LIST OF TABLES

Table 2-1 – Test Methods for Sediment (Chemistry)
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Analytical group	*Analyte*	*CAS number*	*Project objective QL*[1] (ug/kg)	*Achievable QL*[2] (ug/kg)
EPA Method 8270C or 8270SIM: SVOCs by GC/MS				
DDTs	*p,p'*-DDT	50-29-3	5	2.5
	o,p'-DDT	789-02-6	5	2.5
	p,p'-DDE	72-54-8	5	2.5
	o,p'-DDE	53-19-0	5	2.5
	p,p'-DDD	72-55-9	5	2.5
	o,p'-DDD	3424-82-6	5	2.5
	p,p'-DDMU	1022-22-6	5	2.5
	p,p'-DDNU	2642-81-1	5	2.5
PCBs (by congener)	8	34883-43-7	5	2.5
	18	37680-65-2	5	2.5
	28	7012-37-5	5	2.5
	31[3]	16606-02-3	5	2.5
	37[3]	38444-90-5	5	2.5
	44	41464-39-5	5	2.5
	49[3]	41464-40-8	5	2.5
	52	35693-99-3	5	2.5
	66	32598-10-0	5	2.5
	70[3]	32598-11-1	5	2.5
	74[3]	32690-93-0	5	2.5
	77	32598-13-3	5	2.5
	81	70362-50-4	5	2.5
	87[3]	38380-02-8	5	2.5
	99[3]	38380-01-7	5	2.5
	101	37680-73-2	5	2.5
	105	32598-14-4	5	2.5
	110[3]	38380-03-9	5	2.5
	114	74472-37-0	5	2.5
	118	31508-00-6	5	2.5
	119[3]	56558-17-9	5	2.5
	123	65510-44-3	5	2.5
	126	57465-28-8	5	2.5
	128	38380-07-3	5	2.5
	138	35065-28-2	5	2.5
	149[3]	38380-04-0	5	2.5
	151[3]	52663-63-5	5	2.5
	153	35065-27-1	5	2.5
	156	38380-08-4	5	2.5
	157	69782-90-7	5	2.5

Table 2-1 – Test Methods for Sediment (Chemistry)
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Analytical group	*Analyte*	*CAS number*	*Project objective QL*[1] (ug/kg)	*Achievable QL*[2] (ug/kg)
PCBs (continued)				
	158[3]	74472-42-7	5	2.5
	167	52663-72-6	5	2.5
	168[3]	59291-65-5	5	2.5
	169	32774-16-6	5	2.5
	170	35065-30-6	5	2.5
	177[3]	52663-70-4	5	2.5
	180	35065-29-3	5	2.5
	183[3]	52663-69-1	5	2.5
	187	52663-68-0	5	2.5
	189	39635-32-9	5	2.5
	194[3]	35694-08-7	5	2.5
	195	52663-78-2	5	2.5
	201[3]	40186-71-8	5	2.5
	203[3]	52663-76-0	5	2.5
	206	40186-72-9	5	2.5
	209	2051-24-3	5	2.5
EPA Method 9060				
TOC	Total Organic Carbon	NA	0.1%	0.05%

Abbreviations

CAS - Chemical Abstracts Service
DDTs - dichlorodiphenyltrichloroethane
GC/MS - Gas chromatography/mass spectrometry
MNR - Monitored natural recovery
NA - Not applicable
OU - Operable Unit
PCBs - Polychlorinated biphenyls
QL - Quantitation limit
SIM - Selective ion monitoring
SVOCs - Semivolatile organic compounds
TOC - Total organic carbon
ug/kg - Micrograms per kilogram

Footnotes

(1) Sediment interim cleanup levels of 230 ug/kg DDT @ 1% TOC and 70 ug/kg PCBs @ 1% TOC have been set for the project (EPA, 2009b). However, because the data collected during the remedial action will be used in evaluating MNR, project objectives have been set much lower.

(2) Achievable QLs are the laboratory reporting limits for a specific analytical method.

(3) PCBs are listed by congener. Additional congeners were analyzed for the 2013 sediment program as compared to the 2009 sediment program in order to standardize the congener list to that of the water and fish programs.

Table 2-2 ─ Common Lists of PCB Congeners
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

PCB congener	*EPA Palos Verdes Shelf expanded list (not including EPA's PSD events)*	*EPA's PSD events at PV Shelf - used by SCCWRP*	*EPA 2009 sediment study*	*Standard list for Sanitation Districts and SCCWRP Bight program*	*MSRP 2002-2004 fish cont. study (regional to SoCal)*	*Dioxin-like congeners (OEHHA, 2011)*	*WHO 2006 advisory (not PV Shelf-specific)*	*WHO 1994 advisory (not PV Shelf-specific)*	*NOAA status & trends 1998*
8	x	x	x		x				x
18	x	x	x	x	x				x
28	x	x	x	x	x				x
31	x				x				
37	x	x		x	x				
44	x	x	x	x	x				x
49	x	x		x	x				
52	x	x	x	x	x				x
66	x	x	x	x	x				x
70	x	x		x	x				
74	x	x		x	x				
77	x	x	x	x	x	x	x	x	x
81	x	x	x	x	x	x	x		
87	x	x		x	x				
99	x	x		x	x				
101	x	x	x	x	x				x
105	x	x	x	x	x	x	x	x	x
110	x	x		x	x				
114	x	x	x	x	x	x	x	x	
118	x	x	x	x	x	x	x	x	x
119	x	x		x	x				
123	x	x	x	x	x	x	x	x	
126	x	x	x	x	x	x	x	x	x
128	x	x	x	x	x				x
138	x	x	x	x	x				x
149	x	x		x	x				
151	x	x		x	x				
153	x	x	x	x	x				x
156	x	x	x	x	x	x	x	x	
157	x	x	x	x	x	x	x	x	
158	x	x	x	x	x				
167	x	x	x	x	x	x	x	x	
168	x	x		x	x				
169	x	x	x	x	x	x	x	x	x
170	x	x	x	x	x	x		x	x
177	x	x		x	x				
180	x	x	x	x	x	x		x	x
183	x	x		x	x				
187	x	x	x	x	x				x
189	x	x	x	x	x	x	x	x	
194	x	x		x	x				
195	x		x		x				x
200		x							
201	x	x		x	x				
203	x				x				
206	x	x	x	x	x				x
209	x	x	x						x
TOTALS	**46**	**44**	**29**	**41**	**45**	**14**	**12**	**13**	**21**

Abbreviations
EPA - United States Environmental Protection Agency
MSRP - Montrose Settlements Restoration Program
NOAA - National Oceanic and Atmospheric Administration
OEHHA - Office of Environmental Health Hazard Assessment (California Environmental Protection Agency)
PCB - polychlorinated biphenyl
POLA/POLB - Port of Los Angeles, Port of Long Beach
PSD - passive sampling device
PV - Palos Verdes
SCCWRP - Southern California Coastal Water Research Project
WHO - World Health Organization

Table 2-3 – Test Methods for Water (High Resolution)
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Target analyte	*Ocean water project decision limit*	*PORL*	*Laboratory EDL*	*Laboratory LOQ*	*Congener co-elutes*
EPA Method 1699: DDTs by HRGC/HRMS					
p,p'-DDT	0.22	0.1	2.5:1 s/n	0.09	NA
o,p'-DDT	NS	0.1	2.5:1 s/n	0.09	NA
p,p'-DDE	0.22	0.1	2.5:1 s/n	0.09	NA
o,p'-DDE	NS	0.1	2.5:1 s/n	0.09	NA
p,p'-DDD	0.31	0.1	2.5:1 s/n	0.09	NA
o,p'-DDD	NS	0.1	2.5:1 s/n	0.09	NA
p,p'-DDMU	NS	1	2.5:1 s/n	0.1	NA
p,p'-DDNU	NS	1	2.5:1 s/n	0.1	NA
EPA Method 1668C: PCBs by HRGC/HRMS (listed by congener number)					
8	NS	0.01	2.5:1 s/n	0.005	
18	NS	0.01	2.5:1 s/n	0.003	30
28	NS	0.01	2.5:1 s/n	0.001	20
31	NS	0.01	2.5:1 s/n	0.001	
37	NS	0.01	2.5:1 s/n	0.001	
44	NS	0.01	2.5:1 s/n	0.002	47/65
49	NS	0.01	2.5:1 s/n	0.001	69
52	NS	0.01	2.5:1 s/n	0.001	
66	NS	0.01	2.5:1 s/n	0.001	
70 & 74	NS	0.01	2.5:1 s/n	0.005	61/76
77	NS	0.01	2.5:1 s/n	0.001	
81	NS	0.01	2.5:1 s/n	0.001	
87 & 119	NS	0.01	2.5:1 s/n	0.005	86/97/109/125
99	NS	0.01	2.5:1 s/n	0.001	83
101	NS	0.01	2.5:1 s/n	0.001	90/113
105	NS	0.01	2.5:1 s/n	0.001	
110	NS	0.01	2.5:1 s/n	0.005	85/115/116/117
114	NS	0.01	2.5:1 s/n	0.001	
118	NS	0.01	2.5:1 s/n	0.001	
123	NS	0.01	2.5:1 s/n	0.001	
126	NS	0.01	2.5:1 s/n	0.001	
128	NS	0.01	2.5:1 s/n	0.001	166
138	NS	0.01	2.5:1 s/n	0.002	129/163
149	NS	0.01	2.5:1 s/n	0.001	147
151	NS	0.01	2.5:1 s/n	0.001	135
153 & 168	NS	0.01	2.5:1 s/n	0.005	
156 & 157	NS	0.01	2.5:1 s/n	0.005	
158	NS	0.01	2.5:1 s/n	0.001	
167	NS	0.01	2.5:1 s/n	0.001	
169	NS	0.01	2.5:1 s/n	0.001	
170	NS	0.01	2.5:1 s/n	0.001	

Table 2-3 – Test Methods for Water (High Resolution)
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Target analyte	*Ocean water project decision limit*	*PORL*	*Laboratory EDL*	*Laboratory LOQ*	*Congener co-elutes*
177	NS	0.01	2.5:1 s/n	0.001	
180	NS	0.01	2.5:1 s/n	0.001	193
183	NS	0.01	2.5:1 s/n	0.001	
187	NS	0.01	2.5:1 s/n	0.001	
189	NS	0.01	2.5:1 s/n	0.001	
194	NS	0.01	2.5:1 s/n	0.001	
195	NS	0.01	2.5:1 s/n	0.001	
201	NS	0.01	2.5:1 s/n	0.001	
203	NS	0.01	2.5:1 s/n	0.001	
206	NS	0.01	2.5:1 s/n	0.001	
209	NS	0.01	2.5:1 s/n	0.005	

Abbreviations

AWQC – Ambient water quality criteria
CAS – Chemical Abstracts Society
EDL – Estimated detection limit
HRGC – High resolution gas chromatography
HRMS – High resolution mass spectrometry
LOQ – Limit of quantitation
NA – Not applicable
NS – No standard available
PCBs – Polychlorinated biphenyls
PORL – Project objective reporting limit
s/n – Signal-to-noise ratio

Notes

1. Concentration units (for project decision limits, LOQs, and PORLs) are nanograms per liter (ng/L).
2. Explanations for EDLs, LOQs, and PORLs were presented in the *Final Quality Assurance Project Plan – Water Sampling, Remedial Action – Monitored Natural Recovery Component, Palos Verdes Shelf, Los Angeles County, California* (Gilbane Federal, 2014).
3. PCB congeners 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, and 189 are dioxin-like congeners (WHO, 2006).

Table 2-4 –Test Methods for Water (PSDs)
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Analytical group	*Analyte*	*CAS number*	*Project objective QL[1]* (ng/L)	*SPME Achievable QL[2]* (ng/L)	*PED Achievable QL[2,3]* (ng/L)
SCCWRP SOPs Chapter 27 and 35 – GC/MS SIM					
DDTs	*p,p'*-DDT	50-29-3	NE	0.20	--
	o,p'-DDT	789-02-6	NE	0.074	--
	p,p'-DDE	72-54-8	NE	0.022	0.0068
	o,p'-DDE	53-19-0	NE	0.011	0.0063
	p,p'-DDD	72-55-9	NE	0.14	0.013
	o,p'-DDD	3424-82-6	NE	0.038	0.0081
	p,p'-DDMU	1022-22-6	NE	0.022	0.013
	p,p'-DDNU	2642-81-1	NE	0.019	0.022
PCBs	8	34883-43-7	NE	0.11	0.0057
(by congener)	18	37680-65-2	NE	0.037	0.0053
	28	7012-37-5	NE	0.027	0.0016
	37	38444-90-5	NE	0.035	0.0012
	44	41464-39-5	NE	0.018	0.0020
	49	41464-40-8	NE	0.014	0.0014
	52	35693-99-3	NE	0.015	0.0014
	66	32598-10-0	NE	0.012	0.00054
	70	32598-11-1	NE	0.012	0.00054
	74	32690-93-0	NE	0.013	0.00055
	77	32598-13-3	NE	0.014	0.00055
	81	70362-50-4	NE	0.014	0.00046
	87	38380-02-8	NE	0.016	0.0011
	99	38380-01-7	NE	0.014	0.00073
	101	37680-73-2	NE	0.012	0.00073
	105	32598-14-4	NE	0.0094	0.00047
	110	38380-03-9	NE	0.0099	0.00058
	114	74472-37-0	NE	0.011	0.00040
	118	31508-00-6	NE	0.011	0.00035
	119	56558-17-9	NE	0.011	0.00040
	123	65510-44-3	NE	0.011	0.00034
	126	57465-28-8	NE	0.057	0.00031
	128	38380-07-3	NE	0.022	0.0014
	138	35065-28-2	NE	0.020	0.00030
	149	38380-04-0	NE	0.016	0.0013
	151	52663-63-5	NE	0.0095	0.0013
	153/168	35065-27-1/59291-65-5	NE	0.011	0.00066
	156	38380-08-4	NE	0.080	0.00041
	157	69782-90-7	NE	0.025	0.00044
	158	74472-42-7	NE	0.015	0.00050
	167	52663-72-6	NE	0.026	0.00031

Table 2-4 –Test Methods for Water (PSDs)
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Analytical group	*Analyte*	*CAS number*	*Project objective QL*[1] (ng/L)	*SPME Achievable QL*[2] (ng/L)	*PED Achievable QL*[2,3] (ng/L)
PCBs (continued)	169	32774-16-6	NE	0.038	0.00022
	170	35065-30-6	NE	0.091	0.00056
	177	52663-70-4	NE	0.058	0.00091
	180	35065-29-3	NE	0.069	0.00047
	183	52663-69-1	NE	0.052	0.00064
	187	52663-68-0	NE	0.013	0.00064
	189	39635-32-9	NE	0.082	0.00013
	194	35694-08-7	NE	0.17	0.00026
	200	52663-73-7	NE	0.022	0.00071
	201	40186-71-8	NE	0.20	0.00049
	206	40186-72-9	NE	0.23	0.00015
	209	2051-24-3	NE	0.0068	0.00017

Abbreviations

CAS	-	Chemical Abstracts Service
DDTs	-	dichlorodiphenyltrichloroethane and its byproducts
GC/MS	-	gas chromatography/mass spectrometry
MNR	-	monitored natural recovery
NA	-	not applicable
NE	-	not established
ng/L	-	nanograms per liter
OU	-	Operable Unit
PCBs	-	polychlorinated biphenyls
PED	-	polyethylene device
PSD	-	passive sampling device
QL	-	quantitation limit
SCCWRP	-	Southern California Coastal Water Research Project
SIM	-	selective ion monitoring
SOP	-	standard operating procedure
SPME	-	solid-phase microextraction

Footnotes

(1) The PSD QAPP did not specify project quantitation limits for the analytical laboratory.

(2) Achievable QLs are the laboratory reporting limits for a specific analytical method.

(3) A conservative QL is presented using the maximum sample-specific reporting limit calculated for PEDs based on the observed fraction of equilibrium between sampler and water at a representative station.

