reservoir		BLB	L	<0.05	<0.01	<0.02	2.5	<0.1		<0.1		<0.02	20.
626.80.03	Little Rock Creek Reservoir		BLB	L	<0.05	0.01	<0.02	2.3	<0.1		<0.1		<0.02	20.
628.20.02	Silverwood Lake		LMB	F								0.39		
628.20.02	Silverwood Lake		LMB	F								0.39		
405.12.00	Alamitos Bay		CCB	F						0.05				
405.12.00	Alamitos Bay		CCB	F						0.05				
304.13.92	Aptos Creek		PCP	W		0.03	0.06	0.98	<0.1	0.14	<0.1		<0.02	17
304.13.92	Aptos Creek		PCP	W		0.03	0.07	0.98	<0.1	0.13	<0.1		<0.02	17.
309.82.08	Lake Nacimiento/Las Tablas		Sed		4.1	0.41	63.	18.	12.	0.48	67.	0.34	0.07	53
309.82.08	Lake Nacimiento/Las Tablas		Sed		4.1	0.56	68.	18.	13.	0.48	68.	0.32	0.08	54.
309.82.08	Lake Nacimiento/Las Tablas		Sed			0.52	69.	20.	13.		67.		0.07	58.
309.82.04	Lake Nacimiento/Dip Creek		Sed			0.37	44.	10.	14.	0.09	39.		<0.04	36.
309.82.04	Lake Nacimiento/Dip Creek		Sed			0.36	46.	15.	15.	0.10	38.		<0.04	38.
309.82.04	Lake Nacimiento/Dip Creek		Sed			0.37	45.	11.	15.		37.		<0.04	35.
307.00.01	Carmel Lagoon		Sed			0.23	4.0	2.3	0.57	0.03	2.5		<0.04	8.0
307.00.01	Carmel Lagoon		Sed			0.16	3.6	2.0	0.76	0.03	2.4		<0.04	8.6
307.00.01	Carmel Lagoon		Sed			0.19	4.3	2.7	0.74		3.6		<0.04	8.9
106.40.12	Carrville Pond		Sed			0.07	320.	62.	0.90	0.11	790.		0.06	25.
106.40.12	Carrville Pond		Sed			0.07	320.	59.	0.90	0.10	750.		0.07	25.
106.40.12	Carrvelle Pond		Sed			<0.03	330.	62.	0.79		760.		0.05	27.

* Tables 2, 3, and 4 list code names for species. L = Liver. F = Filet. W = Whole Body.

TABLE S-3
Toxic Substances Monitoring Program
1991 Trace Metal Analysis of Reference Materials (ug/g dry weight)*

REFERENCE MATERIAL**	AG	AS	CD	CR	CU	HG	NI	PB	SE	ZN
NBS-1577a (Bovine Liver)		0.047±0.015 (0.047±0.006)							0.73±0.10 (0.71±0.07)	
DOLT-1 (Dogfish Liver)			4.47±0.56 (4.18±0.28)	0.44±0.24 (0.40±0.07)	20.3±1.5 (20.8±1.2)		0.27±0.14 (0.26±0.06)	1.40±0.68 (1.36±0.29)		94.1±5.2 (92.5±2.3)
DORM-1 (Dogfish Muscle)		17.2±0.36 (17.7±2.1)	0.106±0.037 (0.086±0.012)	3.92±1.7 (3.60±0.40)	4.57±1.5 (5.22±0.33)	0.787±0.11 (0.798±0.07)	1.20±0.32 (1.20±0.30)	0.37±0.18 (0.40±0.12)	1.61±0.19 (1.62±0.12)	19.5±1.2 (21.3±1.0)
NBS 1566a (Oyster)	1.50±0.40 (1.63±0.15)		4.23±0.67 (4.15±0.38)	1.16±0.50 (1.43±0.46)	63.1±2.3 (66.3±4.3)		2.19±0.75 (2.25±0.44)	0.315±0.100 (0.371±0.014)		835±48. (830±57)

* Sample values are given first, followed by reference values in parentheses, both values include 95% confidence interval.

