Table 2.1.2-1. Summary of Chemicals of Potential Concern (COPCs) for Steps 1 and 2 of the SRA

COPC	CAS Number
Metals	
Aluminum	7429-90-5
Antimony	7440-36-0
Arsenic	7440-38-2
Cadmium	7440-43-9
Chromium	7440-47-3
Cobalt	7440-48-4
Copper	7440-50-8
Iron	7439-89-6
Lead	7439-92-1
Manganese	7439-96-5
Mercury	7439-97-6
Molybdenum	7439-98-7
Nickel	7440-02-0
Selenium	7782-49-2
Silicon	7440-21-3
Silver	7440-22-4
Tin	7440-31-5
Zinc	7440-66-6
Butyltins	
Monobutyltin	1118-46-3
Dibutyltin	683-18-1
Tributyltin	688-73-3
Tetrabutyltin	1461-25-2
Polycyclic Aromatic Hydrocarbons (PAHs)	
2-ring PAHs	
Naphthalene	91-20-3
Naphthalenes,C1-	NAPHTHALC1
Naphthalenes,C2-	NAPHTHALC2
Naphthalenes,C3-	NAPHTHALC3
Naphthalenes,C4-	NAPHTHALC4
1-Methylnapthalene	90-12-0
2-Methylnaphthalene	91-57-6
2,6-Dimethylnapthalene	581-42-0
1,6,7-Trimethylnaphthalene	2245-38-7
Biphenyl	92-52-4
3-ring PAHs	
Acenaphthene	83-32-9
Acenaphthylene	208-96-8
Anthracene	120-12-7
Phenanthrene	85-01-8
1-Methylphenanthrene	832-69-9
Phenanthrenes+Anthracenes,C1-	PHENANTHC1
Phenanthrenes+Anthracenes,C2-	PHENANTHC2
Phenanthrenes+Anthracenes,C3-	PHENANTHC3
Phenanthrenes+Anthracenes,C4-	PHENANTHC4
Fluorene	86-73-7
Fluorenes,C1-	FLUORENESC1
Fluorenes,C2-	FLUORENESC2
Fluorenes,C3-	FLUORENESC3
Dibenzothiophene	132-65-0
Dibenzothiophenes,C1-	DIBENZC1ALK
Dibenzothiophenes,C2-	DIBENZC2ALK
Dibenzothiophenes,C3-	DIBENZC3ALK

Table 2.1.2-1. Summary of Chemicals of Potential Concern (COPCs) for Steps 1 and 2 of the SRA

COPC	CAS Number
total Low Molecular Weight PAHs (tLMWPAH; 2-3 ring) [(a)]	
tLMWPAH-Long95 [(b)]	
4-ring PAHs	
Benz(a)anthracene	56-55-3
Chrysene	218-01-9
Chrysenes,C1	CHRYSC1ALK
Chrysenes,C2-	CHRYSC2ALK
Chrysenes,C3-	CHRYSC3ALK
Chrysenes,C4-	CHRYSC4ALK
Fluoranthene	206-44-0
Pyrene	129-00-0
Fluoranthenes+Pyrenes,C1-	FLUORANTHC1
Fluoranthenes+Pyrenes,C2-	FLUORANTHC2
Fluoranthenes+Pyrenes,C3-	FLUORANTHC3
5-ring PAHs	
Benzo(a)pyrene	50-32-8
Benzo(e)pyrene	192-97-2
Benzo(b)fluoranthene	205-99-2
Benzo(k)fluoranthene	207-08-9
Dibenz(a,h)anthracene	53-70-3
Perylene	198-55-0
6-ring PAHs	
Benzo(g,h,i)perylene	191-24-2
Indeno(1,2,3-cd)pyrene	193-39-5
total High Molecular Weight PAHs (tHMWPAH; 4-6 ring) [(c)]	
tHMWPAH-Long95 [(d)]	
total PAHs (tPAH; 2-6 ring) [(e)]	
tPAH-Long95 [(f)]	
non-PAH Semivolatiles	
Aniline	62-53-3
Benzoic Acid	65-85-0
Benzyl Alcohol	100-51-6
bis(2-Chloroethoxy)methane	111-91-1
bis(2-Chloroethyl)Ether	111-44-4
bis(Chloromethyl)Ether	542-88-1
4-Bromophenyl-phenylether	101-55-3
Carbazole	86-74-8
4-Chloroaniline	106-47-8
2-Chloronaphthalene	91-58-7
2-Chlorophenol	95-57-8
4-Chlorophenol	106-48-9
4-Chlorophenyl-phenylether	7005-72-3
Dibenzofuran	132-64-9
1,2-Dichlorobenzene	95-50-1
1,3-Dichlorobenzene	541-73-1
1,4-Dichlorobenzene	106-46-7
3,3'-Dichlorobenzidine	91-94-1
Hexachlorobutadiene	87-68-3
Hexachlorocyclopentadiene	77-47-4
Hexachloroethane	67-72-1
Isophorone	78-59-1
2-Nitroaniline	88-74-4

Table 2.1.2-1. Summary of Chemicals of Potential Concern (COPCs) for Steps 1 and 2 of the SRA

COPC	CAS Number
3-Nitroaniline	99-09-2
4-Nitroaniline	100-01-6
2-Nitrophenol	88-75-5
4-Nitrophenol	100-02-7
N-Nitrosodi-n-propylamine	621-64-7
N-Nitrosodibutylamine	924-16-3
N-Nitrosodiethylamine	55-18-5
N-Nitrosodimethylamine	62-75-9
N-nitrosodiphenylamine	86-30-6
N-Nitrosomethylethylamine	10595-95-6
N-Nitrosopyrrolidine	930-55-2
Octachlorostyrene	29082-74-4
2,2'oxybis(1-Chloropropane)	108-60-1
Pentachlorobenzene	608-93-5
Pentachlorophenol	87-86-5
Phenol	108-95-2
2,3,5,6-Tetrachlorophenol	935-95-5
2,4,5-Trichlorophenol	95-95-4
2,4,6-Trichlorophenol	88-06-2
2,4-Dichlorophenol	120-83-2
2,4-Dimethylphenol	105-67-9
2,4-Dinitrophenol	51-28-5
2-Methylphenol	95-48-7
4,6-Dinitro-2-methylphenol	534-52-1
4-Chloro-3-Methylphenol	59-50-7
4-Methylphenol	106-44-5
Butylbenzylphthalate	85-68-7
bis(2-Ethylhexyl) phthalate	117-81-7
Di-n-butylphthalate	84-74-2
Di-n-octylphthalate	117-84-0
Diethylphthalate	84-66-2
Dimethylphthalate	131-11-3
1,2,4,5-Tetrachlorobenzene	95-94-3
1,2,3-Trichlorobenzene	87-61-6
1,2,4-Trichlorobenzene	120-82-1
Chlorinated Pesticides	
2,4'-DDD	53-19-0
4,4'-DDD	72-54-8
2,4'-DDE	3424-82-6
4,4'-DDE	72-55-9
2,4'-DDT	789-02-6
4,4'-DDT	50-29-3
total DDT series (tDDT) [(g)]	
alpha-Chlordane	5103-71-9 (57-74-9)
gamma-Chlordane	5103-74-2 (57-74-9)
cis-Nonachlor	5103-73-1
trans-Nonachlor	39765-80-5
Heptachlor	76-44-8
Heptachlor epoxide	1024-57-3
Oxychlordane	27304-13-8
total Chlordane series (tChlordane) [(h)]	
Aldrin	309-00-2
alpha-BHC	319-84-6
beta-BHC	319-85-7

Table 2.1.2-1. Summary of Chemicals of Potential Concern (COPCs) for Steps 1 and 2 of the SRA

COPC	CAS Number
delta-BHC	319-86-8
gamma-BHC(Lindane)	58-89-9
Dieldrin	60-57-1
Endosulfan I	959-98-8
Endosulfan II	33213-65-9
Endosulfan sulfate	1031-07-8
Endrin	72-20-8
Endrin aldehyde	7421-93-4
Endrine ketone	53494-70-5
Hexachlorobenzene	118-74-1
Methoxychlor	72-43-5
Mirex	2385-85-5
Toxaphene	8001-35-2
Polychlorinated Biphenyls (PCBs)	
PCB-8	34883-43-7
PCB-18	37680-65-2
PCB-28	7012-37-5
PCB-44	41464-39-5
PCB-52	35693-99-3
PCB-66	32598-10-0
PCB-77 (non-ortho coplaner)	32598-13-3
PCB-101	37680-73-2
PCB-105	32598-14-4
PCB-114	74472-37-0
PCB-118	31508-00-6
PCB-123	65510-44-3
PCB-126 (non-ortho coplaner)	57465-28-8
PCB-128	38380-07-3
PCB-138	35065-28-2
PCB-153	35065-27-1
PCB-156	38380-08-4
PCB-157	69782-90-7
PCB-167	52663-72-6
PCB-169 (non-ortho coplaner)	32774-16-6
PCB-170	35065-30-6
PCB-180	35065-29-3
PCB-187	52663-68-0
PCB-189	39635-31-9
PCB-195	52663-78-2
PCB-206	40186-72-9
PCB-209	2051-24-3
total PCB (tPCB) - TEQ-birds (i)	
total PCB (tPCB) - TEQ-fish (j)	
total PCB (tPCB) - Aroclor [(k)]	
total PCB (tPCB) - NOAA-18 [(l)]	
Polychlorinated Dioxins/Furans (PCDD/PCDF)	
2,3,7,8-TCDD	1746-01-6
1,2,3,7,8-PeCDD	40321-76-4
1,2,3,4,7,8-HxCDD	39227-28-6
1,2,3,6,7,8-HxCDD	57653-85-7
1,2,3,7,8,9-HxCDD	19408-74-3
1,2,3,4,6,7,8-HpCDD	35822-46-9
OCDD	3268-87-9

Table 2.1.2-1. Summary of Chemicals of Potential Concern (COPCs) for Steps 1 and 2 of the SRA

COPC	CAS Number
2,3,7,8-TCDF	51207-31-9
1,2,3,7,8-PeCDF	57117-41-6
2,3,4,7,8-PeCDF	57117-31-4
1,2,3,4,7,8-HxCDF	70648-26-9
1,2,3,6,7,8-HxCDF	57117-44-9
2,3,4,6,7,8-HxCDF	60851-34-5
1,2,3,7,8,9-HxCDF	72918-21-9
1,2,3,4,6,7,8-HpCDF	67562-39-4
1,2,3,4,7,8,9-HpCDF	55673-89-7
OCDF	39001-02-0
total Dioxins + Furans (tDioxin/Furan) [m]	
total Dioxins + Furans (tDioxin/Furan) - TEQ-birds (n)	
total Dioxins + Furans (tDioxin/Furan) - TEQ-fish (o)	
Organophosphorus Pesticides	
Azinphos-methyl	86-50-0
Chlorpyrifos	2921-88-2
Demeton-O	298-03-3
Demeton-S	126-75-0
Diazinon	333-41-5
Ethion	563-12-2
Ethoprop	13194-48-4
Ethyl parathion	56-38-2
Malathion	121-75-5
Methyl parathion	298-00-0
Chlorinated Herbicides	
2,4,5-T	93-76-5
2,4-D	94-75-7
Dalapon	75-99-0
Dicamba	1918-00-9
MCPP	93-65-2/7085-19-0
2,4,5-TP (Silvex)	93-72-1
Triazine Pesticides	
Ametryn	834-12-8
Anilazine	101-05-3
Atrazine	1912-24-9
Pronamide	23950-58-5
Propiconazole	60207-90-1
Simazine	122-34-9
Terbacil	5902-51-2
Hexazinone	51235-04-2
Carbamate/Urea Pesticides	
Benomyl	17804-35-2
Carbaryl	63-25-2
Carbofuran	1563-66-2
Diuron	330-54-1
Methomyl	16752-77-5
Oxamyl	23135-22-0
Ordnance Compounds	
1,3-Dinitrobenzene	99-65-0
2,4-Dinitrotoluene	121-14-2
2,6-Dinitrotoluene	606-20-2
HMX	2691-41-0
Nitrobenzene	98-95-3

Table 2.1.2-1. Summary of Chemicals of Potential Concern (COPCs) for Steps 1 and 2 of the SRA

COPC	CAS Number
Nitroglycerin	55-63-0
2-Nitrotoluene	88-72-2
3-Nitrotoluene	99-08-1
4-Nitrotoluene	99-99-0
Picric Acid	88-89-1
RDX	121-82-4
Tetryl	479-45-8
1,3,5-Trinitrobenzene	99-35-4
2,4,6-Trinitrotoluene	118-96-7

[a] tLMWPAH = sum of all indicated 2-ring + 3-ring PAHs
[b] tLMWPAH-Long95 = acenaphthene + acenaphthlylene + anthracene + fluorene + 2-methynaphthalene + naphthalene + phenanthrene (Long et al. 1995)
[c] tHMWPAH = sum of all indicated 4-ring + 5-ring + 6-ring PAHs
[d] tHMWPAH-Long95 = benz(a)anthracene + benzo(a)pyrene + chrysene + dibenz(a,h)anthracene + fluoranthene + pyrene (Long et al. 1995)
[e] tPAH = tLMWPAH + tHMWPAH
[f] tPAH-Long95 = tLMWPAH-Long95 + tHMWPAH-Long95 (Long et al. 1995)
[g] tDDT = 2,4'-DDD + 4,4'-DDD + 2,4'-DDE + 4,4'-DDE + 2,4'-DDT + 4,4'-DDT
[h] tChlordane = alpha-Chlordane + gamma-Chlordane + cis-Nonachlor + trans-Nonachlor + Heptachlor + Heptachlor epoxide + Oxychlordane
[i] tPCB - TEF-birds = Sum of values for all 27 PCB congeners adjusted for 2,3,7,8-TCDD TEFs for birds (Van den Berg et al. 1998)
[j] tPCB - TEF-fish = Sum of values for all 27 PCB congeners adjusted for 2,3,7,8-TCDD TEFs for fish (Van den Berg et al. 1998)
[k] tPCB - Aroclor = Aroclor equivalent concentration calculated from PCB congener distribution and measured congener concentrations
[l] tPCB - NOAA-18 = Sum of the NOAA 18 congeners multiplied by 2 as described in Technical Appendix 2 in Valoppi et al. (1998)
[m] tDioxin/Furan = Sum of all 17 dioxin/furan congeners
[n] tDioxin/Furan - TEF-birds = Sum of values for all 17 dioxin/furan congeners adjusted for 2,3,7,8-TCDD TEFs for birds (Van den Berg et al. 1998)
[o] tDioxin/Furan - TEF-fish = Sum of values for all 17 dioxin/furan congeners adjusted for 2,3,7,8-TCDD TEFs for fish (Van den Berg et al. 1998)

Return to Table of Contents

Table 2.3-1. Target Bird Receptors with Body Weights and Ingestion Items for Steps 1 and 2 of the SRA.

Target Bird Receptor	body weight (kg)[a]	ingestion item:				
		incidental sediment	composite macroinfauna	epibenthic crabs	tilapia	bandtail goatfish
Waterbirds:						
Hawaiian stilt (*Himantopus mexicanus knudseni*)	0.199	X	X	X	X	X
Hawaiian coot (*Fulica americana alai*)	0.560	X	X			
Hawaiian duck (*Anas wyvilliana*)	0.585	X	X			
Hawaiian moorhen (*Gallinula chloropus sandvicensis*)	0.265	X	X			
black-crowned night heron (*Nycticorax nycticorax*)	0.883	X	X	X	X	X
Shorebirds:						
wandering tattler (*Heteroscelus incana*)	0.101	X	X			
Piscivorous Seabirds:						
sooty tern (*Sterna fuscata*)	0.180				X	X

[a]body weights are minimum values for adults of a species from Dunning (1993)

Return to Table of Contents

Table 2.5-1. Assessment Endpoints and Measures of Effects for Evaluation of Step 1 and 2 Screening Ecological Risk for the Pearl Harbor Sediment Study RI/FS

Receptor Class: Specific Receptors	Assessment Endpoint	Risk Questions	Surrogate Species or Community	Measures of Effects	Uncertainties	Notes
Primary/Secondary Consumers: Composite Benthic Macroinfauna	Sediment Quality Benchmarks: No adverse effect to composite benthic macroinfauna inferred from exceedance of low level Sediment Quality Benchmark (NOAA ERL)	Is a COPC present at one or more locations in Pearl Harbor sediments where the maximum measured concentrations exceeds the NOAA low level Sediment Quality Benchmark (i.e., ERL)?	(1) low level Sediment Quality Benchmarks (NOAA ERLs)	(1) Step 1 and 2: Compare concentration of COPCs in sediment to low level Sediment Quality Benchmarks (NOAA ERLs)	(1) Conditions where benchmark values were measured may not reflect exposure conditions for benthic invertebrates in Pearl Harbor; benchmark values exist for only 32 COPCs considered for Pearl Harbor sediments	**COPC Identification: COPCs with 1 or more sediment concentrations >ERL identified as continuing COPC**
Primary/Secondary Consumers: Composite Benthic Macroinfauna	Sediment Toxicity: No adverse effect to composite benthic macroinfauna inferred from in situ acute toxicity in whole sediments to the amphipod *Ampelisca abdita*	Do sediments at one or more locations in Pearl Harbor exhibit measured acute toxicity, as characterized by <80% survival for the amphipod *Ampelisca abdita* in whole-sediment toxicity tests?	(2) *Ampelisca abdita* (amphipod)	(2) Step 1 and 2: Measure negative-control corrected site-specific whole-sediment toxicity at each sampling location; compare negative-contol corrected toxicity result to toxic benchmark of <80% survival for amphipod.	(2) Laboratory tests may not reflect field conditions for exposure of composite benthic macroinfauna in Pearl Harbor; exact causal agent for measured toxicity confounded by occurrence in samples of multiple COPCs and other potentially contributing non-chemical agents (e.g., organic material, in situ salinity and temperature).	Sampling locations where amphipod survival is <80% for whole-sediment matrix are identified as areas with inferred potential risk to benthic macroinfauna. The <80% survival benchmark in commonly used to identify toxic samples by NOAA and the USACOE in sediment testing studies.
		Does acute toxicity (as characterized by <80% survival for the amphipod Ampelisca abdita) exhibit a statistically significant correlation (P<0.05) for an increasing concentration of a COPC in sediment and decreasing amphipod survival?		Step 1 and 2: Determine if there is a statistically significant correlation (P<0.05) for an increasing concentration of a COPC in sediment with decreasing amphipod survival using a nonparametric Spearman Rank Correlation Test.	See uncertainties for (2)	COPC Identification: A COPC with a statistically significant correlation (P<0.05) for increasing sediment chemistry and decreasing amphipod survival is identified as continuing COPC.
Primary/Secondary Consumers: Composite Benthic Macroinfauna	Sediment Toxicity: No adverse effect to composite benthic macroinfauna inferred from in situ acute toxicity in sediment pore water to the echinoderm *Dendraster excentricus*	Do sediments at one or more locations in Pearl Harbor exhibit measured acute toxicity, as characterized by <80% fertilization for the echinoderm *Dendraster excentricus* in sediment pore water toxicity tests?	(3) *Dendraster excentricus* (echinoderm)	(3) Step 1 and 2: Measure negative-control corrected site-specific sediment pore water toxicity at each sampling location; compare negative-contol corrected toxicity result to toxic benchmark of <80% fertilization for echinoderm.	(3) Laboratory tests may not reflect field conditions for exposure of composite benthic macroinfauna in Pearl Harbor; exact causal agent for measured toxicity confounded by occurrence in samples of multiple COPCs and other potentially contributing non-chemical agents (e.g., organic material, in situ salinity and temperature).	Sampling locations where echinoderm fertilization is <80% for sediment pore water matrix are identified as areas with inferred potential risk to benthic macroinfauna. The <80% fertilization benchmark in commonly used to identify toxic samples by NOAA and the USACOE in sediment testing studies.
		Does acute toxicity (as characterized by <80% fertilization for the echinoderm *Dendraster excentricus*) exhibit a statistically significant correlation (P<0.05) for an increasing concentration of a COPC in sediment and decreasing echinoderm fertilization?		Step 1 and 2: Determine if there is a statistically significant correlation (P<0.05) for an increasing concentration of a COPC in sediment with decreasing echinoderm fertilization using a nonparametric Spearman Rank Correlation Test.	See uncertainties for (3)	COPC Identification: A COPC with a statistically significant correlation (P<0.05) for increasing sediment chemistry and decreasing echinoderm fertilization is identified as continuing COPC
Primary/Secondary Consumers: Composite Benthic Macroinfauna	Bioaccumulation: No adverse effect on populations of composite benthic macroinfauna inferred from bioaccumulation measures related to lowest literature-derived NOAEL for whole-body tissue residue levels in crustacea for combined effect endpoints of impaired growth/development, reproduction, and survival	Is a COPC present at one or more locations in Pearl Harbor sediments at concentrations that pose potential bioaccumulation risk to composite benthic macroinfauna as inferred from the maximum value for whole-body tissue residue levels exceeding the lowest literature-derived NOAEL for whole-body tissue residue levels in crustacea for combined effect endpoints of growth/development, reproduction, or survival?	(4) Composite benthic macroinfauna - primarily crustacea including ghost shrimp (*Callianassa* sp.) and snapping shrimp (*Alpheus* sp.) as well as polychaete worms	(4) Step 1-2 SRA - Wild-Caught Tissue Maximum in Receptor: Compare maximum whole-body tissue concentrations of COPCs in wild-caught samples of composite benthic macroinfauna from harbor (primarily ghost/snapping shrimp and polychaete worms) to lowest literature-derived NOAEL for whole-body tissue residue levels in crustacea for combined effect endpoints of growth/development, reproduction, and survival	(4) wild-caught composite benthic macroinfauna samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) are expected to occur; Pearl Harbor habitat for composite benthic macroinfauna estimated as all locations in harbor; apply lowest literature-derived NOAEL TRVs for whole-body tissue residues in crustacea to composite benthic macroinfauna for Pearl Harbor; limited information in scientific literature for whole-body tissue-based TRVs for crustacea for many COPCs; apply lowest literature-derived NOAEL-equivalent TRV for whole-body tissue residues in crustacea for combined effect endpoints of growth/development, reproduction, and survival for composite benthic macroinfauna in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**

Table 2.5-1. Assessment Endpoints and Measures of Effects for Evaluation of Step 1 and 2 Screening Ecological Risk for the Pearl Harbor Sediment Study RI/FS

Receptor Class: Specific Receptors	Assessment Endpoint	Risk Questions	Surrogate Species or Community	Measures of Effects	Uncertainties	Notes
Secondary Consumers: Epibenthic Crabs	Bioaccumulation: No adverse effect on populations of epibenthic crabs inferred from bioaccumulation measures related to lowest literature-derived NOAEL for whole-body tissue residue levels in crustacea for combined effect endpoints of impaired growth/development, reproduction, and survival	Are COPCs in Pearl Harbor sediments present at concentrations acutely or chronically toxic to epibenthic crabs for bioaccumulation measures related to lowest literature-derived NOAEL for whole-body tissue residue levels in crustacea for combined effect endpoints of growth/development, reproduction, and survival?	(5) Epibenthic crabs (*Thalamita crenulata*)	(5) Step 1-2 SRA - Wild-Caught Tissue Maximum in Receptor: Compare maximum whole-body tissue concentrations of COPCs in wild-caught samples of epibenthic crabs from harbor to lowest literature-derived NOAEL for whole-body tissue residue levels in crustacea for combined effect endpoints of growth/development, reproduction, and survival	(5) wild-caught epibenthic crab samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., humans, shorebirds) are expected to occur; Pearl Harbor habitat for epibenthic crabs estimated as shallow locations (<2 meter depth) in upper West, Middle, and East Lochs and mouth of Halawa Stream in Southeast Loch; apply lowest literature-derived NOAEL TRVs for whole-body tissue residues in crustacea to epibenthic crabs for Pearl Harbor; limited information in scientific literature for whole-body tissue-based TRVs for crustacea for many COPCs; apply lowest literature-derived NOAEL-equivalent TRV for whole-body tissue residues in crustacea for combined effect endpoints of growth/development, reproduction, and survival for epibenthic crabs in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
Secondary Consumers: Epibenthic Fish	Bioaccumulation: No adverse effect on populations of epibenthic fish inferred from bioaccumulation measures related to lowest literature-derived NOAEL for whole-body tissue residue levels in fish for combined effect endpoints of impaired growth/development, reproduction, and survival	Are COPCs in Pearl Harbor sediments present at concentrations acutely or chronically toxic to epibenthic fish for bioaccumulation measures related to lowest literature-derived NOAEL for whole-body tissue residue levels in fish for combined effect endpoints of growth/development, reproduction, and survival?	(6) Tilapia (Oreochromis mossambicus)	(6) Step 1-2 SRA - Wild-Caught Tissue Maximum in Receptor: Compare maximum whole-body tissue concentrations of COPCs in wild-caught samples of tilapia from harbor to lowest literature-derived NOAEL for whole-body tissue residue levels in fish for combined effect endpoints of growth/development, reproduction, and survival	(6) wild-caught tilapia samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds, humans) are expected to occur; Pearl Harbor habitat for tilapia estimated as shallow to mid-depth locations (<10 meter depth) in upper West, Middle, and East Lochs and mouth of Halawa Stream in Southeast Loch; apply lowest literature-derived NOAEL TRVs for whole-body tissue residues in fish to tilapia for Pearl Harbor; limited information in scientific literature for whole-body tissue-based TRVs for fish for many COPCs; apply lowest literature-derived NOAEL-equivalent TRV for whole-body tissue residues in fish for combined effect endpoints of growth/development, reproduction, and survival for tilapia in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
Secondary Consumers: Epibenthic Fish (continued)			(7) Bandtail goatfish (Upeneus taeniopterus)	(7) Step 1-2 SRA - Wild-Caught Tissue Maximum in Receptor: Compare maximum whole-body tissue concentrations of COPCs in wild-caught samples of bandtail goatfish from harbor to lowest literature-derived NOAEL for whole-body tissue residue levels in fish for combined effect endpoints of growth/development, reproduction, and survival	(7) wild-caught bandtail goatfish samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds, humans) are expected to occur; Pearl Harbor habitat for bandtail goatfish estimated as all locations in harbor; apply lowest literature-derived NOAEL TRVs for whole-body tissue residues in fish to bandtail goatfish for Pearl Harbor; limited information in scientific literature for whole-body tissue-based TRVs for fish for many COPCs; apply lowest literature-derived NOAEL-equivalent TRV for whole-body tissue residues in fish for combined effect endpoints of growth/development, reproduction, and survival for bandtail goatfish in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**

Table 2.5-1. Assessment Endpoints and Measures of Effects for Evaluation of Step 1 and 2 Screening Ecological Risk for the Pearl Harbor Sediment Study RI/FS

Receptor Class: Specific Receptors	Assessment Endpoint	Risk Questions	Surrogate Species or Community	Measures of Effects	Uncertainties	Notes
Tertiary Consumers: Omnivorous Waterbird	Bioaccumulation: No adverse effect on populations of omnivorous shorebirds inferred from ingestion measures related to lowest literature-derived NOAEL for ingestion doses in birds for combined effect endpoints of impaired growth/development, reproduction, and survival	Are COPCs in Pearl Harbor sediments present at concentrations acutely or chronically toxic to omnivorous shorebirds for ingestion measures related to lowest literature-derived NOAEL for ingestion doses in birds for combined effect endpoints of growth/development, reproduction, and survival?	(8-1) Hawaiian stilt (*Himantopus mexicanus knudseni*) consuming incidental sediment	(8-1) Step 1-2 SRA and Step 3a BERA - Maximum in Incidental Ingested Sediment: Base consumption estimate on 100% occupancy exposure to sediments at each sediment location in stilt habitat; compare maximum ingestion dose for COPC from maximum COPC concentration in incidental ingested sediment for sediments from all locations occupied by stilt in harbor to lowest literature-derived NOAEL ingestion dose TRV for COPC in birds for combined effect endpoints of growth/development, reproduction, and survival	(8-1) Pearl Harbor foraging habitat for stilt estimated as all shallow locations (<2 meter depth) in upper West, Middle, and East Lochs and landfill and north shoreline of Ford Island; apply maximum sediment concentration from all locations identified for foraging habitat for stilt in Pearl Harbor; apply USEPA allometric equation to estimate ingestion dose for incidental sediment/forage item for stilt in Pearl Harbor; limited information in scientific literature for ingestion dose based TRVs for birds for many COPCs; apply lowest NOAEL-equivalent TRV for birds from scientific-literature for endpoints of growth/development, reproduction, and survival for stilt in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(8-2) Hawaiian stilt consuming composite benthic macroinfauna (primarily ghost/snapping shrimp and polychaete worms)	(8-2) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of composite benthic macroinfauna (ghost/snapping shrimp and polychaete worms) from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(8-2) (see uncertainties for (8-1)); wild-caught composite benthic macroinfauna samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of composite benthic macroinfauna collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(8-3) Hawaiian stilt consuming epibenthic crabs	(8-3) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of epibenthic crabs from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(8-3) (see uncertainties for (8-1)); wild-caught epibenthic crab samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of epibenthic crabs collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(8-4) Hawaiian stilt consuming tilapia	(8-4) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of tilapia from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(8-4) (see uncertainties for (8-1)); wild-caught tilapia samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of tilapia collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(8-5) Hawaiian stilt consuming bandtail goatfish	(8-5) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of bandtail goatfish from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(8-5) (see uncertainties for (8-1)); wild-caught bandtail goatfish samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of goatfish collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**

Table 2.5-1. Assessment Endpoints and Measures of Effects for Evaluation of Step 1 and 2 Screening Ecological Risk for the Pearl Harbor Sediment Study RI/FS

Receptor Class: Specific Receptors	Assessment Endpoint	Risk Questions	Surrogate Species or Community	Measures of Effects	Uncertainties	Notes
Tertiary Consumers: Omnivorous Waterbird (continued)			(9-1) Hawaiian coot (*Fulica americana alai*) consuming incidental sediment	(9-1) Step 1-2 SRA and Step 3a BERA - Maximum in Incidental Ingested Sediment: Base consumption estimate on 100% occupancy exposure to sediments at each sediment location in coot habitat; compare maximum ingestion dose for COPC from maximum COPC concentration in incidental ingested sediment for sediments from all locations occupied by coot in harbor to lowest literature-derived NOAEL ingestion dose TRV for COPC in birds for combined effect endpoints of growth/development, reproduction, and survival	(9-1) Pearl Harbor foraging habitat for coot estimated as all shallow locations (<2 meter depth) in upper West, Middle, and East Lochs and mouth of Halawa Stream in Southeast Loch; apply maximum sediment concentration from all locations identified for foraging habitat for coot in Pearl Harbor; apply USEPA allometric equation to estimate ingestion dose for incidental sediment/forage item for coot in Pearl Harbor; limited information in scientific literature for ingestion dose based TRVs for birds for many COPCs; apply lowest NOAEL-equivalent TRV for birds from scientific-literature for endpoints of growth/development, reproduction, and survival for coot in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(9-2) Hawaiian coot consuming composite benthic macroinfauna (primarily ghost/snapping shrimp and polychaete worms)	(9-2) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of composite benthic macroinfauna (ghost/snapping shrimp and polychaete worms) from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(9-2) (see uncertainties for (9-1)); wild-caught composite benthic macroinfauna samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of composite benthic macroinfauna collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
Tertiary Consumers: Omnivorous Waterbird (continued)			(10-1) Hawaiian duck (*Anas wyvilliana*) consuming incidental sediment	(10-1) Step 1-2 SRA and Step 3a BERA - Maximum in Incidental Ingested Sediment: Base consumption estimate on 100% occupancy exposure to sediments at each sediment location in duck habitat; compare maximum ingestion dose for COPC from maximum COPC concentration in incidental ingested sediment for sediments from all locations occupied by duck in harbor to lowest literature-derived NOAEL ingestion dose TRV for COPC in birds for combined effect endpoints of growth/development, reproduction, and survival	(10-1) Pearl Harbor foraging habitat for duck estimated as all shallow stream mouth locations (<2 meter depth) in upper West, Middle, and East Lochs, the mouth of Halawa Stream in Southeast Loch, and the shore of the National Wildlife Refuge in West Loch; apply maximum sediment concentration from all locations identified for foraging habitat for duck in Pearl Harbor; apply USEPA allometric equation to estimate ingestion dose for incidental sediment/forage item for duck in Pearl Harbor; limited information in scientific literature for ingestion dose based TRVs for birds for many COPCs; apply lowest NOAEL-equivalent TRV for birds from scientific-literature for endpoints of growth/development, reproduction, and survival for coot in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(10-2) Hawaiian duck consuming composite benthic macroinfauna (primarily ghost/snapping shrimp and polychaete worms)	(10-2) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of composite benthic macroinfauna (ghost/snapping shrimp and polychaete worms) from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(10-2) (see uncertainties for (10-1)); wild-caught composite benthic macroinfauna samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of composite benthic macroinfauna collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**

Table 2.5-1. Assessment Endpoints and Measures of Effects for Evaluation of Step 1 and 2 Screening Ecological Risk for the Pearl Harbor Sediment Study RI/FS

Receptor Class: Specific Receptors	Assessment Endpoint	Risk Questions	Surrogate Species or Community	Measures of Effects	Uncertainties	Notes
Tertiary Consumers: Omnivorous Waterbird (continued)			(11-1) Hawaiian moorhen (*Gallinula chloropus sandvicensis*) consuming incidental sediment	(11-1) Step 1-2 SRA and Step 3a BERA - Maximum in Incidental Ingested Sediment: Base consumption estimate on 100% occupancy exposure to sediments at each sediment location in moorhen habitat; compare maximum ingestion dose for COPC from maximum COPC concentration in incidental ingested sediment for sediments from all locations occupied by moorhen in harbor to lowest literature-derived NOAEL ingestion dose TRV for COPC in birds for combined effect endpoints of growth/development, reproduction, and survival	(11-1) Pearl Harbor foraging habitat for moorhen estimated as all shallow stream mouth locations (<2 meter depth) in upper West, Middle, and East Lochs, the mouth of Halawa Stream in Southeast Loch, and the shore of the National Wildlife Refuge in West Loch; apply maximum sediment concentration from all locations identified for foraging habitat for moorhen in Pearl Harbor; apply USEPA allometric equation to estimate ingestion dose for incidental sediment/forage item for moorhen in Pearl Harbor; limited information in scientific literature for ingestion dose based TRVs for birds for many COPCs; apply lowest NOAEL-equivalent TRV for birds from scientific-literature for endpoints of growth/development, reproduction, and survival for moorhen in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(11-2) Hawaiian moorhen consuming composite benthic macroinfauna (primarily ghost/snapping shrimp and polychaete worms)	(11-2) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of composite benthic macroinfauna (ghost/snapping shrimp and polychaete worms) from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(11-2) (see uncertainties for (11-1)); wild-caught composite benthic macroinfauna samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of composite benthic macroinfauna collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**

Table 2.5-1. Assessment Endpoints and Measures of Effects for Evaluation of Step 1 and 2 Screening Ecological Risk for the Pearl Harbor Sediment Study RI/FS

Receptor Class: Specific Receptors	Assessment Endpoint	Risk Questions	Surrogate Species or Community	Measures of Effects	Uncertainties	Notes
Tertiary Consumers: Omnivorous Waterbird (continued)			(12-1) black-crowned night heron (*Nycticorax nycticorax*) consuming incidental sediment	(12-1) Step 1-2 SRA and Step 3a BERA - Maximum in Incidental Ingested Sediment: Base consumption estimate on 100% occupancy exposure to sediments at each sediment location in heron habitat; compare maximum ingestion dose for COPC from maximum COPC concentration in incidental ingested sediment for sediments from all locations occupied by heron in harbor to lowest literature-derived NOAEL ingestion dose TRV for COPC in birds for combined effect endpoints of growth/development, reproduction, and survival	(12-1) Pearl Harbor foraging habitat for heron estimated as all shallow locations (<2 meter depth) in upper West, Middle, and East Lochs and landfill and north shoreline of Ford Island; apply maximum sediment concentration from all locations identified for foraging habitat for heron in Pearl Harbor; apply USEPA allometric equation to estimate ingestion dose for incidental sediment/forage item for heron in Pearl Harbor; limited information in scientific literature for ingestion dose based TRVs for birds for many COPCs; apply lowest NOAEL-equivalent TRV for birds from scientific-literature for endpoints of growth/development, reproduction, and survival for heron in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(12-2) black-crowned night heron consuming composite benthic macroinfauna (primarily ghost/snapping shrimp and polychaete worms)	(12-2) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of composite benthic macroinfauna (ghost/snapping shrimp and polychaete worms) from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(12-2) (see uncertainties for (12-1)); wild-caught composite benthic macroinfauna samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of composite benthic macroinfauna collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(12-3) black-crowned night heron consuming epibenthic crabs	(12-3) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of epibenthic crabs from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(12-3) (see uncertainties for (12-1)); wild-caught epibenthic crab samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of epibenthic crabs collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(12-4) black-crowned night heron consuming tilapia	(12-4) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of tilapia from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(12-4) (see uncertainties for (12-1)); wild-caught tilapia samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of tilapia collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(12-5) black-crowned night heron consuming bandtail goatfish	(12-5) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of bandtail goatfish from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(12-5) (see uncertainties for (12-1)); wild-caught bandtail goatfish samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of goatfish collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**

Table 2.5-1. Assessment Endpoints and Measures of Effects for Evaluation of Step 1 and 2 Screening Ecological Risk for the Pearl Harbor Sediment Study RI/FS

Receptor Class: Specific Receptors	Assessment Endpoint	Risk Questions	Surrogate Species or Community	Measures of Effects	Uncertainties	Notes
Tertiary Consumers: Omnivorous Shorebird			(13-1) wandering tattler (*Heteroscelus incana*) consuming incidental sediment	(13-1) Step 1-2 SRA and Step 3a BERA - Maximum in Incidental Ingested Sediment: Base consumption estimate on 100% occupancy exposure to sediments at each sediment location in tattler habitat; compare maximum ingestion dose for COPC from maximum COPC concentration in incidental ingested sediment for sediments from all locations occupied by tattler in harbor to lowest literature-derived NOAEL ingestion dose TRV for COPC in birds for combined effect endpoints of growth/development, reproduction, and survival	(13-1) Pearl Harbor foraging habitat for tattler estimated as all shallow locations (<2 meter depth) in upper West, Middle, and East Lochs and landfill and north shoreline of Ford Island; apply maximum sediment concentration from all locations identified for foraging habitat for tattler in Pearl Harbor; apply USEPA allometric equation to estimate ingestion dose for incidental sediment/forage item for tattler in Pearl Harbor; limited information in scientific literature for ingestion dose based TRVs for birds for many COPCs; apply lowest NOAEL-equivalent TRV for birds from scientific-literature for endpoints of growth/development, reproduction, and survival for tattler in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
			(13-2) wandering tattler consuming composite benthic macroinfauna (primarily ghost/snapping shrimp and polychaete worms)	(13-2) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of composite benthic macroinfauna (ghost/snapping shrimp and polychaete worms) from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(13-2) (see uncertainties for (13-1)); wild-caught composite benthic macroinfauna samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., shorebirds) expected to occur; apply maximum tissue concentration for all wild-caught tissue samples of composite benthic macroinfauna collected in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**
Tertiary Consumers: Piscivorous Seabird	Bioaccumulation: No adverse effect on populations of piscivorous seabirds inferred from ingestion measures related to lowest literature-derived NOAEL for ingestion doses in birds for combined effect endpoints of impaired growth/development, reproduction, and survival	Are COPCs in Pearl Harbor sediments present at concentrations acutely or chronically toxic to piscivorous seabirds for ingestion measures related to lowest literature-derived NOAEL for ingestion doses in birds for combined effect endpoints of growth/development, reproduction, and survival?	(14) Sooty tern (*Sterna fuscata*) consuming tilapia	(14) Step 1-2 SRA - Tissue Maximum in Wild-Caught Forage Item: Compare maximum ingestion dose for COPC from maximum COPC concentration in wild-caught samples of tilapia (surrogate for surface fish) from harbor to lowest literature-derived NOAEL ingestion dose TRV for COPCs in birds for combined effect endpoints of growth/development, reproduction, and/or survival	(14) apply maximum tissue concentration for all wild-caught tissue samples of tilapia collected in Pearl Harbor as forage item for tern; wild-caught tilapia samples collected from shallow shoreline areas (<2 meters depth) where potential predators (e.g., piscivorous seabirds) expected to occur; Pearl Harbor foraging habitat for tern estimated as all locations in harbor; apply USEPA allometric equation to estimate ingestion dose for forage item for tern in Pearl Harbor; limited information in scientific literature for ingestion dose based TRVs for birds for many COPCs; apply lowest NOAEL-equivalent TRV for birds from scientific-literature for endpoints of growth/development, reproduction, and survival for tern in Pearl Harbor	**COPC Identification: COPCs with HQ or HI>1 identified as continuing COPC**

Return to Table of Contents

Table 3.3.1-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Crustacea

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Crustacea	Total Number of TEVs	Number of TEVs by effect[a]:			Number of TEVs by endpoint:			test organism: common name	test organism: scientific name	form for exposure chemical	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentration	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
		growth/ develop	reprod-uction	surviva	NOAEL	LOAEL	LC50																			
Metals																										
Aluminum	0																									
Antimony	0																									
Arsenic	9	4	0	5	8	0	1	Shrimp - Grass	Palaemonetes pugio		saltwater	NOAEL	Growth/ Development	1.03	mg/kg wet	1	20%	**5.150**	Whole Body	Absorption	Juvenile			No Effect On Growth	ERED-URS165	Lindsay, D.M. and J.G. Sanders. 1990. Arsenic uptake and transfer in a simplified estuarine food chain. Environmental Toxicology and Chemistry, 9: 391-395.
Cadmium	73	14	10	61	25	32	16	Mysid	Mysidopsis bahia	Cadmium chloride	saltwater	NOAEL	Growth/ Development	0.08	mg/kg wet	1	20%	**0.4000**	Whole body	Water; Not available	Adult	Lab; Flow-through	33	EPA-Duluth converted dry to wet value with dry/wet=20%	EPA-Duluth-79	Carr, R.S., J.W. Williams, F.I. Saksa, R.L. Buhl, and J.M. Neff. 1985. Bioenergetic alterations correlated with growth, fecundity and body burden of cadmium for mysids (Mysidopsis bahia). Environmental Toxicology and Chemistry, 4:181-188.
Chromium	6	5	0	2	3	2	1	Sand crab	Portunus pelagicus	Potassium dichromate	saltwater	NOAEL	Growth/ Development	1	mg/kg wet	1	20%	**5.000**	Whole body	Water; 0.1 mg/L	Juvenile	Lab; Renewal, 1 d	40	2 instar stage	EPA-Duluth-310	Mortimer, M.R. and G.J. Miller. 1994. Susceptibility of larval and juvenile instars of the sand crab, Portunus pelagicus (L.) to sea water contaminated by chromium, nickel or copper. Australian Journal of Marine and Freshwater Research, 45: 1107-1121.
Cobalt	3	0	0	3	3	0	0	Shrimp	Palaemon elegans	cobalt chloride		NOAEL	Survival	4.52	mg/kg wet	1	20%	**22.600**	Whole Body	Combined	Adult				ERED-SEQ97-42	Rainbow, P.S. and S.L. White. 1990. Comparative accumulation of cobalt by three crustaceans: A decapod, an amphipod, and a barnacle. Aquatic Toxicology, 16: 113-126.
Copper	14	5	0	11	7	5	2	Crayfish	Orconectes rusticus			NOAEL	Survival	2.000	mg/kg wet	1	20%	**10.000**	Whole Body	Absorption	Adult			No Effect On Survivorship	ERED-URS79	Evans, M.L. 1980. Copper accumulation in the crayfish (Orconectes rusticus). Bulletin of Environmental Contamination and Toxicology, 24: 916-920.
Iron	0																									
Lead	7	0	0	7	1	0	6	Amphipod	Pontoporeia affinis			NOAEL	Survival	4	mg/kg wet	1	20%	**20.000**	Whole Body	Combined	Immature			Body Burden Est. From Graph	ERED-SEQ97-39	Sundelin, B. 1984. Single and combined effects of lead and cadmium on Pontophoreia affinis (Crustacea: Amphipoda) in laboratory soft-bottom microcosms. Ecotoxicological Testing for the Marine Environment, 2: 588.
Manganese	0																									
Mercury	15	2	6	11	10	4	1	Water flea	Daphnia magna			NOAEL	Survival, Reproduction	0.859	mg/kg wet	1	20%	**4.2950**	Whole Body	Absorption	Immature			No Effect On Mortality, No Significant Reproductive Impairment	ERED-URS26	Biesinger, K.E., L.E. Anderson, and J.G. Eaton. 1982. Chronic effects of inorganic and organic mercury on Daphnia magna: Toxicity, accumulation, and loss. Archives of Environmental Contamination and Toxicology, 11: 769-774.
Molybdenum	0																									
Nickel	1	0	0	1	0	0	1	Water flea	Daphnia magna			LC50	Survival	223	mg/kg wet	100	20%	**11.150**	Whole Body	Absorption	Immature			Lethal Body Burden After 21 Day Exposure	ERED-URS17	Enserink, E.L., J.L. Maas-Diepeveen, and C.J. Van Leeuwen. 1991. Combined Effects of Metals: An Ecotoxicological Evaluation. Water Research, 25:679-687.
Selenium	18	13	5	13	10	7	1	Cladoceran	Daphnia magna	6:1 mixture selenate to selnite	freshwater	NOAEL	Growth/ Development, Reproduction	0.26	mg/kg wet	1	20%	**1.3000**	Whole body	Water; 5 µg/L	<24 h	Lab; Flow-through	21	A conservative residue value; No Effect On Growth, Mortality, Whole Body Ions, or Reproduction	EPA-Duluth-215; ERED-URS129	Ingersoll, C.G., F.J. Dwyer, and T.W. May. 1990. Toxicity of inorganic and organic selenium to Daphnia magna (Cladocera) and Chironomus riparius (Diptera). Environmental Toxicology and Chemistry, 9: 1171-1181.
Silicon	0																									
Silver	0																									
Tin	0																									
Zinc	6	1	0	6	3	2	1	Crayfish	Orconectes virilis	Zinc sulfate	freshwater	NOAEL	Survival	12.7	mg/kg wet	1	20%	**63.500**	Whole body	Water; 12.2 µg/L	Adult	Lab; Flow-through	14	Authors state that the crayfish may have been adapted to low concentrations of zinc prior to testing	EPA-Duluth-305	Mirenda, R.J. 1986. Toxicity and accumulation of cadmium in the crayfish, Orconectes virilis (Hagen). Archives of Environmental Contamination and Toxicology, 15: 401-407.
Butyltins																										
Monobutyltin	0									*[use tin, tributyl-]*								***0.600***								
Dibutyltin	0									*[use tin, tributyl-]*								***0.600***								
Tributyltin	5	1	0	4	1	0	4	Blue crab	Callinectes sapidus	Tributyltin chloride	Saltwater	NOAEL	growth/development	0.12	mg/kg wet	1	20%	**0.600**	Whole body	Diet: 1.89 µg/g (wet weight)	Juvenile	Lab; Static	16	Dibutyltin residues were 0.39 µg/g, monobutyltin residues were 0.35 µg/g; total butylin residues were 0.86 µ g/g	EPA-Duluth-371	Rice, S.D., J.W. Short, and W.B. Stickle. 1989. Uptake and catabolism of tributyltin by blue crabs fed TBT contaminated prey. Marine Environmental Research, 27: 137-145.
Tetrabutyltin	0									*[use tin, tributyl-]*								***0.600***								
LMWPAHs (2-3 ring)																										
2-ring PAHs																										
Naphthalene	0									*[use naphthalene, 2-methyl-]*								***0.895***								
Naphthalenes,C1-	0									*[use naphthalene, 2-methyl-]*								***0.895***								
Naphthalenes,C2-	0									*[use naphthalene, 2-methyl-]*								***0.895***								
Naphthalenes,C3-	0									*[use naphthalene, 2-methyl-]*								***0.895***								
Naphthalenes,C4-	0									*[use naphthalene, 2-methyl-]*								***0.895***								
1-Methylnapthalene	0									*[use naphthalene, 2-methyl-]*								***0.895***								
2-Methylnaphthalene	3	0	0	3	0	1	2	Cladoceran	Daphnia magna	2-Methyl-naphthalene	Freshwater	LOAEL	survival	1.79	mg/kg wet	10	20%	**0.895**	Whole body	Water; 1.4 mg/L	Parthenogenic females	Lab; Static	2	Radiotracer study; Only narcotized animals were analyzed	EPA-Duluth-353,354	Pawlisz, A.V. and R.H. Peters. 1993a. A test of the equipotency of internal burdens of nine narcotic chemicals using Daphnia magna. Environmental Science and Technology, 27: 2801-2806.; Pawlisz, A.V. and R.H. Peters. 1993b. A radioactive tracer technique for the study of lethal body burdens of narcotic organic chemicals in Daphnia magna. Environmental Science and Technology, 27: 2795-2800.
2,6-Dimethylnapthalene	0									*[use naphthalene, 2-methyl-]*								***0.895***								
1,6,7-Trimethylnaphthalene	0									*[use naphthalene, 2-methyl-]*								***0.895***								
Biphenyl	0																									