Table 2-5 - Planned Fish Collections
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Collection area	*Number of barred sand bass*	*Number of white croaker*
Zone 1	30	30
Zone 2	10	30
Zone 3	30	30
Breakwater Zone	30	30
Huntington Flats	30	0
Redondo Flats	30	30
Ventura Flats	0	30
Total	160	180

Table 2-6 – Test Methods for Fish
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Target Analyte	*Fish tissue project decision limit*	*PORL*	*Laboratory EDL*	*Laboratory LOQ*	*Congener co-elutes*
EPA Method 1699: DDTs by HRGC/HRMS					
p,p'-DDT	625	100	2.5:1 s/n	40	NA
o,p'-DDT	625	100	2.5:1 s/n	20	NA
p,p'-DDE	625	100	2.5:1 s/n	40	NA
o,p'-DDE	625	100	2.5:1 s/n	40	NA
p,p'-DDD	625	100	2.5:1 s/n	20	NA
o,p'-DDD	625	100	2.5:1 s/n	20	NA
p,p'-DDMU	625	200	2.5:1 s/n	200	NA
p,p'-DDNU	625	100	2.5:1 s/n	40	NA
EPA Method 1668C: PCBs by HRGC/HRMS (listed by congener number)					
8	NS	2.5	2.5:1 s/n	1.0	5
18	NS	2.5	2.5:1 s/n	0.5	
28	NS	2.5	2.5:1 s/n	0.5	
31	NS	2.5	2.5:1 s/n	0.5	
37	NS	2.5	2.5:1 s/n	0.5	
44	NS	2.5	2.5:1 s/n	0.5	
49	NS	2.5	2.5:1 s/n	1.0	43
52	NS	2.5	2.5:1 s/n	1.0	69
66	NS	2.5	2.5:1 s/n	1.0	76
70	NS	2.5	2.5:1 s/n	1.0	61
74	NS	2.5	2.5:1 s/n	0.5	
77	NS	2.5	2.5:1 s/n	0.5	
81	NS	2.5	2.5:1 s/n	0.5	
87	NS	2.5	2.5:1 s/n	1.5	117/125
99	NS	2.5	2.5:1 s/n	0.5	
101	NS	2.5	2.5:1 s/n	1.0	90
105	NS	2.5	2.5:1 s/n	0.5	
110	NS	2.5	2.5:1 s/n	0.5	
114	NS	2.5	2.5:1 s/n	0.5	
118	NS	2.5	2.5:1 s/n	1.0	106
119	NS	2.5	2.5:1 s/n	0.5	
123	NS	2.5	2.5:1 s/n	0.5	
126	NS	2.5	2.5:1 s/n	0.5	
128	NS	2.5	2.5:1 s/n	1.0	162
138	NS	2.5	2.5:1 s/n	1.5	163/164
149	NS	2.5	2.5:1 s/n	1.0	139
151	NS	2.5	2.5:1 s/n	0.5	
153	NS	2.5	2.5:1 s/n	0.5	
156	NS	2.5	2.5:1 s/n	0.5	
157	NS	2.5	2.5:1 s/n	0.5	
158	NS	2.5	2.5:1 s/n	1.0	160
167	NS	2.5	2.5:1 s/n	0.5	
168	NS	2.5	2.5:1 s/n	0.5	
169	NS	2.5	2.5:1 s/n	0.5	
170	NS	2.5	2.5:1 s/n	0.5	
177	NS	2.5	2.5:1 s/n	0.5	
180	NS	2.5	2.5:1 s/n	0.5	
183	NS	2.5	2.5:1 s/n	0.5	
187	NS	2.5	2.5:1 s/n	1.0	182

Table 2-6 – Test Methods for Fish
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Target Analyte	*Fish tissue project decision limit*	*PORL*	*Laboratory EDL*	*Laboratory LOQ*	*Congener co-elutes*
189	NS	2.5	2.5:1 s/n	0.5	
194	NS	2.5	2.5:1 s/n	0.5	
195	NS	2.5	2.5:1 s/n	0.5	
201	NS	2.5	2.5:1 s/n	0.5	
203	NS	2.5	2.5:1 s/n	1.0	196
206	NS	2.5	2.5:1 s/n	0.5	
209	NS	2.5	2.5:1 s/n	0.5	
Percent Lipids by Bligh-Dyer Extraction and Gravimetry					
Lipids	NS	0.01%	0.001g	0.002g	NA

Abbreviations

AWQC – Ambient water quality criteria
CAS – Chemical Abstracts Society
EDL – Estimated detection limit
HRGC – High resolution gas chromatography
HRMS – High resolution mass spectrometry
LOQ – Limit of quantitation
NA – Not applicable
NS – No standard available
PCBs – Polychlorinated biphenyls
PORL – Project objective reporting limit
s/n – Signal-to-noise ratio

Notes

1. Concentration units (for project decision limits, LOQs, and PORLs) are picograms per gram (pg/g), unless otherwise noted.
2. Explanations for EDLs, LOQs, and PORLs were presented in the *Final Quality Assurance Project Plan, Fish Sampling Program, Remedial Action – Monitored Natural Recovery Component, Palos Verdes Shelf, Los Angeles County, California* (Gilbane Federal, 2016).
3. PCB congeners 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, and 189 are dioxin-like congeners (WHO, 2006).

Table 3-1 – Coordinates of Shelf-Wide Sediment Cores
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location name	*Replicate collected?*	*N/E coordinates*	*Nominal water depth* (meters)
BA1B	No	33° 44.97'/118° 26.81'	150
BA1C	No	33° 45.44'/118° 26.46'	60
BA1DC	No	33° 45.76'/118° 26.22	40
BA2B	Yes	33° 43.95'/118° 25.55'	150
BA2C	No	33° 44.26'/118° 25.39'	60
BA2DC	No	33 ° 44.39/118° 25.32'	40
BA3B	No	33° 43.43'/118° 24.44'	150
BA3C	No	33° 43.80'/118° 24.15'	60
BA3DC	No	33° 43.95'/118° 24.05'	40
BA4B	No	33° 43.00'/118° 23.24'	150
BA4C	Yes	33° 43.40'/118° 23.08'	60
BA4DC	No	33° 43.75'/118° 22.90'	40
BA5B	Yes	33° 42.54'/118° 22.08'	150
BA5C	No	33° 42.88'/118° 21.96'	60
BA5DC	No	33° 43.23'/118° 21.83'	40
BA6B	No	33° 42.18'/118° 21.35'	150
BA6BC	No	33° 42.24'/118° 21.32'	100
BA6C	No	33° 42.47'/118° 21.24'	60
BA6DC	No	33° 42.75'/118° 21.05'	40
BA7B	No	33° 42.05'/118° 21.09'	150
BA7BC	No	33° 42.11'/118° 21.05'	100
BA7C	No	33° 42.31'/118° 20.92'	60
BA7DC	No	33° 42.57'/118° 20.73'	40
BA8B	No	33° 41.53'/118° 20.24'	150
BA8BC	No	33° 41.63'/118° 20.21'	100
BA8C	No	33° 41.91'/118° 20.14'	60
BA8DC	No	33° 42.22'/118° 19.91'	40
BA9B	No	33° 40.89'/118° 19.31'	150
BA9BC	No	33° 41.01'/118° 19.25'	100
BA9C	No	33° 41.32'/118° 19.10'	60
BA9DC	No	33° 41.77'/118° 18.88'	40
BA10B	No	33° 39.73'/118° 17.90'	150
BA10C	No	33° 40.11/118° 17.81'	60
BA10DC	No	33° 41.13'/118° 17.49'	40

Notes

1. Coordinates are latitude/longitude shown in degrees-decimal minutes.
2. Coordinates for locations with “B” and “C” designations are from Appendix E of Order No. R4-2011-0151, NPDES Permit No. CA0053813 (California Regional Water Quality Control Board, Los Angeles Region, 01 September 2011).

Table 3-2 – Coordinates of Outfall Area Sediment Cores
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location name	*Replicate collected?*	*N/E coordinates*	*Nominal water depth* (meters)
OA01	No	33° 42.27'/118° 21.13'	70
OA02	No	33° 42.51'/118° 20.99'	50
OA03	No	33° 42.51'/118° 20.79'	80
OA04	No	33° 42.09'/118° 20.77'	70
OA05	Yes	33° 42.20'/118° 20.69'	60
OA06	No	33° 42.30'/118° 20.59'	50
OA07	Yes	33° 41.97'/118° 20.53'	70
OA08	No	33° 42.21'/118° 20.38'	50
OA09	No	33° 42.38'/118° 20.28'	40
OA10	Yes	33° 41.80'/118° 20.23'	70
OA11	Yes	33° 42.00'/118° 20.02'	50
OA12	Yes	33° 41.60'/118° 19.88'	70
OA13	No	33° 41.77'/118° 19.82'	60
OA14	No	33° 41.92'/118° 19.75'	50
OA15	No	33° 41.40'/118° 19.72'	80
OA16	Yes	33° 41.50'/118° 19.71'	70
OA17	No	33° 41.65'/118° 19.61'	60
OA18	No	33° 41.11'/118° 19.34'	90
OA19	No	33° 41.20'/118° 19.29'	75
OA20	No	33° 41.85'/118° 19.03'	40
OA21	No	33° 40.89'/118° 18.96'	80
OA22	Yes	33° 41.11'/118° 18.78'	60
OA23	No	33° 41.40'/118° 18.70'	50
OA24	No	33° 40.74'/118° 18.62'	70
OA25	No	33° 41.14'/118° 18.33'	50
OA26	No	33° 42.10'/118° 20.47'	60
OA27	No	33° 41.91'/118° 20.78'	145
OA28	No	33° 41.87'/118° 20.37'	70
OA29	No	33° 41.72'/118° 20.49'	145
OA30	No	33° 41.98'/118° 19.87'	50
OA31	No	33° 41.84'/118° 19.96'	60
OA32	No	33° 41.70'/118° 20.04'	70
OA33	No	33° 41.54'/118° 19.36'	60
OA34	No	33° 41.37'/118° 19.49'	70
OA35	No	33° 41.32'/118° 19.59'	80

Notes

1. Coordinates are latitude/longitude shown in degrees-decimal minutes.
2. The basis for selecting the planned cores was presented in the sediment Field Sampling Plan (ITSI Gilbane, 2014).

Table 3-3 — Sediment Core Lengths and Samples Generated
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Core location	*Nominal water depth* (m)	*Core length* (cm)	*Number of slices generated*	*Number of samples generated*
Transect 1				
BA1B	150	60	29	16
BA1C	60	48	24	14
BA1DC	40	31	15	9
Transect 2				
BA2B	150	35	16	10
BA2BR	150	22	10	7
BA2C	60	60	30	17
BA2DC	40	46	23	13
Transect 3				
BA3B	150	37	17	10
BA3C	60	67	33	17
BA3DC	40	59	29	16
Transect 4				
BA4B	150	56	28	16
BA4C	60	63	30	17
BA4CR	60	63	31	17
BA4DC	40	86	43	23
Transect 5				
BA5B	150	66	33	18
BA5BR	150	68	34	19
BA5C	60	79	41	22
BA5DC	40	81	40	22
Transect 6				
BA6B	150	79	39	21
BA6BC	100	33	16	10
BA6C	60	79	40	21
BA6DC	40	56	27	15
Transect 7				
BA7B	150	50	25	14
BA7BC	100	24	12	8
OA01	70	52	26	15
BA7C	60	68	34	19
OA02	50	79	39	21
BA7DC	40	61	30	17
Transect 7.5				
OA03	80	60	30	17
OA04	70	57	28	16
OA05	60	85	42	23
OA05R	60	85	43	23
OA06	50	77	38	21
OA07	70	58	29	16
OA07R	70	45	22	13
OA08	50	81	40	22
OA09	40	61	30	17
OA26	60	72	36	20
OA27	150	29	14	9
Transect 7.75				
OA28	70	57	23	13
OA29	150	56	28	16
Transect 8				
BA8B	150	61	30	17
BA8BC	100	37	18	11
OA10	70	53	26	15
OA10R	70	44	22	13

Table 3-3 — Sediment Core Lengths and Samples Generated
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Core location	*Nominal water depth* (m)	*Core length* (cm)	*Number of slices generated*	*Number of samples generated*
BA8C	60	79	40	22
OA11	50	83	42	22
OA11R	50	77	39	21
BA8DC	40	60	30	17
Transect 8.5				
OA12	70	41	21	12
OA12R	70	39	20	11
OA13	60	54	27	15
OA14	50	67	34	18
OA15	80	51	25	14
OA16	70	42	22	12
OA16R	70	49	24	14
OA17	60	35	17	10
OA30	50	71	35	19
OA31	60	66	33	18
OA32	70	51	26	14
Transect 8.75				
OA33	60	32	15	9
OA34	70	36	19	10
OA35	80	56	28	16
Transect 9				
BA9B	150	45	22	13
BA9BC	100	33	18	10
OA18	90	45	23	13
OA19	75	42	21	12
BA9C	60	32	16	10
BA9DC	40	45	22	13
OA20	40	56	27	15
Transect 9.25				
OA21	80	18	8	6
OA22	60	38	18	11
OA22R	60	43	20	12
OA23	50	51	25	14
Transect 9.5				
OA24	70	27	11	7
OA25	50	41	18	11
Transect 10				
BA10B	150	31	15	9
BA10C	60	25	12	8
BA10DC	40	36	18	11
GRAND TOTAL	**-**	**-**	**2,084**	**1,175**

Abbreviations
cm - Centimeters
m - Meters

Notes
1. Core lengths indicated are the lengths of cores used to generate samples during core cutting events. These lengths may differ from measurements made on-board at the time of core collection, due to: different measuring conditions; possible deformation during handling; and the discarding of core bottom portions.

Table 3-4 – Grain Size and TOC for Sediment (60-m Isobath)
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location name	*Nominal ocean depth* (m)	*Length of core* (cm)	*Average sand content* (%)	*Average silt content* (%)	*Average clay content* (%)	*Average TOC* (%)
Northwest (down-current) of outfalls						
BA1C	60	48	43	43	14	2.8
BA2C	60	60	57	29	13	3.1
BA3C	60	67	48	39	13	3.5
BA4C	60	63	29	57	14	2.4
BA4CR	60	63	29	56	15	2.7
BA5C	60	79	24	61	16	3.6
BA6C	60	79	32	50	18	3.6
BA7C	60	68	43	41	15	3.2
OA05	60	85	28	52	20	4.0
OA05R	60	85	28	50	22	4.7
OA26	60	72	30	52	18	4.3
		Average	**36**	**48**	**16**	**3.4**
Outfall vicinity						
BA8C	60	79	49	29	19	8.8
OA13	60	54	33	53	15	2.6
OA17	60	35	35	52	14	1.5
OA31	60	66	29	56	14	2.4
		Average	**36**	**48**	**16**	**3.8**
Southeast (up-current) of outfalls						
OA33	60	32	48	42	9.7	0.85
BA9C	60	32	46	41	13	1.5
OA22	60	38	48	38	14	1.4
OA22R	60	43	50	38	12	1.3
BA10C	60	25	58	28	12	0.71
		Average	**50**	**37**	**12**	**1.2**

Abbreviations

cm - Centimeters
m - Meters
TOC - Total organic carbon

Table 3-5 — DDTs in 0-8-cm Sediment Bed-Depth Interval
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Core location	*Nominal water depth* (m)	*Average Total DDTs* (ug/kg)	*Average Total DDTs (OC normalized)* (ug/kg OC)	*Average Total DDT Compounds* (ug/kg)	*Average Total DDT Compounds (OC normalized)* (ug/kg OC)
Shelf-wide Cores					
BA1B	150	920	56,000	1,200	73,000
BA1C	150	1,300	44,000	1,800	62,000
BA1DC	150	390	30,000	540	42,000
BA2B	150	1,200	48,000	1,300	55,000
BA2BR	150	1,100	60,000	1,500	78,000
BA2C	150	1,100	37,000	1,600	56,000
BA2DC	150	200	3,300	270	4,400
BA3B	150	2,900	150,000	3,900	210,000
BA3C	150	1,100	43,000	1,500	59,000
BA3DC	150	310	6,500	480	10,000
BA4B	150	5,300	180,000	8,500	290,000
BA4C	150	1,700	88,000	2,500	130,000
BA4CR	100	1,800	86,000	2,500	120,000
BA4DC	100	920	41,000	1,400	62,000
BA5B	100	10,000	190,000	16,000	300,000
BA5BR	100	11,000	170,000	17,000	270,000
BA5C	60	2,800	140,000	3,700	180,000
BA5DC	60	630	34,000	890	49,000
BA6B	60	10,000	200,000	20,000	380,000
BA6BC	60	7,100	150,000	17,000	340,000
BA6C	60	2,900	150,000	3,600	180,000
BA6DC	60	1,400	75,000	1,600	92,000
BA7B	60	5,500	160,000	11,000	310,000
BA7BC	60	720	50,000	910	63,000