** NBS refers to the National Bureau of Standards; DOLT-1 and DORM-1 are from the National Research Council of Canada; NIES 6 is from the National Institute for Environmental Studies of Japan.

TABLE S-4

Toxic Substances Monitoring Program
Distribution of Synthetic Organic Compounds Among
Four Fractions of a Standard Florisil[R] Column

(0%) Fraction 1	(6%) Fraction 2	(15%) Fraction 3
HCH, alpha*	HCH, alpha*	dacthal
aldrin	HCH, beta	diazinon
chlordene, alpha	HCH, gamma	dichlorobenzophenone, p,p'
chlordene, gamma	HCH, delta	dieldrin
DDE, o,p'	chlorbenside	endosulfan I
DDE, p,p'	cis-chlordane	endrin
DDMU, p,p'	trans-chlordane	malathion
DDT, o,p'	chlorpyrifos	oxadiazon
DDT, p,p'*	DDD, o,p'	parathion, ethyl
heptachlor	DDD, p,p'	parathion, methyl
hexachlorobenzene	DDMS, p,p'	tetradifon (tedion)
trans-nonachlor	DDT, p,p'*	
PCB 1248	dicofol (kelthane)	
PCB 1254	ethion	
PCB 1260	heptachlor epoxide	
	methoxychlor	(50%) Fraction 4
	cis-nonachlor	
	oxychlordane	endosulfan II
	toxaphene	endosulfan sulfate

* Found in both 0% and 6% fractions.

TABLE S-5

Toxic Substances Monitoring Program
Synthetic Organic Compounds Analyzed
and Their Detection Limits in Flesh

Compound (ng/g, ppb wet weight)	Detection Limit
aldrin	5
chlorbenside	50
cis-chlordane	5
trans-chlordane	5
chlordene, alpha	5
chlordene, gamma	5
chlorpyrifos	10
dacthal	5
DDD, o,'p	10
DDD, p,p'	10
DDE, o,p'	10
DDE, p,p'	5
DDMS, p,p'	30
DDMU,p,p'	15
DDT, o,p'	10
DDT, p,p'	10
diazinon	50
dichlorobenzophenone-p,p'	30
dicofol (Kelthane)	100
dieldrin	5
endosulfan I	5
endosulfan II	70
endosulfan sulfate	85
endrin	15
ethion	20
HCH, alpha	2
HCH, beta	10
HCH, gamma	2
HCH, delta	5
heptachlor	5
heptachlor epoxide	5
HCB	2
methoxychlor	15
cis-nonachlor	5
trans-nonachlor	5
oxadiazon	5
oxychlordane	5
parathion, ethyl	10
parathion, methyl	10
PCB 1248	50
PCB 1254	50
PCB 1260	50
pentachlorophenol*	2
2,3,5,6-tetrachlorophenol*	2
tetradifon (Tedion)	10
toxaphene	100

* Analyzed only when requested.

TABLE S-6

Toxic Substances Monitoring Program

Results of Duplicate Sample Analysis: 1991 Synthetic Organic Compounds Quality Control

(ng/g wet weight)