(a) studies can include multiple effects

Table 3.3.1-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Crustacea

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Crustacea	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentratio	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
3-ring PAHs																										
Acenaphthene	0																									
Acenaphthylene	0																									
Anthracene	0									*[use phenanthrene]*								***35.50***								
Phenanthrene	1	0	0	1	0	1	0	Amphipod	Diporeia spp.			LOAEL	survival	71	mg/kg wet	10	20%	**35.50**	Whole Body	Ingestion	Immature			12% Mortality	ERED-URS155	Landrum, P.F., W.S. Dupuis, and J. Kukkonen. 1994. Toxicokinetics and toxicity of sediment-associated pyrene and phenanthrene in Diporeia spp.: Examination of equilibrium partitioning theory and residue-based effects for assessing hazard. Environmental Toxicology and Chemistry, 13:1769-1780.
1-Methylphenanthrene	0									*[use phenanthrene]*								***35.50***								
Phenanthrenes+Anthracenes,C1-	0									*[use phenanthrene]*								***35.50***								
Phenanthrenes+Anthracenes,C2-	0									*[use phenanthrene]*								***35.50***								
Phenanthrenes+Anthracenes,C3-	0									*[use phenanthrene]*								***35.50***								
Phenanthrenes+Anthracenes,C4-	0									*[use phenanthrene]*								***35.50***								
Fluorene	0																									
Fluorenes,C1-	0																									
Fluorenes,C2-	0																									
Fluorenes,C3-	0																									
Dibenzothiophene	0																									
Dibenzothiophenes,C1-	0																									
Dibenzothiophenes,C2-	0																									
Dibenzothiophenes,C3-	0																									
HMWPAHs (4-6 ring)																										
4-ring PAHs																										
Benz(a)anthracene	0																									
Chrysene	1	0	0	1	1	0	0	Amphipod	Diporeia spp.			NOAEL	Survival	2.6	mg/kg wet	1	20%	**13.00**	Whole Body	Combined	Immature			No Increase In Mortality In 96 Hours	ERED-URS106	Harkey, G.A., P.F. Landrum, and S.J. Klaine. 1994. Comparison of whole-sediment, elutriate and port-water exposures for use in assessing sediment-associated organic contaminants in bioassays. Environmental Toxicology and Chemistry, 13:1315-1329.
Chrysenes,C1	0									*[use chrysene]*								***13.00***								
Chrysenes,C2-	0									*[use chrysene]*								***13.00***								
Chrysenes,C3-	0									*[use chrysene]*								***13.00***								
Chrysenes,C4-	0									*[use chrysene]*								***13.00***								
Fluoranthene	0									*[use pyrene]*								***63.50***								
Pyrene	1	0	0	1	0	0	1	Amphipod	Diporeia spp.			LD50	survival	1270	mg/kg wet	100	20%	**63.50**	Whole Body	Ingestion	Immature			50% Mortality	ERED-URS155	Landrum, P.F., W.S. Dupuis, and J. Kukkonen. 1994. Toxicokinetics and toxicity of sediment-associated pyrene and phenanthrene in Diporeia spp.: Examination of equilibrium partitioning theory and residue-based effects for assessing hazard. Environmental Toxicology and Chemistry, 13:1769-1780.
Fluoranthenes+Pyrenes,C1-	0									*[use pyrene]*								***63.50***								
Fluoranthenes+Pyrenes,C2-	0									*[use pyrene]*								***63.50***								
Fluoranthenes+Pyrenes,C3-	0									*[use pyrene]*								***63.50***								
5-ring PAHs																										
Benzo(a)pyrene	0																									
Benzo(e)pyrene	0																									
Benzo(b)fluoranthene	0																									
Benzo(k)fluoranthene	0																									
Dibenz(a,h)anthracene	0																									
Perylene	0																									
6-ring PAHs																										
Benzo(g,h,i)perylene	0																									
Indeno(1,2,3-cd)pyrene	0																									
non-PAH Semivolatiles																										
Aniline	1	0	0	1	1	0	0	Water flea	Daphnia magna			NOAEL	Survival	0.0079	mg/kg wet	1	20%	**0.040**	Whole Body	Absorption				No Effect On Survivorship In 24 Hours	ERED-URS168	Lu, P.Y. and R.L. Metcalf. 1975. Environmental fate and biodegradability of benzene derivatives as studied in a model aquatic ecosystem. Environmental Health Perspectives, 10:26 284.
Benzoic Acid	0																									
Benzyl Alcohol	0																									
bis(2-Chloroethoxy)methane	0																									
bis(2-Chloroethyl)Ether	0																									
bis(Chloromethyl)Ether	0																									
4-Bromophenyl-phenylether	0																									
Carbazole	0																									
4-Chloroaniline	0																									
2-Chloronaphthalene	0																									
2-Chlorophenol	1	0	0	1	1	0	0	Water flea	Daphnia magna			NOAEL	Survival	0.67	mg/kg wet	1	20%	**3.350**	Whole Body	Absorption				No Effect On Survivorship In 24 Hours	ERED-URS168	Lu, P.Y. and R.L. Metcalf. 1975. Environmental fate and biodegradability of benzene derivatives as studied in a model aquatic ecosystem. Environmental Health Perspectives, 10:26 284.
4-Chlorophenol	1	0	0	1	1	0	0	Water flea	Daphnia magna			NOAEL	Survival	0.87	mg/kg wet	1	20%	**4.350**	Whole Body	Absorption				No Effect On Survivorship In 24 Hours	ERED-URS168	Lu, P.Y. and R.L. Metcalf. 1975. Environmental fate and biodegradability of benzene derivatives as studied in a model aquatic ecosystem. Environmental Health Perspectives, 10:26 284.
4-Chlorophenyl-phenylether	0																									
Dibenzofuran	0																									
1,2-Dichlorobenzene	2	0	0	2	1	0	1	Cladoceran	Daphnia magna	1,2-Dichlorobenzene	freshwater	NOAEL	survival	17.3	mg/kg wet	1	20%	**86.5000**	Whole body	Water; 29.4 mg/L	Parthenogenic females	Lab; Static	2	Radiotracer study; Residues in surviving organisms, 48h LC50	EPA-Duluth-353,354	Pawlisz, A.V. and R.H. Peters. 1993a. A test of the equipotency of internal burdens of nine narcotic chemicals using Daphnia magna. Environmental Science and Technology, 27: 2801-2806.; Pawlisz, A.V. and R.H. Peters. 1993b. A radioactive tracer technique for the study of lethal body burdens of narcotic organic chemicals in Daphnia magna. Environmental Science and Technology, 27: 2795-2800.
1,3-Dichlorobenzene	0																									
1,4-Dichlorobenzene	1	0	0	1	0	1	0	Sand crab	Portunus pelagicus	1,4-Dichlorobenzene	saltwater	LOAEL	Survival - Reduced - Death	211.7	mg/kg wet	10	20%	**105.850**	Whole body	Water; 0.015-14.7 mg/L	Juvenile	Lab; Renewal, 1 d	7	Internal lethal residue	EPA-Duluth-309	Mortimer, M.R. and D.W. Connell. 1994. Critical internal and aqueous lethal concentrations of chlorobenzenes with the crab Portunus pelagicus (L.). Ecotoxicology and Environmental Safety, 28: 298-312.
3,3'-Dichlorobenzidine	0																									
Hexachlorobutadiene	1	0	0	1	0	1	0	Isopod	Asellus aquaticus	Hexachloro-1,3-butadiene	freshwater	LOAEL	Survival - Reduced - Death	128	mg/kg wet	10	20%	**64.000**	Whole body	Water; 200-800 µg/L	Adult	Lab; Static	4	Mean residue in dead isopods from various exposure concentrations	EPA-Duluth-253	Leeuwangh, P., H. Bult, and L. Schneiders. 1975. Toxicity of hexachlorobutadiene in aquatic organisms. In Koeman, J.H. and J.J.T.W.A. Strik, eds., Sublethal Effects of Toxic Chemicals on Aquatic Organisms. Elsevier Publishers, Amsterdam, Netherlands. pp. 167-176.
Hexachlorocyclopentadiene	0																									
Hexachloroethane	0																									

(a) studies can include multiple effects

Table 3.3.1-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Crustacea

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Crustacea	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium:	measurement endpoint	effect to test organism	TEV tissue concentration	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
Isophorone	0																									
2-Nitroaniline	0																									
3-Nitroaniline	0																									
4-Nitroaniline	0																									
2-Nitrophenol	0									*[use 4-nitrophenol]*								***0.385***								
4-Nitrophenol	23	0	0	23	0	0	23	Grass shrimp	Palaemonetes spp.	4-Nitrophenol	saltwater	LC50	Survival - Reduced 50%	7.7	mg/kg wet	100	20%	**0.385**	Whole body	Water; 13.3 mg/L	Juvenile	Lab; Static	4	Radiotracer study; 15 ppt salinity, 27°C	EPA-Duluth-46	Brecken-Folse, J.A., F.L. Mayer, Jr., L.E. Pedigo, and L.L. Marking. 1994. Acute toxicity of 4-nitrophenol, 2,4-dinitrophenol, terbufos and trichlorfon to grass shrimp (Palaemonetes spp.) and sheepshead minnows (Cyprinodon variegatus) as affected by salinity and temperature. Environmental Toxicology and Chemistry, 13: 67-77.
N-Nitrosodi-n-propylamine	0																									
N-Nitrosodibutylamine	0																									
N-Nitrosodiethylamine	0																									
N-Nitrosodimethylamine	0																									
N-nitrosodiphenylamine	0																									
N-Nitrosomethylethylamine	0																									
N-Nitrosopyrrolidine	0																									
Octachlorostyrene	0																									
2,2'oxybis(1-Chloropropane)	0																									
Pentachlorobenzene	1	0	0	1	0	1	0	Sand crab	Portunus pelagicus	Pentachloro-benzene	saltwater	LOAEL	Survival - Reduced - Death	861	mg/kg wet	10	20%	**430.500**	Whole body	Water; 0.25-50 mg/L	Juvenile	Lab; Renewal, 1 d	7	Internal lethal residue	EPA-Duluth-309	Mortimer, M.R. and D.W. Connell. 1994. Critical internal and aqueous lethal concentrations of chlorobenzenes with the crab Portunus pelagicus (L.). Ecotoxicology and Environmental Safety, 28: 298-312.
Pentachlorophenol	3	0	0	3	1	0	2	Water flea	Daphnia magna			NOAEL	Survival	0.45	mg/kg wet	1	20%	**2.250**	Whole Body	Absorption				No Effect On Survivorship In 24 Hours	ERED-URS168	Lu, P.Y. and R.L. Metcalf. 1975. Environmental fate and biodegradability of benzene derivatives as studied in a model aquatic ecosystem. Environmental Health Perspectives, 10:269-284.
Phenol	0																									
2,3,5,6-Tetrachlorophenol	0																									
2,4,5-Trichlorophenol	0																									
2,4,6-Trichlorophenol	0																									
2,4-Dichlorophenol	0																									
2,4-Dimethylphenol	0																									
2,4-Dinitrophenol	16	0	0	16	0	0	16	Amphipod	Gammarus pseudolimnaeus			LC50	Survival	21	mg/kg wet	100	20%	**1.050**	Whole Body	Absorption				radiotracer study; Lethal To 50% Of Animals In 96 Hours	ERED-URS127	Howe, G.E., L.L. Marking, T.D. Bills, J.J. Rach, and F.L. Mayer, Jr. 1994. Effects of water temperature and pH on toxicity of terbufos, trichlorfon, 4-nitrophenol and 2,4-dinitrophenol to the amphipod Gammarus pseudolimnaeus and rainbow trout (Oncorhynchus mykiss). Environmental Toxicology and Chemistry, 13: 51-66.
2-Methylphenol	0																									
4,6-Dinitro-2-methylphenol	0																									
4-Chloro-3-Methylphenol	0																									
4-Methylphenol	0																									
Butylbenzylphthalate	0									*[use phthalate, bis-(2-ethylhexyl-)*								***2.500***								
bis(2-Ethylhexyl) phthalate	3	1	2	2	2	1	0	Shrimp - Grass	Palaemonetes pugio			NOAEL	growth/development, survival	0.5	mg/kg wet	1	20%	**2.500**	Whole Body	Absorption	Larval			No Effect On Development Of Larvae,resd_conc_wet Value>0.5; No Effect On Mortality,resd_conc_wet Value>0.5	ERED-URS156	Laughlin, R.B., Jr., J.M.Neff, Y.C. Hrung, T.C. Goodwin, and C.S. Giam. 1978. The effects of three phthalate esters on the larval development of the grass shrimp Palaemonetes pugio (holthuis). Water, Air, and Soil Pollution, 9: 323-336.
Di-n-butylphthalate	1	1	0	1	1	0	0	Shrimp - Grass	Palaemonetes pugio			NOAEL	Development/Survival	0.5	mg/kg wet	1	20%	**2.500**	Whole Body	Absorption	Larval			No Effect On Development Of Larvae,resd_conc_wet Value>0.5; No Effect On Mortality,resd_conc_wet Value>0.5	ERED-URS156	Laughlin, R.B., Jr., J.M.Neff, Y.C. Hrung, T.C. Goodwin and C.S. Giam 1978. The Effects of Three Phthalate Esters on the Larval Development of the Grass Shrimp Palaemonetes Pugio (holthuis). Water Air Soil Pollut. 9:323-336.
Di-n-octylphthalate	0									*[use phthalate, bis-(2-ethylhexyl-)*								***2.500***								
Diethylphthalate	0									*[use phthalate, bis-(2-ethylhexyl-)*								***2.500***								
Dimethylphthalate	1	1	0	1	1	0	0	Shrimp - Grass	Palaemonetes pugio			NOAEL	development/survival	0.5	mg/kg wet	1	20%	**2.500**	Whole Body	Absorption	Larval			No Effect on Development or mortality of Larvae,resd_conc_wet Value>0.5	ERED-URS156	Laughlin, R.B., Jr., J.M.Neff, Y.C. Hrung, T.C. Goodwin, and C.S. Giam. 1978. The effects of three phthalate esters on the larval development of the grass shrimp Palaemonetes pugio (holthuis). Water, Air, and Soil Pollution, 9: 323-336.
1,2,4,5-Tetrachlorobenzene	0																									
1,2,3-Trichlorobenzene	1	0	0	1	0	1	0	Sand crab	Portunus pelagicus	1,2,3-Trichlorobenzene	saltwater	LOAEL	Survival - Reduced - Death	876.6	mg/kg wet	10	20%	**438.300**	Whole body	Water; 0.02-18.2 mg/L	Juvenile	Lab; Renewal, 1 d	7	Internal lethal residue	EPA-Duluth-309	Mortimer, M.R. and D.W. Connell. 1994. Critical internal and aqueous lethal concentrations of chlorobenzenes with the crab Portunus pelagicus (L.). Ecotoxicology and Environmental Safety, 28: 298-312.
1,2,4-Trichlorobenzene	3	0	0	3	1	1	1	Cladoceran	Daphnia magna	1,2,4-Trichlorobenzene	freshwater	NOAEL	survival	811	mg/kg wet	1	20%	**4055.000**	Whole body	Water; 2.36 mg/L	Parthenogenic females	Lab; Static	2	Radiotracer study; Residues in surviving organisms, 48h LC50	EPA-Duluth-353,354	Pawlisz, A.V. and R.H. Peters. 1993a. A test of the equipotency of internal burdens of nine narcotic chemicals using Daphnia magna. Environmental Science and Technology, 27: 2801-2806.; Pawlisz, A.V. and R.H. Peters. 1993b. A radioactive tracer technique for the study of lethal body burdens of narcotic organic chemicals in Daphnia magna. Environmental Science and Technology, 27: 2795-2800.

(a) studies can include multiple effects

Table 3.3.1-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Crustacea

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Crustacea	Total Number of TEVs	Number of TEVs by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVs by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentration	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
Chlorinated Pesticides																										
DDT series																										
2,4'-DDD	0									*[use p, p'-DDT]*								***0.233***								
4,4'-DDD	0									*[use p, p'-DDT]*								***0.233***								
2,4'-DDE	0									*[use p, p'-DDT]*								***0.233***								
4,4'-DDE	0									*[use p, p'-DDT]*								***0.233***								
2,4'-DDT	1	0	0	1	0	0	1			*[use p, p'-DDT]*								***0.233***								
4,4'-DDT	10	0	0	10	7	2	1	Crayfish	Orconectes nais			NOAEL	survival	0.0466	mg/kg wet	1	20%	**0.233**	Whole Body	Absorption	Adult			No Effect On Survivorship In 3 Days	ERED-URS136	Johnson, B.T., C.R. Saunders, H.O. Sanders, and R.S. Campbell. 1971. Biological magnification and degradation of DDT and aldrin by freshwater invertebrates. Journal of the Fisheries Research Board of Canada, 28: 705-709.
chlordane series																										
alpha-Chlordane	4	0	0	4	2	2	0	Shrimp - Pink	Penaeus duorarum			NOAEL	survival	0.71	mg/kg wet	1	20%	**3.550**	Whole Body	Combined	Adult			Estimated Noed - No Statistical Summary In Text	ERED-SEQ97-4	Parrish, P.R., S.C. Schimmel, D.J. Hansen, J.M. Patrick, and J. Forester. 1976. Chlordane: Effects on several estuarine organisms. Journal of Toxicology and Environmental Health, 1:485-494, 1976
gamma-Chlordane	0									*[use chlordane, cis-(alpha-)]*								***3.550***								
cis-Nonachlor	0									*[use chlordane, cis-(alpha-)]*								***3.550***								
trans-Nonachlor	0									*[use chlordane, cis-(alpha-)]*								***3.550***								
Heptachlor	2	0	0	2	2	0	0	Shrimp - Pink	Penaeus duorarum			NOAEL	Survival	0.01	mg/kg wet	1	20%	**0.050**	Whole Body	Combined	Mature			Exposure Media 65% Heptachlor (technical Grade)	ERED-SEQ97-23	Schimmel, S.C., J.M. Patrick, and J. Forester. 1976b. Heptachlor: Toxicity to and uptake by several estuarine organisms. Journal of Toxicology and Environmental Health, 1:955-965.
Heptachlor epoxide	2	0	0	2	2	0	0	Shrimp - Pink	Penaeus duorarum			NOAEL	Survival	0.054	mg/kg wet	1	20%	**0.270**	Whole Body	Combined	Mature			Exposure Media Heptachlor Epoxide (Conc. NS)	ERED-SEQ97-23	Schimmel, S.C., J.M. Patrick, and J. Forester. 1976b. Heptachlor: Toxicity to and uptake by several estuarine organisms. Journal of Toxicology and Environmental Health, 1:955-965.
Oxychlordane	0									*[use chlordane, cis-(alpha-)]*								***3.550***								
Aldrin	2	0	0	2	1	1	0	Water flea	Daphnia magna			NOAEL	survival	0.48	mg/kg wet	1	20%	**2.400**	Whole Body	Absorption	Adult			No Effect On Survivorship In 3 Days	ERED-URS136	Johnson, B.T., C.R. Saunders, H.O. Sanders, and R.S. Campbell. 1971. Biological magnification and degradation of DDT and aldrin by freshwater invertebrates. Journal of the Fisheries Research Board of Canada, 28: 705-709.
alpha-BHC	4	0	0	4	2	1	1	Cladoceran	Daphnia magna	Hexachloro-cyclohexane (alpha-isomer)	freshwater	NOAEL	Survival - No effect	2	mg/kg wet	1	20%	**10.000**	Whole body	Water; 50 µg/L	<1 d	Lab: Renewal, 2 d	2		EPA-Duluth-71	Canton, J.H., P.A. Greve, W. Slooff, and G.J. van Esch. 1975. Toxicity, accumulation and elimination studies of a-hexachlorocyclohexane (a-HCH) with freshwater organisms of different trophic levels. Water Research, 9: 1163-1169.
beta-BHC	1	0	0	1	0	0	1	Pink shrimp	Penaeus duorarum	Technical grade benzene hexachloride	saltwater	LC50	Survival - Reduced >50%	0.028	mg/kg wet	100	20%	**0.0014**	Whole body	Water; 0.38 µg/L	30-52 mm	Lab: Flow-through	4	Sum of alpha, gamma, beta, and delta isomers; Residues in surviving organisms	EPA-Duluth-394	Schimmel, S.C., J.M. Patrick, Jr., and J. Forester. 1977. Toxicity and bioconcentration of BHC and lindane in selected estuarine animals. Archives of Environmental Contamination and Toxicology, 6: 355-363.
delta-BHC	1	0	0	1	0	0	1	Pink shrimp	Penaeus duorarum	Technical grade benzene hexachloride	saltwater	LD50	Survival - Reduced >50%	0.028	mg/kg wet	100	20%	**0.0014**	Whole body	Water; 0.38 µg/L	30-52 mm	Lab: Flow-through	4	Sum of alpha, gamma, beta, and delta isomers; Residues in surviving organisms	EPA-Duluth-394	Schimmel, S.C., J.M. Patrick, Jr., and J. Forester. 1977. Toxicity and bioconcentration of BHC and lindane in selected estuarine animals. Archives of Environmental Contamination and Toxicology, 6: 355-363.
gamma-BHC(Lindane)	4	0	0	4	0	0	4	Shrimp - Pink	Penaeus duorarum			LC50	Survival	0.022	mg/kg wet	100	20%	**0.0011**	Whole Body	Combined	Mature			Estimate From Table	ERED-SEQ97-23	Schimmel, S.C., J.M. Patrick, and J. Forester. 1976b. Heptachlor: Toxicity to and uptake by several estuarine organisms. Journal of Toxicology and Environmental Health, 1:955-965.
Dieldrin	6	0	0	6	2	3	1	Shrimp - Pink	Penaeus duorarum			NOAEL	survival	0.01	mg/kg wet	1	20%	**0.0500**	Whole Body	Combined	Adult			Estimated Noed - No Statistical Summary In Text	ERED-SEQ97-2	Parrish, P.P., J.A. Couch, J. Forester, J.M. Patrick, and G.H. Cook. (no date). Dieldrin: Effects on several estuarine organisms. Contribution No. 178, Gulf Breeze Environmental Research Laboratory, Sabine Island, Gulf Breeze, FL 32561.
Endosulfan I	2	0	0	2	1	1	0	Grass shrmip	Palaemonetes pµgio	Technical grade endosulfan	saltwater	NOAEL	survival	0.07	mg/kg wet	1	20%	**0.350**	Whole body	Water; 0.40 µg/L	Juvenile-Adult	Lab: Flow-through	4	Residues in surviving organisms; Sum Of Detected Endo I, II, And Sulfate	EPA-Duluth-396; ERED-SEQ97-24	Schimmel, S.C., J.M. Patrick, Jr., and A.J. Wilson, Jr. 1977. Acute toxicity to and bioconcentration of endosulfan by estuarine animals. In Mayer, F.L. and J.L. Hamelink, eds., Aquatic Toxicology and Hazard Evaluation. ASTM STP 634. American Society for Testing and Materials (ASTM), Philadelphia, PA. pp. 241-252.
Endosulfan II	2	0	0	2	1	1	0	Grass shrmip	Palaemonetes pµgio	Technical grade endosulfan	saltwater	NOAEL	survival	0.07	mg/kg wet	1	20%	**0.350**	Whole body	Water; 0.40 µg/L	Juvenile-Adult	Lab: Flow-through	4	Residues in surviving organisms; Sum Of Detected Endo I, II, And Sulfate	EPA-Duluth-396; ERED-SEQ97-24	Schimmel, S.C., J.M. Patrick, Jr., and A.J. Wilson, Jr. 1977. Acute toxicity to and bioconcentration of endosulfan by estuarine animals. In Mayer, F.L. and J.L. Hamelink, eds., Aquatic Toxicology and Hazard Evaluation. ASTM STP 634. American Society for Testing and Materials (ASTM), Philadelphia, PA. pp. 241-252.
Endosulfan sulfate	0									*[use endosulfan]*								***0.350***								
Endrin	7	2	1	4	3	4	0	Grass shrimp	Palaemonetes pugio	Endrin	saltwater	NOAEL	growth/development	0.05	mg/kg wet	1	20%	**0.250**	Whole body	Adults + Water; 0.03 µg/L	Larvae, 2nd generation	Lab: Flow-through	56	Residue calculated from BCF determined in the study	EPA-Duluth-461	Tyler-Schroeder, D.B. 1979. Use of the grass shrimp (Palaemonetes pugio) in a life-cycle toxicity test. In Marking, L.L. and R.A. Kimerle, eds., Aquatic Toxicology. ASTM STP 667. American Society for Testing and Materials (ASTM), Philadelphia, PA. pp. 159-170.
Endrin Aldehyde	0									*[use endrin]*								***0.250***								
Endrine ketone	0									*[use endrin]*								***0.250***								
Hexachlorobenzene	6	1	1	6	6	0	0	Amphipod	Gammarus lacustris	Hexachloro-benzene	freshwater	NOAEL	Survival - No effect	79	mg/kg wet	1	20%	**395**	Whole body	Water, 5 µg/L	Adult	Lab; Flow-through	28		EPA-Duluth-318	Nebeker, A.V., W.L. Griffis, C.M. Wise, E. Hopkins, and J.A. Barbitta. 1989. Survival, reproduction and bioconcentration in invertebrates and fish exposed to hexachlorobenzene. Environmental Toxicology and Chemistry, 8: 601-611.
Methoxychlor	10	1	0	10	5	4	1	Blue crab	Callinectes sapidus	Methoxychlor	saltwater	NOAEL	survival	0.1	mg/kg wet	1	20%	**0.500**	Whole body	Water; 0.7 µg/L	Larvae	Lab: Renewal, 1 d	40-60		EPA-Duluth-37	Bookhout, C.G., J.D. Costlow, Jr., and R. Monroe. 1976. Effects of methoxychlor on larval development of mud-crab and blue crab. Water, Air, and Soil Pollution, 5:349-365.
Mirex	25	5	1	23	11	13	1	Blue crab	Callinectes sapidus	Mirex	saltwater	NOAEL	survival, growth/ development	0.05	mg/kg wet	1	20%	**0.2500**	Whole body	Water; 0.04 µg/L	Juvenile	Outdoor tanks; Flow-through	28	Spring season, 23.1°C	EPA-Duluth-438	Tagatz, M.E., P.W. Borthwick, and J. Forester. 1975. Seasonal effects of leached mirex on selected estuarine animals. Archives of Environmental Contamination and Toxicology, 3: 371-383.
Toxaphene	2	0	0	2	0	0	2	Pink shrimp	Penaeus duorarum	Toxaphene	saltwater	LC50	Survival - Reduced >50%	0.83	mg/kg wet	100	20%	**0.042**	Whole body	Water; 2.4 µg/L		Lab: Flow-through	4	Residues in surviving organisms	EPA-Duluth-395	Schimmel, S.C., J.M. Patrick, Jr., and J. Forester. 1977b. Uptake and toxicity of toxaphene in several estuarine organisms. Archives of Environmental Contamination and Toxicology, 5: 353-367.

(a) studies can include multiple effects

Table 3.3.1-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Crustacea

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Crustacea	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentratior	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
Polychlorinated Biphenyls (PCBs)																										
PCB-8	0																									
PCB-18	0																									
PCB-28	0																									
PCB-44	0																									
PCB-52	2	2	2	2	2	0	0	Cladoceran	Daphnia magna	2,2',5,5'-Tetrachloro biphenyl	freshwater	NOAEL	Survival, Growth, Reproduction - No effect	4	mg/kg wet	1	20%	**20.00**	Whole body	Water; 1 µg/L	Neonates-Adult	Lab; Renewal, 3/wk	21		EPA-Duluth-115	Dillon, T.M., W.H. Benson, R.A. Stackhouse, and A.M. Crider. 1990. Effects of selected PCB congeners on survival, growth, and reproduction in Daphnia magna. Environmental Toxicology and Chemistry, 9: 1317-1326.
PCB-66	0																									
PCB-77	3	3	2	2	2	1	0	Cladoceran	Daphnia magna	3,3',4,4'-Tetrachlorobiphenyl	freshwater	NOAEL	growth/developme nt	1.3	mg/kg wet	1	20%	**6.5000**	Whole body	Water; 0.1 µg/L	Neonate-Adult	Lab; Renewal, 3/wk	21		EPA-Duluth-115	Dillon, T.M., W.H. Benson, R.A. Stackhouse, and A.M. Crider. 1990. Effects of selected PCB congeners on survival, growth, and reproduction in Daphnia magna. Environmental Toxicology and Chemistry, 9: 1317-1326.
PCB-101	2	1	1	1	1	1	0	Cladoceran	Daphnia magna	2,2',4,5,5'-Pentachloro-biphenyl	freshwater	LOAEL	Growth - Reduced	0.7	mg/kg wet	10	20%	**0.35**	Whole body	Water; 0.1 µg/L	Neonate-Adult	Lab; Renewal, 3/wk	21		EPA-Duluth-115	Dillon, T.M., W.H. Benson, R.A. Stackhouse, and A.M. Crider. 1990. Effects of selected PCB congeners on survival, growth, and reproduction in Daphnia magna. Environmental Toxicology and Chemistry, 9: 1317-1326.
PCB-105	0																									
PCB-114	0																									
PCB-118	1	1	1	1	1	0	0	Cladoceran	Daphnia magna	2,3',4,4',5-Pentachloro-biphenyl	freshwater	NOAEL	Survival, Growth, Reproduction - No effect	26.6	mg/kg wet	1	20%	**133.00**	Whole body	Water; 1 µg/L	Neonate-Adult	Lab; Renewal, 3/wk	21		EPA-Duluth-115	Dillon, T.M., W.H. Benson, R.A. Stackhouse, and A.M. Crider. 1990. Effects of selected PCB congeners on survival, growth, and reproduction in Daphnia magna. Environmental Toxicology and Chemistry, 9: 1317-1326.
PCB-123	0																									
PCB-126	0																									
PCB-128	0																									
PCB-138	1	1	1	1	1	0	0	Cladoceran	Daphnia magna	2,2',3,4,4',5'-Hexachloro-biphenyl	freshwater	NOAEL	Survival, Growth, Reproduction - No effect	18.8	mg/kg wet	1	20%	**94.00**	Whole body	Water; 1 µg/L	Neonate-Adult	Lab; Renewal, 3/wk	21		EPA-Duluth-115	Dillon, T.M., W.H. Benson, R.A. Stackhouse, and A.M. Crider. 1990. Effects of selected PCB congeners on survival, growth, and reproduction in Daphnia magna. Environmental Toxicology and Chemistry, 9: 1317-1326.
PCB-153	1	1	1	1	1	0	0	Cladoceran	Daphnia magna	2,2',4,4',5,5'-Hexachloro-biphenyl	freshwater	NOAEL	Survival, Growth, Reproduction - No effect	14.4	mg/kg wet	1	20%	**72.00**	Whole body	Water; 1 µg/L	Neonate-Adult	Lab; Renewal, 3/wk	21		EPA-Duluth-115	Dillon, T.M., W.H. Benson, R.A. Stackhouse, and A.M. Crider. 1990. Effects of selected PCB congeners on survival, growth, and reproduction in Daphnia magna. Environmental Toxicology and Chemistry, 9: 1317-1326.
PCB-156	0																									
PCB-157	0																									
PCB-167	0																									
PCB-169	0																									
PCB-170	0																									
PCB-180	1	1	1	1	1	0	0	Cladoceran	Daphnia magna	2,2',3,4,4',5,5'-Heptachloro-biphenyl	freshwater	NOAEL	Survival, Growth, Reproduction - No effect	24.1	mg/kg wet	1	20%	**120.50**	Whole body	Water; 1 µg/L	Neonate-Adult	Lab; Renewal, 3/wk	21		EPA-Duluth-115	Dillon, T.M., W.H. Benson, R.A. Stackhouse, and A.M. Crider. 1990. Effects of selected PCB congeners on survival, growth, and reproduction in Daphnia magna. Environmental Toxicology and Chemistry, 9: 1317-1326.
PCB-187	0																									
PCB-189	0																									
PCB-195	0																									
PCB-206	0																									
PCB-209	0																									
PCB Aroclor	20	1	0	19	13	3	4	Crayfish	Orconectes nais	Aroclor 1254		NOAEL	Survival	0.04	mg/kg wet	1	20%	**0.200**	Whole Body	Combined	Mature			Radiolabeled Compound	ERED-SEQ97-18	Sanders, H.O. and J.H. Chandler. 1972. Biological magnification of a polychlorinated biphenyl (Aroclor 1254) from water by aquatic invertebrates. Bulletin of Environmental Contamination and Toxicology.
Polychlorinated Dioxins/Furans (PCDD/PCDF)																										
2,3,7,8-TCDD	2	0	0	2	2	0	0	Cladoceran	Daphnia magna	2,3,7,8-TCDD	Freshwater	NOAEL	survival	0.017	mg/kg wet	1	20%	**0.0850**	Whole body	Water; 3.1 ng/L	Adult	Lab; Model ecosystem	32	Radiotracer Study	EPA-Duluth-216,217	Isensee, A.R. 1978. Bioaccumulation of 2,3,7,8-tetrachlorodibenzo-para-dioxin. Ecol. Bull. Nfr. (Naturvetensk Forskningsradet), 27: 255-262.; Isensee, A.R. and G.E. Jones. 1975. Distribution of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) in an aquatic model ecosystem. Environmental Science and Technology, 9:668-672.
1,2,3,7,8-PeCDD	0																									
1,2,3,4,7,8-HxCDD	0																									
1,2,3,6,7,8-HxCDD	0																									
1,2,3,7,8,9-HxCDD	0																									
1,2,3,4,6,7,8-HpCDD	0																									
OCDD	0																									
2,3,7,8-TCDF	0																									
1,2,3,7,8-PeCDF	0																									
2,3,4,7,8-PeCDF	0																									
1,2,3,4,7,8-HxCDF	0																									
1,2,3,6,7,8-HxCDF	0																									
2,3,4,6,7,8-HxCDF	0																									
1,2,3,7,8,9-HxCDF	0																									
1,2,3,4,6,7,8-HpCDF	0																									
1,2,3,4,7,8,9-HpCDF	0																									
OCDF	0																									
Organophosphorus Pesticides																										
Azinphos-methyl	0																									
Chlorpyrifos	2	1	0	2	1	1	0	Isopod	Asellus aquaticus	Dursban 4E	Freshwater	NOAEL	survival	0.97	mg/kg wet	1	20%	**4.850**	Whole body	Water; 0.7 µg/L	Adult	Field; Outdoor ditches	23	Applied as a single dose	EPA-Duluth-307	Montanes, J.F.C., B. van Hattum, and J. Deneer. 1995. Bioconcentration of chlorpyrifos by the freshwater isopod Asellus aquaticus (L.) in outdoor experimental ditches. Environmental Pollution, 88: 137-146.
Demeton-O	0																									
Demeton-S	0																									
Diazinon	0																									
Ethion	0																									
Ethoprop	0																									
Ethyl parathion	0																									
Malathion	0																									
Methyl parathion	0																									

(a) studies can include multiple effects

Table 3.3.1-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Crustacea

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Crustacea	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentration	TEV-units	endpoint UF to NOAEL level	est. %dry wt	**NOAEL-equiv. TRV (mg/kg dw)**	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
Chlorinated Herbicides																										
2,4,5-T	0																									
2,4-D	0																									
Dalapon	0																									
Dicamba	0																									
MCPP	0																									
2,4,5-TP (Silvex)	0																									
Triazine Pesticides																										
Ametryn	0																									
Anilazine	0																									
Atrazine	0																									
Pronamide	0																									
Propiconazole	0																									
Simazine	0																									
Terbacil	0																									
Hexazinone	0																									
Carbamate/Urea Pesticides																										
Benomyl	0																									
Carbaryl	2	0	0	2	0	1	1	Shrimp	Mysis relicta	Carbaryl	Freshwater	LOAEL	survival	2.42	mg/kg wet	10	20%	**1.210**	Whole body	Water; not available	Juvenile - Adult	Lab; Renewal, 1 d	4	Radiotracer study; Residues in dead organisms; Standard deviation	EPA-Duluth-249; ERED-ABB1	Landrum P.F. and W.S. Dupuis. 1990. Toxicity and toxicokinetics of pentachlorophenol and carbaryl to Pontoporeia hoyi and Mysis relicta. Aquatic Toxicology and Risk Assessment: Thirteenth Volume.
Carbofuran	0																									
Diuron	0																									
Methomyl	0																									
Oxamyl	0																									
Ordnance Compounds																										
1,3-Dinitrobenzene	0																									
2,4-Dinitrotoluene	0																									
2,6-Dinitrotoluene	0																									
HMX	0																									
Nitrobenzene	1	0	0	1	1	0	0	Water flea	Daphnia magna			NOAEL	survival	0.071	mg/kg wet	1	20%	**0.355**	Whole Body	Absorption				No Effect On Survivorship In 24 Hours	ERED-URS168	Lu, P.Y. and R.L. Metcalf. 1975. Environmental fate and biodegradability of benzene derivatives as studied in a model aquatic ecosystem. Environmental Health Perspectives, 10:26 284.
Nitroglycerin	0																									
2-Nitrotoluene	0																									
3-Nitrotoluene	0																									
4-Nitrotoluene	0																									
Picric Acid	0																									
RDX	0																									
Tetryl	0																									
1,3,5-Trinitrobenzene	0																									
2,4,6-Trinitrotoluene	0																									

Return to Table of Contents

(a) studies can include multiple effects

Table 3.3.1-2. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Fish

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Fish	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod-uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentration	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
Metals																										
Aluminum	5	2	0	3	3	2	0	Atlantic salmon	Salmo salar	Aluminium chloride	freshwater	NOAEL	Survival - No effect	1	mg/kg wet	1	20%	**5.000**	Whole body	Water; 181-1809 µg/L	Alevin, newly hatched	Lab; Renewal, 1 d	43	Residues in surviving fish	EPA-Duluth-360	Peterson, R.H., R.A. Bourbonniere, G.L. Lacroix, D.J. Martin-Robichaud, P. Takats, and G. Brun. 1989. Responses of Atlantic salmon (Salmo salar) alevins to dissolved organic carbon and dissolved aluminum at low pH. Water Air and Soil Pollution, 46: 399-413.
Antimony	2	0	0	2	1	0	1	Rainbow trout	Oncorhynchus mykiss	Antimony potassium tartrate	freshwater	NOAEL	Survival	5	mg/kg wet	1	20%	**25.000**	Whole body	Water; 8 mg/L	Fingerling, 1.2 g	Lab; Renewal, 3-4 d	30		EPA-Duluth-119	Doe, K.G., W.R. Parker, S.J. Ponsford, and J.D.A. Vaughan. 1987. The acute and chronic toxicity of antimony to Daphnia magna and rainbow trout. In Lakshminarayana, J.S.S., ed., Technical Report of Fisheries and Aquatic Sciences 1575, 13th Annual Aquatic Toxicity Workshop Proceedings: 12-14 November 1986. Moncton, New Brunswick, Canada. pp. 40-43.
Arsenic	19	9	0	17	9	3	7	Bluegill	Lepomis macrochirus		freshwater	NOAEL	Survival	0.520	mg/kg wet	1	20%	**2.600**	Whole Body	Absorption	Immature			No Effect On Mortality	ERED-URS10	Barrows, M.E., S.R. Petrocelli, K.J. Macek, and J.J. Carroll. 1980. Bioconcentration and elimination of selected water pollutants by bluegill sunfish (Lepomis macrochirus). In Haque R., ed., Dynamics, Exposure and Hazard Assessment of Toxic Chemicals, pp. 379-392.
Cadmium	68	22	2	52	30	26	12	Bluegill	Lepomis macrochirus	Cadmium sulfate	freshwater	NOAEL	Survival	0.036	mg/kg wet	1	20%	**0.1800**	Whole body	Water; 0.08 mg/L	Juvenile	Lab; Renewal	180	EPA-Duluth converted dry to wet value with dry/wet=20%	EPA-Duluth-81	Cearley, J.E. and R.L. Coleman. 1974. Cadmium toxicity and bioconcentration in largemouth bass and bluegill. Bulletin of Environmental Contamination and Toxicology, 11: 146-151.
Chromium	3	0	0	3	2	0	1	Trout - Rainbow	Oncorhynchus mykiss	Cr6+		NOAEL	Survival	2.300	mg/kg wet	1	20%	**11.500**	Whole Body	Absorption	Immature			Ph 7.8; No Increased Mortality Relative To Control	ERED-URS215	Van De Putte, L., J. Lubbers, and Z. Kolar. 1981. Effect of pH on uptake, tissue distribution and retention of hexavelent chromium in rainbow trout (Salmo gairdneri). Aquatic Toxicology, 1: 3-18.
Cobalt	0																									
Copper	7	0	2	5	1	6	0	Trout - Rainbow	Oncorhynchus mykiss			LOAEL	Survival	2.220	mg/kg wet	10	20%	**1.110**	Whole Body	Absorption	Adult			50% Mortality In 7 Hours	ERED-URS99	Handy, R.D. 1992. The assessment of episodic metal pollution I. Uses and limitations of tissue contaminant analysis in rainbow trout (Oncorhynchus mykiss) after short waterborne exposure to cadmium or copper. Archives of Environmental Contamination and Toxicology, 22: 74-81.
Iron	0																									
Lead	7	5	0	4	4	3	0	Brook trout	Salvelinus fontinalis	Lead nitrate	freshwater	NOAEL	Survival	0.34	mg/kg wet	1	20%	**1.700**	Whole body	Adult fish + Water; 58 µg/L	Embryo	Lab; Flow-through	60	Third generation fish	EPA-Duluth-207	Holcombe, G.W., D.A. Benoit, E.N. Leonard, and J.M. McKim. 1976. Long-term effects of lead exposure on three generations of brook trout (Salvelinus fontinalis). Journal of the Fisheries Research Board of Canada, 33: 1731-1741.
Manganese	0																									
Mercury	42	27	3	29	25	16	1	Trout - Rainbow	Oncorhynchus mykiss			NOAEL	Growth/ Development, Survival	0.14	mg/kg wet	1	20%	**0.7000**	Whole Body	Ingestion	Immature			No Effect On Growth, No Effect On Survival	ERED-URS33	Boudou, A. and F. Ribeyre. 1985. Experimental study of trophic contamination of Salmo gairdneri by two mercury compounds - $HgCl_2$ and CH_3HgCl - analysis at the organism and organ levels. Water, Air, and Soil Pollution, 26:137-148.
Molybdenum	0																									
Nickel	0																									
Selenium	69	35	6	35	29	31	9	Fathead minnow	Pimephales promelas	Sodium selenate	freshwater	NOAEL	Growth/ Development	0.12	mg/kg wet	1	20%	**0.6000**	Whole body	Water; 21.5 ng/ml	Adult	Lab; Flow-through	56 (30)	Radiotracer study	EPA-Duluth-29	Bertram, P.E. and A.S. Brooks. 1986. Kinetics of accumulation of selenium from food and water by fathead minnows. Water Research, 20: 877-884.
Silicon	0																									
Silver	1	1	0	1	1	0	0	Bluegill	Lepomis macrochirus	Silver nitrate	freshwater	NOAEL	Survival, Growth - No effect	0.06	mg/kg wet	1	20%	**0.300**	Whole body	Water; 70 µg/L	Young of year	Lab; Static, aerated	180		EPA-Duluth-88	Coleman, R.L. and J.E. Cearley. 1974. Silver toxicity and accumulation in largemouth bass and bluegill. Bulletin of Environmental Contamination and Toxicology, 12: 53-61.
Tin	0																									
Zinc	22	15	7	12	16	6	0	Guppy	Poecilia reticulata			NOAEL	Survival	0.284	mg/kg wet	1	20%	**1.420**	Whole Body	Combined	Immature				ERED-SEQ97-10	Pierson, K.B. 1981. Effects of Chronic Zinc Exposure on The Growth, Sexual Maturity, Reproduction, And Bioaccumulation ofThe Guppy, Poecilia reticulata. Canadian Journal of Fisheries and Aquatic Sciences, 38: .
Butyltins																										
Monobutyltin	0									*[use tin, tributyl-]*								***0.350***								
Dibutyltin	0									*[use tin, tributyl-]*								***0.350***								
Tributyltin	12	2	1	10	8	2	2	Carp	Cypinus carpio	Tri-n-butyltin chloride	Freshwater	NOAEL	survival	0.07	mg/kg wet	1	20%	**0.350**	Whole body	Water; 0.28 µg/L	Female; 0.41-0.55 g	Lab; Flow-through	14(14)	Residues calculated from BCF determined in the study	EPA-Duluth-459	Tsuda, T., S. Aoki, M. Kojima, and H. Harada. 1990. Differences between freshwater and seawater-acclimated guppies in the accumulation and excretion of tri-n-butyltin chloride and triphenyltin chloride. Water Research, 24: 1371-1376.
Tetrabutyltin	0									*[use tin, tributyl-]*								***0.350***								
LMWPAHs (2-3 ring)																										
2-ring PAHs																										
Naphthalene	1	0	0	1	1	0	0	Golden Ide	Leuciscus idus			NOAEL	survival	1.5	mg/kg wet	1	20%	**7.500**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
Naphthalenes,C1-	0									*[use naphthalene]*								***7.500***								
Naphthalenes,C2-	0									*[use naphthalene]*								***7.500***								
Naphthalenes,C3-	0									*[use naphthalene]*								***7.500***								
Naphthalenes,C4-	0									*[use naphthalene]*								***7.500***								
1-Methylnapthalene	0									*[use naphthalene]*								***7.500***								
2-Methylnapthhalene	0									*[use naphthalene]*								***7.500***								
2,6-Dimethylnapthalene	0									*[use naphthalene]*								***7.500***								
1,6,7-Trimethylnaphthalene	0									*[use naphthalene]*								***7.500***								
Biphenyl	1	0	0	1	1	0	0	Golden Ide	Leuciscus idus			NOAEL	survival	14	mg/kg wet	1	20%	**70.0**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.