Table 3-5 — DDTs in 0-8-cm Sediment Bed-Depth Interval
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Core location	*Nominal water depth* (m)	*Average Total DDTs* (ug/kg)	*Average Total DDTs (OC normalized)* (ug/kg OC)	*Average Total DDT Compounds* (ug/kg)	*Average Total DDT Compounds (OC normalized)* (ug/kg OC)
BA7C	60	1,300	87,000	1,600	100,000
BA7DC	60	560	44,000	660	52,000
BA8B	60	9,100	180,000	23,000	440,000
BA8BC	40	1,400	34,000	2,100	51,000
BA8C	40	76,000	1,400,000	81,000	1,500,000
BA8DC	40	1,100	100,000	1,300	120,000
BA9B	40	3,200	130,000	4,500	180,000
BA9BC	40	2,100	86,000	3,000	120,000
BA9C	40	2,400	170,000	2,900	200,000
BA9DC	40	680	48,000	820	58,000
BA10B	40	710	55,000	830	65,000
BA10C	40	300	37,000	340	42,000
BA10DC	40	300	26,000	350	31,000
Outfall area cores					
OA01	70	2,500	120,000	3,000	140,000
OA02	50	2,400	120,000	3,100	160,000
OA03	50	4,600	130,000	5,500	160,000
OA04	70	4,300	140,000	4,900	160,000
OA05	60	3,300	130,000	3,900	150,000
OA05R	60	4,700	200,000	5,700	240,000
OA06	50	5,800	270,000	7,300	350,000
OA07	70	12,000	330,000	19,000	510,000
OA07R	70	15,000	340,000	25,000	560,000
OA08	50	9,200	380,000	12,000	470,000
OA09	40	1,300	91,000	1,500	100,000

Table 3-5 — DDTs in 0-8-cm Sediment Bed-Depth Interval
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Core location	*Nominal water depth* (m)	*Average Total DDTs* (ug/kg)	*Average Total DDTs (OC normalized)* (ug/kg OC)	*Average Total DDT Compounds* (ug/kg)	*Average Total DDT Compounds (OC normalized)* (ug/kg OC)
OA10	70	8,100	220,000	12,000	310,000
OA10R	70	8,500	300,000	12,000	400,000
OA11	50	6,900	320,000	8,500	390,000
OA11R	50	7,500	290,000	9,300	370,000
OA12	70	3,200	160,000	4,500	220,000
OA12R	70	2,500	150,000	3,700	220,000
OA13	60	2,000	120,000	2,400	150,000
OA14	50	1,900	120,000	2,400	150,000
OA15	80	3,500	180,000	5,200	270,000
OA16	70	2,100	110,000	3,000	150,000
OA16R	70	3,900	220,000	5,500	310,000
OA17	60	2,500	160,000	3,600	220,000
OA18	90	2,400	98,000	3,200	130,000
OA19	80	1,900	140,000	3,000	210,000
OA20	40	580	37,000	660	42,000
OA21	80	2,500	150,000	3,100	190,000
OA22	60	1,500	110,000	2,100	160,000
OA22R	60	700	56,000	900	72,000
OA23	50	820	64,000	1,000	79,000
OA24	70	2,700	170,000	3,900	230,000
OA25	50	400	42,000	490	52,000
OA26	60	9,300	360,000	12,000	460,000
OA27	150	3,700	170,000	5,700	270,000
OA28	70	8,700	190,000	11,000	240,000
OA29	150	7,200	150,000	17,000	350,000
OA30	50	3,100	170,000	3,800	210,000
OA31	60	3,100	170,000	3,600	200,000

Table 3-5 — DDTs in 0-8-cm Sediment Bed-Depth Interval
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Core location	*Nominal water depth* (m)	*Average Total DDTs* (ug/kg)	*Average Total DDTs (OC normalized)* (ug/kg OC)	*Average Total DDT Compounds* (ug/kg)	*Average Total DDT Compounds (OC normalized)* (ug/kg OC)
OA32	70	4,300	210,000	5,500	260,000
OA33	60	170	21,000	230	28,000
OA34	70	9,700	320,000	15,000	490,000
OA35	80	7,900	300,000	14,000	520,000

Abbreviations
cm - Centimeters
m - Meters
OC - Organic carbon
ug/kg - Micrograms per kilogram

Notes
1. "Total DDTs" consists of both *o,p'*- and *p,p'*- isomers of DDD, DDE, and DDT.
2. "Total DDT Compounds" consists of both *o,p'*- and *p,p'*- isomers of DDD, DDE, and DDT, plus *p,p'*-DDMU and *p,p'*-DDNU.

Table 3-6 — PCBs in 0-8-cm Sediment Bed-Depth Interval
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Core location	*Nominal water depth* (m)	*Average Total PCBs - short list* (ug/kg)	*Average Total PCBs (OC normalized) - short list* (ug/kg OC)	*Average Total PCBs - expanded list* (ug/kg)	*Average Total PCBs (OC normalized) - expanded list* (ug/kg OC)
Shelf-wide cores					
BA1B	150	69	4,200	140	8,300
BA1C	150	97	3,300	190	6,700
BA1DC	150	28	2,200	57	4,400
BA2B	150	68	2,900	140	5,700
BA2BR	150	70	3,600	140	7,200
BA2C	150	110	4,000	230	7,900
BA2DC	150	15	240	30	490
BA3B	150	230	12,000	450	24,000
BA3C	150	88	3,500	170	6,800
BA3DC	150	27	570	54	1,200
BA4B	150	560	19,000	1,100	39,000
BA4C	150	100	5,400	210	11,000
BA4CR	100	120	5,700	240	11,000
BA4DC	100	58	2,500	110	5,100
BA5B	100	1,000	18,000	2,100	37,000
BA5BR	100	780	12,000	1,500	24,000
BA5C	60	120	5,800	250	12,000
BA5DC	60	60	3,300	120	6,600
BA6B	60	1,700	31,000	3,300	61,000
BA6BC	60	620	13,000	1,200	26,000
BA6C	60	140	7,100	280	14,000
BA6DC	60	30	1,700	60	3,400
BA7B	60	850	25,000	1,700	51,000
BA7BC	60	49	3,200	95	6,300
BA7C	60	72	4,800	140	9,500
BA7DC	60	30	2,400	61	4,800
BA8B	60	1,700	33,000	3,400	67,000
BA8BC	40	180	4,300	350	8,700
BA8C	40	3,200	73,000	6,200	140,000

Table 3-6 — PCBs in 0-8-cm Sediment Bed-Depth Interval
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Core location	*Nominal water depth* (m)	*Average Total PCBs - short list* (ug/kg)	*Average Total PCBs (OC normalized) - short list* (ug/kg OC)	*Average Total PCBs - expanded list* (ug/kg)	*Average Total PCBs (OC normalized) - expanded list* (ug/kg OC)
BA8DC	40	60	5,300	120	11,000
BA9B	40	290	12,000	580	23,000
BA9BC	40	220	9,000	430	18,000
BA9C	40	54	3,900	110	7,700
BA9DC	40	38	2,700	75	5,300
BA10B	40	41	3,200	93	7,300
BA10C	40	9	1,100	20	2,500
BA10DC	40	18	1,600	40	3,500
Outfall area cores					
OA01	70	130	6,200	260	12,000
OA02	50	140	7,000	280	14,000
OA03	50	340	9,700	670	19,000
OA04	70	370	12,000	740	25,000
OA05	60	180	6,900	360	14,000
OA05R	60	280	12,000	560	24,000
OA06	50	370	18,000	750	36,000
OA07	70	1,100	28,000	2,100	55,000
OA07R	70	1,100	25,000	2,300	50,000
OA08	50	470	19,000	940	38,000
OA09	40	37	2,400	75	5,000
OA10	70	600	15,000	1,200	30,000
OA10R	70	440	16,000	890	32,000
OA11	50	360	17,000	720	34,000
OA11R	50	380	15,000	750	29,000
OA12	70	270	13,000	550	27,000
OA12R	70	210	13,000	430	26,000
OA13	60	130	7,600	250	15,000

Table 3-6 — PCBs in 0-8-cm Sediment Bed-Depth Interval
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Core location	*Nominal water depth* (m)	*Average Total PCBs - short list* (ug/kg)	*Average Total PCBs (OC normalized) - short list* (ug/kg OC)	*Average Total PCBs - expanded list* (ug/kg)	*Average Total PCBs (OC normalized) - expanded list* (ug/kg OC)
OA14	50	92	5,700	180	11,000
OA15	80	240	12,000	480	25,000
OA16	70	180	9,100	370	18,000
OA16R	70	230	13,000	470	26,000
OA17	60	150	8,400	320	17,000
OA18	90	250	10,000	500	20,000
OA19	80	140	9,600	270	19,000
OA20	40	30	2,000	63	4,100
OA21	80	190	12,000	380	23,000
OA22	60	110	8,000	220	16,000
OA22R	60	62	4,900	120	9,700
OA23	50	48	3,700	96	7,400
OA24	70	260	16,000	530	31,000
OA25	50	23	2,400	46	4,900
OA26	60	650	25,000	1,300	50,000
OA27	150	290	15,000	590	31,000
OA28	70	460	10,000	930	20,000
OA29	150	1,300	26,000	2,500	52,000
OA30	50	160	8,700	310	17,000
OA31	60	110	6,200	220	12,000
OA32	70	220	11,000	440	22,000
OA33	60	12	1,500	25	3,000
OA34	70	920	30,000	1,900	60,000
OA35	80	800	31,000	1,600	62,000

Abbreviations
cm - Centimeters
m - Meters
OC - Organic carbon
ug/kg - Micrograms per kilogram

Table 3-7 - Average Concentrations of COCs in Sediment
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

	Total DDTs	*Total DDT Compounds*	*Total PCBs - short list*	*Total PCBs - expanded list*
2009 Data Set				
Full model (baseline and outfall area)				
Total bed	1,600	2,300	120	*NA*
0-8 cm interval	1,300	1,600	86	*NA*
Outfall area				
Total bed	2,800	3,600	160	*NA*
0-8 cm interval	1,900	2,400	110	*NA*
2013 Data Set				
Full model (shelf-wide and outfall area)				
Total bed	3,300	4,700	200	400
0-8 cm interval	1,800	2,500	120	240
Outfall area				
Total bed	5,600	7,400	300	600
0-8 cm interval	2,500	3,300	160	320
NORMALIZED FOR ORGANIC CARBON				
2009 Data Set				
Full model (baseline and outfall area)				
Total bed	58,000	85,000	4,500 (410)	NA
0-8 cm interval	56,000	71,000	3,000 (230)	NA
Outfall area				
Total bed	98,000	130,000	6,500 (570)	NA
0-8 cm interval	83,000	100,000	4,700 (300)	NA
2013 Data Set				
Full model (shelf-wide and outfall area)				
Total bed	98,000	140,000	6,500	13,000
0-8 cm interval	77,000	110,000	5,000	10,000
Outfall area				
Total bed	160,000	210,000	9,900	20,000
0-8 cm interval	120,000	150,000	7,100	14,000

Abbreviations

cm - Centimeter
COCs - Chemicals of concern
NA - Not available
OC - Organic carbon

Notes

1. All values are in micrograms per kilogram (parts per billion).
2. For the Total PCBs OC normalized (short list) from the 2009 sediment data set, the values in parentheses were previously published (ITSI Gilbane, 2013b), and are believed to be erroneous. There may have been errors in the computational formulas used to prepare the input to the MVS model. Values without parentheses are based on rigorous quality control checks performed in winter 2016-2017, and are believed to be the best estimates of average Total PCBs OC normalized concentrations for the 2009 sediment data set.

Table 3-8 - Estimates of Mass of COCs in Sediment
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

	o,p'-DDD	*o,p'-DDE*	*o,p'-DDT*	*p,p'-DDD*	*p,p'-DDE*	*p,p'-DDT*	*Total DDTs*	*p,p'-DDMU*	*p,p'-DDNU*	*Total DDT Compounds*	*Total PCBs - short list*	*Total PCBs - expanded list*
2009 Data Set												
Full model (baseline and outfall area)												
Total bed	290	1,900	120	1,300	9,700	530	14,000	5,200	940	20,000	1,000	NA
0-8 cm interval	36	210	16	190	1,200	63	1,700	410	71	2,200	110	NA
Outfall area												
Total bed	150	930	33	920	5,000	310	7,300	1,200	330	8,800	460	NA
0-8 cm interval	19	110	5.8	140	600	37	910	210	33	1,200	58	NA
2013 Data Set												
Full model (shelf-wide and outfall area)												
Total bed	730	6,100	100	2,700	30,000	2,600	42,000	18,000	1,300	61,000	2,900	5,900
0-8 cm interval	64	470	10	280	2,500	250	3,600	1,300	110	5,000	280	570
Outfall area												
Total bed	420	3,300	67	1,800	17,000	1,900	24,000	7,200	470	32,000	1,500	3,000
0-8 cm interval	31	210	7	170	1,100	180	1,700	540	39	2,300	140	270

Abbreviations

cm - Centimeter
COCs - Chemicals of concern
NA - Not available
PCBs - Polychlorinated biphenyls

Notes

1. All values are in kilograms and were rounded to two significant figures.
2. For results reported as non-detected, a value of 5 micrograms per kilogram (ug/kg) was used.
3. The baseline/shelf-wide modeled area was 30 square kilometers (km2). The outfall modeled area was 11 km2.
4. The volume of the baseline/shelf-wide modeled grid was 15 million cubic meters (m3).
5. The volume of the 0-8 cm interval as modeled was 2.3 million m3.

Table 3-9 – Collection Data – High Resolution Grab Water Samples
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Grid ID	*Latitude*	*Longitude*	*Sample ID*	*Sample type*	*Depth* (m)	*Date*	*Time*
BA1B	33° 44.975' N	118° 26.818' W	BA1B-WO5-0915-1	Ocean water	5	9/23/15	1137
			BA1B-WO75-0915-1	Ocean water	75	9/23/15	1112
			BA1B-WO145-0915-1	Ocean water	147	9/23/15	1127
BA1C	33° 45.440' N	118° 26.460' W	BA1C-WO5-0915-1	Ocean water	5	9/16/15	1103
			BA1C-WO30-0915-1	Ocean water	30	9/16/15	1110
			BA1C-WO55-0915-1	Ocean water	57	9/16/15	1123
			BA1C-WO60-0915-1	Ocean water	59	9/16/15	1134
BA1DC	33° 45.758' N	118° 26.226' W	BA1DC-WO5-0915-1	Ocean water	5	9/23/15	1148
			BA1DC-WO5-0915-2	Replicate	5	9/23/15	1153
			BA1DC-WO20-0915-1	Ocean water	20	9/16/15	1207
			BA1DC-WO35-0915-1	Ocean water	35	9/16/15	1215
BA2B	33° 43.940' N	118° 25.561' W	BA2B-WO5-0915-1	Ocean water	5	9/16/15	1451
			BA2B-WO75-0915-1	Ocean water	75	9/16/15	1501
			BA2B-WO145-0915-1	Ocean water	145	9/23/15	1228
BA2C	33° 44.267' N	118° 25.393' W	BA2C-WO5-0915-1	Ocean water	5	9/23/15	1243
			BA2C-WO30-0915-1	Ocean water	30	9/16/15	1354
			BA2C-WO55-0915-1	Ocean water	55	9/16/15	1406
BA2DC	33° 44.386' N	118° 25.329' W	BA2DC-WO5-0915-1	Ocean water	5	9/16/15	1243
			BA2DC-WO20-0915-1	Ocean water	20	9/16/15	1254
			BA2DC-WO35-0915-1	Ocean water	39	9/16/15	1327
BA3B	33° 43.424' N	118° 24.454' W	BA3B-WO5-0915-1	Ocean water	5	9/23/15	1322
			BA3B-WO80-0915-1	Ocean water	75	9/23/15	1300
			BA3B-WO145-0915-1	Ocean water	153	9/23/15	1312
BA3C	33° 43.800' N	118° 24.150' W	BA3C-WO5-0915-1	Ocean water	5	9/16/15	1658
			BA3C-WO5-1115-1	Time replicate	5	11/30/15	1250
			BA3C-WO30-0915-1	Ocean water	30	9/16/15	1708
			BA3C-WO55-0915-1	Ocean water	55	9/16/15	1720
			BA3C-WO58-0915-1	Ocean water	58	9/16/15	1729
BA3DC	33° 43.950' N	118° 24.043' W	BA3DC-WO5-0915-1	Ocean water	5	9/16/15	1633
			BA3DC-WO20-0915-1	Ocean water	20	9/16/15	1641
			BA3DC-WO35-0915-1	Ocean water	38	9/16/15	1650
BA4B	33° 43.002' N	118° 23.245' W	BA4B-WO5-0915-1	Ocean water	5	9/17/15	1719
			BA4B-WO75-0915-1	Ocean water	75	9/17/15	1804
			BA4B-WO145-0915-1	Ocean water	141	9/17/15	1744