Station Name	Newport Bay		Calleguas Creek		Conejo Creek		Alameda Creek/ Niles Canyon Road	
Station No.	801.11.97		403.12.06		403.12.07		204.30.11	
Species*	SSB		GF		GAM		SCP	
REPLICATE	1	2	1	2	1	2	1	2
COMPOUNDS								
cis-chlordane							8.2	7.2
cis-nonachlor							9.3	8.6
gamma-chlordene								
oxychlordane					13.	14.		
trans-chlordane								
trans-nonachlor			5.9	9.2	37.	45.	<5.0	7.3
chlorpyrifos					<10.	10.		
dacthal			30.	24.	120.	120.		
DDD, o,p'			12.	11.	10.	12.		
DDD, p,p'	12.	18.	100.	84.	95.	95.		
DDE, o,p'					29.	17.		
DDE, p,p'	98.	95.	950.	1100.	1700.	1800.	10.	13.
DDT, o,p'			20.	26.	56.	56.		
DDT, p,p'			88.	91.	480.	450.		
DDMU,p,p'			<15.	26.	52.	54.		
diazinon					64.	70.		
dieldrin	<5.0	6.2			39.	34.		
endosulfan I								
endosulfan II								
endosulfan sulfate					210.	210.		
hexachlorobenzene								
alpha-HCH								
gamma-HCH					7.9	8.4		
heptachlor epoxide								
oxadiazon	<5.0	9.5					21.	26.
PCB 1248					<50.	54.		
PCB 1254	78.	71.	<50.	79.	302.	130.		
PCB 1260	57.	53.			54.	53.		
toxaphene			440.	340.	2000.	1700.		
percent moisture	76.4	76.5	80.0	79.9	76.2	76.8	77.3	77.0
percent lipid	1.52	1.64	0.397	0.295	4.04	4.02	4.42	4.86

* Tables 2, 3, and 4 list code names for species.

< Below detection limit.

TABLE S-6 (continued)
Toxic Substances Monitoring Program
Results of Duplicate Sample Analysis: 1991 Synthetic Organic Compounds Quality Control
(ng/g wet weight)

Station Name	Suisun Bay		Huntington Harbor/ Anaheim Bay		Lost River/Tule Lake		Donner Lake	
Station No.	207.10.90		801.11.00		105.92.01		635.20.04	
Species*	WST		WCK		TC		KOK	
REPLICATE	1	2	1	2	1	2	1	2
COMPOUNDS								
cis-chlordane			10.	10.			<5.0	5.0
cis-nonachlor			11.	12.			10.	11.
gamma-chlordene								
oxychlordane							7.8	9.0
trans-chlordane			6.8	6.9				
trans-nonachlor			15.	15.			8.4	8.4
chlorpyrifos								
dacthal								
DDD, o,p'								
DDD, p,p'			28.	32.				
DDE, o,p'								
DDE, p,p'	31.	19.	340.	390.	<5.0	5.5	23.	26.
DDT, o,p'								
DDT, p,p'								
DDMU,p,p'								
dieldrin								
endosulfan I								
endosulfan II								
endosulfan sulfate								
hexachlorobenzene								
alpha-HCH								
gamma-HCH								
heptachlor epoxide								
oxadiazon								
PCB 1254			120.	150.			100.	110.
PCB 1260	<50.	60.	140.	160.			65.	74.
toxaphene								
percent moisture	81.8	81.5	75.9	76.2	79.5	79.4	78.0	78.1
percent lipid	0.270	0.229	3.73	3.54	3.00	3.17	3.03	3.15

* Tables 2, 3, and 4 list code names for species.
< Below detection limit.

TABLE S-6 (continued)
Toxic Substances Monitoring Program
Results of Duplicate Sample Analysis: 1991 Synthetic Organic Compounds Quality Control
(ng/g wet weight)

Station Name	Santa Maria River/ Mouth	
Station No.	312.10.00	
Species*	Sed	
REPLICATE	1	2
COMPOUNDS		
cis-chlordane		
cis-nonachlor		
gamma-chlordene		
oxychlordane		
trans-chlordane		
trans-nonachlor		
chlorpyrifos		
dacthal		
DDD, o,p'		
DDD, p,p'		
DDE, o,p'		
DDE, p,p'		
DDT, o,p'		
DDT, p,p'		
DDMU,p,p'		
dieldrin		
endosulfan I		
endosulfan II		
endosulfan sulfate		
hexachlorobenzene		
alpha-HCH		
gamma-HCH		
heptachlor epoxide		
oxadiazon		
PCB 1254		
PCB 1260		
toxaphene		
percent moisture	68.3	69.4
percent lipid		

* Tables 2, 3, and 4 list code names for species.