(a) studies can include multiple effects

Table 3.3.1-2. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Fish

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Fish	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentratio	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
3-ring PAHs																										
Acenaphthene	1	0	0	1	1	0	0	Bluegill	Lepomis macrochirus			NOAEL	survival	3.5	mg/kg wet	1	20%	**17.5**	Whole Body	Absorption	Immature			No Effect On Mortality	ERED-URS10	Barrows, M.E., S.R. Petrocelli, K.J. Macek, and J.J. Carroll. 1980. Bioconcentration and elimination of selected water pollutants by bluegill sunfish (Lepomis macrochirus). In Haque, R., ed., Dynamics, Exposure and Hazard Assessment of Toxic Chemicals, pp. 379-392.
Acenaphthylene	0																									
Anthracene	1	0	0	1	1	0	0	Golden Ide	Leuciscus idus			NOAEL	survival	45.5	mg/kg wet	1	20%	**227.5**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
Phenanthrene	1	0	0	1	1	0	0	Golden Ide	Leuciscus idus			NOAEL	survival	88	mg/kg wet	1	20%	**440.0**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
1-Methylphenanthrene	0									*[use anthracene]*								***227.5***								
Phenanthrenes+Anthracenes,C1-	0									*[use anthracene]*								***227.5***								
Phenanthrenes+Anthracenes,C2-	0									*[use anthracene]*								***227.5***								
Phenanthrenes+Anthracenes,C3-	0									*[use anthracene]*								***227.5***								
Phenanthrenes+Anthracenes,C4-	0									*[use anthracene]*								***227.5***								
Fluorene	0																									
Fluorenes,C1-	0																									
Fluorenes,C2-	0																									
Fluorenes,C3-	0																									
Dibenzothiophene	0																									
Dibenzothiophenes,C1-	0																									
Dibenzothiophenes,C2-	0																									
Dibenzothiophenes,C3-	0																									
HMWPAHs (4-6 ring)																										
4-ring PAHs																										
Benz(a)anthracene	1	0	0	1	1	0	0	Golden Ide	Leuciscus idus			NOAEL	Survival	17.5	mg/kg wet	1	20%	**87.50**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
Chrysene	0																									
Chrysenes,C1	0																									
Chrysenes,C2-	0																									
Chrysenes,C3-	0																									
Chrysenes,C4-	0																									
Fluoranthene	0																									
Pyrene	0																									
Fluoranthenes+Pyrenes,C1-	0																									
Fluoranthenes+Pyrenes,C2-	0																									
Fluoranthenes+Pyrenes,C3-	0																									
5-ring PAHs																										
Benzo(a)pyrene	4	1	0	3	2	2	0	Flatfish	Psettichthys melanostichus	Benzo(a)pyrene	Saltwater	LOAEL	Survival (Hatchability) - Reduced	2.1	mg/kg wet	10	20%	**1.050**	Whole body (larvae)	Water; 0.1 µg/L	Egg-Larvae	Lab; Renewal, 7-10 d	6	Radiotracer study; BaP+metabolites, since BaP is volatile residues may include metabolites; Reduced Hatching Success; Larval Abnormalities	EPA-Duluth-212; ERED-URS126	Hose, J.E., J.B. Hannah, D. Dijulio, M.L. Landolt, B.S. Miller, W.T. Iwaoka, and S.P. Felton. 1982. Effects of benzo(a)pyrene on early development of flatfish. Archives of Environmental Contamination and Toxicology, 11: 167-171.
Benzo(e)pyrene	0									*[use benzo(a)pyrene]*								***1.050***								
Benzo(b)fluoranthene	0																									
Benzo(k)fluoranthene	0																									
Dibenz(a,h)anthracene	1	0	0	1	1	0	0	Golden Ide	Leuciscus idus			NOAEL	Survival	0.5	mg/kg wet	1	20%	**2.500**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
Perylene	0																									
6-ring PAHs																										
Benzo(g,h,i)perylene	0																									
Indeno(1,2,3-cd)pyrene	0																									
non-PAH Semivolatiles																										
Aniline	3	0	0	3	2	0	1	Golden Ide	Leuciscus idus			NOAEL	Survival	0.25	mg/kg wet	1	20%	**1.250**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
Benzoic Acid	0																									
Benzyl Alcohol	0																									
bis(2-Chloroethoxy)methane	0																									
bis(2-Chloroethyl)Ether	1	0	0	1	1	0	0	Bluegill	Lepomis macrochirus			NOAEL	Survival	0.11	mg/kg wet	1	20%	**0.550**	Whole Body	Absorption	Immature			No Effect On Mortality	ERED-URS10	Barrows, M.E., S.R. Petrocelli, K.J. Macek, and J.J. Carroll. 1980. Bioconcentration and elimination of selected water pollutants by bluegill sunfish (Lepomis macrochirus). In Haque, R., ed., Dynamics, Exposure and Hazard Assessment of Toxic Chemicals, pp. 379-392.
bis(Chloromethyl)Ether	0																									
4-Bromophenyl-phenylether	0																									
Carbazole	0																									
4-Chloroaniline	2	0	0	2	2	0	0	Golden Ide	Leuciscus idus			NOAEL	Survival	0.5	mg/kg wet	1	20%	**2.500**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
2-Chloronaphthalene	0																									
2-Chlorophenol	5	0	0	5	3	2	0	Mosquito fish	Gambusia affinis			NOAEL	Survival	0.32	mg/kg wet	1	20%	**1.600**	Whole Body	Absorption				No Effect On Survivorship In 24 Hours	ERED-URS168	Lu, P.Y. and R.L. Metcalf. 1975. Environmental fate and biodegradability of benzene derivatives as studied in a model aquatic ecosystem. Environmental Health Perspectives, 10:26 284.
4-Chlorophenol	5	0	0	5	2	2	1	Mosquito fish	Gambusia affinis			NOAEL	Survival	0.17	mg/kg wet	1	20%	**0.850**	Whole Body	Absorption				No Effect On Survivorship In 24 Hours	ERED-URS168	Lu, P.Y. and R.L. Metcalf. 1975. Environmental fate and biodegradability of benzene derivatives as studied in a model aquatic ecosystem. Environmental Health Perspectives, 10:26 284.
4-Chlorophenyl-phenylether	0																									
Dibenzofuran	0																									

(a) studies can include multiple effects

Table 3.3.1-2. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Fish

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Fish	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentratio	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
1,2-Dichlorobenzene	6	0	0	6	2	4	0	Rainbow trout	Oncorhynchus mykiss	1,2-Dichlorobenzene	freshwater	NOAEL	Survival - No effect	0.67	mg/kg wet	1	20%	**3.350**	Whole body	Water; 0.940 µg/L	Subadult, 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
1,3-Dichlorobenzene	6	4	0	5	5	1	0	Rainbow trout	Oncorhynchus mykiss	1,3-Dichlorobenzene	freshwater	NOAEL	Survival - No effect	0.64	mg/kg wet	1	20%	**3.200**	Whole body	Water; 0.690 µg/L	Subadult, 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
1,4-Dichlorobenzene	10	2	0	10	5	5	0	Rainbow trout	Oncorhynchus mykiss	1,4-Dichlorobenzene	freshwater	NOAEL	Survival - No effect	0.54	mg/kg wet	1	20%	**2.700**	Whole body	Water; 0.670 µg/L	Subadult, 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
3,3'-Dichlorobenzidine	1	0	0	1	1	0	0	Golden Ide	Leuciscus idus			NOAEL	Survival	30.5	mg/kg wet	1	20%	**152.500**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
Hexachlorobutadiene	2	0	0	2	1	1	0	Rainbow trout	Oncorhynchus mykiss	Hexachloro-1,3-butadiene	freshwater	NOAEL	Survival - No effect	0.063	mg/kg wet	1	20%	**0.315**	Whole body	Water; 0.0034 µg/L	Subadult, 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
Hexachlorocyclopentadiene	2	0	0	2	2	0	0	Fathead minnow	Pimephales promelas	Hexachlorocyclo-pentadiene	freshwater	NOAEL	Survival - No effect	0.04	mg/kg wet	1	20%	**0.200**	Whole body	Water; 3.7 µg/L	Larvae-Juvenile	Lab; Flow-through	30	Residues calculated from BCF determined in the study	EPA-Duluth-425	Spehar, R.L., G.D. Veith, D.L. DeFoe, and B.V. Bergstedt. 1979. Toxicity and bioaccumulation of hexachlorocyclopentadiene, hexachloronorbornadiene and heptachloronorbornene in larval and early juvenile fathead minnows, Pimephales promelas. Bulletin of Environmental Contamination and Toxicology, 21: 576-583.
Hexachloroethane	3	0	0	3	3	0	0	Rainbow trout	Oncorhynchus mykiss	Hexachloroethane	freshwater	NOAEL	Survival - No effect	0.0071	mg/kg wet	1	20%	**0.036**	Whole body	Water; 0.0071 µg/L	Subadult, 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
Isophorone	1	0	0	1	1	0	0	Bluegill	Lepomis macrochirus			NOAEL	Survival	0.65	mg/kg wet	1	20%	**3.250**	Whole Body	Absorption	Immature			No Effect On Mortality	ERED-URS10	Barrows, M.E., S.R. Petrocelli, K.J. Macek, and J.J. Carroll. 1980. Bioconcentration and elimination of selected water pollutants by bluegill sunfish (Lepomis macrochirus). In Haque, R., ed., Dynamics, Exposure and Hazard Assessment of Toxic Chemicals, pp. 379-392.
2-Nitroaniline	0																									
3-Nitroaniline	0																									
4-Nitroaniline	0																									
2-Nitrophenol	0									*[use 4-nitrophenol]*								***10.000***								
4-Nitrophenol	28	1	0	28	2	0	26	Golden Ide	Leuciscus idus			NOAEL	survival	2	mg/kg wet	1	20%	**10.000**	Whole Body	Absorption	NA			No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
N-Nitrosodi-n-propylamine	0																									
N-Nitrosodibutylamine	0																									
N-Nitrosodiethylamine	0																									
N-Nitrosodimethylamine	0																									
N-nitrosodiphenylamine	1	0	0	1	1	0	0	Bluegill	Lepomis macrochirus			NOAEL	Survival	2	mg/kg wet	1	20%	**10.000**	Whole Body	Absorption	Immature			No Effect On Mortality	ERED-URS10	Barrows, M.E., S.R. Petrocelli, K.J. Macek, and J.J. Carroll. 1980. Bioconcentration and elimination of selected water pollutants by bluegill sunfish (Lepomis macrochirus). In Haque, R., ed., Dynamics, Exposure and Hazard Assessment of Toxic Chemicals, pp. 379-392.
N-Nitrosomethylethylamine	0																									
N-Nitrosopyrrolidine	0																									
Octachlorostyrene	0																									
2,2'oxybis(1-Chloropropane)	0																									
Pentachlorobenzene	7	2	0	7	5	2	0	Rainbow trout	Oncorhynchus mykiss	Pentachloro-benzene	freshwater	NOAEL	Survival - No effect	0.22	mg/kg wet	1	20%	**1.100**	Whole body	Water; 0.009 µg/L	Subadult, 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
Pentachlorophenol	28	10	3	24	16	9	3	Rainbow trout	Oncorhynchus mykiss	Pentachloro-phenol	freshwater	NOAEL	Survival, Growth - No effect	0.04	mg/kg wet	1	20%	**0.200**	Whole body	Diet 3000 µg/kg	40 g	Lab; Flow-through	110		EPA-Duluth-325	Niimi, A.J. and C.Y. Cho. 1983. Laboratory and field analysis of pentachlorophenol (PCP) accumulation by salmonids. Water Research, 17: 1791-1795.
Phenol	7	1	0	7	4	1	2	Mosquito fish	Gambusia affinis			NOAEL	Survival	0.067	mg/kg wet	1	20%	**0.335**	Whole Body	Absorption				No Effect On Survivorship In 24 Hours	ERED-URS168	Lu, P.Y. and R.L. Metcalf. 1975. Environmental fate and biodegradability of benzene derivatives as studied in a model aquatic ecosystem. Environmental Health Perspectives, 10:269-284.
2,3,5,6-Tetrachlorophenol	0																									
2,4,5-Trichlorophenol	4	1	0	4	2	2	0	Goldfish	Carassius auratus	2,4,5-Trichlorophenol	freshwater	NOAEL	survival	50	mg/kg wet	1	20%	**250.000**	Whole body	Water; 0.3-50 mg/L	2.2 g	Lab; Static	0.2	Residues in surviving fish; pH 6-10	EPA-Duluth-234	Kishino, T. and K. Kobayashi. 1995. Relation between toxicity and accumulation of chlorophenols at various pH, and their absorption mechanism in fish. Water Research, 29: 431-442.
2,4,6-Trichlorophenol	8	0	1	8	4	1	3	Guppy	Poecilia reticulata	2,4,6-Trichlorophenol	freshwater	NOAEL	survival	0.675	mg/kg wet	1	20%	**3.375**	Whole body	Water; 0.5 µg/L	Adult, male	Lab; Flow-through	56		EPA-Duluth-469	Virtanen, M.T. and M.-L. Hattula. 1982. The fate of 2,4,6-trichlorophenol in an aquatic continuous-flow system. Chemosphere, 11: 641-649.
2,4-Dichlorophenol	5	0	0	5	2	3	0	Golden Ide	Leuciscus idus			NOAEL	survival	5	mg/kg wet	1	20%	**25.0000**	Whole Body	Absorption	NA			No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14c labelled chemicals. Chemosphere, 14:1589-1616.
2,4-Dimethylphenol	1	0	0	1	1	0	0	Bluegill	Lepomis macrochirus			NOAEL	Survival	1.53	mg/kg wet	1	20%	**7.650**	Whole Body	Absorption	Immature			No Effect On Mortality	ERED-URS10	Barrows, M.E., S.R. Petrocelli, K.J. Macek, and J.J. Carroll. 1980. Bioconcentration and elimination of selected water pollutants by bluegill sunfish (Lepomis macrochirus). In Haque, R., ed., Dynamics, Exposure and Hazard Assessment of Toxic Chemicals, pp. 379-392.
2,4-Dinitrophenol	25	0	0	25	0	0	25	Rainbow trout	Oncorhynchus mykiss	2,4-Dinitrophenol	freshwater	LC50	Survival - Reduced 50%	6.9	mg/kg wet	100	20%	**0.345**	Whole body	Water; 0.18 mg/L	0.6-1.0 g	Lab; Static	4	Radiotracer study; pH 6.5, 7°C; Residue estimated from data in figures	EPA-Duluth-213	Howe, G.E., L.L. Marking, T.D. Bills, J.J. Rach, and F.L. Mayer, Jr. 1994. Effects of water temperature and pH on toxicity of terbufos, trichlorfon, 4-nitrophenol and 2,4-dinitrophenol to the amphipod Gammarus pseudolimnaeus and rainbow trout (Oncorhynchus mykiss). Environmental Toxicology and Chemistry, 13: 51-66.
2-Methylphenol	1	0	0	1	1	0	0	Mosquito fish	Gambusia affinis			NOAEL	Survival	0.084	mg/kg wet	1	20%	**0.420**	Whole Body	Absorption				No Effect On Survivorship In 24 Hours	ERED-URS168	Lu, P.Y. and R.L. Metcalf. 1975. Environmental fate and biodegradability of benzene derivatives as studied in a model aquatic ecosystem. Environmental Health Perspectives, 10:269-284.
4,6-Dinitro-2-methylphenol	0																									
4-Chloro-3-Methylphenol	0																									
4-Methylphenol	1	0	0	1	0	0	1	Trout - Rainbow	Oncorhynchus mykiss			LC50	Survival	94.1	mg/kg wet	100	20%	**4.705**	Whole Body	Ingestion	Immature			50% Mortality In 96 Hours; Internal Dose Used For Tissue Concentration	ERED-URS122	Hodson, P.V., D.G. Dixon, and K.I.E. Kaiser. 1984. Measurement of median lethal dose as a rapid indication of contaminant toxicity to fish. Environmental Toxicology and Chemistry, 3: 243-254.

(a) studies can include multiple effects

Table 3.3.1-2. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Fish

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Fish	Total Number of TEVs	Number of TEVS by effect[a]:			Number of TEVS by endpoint:			test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentratior	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
		growth/ develop	reprod-uction	surviva	NOAEL	LOAEL	LC50																			
Butylbenzylphthalate	1	0	0	1	1	0	0	Bluegill	Lepomis macrochirus			NOAEL	Survival	6.45	mg/kg wet	1	20%	**32.25**	Whole Body	Absorption	Immature			No Effect On Mortality	ERED-URS10	Barrows, M.E., S.R. Petrocelli, K.J. Macek, and J.J. Carroll. 1980. Bioconcentration and elimination of selected water pollutants by bluegill sunfish (Lepomis macrochirus). In Haque, R., ed., Dynamics, Exposure and Hazard Assessment of Toxic Chemicals, pp. 379-392.
bis(2-Ethylhexyl) phthalate	2	0	0	2	2	0	0	Bluegill	Lepomis macrochirus			NOAEL	Survival	0.66	mg/kg wet	1	20%	**3.300**	Whole Body	Absorption	Immature			No Effect On Mortality	ERED-URS10	Barrows, M.E., S.R. Petrocelli, K.J. Macek, and J.J. Carroll. 1980. Bioconcentration and elimination of selected water pollutants by bluegill sunfish (Lepomis macrochirus). In Haque, R., ed., Dynamics, Exposure and Hazard Assessment of Toxic Chemicals, pp. 379-392.
Di-n-butylphthalate	0									*[use phthalate, dimethyl-]*								***2.500***								
Di-n-octylphthalate	0									*[use phthalate, dimethyl-]*								***2.500***								
Diethylphthalate	0									*[use phthalate, dimethyl-]*								***2.500***								
Dimethylphthalate	1	0	0	1	1	0	0	Bluegill	Lepomis macrochirus			NOAEL	Survival	0.5	mg/kg wet	1	20%	**2.500**	Whole Body	Absorption	Immature			No Effect On Mortality	ERED-URS10	Barrows, M.E., S.R. Petrocelli, K.J. Macek, and J.J. Carroll. 1980. Bioconcentration and elimination of selected water pollutants by bluegill sunfish (Lepomis macrochirus). In Haque, R., ed., Dynamics, Exposure and Hazard Assessment of Toxic Chemicals, pp. 379-392.
1,2,4,5-Tetrachlorobenzene	1	0	0	1	1	0	0	Rainbow trout	Oncorhynchus mykiss	1,2,4,5-Tetrachloro-benzene	freshwater	NOAEL	Survival - No effect	0.32	mg/kg wet	1	20%	**1.600**	Whole body	Water; 0.021 µg/L	Subadult, 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
1,2,3-Trichlorobenzene	5	0	0	5	1	3	1	Rainbow trout	Oncorhynchus mykiss	1,2,3-Trichlorobenzene	freshwater	NOAEL	Survival - No effect	0.21	mg/kg wet	1	20%	**1.050**	Whole body	Water; 0.072 µg/L	Subadult, 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
1,2,4-Trichlorobenzene	12	6	0	12	8	2	2	Rainbow trout	Oncorhynchus mykiss	1,2,4-Trichlorobenzene	freshwater	NOAEL	Survival - No effect	0.18	mg/kg wet	1	20%	**0.900**	Whole body	Water; 0.052 µg/L	Subadult, 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
Chlorinated Pesticides																										
DDT series																										
2,4'-DDD	0									*[use p, p'-DDD]*								***0.040***								
4,4'-DDD	4	0	1	3	2	2	0	Brook trout	Salvelinus fontinalis	p, p'-DDD	freshwater	NOAEL	Survival - No effect	0.008	mg/kg wet	1	20%	**0.040**	Whole body	Diet; 0.054 µg/g (wet weight)	1 mo, 40 mg	Lab: Satis, aerated	24 (24)		EPA-Duluth-476	Wang, J.S. and K.L. Simpson. 1996. Accumulation and depuration of DDTs in the food chain from Artemia to brook trout (Salvelinus fontinalis). Bulletin of Environmental Contamination and Toxicology, 56: 888-895.
2,4'-DDE	1	0	1	0	0	1	0	Fathead minnow	Pimephales promelas			LOAEL	Reproduction	19.6	mg/kg wet	10	20%	**9.800**	Whole Body	Combined	Adult			Sig. Different From Control (p = 0.05)	ERED-JAW4	Jarvinen, A.W., M.J. Hoffman, and T.W. Thorslund. 1977. Long-term toxic effects of DDT food and water exposure on fathead minnows (Pimephales promelas). J. Fish. Res. Board. Can., 34:2089-2103.
4,4'-DDE	5	1	0	4	3	2	0	Brook trout	Salvelinus fontinalis	p, p'-DDE	freshwater	NOAEL	survival	0.042	mg/kg wet	1	20%	**0.210**	Whole body	Diet; 0.0414 µg/g (wet weight)	1 mo, 40 mg	Lab: Static, aerated	24 (24)		EPA-Duluth-476	Wang, J.S. and K.L. Simpson. 1996. Accumulation and depuration of DDTs in the food chain from Artemia to brook trout (Salvelinus fontinalis). Bulletin of Environmental Contamination and Toxicology, 56: 888-895.
2,4'-DDT	20	5	0	19	14	4	2	Brook trout	Salvelinus fontinalis	o, p'-DDT	freshwater	NOAEL	Survival - No effect	0.008	mg/kg wet	1	20%	**0.040**	Whole body	Diet; 0.128 µg/g (wet weight)	1 mo, 40 mg	Lab: Static, aerated	24 (24)		EPA-Duluth-476	Wang, J.S. and K.L. Simpson. 1996. Accumulation and depuration of DDTs in the food chain from Artemia to brook trout (Salvelinus fontinalis). Bulletin of Environmental Contamination and Toxicology, 56: 888-895.
4,4'-DDT	30	5	2	25	17	9	4	Brook trout	Salvelinus fontinalis	p, p'-DDT	freshwater	NOAEL	Survival - No effect	0.009	mg/kg wet	1	20%	**0.045**	Whole body	Diet; 0.248 µg/g (wet weight)	1 mo, 40 mg	Lab: Static, aerated	24 (24)		EPA-Duluth-476	Wang, J.S. and K.L. Simpson. 1996. Accumulation and depuration of DDTs in the food chain from Artemia to brook trout (Salvelinus fontinalis). Bulletin of Environmental Contamination and Toxicology, 56: 888-895.

(a) studies can include multiple effects

Table 3.3.1-2. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Fish

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Fish	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentration	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
chlordane series																										
alpha-Chlordane	10	0	2	9	4	3	3	Spot	Leiostomus xanthurus			NOAEL	Survival	0.01	mg/kg wet	1	20%	**0.050**	Whole Body	Combined	Mature			Exposure Media 65% Heptachlor (technical Grade)	ERED-SEQ97-23	Schimmel, S.C., J.M. Patrick, Jr., and J. Forester. 1976. Heptachlor: Uptake, depuration, retention, and metabolism by spot, Leiostomus xanthurus. Journal of Toxicology and Environmental Health, 2: 169-178.
gamma-Chlordane	0									*[use chlordane, cis-(alpha-)]*								***0.050***								
cis-Nonachlor	0									*[use chlordane, cis-(alpha-)]*								***0.050***								
trans-Nonachlor	0									*[use chlordane, cis-(alpha-)]*								***0.050***								
Heptachlor	12	1	2	9	6	4	2	Spot	Leiostomus xanthurus			NOAEL	Survival	0.01	mg/kg wet	1	20%	**0.050**	Whole Body	Combined	Mature			Exposure Media 65% Heptachlor (technical Grade)	ERED-SEQ97-23	Schimmel, S.C., J.M. Patrick, and J. Forester. 1976b. Heptachlor: Toxicity to and uptake by several estuarine organisms. Journal of Toxicology and Environmental Health, 1:955-965.
Heptachlor epoxide	7	0	0	7	5	0	2	Spot	Leiostomus xanthurus			NOAEL	Survival	0.01	mg/kg wet	1	20%	**0.050**	Whole Body	Combined	Mature			Exposure Media Heptachlor Epoxide (Conc. NS)	ERED-SEQ97-23	Schimmel, S.C., J.M. Patrick, and J. Forester. 1976b. Heptachlor: Toxicity to and uptake by several estuarine organisms. Journal of Toxicology and Environmental Health, 1:955-965.
Oxychlordane	0									*[use chlordane, cis-(alpha-)]*								***0.050***								
Aldrin	2	0	0	2	2	0	0	Mosquito fish	Gambusia affinis			NOAEL	Survival	0.157	mg/kg wet	1	20%	**0.785**	Whole Body	Combined				No Effect On Survivorship After 3 Days	ERED-URS196	Metcalf, R.L. 1974. A laboratory model ecosystem to evaluate compounds producing biological magnification. In Hayes, E.J., ed., Essays in Toxicology, Volume 5. Academic Press. pp. 17:38.
alpha-BHC	3	0	0	3	1	0	2	Guppy	Poecilia reticulata	Hexachlorocyclohexane (alpha-isomer)	saltwater	NOAEL	survival	25	mg/kg wet	1	20%	**125.000**	Whole body	Water; 50 µg/L	Young	Lab: Renewal	4		EPA-Duluth-73	Canton, J.H., R.C.C. Wegman, T.J.A. Vulto, C.H. Verhoef, and G.J. van Esch. 1978. Toxicity, accumulation and elimination studies of a-hexachlorocyclohexane (a-HCH) with saltwater organisms of different trophic levels. Water Research, 12: 687-690.
beta-BHC	2	0	0	2	1	0	1	Golden Ide	Leuciscus idus			NOAEL	survival	22.5	mg/kg wet	1	20%	**112.5000**	Whole Body	Absorption	NA			No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
delta-BHC	1	0	0	1	0	0	1	Pinfish	Lagodon rhomboides	Technical grade benzene hexachloride	saltwater	LC50	Survival - Reduced >50%	48.6	mg/kg wet	100	20%	**2.430**	Whole body	Water; 91.3 µg/L	55-89 m	Lab: Flow-through	4	Sum of alpha, gamma, beta, and delta isomers; Residues in surviving organisms	EPA-Duluth-394	Schimmel, S.C., J.M. Patrick, Jr., and J. Forester. 1977. Toxicity and bioconcentration of BHC and lindane in selected estuarine animals. Archives of Environmental Contamination and Toxicology, 6: 355-363.
gamma-BHC(Lindane)	10	0	0	10	6	1	3	Fathead minnow	Pimephales promelas			NOAEL	survival	0.537	mg/kg wet	1	20%	**2.685**	Whole Body	Absorption	Immature			No Effect On Survival	ERED-URS174	Macek, K.J., K.S. Buxton, S.K. Derr, J.W. Dean, and S. Sauter. 1976. Chronic toxicity of lindane to selected aquatic invertebrates and fish. U.S. EPA 600/3-76-046, ORD, Duluth, MN. 50 pp.
Dieldrin	12	5	0	8	7	3	2	Rainbow trout	Oncorhynchus mykiss	Dieldrin	freshwater	NOAEL	growth/development	0.36	mg/kg wet	1	20%	**1.8000**	Whole body	Water; 0.08 µg/L Diet; 0.087 µg/g (wet weight)	Juvenile	Lab: Flow-through	112	Fish fed at 2% of body weight	EPA-Duluth-406	Shubat, P.J. and L.R. Curtis. 1986. Ration and toxicant preexposure influence dieldrin accumulation by rainbow trout (Salmo gairdneri). Environmental Toxicology and Chemistry, 5: 69-77.
Endosulfan I	3	0	0	3	1	0	2	Pinfish	Lagodon rhomboides	Technical grade endosulfan	saltwater	NOAEL	survival	0.2	mg/kg wet	1	20%	**1.000**	Whole body	Water; 0.15 µg/L	Juvenile	Lab: Flow-through	4	Sum Of Detected Endo I, II, And Sulfate	EPA-Duluth-396; ERED-SEQ97-24	Schimmel, S.C., J.M. Patrick, Jr., and A.J. Wilson, Jr. 1977. Acute toxicity to and bioconcentration of endosulfan by estuarine animals. In Mayer, F.L. and J.L. Hamelink, eds., Aquatic Toxicology and Hazard Evaluation. ASTM STP 634. American Society for Testing and Materials (ASTM), Philadelphia, PA. pp. 241-252.
Endosulfan II	3	0	0	3	1	0	2	Pinfish	Lagodon rhomboides	Technical grade endosulfan	saltwater	NOAEL	survival	0.2	mg/kg wet	1	20%	**1.000**	Whole body	Water; 0.15 µg/L	Juvenile	Lab: Flow-through	4	Sum Of Detected Endo I, II, And Sulfate	EPA-Duluth-396; ERED-SEQ97-24	Schimmel, S.C., J.M. Patrick, Jr., and A.J. Wilson, Jr. 1977. Acute toxicity to and bioconcentration of endosulfan by estuarine animals. In Mayer, F.L. and J.L. Hamelink, eds., Aquatic Toxicology and Hazard Evaluation. ASTM STP 634. American Society for Testing and Materials (ASTM), Philadelphia, PA. pp. 241-252.
Endosulfan sulfate	0									*[use endosulfan]*								***1.000***								
Endrin	24	7	3	22	15	7	2	Trout - Rainbow	Oncorhynchus mykiss			NOAEL	growth/ development, survival	0.019	mg/kg wet	1	20%	**0.095**	Whole Body	Ingestion	Adult			No Effect on Growth, Mortality, or Behavior; Changes In Blood Serum Parameters	ERED-URS93	Grant, B.F. and P.M. Mehrle. 1973. Endrin toxicosis in rainbow trout (Salmo gairdneri). Journal of the Fisheries Research Board of Canada, 30:31-
Endrin Aldehyde	0									*[use endrin]*								***0.095***								
Endrine ketone	0									*[use endrin]*								***0.095***								
Hexachlorobenzene	9	1	0	9	9	0	0	Rainbow trout	Oncorhynchus mykiss	Hexachloro-benzene	freshwater	NOAEL	Survival - No effect	0.16	mg/kg wet	1	20%	**0.800**	Whole body	Water, 0.008 µg/L	Subadult; 250 g	Lab; Flow-through	105		EPA-Duluth-339	Oliver, B.G. and A.J. Niimi. 1983. Bioconcentration of chlorobenzenes from water by rainbow trout: Correlations with partition coefficients and environmental residues. Environmental Science and Technology, 17: 287-291.
Methoxychlor	9	1	1	8	6	3	0	Striped mullet	Mµgil cephalus	Methoxychlor	saltwater	NOAEL	Survival - No effect	0.06	mg/kg wet	1	20%	**0.300**	Whole body	Water; 0.01 mg/L	Young juvenile	Lab: Flow-through	4		EPA-Duluth-252	Lee, J.H., J.R. Sylvester, and C.E. Nash. 1975. Effects of mirex and methoxychlor on juvenile and adult striped mullet, Mugil cephalus L. Bulletin of Environmental Contamination and Toxicology, 14: 180-186.
Mirex	20	10	6	13	16	4	0	Sheepshead minnow	Cyprinodon variegatus	Mirex	saltwater	NOAEL	Survival - No effect	0.42	mg/kg wet	1	20%	**2.100**	Whole body	Water; 0.04 µg/L	Adult	Outdoor tanks; Flow-through	28	Spring season, 23.1°C	EPA-Duluth-438	Tagatz, M.E., P.W. Borthwick, and J. Forester. 1975. Seasonal effects of leached mirex on selected estuarine animals. Archives of Environmental Contamination and Toxicology, 3: 371-383.
Toxaphene	32	15	4	21	20	10	2	Brook trout	Salvelinus fontinalis	Toxaphene	freshwater	NOAEL	reproduction	0.2	mg/kg wet	1	20%	**1.000**	Whole body	Water; 39 ng/L	Adult	Lab: Flow-through	160		EPA-Duluth-279, 281	Mayer, F.L., Jr., P.M. Mehrle, and W.P. Dwyer. 1975. Toxaphene effects on reproduction, growth, and mortality of brook trout. Publication No. EPA-600/3-75/013. USEPA, Duluth, MN.; Mayer, F.L., Jr. and P.M. Mehrle. 1977. Toxicological aspects of toxaphene in fish: A summary. Transactions of the North American Wildlife and Natural Resources Conference, 42: 365-373.

(a) studies can include multiple effects

Table 3.3.1-2. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Fish

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Fish	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod-uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentratior	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
Polychlorinated Biphenyls (PCBs)																										
PCB-8	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook, P.M., D.W. Kuehl, M.K. Walker, and R.E. Peterson. 1991. Bioaccumulation and toxicity of TCDD and related compounds in aquatic ecosystems. In Gallo, M.A. et al., eds., Banbury Report 35: Biological Basis for Risk Assessment of Dioxins and Related Compounds. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY. pp. 143-167.; Van den Berg, M., L. Birnbaum, A.T.C. Bosveld, B. Brunstrom, P. Cook, M. Feeley, J.P. Giesy, A. Hanberg, R. Hasegawa, S.W. Kennedy, T. Kubiak, J.C. Larsen, F.X.R. van Leeuwen, A.K.D. Liem, C. Nolt, R.E. Peterson, L. Poellinger, S. Safe, D. Schrenk, D. Tillitt, M. Tysklind, M. Younes, F. Waern, and T. Zacharewski. 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environmental Health Perspectives, 106 (12): 775-792.
PCB-18	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-28	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-44	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-52	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-66	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-77	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000100		NOAEL	survival	0.000035	mg/kg wet	1	20%	**1.75**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-101	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-105	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000005		NOAEL	survival	0.000035	mg/kg wet	1	20%	**35.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-114	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000005		NOAEL	survival	0.000035	mg/kg wet	1	20%	**35.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-118	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000005		NOAEL	survival	0.000035	mg/kg wet	1	20%	**35.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-123	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000005		NOAEL	survival	0.000035	mg/kg wet	1	20%	**35.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-126	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.005000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.0350**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-128	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-138	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-153	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-156	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000005		NOAEL	survival	0.000035	mg/kg wet	1	20%	**35.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-157	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000005		NOAEL	survival	0.000035	mg/kg wet	1	20%	**35.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-167	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000005		NOAEL	survival	0.000035	mg/kg wet	1	20%	**35.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-169	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000050		NOAEL	survival	0.000035	mg/kg wet	1	20%	**3.50**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-170	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-180	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-187	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-189	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000005		NOAEL	survival	0.000035	mg/kg wet	1	20%	**35.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-195	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-206	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB-209	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000001		NOAEL	survival	0.000035	mg/kg wet	1	20%	**175.0**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see PCB-8)
PCB Aroclor	81	20	5	71	57	12	12	Sheepshead minnow	Cyprinodon variegatus	Aroclor 1254	saltwater	NOAEL	survival	0.56	mg/kg wet	1	20%	**2.80**	Whole body	Embryo; 0.88 µg/g	Larvae	Lab; Flow-through	(28)	Embryos hatched and larvae raised in clean water	EPA-Duluth-174	Hansen, D.J., S.C. Schimmel, and J. Forester. 1973. Aroclor 1254 in eggs of sheepshead minnows: Effect on fertilization success and survival of embryos and fry. In Proceedings of 27th Annual Conference, Southeastern Association of Game and Fish Commissioners. Hot Springs, AK. 14-17 October 1973. pp. 420-426.

(a) studies can include multiple effects

Table 3.3.1-2. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Fish

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Fish	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentratior	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
Polychlorinated Dioxins/Furans (PCDD/PCDF)																										
2,3,7,8-TCDD	34	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=1.000000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.000175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook, P.M., D.W. Kuehl, M.K. Walker, and R.E. Peterson. 1991. Bioaccumulation and toxicity of TCDD and related compounds in aquatic ecosystems. In Gallo, M.A. et al., eds., Banbury Report 35: Biological Basis for Risk Assessment of Dioxins and Related Compounds. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY. pp. 143-167.; Van den Berg, M., L. Birnbaum, A.T.C. Bosveld, B. Brunstrom, P. Cook, M. Feeley, J.P. Giesy, A. Hanberg, R. Hasegawa, S.W. Kennedy, T. Kubiak, J.C. Larsen, F.X.R. van Leeuwen, A.K.D. Liem, C. Nolt, R.E. Peterson, L. Poellinger, S. Safe, D. Schrenk, D. Tillitt, M. Tysklind, M. Younes, F. Waern, and T. Zacharewski. 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environmental Health Perspectives, 106 (12): 775-792.
1,2,3,7,8-PeCDD	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=1.000000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.000175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,7,8-HxCDD	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.500000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.000350**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,6,7,8-HxCDD	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.010000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.0175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,7,8,9-HxCDD	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.010000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.0175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,6,7,8-HpCDD	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.001000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
OCDD	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000100		NOAEL	survival	0.000035	mg/kg wet	1	20%	**1.75**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
2,3,7,8-TCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.050000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.00350**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,7,8-PeCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.050000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.00350**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
2,3,4,7,8-PeCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.500000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.000350**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,7,8-HxCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.100000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.00175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,6,7,8-HxCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.100000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.00175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
2,3,4,6,7,8-HxCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.100000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.00175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,7,8,9-HxCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.100000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.00175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,6,7,8-HpCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.010000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.0175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,7,8,9-HpCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.010000		NOAEL	survival	0.000035	mg/kg wet	1	20%	**0.0175**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
OCDF	34-TEF	15	3	31	10	15	9	Trout -Lake	Salvelinus namaycush	2,3,7,8-TCDD; TEF=0.000100		NOAEL	survival	0.000035	mg/kg wet	1	20%	**1.75**	Whole Body	Absorption	Egg-embryo			No Effect On Mortality Of Sac Fry	ERED-URS59	Cook et al. 1991; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
Organophosphorus Pesticides																										
Azinphos-methyl	0																									
Chlorpyrifos	31	23	2	23	8	18	5	California Grunion	Leuresthes tenuis			NOAEL	growth/ development, survival	0.015	mg/kg wet	1	20%	**0.075**	Whole Body	Absorption	Immature			No Effect On Weight or Mortality Of Fry	ERED-URS20	Goodman, L.R., D.J. Hansen, G.M. Cripe, D.P. Middaugh, and J.C. Moore. 1985. A new early life-stage toxicity test using the California grunion (Leuresthes tenuis) and results with chlorpyrifos. Ecotoxicology and Environmental Safety, 10:12-21.
Demeton-O	0																									
Demeton-S	0																									
Diazinon	14	2	4	13	5	8	1	Killifish	Oryzias latipes	Diazinon	Freshwater	NOAEL	survival	0.126	mg/kg wet	1	20%	**0.630**	Whole body	Water; 4.5 µg/L	0.10-0.15g	Lab; Flow-through	3(1)	Residue calculated from BCF determined in the study	EPA-Duluth-457	Tsuda, T., S. Aoki, T. Inoue, and M. Kojima. 1994. Accumulation and excretion of pesticides used as insecticides or fungicides in agricultural products by the willow shiner Gnathopogon caerulescens. Comparative Biochemistry and Physiology, 107C: 469-473.
Ethion	0																									
Ethoprop	0																									
Ethyl parathion	0									*[use parathion, methyl-]*								***1.150***								
Malathion	0																									
Methyl parathion	1	0	0	1	1	0	0	Willow shiner	Gnathopogon caerulescens	methyl parathion	Freshwater	NOAEL	Survival - No effect	0.23	mg/kg wet	1	20%	**1.150**	Whole body	Water; 1.7 µg/L	1.7-2.7 g	Lab; Flow-through	14(6)	Residue calculated from BCF determined in the study	EPA-Duluth-456	Tsuda, T., S. Aoki, T. Inoue, and M. Kojima. 1994. Accumulation and excretion of pesticides used as insecticides or fungicides in agricultural products by the willow shiner Gnathopogon caerulescens. Comparative Biochemistry and Physiology, 107C: 469-473.
Chlorinated Herbicides																										
2,4,5-T	0																									
2,4-D	0																									
Dalapon	0																									
Dicamba	0																									
MCPP	0																									
2,4,5-TP (Silvex)	0																									
Triazine Pesticides																										
Ametryn	0																									
Anilazine	0																									
Atrazine	3	3	0	0	1	2	0	Whitefish	Coregonus fera	atrazine	Freshwater	NOAEL	growth/ development	0.27	mg/kg wet	1	20%	**1.3500**	Whole parts	Water; 54 µg/L	Young	Lab; Flow-through	30		EPA-Duluth-158	Gunkel, G. 1981. Bioaccumulation of a herbicide (Atrazine, S-triazine) in the whitefish (Coregonus fera J.): Uptake and distribution of the residue in fish. Archiv fuer Hydrobiologie Supplementband, 59: 252-287.
Pronamide	0																									
Propiconazole	0																									
Simazine	0																									
Terbacil	0																									
Hexazinone	0																									
Carbamate/Urea Pesticides																										
Benomyl	0																									
Carbaryl	3	0	0	3	3	0	0	Channel catfish	Ictalurus punctatus	Carbaryl	Freshwater	NOAEL	survival	0.009	mg/kg wet	1	20%	**0.045**	Whole body	Diet; 2.8 mg/kg/wk	Juvenile , 78 g	Lab; Flow-through	56(28)	Radiotracer study	EPA-Duluth-241	Korn, S. 1973. The uptake and persistence of carbaryl in channel catfish. Transactions of the American Fisheries Society, 102: 137-139.
Carbofuran	0																									