Table 3-9 – Collection Data – High Resolution Grab Water Samples
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Grid ID	*Latitude*	*Longitude*	*Sample ID*	*Sample type*	*Depth* (m)	*Date*	*Time*
BA4C	33° 43.400' N	118° 23.080' W	BA4C-WO5-0915-1	Ocean water	5	9/17/15	1817
			BA4C-WO30-0915-1	Ocean water	30	9/17/15	1828
			BA4C-WO55-0915-1	Ocean water	55	9/17/15	1851
			BA4C-WO58-0915-1	Ocean water	58	9/17/15	1903
BA4DC	33° 43.756' N	118° 22.909' W	BA4DC-WO5-0915-1	Ocean water	5	9/23/15	1352
			BA4DC-WO20-0915-1	Ocean water	20	9/23/15	1339
			BA4DC-WO35-0915-1	Ocean water	36	9/23/15	1346
BA5B	33° 42.541' N	118° 22.083' W	BA5B-WO5-0915-1	Ocean water	5	9/22/15	1032
			BA5B-WO75-0915-1	Ocean water	75	9/22/15	1042
			BA5B-WO145-0915-1	Ocean water	145	9/22/15	1058
BA5C	33° 42.880' N	118° 21.960' W	BA5C-WO5-0915-1	Ocean water	5	9/22/15	1114
			BA5C-WO30-0915-1	Ocean water	30	9/22/15	1159
			BA5C-WO55-0915-1	Ocean water	55	9/22/15	1149
			BA5C-WO58-0915-1	Ocean water	59	9/22/15	1123
			BA5C-WO58-0915-2	Replicate	59	9/22/15	1134
BA5DC	33° 43.230' N	118° 21.830' W	BA5DC-WO5-0915-1	Ocean water	5	9/22/15	1307
			BA5DC-WO20-0915-1	Ocean water	20	9/22/15	1300
			BA5DC-WO35-0915-1	Ocean water	35	9/22/15	1251
			BA5DC-WO38-0915-1	Ocean water	38	9/22/15	1231
			BA5DC-WO38-0915-2	Replicate	38	9/22/15	1242
BA6B	33° 42.182' N	118° 21.359' W	BA6B-WO5-0915-1	Ocean water	5	9/22/15	1408
			BA6B-WO75-0915-1	Ocean water	75	9/22/15	1357
			BA6B-WO145-0915-1	Ocean water	130	9/22/15	1337
BA6BC	33° 42.270' N	118° 21.387' W	BA6BC-WO5-0915-1	Ocean water	5	9/22/15	1443
			BA6BC-WO50-0915-1	Ocean water	50	9/22/15	1435
			BA6BC-WO95-0915-1	Ocean water	88	9/22/15	1424
BA6C	33° 42.471' N	118° 21.242' W	BA6C-WO5-0915-1	Ocean water	5	9/22/15	1523
			BA6C-WO30-0915-1	Ocean water	30	9/22/15	1512
			BA6C-WO55-0915-1	Ocean water	54	9/24/15	1118
BA6DC	33° 42.757' N	118° 21.049' W	BA6DC-WO5-0915-1	Ocean water	5	9/22/15	1556
			BA6DC-WO20-1115-1	Ocean water	20	11/30/15	1122
			BA6DC-WO35-0915-1	Ocean water	35	9/22/15	1539
BA7B	33° 42.049' N	118° 21.086' W	BA7B-WO5-0915-1	Ocean water	5	9/24/15	1012
			BA7B-WO75-0915-1	Ocean water	75	9/24/15	1037
			BA7B-WO145-0915-1	Ocean water	140	9/24/15	1023

Table 3-9 – Collection Data – High Resolution Grab Water Samples
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Grid ID	*Latitude*	*Longitude*	*Sample ID*	*Sample type*	*Depth* (m)	*Date*	*Time*
BA7BC	33° 42.114' N	118° 21.063' W	BA7BC-WO5-0915-1	Ocean water	5	9/24/15	1048
			BA7BC-WO50-0915-1	Ocean water	50	9/24/15	1057
			BA7BC-WO95-0915-1	Ocean water	91	9/24/15	1107
BA7C	33° 42.310' N	118° 20.920' W	BA7C-WO5-0315-1	Ocean water	5	3/31/15	1135
			BA7C-WO30-0315-1	Ocean water	30	3/31/15	1143
			BA7C-WO55-0315-1	Ocean water	55	3/31/15	1156
			BA7C-WO58-0315-1	Ocean water	58	3/31/15	1227
BA7DC	33° 42.570' N	118° 20.730' W	BA7DC-WO5-0915-1	Ocean water	5	9/22/15	1703
			BA7DC-WO20-0915-1	Ocean water	20	9/22/15	1655
			BA7DC-WO35-0915-1	Ocean water	35	9/22/15	1647
			BA7DC-WO38-0915-1	Replicate	39	9/22/15	1613
			BA7DC-WO38-0915-2	Ocean water	39	9/22/15	1626
			BA7DC-WO38-0915-3	Triplicate	39	9/22/15	1636
BA8B	33° 41.533' N	118° 20.238' W	BA8B-WO5-0915-1	Ocean water	5	9/24/15	0911
			BA8B-WO75-0915-1	Ocean water	75	9/24/15	0902
			BA8B-WO145-0915-1	Ocean water	142	9/24/15	0849
BA8BC	33° 41.635' N	118° 20.220' W	BA8BC-WO5-0915-1	Ocean water	5	9/24/15	0953
			BA8BC-WO50-0915-1	Ocean water	50	9/24/15	0920
			BA8BC-WO95-0915-1	Ocean water	92	9/24/15	0929
BA8C	33° 41.910' N	118° 20.140' W	BA8C-WO5-0915-1	Ocean water	5	9/24/15	10:01
			BA8C-WO30-0315-1	Ocean water	30	3/31/15	1246
			BA8C-WO55-0315-1	Ocean water	55	3/31/15	1258
			BA8C-WO58-03151	Replicate	58	3/31/15	1307
			BA8C-WO58-0315-2	Ocean water	58	3/31/15	1316
			BA8C-WO58-0315-3	Triplicate	58	3/31/15	1323
BA8DC	33° 42.220' N	118° 19.910' W	BA8DC-WO5-0915-1	Ocean water	5	9/24/15	1209
			BA8DC-WO20-0915-1	Ocean water	20	9/24/15	1204
			BA8DC-WO35-0915-1	Ocean water	35	9/24/15	1157
			BA8DC-WO38-0915-1	Ocean water	38	9/24/15	1149
BA9B	33° 40.892' N	118° 19.312' W	BA9B-WO5-0915-1	Ocean water	5	9/24/15	0831
			BA9B-WO75-0915-1	Ocean water	75	9/24/15	0824
			BA9B-WO145-0915-1	Ocean water	146	9/24/15	0810
BA9BC	33° 41.010' N	118° 19.247' W	BA9BC-WO5-0915-1	Ocean water	5	9/24/15	1229
			BA9BC-WO50-0915-1	Ocean water	50	9/24/15	1247
			BA9BC-WO95-0915-1	Ocean water	90	9/24/15	1237

Table 3-9 – Collection Data – High Resolution Grab Water Samples
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Grid ID	*Latitude*	*Longitude*	*Sample ID*	*Sample type*	*Depth* (m)	*Date*	*Time*
BA9C	33° 41.320' N	118° 19.100' W	BA9C-WO5-0915-1	Ocean water	5	9/24/15	1257
			BA9C-WO30-0915-1	Ocean water	30	9/24/15	1318
			BA9C-WO55-0915-1	Ocean water	56	9/24/15	1325
			BA9C-WO58-0915-1	Ocean water	58	9/24/15	1304
BA9DC	33° 41.770' N	118° 18.880' W	BA9DC-WO5-0315-1	Ocean water	5	3/31/15	0837
			BA9DC-WO20-0315-1	Ocean water	20	3/31/15	0858
			BA9DC-WO35-03151	Ocean water	35	3/31/15	0916
			BA9DC-WO38-0315-1	Replicate	38	3/31/15	0926
			BA9DC-WO38-0315-2	Ocean water	38	3/31/15	0934
			BA9DC-WO38-0315-3	Triplicate	38	3/31/15	0943
BA10B	33° 39.728' N	118° 17.902' W	BA10B-WO5-0915-1	Ocean water	5	9/25/15	0802
			BA10B-WO75-0915-1	Ocean water	75	9/25/15	0838
			BA10B-WO145-0915-1	Ocean Water	141	9/25/15	08:23
BA10C	33° 40.108' N	118° 17.813' W	BA10C-WO5-0915-1	Ocean water	5	9/25/15	0736
			BA10C-WO30-0915-1	Ocean water	30	9/25/15	0750
			BA10C-WO55-0915-1	Ocean water	56	9/25/15	0742
BA10DC	33° 41.147' N	118° 17.435' W	BA10DC-WO5-0915-1	Ocean water	5	9/15/15	1535
			BA10DC-WO20-0915-1	Ocean water	20	9/15/15	1603
			BA10DC-WO35-0915-1	Ocean water	35	9/15/15	1615
T11	33° 36.055' N	118° 05.199' W	T11-WO5-0915-1	Ocean water	5	9/25/15	1030
			T11-WO30-0915-1	Ocean water	30	9/25/15	1050
			T11-WO55-0915-1	Ocean water	55	9/25/15	1043
			T11-WO58-0915-1	Ocean water	58	9/25/15	1036
W1	33° 46.422' N	118° 27.269' W	W1-WO5-0915-1	Ocean water	5	9/16/15	0842
			W1-WO30-0915-1	Ocean water	30	9/16/15	0854
			W1-WO55-0915-1	Ocean water	57	9/16/15	0910
			W1-WO58-0915-1	Ocean water	60	9/16/15	0934
W2	33° 45.771' N	118° 27.668' W	W2-WO5-0915-1	Ocean water	5	9/23/15	1048
			W2-WO100-0915-1	Ocean water	100	9/23/15	0939
			W2-WO195-0915-1	Ocean water	192	9/23/15	1036
			W2-WO198-0915-1	Ocean water	202	9/23/15	0956
W3	33° 42.759' N	118° 23.078' W	W3-WO5-0915-1	Ocean water	5	9/17/15	1646
			W3-WO100-0915-1	Ocean water	100	9/17/15	1705
			W3-WO195-0915-1	Ocean water	187	9/22/15	0949
			W3-WO198-0915-1	Ocean water	200	9/17/15	1601

Table 3-9 – Collection Data – High Resolution Grab Water Samples
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Grid ID	*Latitude*	*Longitude*	*Sample ID*	*Sample type*	*Depth* (m)	*Date*	*Time*
W4	33° 41.559' N	118° 20.414' W	W4-WO5-0315-1	Ocean water	5	3/31/15	1014
			W4-WO100-0315-1	Ocean water	100	3/31/15	1029
			W4-WO195-0315-1	Ocean water	195	3/31/15	1048
			W4-WO198-0315-1	Ocean water	198	3/31/15	1113
W5	33° 40.085' N	118° 17.673' W	W5-WO5-0915-1	Ocean water	5	9/24/15	1350
			W5-WO30-0915-1	Ocean water	30	9/24/15	1418
			W5-WO55-0915-1	Ocean water	55	9/24/15	1411
			W5-WO58-0915-1	Ocean water	53	9/24/15	1356
			W5-WO58-0915-2	Replicate	53	9/24/15	1403
WE	NA	NA	WQ-ER1-0315-1	Equipment rinsate	NA	3/31/15	1335
			WQ-ER2-0915-1	Equipment rinsate	NA	9/22/15	1850
			WQ-ER3-0915-1	Equipment rinsate	NA	9/25/15	0905

Abbreviations
m = meters
NA = not applicable
WE = quality control equipment rinsate sample

Notes
1. Latitudes and longitudes are based on the Sanitation Districts' "benthic" sediment transects and grid nodes.
2. The sample type denotes replicate and triplicate samples collected from approximately the same water depth during sequential drops.
3. Actual sample depth below the ocean surface based on the nominal depths to the ocean floor at each planned mooring and the 3-depth or 4-depth sampling scheme employed. The field-measured depth is listed.

Table 3-10 — Total DDT Compounds in Water Along the 150-m Isobath
First MNR Report
Palos Verdes Shelf (OU5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location	*Sample ID*	*Depth* (meters)	*Concentration*	*Average*
Down-current of outfall diffusers - near-surface				
BA1B	BA1B-WO5-0915-1	5	0.028	-
BA2B	BA2B-WO5-0915-1	5	0.000	-
BA3B	BA3B-WO5-0915-1	5	0.0758	-
BA4B	BA4B-WO5-0915-1	5	0.0447	-
BA5B	BA5B-WO5-0915-1	5	0.0322	0.0361
Down-current of outfall diffusers - mid-column				
BA1B	BA1B-WO75-0915-1	75	0.773	-
BA2B	BA2B-WO75-0915-1	75	0.134	-
BA3B	BA3B-WO80-0915-1	80	0.200	-
BA4B	BA4B-WO75-0915-1	75	1.08	-
BA5B	BA5B-WO75-0915-1	75	0.571	0.551
Down-current of outfall diffusers - near-bottom				
BA1B	BA1B-WO145-0915-1	147	0.454	-
BA2B	BA2B-WO145-0915-1	145	0.273	-
BA3B	BA3B-WO145-0915-1	153	0.845	-
BA4B	BA4B-WO145-0915-1	141	1.27	-
BA5B	BA5B-WO145-0915-1	145	1.11	0.791
Vicinity of outfall diffusers - near-surface				
BA6B	BA6B-WO5-0915-1	5	0.0473	-
BA7B	BA7B-WO5-0915-1	5	0.0210	-
BA8B	BA8B-WO5-0915-1	5	0.0290	0.0324
Vicinity of outfall diffusers - mid-column				
BA6B	BA6B-WO75-0915-1	75	0.141	-
BA7B	BA7B-WO75-0915-1	75	0.106	-
BA8B	BA8B-WO75-0915-1	75	0.0837	0.110
Vicinity of outfall diffusers - near-bottom				
BA6B	BA6B-WO145-0915-1	130	0.425	-
BA7B	BA7B-WO145-0915-1	140	1.14	-
BA8B	BA8B-WO145-0915-1	142	0.939	0.833
Up-current of outfall diffusers - near surface				
BA9B	BA9B-WO5-0915-1	5	0.0300	-
BA10B	BA10B-WO5-0915-1	5	0.0153	0.0227
Up-current of outfall diffusers - mid-column				
BA9B	BA9B-WO75-0915-1	75	0.494	-
BA10B	BA10B-WO75-0915-1	75	0.0153	0.255
Up-current of outfall diffusers - near-bottom				
BA9B	BA9B-WO145-0915-1	146	0.563	-
BA10B	BA10B-WO145-0915-1	141	0.259	0.411

Notes
1. Concentrations and averages are in nanograms per liter (ng/L [parts per trillion (ppt)]).