TABLE S-7

Toxic Substances Monitoring Program
Polynuclear Aromatic Hydrocarbons (PAHs) Analyzed
and Their Detection Limits in Flesh

Compound	Detection Limit (ng/g, ppb wet weight) 1991
naphthalene	100
1-methylnaphthalene	100
2-methylnaphthalene	100
biphenyl	100
2,6-dimethylnaphthalene	100
acenaphthylene	100
acenaphthene	100
2,3,5-trimethylnaphthalene	100
fluorene	100
phenanthrene	100
anthracene	100
1-methylphenanthrene	100
fluoranthene	100
pyrene	100
benz[a]anthracene	100
chrysene	100
benzo[b]fluoranthene	100
benzo[k]fluoranthene	100
benzo[e]pyrene	100
benzo[a]pyrene	100
perylene	100
indeno[1,2,3-cd]pyrene	100
dibenz[a,h]anthracene	100
benzo[ghi]perylene	100

APPENDIX T

Median International Standards

Median International Standards

In 1982, the Food and Agricultural Organization (FAO) of the United Nations conducted a survey of standards and legal limits for metals including mercury, pesticides, and other contaminants in fishery products. This was in response to frequent inquiries from institutions and companies active in international commerce that found it difficult finding such information.

The FAO surveyed nations that were members of the FAO as well as those who were not. Most nations cooperated with the survey and, in certain other cases, the standards were drawn from other sources. The FAO took all of the responses and presented them in a report entitled "Compilation of Legal Limits for Hazardous Substances in Fish and Fishery Products" (Nauen 1983). Most of the limits were presented in a standard format and in standard units of fresh or live weight. Exceptions are clearly noted.

Nearly all of the standards for pesticides were from the United States (FDA standards). However, with the exception of mercury, the United States has no standards for trace metals in fishery products. It is this very lack of standards that makes interpretation of some of the TSMP findings difficult.

Table T-1 summarizes the standards and guidelines for metals from the FAO report. The table notes whether the standards are for freshwater fish, marine fish, shellfish, or a combination of these. When more than one standard was listed by the FAO report, those values closest to a standard for "fresh weight, edible portion" were chosen. Exceptions are clearly noted in the table. Standards for each element are arranged in ascending order. The country of origin and the approximate date of adoption are also noted.

As can be seen in Table T-1, some of the standards are not truly for edible portion, fresh weight. For example, some standards refer to canned products or protein. In the case of India, the standards are on a dry weight basis. If the Indian standards were stated in fresh weight terms, they would be approximately one fifth or one sixth of the stated standard.

Table T-1 has many striking features. One feature is that most of the standards are surprisingly similar. Another feature is the large number of countries that have standards for metals. Also, although many of these countries are less developed nations, the standards adopted by these nations do not differ from those of the more developed nations.

The standards were not summarized for mercury because there is a USFDA standard of 1.0 ppm for methyl mercury in the edible portions of fish and shellfish. This was, incidentally, the highest limit set by any nation in the FAO study. The great majority of nations have set a mercury standard of 0.5 ppm.

Median International Standards presented in Table 7 were calculated from the standards listed in Table T-1. The median standard was chosen for use for several reasons. The median is less influenced than the mean by outliers in the data. Also, direct comparisons of standards for fresh versus canned