(a) studies can include multiple effects

Table 3.3.1-2. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Fish

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Fish	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod-uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LC50	test organism: common name	test organism: scientific name	form for exposure chemica	exposure medium	measurement endpoint	effect to test organism	TEV tissue concentratior	TEV-units	endpoint UF to NOAEL level	est. %dry wt	NOAEL-equiv. TRV (mg/kg dw)	tissue type	exposure route	lifestage	test site/ conditions	test duration (days)	comments	reference compilation source	full citation
Diuron	1	1	1	1	1	0	0	Fathead minnow	Pimpephales promelas	Technical grade Diuron	Freshwater	NOAEL	survival, growth/ development, reproduction	4.8	mg/kg wet	1	20%	**24.0000**	Whole body	Water; 33.4 µg/L	Embryo-Juvenile	Lab; Flow-through	64	Radiotracer study; Residues were determined in 30 d old juveniles exposed for 24 d	EPA-Duluth-67	Call, D.J., L.T. Brooke, R.J. Kent, M.L. Knuth, S.H. Poirer, J.M. Huot, and A.R. Lima. 1987. Bromacil and diron herbicides: Toxicity, uptake, and elimination in freshwater fish. Archives of Environmental Contamination and Toxicology, 16: 607-613.
Methomyl	0																									
Oxamyl	0																									
Ordnance Compounds																										
1,3-Dinitrobenzene	2	0	0	2	1	0	1	Guppy	Poecilia reticulata	1,3-Dinitrobenzene	Freshwater	NOAEL	survival	4.6	mg/kg wet	1	20%	**23.0000**	Whole body	Water; 0.77 mg/L	Adult, female	Lab; Renewal, 1 d	3	Residue calculated from BCF determined in the study	EPA-Duluth-111	Deneer, J.W., T.L. Sinnige, W. Seinen, and J.L.M. Hermens. 1987. Quantitative structure-activity relationships for the toxicity and bioconcentration factor of nitrobenzene derivatives towards the guppy (Poecilia reticulata). Aquatic Toxicology, 10:115-129.
2,4-Dinitrotoluene	2	0	0	2	1	0	1	Guppy	Poecilia reticulata	2,4-dinitrotoluene	Freshwater	NOAEL	survival	41.2	mg/kg wet	1	20%	**206.0000**	Whole body	Water; 2.52 mg/L	Adult, female	Lab; Renewal, 1 d	3	Residue calculated from BCF determined in the study	EPA-Duluth-111	Deneer, J.W., T.L. Sinnige, W. Seinen, and J.L.M. Hermens. 1987. Quantitative structure-activity relationships for the toxicity and bioconcentration factor of nitrobenzene derivatives towards the guppy (Poecilia reticulata). Aquatic Toxicology, 10:115-129.
2,6-Dinitrotoluene	2	0	0	2	1	0	1	Guppy	Poecilia reticulata	2,6-dinitrotoluene	Freshwater	NOAEL	survival	78.4	mg/kg wet	1	20%	**392.0000**	Whole body	Water; 3.56 mg/L	Adult, female	Lab; Renewal, 1 d	3	Residue calculated from BCF determined in the study	EPA-Duluth-111	Deneer, J.W., T.L. Sinnige, W. Seinen, and J.L.M. Hermens. 1987. Quantitative structure-activity relationships for the toxicity and bioconcentration factor of nitrobenzene derivatives towards the guppy (Poecilia reticulata). Aquatic Toxicology, 10:115-129.
HMX	0																									
Nitrobenzene	4	0	0	4	3	0	1	Golden Ide	Leuciscus idus			NOAEL	survival	0.1	mg/kg wet	1	20%	**0.500**	Whole Body	Absorption				No Effect On Survivorship In 3 Days	ERED-URS85	Freitag, D., L. Ballhorn, H. Geyer, and F. Korte. 1985. Environmental hazard profile of organic chemicals: An experimental method for the assessment of the behaviour of organic chemicals in the ecosphere by means of laboratory tests with 14C labelled chemicals. Chemosphere, 14:1589-1616.
Nitroglycerin	0																									
2-Nitrotoluene	2	0	0	2	1	0	1	Guppy	Poecilia reticulata	2-Nitrotoluene	Freshwater	NOAEL	survival	100.2	mg/kg wet	1	20%	**501.0000**	Whole body	Water; 6.58 mg/L	Adult, female	Lab; Renewal, 1 d	3	Residue calculated from BCF determined in the study	EPA-Duluth-111	Deneer, J.W., T.L. Sinnige, W. Seinen, and J.L.M. Hermens. 1987. Quantitative structure-activity relationships for the toxicity and bioconcentration factor of nitrobenzene derivatives towards the guppy (Poecilia reticulata). Aquatic Toxicology, 10:115-129.
3-Nitrotoluene	1	0	0	1	1	0	0	Guppy	Poecilia reticulata	3-nitrotoluene	Freshwater	NOAEL	Survival - No effect	98	mg/kg wet	1	20%	**490.00**	Whole body	Water; 6 mg/L	Adult, female	Lab; Renewal, 1 d	3	Residue calculated from BCF determined in the study	EPA-Duluth-111	Deneer, J.W., T.L. Sinnige, W. Seinen, and J.L.M. Hermens. 1987. Quantitative structure-activity relationships for the toxicity and bioconcentration factor of nitrobenzene derivatives towards the guppy (Poecilia reticulata). Aquatic Toxicology, 10:115-129.
4-Nitrotoluene	2	0	0	2	1	0	1	Guppy	Poecilia reticulata	4-nitrotoluene	Freshwater	NOAEL	survival	138.4	mg/kg wet	1	20%	**692.0000**	Whole body	Water; 7.38 mg/L	Adult, female	Lab; Renewal, 1 d	3	Residue calculated from BCF determined in the study	EPA-Duluth-111	Deneer, J.W., T.L. Sinnige, W. Seinen, and J.L.M. Hermens. 1987. Quantitative structure-activity relationships for the toxicity and bioconcentration factor of nitrobenzene derivatives towards the guppy (Poecilia reticulata). Aquatic Toxicology, 10:115-129.
Picric Acid	0																									
RDX	0																									
Tetryl	0																									
1,3,5-Trinitrobenzene	0																									
2,4,6-Trinitrotoluene	0																									

Return to Table of Contents

(a) studies can include multiple effects

Table 3.3.2-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Birds

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Birds	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LD50	test organism: common name	test organism: scientific name	form for exposure chemica	measurement endpoint	effect to test organism	TEV dose or food concentratior	TEV-units	endpoint UF to NOAEL level	bird wt (kg) for food conc. (Dunning 1993)	NOAEL-equiv. TRV (mg/kg bird wt)	exposure route	exposure technique	life stage	exposure period (days)	test organism/testing procedure: comments	reference compilation source	full citation
Metals																								
Aluminum	1	0	1	0	1	0	0	ringed dove	Streptopelia risoria	$Al_2(SO_4)_3$	NOAEL	reproduction	109.7	mg/kg bw/d	1		**109.7**	oral	diet		4 months		Oak Ridge 1996	Carriere, D., K. Fischer, D. Peakall, and P. Angehrn. 1986. Effects of dietary aluminum in combination with reduced calcium and phosphorus on the ring dove (Streptopelia risoria) Water, Air, and Soil Pollution, 30: 757-764.
Antimony	0																							
Arsenic	10	0	1	9	3	2	5	brown headed cow bird	Molothrus ater	copper acetoarsenite	NOAEL	survival	2.46	mg/kg bw/d	1		**2.460**	oral	diet		7 months		Oak Ridge 1996	US Fish and Wildlife Service. 1969. Bureau of sport fisheries and wildlife. Publication 74, pp. 56-57.
Cadmium	4	3	1	0	1	3	0	mallard	Anas platyrhynchos	cadmium chloride	LOAEL	growth, development	0.78	mg/kg bw/d	10		**0.078**	oral	diet		12 weeks	kidney degeneration	EFA West 1998	Cain, B.W., L. Sileo, J.C. Franson, and J. Moore. 1983. Effects of dietary cadmium on mallard ducklings. Environmental Research, 32: 286-297.
Chromium	3	0	2	1	2	1	0	black duck	Anas rubripes	Cr^{+3} as $CrK(SO_4)_2$	NOAEL	reproduction	1	mg/kg bw/d	1		**1.00**	oral	diet	adult	10 months		Oak Ridge 1996; USFWS-Eisler	Haseltine, S.D., L. Sileo, D.J. Hoffman, and B.D. Mulhern. 1985. Effects of chromium on reproduction and growth in black ducks. In Sample, B.E., D.M. Opresko, and G.W. Suter II. 1996. Toxicological Benchmarks for Wildlife: 1996 Revision. U.S. Department of Energy, Oak Ridge National Laboratory, Oak Ridge, TN. ES/ER/TM-86/R3.
Cobalt	0																							
Copper	5	5	0	3	4	1	0	chicken	Gallus gallus		NOAEL	survival/growth	8.7	mg/kg food	1	0.100	**1.131**	oral	diet	chicks	60		USFWS-Eisler	Carlton, W.W. and W. Henderson. 1963. Cardiovascular lesions in experimental copper deficiency in chickens. Journal of Nutrition, 81: 200-208.
Iron	0																							
Lead	5	1	3	2	4	0	1	Japanese quail	Coturnix japonica	lead acetate	NOAEL	reproduction	0.014	mg/kg bw/d	1		**0.014**	oral	diet	hatchlings	12 weeks	egg production	EFA West 1998	Edens, F.W., E. Benton, S.J. Bursian, and G.W. Morgan. 1976. Effect of dietary lead on reproductive performance of Japanese quail, Coturnix coturnix japonica. Toxicology and Applied Pharmacology, 38: 307-314.
Manganese	2	1	1	0	2	0	0	Japanese quail	Coturnix japonica		NOAEL	reproduction	77.6	mg/kg bw/d	1		**77.6**	oral	diet				EFA West 1998	Laskey, J.W. and F.W. Edens. 1985. Effects of chronic high-level manganese exposure on male behavior in the Japanese quail (Coturnix coturnix japonica). Poultry Science, 64: 579-584.
Mercury	9	0	3	6	3	1	4	mallard	Anas platyrhynchos	methylmercury	NOAEL	reproduction	0.039	mg/kg bw/d	1		**0.039**	oral	diet				EFA West 1998	Heinz, G.H. 1979. Methyl mercury: Reproductive and behavioral effects on three generations of mallard ducks. Journal of Wildlife Management, 43: 394-401.
Molybdenum	1	0	1	0	1	0	0	chicken	Gallus gallus	sodium molybdate (MoO_4)	NOAEL	reproduction	3.5	mg/kg bw/d	1		**3.50**	oral	diet		21		Oak Ridge 1996	Lepore, P.D. and R.F. Miller. 1965. Embryonic viability as influenced by excess molybdenum in chicken breeder diets. Proceedings of the Society of Experimental Biology and Medicine, 118: 155-157.
Nickel	3	3	0	3	2	1	0	mallard	Anas platyrhynchos		NOAEL	survival, growth, behavior	1.38	mg/kg bw/d	1		**1.38**	oral	diet	duckling		no effect on survival, growth, behavior, and systemic effects	EFA West 1998	Cain, B.W. and E.A. Pafford. 1981. Effects of dietary nickel on survival and growth of mallard ducklings. Archives of Environmental Contamination and Toxicology, 10: 737-745.
Selenium	15	6	1	4	4	9	2	mallard	Anas platyrhynchos	seleno-DL-methionine	NOAEL	growth/ development, survival, reproduction	0.23	mg/kg bw/d	1		**0.230**	oral	diet	adult	40-50	hatchling body wt/survival/reproduction	EFA West 1998	Heinz, G.H., D.J. Hoffman, and L.J. Gold. 1989. Impaired reproduction of mallards fed an organic form of selenium. Journal of Wildlife Management, 53: 418-428.
Silicon	0																							
Silver	4	2	0	2	0	2	2	chicken	Gallus gallus		LOAEL	growth/ development	200	mg/kg food	10	***0.100***	**2.60**	oral	diet	chicks		growth suppression	USFWS-Eisler	Smith, I.C. and B.L. Carson. 1977. Trace Metals in the Environment. Volume 2: Silver. Ann Arbor Science Publishers Ann Arbor, MI. 469 p.
Tin	0																							
Zinc	10	7	6	3	3	7	0	white leghorn hen	Gallus gallus	zinc sulfate	NOAEL	reproduction	14.5	mg/kg bw/d	1		**14.50**	oral	diet		44 weeks		Oak Ridge 1996	Stahl, J.L., J.L. Greger, and M.E. Cook. 1990. Breeding-hen and progeny performance when hens are fed excessive dietary zinc. Poultry Science, 69: 259-263.
Butyltins																								
Monobutyltin	0									*[use tin, tributyl-]*							***0.730***							
Dibutyltin	2	0	1	1	2	0	0	Japanese quail	Coturnix japonica	bis(tributyltin)-oxide	NOAEL	reproduction	0.73	mg/kg bw/d	1		**0.730**	oral	diet	8-12 weeks	6 weeks		EFA West 1998; Oak Ridge 1996	Schlatterer, B., T.M.M. Coenen, E. Ebert, R. Grau, V. Hilbig, and R. Munk. 1993. Effects of bis(tri-n-butyltin)oxide in Japanese quail exposed during egg laying period: An interlaboratory comparison study. Archives of Environmental Contamination and Toxicology, 24: 440-448.
Tributyltin	6	0	4	2	4	2	0	Japanese quail	Coturnix japonica	bis(tributyltin)-oxide	NOAEL	reproduction	0.73	mg/kg bw/d	1		**0.730**	oral	diet	8-12 weeks	6 weeks		EFA West 1998; Oak Ridge 1996	Schlatterer, B., T.M.M. Coenen, E. Ebert, R. Grau, V. Hilbig, and R. Munk. 1993. Effects of bis(tri-n-butyltin)oxide in Japanese quail exposed during egg laying period: An interlaboratory comparison study. Archives of Environmental Contamination and Toxicology, 24: 440-448.
Tetrabutyltin	0									*[use tin, tributyl-]*							***0.730***							
LMWPAHs (2-3 ring)																								
2-ring PAHs																								
Naphthalene	2	0	0	2	0	0	2	Northern bobwhite	Colinus virginianus		LD50	survival	2690	mg/kg food	100	0.178	**2.859**	oral	diet				TERRETOX	Office of Pesticide Programs (OPP). 1995. Environmental Effects Database (EEDB). Environmental Fate and Effects Division, USEPA, Washington, DC.
Naphthalenes,C1-	0									*[use naphthalene]*							***2.859***							
Naphthalenes,C2-	0									*[use naphthalene]*							***2.859***							
Naphthalenes,C3-	0									*[use naphthalene]*							***2.859***							
Naphthalenes,C4-	0									*[use naphthalene]*							***2.859***							
1-Methylnapthalene	0									*[use naphthalene]*							***2.859***							
2-Methylnaphthalene	0									*[use naphthalene]*							***2.859***							
2,6-Dimethylnapthalene	0									*[use naphthalene]*							***2.859***							
1,6,7-Trimethylnaphthalene	0									*[use naphthalene]*							***2.859***							
Biphenyl	0																							
3-ring PAHs																								
Acenaphthene	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	101	mg/kg bw/d	100		**1.010**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Acenaphthylene	0																							
Anthracene	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	111	mg/kg body wt	100		**1.110**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Phenanthrene	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	113	mg/kg body wt	100		**1.130**	oral	gavage				ASTM STP 680 (1979)	Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
1-Methylphenanthrene	0									*[use anthracene]*							***1.110***							
Phenanthrenes+Anthracenes,C1-	0									*[use anthracene]*							***1.110***							
Phenanthrenes+Anthracenes,C2-	0									*[use anthracene]*							***1.110***							
Phenanthrenes+Anthracenes,C3-	0									*[use anthracene]*							***1.110***							
Phenanthrenes+Anthracenes,C4-	0									*[use anthracene]*							***1.110***							

(a) studies can include multiple effects

Table 3.3.2-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Birds

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Birds	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod-uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LD50	test organism: common name	test organism: scientific name	form for exposure chemica	measurement endpoint	effect to test organism	TEV dose or food concentration	TEV-units	endpoint UF to NOAEL level	bird wt (kg) for food conc. (Dunning 1993)	NOAEL-equiv. TRV (mg/kg bird wt)	exposure route	exposure technique	life stage	exposure period (days)	test organism/testing procedure: comments	reference compilation source	full citation
Fluorene	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	101	mg/kg bw/d	100		**1.010**	oral	gavage				ASTM STP 680 (1979)	Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Fluorenes,C1-	0									*[use fluorene]*							***1.010***							
Fluorenes,C2-	0									*[use fluorene]*							***1.010***							
Fluorenes,C3-	0									*[use fluorene]*							***1.010***							
Dibenzothiophene	0																							
Dibenzothiophenes,C1-	0																							
Dibenzothiophenes,C2-	0																							
Dibenzothiophenes,C3-	0																							
HMWPAHs (4-6 ring)																								
4-ring PAHs																								
Benz(a)anthracene	0																							
Chrysene	0																							
Chrysenes,C1	0																							
Chrysenes,C2-	0																							
Chrysenes,C3-	0																							
Chrysenes,C4-	0																							
Fluoranthene	0																							
Pyrene	0																							
Fluoranthenes+Pyrenes,C1-	0																							
Fluoranthenes+Pyrenes,C2-	0																							
Fluoranthenes+Pyrenes,C3-	0																							
5-ring PAHs																								
Benzo(a)pyrene	0																							
Benzo(e)pyrene	0																							
Benzo(b)fluoranthene	0																							
Benzo(k)fluoranthene	0																							
Dibenz(a,h)anthracene	0																							
Perylene	0																							
6-ring PAHs																								
Benzo(g,h,i)perylene	0																							
Indeno(1,2,3-cd)pyrene	0																							
non-PAH Semivolatiles																								
Aniline	3	0	0	3	0	0	3	red-winged blackbird	Agelaius phoeniceus		LD50	survival	562	mg/kg bw/d	100		**5.62**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Benzoic Acid	2	0	0	2	0	0	2	red-winged blackbird	Agelaius phoeniceus		LD50	survival	100	mg/kg bw/d	100		**1.00**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Benzyl Alcohol	2	0	0	2	0	0	2	red-winged blackbird	Agelaius phoeniceus		LD50	survival	100	mg/kg bw/d	100		**1.00**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
bis(2-Chloroethoxy)methane	0																							
bis(2-Chloroethyl)Ether	0																							
bis(Chloromethyl)Ether	0																							
4-Bromophenyl-phenylether	0																							
Carbazole	0																							
4-Chloroaniline	2	0	0	2	0	0	2	house sparrow	Passer domesticus		LD50	survival	100	mg/kg bw/d	100		**1.00**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
2-Chloronaphthalene	0																							
2-Chlorophenol	0																							
4-Chlorophenol	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	113	mg/kg bw/d	100		**1.13**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
4-Chlorophenyl-phenylether	0																							
Dibenzofuran	0																							
1,2-Dichlorobenzene	0																							
1,3-Dichlorobenzene	0																							
1,4-Dichlorobenzene	0																							
3,3'-Dichlorobenzidine	0																							
Hexachlorobutadiene	0																							
Hexachlorocyclopentadiene	0																							
Hexachloroethane	0																							
Isophorone	0																							
2-Nitroaniline	3	0	0	3	0	0	3	red-winged blackbird	Agelaius phoeniceus		LD50	survival	750	mg/kg bw/d	100		**7.50**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
3-Nitroaniline	2	0	0	2	0	0	2	red-winged blackbird	Agelaius phoeniceus		LD50	survival	133	mg/kg bw/d	100		**1.33**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
4-Nitroaniline	2	0	0	2	0	0	2	red-winged blackbird	Agelaius phoeniceus		LD50	survival	75	mg/kg bw/d	100		**0.750**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
2-Nitrophenol	0																							
4-Nitrophenol	0																							
N-Nitrosodi-n-propylamine	0																							
N-Nitrosodibutylamine	0																							
N-Nitrosodiethylamine	0																							
N-Nitrosodimethylamine	0																							
N-nitrosodiphenylamine	0																							
N-Nitrosomethylethylamine	0																							
N-Nitrosopyrrolidine	0																							
Octachlorostyrene	0																							
2,2'oxybis(1-Chloropropane)	0																							
Pentachlorobenzene	0																							

(a) studies can include multiple effects

Table 3.3.2-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Birds

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Birds	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod-uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LD50	test organism: common name	test organism: scientific name	form for exposure chemica	measurement endpoint	effect to test organism	TEV dose or food concentration	TEV-units	endpoint UF to NOAEL level	bird wt (kg) for food conc. (Dunning 1993)	NOAEL-equiv. TRV (mg/kg bird wt)	exposure route	exposure technique	life stage	exposure period (days)	test organism/testing procedure: comments	reference compilation source	full citation
Pentachlorophenol	2	0	0	2	0	0	2	mallard	Anas platyrhynchos		LD50	survival	380	mg/kg body wt	100		**3.80**	oral	diet				USFWS-Eisler 1989 (17)	Hudson, R.H., R.K. Tucker, and M.A. Haegele 1984. Handbook of Toxicity of Pesticides to Wildlife. U.S. Fish and Wildlife Service, Technical Resource Publication 153. 90 p.
Phenol	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	113	mg/kg bw/d	100		**1.13**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
2,3,5,6-Tetrachlorophenol	0																							
2,4,5-Trichlorophenol	0																							
2,4,6-Trichlorophenol	0																							
2,4-Dichlorophenol	0																							
2,4-Dimethylphenol	0																							
2,4-Dinitrophenol	2	0	0	2	0	0	2	red-winged blackbird	Agelaius phoeniceus		LD50	survival	13.3	mg/kg bw/d	100		**0.133**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
2-Methylphenol	0									*[use phenol, 4-methyl-]*							***0.960***							
4,6-Dinitro-2-methylphenol	0																							
4-Chloro-3-Methylphenol	0																							
4-Methylphenol	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	96.0	mg/kg bw/d	100		**0.960**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Butylbenzylphthalate	0									*[use phthalate, di-n-butyl-]*							***0.111***							
bis(2-Ethylhexyl) phthalate	1	0	1	0	1	0	0	ringed dove	Streptopelia risoria		NOAEL	reproduction	1.1	mg/kg bw/d	1		**1.10**	oral	diet		4 weeks		Oak Ridge 1996	Peakall, D.B. 1974. Effects of di-N-butylphthalate and di-2-ethylhexylphthalate on the eggs of ring doves. Bulletin of Environmental Contamination and Toxicology, 12: 698-702.
Di-n-butylphthalate	1	0	1	0	0	1	0	ringed dove	Streptopelia risoria		LOAEL	reproduction	1.11	mg/kg bw/d	10		**0.111**	oral	diet		4 weeks		Oak Ridge 1996	Peakall, D.B. 1974. Effects of di-N-butylphthalate and di-2-ethylhexylphthalate on the eggs of ring doves. Bulletin of Environmental Contamination and Toxicology, 12: 698-702.
Di-n-octylphthalate	0									*[use phthalate, di-n-butyl-]*							***0.111***							
Diethylphthalate	0									*[use phthalate, di-n-butyl-]*							***0.111***							
Dimethylphthalate	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	100	mg/kg bw/d	100		**1.00**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
1,2,4,5-Tetrachlorobenzene	0																							
1,2,3-Trichlorobenzene	0																							
1,2,4-Trichlorobenzene	0																							
Chlorinated Pesticides																								
DDT series																								
2,4'-DDD	2	0	2	0	2	0	0	brown pelican	Pelecanus occidentalis		NOAEL	reproduction	0.0028	mg/kg bw/d	1		**0.0028**	oral	diet		5 yr		Oak Ridge 1996	Anderson, D.W., R.W. Risebrough, L.A. Woods, Jr., L.R. DeWeese, and W.G. Edgecomb. 1975. Brown pelicans: Improved reproduction off the Southern California coast. Science, 190: 806-808.
4,4'-DDD	10	0	2	8	2	0	8	brown pelican	Pelecanus occidentalis		NOAEL	reproduction	0.0028	mg/kg bw/d	1		**0.0028**	oral	diet		5 yr		Oak Ridge 1996	Anderson, D.W., R.W. Risebrough, L.A. Woods, Jr., L.R. DeWeese, and W.G. Edgecomb. 1975. Brown pelicans: Improved reproduction off the Southern California coast. Science, 190: 806-808.
2,4'-DDE	2	0	2	0	2	0	0	brown pelican	Pelecanus occidentalis		NOAEL	reproduction	0.0028	mg/kg bw/d	1		**0.0028**	oral	diet		5 yr		Oak Ridge 1996	Anderson, D.W., R.W. Risebrough, L.A. Woods, Jr., L.R. DeWeese, and W.G. Edgecomb. 1975. Brown pelicans: Improved reproduction off the Southern California coast. Science, 190: 806-808.
4,4'-DDE	12	0	2	10	2	1	9	brown pelican	Pelecanus occidentalis		NOAEL	reproduction	0.0028	mg/kg bw/d	1		**0.0028**	oral	diet		5 yr		Oak Ridge 1996	Anderson, D.W., R.W. Risebrough, L.A. Woods, Jr., L.R. DeWeese, and W.G. Edgecomb. 1975. Brown pelicans: Improved reproduction off the Southern California coast. Science, 190: 806-808.
2,4'-DDT	3	0	2	1	2	0	1	brown pelican	Pelecanus occidentalis		NOAEL	reproduction	0.0028	mg/kg bw/d	1		**0.0028**	oral	diet		5 yr		Oak Ridge 1996	Anderson, D.W., R.W. Risebrough, L.A. Woods, Jr., L.R. DeWeese, and W.G. Edgecomb. 1975. Brown pelicans: Improved reproduction off the Southern California coast. Science, 190: 806-808.
4,4'-DDT	22	2	2	18	2	2	18	brown pelican	Pelecanus occidentalis		NOAEL	reproduction	0.0028	mg/kg bw/d	1		**0.0028**	oral	diet		5 yr		Oak Ridge 1996	Anderson, D.W., R.W. Risebrough, L.A. Woods, Jr., L.R. DeWeese, and W.G. Edgecomb. 1975. Brown pelicans: Improved reproduction off the Southern California coast. Science, 190: 806-808.

(a) studies can include multiple effects

Table 3.3.2-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Birds

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Birds	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LD50	test organism: common name	test organism: scientific name	form for exposure chemica	measurement endpoint	effect to test organism	TEV dose or food concentration	TEV-units	endpoint UF to NOAEL level	bird wt (kg) for food conc. (Dunning 1993)	NOAEL-equiv. TRV (mg/kg bird wt)	exposure route	exposure technique	life stage	exposure period (days)	test organism/testing procedure: comments	reference compilation source	full citation
chlordane series																								
alpha-Chlordane	30	3	0	29	4	0	26	chicken	Gallus gallus	chlordane	NOAEL	growth	0.3	mg/kg food	1	0.500	**0.0222**	oral	diet	adults	4 weeks	growth, egg hatchability, chick growth	USFWS Eisler	National Research Council of Canada. 1975. Chlordane: Its effects on Canadian ecosystems and its chemistry. National Research Council of Canada, Publication No. NRCC 14094. 189 p.
gamma-Chlordane	30	3	0	29	4	0	26	chicken	Gallus gallus	chlordane	NOAEL	growth	0.3	mg/kg food	1	0.500	**0.0222**	oral	diet	adults	4 weeks	growth, egg hatchability, chick growth	USFWS Eisler	National Research Council of Canada. 1975. Chlordane: Its effects on Canadian ecosystems and its chemistry. National Research Council of Canada, Publication No. NRCC 14094. 189 p.
cis-Nonachlor	0									*[use chlordane]*							***0.0222***							
trans-Nonachlor	0									*[use chlordane]*							***0.0222***							
Heptachlor	16	0	0	16	0	0	16	Common grackle	Quiscalus quiscula		LC50	survival	50	mg/kg food	100	0.100	**0.065**	oral	diet		13		TERRETOX	Stickel, L.F., W.H. Stickel, R.D. McArthur, and D.L. Hughes. 1979. Chlordane in birds: A study of lethal residues and loss rates. Toxicology and Occupational Medicine. Deichmann, W.B., ed. Elsevier/North Holland, New York, NY. pp. 387-396.
Heptachlor epoxide	0									*[use heptachlor]*							***0.065***							
Oxychlordane	8	0	0	8	0	0	8	European starling	Sturnus vulgaris		LC50	survival	1.5	mg/kg food	100	0.0799	**0.0021**	oral	diet		57		TERRETOX	Stickel, L.F., W.H. Stickel, R.D. McArthur, and D.L. Hughes. 1979. Chlordane in birds: A study of lethal residues and loss rates. Toxicology and Occupational Medicine. Deichmann, W.B., ed. Elsevier/North Holland, New York, NY. pp. 387-396.
Aldrin	12	0	0	12	0	0	12	Ring-necked pheasant	Phasianus colchicus		LD50	survival	57	mg/kg food	100	0.953	**0.034**	oral	diet		5		TERRETOX	Heath, R.G., J.W. Spann, E.F. Hill, and J.F. Kreitzer. 1972. Comparative dietary toxicities of pesticides to birds. U.S. Fish and Wildlife Service, Special Scientific Report – Wildlife 152. U.S. Fish and Wildlife Service, Washington, DC. 57 p.
alpha-BHC	1	0	1	0	1	0	0	Japanese quail	Coturnix japonica	BHC mixed isomers	NOAEL	reproduction	0.563	mg/kg bw/d	1		**0.563**	oral	diet		90		Oak Ridge 1996	Vos, J.G., H.L. Van Der Maas, A. Musch, and E. Ram. 1971. Toxicity of hexachlorobenzene in Japanese quail with special reference to porphyria, liver damage, reproduction, and tissue residues. Toxicology and Applied Pharmacology, 18: 944-957.
beta-BHC	1	0	1	0	1	0	0	Japanese quail	Coturnix japonica	BHC mixed isomers	NOAEL	reproduction	0.563	mg/kg bw/d	1		**0.563**	oral	diet		90		Oak Ridge 1996	Vos, J.G., H.L. Van Der Maas, A. Musch, and E. Ram. 1971. Toxicity of hexachlorobenzene in Japanese quail with special reference to porphyria, liver damage, reproduction, and tissue residues. Toxicology and Applied Pharmacology, 18: 944-957.
delta-BHC	1	0	1	0	1	0	0	Japanese quail	Coturnix japonica	BHC mixed isomers	NOAEL	reproduction	0.563	mg/kg bw/d	1		**0.563**	oral	diet		90		Oak Ridge 1996	Vos, J.G., H.L. Van Der Maas, A. Musch, and E. Ram. 1971. Toxicity of hexachlorobenzene in Japanese quail with special reference to porphyria, liver damage, reproduction, and tissue residues. Toxicology and Applied Pharmacology, 18: 944-957.
gamma-BHC(Lindane)	17	0	2	15	2	0	15	Japanese quail	Coturnix japonica	BHC mixed isomers	NOAEL	reproduction	0.563	mg/kg bw/d	1		**0.563**	oral	diet		90		Oak Ridge 1996	Vos, J.G., H.L. Van Der Maas, A. Musch, and E. Ram. 1971. Toxicity of hexachlorobenzene in Japanese quail with special reference to porphyria, liver damage, reproduction, and tissue residues. Toxicology and Applied Pharmacology, 18: 944-957.
Dieldrin	38	3	4	31	3	9	26	barn owl	Tyto alba		NOAEL	reproduction	0.077	mg/kg bw/d	1		**0.077**	oral	diet		2 years		Oak Ridge 1996	Mendenhall, V.M., E.E. Klaas, and M.A.R. McLane. 1983. Breeding success of barn owls (Tyto alba) fed low levels of DDE and dieldrin. Archives of Environmental Contamination and Toxicology, 12: 235-240.
Endosulfan I	4	0	1	3	1	0	3	gray partridge	Perdix perdix	endosulfan	NOAEL	reproduction	10	mg/kg bw/d	1		**10.0**	oral	diet		4 weeks		Oak Ridge 1996	Abiola, F.A. 1992. Ecotoxicity of organochloride insecticides: Effects of endosulfan on birds reproduction and evaluation of its induction effects in partridge, Perdix perdix L. Review of Veterinary Medicine, 143: 443-450.
Endosulfan II	4	0	1	3	1	0	3	gray partridge	Perdix perdix	endosulfan	NOAEL	reproduction	10	mg/kg bw/d	1		**10.0**	oral	diet		4 weeks		Oak Ridge 1996	Abiola, F.A. 1992. Ecotoxicity of organochloride insecticides: Effects of endosulfan on birds reproduction and evaluation of its induction effects in partridge, Perdix perdix L. Review of Veterinary Medicine, 143: 443-450.
Endosulfan sulfate	0									*[use endosulfan]*							***10.0***							
Endrin	20	4	3	13	2	5	13	Mallard duck	Anas platyrhynchos		NOAEL	reproduction	3	mg/kg food	1	1.082	**0.170**	oral	diet		75-117	reproduction, fertilization, hatching	TERRETOX	Roylance, K.J., C.D. Jorgensen, G.M. Booth, and M.W. Carter. 1985. Effects of dietary endrin on reproduction of mallard ducks. Archives of Environmental Contamination and Toxicology, 14: 705-711.
Endrin Aldehyde	0									*[use endrin]*							***0.170***							
Endrine ketone	0									*[use endrin]*							***0.170***							
Hexachlorobenzene	7	0	2	5	1	1	5	Japanese quail	Coturnix japonica		NOAEL	reproduction	5	mg/kg food	1	0.090	**0.674**	oral	diet		90		TERRETOX	Vos, J.G., H.L. Van Der Maas, A. Musch, and E. Ram. 1971. Toxicity of hexachlorobenzene in Japanese quail with special reference to porphyria, liver damage, reproduction, and tissue residues. Toxicology and Applied Pharmacology, 18: 944-957.
Methoxychlor	17	0	0	17	0	0	17	Northern bobwhite	Colinus virginianus		LD50	survival	2510	mg/kg	100	0.178	**2.67**	oral	diet				TERRETOX	Office of Pesticide Programs (OPP). 1995. Environmental Effects Database (EEDB). Environmental Fate and Effects Division, USEPA, Washington, DC.
Mirex	19	0	2	17	5	1	13	common bobwhite	(Colinus virginianus)		NOAEL	reproduction	40	mg/kg food	1	0.178	**4.252**	oral	diet				USFWS-Eisler	Kendall, R.J., R. Noblet, L.H. Senn, and J.R. Holman. 1978. Toxicological studies with mirex in bobwhite quail. Poultry Science, 57: 1539-1545.
Toxaphene	0																							

(a) studies can include multiple effects

Table 3.3.2-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Birds

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Birds	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod-uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LD50	test organism: common name	test organism: scientific name	form for exposure chemica	measurement endpoint	effect to test organism	TEV dose or food concentration	TEV-units	endpoint UF to NOAEL level	bird wt (kg) for food conc. (Dunning 1993)	**NOAEL-equiv. TRV (mg/kg bird wt)**	exposure route	exposure technique	life stage	exposure period (days)	test organism/testing procedure: comments	reference compilation source	full citation
Polychlorinated Biphenyls (PCBs)																								
PCB-8	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson, R.H., R.K. Tucker, and M.A. Haegele 1984. Handbook of Toxicity of Pesticides to Wildlife. U.S. Fish and Wildlife Service, Technical Resource Publication 153.AA35 90 p.; Van den Berg, M., L. Birnbaum, A.T.C. Bosveld, B. Brunstrom, P. Cook, M. Feeley, J.P. Giesy, A. Hanberg, R. Hasegawa, S.W. Kennedy, T. Kubiak, J.C. Larsen, F.X.R. van Leeuwen, A.K.D. Liem, C. Nolt, R.E. Peterson, L. Poellinger, S. Safe, D. Schrenk, D. Tillitt, M. Tysklind, M. Younes, F. Waern, and T. Zacharewski. 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environmental Health Perspectives, 106 (12): 775-792.
PCB-18	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-28	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-44	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-52	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-66	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-77	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.050000	LD50	survival	0.015	mg/kg bw/d	100		**0.0030**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-101	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-105	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000100	LD50	survival	0.015	mg/kg bw/d	100		**1.50**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-114	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000100	LD50	survival	0.015	mg/kg bw/d	100		**1.50**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-118	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000010	LD50	survival	0.015	mg/kg bw/d	100		**15.0**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-123	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000010	LD50	survival	0.015	mg/kg bw/d	100		**15.0**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-126	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.100000	LD50	survival	0.015	mg/kg bw/d	100		**0.0015**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-128	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-138	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-153	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-156	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000100	LD50	survival	0.015	mg/kg bw/d	100		**1.50**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-157	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000100	LD50	survival	0.015	mg/kg bw/d	100		**1.50**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-167	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000010	LD50	survival	0.015	mg/kg bw/d	100		**15.0**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-169	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.001000	LD50	survival	0.015	mg/kg bw/d	100		**0.15**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-170	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-180	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-187	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-189	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000010	LD50	survival	0.015	mg/kg bw/d	100		**15.0**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-195	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-206	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB-209	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000001	LD50	survival	0.015	mg/kg bw/d	100		**150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see PCB-8)
PCB Aroclor	13	0	2	11	2	0	11	chicken	Gallus sp.	Aroclor 1254	NOAEL	reproduction	0.09	mg/kg bw/d	1		**0.090**	oral	diet	adult	39 weeks	reproduction/egg production	EFA West 1998	Platonow, N.S. and B.L. Reinhart. 1973. The effect of polychlorinated biphenyls Aroclor 1254 on chicken egg production fertility and hatchability. Canadian Journal of Comparative Medicine, 37: 341-346.

(a) studies can include multiple effects

Table 3.3.2-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Birds

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Birds	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LD50	test organism: common name	test organism: scientific name	form for exposure chemica	measurement endpoint	effect to test organism	TEV dose or food concentration	TEV-units	endpoint UF to NOAEL level	bird wt (kg) for food conc. (Dunning 1993)	NOAEL-equiv. TRV (mg/kg bird wt)	exposure route	exposure technique	life stage	exposure period (days)	test organism/testing procedure: comments	reference compilation source	full citation
Polychlorinated Dioxins/Furans (PCDD/PCDF)																								
2,3,7,8-TCDD	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD	LD50	survival	0.015	mg/kg bw/d	100		**0.00015**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)	Hudson, R.H., R.K. Tucker, and M.A. Haegele 1984. Handbook of Toxicity of Pesticides to Wildlife. U.S. Fish and Wildlife Service, Technical Resource Publication 153.AA35 90 p.; Van den Berg, M., L. Birnbaum, A.T.C. Bosveld, B. Brunstrom, P. Cook, M. Feeley, J.P. Giesy, A. Hanberg, R. Hasegawa, S.W. Kennedy, T. Kubiak, J.C. Larsen, F.X.R. van Leeuwen, A.K.D. Liem, C. Nolt, R.E. Peterson, L. Poellinger, S. Safe, D. Schrenk, D. Tillitt, M. Tysklind, M. Younes, F. Waern, and T. Zacharewski. 1998. Toxic Equivalency Factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environmental Health Perspectives, 106 (12): 775-792.
1,2,3,7,8-PeCDD	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=1.000000	LD50	survival	0.015	mg/kg bw/d	100		**0.00015**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,7,8-HxCDD	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.050000	LD50	survival	0.015	mg/kg bw/d	100		**0.00300**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,6,7,8-HxCDD	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.010000	LD50	survival	0.015	mg/kg bw/d	100		**0.01500**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,7,8,9-HxCDD	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.100000	LD50	survival	0.015	mg/kg bw/d	100		**0.00150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,6,7,8-HpCDD	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.001000	LD50	survival	0.015	mg/kg bw/d	100		**0.15000**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
OCDD	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000100	LD50	survival	0.015	mg/kg bw/d	100		**1.50000**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
2,3,7,8-TCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=1.000000	LD50	survival	0.015	mg/kg bw/d	100		**0.00015**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,7,8-PeCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.100000	LD50	survival	0.015	mg/kg bw/d	100		**0.00150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
2,3,4,7,8-PeCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=1.000000	LD50	survival	0.015	mg/kg bw/d	100		**0.00015**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,7,8-HxCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.100000	LD50	survival	0.015	mg/kg bw/d	100		**0.00150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,6,7,8-HxCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.100000	LD50	survival	0.015	mg/kg bw/d	100		**0.00150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
2,3,4,6,7,8-HxCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.100000	LD50	survival	0.015	mg/kg bw/d	100		**0.00150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,7,8,9-HxCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.100000	LD50	survival	0.015	mg/kg bw/d	100		**0.00150**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,6,7,8-HpCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.010000	LD50	survival	0.015	mg/kg bw/d	100		**0.01500**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
1,2,3,4,7,8,9-HpCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.010000	LD50	survival	0.015	mg/kg bw/d	100		**0.01500**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
OCDF	4	0	0	4	0	0	4	northern bobwhite	Colinus virginianus	2,3,7,8-TCDD; TEF=0.000100	LD50	survival	0.015	mg/kg bw/d	100		**1.50000**	oral	diet-single dose		single dose	LD50 at day 37	USFWS-Eisler 1986 (8)/Van den Berg et al. 1998	Hudson et al. 1984; Van den Berg et al. 1998 (see 2,3,7,8-TCDD)
Organophosphorus Pesticides																								
Azinphos-methyl	2	0	0	2	0	0	2	red-winged blackbird	Agelaius phoeniceus		LD50	survival	8.00	mg/kg bw/d	100		**0.080**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Chlorpyrifos	7	0	0	7	0	0	7	common grackle	Quiscalus quiscula		LD50	survival	5.62	mg/kg bw/d	100		**0.056**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Demeton-O	6	0	0	6	0	0	6	common grackle	Quiscalus quiscula		LD50	survival	1.78	mg/kg bw/d	100		**0.018**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Demeton-S	6	0	0	6	0	0	6	common grackle	Quiscalus quiscula		LD50	survival	1.78	mg/kg bw/d	100		**0.018**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Diazinon	6	0	0	6	0	0	6	red-winged blackbird	Agelaius phoeniceus		LD50	survival	2.00	mg/kg bw/d	100		**0.020**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Ethion	2	0	0	2	0	0	2	red-winged blackbird	Agelaius phoeniceus		LD50	survival	45.0	mg/kg bw/d	100		**0.450**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Ethoprop	0																							
Ethyl parathion	7	0	0	7	0	0	7	house sparrow	Passer domesticus		LD50	survival	1.33	mg/kg bw/d	100		**0.013**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Malathion	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	400	mg/kg bw/d	100		**4.000**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.