Table 3-11 — Total DDT Compounds in Water Along the 60-m Isobath
First MNR Report
Palos Verdes Shelf (OU5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location	*Sample ID*	*Depth* (meters)	*Concentration*	*Average*
Down-current of outfall diffusers - near-surface				
BA1C	BA1C-WO5-0915-1	5	0.0896	-
BA2C	BA2C-WO5-0915-1	5	0.00520	-
BA3C	BA3C-WO5-0915-1	5	0.0927	-
BA4C	BA4C-WO5-0915-1	5	0.0470	-
BA5C	BA5C-WO5-0915-1	5	0.0344	0.0538
Down-current of outfall diffusers - mid-column				
BA1C	BA1C-WO30-0915-1	30	0.352	-
BA2C	BA2C-WO30-0915-1	30	0.460	-
BA3C	BA3C-WO30-0915-1	30	0.684	-
BA4C	BA4C-WO30-0915-1	30	0.0684	-
BA5C	BA5C-WO30-0915-1	30	0.133	0.340
Down-current of outfall diffusers - near-bottom				
BA1C	BA1C-WO55-0915-1	57	0.714	-
BA1C	BA1C-WO60-0915-1	59	0.454	-
BA2C	BA2C-WO55-0915-1	55	0.277	-
BA3C	BA3C-WO55-0915-1	55	0.304	-
BA3C	BA3C-WO58-0915-1	58	0.416	-
BA4C	BA4C-WO55-0915-1	55	0.170	-
BA4C	BA4C-WO58-0915-1	58	3.26	-
BA5C	BA5C-WO55-0915-1	55	0.898	-
BA5C	BA5C-WO58-0915-1	59	1.59	0.897
Vicinity of outfall diffusers - near-surface				
BA6C	BA6C-WO5-0915-1	5	0.0714	-
BA7C	BA7C-WO5-0315-1	5	0.0140	-
BA8C	BA8C-WO5-0915-1	5	0.0413	0.0422
Vicinity of outfall diffusers - mid-column				
BA6C	BA6C-WO30-0915-1	30	0.635	-
BA7C	BA7C-WO30-0315-1	30	1.22	-
BA8C	BA8C-WO30-0315-1	30	0.00740	0.622
Vicinity of outfall diffusers - near-bottom				
BA6C	BA6C-WO55-0915-1	54	1.08	-
BA7C	BA7C-WO55-0315-1	55	0.00964	-
BA7C	BA7C-WO58-0315-1	58	0.000	-
BA8C	BA8C-WO55-0315-1	55	0.292	-
BA8C	BA8C-WO58-0315-2	58	0.265	0.329
Up-current of outfall diffusers - near surface				
BA9C	BA9C-WO5-0915-1	5	0.00674	-
BA10C	BA10C-WO5-0915-1	5	0.0224	0.0146
Up-current of outfall diffusers - mid-column				
BA9C	BA9C-WO30-0915-1	30	0.157	-
BA10C	BA10C-WO30-0915-1	30	0.000	0.0786
Up-current of outfall diffusers - near-bottom				
BA9C	BA9C-WO55-0915-1	56	0.197	-
BA9C	BA9C-WO58-0915-1	58	0.315	-
BA10C	BA10C-WO55-0915-1	56	0.457	0.323

Notes
1. Concentrations and averages are in nanograms per liter (ng/L [parts per trillion (ppt)])

Table 3-12 — Total DDT Compounds in Water Along the 40-m Isobath
First MNR Report
Palos Verdes Shelf (OU5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location	*Sample ID*	*Depth* (meters)	*Concentration*	*Average*
Down-current of outfall diffusers - near-surface				
BA1DC	BA1DC-WO5-0915-1	5	0.0353	-
BA2DC	BA2DC-WO5-0915-1	5	0.101	-
BA3DC	BA3DC-WO5-0915-1	5	0.000	-
BA4DC	BA4DC-WO5-0915-1	5	0.118	-
BA5DC	BA5DC-WO5-0915-1	5	0.0218	0.0552
Down-current of outfall diffusers - mid-column				
BA1DC	BA1DC-WO20-0915-1	20	0.292	-
BA2DC	BA2DC-WO20-0915-1	20	0.336	-
BA3DC	BA3DC-WO20-0915-1	20	1.12	-
BA4DC	BA4DC-WO20-0915-1	20	0.302	-
BA5DC	BA5DC-WO20-0915-1	20	0.0135	0.412
Down-current of outfall diffusers - near-bottom				
BA1DC	BA1DC-WO35-0915-1	35	0.171	-
BA2DC	BA2DC-WO35-0915-1	39	0.305	-
BA3DC	BA3DC-WO35-0915-1	38	1.33	-
BA4DC	BA4DC-WO35-0915-1	36	1.50	-
BA5DC	BA5DC-WO35-0915-1	35	0.640	-
BA5DC	BA5DC-WO38-0915-1	38	1.81	0.959
Vicinity of outfall diffusers - near-surface				
BA6DC	BA6DC-WO5-0915-1	5	0.0712	-
BA7DC	BA7DC-WO5-0915-1	5	0.0374	-
BA8DC	BA8DC-WO5-0915-1	5	0.0370	0.0485
Vicinity of outfall diffusers - mid-column				
BA6DC	BA6DC-WO20-1115-1	20	0.284	-
BA7DC	BA7DC-WO20-0915-1	20	0.159	-
BA8DC	BA8DC-WO20-0915-1	20	0.141	0.195
Vicinity of outfall diffusers - near-bottom				
BA6DC	BA6DC-WO35-0915-1	35	1.72	-
BA7DC	BA7DC-WO35-0915-1	35	1.66	-
BA7DC	BA7DC-WO38-0915-2	39	1.09	-
BA8DC	BA8DC-WO35-0915-1	35	0.668	-
BA8DC	BA8DC-WO38-0915-1	38	0.728	1.17
Up-current of outfall diffusers - near surface				
BA9DC	BA9DC-WO5-0315-1	5	0.00410	-
BA10DC	BA10DC-WO5-0915-1	5	0.0280	0.0161
Up-current of outfall diffusers - mid-column				
BA9DC	BA9DC-WO20-0315-1	20	0.178	-
BA10DC	BA10DC-WO20-0915-1	20	0.000	0.0892
Up-current of outfall diffusers - near-bottom				
BA9DC	BA9DC-WO35-0315-1	35	0.202	-
BA9DC	BA9DC-WO38-0315-2	38	0.0466	-
BA10DC	BA10DC-WO35-0915-1	35	0.189	0.146

Notes
1. Concentrations and averages are in nanograms per liter (ng/L [parts per trillion (ppt)]).

Table 3-13 — Total PCBs in Water Along the 150-m Isobath
First MNR Report
Palos Verdes Shelf (OU5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location	*Sample ID*	*Depth* (meters)	*Concentration*	*Average*
Down-current of outfall diffusers - near-surface				
BA1B	BA1B-WO5-0915-1	5	12.6	-
BA2B	BA2B-WO5-0915-1	5	17.0	-
BA3B	BA3B-WO5-0915-1	5	61.7	-
BA4B	BA4B-WO5-0915-1	5	25.7	-
BA5B	BA5B-WO5-0915-1	5	23.6	28.1
Down-current of outfall diffusers - mid-column				
BA1B	BA1B-WO75-0915-1	75	74.8	-
BA2B	BA2B-WO75-0915-1	75	24.2	-
BA3B	BA3B-WO80-0915-1	80	30.4	-
BA4B	BA4B-WO75-0915-1	75	73.7	-
BA5B	BA5B-WO75-0915-1	75	42.7	49.2
Down-current of outfall diffusers - near-bottom				
BA1B	BA1B-WO145-0915-1	147	43.0	-
BA2B	BA2B-WO145-0915-1	145	105	-
BA3B	BA3B-WO145-0915-1	153	68.8	-
BA4B	BA4B-WO145-0915-1	141	84.6	-
BA5B	BA5B-WO145-0915-1	145	90.7	78.4
Vicinity of outfall diffusers - near-surface				
BA6B	BA6B-WO5-0915-1	5	18.4	-
BA7B	BA7B-WO5-0915-1	5	1.62	-
BA8B	BA8B-WO5-0915-1	5	9.36	9.80
Vicinity of outfall diffusers - mid-column				
BA6B	BA6B-WO75-0915-1	75	22.1	-
BA7B	BA7B-WO75-0915-1	75	14.5	-
BA8B	BA8B-WO75-0915-1	75	32.1	22.9
Vicinity of outfall diffusers - near-bottom				
BA6B	BA6B-WO145-0915-1	130	50.1	-
BA7B	BA7B-WO145-0915-1	140	103	-
BA8B	BA8B-WO145-0915-1	142	75.7	76.3
Up-current of outfall diffusers - near surface				
BA9B	BA9B-WO5-0915-1	5	6.24	-
BA10B	BA10B-WO5-0915-1	5	0.350	3.30
Up-current of outfall diffusers - mid-column				
BA9B	BA9B-WO75-0915-1	75	54.1	-
BA10B	BA10B-WO75-0915-1	75	0.330	27.2
Up-current of outfall diffusers - near-bottom				
BA9B	BA9B-WO145-0915-1	146	65.9	-
BA10B	BA10B-WO145-0915-1	141	17.0	41.5

Notes
1. Concentrations and averages are in picograms per liter (pg/L [parts per quadrillion (ppq)]).

Table 3-14 — Total PCBs in Water Along the 60-m Isobath
First MNR Report
Palos Verdes Shelf (OU5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location	*Sample ID*	*Depth* (meters)	*Concentration*	*Average*
Down-current of outfall diffusers - near-surface				
BA1C	BA1C-WO5-0915-1	5	22.8	-
BA2C	BA2C-WO5-0915-1	5	46.7	-
BA3C	BA3C-WO5-0915-1	5	12.6	-
BA4C	BA4C-WO5-0915-1	5	24.2	-
BA5C	BA5C-WO5-0915-1	5	19.1	25.1
Down-current of outfall diffusers - mid-column				
BA1C	BA1C-WO30-0915-1	30	45.6	-
BA2C	BA2C-WO30-0915-1	30	46.3	-
BA3C	BA3C-WO30-0915-1	30	52.6	-
BA4C	BA4C-WO30-0915-1	30	32.6	-
BA5C	BA5C-WO30-0915-1	30	24.2	40.3
Down-current of outfall diffusers - near-bottom				
BA1C	BA1C-WO55-0915-1	57	47.9	-
BA1C	BA1C-WO60-0915-1	59	46.3	-
BA2C	BA2C-WO55-0915-1	55	27.0	-
BA3C	BA3C-WO55-0915-1	55	28.0	-
BA3C	BA3C-WO58-0915-1	58	27.9	-
BA4C	BA4C-WO55-0915-1	55	49.3	-
BA4C	BA4C-WO58-0915-1	58	168	-
BA5C	BA5C-WO55-0915-1	55	76.1	-
BA5C	BA5C-WO58-0915-1	59	110	64.5
Vicinity of outfall diffusers - near-surface				
BA6C	BA6C-WO5-0915-1	5	43.4	-
BA7C	BA7C-WO5-0315-1	5	92.4	-
BA8C	BA8C-WO5-0915-1	5	3.77	46.5
Vicinity of outfall diffusers - mid-column				
BA6C	BA6C-WO30-0915-1	30	65.1	-
BA7C	BA7C-WO30-0315-1	30	185	-
BA8C	BA8C-WO30-0315-1	30	24.1	91.5
Vicinity of outfall diffusers - near-bottom				
BA6C	BA6C-WO55-0915-1	54	94.4	-
BA7C	BA7C-WO55-0315-1	55	26.8	-
BA7C	BA7C-WO58-0315-1	58	5.19	-
BA8C	BA8C-WO55-0315-1	55	63.3	-
BA8C	BA8C-WO58-0315-2	58	38.6	45.7
Up-current of outfall diffusers - near surface				
BA9C	BA9C-WO5-0915-1	5	12.0	-
BA10C	BA10C-WO5-0915-1	5	6.44	9.20
Up-current of outfall diffusers - mid-column				
BA9C	BA9C-WO30-0915-1	30	40.5	-
BA10C	BA10C-WO30-0915-1	30	2.12	21.3
Up-current of outfall diffusers - near-bottom				
BA9C	BA9C-WO55-0915-1	56	24.5	-
BA9C	BA9C-WO58-0915-1	58	31.0	-
BA10C	BA10C-WO55-0915-1	56	30.7	28.7

Notes
1. Concentrations and averages are in picograms per liter (pg/L [parts per quadrillion (ppq)]).

Table 3-15 — Total PCBs in Water Along the 40-m Isobath
First MNR Report
Palos Verdes Shelf (OU5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location	*Sample ID*	*Depth* (meters)	*Concentration*	*Average*
Down-current of outfall diffusers - near-surface				
BA1DC	BA1DC-WO5-0915-1	5	27.8	-
BA2DC	BA2DC-WO5-0915-1	5	32.2	-
BA3DC	BA3DC-WO5-0915-1	5	8.98	-
BA4DC	BA4DC-WO5-0915-1	5	31.9	-
BA5DC	BA5DC-WO5-0915-1	5	19.6	24.1
Down-current of outfall diffusers - mid-column				
BA1DC	BA1DC-WO20-0915-1	20	39.6	-
BA2DC	BA2DC-WO20-0915-1	20	33.9	-
BA3DC	BA3DC-WO20-0915-1	20	90.1	-
BA4DC	BA4DC-WO20-0915-1	20	38.4	-
BA5DC	BA5DC-WO20-0915-1	20	13.7	43.1
Down-current of outfall diffusers - near-bottom				
BA1DC	BA1DC-WO35-0915-1	35	26.0	-
BA2DC	BA2DC-WO35-0915-1	39	25.5	-
BA3DC	BA3DC-WO35-0915-1	38	95.8	-
BA4DC	BA4DC-WO35-0915-1	36	103	-
BA5DC	BA5DC-WO35-0915-1	35	53.0	-
BA5DC	BA5DC-WO38-0915-1	38	120	70.6
Vicinity of outfall diffusers - near-surface				
BA6DC	BA6DC-WO5-0915-1	5	19.4	-
BA7DC	BA7DC-WO5-0915-1	5	10.6	-
BA8DC	BA8DC-WO5-0915-1	5	15.5	15.2
Vicinity of outfall diffusers - mid-column				
BA6DC	BA6DC-WO20-1115-1	20	14.7	-
BA7DC	BA7DC-WO20-0915-1	20	57.7	-
BA8DC	BA8DC-WO20-0915-1	20	106	59.3
Vicinity of outfall diffusers - near-bottom				
BA6DC	BA6DC-WO35-0915-1	35	139	-
BA7DC	BA7DC-WO35-0915-1	35	104	-
BA7DC	BA7DC-WO38-0915-2	39	88.4	-
BA8DC	BA8DC-WO35-0915-1	35	79.8	-
BA8DC	BA8DC-WO38-0915-1	38	74.2	97.1
Up-current of outfall diffusers - near surface				
BA9DC	BA9DC-WO5-0315-1	5	42.1	-
BA10DC	BA10DC-WO5-0915-1	5	18.9	30.5
Up-current of outfall diffusers - mid-column				
BA9DC	BA9DC-WO20-0315-1	20	70.5	-
BA10DC	BA10DC-WO20-0915-1	20	11.7	41.1
Up-current of outfall diffusers - near-bottom				
BA9DC	BA9DC-WO35-0315-1	35	49.1	-
BA9DC	BA9DC-WO38-0315-2	38	7.40	-
BA10DC	BA10DC-WO35-0915-1	35	34.5	30.3

Notes
1. Concentrations and averages are in picograms per liter (pg/L [parts per quadrillion (ppq)]).

Table 3-16 — Summary of Fish Collections
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Collection area	*Longitude*	*Latitude*	*Catch date*	*BSB collected*	*WC collected*	*Sample names*	*Caught by*	*Catch method*
Huntington Flats	118° 03.403' W	33° 39.301' N	7/20/2015	1	0	HFBSB-2015-01	Seaventures	Trap
			7/15-18/2016	29	0	HFBSB-2016-02 through HFBSB-2016-30	Seaventures	Trap, H&L
Subtotal Huntington Flats				*30*	*0*			
Redondo Flats	118˚ 25.066' W	33˚ 51.379' N	7/15/2015	2	0	RFBSB-2015-01 through RFBSB-2015-02	Seaventures	Trap
			7/17/2015	1	0	RFBSB-2015-03	Seaventures	Trap
			7/18/2015	5	0	RFBSB-2015-04 through RFBSB-2015-08	Seaventures	Trap, H&L
			7/19/2015	0	5	RFWC-2015-01 through RFWC-2015-05	Seaventures	Trawl
			7/19-24/2016	18	3	RFBSB-2016-09 to -26, RFWC-2016-06 to -08	Seaventures	H&L, Trawl
Subtotal Redondo Flats				*26*	*8*			
Ventura Flats	119˚ 19.639' W	34˚ 14.195' N	7/16/2015	0	30	VFWC-2015-01 through VFWC-2015-30	Seaventures	Trawl
Zone 1	118˚ 19.966' W	33˚ 42.157' N	6/10/2014	3	0	Z1BSB-2014-01 through Z1BSB-2014-03	Sanitation Districts	Trap
			6/13/2014	1	0	Z1BSB-2014-04	Sanitation Districts	Trap
			9/29/2014	1	0	Z1BSB-2014-05	Sanitation Districts	Trap
			10/1/2014	5	0	Z1BSB-2014-06 through Z1BSB-2014-10	Sanitation Districts	Trap
			10/2/2014	1	0	Z1BSB-2014-11	Sanitation Districts	Trap
			10/20/2014	0	30	Z1WC-2014-01 through Z1WC-2014-30	Sanitation Districts	Trawl
			12/5/2014	8	0	Z1BSB-2014-12 through Z1BSB-2014-19	Sanitation Districts	Trap
			12/9/2014	4	0	Z1BSB-2014-20 through Z1BSB-2014-23	Sanitation Districts	Trap
			12/22/2014	7	0	Z1BSB-2014-24 through Z1BSB-2014-30	Sanitation Districts	Trap
Subtotal Zone 1				*30*	*30*			
Zone 2	118˚ 24.061' W	33˚ 44.051' N	7/15/2014	1	0	Z2BSB-2014-01	Sanitation Districts	Trap
			8/19/2014	1	0	Z2BSB-2014-02	Sanitation Districts	Trap
			10/1/2014	1	0	Z2BSB-2014-03	Sanitation Districts	Trap
			10/20/2014	0	30	Z2WC-2014-01 through Z2WC-2014-30	Sanitation Districts	Trawl
			5/13/2015	2	0	Z2BSB-2014-04 through Z2BSB-2014-05	Sanitation Districts	Trap
			5/14/2015	1	0	Z2BSB-2014-06	Sanitation Districts	Trap
			5/21/2015	2	0	Z2BSB-2014-07 through Z2BSB-2014-08	Sanitation Districts	Trap
			6/2/2015	4	0	Z2BSB-2014-09 through Z2BSB-2014-12	Sanitation Districts	Trap
Subtotal Zone 2				*12*	*30*			
Zone 3	118˚ 25.808' W	33˚ 47.990' N	10/20/2014	0	14	Z3WC-2014-01 through Z3WC-2014-14	Sanitation Districts	Trawl
			10/21/2014	0	16	Z3WC-2014-15 through Z3WC-2014-30	Sanitation Districts	Trawl
			7/15/2015	1	0	Z3BSB-2014-01	Sanitation Districts	Trap
			7/17/2015	3	0	Z3BSB-2014-02 through Z3BSB-2014-04	Sanitation Districts	Trap
			5/13/2016	0	0	No BSB or WC caught	NA	Trap
			5/27/2016	0	0	No BSB or WC caught	NA	Trap
			6/28/2016	3	0	Z3BSB-05 through Z3BSB-07	Sanitation Districts	Spear
			7/6/2016	3	0	Z3BSB-08 through Z3BSB-10	Sanitation Districts	Spear
			7/29/2016	3	0	Z3BSB-11 through Z3BSB-13	Sanitation Districts	Spear
			8/4/2016	1	0	Z3BSB-14	Sanitation Districts	Trap
			8/22, 8/26, 8/31	0	0	No BSB or WC caught	NA	Trap, spear
Subtotal Zone 3				*14*	*30*			
Breakwater Zone	118˚ 12.639' W	33˚ 42.261' N	7/2/2014	1	0	BWBSB-2014-01	Sanitation Districts	Trap
			7/3/2014	2	0	BWBSB-2014-02, BWBSB-2014-03	Sanitation Districts	Trap
			7/14/2014	7	0	BWBSB-2014-04 through BWBSB-2014-10	Sanitation Districts	H&L
			10/21/2014	0	5	BWWC-2014-01 through BWWC-2014-05	Sanitation Districts	Trawl
			10/22/2014	0	25	BWWC-2014-06 through BWWC-2014-30	Sanitation Districts	Trawl
			10/22/2014	4	0	BWBSB-2014-11 through BWBSB-2014-14	Sanitation Districts	Trap
			4/15/2015	3	0	BWBSB-2014-15 through BWBSB-2014-17	Sanitation Districts	Trap
			6/9/2015	2	0	BWBSB-2014-18 through BWBSB-2014-19	Sanitation Districts	Trap
			6/10/2015	1	0	BWBSB-2014-20	Sanitation Districts	Trap
			6/16/2015	2	0	BWBSB-2014-21 through BWBSB-2014-22	Sanitation Districts	Trap
			6/30/2015	2	0	BWBSB-2014-23 through BWBSB-2014-24	Sanitation Districts	Trap
			7/14/2015	1	0	BWBSB-2014-25	Sanitation Districts	Trap
			4/19/2016	6	0	BWBSB-2014-26 through BWBSB-2014-31	Sanitation Districts	H&L, trap
Subtotal Breakwater Zone				*31*	*30*			
TOTALS FOR OUTFALL AREA				**87**	**120**			
GRAND TOTAL			**301**	**143**	**158**			
Planned			*340*	*160*	*180*			