TABLE T-1

International Standards for Trace Elements in Fish and Molluscs

Element	Standard	Freshwater Fish	Marine Fish	Molluscs/ Shellfish	Country	Approximate Date of Adoption
Antimony	1.0 ppm	x	x	x	Hong Kong	1983
	1.0 ppm	x	x	x	New Zealand	1971
	1.5 ppm	x	x	x	Australia	1982
Arsenic	0.1 ppm	x	x	x	Venezuela	-
	1.0 ppm	x	x	x	Chile	-
	1.0 ppm	d	d	x	India	-
	1.0 ppm	x	x	x	New Zealand	1971
	1.0 ppm	e	e	e	United Kingdom	1959
	1.4 ppm	x			Hong Kong	1983
	1.5 ppm	x	x	x	Australia	1982
	1.5 ppm	c	c	c	Thailand	1982
	3.5 ppm	p	p		Canada	1976
	5.0 ppm	x	x	x	Finland	1980
	5.0 ppm	x	x	x	Zambia	1976
Cadmium	0.05 ppm	x	x		Netherlands	-
	0.1 ppm	c	c	c	Switzerland	1982
	0.1 ppm	r	x		Venezuela	-
	0.2 ppm	x	x		Australia	1982
	0.3 ppm	r	r		Finland	-
	0.5 ppm	x			W. Germany	1979
	1.0 ppm	x			Netherlands	-
	1.0 ppm	x	x		New Zealand	1971
	2.0 ppm	x			Australia	1982
	2.0 ppm	x	x	x	Hong Kong	1983
Chromium	1.0 ppm	x	x	x	Hong Kong	1983
Copper	10.0 ppm	x	x	x	Chile	-
	10.0 ppm	d	d		India	-
	10.0 ppm	x	x		Venezuela	-
	20.0 ppm	c	c	c	Thailand	1982
	20.0 ppm	g	g	g	United Kingdom	1956
	30.0 ppm	x	x	x	Australia	1982
	30.0 ppm	x	x	x	New Zealand	1971
	100.0 ppm	x	x		Zambia	1976
Fluoride	150.0 ppm	p	p		Canada	1979
Fluorine	10.0 ppm	x	x		New Zealand	1971
	25.0 ppm	x	x		Zambia	1976

p - in protein
e - except where natural levels are higher
c - in metal containers
g - recommended guideline
d - dry weight basis
r - revised limit (proposed)

TABLE T-1 (continued)

International Standards for Trace Elements in Fish and Molluscs

Element	Standard	Freshwater Fish	Marine Fish	Molluscs/ Shellfish	Country	Approximate Date of Adoption
Lead	0.5 ppm	p	p		Canada	1979
	0.5 ppm	x			W. Germany	1979
	0.5 ppm	x	x		Netherlands	-
	1.0 ppm	x	x	x	Sweden	1979
	1.0 ppm	c	c	c	Switzerland	1982
	1.0 ppm	c	c	c	Thailand	1982
	2.0 ppm	x	x		Australia	1982
	2.0 ppm	x	x	x	Chile	1982
	2.0 ppm	x			Finland	1980
	2.0 ppm	x			Italy	1978
	2.0 ppm	x			Netherlands	-
	2.0 ppm	x	x		New Zealand	-
	2.0 ppm	l	l		Sweden	1979
	2.0 ppm	x	x		United Kingdom	1980
	2.0 ppm	x	x		Venezuela	-
	2.5 ppm	x			Australia	1982
	5.0 ppm	d	d		India	-
	6.0 ppm	x	x	x	Hong Kong	1983
	10.0 ppm	x	x		Zambia	1976
Mercury	International Standards for Mercury range from 0.1 ppm to 1.0 ppm. Twenty-eight countries have established standards for Mercury. The U. S. Food and Drug Administration have set an action level of 1.0 ppm in the edible portion of fish and molluscs. The median international standard is 0.5 ppm.					
Selenium	0.3 ppm	x	x	x	Chile	1982
	2.0 ppm	x	x		Australia	1982
	2.0 ppm	x	x		New Zealand	1971
Tin	50.0 ppm	x	x		Australia	1982
	100.0 ppm	x	x		Venezuela	-
	150.0 ppm	c	c	c	Finland	1979
	150.0 ppm	x	x		New Zealand	1977
	230.0 ppm	x	x	x	Hong Kong	1983
	250.0 ppm	d	d		India	-
	250.0 ppm	x	x		Thailand	1982
	250.0 ppm	g,c	g,c	g,c	United Kingdom	1973
Zinc	40.0 ppm	x	x	x	Australia	1982
	40.0 ppm	x	x		New Zealand	1971
	50.0 ppm	d	d		India	-
	50.0 ppm	g	g		United Kingdom	1953
	100.0 ppm	x	x	x	Chile	1982
	100.0 ppm	x	x		Zambia	1976