(a) studies can include multiple effects

Table 3.3.2-1. Step 1-2 Screening Level Lowest NOAEL or NOAEL-equivalent TRVs for Birds

NOAEL-TRVs for Step 1-2 Screening Level Evaluation for Birds	Total Number of TEVs	Number of TEVS by effect[a]: growth/ develop	reprod- uction	surviva	Number of TEVS by endpoint: NOAEL	LOAEL	LD50	test organism: common name	test organism: scientific name	form for exposure chemica	measurement endpoint	effect to test organism	TEV dose or food concentration	TEV-units	endpoint UF to NOAEL level	bird wt (kg) for food conc. (Dunning 1993)	NOAEL-equiv. TRV (mg/kg bird wt)	exposure route	exposure technique	life stage	exposure period (days)	test organism/testing procedure: comments	reference compilation source	full citation
Methyl parathion	2	0	0	2	0	0	2	starling	Sturnus vulgaris		LD50	survival	7.5	mg/kg bw/d	100		**0.075**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Chlorinated Herbicides																								
2,4,5-T	0																							
2,4-D	0																							
Dalapon	0																							
Dicamba	3	0	0	3	0	0	3	Mallard duck	Anas platyrhynchos		LD50	survival	2009	mg/kg food	100	0.585	**1.41**	oral	diet				Kamrin 1997	Weed Science Society of America. 1994. Herbicide Handbook, 7th ed. Champaign, IL.
MCPP	0																							
2,4,5-TP (Silvex)	0																							
Triazine Pesticides																								
Ametryn	0																							
Anilazine	0																							
Atrazine	0																							
Pronamide	0																							
Propiconazole	0																							
Simazine	0																							
Terbacil	0																							
Hexazinone	0																							
Carbamate/Urea Pesticides																								
Benomyl	0																							
Carbaryl	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	56.2	mg/kg bw/d	100		**0.562**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Carbofuran	6	0	0	6	0	0	6	red-winged blackbird	Agelaius phoeniceus		LD50	survival	0.422	mg/kg bw/d	100		**0.0042**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Diuron	0																							
Methomyl	6	0	0	6	0	0	6	red-winged blackbird	Agelaius phoeniceus		LD50	survival	10.0	mg/kg bw/d	100		**0.100**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
Oxamyl	0																							
Ordnance Compounds																								
1,3-Dinitrobenzene	1	0	0	1	0	0	1	red-winged blackbird	Agelaius phoeniceus		LD50	survival	42.2	mg/kg bw/d	100		**0.422**	oral	gavage					Schafer, E.W., Jr., W.A. Bowles, Jr., and J. Hurlbut. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Archives of Environmental Contamination and Toxicology, 12: 355-382.
2,4-Dinitrotoluene	0																							
2,6-Dinitrotoluene	0																							
HMX	0																							
Nitrobenzene	0																							
Nitroglycerin	0																							
2-Nitrotoluene	0																							
3-Nitrotoluene	0																							
4-Nitrotoluene	0																							
Picric Acid	0																							
RDX	0																							
Tetryl	0																							
1,3,5-Trinitrobenzene	0																							
2,4,6-Trinitrotoluene	0																							

Return to Table of Contents

(a) studies can include multiple effects

Table 6.1-1. Evaluation of Adequacy of Nondetect Measurements for Individual COPCs in All 219 Sediment Samples for Comparisons to Sediment Quality Benchmarks (ER-Ls) for Steps 1 and 2 of the SRA

	nondetected values			comparison of nondetects to ER-L								
					ratio of maximum	number[a]	number of nondetects in following ranges≥ER-L					
Individual COPCs with ER-Ls	n[a]	maximum	minimum	ER-L	nondetect/ER-L	nondetects≥ER-L	1-2	2-5	5-10	10-50	50-100	100-200
Metals (mg/kg dry wt)												
Arsenic	0			8.20	(all detect)	(all detect)						
Cadmium	82	1.350	0.045	1.200	1.13	1	1					
Chromium	0			81.0	(all detect)	(all detect)						
Copper	0			34.0	(all detect)	(all detect)						
Lead	0			46.70	(all detect)	(all detect)						
Mercury	23	0.550	0.010	0.150	3.67	4	2	2				
Nickel	0			20.9	(all detect)	(all detect)						
Silver	87	1.000	0.051	1.000	1.00	1	1					
Zinc	0			150.0	(all detect)	(all detect)						
PAHs (ug/kg dry wt)												
Naphthalene	144	500.00	5.50	160.00	3.13	8	7	1				
2-Methylnaphthalene	172	500.00	5.00	70.00	7.14	23	12	10	1			
Acenaphthene	127	140.00	2.70	16.00	8.75	18	3	10	5			
Acenaphthylene	182	260.00	2.60	44.00	5.91	21	15	5	1			
Anthracene	34	13.50	2.70	85.30	0.16	0						
Phenanthrene	4	3.60	2.85	240.00	0.02	0						
Fluorene	114	140.00	2.70	19.00	7.37	13	4	6	3			
Benz(a)anthracene	3	3.10	2.90	261.00	0.01	0						
Chrysene	0			384.00	(all detect)	(all detect)						
Fluoranthene	0			600.00	(all detect)	(all detect)						
Pyrene	0			665.00	(all detect)	(all detect)						
Benzo(a)pyrene	1	2.90	2.90	430.00	0.01	0						
Dibenz(a,h)anthracene	15	13.50	2.85	63.40	0.21	0						
Chlorinated Pesticides (ug/kg dry wt)												
4,4'-DDD	125	24.00	0.07	2.00	12.00	4	2	1		1		
4,4'-DDE	31	24.00	0.07	2.20	10.91	3	1	1		1		
4,4'-DDT	138	39.50	0.12	1.00	39.50	38	13	21	2	2		
alpha-Chlordane	129	24.00	0.07	0.50	48.00	36	15	17	2	2		
gamma-Chlordane	115	24.00	0.07	0.50	48.00	34	12	17	3	2		
Dieldrin	96	3.45	0.07	0.02	172.50	96		25	23	36	10	2
PCBs (ug/kg dry wt)												
tPCB (as Aroclor)	0			22.70	(all detect)	(all detect)						
tPCB (as NOAA-18)	0			22.70	(all detect)	(all detect)						

[a] number of sediment samples in category for harborwide data set; total data set = 219 sediment samples

Return to Table of Contents

Table 6.2-1. Evaluation of Adequacy of Negative Controls for Toxicity Measurements in All 219 Sediment Samples for Steps 1 and 2 of the SRA

amphipod survival		echinoderm fertilization	
maximum for all negative controls	94.7%	maximum for all negative controls	98.1%
minimum for all negative controls	81.0%	minimum for all negative controls	58.4%
method acceptance criterion for negative control	90%	method acceptance criterion for negative control	70%
total samples	219	total samples	219
samples with negative controls>90% [(a)]	122	samples with negative controls>70% [(a)]	188
samples with negative controls 85-90% [(b)]	63	samples with negative controls 65-70% [(b)]	10
samples with negative controls 80-85% [(b)]	34	samples with negative controls 60-65% [(b)]	6
		samples with negative controls 55-60% [(b)]	15

[(a)] PREFERRED APPROACH: samples with negative controls greater than method acceptance criterion corrected for associated negative control value

[(b)] ALTERNATIVE APPROACH: samples with negative control less than method acceptance criterion corrected for method acceptance criterion value

Return to Table of Contents

file = SRA_table61-1-2.xls;
worksheet = Table62-1_tox-contrl-correct

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

COPCs by chemical group	NOAEL-TRVs for crustacea HQ=1 (mg/kg dry tissue wt)	composite macroinfauna	epibenthic crabs	NOAEL-TRVs for fish HQ=1 (mg/kg dry tissue wt)	burrowing goby	tilapia	bandtail goatfish	NOAEL TRV ingest. conc. in matrix for stilt HQ=1 (mg/kg dw in ingest. matrix)	Hawaiian stilt - max. nd for consuming matrix of: 100% sediment (0-2 m)	100% macroinfauna	100% epibenthic crab	100% tilapia	100% bandtail goatfish
	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1												
Count Summary for COPCs:													
Total COPCs:		**245**	**245**		**245**	**245**	**245**		**245**	**245**	**245**	**245**	**245**
Acceptable Maximum nd:		**95**	**94**		**143**	**146**	**146**		**147**	**132**	**137**	**129**	**131**
all detected values		20	20		32	25	24		22	20	20	25	24
max.nd/crit.conc.<1		75	74		111	121	122		125	112	117	104	107
Uncertain Maximum nd:		**4**	**3**		**4**	**4**	**1**		**4**	**5**	**1**	**7**	**3**
max.nd/crit.conc. ≥1		4	3		4	4	1		4	5	1	7	3
Data Gaps for Maximum nd:		**146**	**148**		**98**	**95**	**98**		**94**	**108**	**107**	**109**	**111**
dg-no TRV		115	116		67	62	65		90	77	75	76	78
dg-no value		2	3		2	4	4		4	2	3	4	4
dg-not measured		29	29		29	29	29		0	29	29	29	29
Metals													
Aluminum	(no TRV)	OK-all detect	OK-all detect	5.000	OK-all detect	OK-all detect	OK-all detect	1073	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Antimony	(no TRV)	dg-no TRV	dg-no TRV	25.000	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Arsenic	5.150	OK-all detect	OK-all detect	2.600	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	24.1	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1
Cadmium	0.4000	OK-all detect	OK-all detect	0.1800	OK-all detect	OK-all detect	OK-all detect	0.763	unc: max.nd/crit.conc.=1.18	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Chromium	5.000	OK-all detect	OK-all detect	11.500	OK-all detect	OK-all detect	OK-all detect	9.78	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Cobalt	22.600	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	OK-all detect	OK-all detect	OK-all detect	dg-no TRV
Copper	10.000	OK-all detect	OK-all detect	1.110	OK-all detect	OK-all detect	OK-all detect	11.1	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Iron	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Lead	20.000	OK-all detect	OK: max.nd/crit.conc.<1	1.700	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1	0.137	OK-all detect	OK-all detect	unc: max.nd/crit.conc.=1.4	OK-all detect	unc: max.nd/crit.conc.=1.42
Manganese	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect	OK-all detect	759	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Mercury	4.2950	OK: max.nd/crit.conc.<1	OK-all detect	0.7000	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	0.381	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK-all detect
Molybdenum	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect	OK-all detect	34.2	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Nickel	11.150	OK-all detect	OK-all detect	(no TRV)	dg-no TRV	OK-all detect	dg-no TRV	13.5	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1
Selenium	1.3000	OK-all detect	OK-all detect	0.6000	OK-all detect	OK-all detect	OK-all detect	2.25	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Silicon	(no TRV)	OK-all detect	OK-all detect	(no TRV)	dg-no TRV	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	OK-all detect	OK-all detect	OK-all detect	dg-no TRV
Silver	(no TRV)	dg-no TRV	dg-no TRV	0.300	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	25.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Tin	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	OK-all detect	OK-all detect	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	OK-all detect	OK-all detect
Zinc	63.500	OK-all detect	OK-all detect	1.420	OK-all detect	OK-all detect	OK-all detect	142	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Butyltins													
Monobutyltin	*0.600*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.350*	OK: max.nd/crit.conc.<1	dg-no value	dg-no value	*7.14*	dg-no value	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	dg-no value	dg-no value
Dibutyltin	*0.600*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.350*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.14	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Tributyltin	0.600	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.350	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.14	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Tetrabutyltin	*0.600*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.350*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.14*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PAHs													
2-ring PAHs													
Naphthalene	*0.895*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.500	OK-all detect	OK: max.nd/crit.conc.<1	OK-all detect	28.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect
Naphthalenes,C1-	*0.895*	OK-all detect	OK: max.nd/crit.conc.<1	*7.500*	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1	*28.0*	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1
Naphthalenes,C2-	*0.895*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.500*	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*28.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Naphthalenes,C3-	*0.895*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*28.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Naphthalenes,C4-	*0.895*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*28.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1-Methylnapthalene	*0.895*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*28.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2-Methylnaphthalene	0.895	OK-all detect	OK: max.nd/crit.conc.<1	*7.500*	OK-all detect	OK-all detect	OK-all detect	28.0	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect
2,6-Dimethylnapthalene	*0.895*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*28.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,6,7-Trimethylnaphthalene	*0.895*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*28.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Biphenyl	(no TRV)	dg-no TRV	dg-no TRV	70.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
3-ring PAHs													
Acenaphthene	(no TRV)	dg-no TRV	dg-no TRV	17.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	9.88	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Acenaphthylene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Anthracene	*35.50*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	227.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrene	35.50	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	440.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	11.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect
1-Methylphenanthrene	*35.50*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*227.5*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C1-	*35.50*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*227.5*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C2-	*35.50*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*227.5*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C3-	*35.50*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*227.5*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C4-	*35.50*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*227.5*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	9.88	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorenes,C1-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	*9.88*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorenes,C2-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	*9.88*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorenes,C3-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	*9.88*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Dibenzothiophene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Dibenzothiophenes,C1-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Dibenzothiophenes,C2-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Dibenzothiophenes,C3-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
4-ring PAHs													
Benz(a)anthracene	(no TRV)	dg-no TRV	dg-no TRV	87.50	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Chrysene	13.00	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Chrysenes,C1	*13.00*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Chrysenes,C2-	*13.00*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Chrysenes,C3-	*13.00*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Chrysenes,C4-	*13.00*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Fluoranthene	*63.50*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Pyrene	63.50	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Fluoranthenes+Pyrenes,C1-	*63.50*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Fluoranthenes+Pyrenes,C2-	*63.50*	OK: max.nd/crit.conc.<1	dg-no value	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no value	dg-no TRV	dg-no TRV
Fluoranthenes+Pyrenes,C3-	*63.50*	OK: max.nd/crit.conc.<1	dg-no value	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	dg-no value	dg-no TRV	dg-no TRV

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1												
	NOAEL-TRVs for crustacea HQ=1 (mg/kg dry tissue wt)	**composite macroinfauna**	**epibenthic crabs**	NOAEL-TRVs for fish HQ=1 (mg/kg dry tissue wt)	**burrowing goby**	**tilapia**	**bandtail goatfish**	NOAEL TRV ingest. conc. in matrix for stilt HQ=1 (mg/kg dw in ingest. matrix)	**Hawaiian stilt - max. nd for consuming matrix of:**				
COPCs by chemical group									100% sediment (0-2 m)	100% macroinfauna	100% epibenthic crab	100% tilapia	100% bandtail goatfish
5-ring PAHs													
Benzo(a)pyrene	(no TRV)	dg-no TRV	dg-no TRV	1.050	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Benzo(e)pyrene	(no TRV)	dg-no TRV	dg-no TRV	*1.050*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Benzo(b)fluoranthene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Benzo(k)fluoranthene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Dibenz(a,h)anthracene	(no TRV)	dg-no TRV	dg-no TRV	2.500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Perylene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
6-ring PAHs													
Benzo(g,h,i)perylene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Indeno(1,2,3-cd)pyrene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
non-PAH Semivolatiles													
Aniline	0.040	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.250	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	55.0	dg-no value	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Benzoic Acid	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	9.78	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured
Benzyl Alcohol	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	9.78	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
bis(2-Chloroethoxy)methane	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
bis(2-Chloroethyl)Ether	(no TRV)	dg-no TRV	dg-no TRV	0.550	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
bis(Chloromethyl)Ether	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
4-Bromophenyl-phenylether	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Carbazole	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
4-Chloroaniline	(no TRV)	dg-no value	dg-no TRV	2.500	dg-no value	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	9.78	OK: max.nd/crit.conc.<1	dg-no value	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2-Chloronaphthalene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
2-Chlorophenol	3.350	dg-not measured	dg-not measured	1.600	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
4-Chlorophenol	4.350	dg-not measured	dg-not measured	0.850	dg-not measured	dg-not measured	dg-not measured	11.1	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured
4-Chlorophenyl-phenylether	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Dibenzofuran	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
1,2-Dichlorobenzene	86.5000	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	3.350	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
1,3-Dichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	3.200	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
1,4-Dichlorobenzene	105.850	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2.700	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
3,3'-Dichlorobenzidine	(no TRV)	dg-no TRV	dg-no TRV	152.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Hexachlorobutadiene	64.000	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.315	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Hexachlorocyclopentadiene	(no TRV)	dg-no TRV	dg-no TRV	0.200	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Hexachloroethane	(no TRV)	dg-no TRV	dg-no TRV	0.036	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=2.54	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Isophorone	(no TRV)	dg-no TRV	dg-no TRV	3.250	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
2-Nitroaniline	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	73.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
3-Nitroaniline	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	13.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
4-Nitroaniline	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	7.34	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2-Nitrophenol	*0.385*	dg-not measured	dg-not measured	*10.000*	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
4-Nitrophenol	0.385	dg-not measured	dg-not measured	10.000	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
N-Nitrosodi-n-propylamine	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
N-Nitrosodibutylamine	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
N-Nitrosodiethylamine	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
N-Nitrosodimethylamine	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
N-nitrosodiphenylamine	(no TRV)	dg-not measured	dg-not measured	10.000	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
N-Nitrosomethylethylamine	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
N-Nitrosopyrrolidine	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Octachlorostyrene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
2,2'oxybis(1-Chloropropane)	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Pentachlorobenzene	430.500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.100	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Pentachlorophenol	2.250	dg-not measured	dg-not measured	0.200	dg-not measured	dg-not measured	dg-not measured	37.2	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured
Phenol	(no TRV)	dg-not measured	dg-not measured	0.335	dg-not measured	dg-not measured	dg-not measured	11.1	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured
2,3,5,6-Tetrachlorophenol	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
2,4,5-Trichlorophenol	(no TRV)	dg-not measured	dg-not measured	250.0	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
2,4,6-Trichlorophenol	(no TRV)	dg-not measured	dg-not measured	3.375	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
2,4-Dichlorophenol	(no TRV)	dg-not measured	dg-not measured	25.0	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
2,4-Dimethylphenol	(no TRV)	dg-not measured	dg-not measured	7.65	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
2,4-Dinitrophenol	1.050	dg-not measured	dg-not measured	0.345	dg-not measured	dg-not measured	dg-not measured	1.30	unc: max.nd/crit.conc.=1.19	dg-not measured	dg-not measured	dg-not measured	dg-not measured
2-Methylphenol	(no TRV)	dg-not measured	dg-not measured	0.420	dg-not measured	dg-not measured	dg-not measured	*9.39*	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured
4,6-Dinitro-2-methylphenol	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
4-Chloro-3-Methylphenol	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
4-Methylphenol	(no TRV)	dg-not measured	dg-not measured	4.705	dg-not measured	dg-not measured	dg-not measured	9.39	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured
Butylbenzylphthalate	*2.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	32.25	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.09*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
bis(2-Ethylhexyl) phthalate	2.500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	3.300	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Di-n-butylphthalate	2.500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*2.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.09	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Di-n-octylphthalate	*2.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*2.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.09*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Diethylphthalate	*2.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*2.500*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.09*	unc: max.nd/crit.conc.=1.15	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Dimethylphthalate	2.500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2.500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	9.78	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,4,5-Tetrachlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	1.600	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
1,2,3-Trichlorobenzene	438.300	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.050	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
1,2,4-Trichlorobenzene	4055.000	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.900	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Chlorinated Pesticides													
DDT series													
2,4'-DDD	*0.233*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.040*	unc: max.nd/crit.conc.=2.88	unc: max.nd/crit.conc.=2	OK: max.nd/crit.conc.<1	0.0274	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=2.56	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=2.92	unc: max.nd/crit.conc.=1.37
4,4'-DDD	*0.233*	OK-all detect	OK: max.nd/crit.conc.<1	0.040	OK-all detect	OK: max.nd/crit.conc.<1	OK-all detect	0.0274	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect
2,4'-DDE	*0.233*	OK: max.nd/crit.conc.<1	OK-all detect	9.800	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0274	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.41	OK-all detect	unc: max.nd/crit.conc.=1.59	OK: max.nd/crit.conc.<1
4,4'-DDE	*0.233*	unc: max.nd/crit.conc.=1.03	OK: max.nd/crit.conc.<1	0.210	OK-all detect	OK-all detect	OK-all detect	0.0274	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=8.76	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect
2,4'-DDT	*0.233*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.040	unc: max.nd/crit.conc.=1.05	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0274	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.06	OK: max.nd/crit.conc.<1
4,4'-DDT	0.233	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.045	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1	0.0274	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1
chlordane series													
alpha-Chlordane	3.550	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.050	OK-all detect	OK-all detect	OK-all detect	0.218	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect
gamma-Chlordane	*3.550*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.050*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.218	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
cis-Nonachlor	*3.550*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.050*	unc: max.nd/crit.conc.=6.5	unc: max.nd/crit.conc.=4.5	unc: max.nd/crit.conc.=2.1	*0.218*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.03	OK: max.nd/crit.conc.<1
trans-Nonachlor	*3.550*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.050*	unc: max.nd/crit.conc.=1.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.218*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Heptachlor	0.050	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.050	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.636	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Heptachlor epoxide	0.270	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.050	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.636*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Oxychlordane	*3.550*	OK: max.nd/crit.conc.<1	OK-all detect	*0.050*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0206	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.31	OK-all detect	unc: max.nd/crit.conc.=1.48	OK: max.nd/crit.conc.<1
Aldrin	2.400	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.785	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.330	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
alpha-BHC	10.000	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	125.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.51	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
beta-BHC	0.0014	unc: max.nd/crit.conc.=11.79	unc: max.nd/crit.conc.=1.21	112.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.51	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
delta-BHC	0.0014	unc: max.nd/crit.conc.=14.29	unc: max.nd/crit.conc.=1.43	2.430	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.51	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
gamma-BHC(Lindane)	0.0011	unc: max.nd/crit.conc.=11.82	unc: max.nd/crit.conc.=1.18	2.685	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.51	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1												
	NOAEL-TRVs for crustacea HQ=1 (mg/kg dry tissue wt)			NOAEL-TRVs for fish HQ=1 (mg/kg dry tissue wt)				NOAEL TRV ingest. conc. in matrix for stilt HQ=1 (mg/kg dw in ingest. matrix)	Hawaiian stilt - max. nd for consuming matrix of:				
COPCs by chemical group		**composite macroinfauna**	**epibenthic crabs**		**burrowing goby**	**tilapia**	**bandtail goatfish**		100% sediment (0-2 m)	100% macroinfauna	100% epibenthic crab	100% tilapia	100% bandtail goatfish
Dieldrin	0.0500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.800	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.753	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endosulfan I	0.350	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.000	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	97.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endosulfan II	0.350	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.000	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	97.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endosulfan sulfate	*0.350*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.000*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*97.8*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endrin	0.250	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.095	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.66	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endrin Aldehyde	*0.250*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.095*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.66*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endrine ketone	*0.250*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.095*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.66*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Hexachlorobenzene	395	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.800	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.60	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Methoxychlor	0.500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.300	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	26.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Mirex	0.2500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2.100	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	41.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Toxaphene	0.042	dg-no value	dg-no value	1.000	dg-no value	dg-no value	dg-no value	(no TRV)	dg-no value	dg-no value	dg-no value	dg-no value	dg-no value
Polychlorinated Biphenyls (PCBs)													
PCB-8	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-18	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-28	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-44	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-52	20.00	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-66	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-77 (non-ortho coplaner)	6.5000	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.75	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0293	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.09	OK: max.nd/crit.conc.<1
PCB-101	0.35	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-105	(no TRV)	dg-no TRV	dg-no TRV	35.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-114	(no TRV)	dg-no TRV	dg-no TRV	35.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	14.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect
PCB-118	133.00	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	35.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-123	(no TRV)	dg-no TRV	dg-no TRV	35.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-126 (non-ortho coplaner)	(no TRV)	dg-no TRV	dg-no TRV	0.035	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.27	OK: max.nd/crit.conc.<1	0.0147	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=2.66	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=3.03	unc: max.nd/crit.conc.=1.43
PCB-128	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-138	94.00	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-153	72.00	OK: max.nd/crit.conc.<1	OK-all detect	175.0	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	OK-all detect
PCB-156	(no TRV)	dg-no TRV	dg-no TRV	35.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-157	(no TRV)	dg-no TRV	dg-no TRV	35.0	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	14.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect
PCB-167	(no TRV)	dg-no TRV	dg-no TRV	35.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-169 (non-ortho coplaner)	(no TRV)	dg-no TRV	dg-no TRV	3.50	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.47	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-170	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-180	120.50	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	175.0	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect
PCB-187	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect
PCB-189	(no TRV)	dg-no TRV	dg-no TRV	35.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-195	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-206	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-209	(no TRV)	dg-no TRV	dg-no TRV	175.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1467	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
tPCB TEQ - fish and birds:	(no TRV)			(no TRV)									
tPCB NOAA-1E	0.200	OK-all detect	OK-all detect	2.80	OK-all detect	OK-all detect	OK-all detect	0.880	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect
Dioxins/Furans (PCDDs/PCDFs)													
2,3,7,8-TCDD	0.0850	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.000175	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8-PeCDD	(no TRV)	dg-no TRV	dg-no TRV	0.000175	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,7,8-HxCDD	(no TRV)	dg-no TRV	dg-no TRV	0.000350	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0293	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,6,7,8-HxCDD	(no TRV)	dg-no TRV	dg-no TRV	0.0175	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8,9-HxCDD	(no TRV)	dg-no TRV	dg-no TRV	0.0175	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,6,7,8-HpCDD	(no TRV)	OK-all detect	dg-no TRV	0.175	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.47	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
OCDD	(no TRV)	dg-no TRV	dg-no TRV	1.75	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.67	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,3,7,8-TCDF	(no TRV)	dg-no TRV	dg-no TRV	0.00350	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8-PeCDF	(no TRV)	dg-no TRV	dg-no TRV	0.00350	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,3,4,7,8-PeCDF	(no TRV)	dg-no TRV	dg-no TRV	0.000350	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,7,8-HxCDF	(no TRV)	dg-no TRV	dg-no TRV	0.00175	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,6,7,8-HxCDF	(no TRV)	dg-no TRV	dg-no TRV	0.00175	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,3,4,6,7,8-HxCDF	(no TRV)	dg-no TRV	dg-no TRV	0.00175	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8,9-HxCDF	(no TRV)	dg-no TRV	dg-no TRV	0.00175	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,6,7,8-HpCDF	(no TRV)	dg-no TRV	OK-all detect	0.0175	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,7,8,9-HpCDF	(no TRV)	dg-no TRV	dg-no TRV	0.0175	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.147	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
OCDF	(no TRV)	dg-no TRV	dg-no TRV	1.75	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.7	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Organophosphorus Pesticides													
Azinphos-methyl	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	0.782	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Chlorpyrifos	4.850	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.075	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.550	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Demeton-O	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no value	dg-no value	0.174	dg-no value	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	dg-no value	dg-no value
Demeton-S	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no value	dg-no value	0.174	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	dg-no value	dg-no value
Diazinon	(no TRV)	dg-no TRV	dg-no TRV	0.630	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.196	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Ethion	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	4.40	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Ethoprop	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Ethyl parathion	(no TRV)	dg-no TRV	dg-no TRV	*1.150*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.130	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Malathion	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	39.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Methyl parathion	(no TRV)	dg-no TRV	dg-no TRV	1.150	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.734	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Chlorinated Herbicides													
2,4,5-T	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
2,4-D	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Dalapon	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Dicamba	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	13.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
MCPP	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
2,4,5-TP (Silvex)	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1												
COPCs by chemical group	NOAEL-TRVs for crustacea HQ=1 (mg/kg dry tissue wt)	**composite macroinfauna**	**epibenthic crabs**	NOAEL-TRVs for fish HQ=1 (mg/kg dry tissue wt)	**burrowing goby**	**tilapia**	**bandtail goatfish**	NOAEL TRV ingest. conc. in matrix for stilt HQ=1 (mg/kg dw in ingest. matrix)	**Hawaiian stilt - max. nd for consuming matrix of:** 100% sediment (0-2 m)	100% macroinfauna	100% epibenthic crab	100% tilapia	100% bandtail goatfish
Triazine Pesticides													
Ametryn	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Anilazine	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Atrazine	(no TRV)	dg-no TRV	dg-no TRV	1.350	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Pronamide	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Propiconazole	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Simazine	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Terbacil	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Hexazinone	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Carbamate/Urea Pesticides													
Benomyl	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	OK-all detect	dg-not measured	dg-not measured	dg-not measured	dg-not measured
Carbaryl	1.210	dg-not measured	dg-not measured	0.045	dg-not measured	dg-not measured	dg-not measured	5.50	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured
Carbofuran	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	0.0413	unc: max.nd/crit.conc.=2.67	dg-not measured	dg-not measured	dg-not measured	dg-not measured
Diuron	(no TRV)	dg-not measured	dg-not measured	24.0	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
Methomyl	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	0.978	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured
Oxamyl	(no TRV)	dg-not measured	dg-not measured	(no TRV)	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured
Ordnance Compounds													
1,3-Dinitrobenzene	(no TRV)	dg-no TRV	dg-no TRV	23.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	4.13	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,4-Dinitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	206.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
2,6-Dinitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	392.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
HMX	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Nitrobenzene	0.355	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.500	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Nitroglycerin	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
2-Nitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	501.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
3-Nitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	490.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
4-Nitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	692.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Picric Acid	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
RDX	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
Tetryl	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
1,3,5-Trinitrobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV
2,4,6-Trinitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1								
	NOAEL TRV ingest. conc. in matrix for coot HQ=1	Hawaiian coot - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for duck HQ=1	Hawaiian duck - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for moorhen HQ=1	Hawaiian moorhen - max. nd for consuming matrix of:	
COPCs by chemical group	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna
Count Summary for COPCs:									
Total COPCs:		**245**	**245**		**245**	**245**		**245**	**245**
Acceptable Maximum nd:		**150**	**134**		**150**	**134**		**147**	**132**
all detected values		22	20		22	20		22	20
max.nd/crit.conc.<1		128	114		128	114		125	112
Uncertain Maximum nd:		**1**	**3**		**1**	**3**		**4**	**5**
max.nd/crit.conc. ≥1		1	3		1	3		4	5
Data Gaps for Maximum nd:		**94**	**108**		**94**	**108**		**94**	**108**
dg-no TRV		90	77		90	77		90	77
dg-no value		4	2		4	2		4	2
dg-not measured		0	29		0	29		0	29
Metals									
Aluminum	1540	OK-all detect	OK-all detect	1563	OK-all detect	OK-all detect	1186	OK-all detect	OK-all detect
Antimony	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Arsenic	34.5	OK-all detect	OK-all detect	35.1	OK-all detect	OK-all detect	26.6	OK-all detect	OK-all detect
Cadmium	1.095	OK: max.nd/crit.conc.<1	OK-all detect	1.111	OK: max.nd/crit.conc.<1	OK-all detect	0.843	unc: max.nd/crit.conc.=1.07	OK-all detect
Chromium	14.03	OK-all detect	OK-all detect	14.25	OK-all detect	OK-all detect	10.81	OK-all detect	OK-all detect
Cobalt	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect
Copper	15.9	OK-all detect	OK-all detect	16.1	OK-all detect	OK-all detect	12.2	OK-all detect	OK-all detect
Iron	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect
Lead	0.196	OK-all detect	OK-all detect	0.199	OK-all detect	OK-all detect	0.151	OK-all detect	OK-all detect
Manganese	1089	OK-all detect	OK-all detect	1106	OK-all detect	OK-all detect	839	OK-all detect	OK-all detect
Mercury	0.547	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.556	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.422	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Molybdenum	49.1	OK: max.nd/crit.conc.<1	OK-all detect	49.9	OK: max.nd/crit.conc.<1	OK-all detect	37.8	OK: max.nd/crit.conc.<1	OK-all detect
Nickel	19.4	OK-all detect	OK-all detect	19.7	OK-all detect	OK-all detect	14.9	OK-all detect	OK-all detect
Selenium	3.23	OK: max.nd/crit.conc.<1	OK-all detect	3.28	OK: max.nd/crit.conc.<1	OK-all detect	2.49	OK: max.nd/crit.conc.<1	OK-all detect
Silicon	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect
Silver	36.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	37.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	28.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Tin	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Zinc	203	OK-all detect	OK-all detect	207	OK-all detect	OK-all detect	157	OK-all detect	OK-all detect
Butyltins									
Monobutyltin	*10.25*	dg-no value	OK: max.nd/crit.conc.<1	*10.40*	dg-no value	OK: max.nd/crit.conc.<1	*7.89*	dg-no value	OK: max.nd/crit.conc.<1
Dibutyltin	10.25	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.40	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.89	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Tributyltin	10.25	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.40	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.89	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Tetrabutyltin	*10.25*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.40*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.89*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PAHs									
2-ring PAHs									
Naphthalene	40.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	40.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	30.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Naphthalenes,C1-	*40.1*	OK: max.nd/crit.conc.<1	OK-all detect	*40.7*	OK: max.nd/crit.conc.<1	OK-all detect	*30.9*	OK: max.nd/crit.conc.<1	OK-all detect
Naphthalenes,C2-	*40.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*40.7*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*30.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Naphthalenes,C3-	*40.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*40.7*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*30.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Naphthalenes,C4-	*40.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*40.7*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*30.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1-Methylnapthalene	*40.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*40.7*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*30.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2-Methylnaphthalene	40.1	OK: max.nd/crit.conc.<1	OK-all detect	40.7	OK: max.nd/crit.conc.<1	OK-all detect	30.9	OK: max.nd/crit.conc.<1	OK-all detect
2,6-Dimethylnapthalene	*40.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*40.7*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*30.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,6,7-Trimethylnaphthalene	*40.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*40.7*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*30.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Biphenyl	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
3-ring PAHs									
Acenaphthene	14.17	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.39	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.92	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Acenaphthylene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Anthracene	15.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	15.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	12.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrene	15.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	16.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	12.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1-Methylphenanthrene	*15.6*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*15.8*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*12.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C1-	*15.6*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*15.8*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*12.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C2-	*15.6*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*15.8*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*12.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C3-	*15.6*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*15.8*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*12.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C4-	*15.6*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*15.8*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*12.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorene	14.17	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.39	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.92	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorenes,C1-	*14.17*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*14.39*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.92*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorenes,C2-	*14.17*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*14.39*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.92*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorenes,C3-	*14.17*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*14.39*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.92*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Dibenzothiophene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenzothiophenes,C1-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenzothiophenes,C2-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenzothiophenes,C3-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
4-ring PAHs									
Benz(a)anthracene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chrysene	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV
Chrysenes,C1	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chrysenes,C2-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chrysenes,C3-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chrysenes,C4-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Fluoranthene	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV
Pyrene	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV
Fluoranthenes+Pyrenes,C1-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Fluoranthenes+Pyrenes,C2-	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Fluoranthenes+Pyrenes,C3-	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1								
	NOAEL TRV ingest. conc. in matrix for coot HQ=1	Hawaiian coot - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for duck HQ=1	Hawaiian duck - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for moorhen HQ=1	Hawaiian moorhen - max. nd for consuming matrix of:	
COPCs by chemical group	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna
5-ring PAHs									
Benzo(a)pyrene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Benzo(e)pyrene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Benzo(b)fluoranthene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Benzo(k)fluoranthene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenz(a,h)anthracene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Perylene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
6-ring PAHs									
Benzo(g,h,i)perylene	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV
Indeno(1,2,3-cd)pyrene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
non-PAH Semivolatiles									
Aniline	78.9	dg-no value	OK: max.nd/crit.conc.<1	80.1	dg-no value	OK: max.nd/crit.conc.<1	60.7	dg-no value	OK: max.nd/crit.conc.<1
Benzoic Acid	14.03	OK: max.nd/crit.conc.<1	dg-not measured	14.25	OK: max.nd/crit.conc.<1	dg-not measured	10.81	OK: max.nd/crit.conc.<1	dg-not measured
Benzyl Alcohol	14.03	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.25	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.81	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
bis(2-Chloroethoxy)methane	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
bis(2-Chloroethyl)Ether	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
bis(Chloromethyl)Ether	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
4-Bromophenyl-phenylether	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Carbazole	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
4-Chloroaniline	14.03	OK: max.nd/crit.conc.<1	dg-no value	14.25	OK: max.nd/crit.conc.<1	dg-no value	10.81	OK: max.nd/crit.conc.<1	dg-no value
2-Chloronaphthalene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2-Chlorophenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
4-Chlorophenol	15.9	OK: max.nd/crit.conc.<1	dg-not measured	16.1	OK: max.nd/crit.conc.<1	dg-not measured	12.2	OK: max.nd/crit.conc.<1	dg-not measured
4-Chlorophenyl-phenylether	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenzofuran	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,2-Dichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,3-Dichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,4-Dichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
3,3'-Dichlorobenzidine	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Hexachlorobutadiene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Hexachlorocyclopentadiene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Hexachloroethane	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Isophorone	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2-Nitroaniline	105.3	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	106.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	81.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
3-Nitroaniline	18.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	19.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
4-Nitroaniline	10.53	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.69	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	8.11	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2-Nitrophenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
4-Nitrophenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
N-Nitrosodi-n-propylamine	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
N-Nitrosodibutylamine	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
N-Nitrosodiethylamine	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
N-Nitrosodimethylamine	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
N-nitrosodiphenylamine	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
N-Nitrosomethylethylamine	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
N-Nitrosopyrrolidine	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Octachlorostyrene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,2'oxybis(1-Chloropropane)	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Pentachlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Pentachlorophenol	53.3	OK: max.nd/crit.conc.<1	dg-not measured	54.1	OK: max.nd/crit.conc.<1	dg-not measured	41.1	OK: max.nd/crit.conc.<1	dg-not measured
Phenol	15.9	OK: max.nd/crit.conc.<1	dg-not measured	16.1	OK: max.nd/crit.conc.<1	dg-not measured	12.2	OK: max.nd/crit.conc.<1	dg-not measured
2,3,5,6-Tetrachlorophenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
2,4,5-Trichlorophenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
2,4,6-Trichlorophenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
2,4-Dichlorophenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
2,4-Dimethylphenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
2,4-Dinitrophenol	1.87	OK: max.nd/crit.conc.<1	dg-not measured	1.90	OK: max.nd/crit.conc.<1	dg-not measured	1.44	unc: max.nd/crit.conc.=1.08	dg-not measured
2-Methylphenol	*13.5*	OK: max.nd/crit.conc.<1	dg-not measured	*13.7*	OK: max.nd/crit.conc.<1	dg-not measured	*10.4*	OK: max.nd/crit.conc.<1	dg-not measured
4,6-Dinitro-2-methylphenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
4-Chloro-3-Methylphenol	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
4-Methylphenol	13.47	OK: max.nd/crit.conc.<1	dg-not measured	13.68	OK: max.nd/crit.conc.<1	dg-not measured	10.38	OK: max.nd/crit.conc.<1	dg-not measured
Butylbenzylphthalate	*1.56*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.58*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.20*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
bis(2-Ethylhexyl) phthalate	15.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	15.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	11.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Di-n-butylphthalate	1.56	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.58	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.20	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Di-n-octylphthalate	*1.56*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.58*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.20*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Diethylphthalate	*1.56*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.58*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.20*	unc: max.nd/crit.conc.=1.04	OK: max.nd/crit.conc.<1
Dimethylphthalate	14.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,4,5-Tetrachlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,2,3-Trichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,2,4-Trichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chlorinated Pesticides									
DDT series									
2,4'-DDD	0.0393	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.78	0.0399	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.75	0.0303	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=2.31
4,4'-DDD	0.0393	OK: max.nd/crit.conc.<1	OK-all detect	0.0399	OK: max.nd/crit.conc.<1	OK-all detect	0.0303	OK: max.nd/crit.conc.<1	OK-all detect
2,4'-DDE	0.0393	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0399	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0303	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.27
4,4'-DDE	0.0393	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=6.11	0.0399	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=6.02	0.0303	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=7.93
2,4'-DDT	0.0393	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0399	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0303	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
4,4'-DDT	0.0393	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0399	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0303	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
chlordane series									
alpha-Chlordane	0.312	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.317	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.240	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
gamma-Chlordane	0.312	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.317	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.240	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
cis-Nonachlor	*0.312*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.317*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.240*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
trans-Nonachlor	*0.312*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.317*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.240*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Heptachlor	0.912	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.926	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.703	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Heptachlor epoxide	*0.912*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.926*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.703*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Oxychlordane	0.0296	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0300	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0228	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.18
Aldrin	0.473	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.481	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.365	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
alpha-BHC	7.90	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	8.02	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.09	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
beta-BHC	7.90	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	8.02	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.09	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
delta-BHC	7.90	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	8.02	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.09	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
gamma-BHC(Lindane)	7.90	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	8.02	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.09	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1								
	NOAEL TRV ingest. conc. in matrix for coot HQ=1	Hawaiian coot - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for duck HQ=1	Hawaiian duck - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for moorhen HQ=1	Hawaiian moorhen - max. nd for consuming matrix of:	
COPCs by chemical group	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna
Dieldrin	1.081	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.097	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.832	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endosulfan I	140.3	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	142.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	108.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endosulfan II	140.3	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	142.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	108.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endosulfan sulfate	*140.3*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*142.5*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*108.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endrin	2.38	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2.42	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.84	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endrin Aldehyde	*2.38*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*2.42*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.84*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endrine ketone	*2.38*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*2.42*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.84*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Hexachlorobenzene	9.46	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	9.61	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.29	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Methoxychlor	37.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	38.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	28.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Mirex	59.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	60.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	46.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Toxaphene	(no TRV)	dg-no value	dg-no value	(no TRV)	dg-no value	dg-no value	(no TRV)	dg-no value	dg-no value
Polychlorinated Biphenyls (PCBs)									
PCB-8	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-18	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-28	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-44	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-52	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-66	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-77 (non-ortho coplaner)	0.0421	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0427	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0324	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-101	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-105	21.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	21.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	16.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-114	21.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	21.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	16.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-118	211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-123	211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-126 (non-ortho coplaner)	0.0211	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.85	0.0214	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.82	0.0162	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=2.41
PCB-128	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-138	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-153	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-156	21.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	21.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	16.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-157	21.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	21.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	16.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-167	211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-169 (non-ortho coplaner)	2.11	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2.14	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.62	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-170	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-180	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-187	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-189	211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-195	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-206	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-209	2105	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	2137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1621	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
tPCB TEQ - fish and birds:									
tPCB NOAA-16	1.263	OK-all detect	OK-all detect	1.282	OK-all detect	OK-all detect	0.973	OK-all detect	OK-all detect
Dioxins/Furans (PCDDs/PCDFs)									
2,3,7,8-TCDD	0.00211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8-PeCDD	0.00211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,7,8-HxCDD	0.0421	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0427	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0324	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,6,7,8-HxCDD	0.211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8,9-HxCDD	0.0211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,6,7,8-HpCDD	2.11	OK-all detect	OK-all detect	2.14	OK-all detect	OK-all detect	1.62	OK-all detect	OK-all detect
OCDD	21.05	OK-all detect	OK: max.nd/crit.conc.<1	21.4	OK-all detect	OK: max.nd/crit.conc.<1	16.2	OK-all detect	OK: max.nd/crit.conc.<1
2,3,7,8-TCDF	0.00211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8-PeCDF	0.0211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,3,4,7,8-PeCDF	0.00211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,7,8-HxCDF	0.0211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,6,7,8-HxCDF	0.0211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,3,4,6,7,8-HxCDF	0.0211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8,9-HxCDF	0.0211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,6,7,8-HpCDF	0.211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,7,8,9-HpCDF	0.211	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.214	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.162	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
OCDF	21.1	OK-all detect	OK: max.nd/crit.conc.<1	21.4	OK-all detect	OK: max.nd/crit.conc.<1	16.2	OK-all detect	OK: max.nd/crit.conc.<1
Organophosphorus Pesticides									
Azinphos-methyl	1.123	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.140	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.865	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Chlorpyrifos	0.789	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.801	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.607	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Demeton-O	0.250	dg-no value	OK: max.nd/crit.conc.<1	0.254	dg-no value	OK: max.nd/crit.conc.<1	0.192	dg-no value	OK: max.nd/crit.conc.<1
Demeton-S	0.250	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.254	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.192	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Diazinon	0.281	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.285	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.216	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Ethion	6.32	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.41	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	4.86	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Ethoprop	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Ethyl parathion	0.187	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.190	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.144	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Malathion	56.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	57.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	43.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Methyl parathion	1.053	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.069	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.811	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Chlorinated Herbicides									
2,4,5-T	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,4-D	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dalapon	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dicamba	19.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	20.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	15.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
MCPP	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,4,5-TP (Silvex)	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1								
	NOAEL TRV ingest. conc. in matrix for coot HQ=1	Hawaiian coot - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for duck HQ=1	Hawaiian duck - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for moorhen HQ=1	Hawaiian moorhen - max. nd for consuming matrix of:	
COPCs by chemical group	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna
Triazine Pesticides									
Ametryn	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Anilazine	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Atrazine	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Pronamide	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Propiconazole	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Simazine	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Terbacil	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Hexazinone	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Carbamate/Urea Pesticides									
Benomyl	(no TRV)	OK-all detect	dg-not measured	(no TRV)	OK-all detect	dg-not measured	(no TRV)	OK-all detect	dg-not measured
Carbaryl	7.89	OK: max.nd/crit.conc.<1	dg-not measured	8.01	OK: max.nd/crit.conc.<1	dg-not measured	6.07	OK: max.nd/crit.conc.<1	dg-not measured
Carbofuran	0.0592	unc: max.nd/crit.conc.=1.86	dg-not measured	0.0601	unc: max.nd/crit.conc.=1.83	dg-not measured	0.0456	unc: max.nd/crit.conc.=2.41	dg-not measured
Diuron	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
Methomyl	1.403	OK: max.nd/crit.conc.<1	dg-not measured	1.425	OK: max.nd/crit.conc.<1	dg-not measured	1.081	OK: max.nd/crit.conc.<1	dg-not measured
Oxamyl	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-no TRV	dg-not measured
Ordnance Compounds									
1,3-Dinitrobenzene	5.92	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.01	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	4.56	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,4-Dinitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,6-Dinitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
HMX	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Nitrobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Nitroglycerin	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2-Nitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
3-Nitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
4-Nitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Picric Acid	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
RDX	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Tetryl	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,3,5-Trinitrobenzene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,4,6-Trinitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1											
	NOAEL TRV ingest. conc. in matrix for heron HQ=1	black-crowned night heron - max. nd for consuming matrix of:					NOAEL TRV ingest. conc. in matrix for tattler HQ=1	wandering tattler - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for tern HQ=1	sooty tern - max. nd for consuming matrix of:	
COPCs by chemical group	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	100% epibenthic crab	100% tilapia	100% bandtail goatfish	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% tilapia	100% bandtail goatfish
Count Summary for COPCs:												
Total COPCs:		**245**	**245**	**245**	**245**	**245**		**245**	**245**		**245**	**245**
Acceptable Maximum nd:		**150**	**134**	**138**	**134**	**134**		**147**	**128**		**129**	**131**
all detected values		22	20	20	25	24		22	20		25	24
max.nd/crit.conc.<1		128	114	118	109	110		125	108		104	107
Uncertain Maximum nd:		**1**	**3**	**0**	**2**	**0**		**4**	**9**		**7**	**3**
max.nd/crit.conc. ≥1		1	3	0	2	0		4	9		7	3
Data Gaps for Maximum nd:		**94**	**108**	**107**	**109**	**111**		**94**	**108**		**109**	**111**
dg-no TRV		90	77	75	76	78		90	77		76	78
dg-no value		4	2	3	4	4		4	2		4	4
dg-not measured		0	29	29	29	29		0	29		29	29
Metals												
Aluminum	1805	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect	847	OK-all detect	OK-all detect	1031	OK-all detect	OK-all detect
Antimony	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Arsenic	40.5	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1	19.0	OK-all detect	OK-all detect	23.1	OK-all detect	OK: max.nd/crit.conc.<1
Cadmium	1.283	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	OK-all detect	OK-all detect	0.602	unc: max.nd/crit.conc.=1.49	OK-all detect	0.733	OK-all detect	OK-all detect
Chromium	16.45	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect	7.72	OK-all detect	OK-all detect	9.40	OK-all detect	OK-all detect
Cobalt	(no TRV)	OK-all detect	OK-all detect	OK-all detect	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	dg-no TRV
Copper	18.6	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect	8.73	OK-all detect	OK-all detect	10.6	OK-all detect	OK-all detect
Iron	(no TRV)	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	OK-all detect
Lead	0.230	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	0.108	OK-all detect	OK-all detect	0.132	OK-all detect	unc: max.nd/crit.conc.=1.48
Manganese	1277	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect	599	OK-all detect	OK-all detect	729	OK-all detect	OK-all detect
Mercury	0.642	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK-all detect	0.301	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.366	OK: max.nd/crit.conc.<1	OK-all detect
Molybdenum	57.6	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	OK-all detect	OK-all detect	27.0	OK: max.nd/crit.conc.<1	OK-all detect	32.9	OK-all detect	OK-all detect
Nickel	22.7	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1	10.7	OK-all detect	OK-all detect	13.0	OK-all detect	OK: max.nd/crit.conc.<1
Selenium	3.78	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	OK-all detect	OK-all detect	1.78	OK: max.nd/crit.conc.<1	OK-all detect	2.16	OK-all detect	OK-all detect
Silicon	(no TRV)	OK-all detect	OK-all detect	OK-all detect	OK-all detect	dg-no TRV	(no TRV)	OK-all detect	OK-all detect	(no TRV)	OK-all detect	dg-no TRV
Silver	42.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	20.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	24.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Tin	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	OK-all detect	OK-all detect	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	OK-all detect
Zinc	239	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect	112	OK-all detect	OK-all detect	136	OK-all detect	OK-all detect
Butyltins												
Monobutyltin	*12.01*	dg-no value	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	dg-no value	dg-no value	*5.64*	dg-no value	OK: max.nd/crit.conc.<1	*6.86*	dg-no value	dg-no value
Dibutyltin	12.01	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.64	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.86	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Tributyltin	12.01	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.64	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.86	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Tetrabutyltin	*12.01*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*5.64*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*6.86*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PAHs												
2-ring PAHs												
Naphthalene	47.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	22.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	26.9	OK: max.nd/crit.conc.<1	OK-all detect
Naphthalenes,C1-	*47.0*	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	*22.1*	OK: max.nd/crit.conc.<1	OK-all detect	*26.9*	OK-all detect	OK: max.nd/crit.conc.<1
Naphthalenes,C2-	*47.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*22.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*26.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Naphthalenes,C3-	*47.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*22.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*26.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Naphthalenes,C4-	*47.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*22.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*26.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1-Methylnapthalene	*47.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*22.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*26.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2-Methylnaphthalene	47.0	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	22.1	OK: max.nd/crit.conc.<1	OK-all detect	26.9	OK-all detect	OK-all detect
2,6-Dimethylnapthalene	*47.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*22.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*26.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,6,7-Trimethylnaphthalene	*47.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*22.1*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*26.9*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Biphenyl	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
3-ring PAHs												
Acenaphthene	16.62	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.80	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	9.49	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Acenaphthylene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Anthracene	18.3	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	8.57	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrene	18.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	8.72	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.6	OK: max.nd/crit.conc.<1	OK-all detect
1-Methylphenanthrene	*18.3*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*8.57*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.4*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C1-	*18.3*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*8.57*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.4*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C2-	*18.3*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*8.57*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.4*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C3-	*18.3*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*8.57*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.4*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Phenanthrenes+Anthracenes,C4-	*18.3*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*8.57*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*10.4*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorene	16.62	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.80	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	9.49	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorenes,C1-	*16.62*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.80*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*9.49*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorenes,C2-	*16.62*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.80*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*9.49*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Fluorenes,C3-	*16.62*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*7.80*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*9.49*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Dibenzothiophene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenzothiophenes,C1-	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenzothiophenes,C2-	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenzothiophenes,C3-	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
4-ring PAHs												
Benz(a)anthracene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chrysene	(no TRV)	OK-all detect	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chrysenes,C1	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chrysenes,C2-	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chrysenes,C3-	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chrysenes,C4-	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Fluoranthene	(no TRV)	OK-all detect	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Pyrene	(no TRV)	OK-all detect	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Fluoranthenes+Pyrenes,C1-	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Fluoranthenes+Pyrenes,C2-	(no TRV)	dg-no TRV	dg-no TRV	dg-no value	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Fluoranthenes+Pyrenes,C3-	(no TRV)	OK-all detect	dg-no TRV	dg-no value	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1											
	NOAEL TRV ingest. conc. in matrix for heron HQ=1	black-crowned night heron - max. nd for consuming matrix of:					NOAEL TRV ingest. conc. in matrix for tattler HQ=1	wandering tattler - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for tern HQ=1	sooty tern - max. nd for consuming matrix of:	
COPCs by chemical group	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	100% epibenthic crab	100% tilapia	100% bandtail goatfish	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% tilapia	100% bandtail goatfish
5-ring PAHs												
Benzo(a)pyrene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Benzo(e)pyrene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Benzo(b)fluoranthene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Benzo(k)fluoranthene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenz(a,h)anthracene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Perylene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
6-ring PAHs												
Benzo(g,h,i)perylene	(no TRV)	OK-all detect	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	OK-all detect	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Indeno(1,2,3-cd)pyrene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
non-PAH Semivolatiles												
Aniline	92.5	dg-no value	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	43.4	dg-no value	OK: max.nd/crit.conc.<1	52.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Benzoic Acid	16.45	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured	7.72	OK: max.nd/crit.conc.<1	dg-not measured	9.40	dg-not measured	dg-not measured
Benzyl Alcohol	16.45	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.72	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	9.40	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
bis(2-Chloroethoxy)methane	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
bis(2-Chloroethyl)Ether	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
bis(Chloromethyl)Ether	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
4-Bromophenyl-phenylether	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Carbazole	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
4-Chloroaniline	16.45	OK: max.nd/crit.conc.<1	dg-no value	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.72	OK: max.nd/crit.conc.<1	dg-no value	9.40	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2-Chloronaphthalene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2-Chlorophenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
4-Chlorophenol	18.6	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured	8.72	OK: max.nd/crit.conc.<1	dg-not measured	10.6	dg-not measured	dg-not measured
4-Chlorophenyl-phenylether	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dibenzofuran	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,2-Dichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,3-Dichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,4-Dichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
3,3'-Dichlorobenzidine	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Hexachlorobutadiene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Hexachlorocyclopentadiene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Hexachloroethane	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Isophorone	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2-Nitroaniline	123.4	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	57.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	70.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
3-Nitroaniline	21.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.3	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	12.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
4-Nitroaniline	12.34	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.79	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.05	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2-Nitrophenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
4-Nitrophenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
N-Nitrosodi-n-propylamine	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
N-Nitrosodibutylamine	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
N-Nitrosodiethylamine	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
N-Nitrosodimethylamine	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
N-nitrosodiphenylamine	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
N-Nitrosomethylethylamine	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
N-Nitrosopyrrolidine	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Octachlorostyrene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,2'oxybis(1-Chloropropane)	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Pentachlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Pentachlorophenol	62.5	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured	29.3	OK: max.nd/crit.conc.<1	dg-not measured	35.7	dg-not measured	dg-not measured
Phenol	18.6	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured	8.72	OK: max.nd/crit.conc.<1	dg-not measured	10.6	dg-not measured	dg-not measured
2,3,5,6-Tetrachlorophenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
2,4,5-Trichlorophenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
2,4,6-Trichlorophenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
2,4-Dichlorophenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
2,4-Dimethylphenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
2,4-Dinitrophenol	2.19	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured	1.03	unc: max.nd/crit.conc.=1.51	dg-not measured	1.25	dg-not measured	dg-not measured
2-Methylphenol	*15.8*	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured	*7.41*	OK: max.nd/crit.conc.<1	dg-not measured	*9.02*	dg-not measured	dg-not measured
4,6-Dinitro-2-methylphenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
4-Chloro-3-Methylphenol	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
4-Methylphenol	15.79	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured	7.41	OK: max.nd/crit.conc.<1	dg-not measured	9.02	dg-not measured	dg-not measured
Butylbenzylphthalate	*1.83*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.857*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.04*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
bis(2-Ethylhexyl) phthalate	18.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	8.49	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.3	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Di-n-butylphthalate	1.83	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.857	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.04	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Di-n-octylphthalate	*1.83*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.857*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.04*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Diethylphthalate	*1.83*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.857*	unc: max.nd/crit.conc.=1.46	OK: max.nd/crit.conc.<1	*1.04*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Dimethylphthalate	16.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	7.72	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	9.40	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,4,5-Tetrachlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,2,3-Trichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,2,4-Trichlorobenzene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Chlorinated Pesticides												
DDT series												
2,4'-DDD	0.0461	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.52	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.74	OK: max.nd/crit.conc.<1	0.0216	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=3.24	0.0263	unc: max.nd/crit.conc.=3.04	unc: max.nd/crit.conc.=1.43
4,4'-DDD	0.0461	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	0.0216	OK: max.nd/crit.conc.<1	OK-all detect	0.0263	OK: max.nd/crit.conc.<1	OK-all detect
2,4'-DDE	0.0461	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0216	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.78	0.0263	unc: max.nd/crit.conc.=1.65	OK: max.nd/crit.conc.<1
4,4'-DDE	0.0461	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=5.21	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	0.0216	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=11.1	0.0263	OK-all detect	OK-all detect
2,4'-DDT	0.0461	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0216	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.18	0.0263	unc: max.nd/crit.conc.=1.1	OK: max.nd/crit.conc.<1
4,4'-DDT	0.0461	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	0.0216	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.06	0.0263	OK-all detect	OK: max.nd/crit.conc.<1
chlordane series												
alpha-Chlordane	0.366	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	0.172	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.209	OK-all detect	OK-all detect
gamma-Chlordane	0.366	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.172	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.209	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
cis-Nonachlor	*0.366*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.172*	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.17	*0.209*	unc: max.nd/crit.conc.=1.08	OK: max.nd/crit.conc.<1
trans-Nonachlor	*0.366*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.172*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.209*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Heptachlor	1.069	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.502	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.611	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Heptachlor epoxide	*1.069*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.502*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*0.611*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Oxychlordane	0.0347	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0163	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.66	0.0198	unc: max.nd/crit.conc.=1.54	OK: max.nd/crit.conc.<1
Aldrin	0.555	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.260	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.317	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
alpha-BHC	9.26	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	4.35	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.29	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
beta-BHC	9.26	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	4.35	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.29	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
delta-BHC	9.26	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	4.35	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.29	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
gamma-BHC(Lindane)	9.26	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	4.35	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.29	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1											
	NOAEL TRV ingest. conc. in matrix for heron HQ=1	black-crowned night heron - max. nd for consuming matrix of:					NOAEL TRV ingest. conc. in matrix for tattler HQ=1	wandering tattler - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for tern HQ=1	sooty tern - max. nd for consuming matrix of:	
COPCs by chemical group	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	100% epibenthic crab	100% tilapia	100% bandtail goatfish	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% tilapia	100% bandtail goatfish
Dieldrin	1.267	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.594	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.724	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endosulfan I	164.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	77.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	94.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endosulfan II	164.5	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	77.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	94.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endosulfan sulfate	*164.5*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*77.2*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*94.0*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endrin	2.79	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.31	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.60	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endrin Aldehyde	*2.79*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.31*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.60*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Endrine ketone	*2.79*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.31*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	*1.60*	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Hexachlorobenzene	11.09	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	5.21	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	6.34	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Methoxychlor	43.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	20.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	25.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Mirex	70.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	32.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	40.0	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Toxaphene	(no TRV)	dg-no value	dg-no value	dg-no value	dg-no value	dg-no value	(no TRV)	dg-no value	dg-no value	(no TRV)	dg-no value	dg-no value
Polychlorinated Biphenyls (PCBs)												
PCB-8	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-18	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-28	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-44	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-52	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-66	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-77 (non-ortho coplaner)	0.0494	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0232	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.21	0.0282	unc: max.nd/crit.conc.=1.14	OK: max.nd/crit.conc.<1
PCB-101	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-105	24.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	11.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-114	24.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	11.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.1	OK: max.nd/crit.conc.<1	OK-all detect
PCB-118	247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-123	247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-126 (non-ortho coplaner)	0.0247	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.58	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=1.8	OK: max.nd/crit.conc.<1	0.0116	OK: max.nd/crit.conc.<1	unc: max.nd/crit.conc.=3.37	0.0141	unc: max.nd/crit.conc.=3.16	unc: max.nd/crit.conc.=1.49
PCB-128	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-138	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-153	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	OK-all detect	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK-all detect	OK-all detect
PCB-156	24.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	11.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-157	24.7	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	11.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	14.1	OK-all detect	OK-all detect
PCB-167	247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-169 (non-ortho coplaner)	2.47	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.16	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.41	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-170	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-180	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK-all detect	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK-all detect	OK-all detect
PCB-187	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK-all detect
PCB-189	247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-195	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-206	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
PCB-209	2468	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1158	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1409	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
tPCB TEQ - fish and birds:												
tPCB NOAA-18	1.481	OK-all detect	OK-all detect	OK-all detect	OK-all detect	OK-all detect	0.695	OK-all detect	OK-all detect	0.846	OK-all detect	OK-all detect
Dioxins/Furans (PCDDs/PCDFs)												
2,3,7,8-TCDD	0.00247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8-PeCDD	0.00247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,7,8-HxCDD	0.0494	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0232	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0282	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,6,7,8-HxCDD	0.247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8,9-HxCDD	0.0247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,6,7,8-HpCDD	2.47	OK-all detect	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	1.16	OK-all detect	OK-all detect	1.41	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
OCDD	24.7	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	11.6	OK-all detect	OK: max.nd/crit.conc.<1	14.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,3,7,8-TCDF	0.00247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8-PeCDF	0.0247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,3,4,7,8-PeCDF	0.00247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.00141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,7,8-HxCDF	0.0247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,6,7,8-HxCDF	0.0247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,3,4,6,7,8-HxCDF	0.0247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,7,8,9-HxCDF	0.0247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.0141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,6,7,8-HpCDF	0.247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
1,2,3,4,7,8,9-HpCDF	0.247	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.116	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.141	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
OCDF	24.7	OK-all detect	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	11.6	OK-all detect	OK: max.nd/crit.conc.<1	14.1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Organophosphorus Pesticides												
Azinphos-methyl	1.316	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.618	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.752	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Chlorpyrifos	0.925	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.434	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.528	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Demeton-O	0.293	dg-no value	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	dg-no value	dg-no value	0.137	dg-no value	OK: max.nd/crit.conc.<1	0.167	dg-no value	dg-no value
Demeton-S	0.293	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	dg-no value	dg-no value	0.137	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.167	dg-no value	dg-no value
Diazinon	0.329	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.154	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.188	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Ethion	7.40	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	3.47	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	4.23	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Ethoprop	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Ethyl parathion	0.219	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.103	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.125	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Malathion	65.8	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	30.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	37.6	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Methyl parathion	1.234	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.579	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	0.705	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
Chlorinated Herbicides												
2,4,5-T	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,4-D	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dalapon	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Dicamba	23.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	10.9	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	13.2	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
MCPP	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,4,5-TP (Silvex)	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV

nd = nondetect value; dg = data gap; unc = uncertain for adequacy; crit.conc. = matrix conc. for lowest NOAEL or NOAEL-equivalent TRV

Table 6.3-1. Evaluation of Adequacy of Maximum Nondetect (nd) Measurements for COPCs for Bioaccumulation HQs in Steps 1 and 2 of the SRA

	adequacy of maximum nondetect (nd) value in environmental matrix for identified receptor for assessing HQ of 1											
	NOAEL TRV ingest. conc. in matrix for heron HQ=1	black-crowned night heron - max. nd for consuming matrix of:					NOAEL TRV ingest. conc. in matrix for tattler HQ=1	wandering tattler - max. nd for consuming matrix of:		NOAEL TRV ingest. conc. in matrix for tern HQ=1	sooty tern - max. nd for consuming matrix of:	
COPCs by chemical group	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	100% epibenthic crab	100% tilapia	100% bandtail goatfish	(mg/kg dw in ingest. matrix)	100% sediment (0-2 m)	100% macroinfauna	(mg/kg dw in ingest. matrix)	100% tilapia	100% bandtail goatfish
Triazine Pesticides												
Ametryn	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Anilazine	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Atrazine	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Pronamide	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Propiconazole	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Simazine	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Terbacil	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Hexazinone	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Carbamate/Urea Pesticides												
Benomyl	(no TRV)	OK-all detect	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	OK-all detect	dg-not measured	(no TRV)	dg-not measured	dg-not measured
Carbaryl	9.25	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured	4.34	OK: max.nd/crit.conc.<1	dg-not measured	5.28	dg-not measured	dg-not measured
Carbofuran	0.0694	unc: max.nd/crit.conc.=1.58	dg-not measured	dg-not measured	dg-not measured	dg-not measured	0.0326	unc: max.nd/crit.conc.=3.38	dg-not measured	0.0397	dg-not measured	dg-not measured
Diuron	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
Methomyl	1.645	OK: max.nd/crit.conc.<1	dg-not measured	dg-not measured	dg-not measured	dg-not measured	0.772	OK: max.nd/crit.conc.<1	dg-not measured	0.940	dg-not measured	dg-not measured
Oxamyl	(no TRV)	dg-no TRV	dg-not measured	dg-not measured	dg-not measured	dg-not measured	(no TRV)	dg-no TRV	dg-not measured	(no TRV)	dg-not measured	dg-not measured
Ordnance Compounds												
1,3-Dinitrobenzene	6.94	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	3.26	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1	3.97	OK: max.nd/crit.conc.<1	OK: max.nd/crit.conc.<1
2,4-Dinitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,6-Dinitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
HMX	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Nitrobenzene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Nitroglycerin	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2-Nitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
3-Nitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
4-Nitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Picric Acid	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
RDX	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
Tetryl	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
1,3,5-Trinitrobenzene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV
2,4,6-Trinitrotoluene	(no TRV)	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV	(no TRV)	dg-no TRV	dg-no TRV

Return to Table of Contents

Table 7.1-1. Concentration of Chemicals of Potential Concern (COPCs) in 219 Sediment Samples Compared to NOAA ER-L Sediment Quality Benchmarks. ER-L Ratio = detected COPC concentration in sediment/ER-L value.

NOAA ER-L Chemicals	CAS Number	Maximum Detect Sediment Conc. (units dry weight)	NOAA ER-L Conc. (units dry weight)	Max ER-L Ratio	COPC or ltb
Metals (mg/kg dry weight)					
Arsenic	7440-38-2	66.9	8.2	8.2	COPC
Cadmium	7440-43-9	5	1.2	4.2	COPC
Chromium	7440-47-3	391	81.0	4.8	COPC
Copper	7440-50-8	2020	34.0	59.4	COPC
Lead	7439-92-1	705	46.7	15.1	COPC
Mercury	7439-97-6	13.5	0.15	90.0	COPC
Nickel	7440-02-0	2000	20.9	95.7	COPC
Silver	7440-22-4	15.2	1.0	15.2	COPC
Zinc	7440-66-6	985	150.0	6.6	COPC
Polycyclic Aromatic Hydrocarbons (PAHs) (ug/kg dry weight)					
2-ring PAHs					
Naphthalene	91-20-3	85	160	0.5	ltb
2-Methylnaphthalene	91-57-6	110	70	1.6	COPC
3-ring PAHs					
Acenaphthene	83-32-9	1600	16	100.0	COPC
Acenaphthylene	208-96-8	82	44	1.9	COPC
Anthracene	120-12-7	6000	85.3	70.3	COPC
Phenanthrene	85-01-8	8500	240	35.4	COPC
Fluorene	86-73-7	340	19	17.9	COPC
tLMWPAH-Long95 (detect) [a]		14773	552	26.8	COPC
4-ring PAHs					
Benz(a)anthracene	56-55-3	20000	261	76.6	COPC
Chrysene	218-01-9	32000	384	83.3	COPC
Fluoranthene	206-44-0	26000	600	43.3	COPC
Pyrene	129-00-0	30000	665	45.1	COPC
5-ring PAHs					
Benzo(a)pyrene	50-32-8	47000	430	109.3	COPC
Dibenz(a,h)anthracene	53-70-3	15000	63.4	236.6	COPC
tHMWPAH-Long95 (detect) (a)		170000	1700	100.0	COPC
tPAH-Long95 (detect) (a)		184773	4022	45.9	COPC
Chlorinated Pesticides (ug/kg dry weight)					
DDT series					
4,4'-DDD [b]	72-54-8	140	2	70.0	COPC
4,4'-DDE	72-55-9	66	2.2	30.0	COPC
4,4'-DDT [b]	50-29-3	77	1	77.0	COPC
tDDT (detect) [a]		155	1.58	98.1	COPC
tChlordane (alpha + gamma) (detect)	5103-71-9 + 5103-74-2	114	0.5	228	COPC
Dieldrin	60-57-1	90	0.02	4500	COPC
Polychlorinated Biphenyls (PCBs) (ug/kg dry weight)					
tPCB NOAA-18 (detect) [a]		8448.0	22.7	372.2	COPC

(a) Total values are based on an arithmetic sum of detected values for the listed analytes.

PAHs:

tLMWPAHs -	All 2-3 ring low molecular weight PAHs
tHMWPAHs -	All 4-5-6 ring high molecular weight PAHs
tPAHs -	All LMWPAHs and HMWPAHs
tLMWPAHs-Long95 -	acenaphthene, acenaphthlylene, anthracene, fluorene, 2-methynaphthalene, naphthalene, phenanthrene
tHMWPAHs-Long95 -	benz(a)anthracene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluoranthene, pyrene
tPAHs-Long95 -	All LMWPAHs-Long95 and HMWPAHs-Long95

tDDT includes the sum of values for:

2,4'-DDD	4,4'-DDD
2,4'-DDE	4,4'-DDE
2,4'-DDT	4,4'-DDT

tPCB NOAA-18: Sum of the NOAA 18 congeners multiplied by 2 as described in Technical Appendix 2, Valoppi et al. 1998.

(b) Chemicals with ER-L benchmark values identified on NOAA SQUIRT reference tables (Buchman 1999), but not in Long et al. 1995.

ltb - lower than benchmark

12/14/1999

Return to Table of Contents

Table 7.2-1. Summary of Sediment Chemistry - Toxicity Correlation Relationship - Results for Amphipod Survival: Harborwide Data Set

							Amphipod - Spearman Correlation Analysis					
							Total=detect + 1/2 nondetect		Detect Values Only		COPC Designation	
Chemical/Physical Measurement	CAS Number	chemical units dry weight	number of samples	number of rejects	number of chemical non-detect	number of chemical detects	rho	P	rho	P	Total=detect + 1/2 non-detect	Detect Values Only
Metals (18)												
Aluminum	7429-90-5	mg/kg	219	0	0	219	0.259	0.00005330	0.259	0.00005330	nsc	nsc
Antimony	7440-36-0	mg/kg	219	0	11	208	0.276	0.00001770	0.288	0.00001210	nsc	nsc
Arsenic	7440-38-2	mg/kg	219	0	0	219	0.068	0.15900000	0.068	0.15900000	nsc	nsc
Cadmium	7440-43-9	mg/kg	219	22	82	115	0.049	0.24500000	0.394	0.00000675	nsc	nsc
Chromium	7440-47-3	mg/kg	219	0	0	219	0.284	0.00000977	0.284	0.00000977	nsc	nsc
Cobalt	7440-48-4	mg/kg	219	0	0	219	0.320	0.00000100	0.320	0.00000100	nsc	nsc
Copper	7440-50-8	mg/kg	219	0	0	219	-0.131	0.02700000	-0.131	0.02700000	COPC	COPC
Iron	7439-89-6	mg/kg	219	0	0	219	0.344	0.00000100	0.344	0.00000100	nsc	nsc
Lead	7439-92-1	mg/kg	219	0	0	219	-0.139	0.02000000	-0.139	0.02000000	COPC	COPC
Manganese	7439-96-5	mg/kg	219	0	0	219	0.323	0.00000100	0.323	0.00000100	nsc	nsc
Mercury	7439-97-6	mg/kg	219	0	23	196	-0.113	0.04800000	-0.171	0.00800000	COPC	COPC
Molybdenum	7439-98-7	mg/kg	219	0	111	108	-0.234	0.00024300	-0.300	0.00100000	COPC	COPC
Nickel	7440-02-0	mg/kg	219	0	0	219	0.281	0.00001250	0.281	0.00001250	nsc	nsc
Selenium	7782-49-2	mg/kg	219	1	78	140	0.332	0.00000100	0.228	0.00300000	nsc	nsc
Silicon	7440-21-3	mg/kg	219	0	0	219	0.102	0.06700000	0.102	0.06700000	nsc	nsc
Silver	7440-22-4	mg/kg	219	0	87	132	-0.049	0.23700000	0.057	0.25600000	nsc	nsc
Tin	7440-31-5	mg/kg	219	0	42	177	-0.011	0.43800000	-0.070	0.17800000	nsc	nsc
Zinc	7440-66-6	mg/kg	219	0	0	219	-0.032	0.31900000	-0.032	0.31900000	nsc	nsc
Butyltins (4)												
Monobutyltin	1118-46-3	ug/kg	219	219	0	0	nca		nca		nca	nca
Dibutyltin	683-18-1	ug/kg	219	0	169	50	-0.070	0.15100000	-0.310	0.01400000	nsc	COPC
Tributyltin	688-73-3	ug/kg	219	0	179	40	-0.056	0.20300000	-0.370	0.00900000	nsc	COPC
Tetrabutyltin	1461-25-2	ug/kg	219	0	219	0	nca		nca		nca	nca
Polycyclic Aromatic Hydrocarbons (PAHs) (46)												
2-ring PAHs												
Naphthalene	91-20-3	ug/kg	219	0	144	75	-0.183	0.00300000	-0.019	0.43700000	COPC	nsc
Naphthalenes,C1-	NAPHTHALC1	ug/kg	219	0	165	54	-0.251	0.00008540	-0.252	0.03300000	COPC	COPC
Naphthalenes,C2-	NAPHTHALC2	ug/kg	219	0	148	71	-0.195	0.00200000	-0.177	0.07000000	COPC	nsc
Naphthalenes,C3-	NAPHTHALC3	ug/kg	219	0	140	79	-0.222	0.00047100	-0.273	0.00700000	COPC	COPC
Naphthalenes,C4-	NAPHTHALC4	ug/kg	219	0	156	63	-0.225	0.00039000	-0.403	0.00100000	COPC	COPC
1-Methylnapthalene	90-12-0	ug/kg	219	0	189	30	-0.166	0.00700000	-0.430	0.00900000	COPC	COPC
2-Methylnaphthalene	91-57-6	ug/kg	219	0	172	47	-0.220	0.00100000	-0.214	0.07400000	COPC	nsc
2,6-Dimethylnapthalene	581-42-0	ug/kg	219	0	181	38	-0.166	0.00700000	-0.249	0.06600000	COPC	nsc
1,6,7-Trimethylnaphthalene	2245-38-7	ug/kg	219	0	176	43	-0.186	0.00300000	-0.360	0.00900000	COPC	COPC
Biphenyl	92-52-4	ug/kg	219	0	200	19	-0.118	0.04100000	-0.099	0.34300000	COPC	nsc
3-ring PAHs												
Acenaphthene	83-32-9	ug/kg	219	0	127	92	-0.152	0.01200000	-0.243	0.01000000	COPC	COPC
Acenaphthylene	208-96-8	ug/kg	219	0	182	37	-0.130	0.02700000	-0.219	0.09700000	COPC	nsc
Anthracene	120-12-7	ug/kg	219	0	34	185	-0.167	0.00700000	-0.210	0.00200000	COPC	COPC
Phenanthrene	85-01-8	ug/kg	219	0	4	215	-0.177	0.00400000	-0.210	0.00100000	COPC	COPC
1-Methylphenanthrene	832-69-9	ug/kg	219	0	71	148	-0.146	0.01500000	-0.186	0.01200000	COPC	COPC
Phenanthrenes+Anthracenes,C1-	PHENANTHC1	ug/kg	219	0	17	202	-0.222	0.00045900	-0.241	0.00027100	COPC	COPC
Phenanthrenes+Anthracenes,C2-	PHENANTHC2	ug/kg	219	0	31	188	-0.228	0.00033700	-0.239	0.00048800	COPC	COPC
Phenanthrenes+Anthracenes,C3-	PHENANTHC3	ug/kg	219	0	53	166	-0.220	0.00100000	-0.208	0.00400000	COPC	COPC
Phenanthrenes+Anthracenes,C4-	PHENANTHC4	ug/kg	219	0	87	132	-0.216	0.00100000	-0.395	0.00000141	COPC	COPC
Fluorene	86-73-7	ug/kg	219	0	114	105	-0.130	0.02700000	-0.249	0.00500000	COPC	COPC
Fluorenes,C1-	FLUORENESC1	ug/kg	219	0	155	64	-0.151	0.01300000	-0.334	0.00300000	COPC	COPC
Fluorenes,C2-	FLUORENESC2	ug/kg	219	0	159	60	-0.155	0.01100000	-0.399	0.00100000	COPC	COPC
Fluorenes,C3-	FLUORENESC3	ug/kg	219	0	167	52	-0.138	0.02100000	-0.421	0.00100000	COPC	COPC
Dibenzothiophene	132-65-0	ug/kg	219	0	181	38	-0.131	0.02600000	-0.113	0.24900000	COPC	nsc
Dibenzothiophenes,C1-	DIBENZC1ALK	ug/kg	219	0	130	89	-0.141	0.01900000	-0.128	0.11700000	COPC	nsc
Dibenzothiophenes,C2-	DIBENZC2ALK	ug/kg	219	0	108	111	-0.156	0.01000000	-0.268	0.00200000	COPC	COPC
Dibenzothiophenes,C3-	DIBENZC3ALK	ug/kg	219	0	110	109	-0.171	0.00600000	-0.314	0.00044200	COPC	COPC
tLMWPAHs (2-3 ring) (detect)		ug/kg	219	na	na	na	-0.199	0.00200000	-0.250	0.00009360	COPC	COPC
tLMWPAH-Long95 (detect)		ug/kg	219	na	na	na	-0.161	0.00900000	-0.188	0.00300000	COPC	COPC
4-ring PAHs												
Benz(a)anthracene	56-55-3	ug/kg	219	0	3	216	-0.198	0.00200000	-0.220	0.00100000	COPC	COPC
Chrysene	218-01-9	ug/kg	219	0	0	219	-0.197	0.00200000	-0.197	0.00200000	COPC	COPC
Chrysenes,C1	CHRYSC1ALK	ug/kg	219	0	5	214	-0.263	0.00004000	-0.289	0.00000884	COPC	COPC
Chrysenes,C2-	CHRYSC2ALK	ug/kg	219	0	17	202	-0.309	0.00000158	-0.315	0.00000245	COPC	COPC
Chrysenes,C3-	CHRYSC3ALK	ug/kg	219	0	47	172	-0.318	0.00000100	-0.284	0.00008050	COPC	COPC
Chrysenes,C4-	CHRYSC4ALK	ug/kg	219	0	61	158	-0.276	0.00001690	-0.274	0.00024900	COPC	COPC
Fluoranthene	206-44-0	ug/kg	219	0	0	219	-0.181	0.00400000	-0.181	0.00400000	COPC	COPC
Pyrene	129-00-0	ug/kg	219	0	0	219	-0.205	0.00100000	-0.205	0.00100000	COPC	COPC
Fluoranthenes+Pyrenes,C1-	FLUORANTHC1	ug/kg	219	0	4	215	-0.236	0.00021400	-0.256	0.00007180	COPC	COPC
Fluoranthenes+Pyrenes,C2-	FLUORANTHC2	ug/kg	219	0	17	202	-0.296	0.00000418	-0.279	0.00002870	COPC	COPC
Fluoranthenes+Pyrenes,C3-	FLUORANTHC3	ug/kg	219	0	0	219	-0.297	0.00000395	-0.297	0.00000395	COPC	COPC
5-ring PAHs												
Benzo(a)pyrene	50-32-8	ug/kg	219	0	1	218	-0.242	0.00015300	-0.256	0.00006810	COPC	COPC
Benzo(e)pyrene	192-97-2	ug/kg	219	0	2	217	-0.232	0.00026200	-0.256	0.00006950	COPC	COPC
Benzo(b)fluoranthene	205-99-2	ug/kg	219	0	1	218	-0.215	0.00100000	-0.228	0.00034400	COPC	COPC
Benzo(k)fluoranthene	207-08-9	ug/kg	219	50	1	168	-0.268	0.00021600	-0.286	0.00008520	COPC	COPC
Dibenz(a,h)anthracene	53-70-3	ug/kg	219	0	15	204	-0.244	0.00013000	-0.260	0.00008500	COPC	COPC
Perylene	198-55-0	ug/kg	219	0	7	212	-0.243	0.00014500	-0.260	0.00006310	COPC	COPC
6-ring PAHs												
Benzo(g,h,i)perylene	191-24-2	ug/kg	219	1	0	218	-0.244	0.00013900	-0.244	0.00013900	COPC	COPC
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	219	0	2	217	-0.242	0.00015400	-0.253	0.00008310	COPC	COPC
tHMWPAHs (4-6 ring) (detect)		ug/kg	219	na	na	na	-0.257	0.00006180	-0.259	0.00005220	COPC	COPC
tHMWPAH-Long95 (detect)		ug/kg	219	na	na	na	-0.215	0.00100000	-0.216	0.00100000	COPC	COPC
tPAHs (2-6 ring) (detect)		ug/kg	219	na	na	na	-0.249	0.00010000	-0.263	0.000040	COPC	COPC
tPAH-Long95 (detect)			219	na	na	na	-0.206	0.00100000	-0.213	0.00100000	COPC	COPC

Table 7.2-1. Summary of Sediment Chemistry - Toxicity Correlation Relationship - Results for Amphipod Survival: Harborwide Data Set

							Amphipod - Spearman Correlation Analysis					
							Total=detect + 1/2 nondetect		Detect Values Only		COPC Designation	
Chemical/Physical Measurement	CAS Number	chemical units dry weight	number of samples	number of rejects	number of chemical non-detect	number of chemical detects	rho	P	rho	P	Total=detect + 1/2 non-detect	Detect Values Only
non-PAH Semivolatiles (58)												
Aniline	62-53-3	ug/kg	105	92	13	0	nca		nca		nca	nca
Benzoic Acid	65-85-0	ug/kg	219	0	106	113	0.010	0.44200000	0.134	0.07800000	nsc	nsc
Benzyl Alcohol	100-51-6	ug/kg	105	0	105	0	nca		nca		nca	nca
bis(2-Chloroethoxy)methane	111-91-1	ug/kg	105	0	105	0	nca		nca		nca	nca
bis(2-Chloroethyl)Ether	111-44-4	ug/kg	105	0	105	0	nca		nca		nca	nca
bis(Chloromethyl)Ether	542-88-1	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Bromophenyl-phenylether	101-55-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Carbazole	86-74-8	ug/kg	219	0	147	72	-0.138	0.02100000	-0.242	0.02000000	COPC	COPC
4-Chloroaniline	106-47-8	ug/kg	105	55	50	0	nca		nca		nca	nca
2-Chloronaphthalene	91-58-7	ug/kg	105	0	105	0	nca		nca		nca	nca
2-Chlorophenol	95-57-8	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Chlorophenol	106-48-9	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Dibenzofuran	132-64-9	ug/kg	105	0	103	2	nca		nca		nca	nca
1,2-Dichlorobenzene	95-50-1	ug/kg	105	0	105	0	nca		nca		nca	nca
1,3-Dichlorobenzene	541-73-1	ug/kg	105	0	105	0	nca		nca		nca	nca
1,4-Dichlorobenzene	106-46-7	ug/kg	105	0	105	0	nca		nca		nca	nca
3,3'-Dichlorobenzidine	91-94-1	ug/kg	105	0	105	0	nca		nca		nca	nca
Hexachlorobutadiene	87-68-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Hexachlorocyclopentadiene	77-47-4	ug/kg	105	0	105	0	nca		nca		nca	nca
Hexachloroethane	67-72-1	ug/kg	105	0	105	0	nca		nca		nca	nca
Isophorone	78-59-1	ug/kg	105	0	105	0	nca		nca		nca	nca
2-Nitroaniline	88-74-4	ug/kg	105	0	105	0	nca		nca		nca	nca
3-Nitroaniline	99-09-2	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Nitroaniline	100-01-6	ug/kg	105	0	105	0	nca		nca		nca	nca
2-Nitrophenol	88-75-5	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Nitrophenol	100-02-7	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosodi-n-propylamine	621-64-7	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosodibutylamine	924-16-3	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosodiethylamine	55-18-5	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosodimethylamine	62-75-9	ug/kg	105	0	105	0	nca		nca		nca	nca
N-nitrosodiphenylamine	86-30-6	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosomethylethylamine	10595-95-6	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosopyrrolidine	930-55-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Octachlorostyrene	29082-74-4	ug/kg	105	0	105	0	nca		nca		nca	nca
2,2'oxybis(1-Chloropropane)	108-60-1	ug/kg	105	0	105	0	nca		nca		nca	nca
Pentachlorobenzene	608-93-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Pentachlorophenol	87-86-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Phenol	108-95-2	ug/kg	105	0	96	9	-0.337	0.00022000	-0.063	0.43600000	COPC	nsc
2,3,5,6-Tetrachlorophenol	935-95-5	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4,5-Trichlorophenol	95-95-4	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4,6-Trichlorophenol	88-06-2	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4-Dichlorophenol	120-83-2	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4-Dimethylphenol	105-67-9	ug/kg	105	17	88	0	nca		nca		nca	nca
2,4-Dinitrophenol	51-28-5	ug/kg	105	0	105	0	nca		nca		nca	nca
2-Methylphenol	95-48-7	ug/kg	105	0	105	0	nca		nca		nca	nca
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Chloro-3-Methylphenol	59-50-7	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Methylphenol	106-44-5	ug/kg	219	0	117	102	-0.019	0.39300000	0.054	0.29500000	nsc	nsc
Butylbenzylphthalate	85-68-7	ug/kg	105	0	99	6	-0.277	0.00200000	0.086	0.43600000	COPC	nsc
bis(2-Ethylhexyl) phthalate	117-81-7	ug/kg	219	0	131	88	-0.149	0.01400000	-0.265	0.00600000	COPC	COPC
Di-n-butylphthalate	84-74-2	ug/kg	219	0	187	32	-0.063	0.17800000	-0.113	0.26900000	nsc	nsc
Di-n-octylphthalate	117-84-0	ug/kg	105	0	101	4	-0.291	0.00100000	0.400	0.30000000	COPC	nsc
Diethylphthalate	84-66-2	ug/kg	219	0	169	50	-0.090	0.09200000	0.056	0.34900000	nsc	nsc
Dimethylphthalate	131-11-3	ug/kg	105	0	104	1	nca		nca		nca	nca
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/kg	105	0	105	0	nca		nca		nca	nca
1,2,3-Trichlorobenzene	87-61-6	ug/kg	105	0	105	0	nca		nca		nca	nca
1,2,4-Trichlorobenzene	120-82-1	ug/kg	105	0	105	0	nca		nca		nca	nca
Chlorinated Pesticides (29)												
DDT series												
2,4'-DDD	53-19-0	ug/kg	219	0	136	83	-0.125	0.03200000	-0.482	0.00000200	COPC	COPC
4,4'-DDD	72-54-8	ug/kg	219	0	125	94	0.034	0.30600000	0.119	0.12700000	nsc	nsc
2,4'-DDE	3424-82-6	ug/kg	219	0	158	61	0.006	0.46200000	-0.142	0.13800000	nsc	nsc
4,4'-DDE	72-55-9	ug/kg	219	0	31	188	0.010	0.44200000	-0.009	0.45100000	nsc	nsc
2,4'-DDT	789-02-6	ug/kg	219	0	203	16	-0.056	0.20400000	0.411	0.05700000	nsc	nsc
4,4'-DDT	50-29-3	ug/kg	219	0	138	81	0.017	0.40400000	0.083	0.23100000	nsc	nsc
tDDT (detect)		ug/kg	219	(a)	(a)	(a)	-0.057	0.20200000	-0.051	0.22500000	nsc	nsc
chlordane series												
alpha-Chlordane	5103-71-9	ug/kg	219	0	129	90	-0.118	0.04100000	0.075	0.24000000	COPC	nsc
gamma-Chlordane	5103-74-2	ug/kg	219	0	115	104	0.063	0.17800000	-0.014	0.44600000	nsc	nsc
cis-Nonachlor	5103-73-1	ug/kg	219	0	191	28	-0.087	0.09900000	0.128	0.25800000	nsc	nsc
trans-Nonachlor	39765-80-5	ug/kg	219	0	149	70	-0.055	0.20800000	0.244	0.02100000	nsc	nsc
Heptachlor	76-44-8	ug/kg	219	0	212	7	-0.073	0.14100000	-0.126	0.39400000	nsc	nsc
Heptachlor epoxide	1024-57-3	ug/kg	219	0	213	6	-0.083	0.11000000	-0.638	0.08700000	nsc	nsc
Oxychlordane	27304-13-8	ug/kg	219	0	209	10	-0.048	0.23900000	0.091	0.40100000	nsc	nsc
tChlordane (detect)		ug/kg	219	mna	mna	(a)	-0.099	0.07200000	0.084	0.10800000	nsc	nsc
Aldrin	309-00-2	ug/kg	219	0	204	15	-0.083	0.11200000	0.194	0.24400000	nsc	nsc
alpha-BHC	319-84-6	ug/kg	219	0	165	54	-0.139	0.02000000	-0.089	0.26100000	COPC	nsc
beta-BHC	319-85-7	ug/kg	219	0	212	7	-0.066	0.16600000	0.000	0.50000000	nsc	nsc
delta-BHC	319-86-8	ug/kg	219	0	188	31	-0.072	0.14500000	-0.366	0.02200000	nsc	COPC
gamma-BHC(Lindane)	58-89-9	ug/kg	219	0	182	37	-0.100	0.07100000	0.456	0.00200000	nsc	nsc
Dieldrin	60-57-1	ug/kg	219	0	96	123	-0.192	0.00200000	-0.211	0.01000000	COPC	COPC
Endosulfan I	959-98-8	ug/kg	219	0	142	77	-0.204	0.00100000	-0.347	0.00100000	COPC	COPC
Endosulfan II	33213-65-9	ug/kg	219	0	203	16	-0.078	0.12400000	0.729	0.00100000	nsc	nsc
Endosulfan sulfate	1031-07-8	ug/kg	219	0	215	4	-0.082	0.11400000	0.800	0.10000000	nsc	nsc
Endrin	72-20-8	ug/kg	219	0	212	7	-0.059	0.19200000	-0.286	0.26700000	nsc	nsc
Endrin aldehyde	7421-93-4	ug/kg	219	0	196	23	-0.086	0.10300000	-0.471	0.01200000	nsc	COPC
Endrine ketone	53494-70-5	ug/kg	219	0	196	23	-0.140	0.01900000	0.190	0.19300000	COPC	nsc
Hexachlorobenzene	118-74-1	ug/kg	219	0	192	27	-0.075	0.13400000	-0.096	0.31600000	nsc	nsc
Methoxychlor	72-43-5	ug/kg	219	0	215	4	-0.077	0.12900000	-0.200	0.40000000	nsc	nsc

Table 7.2-1. Summary of Sediment Chemistry - Toxicity Correlation Relationship - Results for Amphipod Survival: Harborwide Data Set

							Amphipod - Spearman Correlation Analysis					
							Total=detect + 1/2 nondetect		Detect Values Only		COPC Designation	
Chemical/Physical Measurement	CAS Number	chemical units dry weight	number of samples	number of rejects	number of chemical non-detect	number of chemical detects	rho	P	rho	P	Total=detect + 1/2 non-detect	Detect Values Only
Mirex	2385-85-5	ug/kg	219	0	206	13	-0.053	0.21700000	0.379	0.10100000	nsc	nsc
Toxaphene	8001-35-2	ug/kg	219	219	0	0	nca		nca		nca	nca
Polychlorinated Biphenyls (PCBs) (27)												
tPCB TEQ - fish		ug/kg	219									
tPCB NOAA-18 (detect)		ug/kg	219	na	na	na	-0.198	0.00200000	-0.249	0.00010000	COPC	COPC
Polychlorinated Dioxins/Furans (PCDD/PCDF) (17)												
tDioxin/Furan (detect)		ng/kg	219	na	na	na	-0.116	0.04300000	-0.116	0.04300000	COPC	COPC
tDioxin/Furan TEQ - birds												
Organophosphorus Pesticides (10)												
Azinphos-methyl	86-50-0	ug/kg	105	0	104	1	nca		nca		nca	nca
Chlorpyrifos	2921-88-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Demeton-O	298-03-3	ug/kg	105	105	0	0	nca		nca		nca	nca
Demeton-S	126-75-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Diazinon	333-41-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Ethion	563-12-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Ethoprop	13194-48-4	ug/kg	105	0	104	1	nca		nca		nca	nca
Ethyl parathion	56-38-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Malathion	121-75-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Methyl parathion	298-00-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Chlorinated Herbicides (6)												
2,4,5-T	93-76-5	ug/kg	105	0	100	5	-0.216	0.01300000	-0.667	0.10900000	COPC	nsc
2,4-D	94-75-7	ug/kg	105	0	105	0	nca		nca		nca	nca
Dalapon	75-99-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Dicamba	1918-00-9	ug/kg	219	0	186	33	0.011	0.43500000	-0.163	0.18200000	nsc	nsc
MCPP	93-65-2/7085-19-	ug/kg	219	0	207	12	0.030	0.32800000	-0.260	0.20700000	nsc	nsc
2,4,5-TP (Silvex)	93-72-1	ug/kg	105	0	103	2	nca		nca		nca	nca
Triazine Pesticides (8)												
Ametryn	834-12-8	ug/kg	105	0	105	0	nca		nca		nca	nca
Anilazine	101-05-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Atrazine	1912-24-9	ug/kg	105	0	105	0	nca		nca		nca	nca
Pronamide	23950-58-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Propiconazole	60207-90-1	ug/kg	105	0	104	1	nca		nca		nca	nca
Simazine	122-34-9	ug/kg	105	0	105	0	nca		nca		nca	nca
Terbacil	5902-51-2	ug/kg	105	0	104	1	nca		nca		nca	nca
Hexazinone	51235-04-2	ug/kg	105	0	104	1	nca		nca		nca	nca
Carbamate/Urea Pesticides (6)												
Benomyl	17804-35-2	ug/kg	105	104	0	1	nca		nca		nca	nca
Carbaryl	63-25-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Carbofuran	1563-66-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Diuron	330-54-1	ug/kg	105	0	103	2	nca		nca		nca	nca
Methomyl	16752-77-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Oxamyl	23135-22-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Ordnance Compounds (14)												
1,3-Dinitrobenzene	99-65-0	ug/kg	105	0	104	1	nca		nca		nca	nca
2,4-Dinitrotoluene	121-14-2	ug/kg	105	0	105	0	nca		nca		nca	nca
2,6-Dinitrotoluene	606-20-2	ug/kg	105	0	105	0	nca		nca		nca	nca
HMX	2691-41-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Nitrobenzene	98-95-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Nitroglycerin	55-63-0	ug/kg	105	0	104	1	nca		nca		nca	nca
2-Nitrotoluene	88-72-2	ug/kg	105	0	105	0	nca		nca		nca	nca
3-Nitrotoluene	99-08-1	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Nitrotoluene	99-99-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Picric Acid	88-89-1	ug/kg	105	0	105	0	nca		nca		nca	nca
RDX	121-82-4	ug/kg	105	0	105	0	nca		nca		nca	nca
Tetryl	479-45-8	ug/kg	105	0	105	0	nca		nca		nca	nca
1,3,5-Trinitrobenzene	99-35-4	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4,6-Trinitrotoluene	118-96-7	ug/kg	219	0	219	0	nca		nca		nca	nca
General Sediment Properties (3)												
Sediment Fines (<63 um)		%	219	0	0	219	-0.005	0.46900000	-0.005	0.46900000	nsc	nsc
Total Organic Carbon (TOC)		%	219	0	0	219	-0.164	0.00800000	-0.164	0.00800000	COPC	COPC
Unionized Ammonia (in porewater)		mg/l	105	0	10	95	-0.018	0.42700000	0.041	0.34700000	nsc	nsc

COPC - Chemical of Potential Concern - significant negative correlation for increasing COPC concentration with decreasing amphipod survival or echinoderm fertilization
nsc - no significant correlation
nca - no correlation attempted because the number of detect measurements is <2

Return to Table of Contents

Table 7.2-2. Summary of Sediment Chemistry - Toxicity Correlation Relationship Results for Echinoderm Fertilization: Harborwide Data Set.