Abbreviations:
BSB - Barred sand bass (Paralabrax nebulifer)
H&L - Hook and line
NA - Not applicable
NAD - North American Datum
WC - White croaker (Genyonemus lineatus)

Notes:
1. Latitude and longitude coordinates are for the approximate center point of the relevant fish collection area, in degrees-decimal minutes; geographic coordinate system is NAD 83.
2. Fish collection areas are shown on Figure 2-5.

Table 3-17 — Total DDTs in Fish
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Fish identifier	Barred sand bass						White croaker					
	Breakwater Zone	*Huntington Flats*	*Redondo Flats*	*Zone 1*	*Zone 2*	*Zone 3*	*Breakwater Zone*	*Redondo Flats*	*Ventura Flats*	*Zone 1*	*Zone 2*	*Zone 3*
1	22.2	172	31.1	155	39.2	19.5	287	382	11	603	598	580
2	155	21.3	35.8	146	93.3	35	105	508	10.8	1,280	1,040	528
3	57.4	124	112	105	64.4	245	293	163	5.71	1,180	856	245
4	99.2	205	101	137	225	219	57	118	17.1	348	410	685
5	70.5	134	78.3	331	371	250	81.8	195	7.72	451	611	268
6	48.1	59	105	100	198	32.7	166	247	9.06	580	341	496
7	78.3	141	114	501	44.9	58.7	280	79.8	8.11	401	711	433
8	26.2	58.4	122	206	60.8	61	294	82.9	6.51	236	865	469
9	201	47.7	8.77	72.6	296	18.6	308		12.5	416	129	248
10	31.5	27.7	22.4	133	83.8	13.4	421		16.1	1,290	347	183
11	91.7	20.4	153	191	114	177	622		8.13	265	136	424
12	247	30.6	15.5	565	40.4	156	264		6.46	2,080	182	515
13	121	137	34.2	518		32.8	434		4.83	693	110	1,530
14	56.5	84.9	50.4	551		37.5	585		6.94	295	758	551
15	41.3	130	73.1	529			233		7.32	680	2,000	365
16	49.5	62.7	25.1	302			333		17.7	187	991	207
17	31	64.7	22.7	536			341		7.5	389	2,030	84.4
18	93	20.2	9.99	116			331		7.77	229	1,680	1,020
19	45.5	543	66.9	214			374		4.49	2,360	1,060	81.7
20	24.6	95.2	36.1	74.5			316		5.66	347	632	281
21	38.7	29.3	39.6	17.6			253		20.4	836	1,600	553
22	160	119	25.6	91.1			517		21.3	1,700	355	259
23	85.1	32.6	46.1	662			91.7		16.2	311	552	166
24	27.6	147	26.1	37.6			383		18.8	1,400	472	335
25	136	143	47.1	297			187		16.1	678	852	381
26	23.9	29.1	15.1	107			120		17.4	390	508	353
27	47.8	52.6		508			199		16.2	834	551	561
28	51.5	10.7		701			341		17.6	2,110	1,180	281
29	37.4	31.5		325			164		17.4	157	1,410	160
30	90.9	28.9		339			129		9.97	225	215	256
31	46.4											
Summary statistics												
Minimum	22.2	10.7	8.77	17.6	39.2	13.4	57	79.8	4.49	157	110	81.7
Median	51.5	60.9	37.9	210	88.6	48.1	290	179	10.4	516	622	359
Mean	75.3	93.4	54.5	286	136	96.9	284	222	11.8	765	773	417
95% UCL	94.2	126	72.1	376	227	172	328	324	13.4	995	939	515
Maximum	247	543	153	701	371	250	622	508	21.3	2,360	2,030	1,530
StDev	55.3	101	40.3	206	111	91.0	143	152	5.3	627	536	289
N	31	30	26	30	12	14	30	8	30	30	30	30
N >= IROD goal	NA	NA	NA	NA	NA	NA	5	1	0	18	22	13

Notes
1. All Total DDTs are in micrograms per kilogram (ug/kg).
2. Total DDTs is the sum of six target DDT isomers (o,p'-DDD, o,p'-DDE, o,p'-DDT, p,p'-DDD, p,p'-DDE, p,p'-DDT).
3. Shaded cells show Total DDTs greater than the IROD Remedial Action Objective (RAO) for white croaker ingestion of 400 ug/kg
4. In calculating summations of Total DDTs, nondetects were assumed to have a value of the EDL

Abbreviations
DDD - Dichlorodiphenyldichloroethane
DDE - Dichlorodiphenyldichloroethene
DDT - Dichlorodiphenyltrichloroethane
EDL - Estimated detection limit (sample specific)
IROD - Interim Record of Decision
N - Number of fish
NA - Not available
RAO - Remedial Action Objective
StDev - Standard deviation
UCL - Upper confidence limit (of the mean)
ug/kg - Micrograms per kilogram
>= - Greater than or equal to

Table 3-18 — Total DDT Compounds in Fish
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Fish identifier	Barred sand bass						White croaker					
	Breakwater Zone	Huntington Flats	Redondo Flats	Zone 1	Zone 2	Zone 3	Breakwater Zone	Redondo Flats	Ventura Flats	Zone 1	Zone 2	Zone 3
1	23.6	183	32.1	172	42.9	20.3	315	417	11.6	834	796	673
2	163	22.5	37.7	158	107	36	115	545	11.3	1,690	1,360	584
3	61.1	133	120	114	68.9	256	318	180	6.07	1,640	1,330	287
4	105	220	107	151	236	230	64.3	128	18.2	415	562	819
5	73.6	142	81.6	360	408	261	88.5	210	8.17	536	886	307
6	51.3	71	110	106	228	33.8	191	268	9.75	690	489	564
7	79.7	149	120	557	49.6	62.6	306	92.2	8.59	536	993	551
8	28.1	62.4	128	218	68.4	64.5	327	92.9	6.82	282	1,360	534
9	214	51.3	9.45	80.4	331	19.5	335		12	495	315	278
10	33.6	29.3	23.5	151	94.1	14.4	468		15.9	1,760	448	204
11	95.9	21.7	163	208	135	187	696		7.88	319	167	473
12	256	33.1	16.7	672	42.5	165	298		6.18	2,860	225	564
13	131	148	36	591		34.1	480		4.64	789	131	1,970
14	61.6	88.8	53.5	654		38.8	646		6.76	368	887	611
15	42.5	143	79.9	607			264		7.17	854	2,620	450
16	51.2	67.2	26.6	360			371		18.5	259	1,400	234
17	32.5	68.6	24.4	639			385		7.34	490	2,590	94.3
18	97.1	21.5	10.8	134			380		8.07	291	1,950	1,260
19	47.2	589	70.9	234			415		4.39	3,230	1,470	91.6
20	25.5	106	39.3	79.9			358		5.58	433	736	305
21	41	31.6	42.8	22.2			272		21.3	1,040	1,940	606
22	167	130	27.9	94.8			569		22.2	2,430	411	297
23	89.8	34.8	49.4	796			100		16.6	377	747	208
24	29.1	163	28.1	39.7			423		19.6	1,810	554	394
25	140	155	50.6	314			207		16.5	928	1,190	422
26	25	30.7	16.3	118			131		18	447	681	411
27	50.5	55.8		548			220		16.7	1,220	701	670
28	53.2	11.4		810			383		18.4	3,010	1,590	314
29	38.7	35		361			179		18.3	194	1,940	177
30	94.2	31.9		382			143		10.6	272	249	284
31	49											
Summary statistics												
Minimum	23.6	11.4	9.45	22.2	42.5	14.4	64.3	92.2	4.39	194	131	91.6
Median	53.2	67.9	41.1	226	100.6	50.7	316.5	195	11.0	613	841	416.5
Mean	79.1	101.0	57.9	324	151	101.6	315	242	12.1	1,017	1,024	488
95% UCL	98.8	136	76.5	430	214	180	364	351	13.8	1,440	1,240	609
Maximum	256	589	163	810	408	261	696	545	22.2	3,230	2,620	1,970
StDev	57.9	109	42.6	243	122	95.4	159	163	5.6	886	688	368
N	31	30	26	30	12	14	30	8	30	30	30	30

Notes
1. All Total DDT Compounds are in micrograms per kilogram (ug/kg).
2. Total DDT Compounds is the sum of eight target DDT isomers: o,p'-DDD, o,p'-DDE, o,p'-DDT, p,p'-DDD, p,p'-DDE, p,p'-DDT, p,p'-DDMU and p,p'-DDNU.
3. In calculating summations of Total DDT Compounds, nondetects were assumed to have a value of the EDL

Abbreviations
DDD - Dichlorodiphenyldichloroethane
DDE - Dichlorodiphenyldichloroethene
DDMU - 1,1-Bis(4-chlorophenyl)-2-chloroethene
DDNU - 1,1-Bis(4-chlorophenyl)ethene
DDT - Dichlorodiphenyltrichloroethane
EDL - Estimated detection limit (sample specific)
N - Number of fish
StDev - Standard deviation
UCL - Upper confidence limit (of the mean)
ug/kg - Micrograms per kilogram

Table 3-19 — Total PCBs in Fish
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Fish identifier	Barred sand bass						White croaker					
	Breakwater Zone	*Huntington Flats*	*Redondo Flats*	*Zone 1*	*Zone 2*	*Zone 3*	*Breakwater Zone*	*Redondo Flats*	*Ventura Flats*	*Zone 1*	*Zone 2*	*Zone 3*
1	21.3	20.3	16	19.5	9.13	4.22	52.1	62.5	3.37	79.9	89.5	55.6
2	22.6	20	12.9	37.3	21.1	4.19	21.3	146	2.4	89.3	115	61
3	8.01	133	128	16.7	38.3	34.6	33.8	42	1.34	103	109	30
4	22.2	65.8	41.6	17.2	32.5	22.9	10.6	30.9	3.85	42.9	63.6	102
5	24	71.1	32.8	27.3	66	38.5	16.7	68.6	1.96	45.8	102	35.8
6	16.3	32.7	58.3	22.8	47.4	7.74	46.2	112	2.43	62.2	71.9	90.7
7	36.2	40.4	28.3	53.3	4.39	7.62	58.5	26.5	2.32	65.9	118	57.1
8	11.4	27.7	30.1	22.8	7.17	28.4	55.3	73.8	1.95	45.4	111	41
9	29.8	63.5	11.3	19.2	21.7	5.56	64.7		3.37	62.1	76	29.7
10	11.6	28.6	16.2	16.7	13.8	9.72	59.4		3.09	115	71.7	62.2
11	19.4	17.5	58.2	22.9	6.87	21.2	81		1.96	40.5	43.2	39.4
12	77.3	15.2	6.83	37.8	3.77	25.4	55.1		1.82	186	29.5	66.6
13	13.9	171	10.1	39		4.89	76.8		1.75	118	24.7	164
14	7.4	46.4	20.2	50.5		11.1	75.9		1.78	45.5	145	70.6
15	8.95	44.5	26.4	60.2			68		1.82	154	225	30.7
16	5.84	29.7	11.2	32.3			47.3		2.06	46.5	176	76.8
17	6.1	32.9	15.5	31.9			70.9		2.53	41.8	196	14.9
18	21	8.85	4.96	16.1			72.5		2.12	63.5	256	62.8
19	11.9	164	42.4	65.8			64.8		1.9	138	225	9.98
20	14.1	39.9	24.2	9.5			65.3		2.22	40.9	173	21.2
21	5.81	12.9	25.2	7.05			46.3		4.95	72.3	161	54.9
22	23.8	42.7	20.9	14.8			87.4		4.79	134	83.4	38.7
23	9.65	20.3	18.1	87.5			35.2		3.94	42	69.1	35.9
24	7.76	33.3	18	6.46			69.2		5.14	122	50.9	31.4
25	17.1	36.6	30.1	50.3			33.5		2.91	78.8	168	64.7
26	4.24	9.25	8.43	17.9			26.6		3.92	49.5	59.4	26
27	13.3	49.9		76.1			34.9		3.83	80.5	54.3	37.2
28	18.8	12.3		106			59		2.91	199	167	43.9
29	27.5	14.1		16.6			33.5		2.84	59.8	152	27.7
30	28.8	7.68		43.1			38.3		3.33	40.9	50.3	38.1
31	4.83											
Summary statistics												
Minimum	4.24	7.68	4.96	6.46	3.77	4.19	10.6	26.5	1.34	40.5	24.7	9.98
Median	14.1	32.8	20.6	25.1	17.5	10.4	55.2	65.6	2.48	64.7	106	40.2
Mean	17.8	43.7	27.5	34.8	22.7	16.1	52.0	70.3	2.82	82.2	115	50.7
95% UCL	22.2	57.8	36.2	44.0	32.9	25.4	58.2	97.8	3.14	97.6	134	60.1
Maximum	77.3	171	128	106	66.0	38.5	87.4	146	5.14	199	256	164
StDev	13.9	42.0	24.9	24.6	19.7	12.0	20.1	41.1	1.03	44.8	63.0	30.4
N	31	30	26	30	12	14	30	8	30	30	30	30
N >= IROD RAO	NA	NA	NA	NA	NA	NA	6	3	0	14	21	5

Notes
1. Total PCBs is the sum of 46 PCB congeners: 8, 18, 28, 31, 37, 44, 49, 52, 66, 70, 74, 77*, 81*, 87, 99, 101, 105*, 110, 114*, 118*, 119, 123*, 126*, 128, 138, 149, 151, 153, 156*, 157*, 158, 167*, 168, 169*, 170, 177, 180, 183, 187, 189*, 194, 195, 201, 203, 206, and 209. The list includes 12 dioxin-like congeners designated with an asterisk (e.g., PCB 126*).
2. All Total PCBs are in micrograms per kilogram (ug/kg)
3. Shaded cells show Total PCBs greater than the IROD Remedial Action Objective (RAO) for white croaker ingestion of 70 ug/kg.
4. In calculating summations of Total PCBs, nondetects were assumed to have a value of the EDL.