p - in protein
e - except where natural levels are higher
c - in metal containers
l - in liver
g - recommended guideline
d - dry weight basis
r - revised limit (proposed)

versus dry can be misleading. By using median standards, these misleading comparisons can be more easily avoided. In most cases, the Median International Standard is actually a standard set by one or more nations rather than an average value not actually set by any country. The median was calculated as follows. All standards or guidelines (with the exception of the Indian standards which are based on dry weight) were considered to be more-or-less equivalent. For the purposes of calculating the median, the Indian standards were divided by five. The median was calculated as the middle value of all of the standards (e.g., the fourth of seven values arranged in ascending order). In a few cases, the number of standards was even. In this event, the two mid-values were averaged (most were not different). None of the adjusted dry-weight standards from India ended up as a median or as part of a mid-value pair.

For obvious reasons, the Median International Standards can only be used to provide a general idea of what other nations have chosen to use as a standard. The range of all values is listed in Table 7 as a reminder of this. However, with the lack of American standards, Median International Standards can provide a guidepost for those responsible for interpreting trace metal findings in fish and shellfish tissue.

APPENDIX U

Elevated Data Levels

Elevated Data Levels (EDL)

An EDL is defined for the purposes of the TSMP as that concentration of a toxic substance in a fish tissue that equals or exceeds a specified percentile (such as 85 percent) of all TSMP measurements of the toxic substance in the same fish and tissue type between 1978 and 1991. EDLs were determined as follows:

(1) All TSMP data from 1978 through 1991 were pooled by fish and tissue type, (2) The concentrations of each toxicant were ranked from highest to lowest concentration down to, and including, instances when a chemical was not detected, (3) The cumulative frequency of occurrence and percentile ranking for all concentrations were calculated, (4) The concentration of the toxic substance representing the 85^{th} percentile was identified and designated the 85 percent EDL or EDL 85, and (5) The concentration of the toxic substance representing the 95^{th} percentile was identified and designated the 95 percent EDL or EDL 95. The EDL 85 is that concentration of a toxic substance that equals or exceeds 85 percent of all TSMP measurements of the toxic substance in the same fish and tissue type between 1978 and 1991. The EDL 95 is that concentration of a toxic substance that equals or exceeds 95 percent of all TSMP measurements of the toxic substance in the same fish and tissue type between 1978 and 1991. EDLs for trace metals are summarized in Tables 8 through 10. EDLs for synthetic organic substances are summarized in Tables 11 through 16.

Because EDLs are based on the relative ranking of each measurement, rather than a percentage of the highest concentration obtained, they are not influenced by unusually high (anomalous) toxicant values. This characteristic of EDLs is especially desirable in the evaluation of synthetic organic toxicants where the highest concentration may be as much as ten times the next highest concentration. EDLs do, however, reflect the biases of the data upon which they have been based. For instance, EDLs for mercury and selenium in California fish show that a large number of samples for each exceed criteria. However, much of the mercury and selenium data collected by TSMP were in locations known to have elevated mercury and selenium levels, and often large numbers of fish were analyzed from those locations to determine the extent of the problem.

Because they are based on TSMP data rather than an absolute number external to the TSMP, EDLs, when exceeded, can provide a sensitive first indication of elevated toxicant levels in California waters. As such, EDLs fulfill the monitoring function of the TSMP effectively. In addition, EDLs may be expressed in wet weight or lipid weight to eliminate data variability due to lipid content and to conform to scientific literature relevant to fish monitoring programs worldwide. However, EDLs do not assess adverse impacts, nor do they necessarily represent concentrations that may be damaging to the fish or to a human consuming the fish. They do not directly relate to Maximum Tissue Residue levels (MTRLs), FDA action levels, NAS guidelines, or Median International Standards (MIS).