							Echinoderm - Spearman Correlation Analyses					
							Total=detect + 1/2 nondetect		Detect Values Only		COPC Designation	
Chemical/Physical Measurement	CAS Number	chemical units dry weight	number of samples	number of rejects	number of chemical non-detect	number of chemical detects	rho	P	rho	P	Total =detect + 1/2 non-detect	Detect Values Only
Metals (18)												
Aluminum	7429-90-5	mg/kg	219	0	0	219	0.077	0.1280000	0.077	0.12800000	nsc	nsc
Antimony	7440-36-0	mg/kg	219	0	11	208	0.200	0.0010000	0.198	0.00200000	nsc	nsc
Arsenic	7440-38-2	mg/kg	219	0	0	219	-0.031	0.3240000	-0.031	0.3240000	nsc	nsc
Cadmium	7440-43-9	mg/kg	219	22	82	115	-0.386	0.0000010	-0.144	0.06300000	COPC	nsc
Chromium	7440-47-3	mg/kg	219	0	0	219	0.073	0.1420000	0.073	0.1420000	nsc	nsc
Cobalt	7440-48-4	mg/kg	219	0	0	219	0.028	0.3430000	0.028	0.3430000	nsc	nsc
Copper	7440-50-8	mg/kg	219	0	0	219	0.201	0.0010000	0.201	0.0010000	nsc	nsc
Iron	7439-89-6	mg/kg	219	0	0	219	0.004	0.4780000	0.004	0.4780000	nsc	nsc
Lead	7439-92-1	mg/kg	219	0	0	219	0.089	0.0940000	0.089	0.0940000	nsc	nsc
Manganese	7439-96-5	mg/kg	219	0	0	219	0.114	0.0460000	0.114	0.04600000	nsc	nsc
Mercury	7439-97-6	mg/kg	219	0	23	196	0.126	0.0310000	-0.008	0.45500000	nsc	nsc
Molybdenum	7439-98-7	mg/kg	219	0	111	108	0.154	0.0110000	0.302	0.00100000	nsc	nsc
Nickel	7440-02-0	mg/kg	219	0	0	219	0.067	0.1610000	0.067	0.1610000	nsc	nsc
Selenium	7782-49-2	mg/kg	219	1	78	140	0.285	0.0000100	0.153	0.03600000	nsc	nsc
Silicon	7440-21-3	mg/kg	219	0	0	219	0.332	0.0000010	0.332	0.0000010	nsc	nsc
Silver	7440-22-4	mg/kg	219	0	87	132	-0.017	0.4000000	0.217	0.00600000	nsc	nsc
Tin	7440-31-5	mg/kg	219	0	42	177	0.052	0.2210000	0.188	0.00600000	nsc	nsc
Zinc	7440-66-6	mg/kg	219	0	0	219	0.112	0.0490000	0.112	0.0490000	nsc	nsc
Butyltins (4)												
Monobutyltin	1118-46-3	ug/kg	219	219	0	0	nca		nca		nca	nca
Dibutyltin	683-18-1	ug/kg	219	0	169	50	0.119	0.0390000	0.133	0.17800000	nsc	nsc
Tributyltin	688-73-3	ug/kg	219	0	179	40	0.156	0.0100000	-0.005	0.48900000	nsc	nsc
Tetrabutyltin	1461-25-2	ug/kg	219	0	219	0	nca		nca		nca	nca
Polycyclic Aromatic Hydrocarbons (PAHs) (46)												
2-ring PAHs												
Naphthalene	91-20-3	ug/kg	219	0	144	75	0.101	0.0680000	-0.088	0.22500000	nsc	nsc
Naphthalenes,C1-	NAPHTHALC1	ug/kg	219	0	165	54	0.126	0.0310000	-0.200	0.07400000	nsc	nsc
Naphthalenes,C2-	NAPHTHALC2	ug/kg	219	0	148	71	0.106	0.0580000	-0.123	0.15200000	nsc	nsc
Naphthalenes,C3-	NAPHTHALC3	ug/kg	219	0	140	79	0.138	0.0210000	-0.013	0.45500000	nsc	nsc
Naphthalenes,C4-	NAPHTHALC4	ug/kg	219	0	156	63	0.186	0.0030000	0.197	0.06100000	nsc	nsc
1-Methylnapthalene	90-12-0	ug/kg	219	0	189	30	0.143	0.0170000	-0.177	0.17400000	nsc	nsc
2-Methylnaphthalene	91-57-6	ug/kg	219	0	172	47	0.125	0.0320000	-0.229	0.06000000	nsc	nsc
2,6-Dimethylnapthalene	581-42-0	ug/kg	219	0	181	38	0.114	0.0470000	-0.315	0.02700000	nsc	COPC
1,6,7-Trimethylnaphthalene	2245-38-7	ug/kg	219	0	176	43	0.139	0.0200000	-0.194	0.10600000	nsc	nsc
Biphenyl	92-52-4	ug/kg	219	0	200	19	0.152	0.0120000	0.025	0.45900000	nsc	nsc
3-ring PAHs												
Acenaphthene	83-32-9	ug/kg	219	0	127	92	0.148	0.0140000	0.099	0.17400000	nsc	nsc
Acenaphthylene	208-96-8	ug/kg	219	0	182	37	0.120	0.0380000	-0.305	0.03300000	nsc	COPC
Anthracene	120-12-7	ug/kg	219	0	34	185	0.091	0.0900000	0.062	0.20300000	nsc	nsc
Phenanthrene	85-01-8	ug/kg	219	0	4	215	0.061	0.1860000	0.036	0.30200000	nsc	nsc
1-Methylphenanthrene	832-69-9	ug/kg	219	0	71	148	0.047	0.2450000	-0.068	0.20600000	nsc	nsc
Phenanthrenes+Anthracenes,C1-	PHENANTHC1	ug/kg	219	0	17	202	0.030	0.3310000	0.018	0.39800000	nsc	nsc
Phenanthrenes+Anthracenes,C2-	PHENANTHC2	ug/kg	219	0	31	188	0.002	0.4860000	-0.037	0.30500000	nsc	nsc
Phenanthrenes+Anthracenes,C3-	PHENANTHC3	ug/kg	219	0	53	166	0.021	0.3770000	0.020	0.39800000	nsc	nsc
Phenanthrenes+Anthracenes,C4-	PHENANTHC4	ug/kg	219	0	87	132	0.065	0.1690000	0.161	0.03300000	nsc	nsc
Fluorene	86-73-7	ug/kg	219	0	114	105	0.141	0.0190000	0.052	0.29900000	nsc	nsc
Fluorenes,C1-	FLUORENESC1	ug/kg	219	0	155	64	0.142	0.0180000	-0.115	0.18400000	nsc	nsc
Fluorenes,C2-	FLUORENESC2	ug/kg	219	0	159	60	0.117	0.0420000	0.092	0.24200000	nsc	nsc
Fluorenes,C3-	FLUORENESC3	ug/kg	219	0	167	52	0.081	0.1160000	0.159	0.13100000	nsc	nsc
Dibenzothiophene	132-65-0	ug/kg	219	0	181	38	0.139	0.0200000	-0.011	0.47500000	nsc	nsc
Dibenzothiophenes,C1-	DIBENZC1ALK	ug/kg	219	0	130	89	0.117	0.0420000	-0.021	0.42300000	nsc	nsc
Dibenzothiophenes,C2-	DIBENZC2ALK	ug/kg	219	0	108	111	0.121	0.0370000	0.146	0.06300000	nsc	nsc
Dibenzothiophenes,C3-	DIBENZC3ALK	ug/kg	219	0	110	109	0.090	0.0920000	0.160	0.04800000	nsc	nsc
tLMWPAHs (2-3 ring) (detect)		ug/kg	219	na	na	na	0.074	0.1370000	0.025	0.35500000	nsc	nsc
tLMWPAH-Long95 (detect)		ug/kg	219	na	na	na	0.089	0.0940000	0.073	0.14200000	nsc	nsc
4-ring PAHs												
Benz(a)anthracene	56-55-3	ug/kg	219	0	3	216	0.093	0.0850000	0.071	0.14900000	nsc	nsc
Chrysene	218-01-9	ug/kg	219	0	0	219	0.068	0.1590000	0.068	0.1590000	nsc	nsc
Chrysenes,C1	CHRYSC1ALK	ug/kg	219	0	5	214	0.078	0.1240000	0.071	0.15000000	nsc	nsc
Chrysenes,C2-	CHRYSC2ALK	ug/kg	219	0	17	202	-0.007	0.4600000	0.021	0.38400000	nsc	nsc
Chrysenes,C3-	CHRYSC3ALK	ug/kg	219	0	47	172	-0.0003	0.4980000	0.161	0.01700000	nsc	nsc
Chrysenes,C4-	CHRYSC4ALK	ug/kg	219	0	61	158	-0.002	0.4900000	0.167	0.01800000	nsc	nsc
Fluoranthene	206-44-0	ug/kg	219	0	0	219	0.067	0.1620000	0.067	0.16200000	nsc	nsc
Pyrene	129-00-0	ug/kg	219	0	0	219	0.072	0.1450000	0.072	0.1450000	nsc	nsc
Fluoranthenes+Pyrenes,C1-	FLUORANTHC1	ug/kg	219	0	4	215	0.127	0.0300000	0.114	0.04800000	nsc	nsc
Fluoranthenes+Pyrenes,C2-	FLUORANTHC2	ug/kg	219	0	17	202	0.080	0.1190000	0.074	0.14900000	nsc	nsc
Fluoranthenes+Pyrenes,C3-	FLUORANTHC3	ug/kg	219	0	0	219	0.056	0.2060000	0.056	0.2060000	nsc	nsc
5-ring PAHs												
Benzo(a)pyrene	50-32-8	ug/kg	219	0	1	218	0.042	0.2670000	0.032	0.32100000	nsc	nsc
Benzo(e)pyrene	192-97-2	ug/kg	219	0	2	217	0.084	0.1090000	0.064	0.17500000	nsc	nsc
Benzo(b)fluoranthene	205-99-2	ug/kg	219	0	1	218	0.110	0.0520000	0.100	0.07000000	nsc	nsc
Benzo(k)fluoranthene	207-08-9	ug/kg	219	50	1	168	0.095	0.1110000	0.081	0.14800000	nsc	nsc
Dibenz(a,h)anthracene	53-70-3	ug/kg	219	0	15	204	0.002	0.4860000	0.008	0.45600000	nsc	nsc
Perylene	198-55-0	ug/kg	219	0	7	212	0.057	0.2020000	0.027	0.34900000	nsc	nsc
6-ring PAHs												
Benzo(g,h,i)perylene	191-24-2	ug/kg	219	1	0	218	0.015	0.4140000	0.015	0.41400000	nsc	nsc
Indeno(1,2,3-cd)pyrene	193-39-5	ug/kg	219	0	2	217	0.0001	0.4990000	0.001	0.49600000	nsc	nsc
tHMWPAHs (4-6 ring) (detect)		ug/kg	219	na	na	na	0.059	0.1930000	0.056	0.20500000	nsc	nsc
tHMWPAH-Long95 (detect)		ug/kg	219	na	na	na	0.070	0.1500000	0.070	0.15100000	nsc	nsc
tPAHs (2-6 ring) (detect)		ug/kg	219	na	na	na	0.060	0.1870000	0.052	0.22000000	nsc	nsc
tPAH-Long95 (detect)		ug/kg	219	na	na	na	0.073	0.1430000	0.073	0.14000000	nsc	nsc

Table 7.2-2. Summary of Sediment Chemistry - Toxicity Correlation Relationship Results for Echinoderm Fertilization: Harborwide Data Set.

							Echinoderm - Spearman Correlation Analyses					
							Total=detect + 1/2 nondetect		Detect Values Only		COPC Designation	
Chemical/Physical Measurement	CAS Number	chemical units dry weight	number of samples	number of rejects	number of chemical non-detect	number of chemical detects	rho	P	rho	P	Total =detect + 1/2 non-detect	Detect Values Only
non-PAH Semivolatiles (58)												
Aniline	62-53-3	ug/kg	105	92	13	0	nca		nca		nca	nca
Benzoic Acid	65-85-0	ug/kg	219	0	106	113	-0.213	0.0010000	-0.421	0.00000200	COPC	COPC
Benzyl Alcohol	100-51-6	ug/kg	105	0	105	0	nca		nca		nca	nca
bis(2-Chloroethoxy)methane	111-91-1	ug/kg	105	0	105	0	nca		nca		nca	nca
bis(2-Chloroethyl)Ether	111-44-4	ug/kg	105	0	105	0	nca		nca		nca	nca
bis(Chloromethyl)Ether	542-88-1	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Bromophenyl-phenylether	101-55-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Carbazole	86-74-8	ug/kg	219	0	147	72	-0.125	0.0330000	-0.222	0.03000000	COPC	COPC
4-Chloroaniline	106-47-8	ug/kg	105	55	50	0	nca		nca		nca	nca
2-Chloronaphthalene	91-58-7	ug/kg	105	0	105	0	nca		nca		nca	nca
2-Chlorophenol	95-57-8	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Chlorophenol	106-48-9	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Chlorophenyl-phenylether	7005-72-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Dibenzofuran	132-64-9	ug/kg	105	0	103	2	nca		nca		nca	nca
1,2-Dichlorobenzene	95-50-1	ug/kg	105	0	105	0	nca		nca		nca	nca
1,3-Dichlorobenzene	541-73-1	ug/kg	105	0	105	0	nca		nca		nca	nca
1,4-Dichlorobenzene	106-46-7	ug/kg	105	0	105	0	nca		nca		nca	nca
3,3'-Dichlorobenzidine	91-94-1	ug/kg	105	0	105	0	nca		nca		nca	nca
Hexachlorobutadiene	87-68-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Hexachlorocyclopentadiene	77-47-4	ug/kg	105	0	105	0	nca		nca		nca	nca
Hexachloroethane	67-72-1	ug/kg	105	0	105	0	nca		nca		nca	nca
Isophorone	78-59-1	ug/kg	105	0	105	0	nca		nca		nca	nca
2-Nitroaniline	88-74-4	ug/kg	105	0	105	0	nca		nca		nca	nca
3-Nitroaniline	99-09-2	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Nitroaniline	100-01-6	ug/kg	105	0	105	0	nca		nca		nca	nca
2-Nitrophenol	88-75-5	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Nitrophenol	100-02-7	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosodi-n-propylamine	621-64-7	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosodibutylamine	924-16-3	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosodiethylamine	55-18-5	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosodimethylamine	62-75-9	ug/kg	105	0	105	0	nca		nca		nca	nca
N-nitrosodiphenylamine	86-30-6	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosomethylethylamine	10595-95-6	ug/kg	105	0	105	0	nca		nca		nca	nca
N-Nitrosopyrrolidine	930-55-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Octachlorostyrene	29082-74-4	ug/kg	105	0	105	0	nca		nca		nca	nca
2,2'oxybis(1-Chloropropane)	108-60-1	ug/kg	105	0	105	0	nca		nca		nca	nca
Pentachlorobenzene	608-93-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Pentachlorophenol	87-86-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Phenol	108-95-2	ug/kg	105	0	96	9	0.114	0.1230000	0.318	0.20200000	nsc	nsc
2,3,5,6-Tetrachlorophenol	935-95-5	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4,5-Trichlorophenol	95-95-4	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4,6-Trichlorophenol	88-06-2	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4-Dichlorophenol	120-83-2	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4-Dimethylphenol	105-67-9	ug/kg	105	17	88	0	nca		nca		nca	nca
2,4-Dinitrophenol	51-28-5	ug/kg	105	0	105	0	nca		nca		nca	nca
2-Methylphenol	95-48-7	ug/kg	105	0	105	0	nca		nca		nca	nca
4,6-Dinitro-2-methylphenol	534-52-1	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Chloro-3-Methylphenol	59-50-7	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Methylphenol	106-44-5	ug/kg	219	0	117	102	-0.147	0.0150000	-0.296	0.00100000	COPC	COPC
Butylbenzylphthalate	85-68-7	ug/kg	105	0	99	6	0.164	0.0470000	0.314	0.27200000	nsc	nsc
bis(2-Ethylhexyl) phthalate	117-81-7	ug/kg	219	0	131	88	-0.076	0.1320000	0.050	0.32300000	nsc	nsc
Di-n-butylphthalate	84-74-2	ug/kg	219	0	187	32	0.003	0.4840000	-0.123	0.25200000	nsc	nsc
Di-n-octylphthalate	117-84-0	ug/kg	105	0	101	4	0.038	0.3520000	-0.400	0.30000000	nsc	nsc
Diethylphthalate	84-66-2	ug/kg	219	0	169	50	-0.004	0.4760000	0.051	0.36300000	nsc	nsc
Dimethylphthalate	131-11-3	ug/kg	105	0	104	1	nca		nca		nca	nca
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/kg	105	0	105	0	nca		nca		nca	nca
1,2,3-Trichlorobenzene	87-61-6	ug/kg	105	0	105	0	nca		nca		nca	nca
1,2,4-Trichlorobenzene	120-82-1	ug/kg	105	0	105	0	nca		nca		nca	nca
Chlorinated Pesticides (29)												
DDT series												
2,4'-DDD	53-19-0	ug/kg	219	0	136	83	0.070	0.1510000	0.185	0.04700000	nsc	nsc
4,4'-DDD	72-54-8	ug/kg	219	0	125	94	0.128	0.0290000	0.169	0.05100000	nsc	nsc
2,4'-DDE	3424-82-6	ug/kg	219	0	158	61	0.212	0.0010000	0.143	0.13500000	nsc	nsc
4,4'-DDE	72-55-9	ug/kg	219	0	31	188	0.164	0.0080000	0.081	0.13600000	nsc	nsc
2,4'-DDT	789-02-6	ug/kg	219	0	203	16	0.167	0.0070000	0.096	0.36200000	nsc	nsc
4,4'-DDT	50-29-3	ug/kg	219	0	138	81	0.332	0.0000010	-0.129	0.12500000	nsc	nsc
tDDT (detect)		ug/kg	219	na	na	na	0.195	0.0020000	0.192	0.00200000	nsc	nsc
chlordane series												
alpha-Chlordane	5103-71-9	ug/kg	219	0	129	90	0.025	0.3550000	0.016	0.44000000	nsc	nsc
gamma-Chlordane	5103-74-2	ug/kg	219	0	115	104	0.076	0.1310000	-0.036	0.35800000	nsc	nsc
cis-Nonachlor	5103-73-1	ug/kg	219	0	191	28	0.202	0.0010000	0.319	0.04900000	nsc	nsc
trans-Nonachlor	39765-80-5	ug/kg	219	0	149	70	0.103	0.0650000	0.102	0.20000000	nsc	nsc
Heptachlor	76-44-8	ug/kg	219	0	212	7	0.144	0.0170000	0.321	0.24100000	nsc	nsc
Heptachlor epoxide	1024-57-3	ug/kg	219	0	213	6	0.160	0.0090000	0.145	0.39200000	nsc	nsc
Oxychlordane	27304-13-8	ug/kg	219	0	209	10	0.167	0.0070000	-0.247	0.24600000	nsc	nsc
tChlordane (detect)		ug/kg	219	na	na	na	0.074	0.1370000	-0.080	0.11800000	nsc	nsc
Aldrin	309-00-2	ug/kg	219	0	204	15	0.113	0.0470000	-0.166	0.27700000	nsc	nsc
alpha-BHC	319-84-6	ug/kg	219	0	165	54	0.069	0.1540000	0.192	0.08300000	nsc	nsc
beta-BHC	319-85-7	ug/kg	219	0	212	7	0.191	0.0020000	-0.036	0.47000000	nsc	nsc
delta-BHC	319-86-8	ug/kg	219	0	188	31	0.148	0.0140000	-0.070	0.35300000	nsc	nsc
gamma-BHC(Lindane)	58-89-9	ug/kg	219	0	182	37	0.171	0.0060000	0.205	0.11200000	nsc	nsc
Dieldrin	60-57-1	ug/kg	219	0	96	123	0.059	0.1920000	0.130	0.07700000	nsc	nsc
Endosulfan I	959-98-8	ug/kg	219	0	142	77	-0.006	0.4680000	0.069	0.27600000	nsc	nsc
Endosulfan II	33213-65-9	ug/kg	219	0	203	16	0.087	0.1010000	0.282	0.14500000	nsc	nsc
Endosulfan sulfate	1031-07-8	ug/kg	219	0	215	4	0.168	0.0060000	-0.200	0.40000000	nsc	nsc
Endrin	72-20-8	ug/kg	219	0	212	7	0.171	0.0060000	-0.643	0.06000000	nsc	nsc
Endrin aldehyde	7421-93-4	ug/kg	219	0	196	23	0.231	0.0003000	-0.030	0.44600000	nsc	nsc
Endrine ketone	53494-70-5	ug/kg	219	0	196	23	0.112	0.0490000	0.180	0.20500000	nsc	nsc
Hexachlorobenzene	118-74-1	ug/kg	219	0	192	27	0.139	0.0200000	0.333	0.04500000	nsc	nsc
Methoxychlor	72-43-5	ug/kg	219	0	215	4	0.161	0.0090000	0.800	0.10000000	nsc	nsc
Mirex	2385-85-5	ug/kg	219	0	206	13	0.087	0.1000000	0.514	0.03600000	nsc	nsc
Toxaphene	8001-35-2	ug/kg	219	219	0	0	nca		nca		nca	nca

Table 7.2-2. Summary of Sediment Chemistry - Toxicity Correlation Relationship Results for Echinoderm Fertilization: Harborwide Data Set.

							Echinoderm - Spearman Correlation Analyses					
							Total=detect + 1/2 nondetect		Detect Values Only		COPC Designation	
Chemical/Physical Measurement	CAS Number	chemical units dry weight	number of samples	number of rejects	number of chemical non-detect	number of chemical detects	rho	P	rho	P	Total =detect + 1/2 non-detect	Detect Values Only
Polychlorinated Biphenyls (PCBs) (27)												
tPCB TEQ - fish		ug/kg	219	na	na	na						
tPCB NOAA-18 (detect)		ug/kg	219	na	na	na	0.060	0.1890000	0.026	0.35200000	nsc	nsc
Polychlorinated Dioxins/Furans (PCDD/PCDF) (17)												
tDioxin/Furan (detect)		ng/kg	219	na	na	na	0.045	0.2550000	0.044	0.2560000	nsc	nsc
tDioxin/Furan TEQ - birds		ng/kg	219	na	na	na						
Organophosphorus Pesticides (10)												
Azinphos-methyl	86-50-0	ug/kg	105	0	104	1	nca		nca		nca	nca
Chlorpyrifos	2921-88-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Demeton-O	298-03-3	ug/kg	105	105	0	0	nca		nca		nca	nca
Demeton-S	126-75-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Diazinon	333-41-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Ethion	563-12-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Ethoprop	13194-48-4	ug/kg	105	0	104	1	nca		nca		nca	nca
Ethyl parathion	56-38-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Malathion	121-75-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Methyl parathion	298-00-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Chlorinated Herbicides (6)												
2,4,5-T	93-76-5	ug/kg	105	0	100	5	0.315	0.0010000	-0.410	0.24600000	nsc	nsc
2,4-D	94-75-7	ug/kg	105	0	105	0	nca		nca		nca	nca
Dalapon	75-99-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Dicamba	1918-00-9	ug/kg	219	0	186	33	0.162	0.0080000	-0.048	0.39500000	nsc	nsc
MCPP	93-65-2/7085-19-0	ug/kg	219	0	207	12	0.155	0.0110000	-0.130	0.34400000	nsc	nsc
2,4,5-TP (Silvex)	93-72-1	ug/kg	105	0	103	2	nca		nca		nca	nca
Triazine Pesticides (8)												
Ametryn	834-12-8	ug/kg	105	0	105	0	nca		nca		nca	nca
Anilazine	101-05-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Atrazine	1912-24-9	ug/kg	105	0	105	0	nca		nca		nca	nca
Pronamide	23950-58-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Propiconazole	60207-90-1	ug/kg	105	0	104	1	nca		nca		nca	nca
Simazine	122-34-9	ug/kg	105	0	105	0	nca		nca		nca	nca
Terbacil	5902-51-2	ug/kg	105	0	104	1	nca		nca		nca	nca
Hexazinone	51235-04-2	ug/kg	105	0	104	1	nca		nca		nca	nca
Carbamate/Urea Pesticides (6)												
Benomyl	17804-35-2	ug/kg	105	104	0	1	nca		nca		nca	nca
Carbaryl	63-25-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Carbofuran	1563-66-2	ug/kg	105	0	105	0	nca		nca		nca	nca
Diuron	330-54-1	ug/kg	105	0	103	2	nca		nca		nca	nca
Methomyl	16752-77-5	ug/kg	105	0	105	0	nca		nca		nca	nca
Oxamyl	23135-22-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Ordnance Compounds (14)												
1,3-Dinitrobenzene	99-65-0	ug/kg	105	0	104	1	nca		nca		nca	nca
2,4-Dinitrotoluene	121-14-2	ug/kg	105	0	105	0	nca		nca		nca	nca
2,6-Dinitrotoluene	606-20-2	ug/kg	105	0	105	0	nca		nca		nca	nca
HMX	2691-41-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Nitrobenzene	98-95-3	ug/kg	105	0	105	0	nca		nca		nca	nca
Nitroglycerin	55-63-0	ug/kg	105	0	104	1	nca		nca		nca	nca
2-Nitrotoluene	88-72-2	ug/kg	105	0	105	0	nca		nca		nca	nca
3-Nitrotoluene	99-08-1	ug/kg	105	0	105	0	nca		nca		nca	nca
4-Nitrotoluene	99-99-0	ug/kg	105	0	105	0	nca		nca		nca	nca
Picric Acid	88-89-1	ug/kg	105	0	105	0	nca		nca		nca	nca
RDX	121-82-4	ug/kg	105	0	105	0	nca		nca		nca	nca
Tetryl	479-45-8	ug/kg	105	0	105	0	nca		nca		nca	nca
1,3,5-Trinitrobenzene	99-35-4	ug/kg	105	0	105	0	nca		nca		nca	nca
2,4,6-Trinitrotoluene	118-96-7	ug/kg	219	0	219	0	nca		nca		nca	nca
General Sediment Properties (3)												
Sediment Fines (<63 um)		%	219	0	0	219	0.197	0.00200000	0.197	0.00200000	nsc	nsc
Total Organic Carbon (TOC)		%	219	0	0	219	-0.022	0.3700000	-0.022	0.3700000	nsc	nsc
Unionized Ammonia (in porewater)		mg/l	105	0	10	95	-0.158	0.5300000	-0.175	0.04500000	nsc	COPC

COPC - Chemical of Potential Concern - significant negative correlation for increasing COPC concentration with decreasing amphipod survival or echinoderm fertilization
nsc - no significant correlation
nca - no correlation attempted because the number of detect measurements is <2

Return to Table of Contents

Table 7.3-1. Summary of Maximum Bioaccumulation HQs or HIs for All COPCs and All Receptors/Scenarios for Steps 1 and 2 of the SRA

	Step 1-2 bioaccumulation summary of COPC indicators and maximum HQ or HI - all receptors for maximum total chemistry values (detect or half nondetect)																						
	all receptors	birds														fish				invertebrates			
	overall COPC	Hawaiian stilt		Hawaiian coot		Hawaiian moorhen		Hawaiian duck		wandering tattler		night heron		sooty tern		bandtail goatfish		tilapia		composite macroinfauna		epibenthic crab	
chemical	indicator	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI
COPCs with one or more HQs>1:	33	26		18		23		18		26		19		18		8		18		13		9	
COPCs with all HQs<1:	82	105		113		109		113		107		111		113		134		124		79		81	
COPCs with uncertain (unc) HQs:	129	113		113		112		113		111		114		113		102		102		152		154	
COPC groups with one or more HQs>1:	5	3		3		3		3		5		3		3		2		3		2		0	
COPC groups with all HQs<1:	1	1		1		1		1		1		1		1		2		1		1		2	
COPC groups with uncertain (unc) HQs:	1	3		3		3		3		1		3		3		3		3		4		5	
Metals																							
Aluminum	COPC	COPC	74.747	COPC	52.092	COPC	67.636	COPC	51.304	COPC	94.707	COPC	44.438	COPC	6.138	COPC	39.875	COPC	1265.296	(unc)	(no TRV)	(unc)	(no TRV)
Antimony	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.018	(alr)	0.048	(unc)	(no TRV)	(unc)	(no TRV)
Arsenic	COPC	COPC	1.733	COPC	1.208	COPC	1.568	COPC	1.190	COPC	2.196	COPC	1.030	(alr)	0.567	COPC	1.842	COPC	5.041	COPC	8.098	COPC	3.917
Cadmium	COPC	COPC	6.423	COPC	4.476	COPC	5.812	COPC	4.408	COPC	8.138	COPC	3.818	(alr)	0.488	(alr)	0.616	COPC	1.988	COPC	5.691	COPC	2.840
Chromium	COPC	COPC	38.136	COPC	26.578	COPC	34.508	COPC	26.175	COPC	48.320	COPC	22.672	COPC	2.130	(alr)	0.120	COPC	1.740	COPC	8.356	(alr)	0.733
Cobalt	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.550	(alr)	0.091
Copper	COPC	COPC	24.409	COPC	17.011	COPC	22.087	COPC	16.754	COPC	30.927	COPC	14.511	COPC	15.744	COPC	14.337	COPC	150.729	COPC	24.896	COPC	10.342
Iron	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Lead	COPC	COPC	1628.546	COPC	1134.964	COPC	1473.625	COPC	1117.796	COPC	2063.439	COPC	968.188	COPC	30.896	(alr)	0.114	COPC	2.391	(alr)	0.674	(alr)	0.088
Manganese	COPC	COPC	16.733	COPC	11.661	COPC	15.141	COPC	11.485	COPC	21.201	COPC	9.948	(alr)	0.360	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Mercury	COPC	COPC	4.194	COPC	2.923	COPC	3.795	COPC	2.879	COPC	5.315	COPC	2.494	COPC	1.502	(alr)	0.786	(alr)	0.067	(alr)	0.041	(alr)	0.074
Molybdenum	(unc)	(alr)	0.165	(alr)	0.115	(alr)	0.150	(alr)	0.114	(alr)	0.210	(alr)	0.098	(alr)	0.067	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Nickel	COPC	COPC	148.175	COPC	103.266	COPC	134.079	COPC	101.704	COPC	187.744	COPC	88.091	COPC	30.499	(unc)	(no TRV)	(unc)	(no TRV)	COPC	3.038	(alr)	0.198
Selenium	COPC	COPC	3.968	COPC	2.765	COPC	3.591	COPC	2.724	COPC	5.028	COPC	2.359	COPC	2.107	COPC	6.548	COPC	7.590	COPC	6.867	COPC	2.229
Silicon	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Silver	COPC	COPC	1.325	(alr)	0.924	COPC	1.199	(alr)	0.910	COPC	1.679	(alr)	0.788	(alr)	0.046	(alr)	0.412	COPC	3.724	(unc)	(no TRV)	(unc)	(no TRV)
Tin	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Zinc	COPC	COPC	4.562	COPC	3.179	COPC	4.128	COPC	3.131	COPC	5.780	COPC	2.712	(alr)	0.809	COPC	77.581	COPC	70.974	COPC	7.001	COPC	1.361
Butyltins																							
Monobutyltin	(unc)	(unc)	0.0006	(unc)	0.0004	(unc)	0.0005	(unc)	0.0004	(unc)	0.0007	(unc)	0.0003	(unc)	(R)	(unc)	(R)	(unc)	(R)	(alr)	0.007	(alr)	0.003
Dibutyltin	(alr)	(alr)	0.0013	(alr)	0.0009	(alr)	0.0012	(alr)	0.0009	(alr)	0.0016	(alr)	0.0008	(alr)	0.0005	(alr)	0.010	(alr)	0.010	(alr)	0.013	(alr)	0.006
Tributyltin	(alr)	(alr)	0.010	(alr)	0.004	(alr)	0.005	(alr)	0.004	(alr)	0.007	(alr)	0.006	(alr)	0.010	(alr)	0.203	(alr)	0.034	(alr)	0.068	(alr)	0.013
Tetrabutyltin	(alr)	(alr)	0.0015	(alr)	0.0010	(alr)	0.0013	(alr)	0.0010	(alr)	0.0019	(alr)	0.0009	(alr)	0.0007	(alr)	0.014	(alr)	0.014	(alr)	0.018	(alr)	0.008
PAHs																							
2-ring PAHs																							
Naphthalene	(alr)	(alr)	0.004	(alr)	0.002	(alr)	0.003	(alr)	0.002	(alr)	0.005	(alr)	0.002	(alr)	0.0015	(alr)	0.003	(alr)	0.005	(alr)	0.067	(alr)	0.046
Naphthalenes,C1-	(alr)	(alr)	0.004	(alr)	0.002	(alr)	0.003	(alr)	0.002	(alr)	0.005	(alr)	0.002	(alr)	0.002	(alr)	0.008	(alr)	0.003	(alr)	0.044	(alr)	0.047
Naphthalenes,C2-	(alr)	(alr)	0.010	(alr)	0.004	(alr)	0.005	(alr)	0.004	(alr)	0.007	(alr)	0.006	(alr)	0.011	(alr)	0.039	(alr)	0.006	(alr)	0.106	(alr)	0.047
Naphthalenes,C3-	(alr)	(alr)	0.011	(alr)	0.005	(alr)	0.006	(alr)	0.005	(alr)	0.009	(alr)	0.006	(alr)	0.011	(alr)	0.040	(alr)	0.006	(alr)	0.106	(alr)	0.047
Naphthalenes,C4-	(alr)	(alr)	0.010	(alr)	0.007	(alr)	0.009	(alr)	0.007	(alr)	0.013	(alr)	0.006	(alr)	0.004	(alr)	0.015	(alr)	0.006	(alr)	0.106	(alr)	0.047
1-Methylnapthalene	(alr)	(alr)	0.003	(alr)	0.002	(alr)	0.003	(alr)	0.002	(alr)	0.004	(alr)	0.002	(alr)	0.002	(alr)	0.007	(alr)	0.006	(alr)	0.106	(alr)	0.047
2-Methylnaphthalene	(alr)	(alr)	0.004	(alr)	0.003	(alr)	0.004	(alr)	0.003	(alr)	0.005	(alr)	0.002	(alr)	0.002	(alr)	0.008	(alr)	0.004	(alr)	0.051	(alr)	0.056
2,6-Dimethylnapthalene	(alr)	(alr)	0.005	(alr)	0.003	(alr)	0.004	(alr)	0.003	(alr)	0.005	(alr)	0.003	(alr)	0.006	(alr)	0.020	(alr)	0.006	(alr)	0.106	(alr)	0.047
1,6,7-Trimethylnaphthalene	(alr)	(alr)	0.005	(alr)	0.003	(alr)	0.005	(alr)	0.003	(alr)	0.006	(alr)	0.003	(alr)	0.005	(alr)	0.017	(alr)	0.009	(alr)	0.156	(alr)	0.073
Biphenyl	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.003	(alr)	0.003	(unc)	(no TRV)	(unc)	(no TRV)
3-ring PAHs																							
Acenaphthene	(unc)	(alr)	0.008	(alr)	0.005	(alr)	0.007	(alr)	0.005	(alr)	0.010	(alr)	0.005	(alr)	0.004	(alr)	0.002	(alr)	0.002	(unc)	(no TRV)	(unc)	(no TRV)
Acenaphthylene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Anthracene	(alr)	(alr)	0.037	(alr)	0.026	(alr)	0.033	(alr)	0.025	(alr)	0.047	(alr)	0.022	(alr)	0.003	(alr)	0.00012	(alr)	0.00012	(alr)	0.002	(alr)	0.0007
Phenanthrene	(alr)	(alr)	0.100	(alr)	0.069	(alr)	0.090	(alr)	0.068	(alr)	0.126	(alr)	0.059	(alr)	0.009	(alr)	0.0002	(alr)	0.00010	(alr)	0.003	(alr)	0.0012
1-Methylphenanthrene	(alr)	(alr)	0.018	(alr)	0.013	(alr)	0.017	(alr)	0.013	(alr)	0.023	(alr)	0.011	(alr)	0.004	(alr)	0.0002	(alr)	0.0002	(alr)	0.003	(alr)	0.0011
Phenanthrenes+Anthracenes,C1-	(alr)	(alr)	0.043	(alr)	0.030	(alr)	0.039	(alr)	0.030	(alr)	0.055	(alr)	0.026	(alr)	0.004	(alr)	0.0002	(alr)	0.0002	(alr)	0.005	(alr)	0.0012
Phenanthrenes+Anthracenes,C2-	(alr)	(alr)	0.079	(alr)	0.055	(alr)	0.072	(alr)	0.054	(alr)	0.100	(alr)	0.047	(alr)	0.004	(alr)	0.0002	(alr)	0.0002	(alr)	0.021	(alr)	0.0012
Phenanthrenes+Anthracenes,C3-	(alr)	(alr)	0.120	(alr)	0.083	(alr)	0.108	(alr)	0.082	(alr)	0.152	(alr)	0.071	(alr)	0.004	(alr)	0.0002	(alr)	0.0002	(alr)	0.028	(alr)	0.0012
Phenanthrenes+Anthracenes,C4-	(alr)	(alr)	0.332	(alr)	0.231	(alr)	0.300	(alr)	0.228	(alr)	0.420	(alr)	0.197	(alr)	0.004	(alr)	0.0002	(alr)	0.0002	(alr)	0.017	(alr)	0.0012
Fluorene	(unc)	(alr)	0.008	(alr)	0.005	(alr)	0.007	(alr)	0.005	(alr)	0.010	(alr)	0.005	(alr)	0.004	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Fluorenes,C1-	(unc)	(alr)	0.008	(alr)	0.006	(alr)	0.008	(alr)	0.006	(alr)	0.011	(alr)	0.005	(alr)	0.004	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Fluorenes,C2-	(unc)	(alr)	0.017	(alr)	0.012	(alr)	0.016	(alr)	0.012	(alr)	0.022	(alr)	0.010	(alr)	0.004	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Fluorenes,C3-	(unc)	(alr)	0.025	(alr)	0.018	(alr)	0.023	(alr)	0.017	(alr)	0.032	(alr)	0.015	(alr)	0.004	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Dibenzothiophene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Dibenzothiophenes,C1-	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Dibenzothiophenes,C2-	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Dibenzothiophenes,C3-	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
tLMWPAHs (2-3 ring)	COPC	(unc)	0.834	(unc)	0.581	(unc)	0.755	(unc)	0.573	COPC	1.057	(unc)	0.496	(unc)	0.097	(unc)	0.164	(unc)	0.056	(unc)	0.928	(unc)	0.468
4-ring PAHs																							
Benz(a)anthracene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.0004	(alr)	0.0004	(unc)	(no TRV)	(unc)	(no TRV)
Chrysene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.018	(alr)	0.003
Chrysenes,C1	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.039	(alr)	0.003
Chrysenes,C2-	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.063	(alr)	0.003
Chrysenes,C3-	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.051	(alr)	0.003
Chrysenes,C4-	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.037	(alr)	0.003
Fluoranthene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.003	(alr)	0.0011
Pyrene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.004	(alr)	0.0007
Fluoranthenes+Pyrenes,C1-	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.011	(alr)	0.0004
Fluoranthenes+Pyrenes,C2-	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.022	(unc)	(R)
Fluoranthenes+Pyrenes,C3-	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.022	(unc)	(R)

COPC=Chemical of Potential Concern (HQ or HI >1);
(alr)=acceptably low risk (HQ or HI <1); (unc)=data gap for COPC designation;
(nd)=all non-detects; (R)=all rejects; (nm)=COPC not measured;
(mna)=not applicable

Table 7.3-1. Summary of Maximum Bioaccumulation HQs or HIs for All COPCs and All Receptors/Scenarios for Steps 1 and 2 of the SRA

	Step 1-2 bioaccumulation summary of COPC indicators and maximum HQ or HI - all receptors for maximum total chemistry values (detect or half nondetect)																							
	all receptors	birds														fish				invertebrates				
	overall COPC	Hawaiian stilt		Hawaiian coot		Hawaiian moorhen		Hawaiian duck		wandering tattler		night heron		sooty tern		bandtail goatfish		tilapia		composite macroinfauna		epibenthic crab	
chemical	indicator	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI
5-ring PAHs																								
Benzo(a)pyrene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.044	(alr)	0.042	(unc)	(no TRV)	(unc)	(no TRV)
Benzo(e)pyrene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.035	(alr)	0.034	(unc)	(no TRV)	(unc)	(no TRV)
Benzo(b)fluoranthene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Benzo(k)fluoranthene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Dibenz(a,h)anthracene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.015	(alr)	0.014	(unc)	(no TRV)	(unc)	(no TRV)
Perylene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
6-ring PAHs																								
Benzo(g,h,i)perylene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Indeno(1,2,3-cd)pyrene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
tHMWPAHs (4-6 ring)	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	0.094	(unc)	0.090	(unc)	0.270	(unc)	0.015
tPAHs (2-6 ring)	COPC	(unc)	0.834	(unc)	0.581	(unc)	0.755	(unc)	0.573	COPC	1.057	(unc)	0.496	(unc)	0.097	(unc)	0.258	(unc)	0.147	COPC	1.199	(unc)	0.483
non-PAH Semivolatiles																								
Aniline	(unc)	(unc)	0.0011	(unc)	0.0004	(unc)	0.0006	(unc)	0.0004	(unc)	0.0008	(unc)	0.0006	(alr)	0.0011	(alr)	0.014	(alr)	0.048	(alr)	0.848	(alr)	0.430
Benzoic Acid	(unc)	(unc)	0.204	(unc)	0.143	(unc)	0.185	(unc)	0.140	(unc)	0.259	(unc)	0.122	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
Benzyl Alcohol	(unc)	(alr)	0.066	(alr)	0.046	(alr)	0.060	(alr)	0.046	(alr)	0.084	(alr)	0.040	(alr)	0.007	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
bis(2-Chloroethoxy)methane	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
bis(2-Chloroethyl)Ether	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.042	(alr)	0.155	(unc)	(no TRV)	(unc)	(no TRV)
bis(Chloromethyl)Ether	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
4-Bromophenyl-phenylether	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Carbazole	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
4-Chloroaniline	(unc)	(unc)	0.012	(unc)	0.008	(unc)	0.011	(unc)	0.008	(unc)	0.015	(unc)	0.007	(alr)	0.006	(alr)	0.007	(alr)	0.024	(unc)	(R)	(unc)	(no TRV)
2-Chloronaphthalene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
2-Chlorophenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
4-Chlorophenol	(unc)	(unc)	0.059	(unc)	0.041	(unc)	0.053	(unc)	0.040	(unc)	0.075	(unc)	0.035	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
4-Chlorophenyl-phenylether	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Dibenzofuran	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
1,2-Dichlorobenzene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.009	(alr)	0.033	(alr)	0.001	(alr)	0.0003
1,3-Dichlorobenzene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.008	(alr)	0.030	(unc)	(no TRV)	(unc)	(no TRV)
1,4-Dichlorobenzene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.011	(alr)	0.039	(alr)	0.001	(alr)	0.0003
3,3'-Dichlorobenzidine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.00012	(alr)	0.0004	(unc)	(no TRV)	(unc)	(no TRV)
Hexachlorobutadiene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.073	(alr)	0.270	(alr)	0.001	(alr)	0.0003
Hexachlorocyclopentadiene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.090	(alr)	0.325	(unc)	(no TRV)	(unc)	(no TRV)
Hexachloroethane	COPC	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.704	COPC	2.535	(unc)	(no TRV)	(unc)	(no TRV)
Isophorone	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.006	(alr)	0.020	(unc)	(no TRV)	(unc)	(no TRV)
2-Nitroaniline	(unc)	(alr)	0.021	(alr)	0.015	(alr)	0.019	(alr)	0.015	(alr)	0.027	(alr)	0.013	(alr)	0.003	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
3-Nitroaniline	(unc)	(alr)	0.119	(alr)	0.083	(alr)	0.108	(alr)	0.082	(alr)	0.151	(alr)	0.071	(alr)	0.005	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
4-Nitroaniline	(unc)	(alr)	0.211	(alr)	0.147	(alr)	0.191	(alr)	0.145	(alr)	0.268	(alr)	0.126	(alr)	0.009	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
2-Nitrophenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
4-Nitrophenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
N-Nitrosodi-n-propylamine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
N-Nitrosodibutylamine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
N-Nitrosodiethylamine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
N-Nitrosodimethylamine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
N-nitrosodiphenylamine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
N-Nitrosomethylethylamine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
N-Nitrosopyrrolidine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Octachlorostyrene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
2,2'oxybis(1-Chloropropane)	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Pentachlorobenzene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.020	(alr)	0.068	(alr)	0.000	(alr)	0.00005
Pentachlorophenol	(unc)	(unc)	0.042	(unc)	0.029	(unc)	0.038	(unc)	0.029	(unc)	0.053	(unc)	0.025	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
Phenol	(unc)	(unc)	0.059	(unc)	0.041	(unc)	0.053	(unc)	0.040	(unc)	0.075	(unc)	0.035	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
2,3,5,6-Tetrachlorophenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
2,4,5-Trichlorophenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
2,4,6-Trichlorophenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
2,4-Dichlorophenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
2,4-Dimethylphenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
2,4-Dinitrophenol	COPC	COPC	1.192	(unc)	0.830	COPC	1.078	(unc)	0.818	COPC	1.510	(unc)	0.708	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
2-Methylphenol	(unc)	(unc)	0.069	(unc)	0.048	(unc)	0.063	(unc)	0.048	(unc)	0.088	(unc)	0.041	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
4,6-Dinitro-2-methylphenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
4-Chloro-3-Methylphenol	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
4-Methylphenol	COPC	(unc)	0.895	(unc)	0.623	(unc)	0.810	(unc)	0.614	COPC	1.134	(unc)	0.532	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
Butylbenzylphthalate	(alr)	(alr)	0.599	(alr)	0.417	(alr)	0.542	(alr)	0.411	(alr)	0.759	(alr)	0.356	(alr)	0.086	(alr)	0.0008	(alr)	0.003	(alr)	0.019	(alr)	0.009
bis(2-Ethylhexyl) phthalate	(alr)	(alr)	0.079	(alr)	0.055	(alr)	0.071	(alr)	0.054	(alr)	0.100	(alr)	0.047	(alr)	0.010	(alr)	0.009	(alr)	0.032	(alr)	0.022	(alr)	0.011
Di-n-butylphthalate	(alr)	(alr)	0.737	(alr)	0.514	(alr)	0.667	(alr)	0.506	(alr)	0.934	(alr)	0.438	(alr)	0.062	(alr)	0.007	(alr)	0.026	(alr)	0.013	(alr)	0.007
Di-n-octylphthalate	(alr)	(alr)	0.599	(alr)	0.417	(alr)	0.542	(alr)	0.411	(alr)	0.759	(alr)	0.356	(alr)	0.091	(alr)	0.011	(alr)	0.038	(alr)	0.020	(alr)	0.010
Diethylphthalate	COPC	COPC	1.151	(alr)	0.802	COPC	1.042	(alr)	0.790	COPC	1.459	(alr)	0.684	(alr)	0.062	(alr)	0.007	(alr)	0.026	(alr)	0.013	(alr)	0.007
Dimethylphthalate	(alr)	(alr)	0.066	(alr)	0.046	(alr)	0.060	(alr)	0.046	(alr)	0.084	(alr)	0.040	(alr)	0.007	(alr)	0.007	(alr)	0.026	(alr)	0.013	(alr)	0.007
1,2,4,5-Tetrachlorobenzene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.011	(alr)	0.041	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3-Trichlorobenzene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.019	(alr)	0.067	(alr)	0.00008	(alr)	0.00004
1,2,4-Trichlorobenzene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.026	(alr)	0.094	(alr)	0.000011	(alr)	0.000005
Chlorinated Pesticides																								
DDT series																								
2,4'-DDD	COPC	COPC	2.921	COPC	1.781	COPC	2.313	COPC	1.754	COPC	3.239	COPC	1.737	COPC	3.041	(alr)	0.938	COPC	2.000	(alr)	0.300	(alr)	0.030
4,4'-DDD	COPC	COPC	5.112	COPC	3.563	COPC	4.626	COPC	3.509	COPC	6.477	COPC	3.039	COPC	5.321	COPC	1.700	COPC	3.500	(alr)	0.275	(alr)	0.036
2,4'-DDE	COPC	COPC	1.588	(alr)	0.980	COPC	1.272	(alr)	0.965	COPC	1.781	(alr)	0.944	COPC	1.653	(alr)	0.004	(alr)	0.004	(alr)	0.165	(alr)	0.031
4,4'-DDE	COPC	COPC	30.672	COPC	15.523	COPC	20.155	COPC	15.288	COPC	28.222	COPC	18.235	COPC	31.928	(alr)	0.905	COPC	4.000	COPC	2.618	(alr)	0.326
2,4'-DDT	COPC	COPC	4.017	COPC	2.799	COPC	3.635	COPC	2.757	COPC	5.089	COPC	2.388	COPC	1.102	(alr)	0.338	(alr)	0.725	(alr)	0.472	(alr)	0.011
4,4'-DDT	COPC	COPC	19.353	COPC	13.487	COPC	17.512	COPC	13.283	COPC	24.521	COPC	11.505	COPC	6.842	(alr)	0.267	COPC	4.000	COPC	2.275	(alr)	0.010
tDDT	COPC	COPC	51.942	COPC	36.199	COPC	47.001	COPC	35.652	COPC	65.813	COPC	30.880	COPC	49.887	COPC	4.150	COPC	14.229	COPC	6.105	(alr)	0.445
chlordane series																								
alpha-Chlordane	COPC	(alr)	0.253	(alr)	0.149	(alr)	0.193	(alr)	0.147	(alr)	0.271	(alr)	0.150	(alr)	0.263	COPC	1.100	(alr)	0.680	(alr)	0.013	(alr)	0.002
gamma-Chlordane	(alr)	(alr)	0.460	(alr)	0.320	(alr)	0.416	(alr)	0.316	(alr)	0.583	(alr)	0.273	(alr)	0.148	(alr)	0.560	(alr)	0.620	(alr)	0.008	(alr)	0.0007
cis-Nonachlor	COPC	COPC	1.034	(alr)	0.641	(alr)	0.832	(alr)	0.631	COPC	1.165	(alr)	0.615	COPC	1.077	COPC	2.100	COPC	4.500	(alr)	0.056	(alr)	0.006
trans-Nonachlor	COPC	(alr)	0.271	(alr)	0.170	(alr)	0.220	(alr)	0.167	(alr)	0.309	(alr)	0.161	(alr)	0.282	(alr)	0.860	COPC	1.180	(alr)	0.015	(alr)	0.003