Abbreviations
EDL - Estimated detection limit (sample specific)
IROD - Interim Record of Decision
N - Number of fish
NA - Not available
PCB - Polychlorinated biphenyl
RAO - Remedial Action Objective
StDev - Standard deviation
UCL - Upper confidence limit (of the mean)
ug/kg - Micrograms per kilogram
>= - Greater than or equal to

Table 4-1 – History of Mass Estimates of COCs at PV Shelf
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

***Mass of p,p'-DDE* (MT)**	***Mass of PCBs* (MT)**	***Modeled area* (km^2)**	***Data set***	***Computational approach***	***Reference*[a]**
119.6	NA	43.8	Gravity cores collected by Sanitation Districts between 1981-1989, plus 2 cores from 1991	Integration of five water-depth zones	Lee, H.J., 1994
72	12.3	22.1	1992 USGS box cores and gravity cores from 38 stations	Integration of five water-depth zones	Lee, H.J., 1994
66.8	NA	43.1	1992 USGS box cores and gravity cores from 38 stations	Integration of five water-depth zones	Lee, H.J., *et al*., 2002
71.9	NA	22.1	1992 USGS box cores and gravity cores from 38 stations	Integration of four "volume grids" using "E-type" estimate	Murray, C.J., *et al*., 2002
61.4	NA	22.1	1992 USGS box cores and gravity cores from 38 stations	Integration of four "volume grids" using median concentrations	Murray, C.J., *et al*., 2002
9.7	1.0	29.8	2009 gravity cores from 59 stations	Kriging using MVS with cell averaging	ITSI Gilbane, 2013
13.8	1.0	29.8	2009 gravity cores from 59 stations	Kriging using MVS with adaptive gridding	ITSI Gilbane, 2013
30	2.9 (5.9)[b]	29.8	2013 gravity cores from 65 stations	Kriging using MVS with 20,000 horizontal to vertical anisotrop	Appendix C (this report)

Abbreviations
- km^2 -- square kilometers
- m^3 -- cubic meters
- MT -- Metric tons = grams X 10^6
- MVS -- Mining Visualization System
- NA -- Not available

Superscript Notes
- [a] References are provided in Section 6.0 of this report.
- [b] Mass of PCBs provided as 2009 list of congeners result with 2013 expanded list of congener result in parentheses.

Table 4-2 — Comparison of Sediment Results - 2009 versus 2013
First MNR Report
Palos Verdes Shelf (OU5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Location	Field sample ID	Lab sample ID	Orginal ID	Year of collection	SBD-SED	o,p'-DDD	o,p'-DDE	o,p'-DDT	p,p'-DDD	p,p'-DDE	p,p'-DDT	Total DDTs	DDMU	DDNU	Total DDT Compounds	Total PCBs
BA5B	PVSED-001	17-03-0175-1	BA5B01200905	2009	4-6	200	1,400	27.0 J	510	10,000	140	12,000	3,000	210	15,000	1,900
	PVSED-003	17-03-0175-3	BA5B01201305	2013	4-6	260	1,900	49.0 J	670	12,000	440	15,000	6,200	240	22,000	3,900
	PVSED-002	17-03-0175-2	BA5B01200907	2009	6-8	260	2,000	60.0 J	700	15,000	600	19,000	4,000	280	23,000	3,000
	PVSED-004	17-03-0175-4	BA5B01201307	2013	6-8	460	3,300	65.0 J	1,100	18,000	370	23,000	14,000	390	38,000	5,000
BA6BC	PVSED-005	17-03-0175-5	BA6BC01200905	2009	4-6	180	1,200	50	590	7,700	290	10,000	3,800	170	14,000	1,500
	PVSED-007	17-03-0175-7	BA6BC01201305	2013	4-6	210	1,200	43	680	5,400	740	8,300	7,000	210	15,000	2,200
	PVSED-006	17-03-0175-6	BA6BC01200907	2009	6-8	240	1,400	32.0 J	1,300	8,100	340	11,000	6,200	240	18,000	2,800
	PVSED-008	17-03-0175-8	BA6BC01201307	2013	6-8	470	2,400	70.0 J	1,400	7,600	930	13,000	16,000	340	29,000	5,100
BA9C	PVSED-009	17-03-0175-9	BA9C01200903	2009	2-4	86	520	17.0 J	260	2,700	370	4,000	1,100	49	5,100	570
	PVSED-010	17-03-0175-10	BA9C01201303	2013	2-4	19.0 J	110	3.40 J	57	650	19.0 J	860	250	18.0 J	1,100	140
OA10	PVSED-011	17-03-0175-11	OA1001200901	2009	0-2	97	690	16.0 J	380	4,400	1,000	6,600	1,300	71	8,000	740
	PVSED-014	17-03-0175-14	OA1001201301	2013	0-2	81	560	13.0 J	280	3,400	230	4,600	1,400	78	6,000	650
	PVSED-012	17-03-0175-12	OA1001200905	2009	4-6	80	640	23.0 J	300	3,900	780	5,700	1,400	64	7,200	990
	PVSED-015	17-03-0175-15	OA1001201305	2013	4-6	210	1,300	120	660	6,900	1,300	10,000	3,500	150	14,000	1,400
	PVSED-013	17-03-0175-13	OA1001200907	2009	6-8	200	1,500	31.0 J	720	8,900	950	12,000	4,500	150	17,000	2,000
	PVSED-016	17-03-0175-16	OA1001201307	2013	6-8	460	3,300	130	1,500	15,000	1,400	22,000	12,000	420	34,000	7,300
OA11	PVSED-017	17-03-0175-17	OA1101200901	2009	0-2	150	1,500	32.0 J	500	9,400	1,400	13,000	2,400	110	15,000	1,700
	PVSED-019	17-03-0175-19	OA1101201301	2013	0-2	59	750	12.0 J	230	4,200	670	5,900	1,600	49	7,600	860
	PVSED-018	17-03-0175-18	OA1101200905	2009	4-6	80	720	17.0 J	400	4,500	350	6,100	1,100	44	7,200	700
	PVSED-020	17-03-0175-20	OA1101201305	2013	4-6	84	990	15.0 J	300	5,700	460	7,500	2,200	61	9,800	1,200

Notes
1. SBD-SED is the depth interval in the sediment bed, in centimeters. For example, when SBD-SED = 2-4, the interval begins at a bed depth of 2 centimeters and ends at 4 centimeters.
2. All concentrations of DDTs and PCBs are in micrograms per kilogram (ug/kg = parts per billion).

Table 4-3 — Comparison of Outputs of Geostatistical Models
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

	Total DDTs			***Total DDT Compounds***			***Total PCBs - expanded list***		
	Primary model	***Secondary model***	***RPD (%)***	***Primary model***	***Secondary model***	***RPD (%)***	***Primary model***	***Secondary model***	***RPD (%)***
Average concentrations									
Shelf-wide sediment									
Total bed	3,300	2,500	-28	4,700	3,400	-28	400	270	-39
0-8 cm interval	1,800	1,500	-18	2,500	2,100	-16	240	190	-23
Total mass									
Shelf-wide sediment									
Total bed	42,000	38,000	-10	61,000	52,000	-15	5,900	4,100	-36
0-8 cm interval	3,600	3,900	8	5,000	5,300	6	570	470	-19

Abbreviations
cm - Centimeter
OC - Organic carbon
RPD - Relative percent difference

Notes
1. Values of average concentrations are in micrograms per kilogram OC normalized.
2. Values of total mass are in kilograms.
3. The outputs from the secondary model are averages of concentrations obtained from several model runs that used different values for horizontal-to-vertical anisotropy (see Appendix AA).

Table 4-4 - Comparison of DDTs in Water
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Nominal sample depth (m)		*Near-surface (-5 m)*			*Mid-column (~1/2 total depth)*				*Near-bottom (+5 m)*					*Bottom (+2 m)*		*Bottom (+1 m)*
Sample type		*PED*	*SPME*	*Grab*	*Pump*	*PED*	*SPME*	*Grab*	*Pump*	*PED*		*SPME*	*Grab*	*Pump*	*Grab*	*Pump*
Location	*Total depth (m)*	*2013*	*2013*	*2015*	*1997*	*2013*	*2013*	*2015*	*1997*	*2010*	*2013*	*2013*	*2015*	*1997*	*2015*	*1997*
BA1C	60	117		87.0		1,780		219		2,170	4,290		434		256	
BA3C	60	196		76.0 (223)		2,250		419		NA	4,330		178		248	3,650
BA4C	60	162	157	44.0		1,940	826	63.0		4,960	10,500	2,139	170		1,590	
BA5C	60	135		33.3		2,610		128		4,700	7,010		560		1,000 (1,200)	4,350
BA5DC	40	196		21.8		1,490		13.5		3,490	4,300		430		1,100 (972)	
BA6B	150			36.1				86.9					196			3,050
BA6C	60			44.8	550			381	4,500				690	5,350		6,400
BA6DC	40			46.9				160					1,030			
BA6D	30															2,850
BA7C	60	135	154	14		1,740	973	949		NA	6,620	2,669	7.40		ND	4,500
BA7DC	40	136		37.1		1,000		151		3,640	2,990		1,040		700 (803)*	
BA8C	60	NA	142	25.9		1,420	841	7.40		3,110	1,520	2,053	292		234 (383)*	
BA8DC	40	77.5		23.3		561		104		2,860	3,370		490		510	
BA9C	60	NA	114	0.87		517	426	103		1,440	1,240	1,013	130		200	3,150
BA9DC	40	105		4.10		564		154		2,130	1,330		168		45.6 (141)*	
W1	60	84.3		NA		854		142			1,530		99.2		240	
0C	60															2,050
W2	200	73.4		41.0		335		88.6			1,190		261		231	
W3	200	76.4	127	ND		409	550	167			1,890	2,151	500		1,270	
W4	200	41.2		103		354		141			1,250		540		107	
W5	60	NA		15.4		NA		48.3			NA		12.8 (17.0)		23.6	
T11	60	ND	72	ND		24.6	93	30.8		81.8	38.6	ND	ND		ND	

Abbreviations
AWQC - Ambient Water Quality Criteria
DDD - dichlorodiphenyldichloroethane
DDE - dichlorodiphenyldichloroethene
DDT - dichlorodiphenyltrichloroethane
EDL - estimated detection limit (sample-specific)
IROD - Interim Record of Decision
m - meter(s)
MNR - monitored natural recovery
NA - not available, planned for but not reported due to various sampling or analytical reasons
ND - not detected
o,p - ortho or para position of chlorine on phenyl groups
PED - polyethylene device
pg/L - picograms per liter
SPME - solid-phase microextraction fibers

Notes
1. Analytical results for DDTs are shown in **picograms per liter (pg/L**, parts per quadrillion).
2. "DDTs" is the sum of six target DDT isomers (o,p'-DDD, o,p'-DDE, o,p'-DDT, p,p'-DDD, p,p'-DDE, and p,p'-DDT).
3. Results in parentheses (223) are replicate sample results. Parentheses with an asterisk (803)* are the higher of two triplicate results.
4. Shaded cells show DDTs greater than the IROD AWQC (ecological) of 1 nanogram per liter (ng/L) = 1,000 pg/L. The protectiveness of the 2009 IROD DDTs limits may be re-evaluated at the next 5-year review, as AWQC for individual DDT isomers were updated in 2015.
5. In calculating summations of DDTs, **non-detects were assumed to have a value of zero**.
6. Pumped samples were collected via tubing from selected depths; minimum sample volumes were 1,100 liters; samples were filtered; results were derived for both the dissolved-phase (filtrate) and the filter residue. DDTs were collected on a XAD-II resin column.

Sampling Events
1997 - Average of dissolved winter and summer sampling results from *In Situ Measurements of Chlorinated Hydrocarbons in the Water Column off the Palos Verdes Peninsula, California* (Zeng, 1999).
2010 - Passive sampling to measure background dissolved persistent organic pollutant concentrations in the water column of the Palos Verdes Shelf Superfund site (Fernandez et al., 2012). Results were recalculated using updated PED-water partitioning coefficients (K_{pew}) derived in the 2013 study (Appendix D of this report).
2013 - *Palos Verdes Shelf Water Column Passive Samplers Deployment: Data Summary* (Appendix D of this report)
2015 - High resolution grab water sampling

Table 4-5 - Comparison of PCBs in Water
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Nominal sample depth (m)		*Near-surface (-5 m)*		*Mid-column (~1/2 total depth)*			*Near-bottom (+5 m)*				*Bottom (+2 m)*		*Bottom (+1 m)*
Sample type		*PED*	*Grab*	*Pump*	*PED*	*Grab*	*Pump*	*PED*		*Grab*	*Pump*	*Grab*	*Pump*
Location	*Total Depth (m)*	*2013*	*2015*	*1997*	*2013*	*2015*	*1997*	*2010*	*2013*	*2015*	*1997*	*2015*	*1997*
BA1C	60	13	23		46	46		47	140	48		46	
BA3C	60	20	13 (19)		50	52		NA	93	28		28	310
BA4C	60	17	24		38	33		100	310	50		170	
BA5C	60	18	19		69	24		69	140	76		110 (140)	360
BA5DC	40	23	20		39	14		66	85	53		120 (110)	
BA6B	150		18			22				50			260
BA6C	60		43	110		65	445			94	455		550
BA6DC	40		19			15				140			
BA6D	30												410
BA7C	60	13	92		36	190		NA	130	27		5.2	420
BA7DC	40	15	11		24	58		51	62	100		88 (87)*	
BA8C	60	NA	3.8		31	24		49	27	63		39 (25)	
BA8DC	40	10	16		13	110		45	72	80		74	
BA9C	60	NA	12		13	41		21	32	25		31	160
BA9DC	40	12	42		13	70		31	24	49		7.4 (8.6)	
W1	60	4.6	6.5		16	29			26	16		11	
0C	60												170
W2	200	4.4	25		7.3	40			30	57		48	
W3	200	5.8	27		8.3	36			52	120		150	
W4	200	4.1	41		8.5	29			38	78		5.1	
W5	60	NA	5.0		NA	13			NA	3.9 (3.9)		15	
T11	60	1.5	1.3		1.0	6.8		4.0	2.1	0.52		0.51	

Abbreviations
AWQC - Ambient Water Quality Criteria
IROD - Interim Record of Decision
m - meters
MNR - monitored natural recovery
NA - not available
o,p - ortho or para position of chlorine on phenyl groups
PCB - polychlorinated biphenyl
PED - polyethylene device
pg/L - picograms per liter
PRC - performance reference compound
SPME - solid-phase microextraction

Notes
1. Analytical results for PCBs are in **picograms per liter (pg/L**, parts per quadrillion).
2. Concentrations of PCBs are summations of various congener lists (see Note 5).
3. Results in parentheses (140) are replicate sample results. Parentheses with an asterisk (87)* are the higher of two triplicate results.
4. Shaded cells show Total PCBs greater than the IROD AWQC (human health) of 0.064 nanograms per liter (ng/L) = 64 pg/L. The protectiveness of the 2009 IROD PCBs limits may be re-evaluated at the next 5-year review.
5. In calculating summations of Total PCBs, **non-detects were assumed to have a value of zero**.
   PED results include 44 PCB congeners (not including PCB 31, 195, 203; including PCB 200), and were PRC adjusted.
   Grab results include 46 PCB congeners (not including PCB 200), adjusted with labeled isotopic standards.
   Pump results include 27 PCB congeners; XAD-II resin column spiked by lab with labeled surrogates.
6. Pumped samples were collected via tubing from selected depths; minimum sample volumes were 1,100 liters; samples were filtered; results were derived for both the dissolved-phase (filtrate) and the filter residue.