COPC=Chemical of Potential Concern (HQ or HI >1);
(alr)=acceptably low risk (HQ or HI <1); (unc)=data gap for COPC designation;
(nd)=all non-detects; (R)=all rejects; (nm)=COPC not measured;
(mna)=not applicable

Table 7.3-1. Summary of Maximum Bioaccumulation HQs or HIs for All COPCs and All Receptors/Scenarios for Steps 1 and 2 of the SRA

	Step 1-2 bioaccumulation summary of COPC indicators and maximum HQ or HI - all receptors for maximum total chemistry values (detect or half nondetect)																						
	all receptors	birds														fish				invertebrates			
	overall COPC	Hawaiian stilt		Hawaiian coot		Hawaiian moorhen		Hawaiian duck		wandering tattler		night heron		sooty tern		bandtail goatfish		tilapia		composite macroinfauna		epibenthic crab	
chemical	indicator	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI
Heptachlor	(alr)	(alr)	0.032	(alr)	0.020	(alr)	0.026	(alr)	0.019	(alr)	0.036	(alr)	0.019	(alr)	0.034	(alr)	0.190	(alr)	0.410	(alr)	0.360	(alr)	0.037
Heptachlor epoxide	(alr)	(alr)	0.068	(alr)	0.014	(alr)	0.019	(alr)	0.014	(alr)	0.026	(alr)	0.040	(alr)	0.070	(alr)	0.360	(alr)	0.860	(alr)	0.048	(alr)	0.085
Oxychlordane	COPC	COPC	2.715	(alr)	0.912	COPC	1.185	(alr)	0.899	COPC	1.659	COPC	1.614	COPC	2.826	(alr)	0.290	COPC	1.120	(alr)	0.008	(alr)	0.004
tChlordane	COPC	COPC	4.420	COPC	1.996	COPC	2.591	COPC	1.965	COPC	3.628	COPC	2.627	COPC	4.600	COPC	5.460	COPC	9.370	(alr)	0.508	(alr)	0.138
Aldrin	(alr)	(alr)	0.067	(alr)	0.033	(alr)	0.043	(alr)	0.032	(alr)	0.060	(alr)	0.040	(alr)	0.069	(alr)	0.017	(alr)	0.028	(alr)	0.006	(alr)	0.0006
alpha-BHC	(alr)	(alr)	0.007	(alr)	0.004	(alr)	0.005	(alr)	0.004	(alr)	0.008	(alr)	0.004	(alr)	0.007	(alr)	0.00014	(alr)	0.0003	(alr)	0.003	(alr)	0.0003
beta-BHC	COPC	(alr)	0.003	(alr)	0.002	(alr)	0.003	(alr)	0.002	(alr)	0.004	(alr)	0.002	(alr)	0.004	(alr)	0.00008	(alr)	0.0002	COPC	11.786	COPC	1.214
delta-BHC	COPC	(alr)	0.006	(alr)	0.003	(alr)	0.003	(alr)	0.002	(alr)	0.005	(alr)	0.003	(alr)	0.006	(alr)	0.004	(alr)	0.013	COPC	14.286	COPC	1.429
gamma-BHC(Lindane)	COPC	(alr)	0.003	(alr)	0.002	(alr)	0.002	(alr)	0.002	(alr)	0.003	(alr)	0.002	(alr)	0.003	(alr)	0.003	(alr)	0.005	COPC	11.818	COPC	2.273
Dieldrin	(alr)	(alr)	0.146	(alr)	0.034	(alr)	0.044	(alr)	0.034	(alr)	0.062	(alr)	0.087	(alr)	0.152	(alr)	0.040	(alr)	0.061	(alr)	0.500	(alr)	0.200
Endosulfan I	(alr)	(alr)	0.00015	(alr)	0.00009	(alr)	0.00012	(alr)	0.00009	(alr)	0.0002	(alr)	0.00009	(alr)	0.0002	(alr)	0.012	(alr)	0.015	(alr)	0.037	(alr)	0.022
Endosulfan II	(alr)	(alr)	0.0013	(alr)	0.0008	(alr)	0.0010	(alr)	0.0008	(alr)	0.0014	(alr)	0.0008	(alr)	0.0013	(alr)	0.060	(alr)	0.125	(alr)	0.314	(alr)	0.031
Endosulfan sulfate	(alr)	(alr)	0.0002	(alr)	0.00012	(alr)	0.00016	(alr)	0.00012	(alr)	0.0002	(alr)	0.00012	(alr)	0.0002	(alr)	0.009	(alr)	0.020	(alr)	0.049	(alr)	0.016
Endrin	(alr)	(alr)	0.009	(alr)	0.005	(alr)	0.007	(alr)	0.005	(alr)	0.010	(alr)	0.005	(alr)	0.009	(alr)	0.074	(alr)	0.153	(alr)	0.052	(alr)	0.005
Endrin Aldehyde	(alr)	(alr)	0.029	(alr)	0.009	(alr)	0.011	(alr)	0.009	(alr)	0.016	(alr)	0.018	(alr)	0.031	(alr)	0.074	(alr)	0.516	(alr)	0.084	(alr)	0.022
Endrine ketone	(alr)	(alr)	0.014	(alr)	0.009	(alr)	0.011	(alr)	0.009	(alr)	0.016	(alr)	0.009	(alr)	0.015	(alr)	0.116	(alr)	0.253	(alr)	0.084	(alr)	0.009
Hexachlorobenzene	(alr)	(alr)	0.004	(alr)	0.003	(alr)	0.003	(alr)	0.002	(alr)	0.005	(alr)	0.002	(alr)	0.004	(alr)	0.016	(alr)	0.034	(alr)	0.00006	(alr)	0.000006
Methoxychlor	(alr)	(alr)	0.002	(alr)	0.0013	(alr)	0.0016	(alr)	0.0012	(alr)	0.002	(alr)	0.0013	(alr)	0.002	(alr)	0.083	(alr)	0.183	(alr)	0.095	(alr)	0.010
Mirex	(alr)	(alr)	0.0006	(alr)	0.0004	(alr)	0.0005	(alr)	0.0004	(alr)	0.0007	(alr)	0.0004	(alr)	0.0007	(alr)	0.006	(alr)	0.013	(alr)	0.094	(alr)	0.010
Toxaphene	(unc)	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(R)
Polychlorinated Biphenyls (PCBs)																							
PCB-8	(alr)	(alr)	0.00003	(alr)	0.00002	(alr)	0.00003	(alr)	0.00002	(alr)	0.00004	(alr)	0.00002	(alr)	0.00004	(alr)	0.00014	(alr)	0.0003	(unc)	(no TRV)	(unc)	(no TRV)
PCB-18	(alr)	(alr)	0.00005	(alr)	0.00003	(alr)	0.00004	(alr)	0.00003	(alr)	0.00006	(alr)	0.00003	(alr)	0.00005	(alr)	0.0002	(alr)	0.0004	(unc)	(no TRV)	(unc)	(no TRV)
PCB-28	(alr)	(alr)	0.00002	(alr)	0.000014	(alr)	0.00002	(alr)	0.000014	(alr)	0.00003	(alr)	0.000013	(alr)	0.00002	(alr)	0.00012	(alr)	0.0002	(unc)	(no TRV)	(unc)	(no TRV)
PCB-44	(alr)	(alr)	0.00004	(alr)	0.00002	(alr)	0.00003	(alr)	0.00002	(alr)	0.00004	(alr)	0.00002	(alr)	0.00004	(alr)	0.0002	(alr)	0.0003	(unc)	(no TRV)	(unc)	(no TRV)
PCB-52	(alr)	(alr)	0.00002	(alr)	0.000014	(alr)	0.00002	(alr)	0.000014	(alr)	0.00003	(alr)	0.000013	(alr)	0.00002	(alr)	0.00008	(alr)	0.0002	(alr)	0.0014	(alr)	0.0002
PCB-66	(alr)	(alr)	0.00003	(alr)	0.00002	(alr)	0.00002	(alr)	0.00002	(alr)	0.00003	(alr)	0.00002	(alr)	0.00003	(alr)	0.00014	(alr)	0.0002	(unc)	(no TRV)	(unc)	(no TRV)
PCB-77 (non-ortho coplaner)	COPC	COPC	1.091	(alr)	0.665	(alr)	0.863	(alr)	0.655	COPC	1.209	(alr)	0.648	COPC	1.135	(alr)	0.009	(alr)	0.018	(alr)	0.004	(alr)	0.0004
PCB-101	(alr)	(alr)	0.00012	(alr)	0.00008	(alr)	0.00010	(alr)	0.00007	(alr)	0.00014	(alr)	0.00007	(alr)	0.00013	(alr)	0.0003	(alr)	0.0010	(alr)	0.457	(alr)	0.047
PCB-105	(alr)	(alr)	0.002	(alr)	0.0015	(alr)	0.002	(alr)	0.0015	(alr)	0.003	(alr)	0.0014	(alr)	0.003	(alr)	0.0005	(alr)	0.0010	(unc)	(no TRV)	(unc)	(no TRV)
PCB-114	(alr)	(alr)	0.004	(alr)	0.002	(alr)	0.003	(alr)	0.002	(alr)	0.004	(alr)	0.002	(alr)	0.002	(alr)	0.0009	(alr)	0.0010	(unc)	(no TRV)	(unc)	(no TRV)
PCB-118	(alr)	(alr)	0.0009	(alr)	0.0005	(alr)	0.0007	(alr)	0.0005	(alr)	0.0009	(alr)	0.0005	(alr)	0.0009	(alr)	0.0009	(alr)	0.004	(alr)	0.001	(alr)	0.00008
PCB-123	(alr)	(alr)	0.0004	(alr)	0.0002	(alr)	0.0003	(alr)	0.0002	(alr)	0.0004	(alr)	0.0002	(alr)	0.0004	(alr)	0.0008	(alr)	0.002	(unc)	(no TRV)	(unc)	(no TRV)
PCB-126 (non-ortho coplaner)	COPC	COPC	3.033	COPC	1.853	COPC	2.405	COPC	1.825	COPC	3.368	COPC	1.803	COPC	3.157	(alr)	0.600	COPC	1.271	(unc)	(no TRV)	(unc)	(no TRV)
PCB-128	(alr)	(alr)	0.00002	(alr)	0.000011	(alr)	0.000014	(alr)	0.000011	(alr)	0.00002	(alr)	0.000011	(alr)	0.00002	(alr)	0.00011	(alr)	0.00015	(unc)	(no TRV)	(unc)	(no TRV)
PCB-138	(alr)	(alr)	0.0002	(alr)	0.00010	(alr)	0.00012	(alr)	0.00009	(alr)	0.0002	(alr)	0.00009	(alr)	0.0002	(alr)	0.0005	(alr)	0.0013	(alr)	0.002	(alr)	0.0002
PCB-153	(alr)	(alr)	0.00012	(alr)	0.00008	(alr)	0.00011	(alr)	0.00008	(alr)	0.0002	(alr)	0.00007	(alr)	0.00011	(alr)	0.0009	(alr)	0.0004	(alr)	0.002	(alr)	0.0007
PCB-156	(alr)	(alr)	0.002	(alr)	0.0013	(alr)	0.002	(alr)	0.0013	(alr)	0.002	(alr)	0.0011	(alr)	0.0010	(alr)	0.0002	(alr)	0.0004	(unc)	(no TRV)	(unc)	(no TRV)
PCB-157	(alr)	(alr)	0.007	(alr)	0.002	(alr)	0.002	(alr)	0.002	(alr)	0.003	(alr)	0.004	(alr)	0.007	(alr)	0.0028	(alr)	0.0012	(unc)	(no TRV)	(unc)	(no TRV)
PCB-167	(alr)	(alr)	0.0004	(alr)	0.0003	(alr)	0.0004	(alr)	0.0003	(alr)	0.0005	(alr)	0.0003	(alr)	0.0005	(alr)	0.0009	(alr)	0.002	(unc)	(no TRV)	(unc)	(no TRV)
PCB-169 (non-ortho coplaner)	(alr)	(alr)	0.011	(alr)	0.007	(alr)	0.009	(alr)	0.007	(alr)	0.013	(alr)	0.007	(alr)	0.012	(alr)	0.002	(alr)	0.005	(unc)	(no TRV)	(unc)	(no TRV)
PCB-170	(alr)	(alr)	0.00004	(alr)	0.00002	(alr)	0.00003	(alr)	0.00002	(alr)	0.00004	(alr)	0.00002	(alr)	0.00004	(alr)	0.0002	(alr)	0.0003	(unc)	(no TRV)	(unc)	(no TRV)
PCB-180	(alr)	(alr)	0.00007	(alr)	0.00002	(alr)	0.00002	(alr)	0.00002	(alr)	0.00003	(alr)	0.00004	(alr)	0.00007	(alr)	0.0006	(alr)	0.0002	(alr)	0.0003	(alr)	0.0002
PCB-187	(alr)	(alr)	0.00005	(alr)	0.00003	(alr)	0.00004	(alr)	0.00003	(alr)	0.00006	(alr)	0.00003	(alr)	0.00005	(alr)	0.0003	(alr)	0.0004	(unc)	(no TRV)	(unc)	(no TRV)
PCB-189	(alr)	(alr)	0.00011	(alr)	0.00007	(alr)	0.00009	(alr)	0.00007	(alr)	0.00013	(alr)	0.00007	(alr)	0.00012	(alr)	0.0002	(alr)	0.0005	(unc)	(no TRV)	(unc)	(no TRV)
PCB-195	(alr)	(alr)	0.000012	(alr)	0.000007	(alr)	0.000010	(alr)	0.000007	(alr)	0.000013	(alr)	0.000007	(alr)	0.000012	(alr)	0.00005	(alr)	0.00010	(unc)	(no TRV)	(unc)	(no TRV)
PCB-206	(alr)	(alr)	0.000015	(alr)	0.000009	(alr)	0.000012	(alr)	0.000009	(alr)	0.00002	(alr)	0.000009	(alr)	0.00002	(alr)	0.00006	(alr)	0.00013	(unc)	(no TRV)	(unc)	(no TRV)
PCB-209	(alr)	(alr)	0.00002	(alr)	0.00002	(alr)	0.00002	(alr)	0.000015	(alr)	0.00003	(alr)	0.000015	(alr)	0.00003	(alr)	0.00010	(alr)	0.0002	(unc)	(no TRV)	(unc)	(no TRV)
tPCB TEQ - fish and birds	COPC	COPC	4.146	COPC	2.532	COPC	3.288	COPC	2.494	COPC	4.604	COPC	2.465	COPC	4.316	(alr)	0.622	COPC	1.312	(mna)	(mna)	(mna)	(mna)
tPCB NOAA-18 (detect,	COPC	COPC	1.186	(alr)	0.527	(alr)	0.684	(alr)	0.519	(alr)	0.957	(alr)	0.705	COPC	1.235	(alr)	0.373	(alr)	0.195	COPC	2.008	COPC	1.215
Polychlorinated Dioxins/Furans (PCDD/PCDF)																							
2,3,7,8-TCDD	(alr)	(alr)	0.004	(alr)	0.002	(alr)	0.003	(alr)	0.002	(alr)	0.004	(alr)	0.002	(alr)	0.0009	(alr)	0.007	(alr)	0.003	(alr)	0.000009	(alr)	0.000009
1,2,3,7,8-PeCDD	(alr)	(alr)	0.034	(alr)	0.024	(alr)	0.031	(alr)	0.023	(alr)	0.043	(alr)	0.020	(alr)	0.003	(alr)	0.023	(alr)	0.011	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,4,7,8-HxCDD	(alr)	(alr)	0.005	(alr)	0.003	(alr)	0.005	(alr)	0.003	(alr)	0.006	(alr)	0.003	(alr)	0.00008	(alr)	0.007	(alr)	0.002	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,6,7,8-HxCDD	(alr)	(alr)	0.003	(alr)	0.002	(alr)	0.003	(alr)	0.002	(alr)	0.004	(alr)	0.002	(alr)	0.00008	(alr)	0.0006	(alr)	0.00014	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,7,8,9-HxCDD	(alr)	(alr)	0.027	(alr)	0.019	(alr)	0.025	(alr)	0.019	(alr)	0.034	(alr)	0.016	(alr)	0.0002	(alr)	0.0002	(alr)	0.00012	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,4,6,7,8-HpCDD	(alr)	(alr)	0.013	(alr)	0.009	(alr)	0.011	(alr)	0.009	(alr)	0.016	(alr)	0.007	(alr)	0.00002	(alr)	0.00004	(alr)	0.00013	(unc)	(no TRV)	(unc)	(no TRV)
OCDD	(alr)	(alr)	0.008	(alr)	0.006	(alr)	0.007	(alr)	0.006	(alr)	0.010	(alr)	0.005	(alr)	0.00002	(alr)	0.000007	(alr)	0.00013	(unc)	(no TRV)	(unc)	(no TRV)
2,3,7,8-TCDF	(alr)	(alr)	0.025	(alr)	0.017	(alr)	0.022	(alr)	0.017	(alr)	0.031	(alr)	0.015	(alr)	0.009	(alr)	0.002	(alr)	0.004	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,7,8-PeCDF	(alr)	(alr)	0.0014	(alr)	0.0010	(alr)	0.0013	(alr)	0.0010	(alr)	0.002	(alr)	0.0008	(alr)	0.0002	(alr)	0.0006	(alr)	0.00013	(unc)	(no TRV)	(unc)	(no TRV)
2,3,4,7,8-PeCDF	(alr)	(alr)	0.019	(alr)	0.013	(alr)	0.017	(alr)	0.013	(alr)	0.024	(alr)	0.011	(alr)	0.005	(alr)	0.021	(alr)	0.006	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,4,7,8-HxCDF	(alr)	(alr)	0.013	(alr)	0.008	(alr)	0.011	(alr)	0.008	(alr)	0.015	(alr)	0.008	(alr)	0.00010	(alr)	0.0008	(alr)	0.0006	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,6,7,8-HxCDF	(alr)	(alr)	0.010	(alr)	0.007	(alr)	0.009	(alr)	0.007	(alr)	0.013	(alr)	0.006	(alr)	0.00015	(alr)	0.0012	(alr)	0.0003	(unc)	(no TRV)	(unc)	(no TRV)
2,3,4,6,7,8-HxCDF	(alr)	(alr)	0.021	(alr)	0.015	(alr)	0.019	(alr)	0.015	(alr)	0.027	(alr)	0.013	(alr)	0.00010	(alr)	0.0008	(alr)	0.0008	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,7,8,9-HxCDF	(alr)	(alr)	0.002	(alr)	0.002	(alr)	0.002	(alr)	0.002	(alr)	0.003	(alr)	0.001	(alr)	0.00011	(alr)	0.0009	(alr)	0.0003	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,4,6,7,8-HpCDF	(alr)	(alr)	0.024	(alr)	0.017	(alr)	0.022	(alr)	0.017	(alr)	0.031	(alr)	0.014	(alr)	0.00008	(alr)	0.0002	(alr)	0.0007	(unc)	(no TRV)	(unc)	(no TRV)
1,2,3,4,7,8,9-HpCDF	(alr)	(alr)	0.003	(alr)	0.002	(alr)	0.003	(alr)	0.002	(alr)	0.004	(alr)	0.002	(alr)	0.000013	(alr)	0.00010	(alr)	0.00008	(unc)	(no TRV)	(unc)	(no TRV)
OCDF	(alr)	(alr)	0.0011	(alr)	0.0008	(alr)	0.0010	(alr)	0.0008	(alr)	0.0014	(alr)	0.0007	(alr)	0.000002	(alr)	0.000004	(alr)	0.00002	(unc)	(no TRV)	(unc)	(no TRV)
tDioxin/Furan TEQ - fish and birds	(alr)	(alr)	0.212	(alr)	0.148	(alr)	0.192	(alr)	0.146	(alr)	0.269	(alr)	0.126	(alr)	0.014	(alr)	0.065	(alr)	0.029	(mna)	(mna)	(mna)	(mna)

COPC=Chemical of Potential Concern (HQ or HI >1);
(alr)=acceptably low risk (HQ or HI <1); (unc)=data gap for COPC designation;
(nd)=all non-detects; (R)=all rejects; (nm)=COPC not measured;
(mna)=not applicable

Table 7.3-1. Summary of Maximum Bioaccumulation HQs or HIs for All COPCs and All Receptors/Scenarios for Steps 1 and 2 of the SRA

	Step 1-2 bioaccumulation summary of COPC indicators and maximum HQ or HI - all receptors for maximum total chemistry values (detect or half nondetect)																							
	all receptors	birds														fish				invertebrates				
	overall COPC	Hawaiian stilt		Hawaiian coot		Hawaiian moorhen		Hawaiian duck		wandering tattler		night heron		sooty tern		bandtail goatfish		tilapia		composite macroinfauna		epibenthic crab	
chemical	indicator	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI	indicator	max HQ or HI
Organophosphorus Pesticides																								
Azinphos-methyl	(unc)	(alr)	0.262	(alr)	0.183	(alr)	0.237	(alr)	0.180	(alr)	0.332	(alr)	0.156	(alr)	0.266	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Chlorpyrifos	(alr)	(alr)	0.127	(alr)	0.089	(alr)	0.115	(alr)	0.087	(alr)	0.161	(alr)	0.076	(alr)	0.123	(alr)	0.867	(alr)	0.867	(alr)	0.014	(alr)	0.007
Demeton-O	(unc)	(unc)	0.238	(unc)	0.166	(unc)	0.216	(unc)	0.164	(unc)	0.302	(unc)	0.142	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(no TRV)	(unc)	(no TRV)
Demeton-S	(unc)	(unc)	0.126	(alr)	0.088	(alr)	0.114	(alr)	0.087	(alr)	0.160	(unc)	0.075	(unc)	(R)	(unc)	(R)	(unc)	(R)	(unc)	(no TRV)	(unc)	(no TRV)
Diazinon	(unc)	(alr)	0.511	(alr)	0.356	(alr)	0.463	(alr)	0.351	(alr)	0.648	(alr)	0.304	(alr)	0.532	(alr)	0.159	(alr)	0.159	(unc)	(no TRV)	(unc)	(no TRV)
Ethion	(unc)	(alr)	0.014	(alr)	0.010	(alr)	0.012	(alr)	0.009	(alr)	0.017	(alr)	0.008	(alr)	0.013	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Ethoprop	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Ethyl parathion	(unc)	(alr)	0.577	(alr)	0.402	(alr)	0.522	(alr)	0.396	(alr)	0.731	(alr)	0.343	(alr)	0.560	(alr)	0.061	(alr)	0.061	(unc)	(no TRV)	(unc)	(no TRV)
Malathion	(unc)	(alr)	0.0011	(alr)	0.0008	(alr)	0.0010	(alr)	0.0008	(alr)	0.0014	(alr)	0.0007	(alr)	0.0011	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Methyl parathion	(unc)	(alr)	0.068	(alr)	0.048	(alr)	0.062	(alr)	0.047	(alr)	0.086	(alr)	0.041	(alr)	0.070	(alr)	0.043	(alr)	0.043	(unc)	(no TRV)	(unc)	(no TRV)
Chlorinated Herbicides																								
2,4,5-T	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
2,4-D	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Dalapon	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Dicamba	(unc)	(alr)	0.007	(alr)	0.005	(alr)	0.006	(alr)	0.005	(alr)	0.008	(alr)	0.004	(alr)	0.0009	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
MCPP	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
2,4,5-TP (Silvex)	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Triazine Pesticides																								
Ametryn	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Anilazine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Atrazine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.270	(alr)	0.263	(unc)	(no TRV)	(unc)	(no TRV)
Pronamide	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Propiconazole	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Simazine	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Terbacil	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Hexazinone	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Carbamate/Urea Pesticides																								
Benomyl	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
Carbaryl	(unc)	(unc)	0.020	(unc)	0.014	(unc)	0.018	(unc)	0.014	(unc)	0.025	(unc)	0.012	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
Carbofuran	COPC	COPC	2.665	COPC	1.857	COPC	2.412	COPC	1.829	COPC	3.377	COPC	1.584	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
Diuron	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
Methomyl	(unc)	(unc)	0.112	(unc)	0.078	(unc)	0.102	(unc)	0.077	(unc)	0.142	(unc)	0.067	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
Oxamyl	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)	(unc)	(nm)
Ordnance Compounds																								
1,3-Dinitrobenzene	(unc)	(alr)	0.068	(alr)	0.047	(alr)	0.061	(alr)	0.047	(alr)	0.086	(alr)	0.040	(alr)	0.015	(alr)	0.003	(alr)	0.003	(unc)	(no TRV)	(unc)	(no TRV)
2,4-Dinitrotoluene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.0003	(alr)	0.0003	(unc)	(no TRV)	(unc)	(no TRV)
2,6-Dinitrotoluene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.0002	(alr)	0.0002	(unc)	(no TRV)	(unc)	(no TRV)
HMX	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Nitrobenzene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.130	(alr)	0.130	(alr)	0.183	(alr)	0.183
Nitroglycerin	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
2-Nitrotoluene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.00012	(alr)	0.00012	(unc)	(no TRV)	(unc)	(no TRV)
3-Nitrotoluene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.0002	(alr)	0.002	(unc)	(no TRV)	(unc)	(no TRV)
4-Nitrotoluene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(alr)	0.0002	(alr)	0.0002	(unc)	(no TRV)	(unc)	(no TRV)
Picric Acid	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
RDX	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
Tetryl	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
1,3,5-Trinitrobenzene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)
2,4,6-Trinitrotoluene	(unc)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)	(unc)	(no TRV)

COPC=Chemical of Potential Concern (HQ or HI >1);
(alr)=acceptably low risk (HQ or HI <1); (unc)=data gap for COPC designation;
(nd)=all non-detects; (R)=all rejects; (nm)=COPC not measured;
(mna)=not applicable

Return to Table of Contents

Table 7.4-1. Summary of Screening Risk Assessment Results for Sediment Quality Benchmarks, Sediment Toxicity Relationship, and Tissue Bioaccumulation

Chemical/Physical Measurement	CAS Number	Sediment Quality Benchmark (ER-L)	Sediment Toxicity	Bioaccumulation	COMPOSITE DESIGNATION
Metals (18)					
Aluminum	7429-90-5	nb	nsc	COPC	COPC
Antimony	7440-36-0	nb	nsc	(unc)	data gap
Arsenic	7440-38-2	COPC	nsc	COPC	COPC
Cadmium	7440-43-9	COPC	COPC	COPC	COPC
Chromium	7440-47-3	COPC	nsc	COPC	COPC
Cobalt	7440-48-4	nb	nsc	(unc)	data gap
Copper	7440-50-8	COPC	COPC	COPC	COPC
Iron	7439-89-6	nb	nsc	(unc)	data gap
Lead	7439-92-1	COPC	COPC	COPC	COPC
Manganese	7439-96-5	nb	nsc	COPC	COPC
Mercury	7439-97-6	COPC	COPC	COPC	COPC
Molybdenum	7439-98-7	nb	COPC	(unc)	COPC
Nickel	7440-02-0	COPC	nsc	COPC	COPC
Selenium	7782-49-2	nb	nsc	COPC	COPC
Silicon	7440-21-3	nb	nsc	(unc)	data gap
Silver	7440-22-4	COPC	nsc	COPC	COPC
Tin	7440-31-5	nb	nsc	(unc)	data gap
Zinc	7440-66-6	COPC	nsc	COPC	COPC
Butyltins (4)					
Monobutyltin	1118-46-3	nb	nca	(unc)	data gap
Dibutyltin	683-18-1	nb	COPC	(alr)	COPC
Tributyltin	688-73-3	nb	COPC	(alr)	COPC
Tetrabutyltin	1461-25-2	nb	nca	(alr)	data gap
Polycyclic Aromatic Hydrocarbons (PAHs) (46)					
2-ring PAHs					
Naphthalene	91-20-3	ltb	COPC	(alr)	COPC
Naphthalenes,C1-	NAPHTHALC1	nb	COPC	(alr)	COPC
Naphthalenes,C2-	NAPHTHALC2	nb	COPC	(alr)	COPC
Naphthalenes,C3-	NAPHTHALC3	nb	COPC	(alr)	COPC
Naphthalenes,C4-	NAPHTHALC4	nb	COPC	(alr)	COPC
1-Methylnapthalene	90-12-0	nb	COPC	(alr)	COPC
2-Methylnaphthalene	91-57-6	COPC	COPC	(alr)	COPC
2,6-Dimethylnapthalene	581-42-0	nb	COPC	(alr)	COPC
1,6,7-Trimethylnaphthalene	2245-38-7	nb	COPC	(alr)	COPC
Biphenyl	92-52-4	nb	COPC	(unc)	COPC
3-ring PAHs					
Acenaphthene	83-32-9	COPC	COPC	(unc)	COPC
Acenaphthylene	208-96-8	COPC	COPC	(unc)	COPC
Anthracene	120-12-7	COPC	COPC	(alr)	COPC
Phenanthrene	85-01-8	COPC	COPC	(alr)	COPC
1-Methylphenanthrene	832-69-9	nb	COPC	(alr)	COPC
Phenanthrenes+Anthracenes,C1-	PHENANTHC1	nb	COPC	(alr)	COPC
Phenanthrenes+Anthracenes,C2-	PHENANTHC2	nb	COPC	(alr)	COPC
Phenanthrenes+Anthracenes,C3-	PHENANTHC3	nb	COPC	(alr)	COPC
Phenanthrenes+Anthracenes,C4-	PHENANTHC4	nb	COPC	(alr)	COPC
Fluorene	86-73-7	COPC	COPC	(unc)	COPC
Fluorenes,C1-	FLUORENESC1	nb	COPC	(unc)	COPC
Fluorenes,C2-	FLUORENESC2	nb	COPC	(unc)	COPC
Fluorenes,C3-	FLUORENESC3	nb	COPC	(unc)	COPC
Dibenzothiophene	132-65-0	nb	COPC	(unc)	COPC
Dibenzothiophenes,C1-	DIBENZC1ALK	nb	COPC	(unc)	COPC
Dibenzothiophenes,C2-	DIBENZC2ALK	nb	COPC	(unc)	COPC
Dibenzothiophenes,C3-	DIBENZC3ALK	nb	COPC	(unc)	COPC
tLMWPAHs (2-3 ring) (detect)		nb	COPC	COPC	COPC
tLMWPAH-Long95 (detect)		COPC	COPC	na	COPC
4-ring PAHs					
Benz(a)anthracene	56-55-3	COPC	COPC	(unc)	COPC
Chrysene	218-01-9	COPC	COPC	(unc)	COPC
Chrysenes,C1	CHRYSC1ALK	nb	COPC	(unc)	COPC
Chrysenes,C2-	CHRYSC2ALK	nb	COPC	(unc)	COPC
Chrysenes,C3-	CHRYSC3ALK	nb	COPC	(unc)	COPC
Chrysenes,C4-	CHRYSC4ALK	nb	COPC	(unc)	COPC
Fluoranthene	206-44-0	COPC	COPC	(unc)	COPC
Pyrene	129-00-0	COPC	COPC	(unc)	COPC
Fluoranthenes+Pyrenes,C1-	FLUORANTHC1	nb	COPC	(unc)	COPC
Fluoranthenes+Pyrenes,C2-	FLUORANTHC2	nb	COPC	(unc)	COPC
Fluoranthenes+Pyrenes,C3-	FLUORANTHC3	nb	COPC	(unc)	COPC
5-ring PAHs					
Benzo(a)pyrene	50-32-8	COPC	COPC	(unc)	COPC
Benzo(e)pyrene	192-97-2	nb	COPC	(unc)	COPC
Benzo(b)fluoranthene	205-99-2	nb	COPC	(unc)	COPC
Benzo(k)fluoranthene	207-08-9	nb	COPC	(unc)	COPC
Dibenz(a,h)anthracene	53-70-3	COPC	COPC	(unc)	COPC
Perylene	198-55-0	nb	COPC	(unc)	COPC
6-ring PAHs					
Benzo(g,h,i)perylene	191-24-2	nb	COPC	(unc)	COPC
Indeno(1,2,3-cd)pyrene	193-39-5	nb	COPC	(unc)	COPC
tHMWPAHs (4-6 ring) (detect)		nb	COPC	(unc)	COPC
tHMWPAH-Long95 (detect)		COPC	COPC	na	COPC
tPAHs (2-6 ring) (detect)		nb	COPC	COPC	COPC
tPAH-Long95 (detect)		COPC	COPC	na	COPC

file = stat_sumtablesCS4.xls; worksheet = CSsummary;
date = 12/16/1999; time = 5:52 PM

Table 7.4-1. Summary of Screening Risk Assessment Results for Sediment Quality Benchmarks, Sediment Toxicity Relationship, and Tissue Bioaccumulation

Chemical/Physical Measurement	CAS Number	Sediment Quality Benchmark (ER-L)	Sediment Toxicity	Bioaccumulation	COMPOSITE DESIGNATION
non-PAH Semivolatiles (58)					
Aniline	62-53-3	nb	nca	(unc)	data gap
Benzoic Acid	65-85-0	nb	COPC	(unc)	COPC
Benzyl Alcohol	100-51-6	nb	nca	(unc)	data gap
bis(2-Chloroethoxy)methane	111-91-1	nb	nca	(unc)	data gap
bis(2-Chloroethyl)Ether	111-44-4	nb	nca	(unc)	data gap
bis(Chloromethyl)Ether	542-88-1	nb	nca	(unc)	data gap
4-Bromophenyl-phenylether	101-55-3	nb	nca	(unc)	data gap
Carbazole	86-74-8	nb	COPC	(unc)	COPC
4-Chloroaniline	106-47-8	nb	nca	(unc)	data gap
2-Chloronaphthalene	91-58-7	nb	nca	(unc)	data gap
2-Chlorophenol	95-57-8	nb	nca	(unc)	data gap
4-Chlorophenol	106-48-9	nb	nca	(unc)	data gap
4-Chlorophenyl-phenylether	7005-72-3	nb	nca	(unc)	data gap
Dibenzofuran	132-64-9	nb	nca	(unc)	data gap
1,2-Dichlorobenzene	95-50-1	nb	nca	(unc)	data gap
1,3-Dichlorobenzene	541-73-1	nb	nca	(unc)	data gap
1,4-Dichlorobenzene	106-46-7	nb	nca	(unc)	data gap
3,3'-Dichlorobenzidine	91-94-1	nb	nca	(unc)	data gap
Hexachlorobutadiene	87-68-3	nb	nca	(unc)	data gap
Hexachlorocyclopentadiene	77-47-4	nb	nca	(unc)	data gap
Hexachloroethane	67-72-1	nb	nca	COPC	COPC
Isophorone	78-59-1	nb	nca	(unc)	data gap
2-Nitroaniline	88-74-4	nb	nca	(unc)	data gap
3-Nitroaniline	99-09-2	nb	nca	(unc)	data gap
4-Nitroaniline	100-01-6	nb	nca	(unc)	data gap
2-Nitrophenol	88-75-5	nb	nca	(unc)	data gap
4-Nitrophenol	100-02-7	nb	nca	(unc)	data gap
N-Nitrosodi-n-propylamine	621-64-7	nb	nca	(unc)	data gap
N-Nitrosodibutylamine	924-16-3	nb	nca	(unc)	data gap
N-Nitrosodiethylamine	55-18-5	nb	nca	(unc)	data gap
N-Nitrosodimethylamine	62-75-9	nb	nca	(unc)	data gap
N-nitrosodiphenylamine	86-30-6	nb	nca	(unc)	data gap
N-Nitrosomethylethylamine	10595-95-6	nb	nca	(unc)	data gap
N-Nitrosopyrrolidine	930-55-2	nb	nca	(unc)	data gap
Octachlorostyrene	29082-74-4	nb	nca	(unc)	data gap
2,2'oxybis(1-Chloropropane)	108-60-1	nb	nca	(unc)	data gap
Pentachlorobenzene	608-93-5	nb	nca	(unc)	data gap
Pentachlorophenol	87-86-5	nb	nca	(unc)	data gap
Phenol	108-95-2	nb	COPC	(unc)	COPC
2,3,5,6-Tetrachlorophenol	935-95-5	nb	nca	(unc)	data gap
2,4,5-Trichlorophenol	95-95-4	nb	nca	(unc)	data gap
2,4,6-Trichlorophenol	88-06-2	nb	nca	(unc)	data gap
2,4-Dichlorophenol	120-83-2	nb	nca	(unc)	data gap
2,4-Dimethylphenol	105-67-9	nb	nca	(unc)	data gap
2,4-Dinitrophenol	51-28-5	nb	nca	COPC	COPC
2-Methylphenol	95-48-7	nb	nca	(unc)	data gap
4,6-Dinitro-2-methylphenol	534-52-1	nb	nca	(unc)	data gap
4-Chloro-3-Methylphenol	59-50-7	nb	nca	(unc)	data gap
4-Methylphenol	106-44-5	nb	COPC	COPC	COPC
Butylbenzylphthalate	85-68-7	nb	COPC	(alr)	COPC
bis(2-Ethylhexyl) phthalate	117-81-7	nb	COPC	(alr)	COPC
Di-n-butylphthalate	84-74-2	nb	nsc	(alr)	data gap
Di-n-octylphthalate	117-84-0	nb	COPC	(alr)	COPC
Diethylphthalate	84-66-2	nb	nsc	COPC	COPC
Dimethylphthalate	131-11-3	nb	nca	(alr)	data gap
1,2,4,5-Tetrachlorobenzene	95-94-3	nb	nca	(unc)	data gap
1,2,3-Trichlorobenzene	87-61-6	nb	nca	(unc)	data gap
1,2,4-Trichlorobenzene	120-82-1	nb	nca	(unc)	data gap
Chlorinated Pesticides (29)					
DDT series					
2,4'-DDD	53-19-0	nb	COPC	COPC	COPC
4,4'-DDD	72-54-8	COPC	nsc	COPC	COPC
2,4'-DDE	3424-82-6	nb	nsc	COPC	COPC
4,4'-DDE	72-55-9	COPC	nsc	COPC	COPC
2,4'-DDT	789-02-6	nb	nsc	COPC	COPC
4,4'-DDT	50-29-3	COPC	nsc	COPC	COPC
tDDT (detect)		COPC	nsc	COPC	COPC
chlordane series					
alpha-Chlordane	5103-71-9	COPC	COPC	COPC	COPC
gamma-Chlordane	5103-74-2	nb	nsc	(alr)	data gap
cis-Nonachlor	5103-73-1	nb	nsc	COPC	COPC
trans-Nonachlor	39765-80-5	nb	nsc	COPC	COPC
Heptachlor	76-44-8	nb	nsc	(alr)	data gap
Heptachlor epoxide	1024-57-3	nb	nsc	(alr)	data gap
Oxychlordane	27304-13-8	nb	nsc	COPC	COPC
tChlordane (detect)		nb	nsc	COPC	COPC
Aldrin	309-00-2	nb	nsc	(alr)	data gap
alpha-BHC	319-84-6	nb	COPC	(alr)	COPC
beta-BHC	319-85-7	nb	nsc	COPC	COPC
delta-BHC	319-86-8	nb	COPC	COPC	COPC
gamma-BHC(Lindane)	58-89-9	nb	nsc	COPC	COPC
Dieldrin	60-57-1	COPC	COPC	(alr)	COPC

file = stat_sumtablesCS4.xls; worksheet = CSsummary;
date = 12/16/1999; time = 5:52 PM

Table 7.4-1. Summary of Screening Risk Assessment Results for Sediment Quality Benchmarks, Sediment Toxicity Relationship, and Tissue Bioaccumulation

Chemical/Physical Measurement	CAS Number	Sediment Quality Benchmark (ER-L)	Sediment Toxicity	Bioaccumulation	COMPOSITE DESIGNATION
Endosulfan I	959-98-8	nb	COPC	(alr)	COPC
Endosulfan II	33213-65-9	nb	nsc	(alr)	data gap
Endosulfan sulfate	1031-07-8	nb	nsc	(alr)	data gap
Endrin	72-20-8	nb	nsc	(alr)	data gap
Endrin aldehyde	7421-93-4	nb	COPC	(alr)	COPC
Endrine ketone	53494-70-5	nb	COPC	(alr)	COPC
Hexachlorobenzene	118-74-1	nb	nsc	(alr)	data gap
Methoxychlor	72-43-5	nb	nsc	(alr)	data gap
Mirex	2385-85-5	nb	nsc	(alr)	data gap
Toxaphene	8001-35-2	nb	nca	(unc)	data gap
Polychlorinated Biphenyls (PCBs) (27)					
tPCB TEQ - fish and birds		nb	na	COPC	COPC
tPCB NOAA-18 (detect)		COPC	COPC	COPC	COPC
Polychlorinated Dioxins/Furans (PCDD/PCDF) (17)					
tDioxin/Furan (detect)		nb	COPC	na	COPC
tDioxin/Furan TEQ - fish and birds		nb	na	(alr)	data gap
Organophosphorus Pesticides (10)					
Azinphos-methyl	86-50-0	nb	nca	(unc)	data gap
Chlorpyrifos	2921-88-2	nb	nca	(alr)	data gap
Demeton-O	298-03-3	nb	nca	(unc)	data gap
Demeton-S	126-75-0	nb	nca	(unc)	data gap
Diazinon	333-41-5	nb	nca	(unc)	data gap
Ethion	563-12-2	nb	nca	(unc)	data gap
Ethoprop	13194-48-4	nb	nca	(unc)	data gap
Ethyl parathion	56-38-2	nb	nca	(unc)	data gap
Malathion	121-75-5	nb	nca	(unc)	data gap
Methyl parathion	298-00-0	nb	nca	(unc)	data gap
Chlorinated Herbicides (6)					
2,4,5-T	93-76-5	nb	COPC	(unc)	COPC
2,4-D	94-75-7	nb	nca	(unc)	data gap
Dalapon	75-99-0	nb	nca	(unc)	data gap
Dicamba	1918-00-9	nb	nsc	(unc)	data gap
MCPP	93-65-2/7085-19-0	nb	nsc	(unc)	data gap
2,4,5-TP (Silvex)	93-72-1	nb	nca	(unc)	data gap
Triazine Pesticides (8)					
Ametryn	834-12-8	nb	nca	(unc)	data gap
Anilazine	101-05-3	nb	nca	(unc)	data gap
Atrazine	1912-24-9	nb	nca	(unc)	data gap
Pronamide	23950-58-5	nb	nca	(unc)	data gap
Propiconazole	60207-90-1	nb	nca	(unc)	data gap
Simazine	122-34-9	nb	nca	(unc)	data gap
Terbacil	5902-51-2	nb	nca	(unc)	data gap
Hexazinone	51235-04-2	nb	nca	(unc)	data gap
Carbamate/Urea Pesticides (6)					
Benomyl	17804-35-2	nb	nca	(unc)	data gap
Carbaryl	63-25-2	nb	nca	(unc)	data gap
Carbofuran	1563-66-2	nb	nca	COPC	COPC
Diuron	330-54-1	nb	nca	(unc)	data gap
Methomyl	16752-77-5	nb	nca	(unc)	data gap
Oxamyl	23135-22-0	nb	nca	(unc)	data gap
Ordnansce Compounds (14)					
1,3-Dinitrobenzene	99-65-0	nb	nca	(unc)	data gap
2,4-Dinitrotoluene	121-14-2	nb	nca	(unc)	data gap
2,6-Dinitrotoluene	606-20-2	nb	nca	(unc)	data gap
HMX	2691-41-0	nb	nca	(unc)	data gap
Nitrobenzene	98-95-3	nb	nca	(unc)	data gap
Nitroglycerin	55-63-0	nb	nca	(unc)	data gap
2-Nitrotoluene	88-72-2	nb	nca	(unc)	data gap
3-Nitrotoluene	99-08-1	nb	nca	(unc)	data gap
4-Nitrotoluene	99-99-0	nb	nca	(unc)	data gap
Picric Acid	88-89-1	nb	nca	(unc)	data gap
RDX	121-82-4	nb	nca	(unc)	data gap
Tetryl	479-45-8	nb	nca	(unc)	data gap
1,3,5-Trinitrobenzene	99-35-4	nb	nca	(unc)	data gap
2,4,6-Trinitrotoluene	118-96-7	nb	nca	(unc)	data gap
General Sediment Properties (3)					
Sediment Fines (<63 um)		nb	nsc	na	data gap
Total Organic Carbon (TOC)		nb	COPC	na	COPC
Unionized Ammonia (in porewater)		nb	COPC	na	COPC

(alr) - acceptably low risk
COPCs - Chemical of Potential Concern
data gap - information insufficient to determine if COPC can be eliminated from further evaluation
ltb - lower than benchmark
na - not applicable
nb - no benchmark available
nsc - no significant correlation
nca - no correlation attempted
(unc) - uncertain

Return to Table of Contents

file = stat_sumtablesCS4.xls; worksheet = CSsummary;
date = 12/16/1999; time = 5:52 PM