Sampling Events
1997 - Average of dissolved winter and summer sampling results from *In Situ Measurements of Chlorinated Hydrocarbons in the Water Column off the Palos Verdes Peninsula, California* (Zeng, 1999).
2010 - *Passive sampling to measure background dissolved persistent organic pollutant concentrations in the water column of the Palos Verdes Shelf Superfund Site* (Fernandez et al., 2012). Results were recalculated using updated PED-water partitioning coefficients (K_{pew}) derived in the 2013 study (Appendix D of this report).
2013 - *Palos Verdes Shelf Water Column Passive Samplers Deployment: Data Summary* (Appendix D of this report).
2015 - High resolution grab sampling

Table 4-6 – Comparison of DDTs in Fish
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

	BSB									WC											
Sampling event	*NOAA 2002-2004 (ND = 0)*			*Sanitation Districts 2012 (ND = 0)*			*EPA 2014-2016 (ND = EDL)*			*NOAA 2002-2004 (ND = 0)*			*EPA ICs 2009-2012 (ND = MDL)*			*Sanitation Districts 2015 (ND = 0)*			*EPA 2014-2016 (ND = EDL)*		
Location	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*
Breakwater Area	60,700	202,000 (6)	402,000				22,200	75,350 (31)	247,000	17,300	251,000 (49)	2,900,000	14,800	127,000 (15)	267,000				57,000	284,000 (30)	622,000
Huntington Flats	124,000	124,000 (1)	124,000				10,700	93,400 (30)	543,000	35,600	104,000 (10)	188,000									
Redondo Flats	45,300	99,100 (10)	269,000				8,770	54,500 (26)	153,000	60,100	234,000 (25)	874,000							79,800	222,000 (8)	508,000
Ventura Flats										44,200	84,000 (9)	115,000	10,300	25,200 (4)	48,300				4,490	11,800 (30)	21,300
Zone 1	46,200	882,000 (16)	4,320,000		127,000 (10)		17,600	286,000 (30)	701,000	186,000	1,350,000 (16)	6,770,000					2,850,000 (10)		157,000	765,000 (30)	2,360,000
Zone 2					70,000 (10)		39,200	136,000 (12)	371,000	127,000	992,000 (29)	3,590,000					1,550,000 (10)		110,000	773,000 (30)	2,030,000
Zone 3	65,400	303,000 (5)	586,000		65,000 (10)		13,400	96,900 (14)	250,000								875,000 (10)		81,700	417,000 (30)	1,530,000

Abbreviations
Avg - Average
BSB - Barred sand bass
COCs - Chemicals of concern
DDD - Dichlorodiphenyldichloroethane
DDE - Dichlorodiphenyldichloroethene
DDT - Dichlorodiphenyltrichloroethane
EDL - Estimated detection limit (sample specific)
EPA - United States Environmental Protection Agency
ICs - Institutional Controls
IROD - Interim Record of Decision
JWPCP - Joint Water Pollution Control Plant
m - Meters
Max - Maximum
MDL - Method detection limit
Min - Minimum
MNR - Monitored natural recovery
NA - Not applicable
ND - Not detected
NOAA - National Oceanic and Atmospheric Administration
NPDES - National Pollutant Discharge Elimination System
o,p - Ortho or para position of chlorine on phenyl groups
SCCWRP - Southern California Coastal Water Research Project
WC - White croaker

Notes
1. Concentrations of DDTs are in units of **picograms per gram (pg/g =** parts per trillion).
2. "DDTs" is the sum of six target DDT isomers (o,p'-DDD, o,p'-DDE, o,p'-DDT, p,p'-DDD, p,p'-DDE, and p,p'-DDT).
3. Numbers in parentheses are the numbers of fish results in each average calculation or composite.
4. NOAA 2002-2004 results are from fish caught at overlapping or adjacent locations: Segment 16 and EPA A (Breakwater Area); Segment 20 (Huntington Flats); Segments 6, 7, and EPA F (Redondo Flats); Segment 1 (Ventura Flats); Segments 12 and 13-14 (Zone 1); EPA E (Zone 2); and Segments 8 and 9 (Zone 3).
5. EPA 2014-2016 results are based on the current sampling program from the locations listed.
6. EPA ICs 2009-2012 results are from WC caught at adjacent pier locations: Long Beach Breakwall and Cabrillo Pier (Breakwater Area); and Santa Monica Pier (Ventura Flats reference area).
7. Sanitation Districts' 2012 results BSB and 2015 results for WC are from fish surveys typically conducted as part of JWPCP NPDES permit compliance. Those results are from analyses of composited samples of 10 fish specimens (one composite each from Zones 1, 2, and 3; Sanitation Districts, 2014, 2016).
8. Shaded cells show DDTs greater than the IROD human health goal for ingestion of WC (400 micrograms per kilogram = 400,000 pg/g).
9. EPA Zones 1, 2, and 3 are subareas within the boundaries of the respective Sanitation Districts' three Fish Tissue Bioaccumulation Zones used in the JWPCP NPDES compliance programs for fish. The EPA zones were located along the 60-m isobath, the depth of the outfall diffusers, the former source of release of COCs to the environment.

Sampling Events
NOAA 2002-2004 - Skin-off filet fish tissue results in *2002-2004 Southern California Coastal Marine Fish Contaminants Survey* (NOAA/EPA, 2007).
EPA ICs 2009-2012 - Institutional Controls program, skin-off filet results in Technical Memoranda - *Risk Evaluation of Fish Monitoring Results and Lobster Data* (Gilbane, 2016b), and *Human Health Risk Evaluation of 2011-2012 Fish Collection Data* (Gilbane, 2017), Palos Verdes Shelf.
Sanitation Districts 2012 - Skin-off filet results in *2012-2013 Joint Water Pollution Control Plant, Biennial Receiving Water Monitoring Report*, Table 7.3 2012 Local Seafood Safety Data Summary (Sanitation Districts, 2014).
Sanitation Districts 2015 - Skin-off filet results in *2014-2015 Joint Water Pollution Control Plant, Biennial Receiving Water Monitoring Report*, Appendix 7.17 2014-2015 Local Bioaccumulation Trends (Sanitation Districts, 2016).
EPA 2014-2016 - Skin-off filets for EPA's MNR event.

Table 4-7 − Comparison of PCBs in Fish
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

	BSB									WC											
Sampling event	*NOAA 2002-2004 (ND = 0)*			*Sanitation Districts 2012 (ND = 0)*			*EPA 2014-2016 (ND = EDL)*			*NOAA 2002-2004 (ND = 0)*			*EPA ICs 2009-2012 (ND = MDL)*			*Sanitation Districts 2015 (ND = 0)*			*EPA 2014-2016 (ND = EDL)*		
Location	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*	*Min*	*Avg*	*Max*
Breakwater Area	24,300	57,400 (6)	111,000				4,240	17,800 (31)	77,300	5,260	44,200 (49)	279,000	23,600	82,500 (15)	164,000				10,600	52,000 (30)	87,400
Huntington Flats	80,300	80,300 (1)	80,300				7,680	43,800 (30)	171,000	5,410	41,100 (10)	72,400									
Redondo Flats	8,170	26,500 (10)	58,700				4,960	27,600 (26)	128,000	18,600	62,100 (25)	209,000							26,500	70,300 (8)	146,000
Ventura Flats										8,860	21,700 (9)	31,000	7,570	15,800 (4)	23,500				1,340	2,820 (30)	5,140
Zone 1	5,470	97,800 (16)	294,000		67,000* (10)		6,460	34,800 (30)	106,000	24,800	348,000 (16)	619,000					267,000 (10)		40,500	82,200 (30)	199,000
Zone 2					31,000* (10)		3,770	22,700 (12)	66,000	15,300	120,000 (29)	356,000					154,000 (10)		24,700	115,000 (30)	256,000
Zone 3	12,100	40,400 (5)	80,400		17,000* (10)		4,190	16,100 (14)	38,500								86,100 (10)		9,980	50,700 (30)	164,000

Abbreviations
Avg - Average
BSB - Barred sand bass
COCs - Chemicals of concern
EDL - Estimated detection limit (sample-specific)
EPA - United States Environmental Protection Agency
ICs - Institutional Controls
IROD - Interim Record of Decision
m - Meters
Max - Maximum
MDL - Method detection limit
Min - Minimum
MNR - Monitored natural recovery
NA - Not applicable
ND - Not detected
NOAA - National Oceanic and Atmospheric Administration
PCBs - Polychlorinated biphenyls
WC - White croaker

Notes
1. Concentrations of PCBs are in units of **picograms per gram (pg/g =** parts per trillion).
2. Different researchers used different congener lists. Sanitation Districts 2012 BSB results are for total detectable Aroclors*. See reference documents.
3. Numbers in parentheses are the numbers of fish results in each average calculation or composite.
4. NOAA 2002-2004 results are from fish caught at overlapping or adjacent locations: Segment 16 and EPA A (Breakwater Area); Segment 20 (Huntington Flats); Segments 6, 7, and EPA F (Redondo Flats); Segment 1 (Ventura Flats); Segments 12 and 13-14 (Zone 1); EPA E (Zone 2); and Segments 8 and 9 (Zone 3).
5. EPA 2014-2016 results are based on the current sampling program from the locations listed.
6. EPA ICs 2009-2012 results are from WC caught at adjacent pier locations: Long Beach Breakwall and Cabrillo Pier (Breakwater Area); and Santa Monica Pier (Ventura Flats reference area).
7. Sanitation Districts' 2012 results BSB and 2015 results for WC are from fish surveys typically conducted as part of JWPCP NPDES permit compliance. Those results are from analyses of composited samples of 10 fish specimens (one composite each from Zones 1, 2, and 3; Sanitation Districts, 2014, 2016).
8. Shaded cells show Total PCBs greater than the IROD human health goal for ingestion of WC (70 micrograms per kilogram = 70,000 pg/g).
9. EPA Zones 1, 2, and 3 are subareas within the boundaries of the respective Sanitation Districts' three Fish Tissue Bioaccumulation Zones used in the JWPCP NPDES compliance programs for fish. The EPA zones were located along the 60-m isobath, the depth of the outfall diffusers (the former source of release of COCs to the environment).

Sampling Events
NOAA 2002-2004 - Skin-off filet fish tissue results in *2002-2004 Southern California Coastal Marine Fish Contaminants Survey* (NOAA/EPA, 2007)
EPA ICs 2009-2012 - Institutional Controls program, skin-off filet results in *Technical Memorandum - Risk Evaluation of Fish Monitoring Results and Lobster Data* (Gilbane, 2016b), and *Technical Memorandum - Human Health Risk Evaluation of 2011-2012 Fish Collection Data - Palos Verdes Shelf* (Gilbane, 2017).
Sanitation Districts 2012 - Skin-off filet results in *2012-2013 Joint Water Pollution Control Plant, Biennial Receiving Water Monitoring Report*, Table 7.3 2012 Local Seafood Safety Data Summary (Sanitation Districts, 2014).
Sanitation Districts 2015 - Skin-off filet results in *2014-2015 Joint Water Pollution Control Plant, Biennial Receiving Water Monitoring Report*, Appendix 7.17 2014-2015 Local Bioaccumulation Trends (Sanitation Districts, 2016).
EPA 2014-2016 - Skin-off filets for EPA's MNR event

Table 5-1 - Summary of IROD Compliance
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

	IROD estimated value	*Representative value*	*IROD post-capping goal*	*IROD interim cleanup level*	*IROD final cleanup level*
Sediment (average concentrations)					
Total DDTs **(mg/kg OC)**	150	77	78	46	23
Total PCBs - short list **(mg/kg OC)**	-	5	7	7	-
Total PCBs **(mg/kg OC)**	-	10	-	-	-
Water (human health)					
p,p'-DDE **(ng/L)**	-	1.1	-	0.22	-
Total PCBs **(ng/L)**	1.1	0.19	-	0.064	-
Water (ecological)					
Total DDTs **(ng/L)**	16	1.6	-	1	-
Total PCBs **(ng/L)**	1.1	0.19	-	30	-
White croaker - Zone 1 Collection Area					
Total DDTs **(ug/kg)**	33,000	1,000	-	400	-
Total PCBs **(ug/kg)**	3,000	98	-	70	-
White croaker - Zone 2 Collection Area					
Total DDTs **(ug/kg)**	8,600	940	-	400	-
Total PCBs **(ug/kg)**	920	130	-	70	-
White croaker - Zone 3 Collection Area					
Total DDTs **(ug/kg)**	4,200	520	-	400	-
Total PCBs **(ug/kg)**	190	60	-	70	-

Abbreviations

IROD - Interim Record of Decision
mg/kg OC - milligrams per kilogram normalized for organic carbon
ug/kg - micrograms per kilogram (parts per billion)
ng/L - nanograms per liter (parts per trillion)

Notes

1. For Total PCBs, all values are for the expanded list of congeners (46), unless otherwise noted.
2. For sediment, all values are for the 0-8-cm bed-depth interval (the bioactive zone at PV Shelf). The representative values are from the current output of the geostatistical model.
3. For water, the representative values are maximum concentrations from the current MNR data set. The representative values for p,p'-DDE and for Total DDTs are from the near-bottom sample for location 4C, and the representative value of Total PCBs is from the mid-column sample at location 7C.
4. For white croaker, the representative value for each collection area is the exposure point concentration based on the current data set.
5. The IROD estimated values were published in Section 5.0 of the IROD as being representative of site

Table 7-1 — Members of the Palos Verdes Technical Information Exchange Group
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Name	*Organization*	*E-mail address*
Anijielo, Augustine	Regional Water Quality Control Board, Los Angeles Region (Water Board)	aanijielo@waterboards.ca.gov
Boyce, Jennifer	National Oceanic and Atmospheric Administration (NOAA)	jennifer.boyce@noaa.gov
Chesnutt, John	United States Environmental Protection Agency (EPA)	chesnutt.john@epa.gov
Cordero, Daniel	California Department of Toxic Substances Control (DTSC)	daniel.cordero@dtsc.ca.gov
Delaplaine, Mark	California Coastal Commission	mdelaplaine@coastal.ca.gov
Dickhudt, Pat	United States Geological Survey (USGS) Woods Hole	pdickhudt@usgs.gov
Ford, Tom	Santa Monica Bay Restoration Commission (SMBRC)	tford@santamonicabay.org
Glaser, David	Anchor QEA	dglaser@anchorqea.com
Gold, Mark	UCLA IOES	gold@ioes.ucla.edu
Gully, Joe	Sanitation Districts of Los Angeles County (Sanitation Districts)	jgully@lacsd.org
Hovel, Wendy	Anchor QEA Irvine	whovel@anchorqea.com
Huang, Judy	EPA	Huang.Judy@epa.gov
Jirik, Andrew	Port of Los Angeles (POLA)	ajirik@portla.org
Joab, Bruce	California Department of Fish and Wildlife (CDFW)	bjoab@OSPR.DFG.CA.GOV
Klasing, Susan	California Office of Environmental Health Hazard Assessment (OEHHA)	Susan.Klasing@oehha.ca.gov
Lindfors, Robert	Gilbane	rlindfors@gilbaneco.com
Little, Annie	United States Fish and Wildlife Service (USFWS)	annie_little@fws.gov
Loretta Fernandez	Fluen Point Environmental	l.fernandez@neu.edu
Lowe, Chris	California State University Long Beach (CSULB)	chris.lowe@csulb.edu
Markle, Phil	Sanitation Districts	PMarkle@lacsd.org>
Maruya, Keith	Southern California Coastal Water Research Project (SCCWRP)	keithm@sccwrp.org
Munakata, Naoko	Sanitation Districts	NMunakata@lacsd.org
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Nguyen, Thanhloan	Water Board	thanhloan.nguyen@waterboards.ca.gov
Orrala, Frankie	Heal the Bay	forrala@healthebay.org
Power, Bill	Sanitation Districts	BPower@lacsd.org
Prickett, Kat	POLA	kprickett@portla.org
Roberts, Carole	US Fish and Wildlife	Carole_A_Roberts@fws.gov
Schiff, Ken	SCCWRP	Kens@sccwrp.org
Sherwood, Christopher	USGS Woods Hole	csherwood@usgs.gov
Tang, Chi-Li	LA County Sanitation Districts	ctang@lacsd.org
Trombadore, Olivia	EPA	trombadore.olivia@epa.gov
Tsao, Allen	Cal Fish and Wildlife	Allen.Tsao@wildlife.ca.gov
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Witting, David	NOAA	David.Witting@noaa.gov
Zeeman, Katie	USFWS	Katie_Zeeman@fws.gov

Table 7-2 — Associated Organizations
First MNR Report
Palos Verdes Shelf (OU 5 of the Montrose Chemical Corp. Superfund Site)
Los Angeles County, California

Organization	*Location*	*Primary contact*	*Function*
ALS Life Sciences Division|Environmental	Burlington, Ontario, Canada	Rachel Stolys	High resolution analysis of water samples
CDM Smith	Wayne, Pennsylvania	Aaron Frantz	Geostatistical modeling of sediment results
Eurofins Calscience Laboratories, Inc.	Garden Grove, California	Carla Hollowell	Chemical analysis of sediment samples
Fluen Point Environmental	Marblehead, Massachusetts	Loretta Fernandez	Water sampling using passive sampling devices
GMU Geotechnical, Inc.	Rancho Santa Margarita, California	Michael Moscrop, P.E.	Geotechnical analysis of sediment samples
Kinnetic Laboratories, Inc.	Carlsbad, California	Tim Fleming	Collection of grab water samples
National Oceanic and Atmospheric Administration	Long Beach, California	Dave Witting, Ph.D.	Design of fish collection grid
Sanitation Districts of Los Angeles County	Whittier, California	Chi-Li Tang	Collection of samples: sediment, water, and fish
Seaventures	San Juan Capistrano, California	Bob Lohrman	Collection of fish
Veridian Environmental, Inc.	Vacaville, California	Tracy Young	Data validation
Vista Analytical Laboratory	El Dorado Hills, California	Martha Maier	Preparation and analysis of fish samples