

PESTICIDES IN SURFACE WATER: 2002-2016

APPENDIX PESTICIDES

Table Pesticides. 1
Surface Water Quality Monitoring Results for Pesticides in the Mainstem of Oak Creek at 15th Avenue: 2002-2016

Compound	2002-2009				2016			
	Samples Collected	Samples with Detections	Percent of Detections	Range of Concentrations ($\mu\text{g/l}$) ^a	Samples Collected	Samples with Detections	Percent of Samples with Detections	Range of Concentrations ($\mu\text{g/l}$) ^a
Fungicides								
Chloronitriles								
Chlorothalonil	--	--	--	--	9	0	0	<LOD
Dicarboximides								
Iprodione	9	0	0	<LOD	--	--	--	--
Phenylamides								
Metalaxyl	41	0	0	<LOD	9	0	0	<LOD
Strobilurins								
Azoxystrobin	--	--	--	--	9	0	0	<LOD
Triazoles								
Myclobutanil	9	0	0	<LOD	--	--	--	--
Propiconazole	--	--	--	--	9	0	0	<LOD
Herbicides and Transformation Products								
Amides/Anilides/Anilines								
Acetochlor	9	3	33	<LOD-0.09	9	0	0	<LOD
Acetochlor ethanesulfonic acid	--	--	--	--	9	0	0	<LOD
Acetochlor oxanilic acid	--	--	--	--	9	0	0	<LOD
Alachlor	9	1	11	<LOD-0.009	9	0	0	<LOD
2,6-Diethylalanine	9	0	0	<LOD	--	--	--	--
2-Chloro-2',6'-diethylacetanilide	9	0	0	<LOD	--	--	--	--
Alachlor ethanesulfonic acid	--	--	--	--	9	0	0	<LOD
Alachlor oxanilic acid	--	--	--	--	9	0	0	<LOD
Benfluralin	9	2	22	<LOD-0.007 ^b	9	0	0	<LOD
Dimethenamid	--	--	--	--	9	0	0	<LOD
Dimethenamid ethanesulfonic acid	--	--	--	--	9	0	0	<LOD
Dimethenamid oxanilic acid	--	--	--	--	9	0	0	<LOD
Ethalfuralin	--	--	--	--	9	0	0	<LOD
Fomesafen	--	--	--	--	9	0	0	<LOD
Metolachlor	20	8	40	<LOD-0.07 ^b	9	0	0	<LOD
2-[(2-Ethyl-6-methylphenyl)amino]-1-propanol	2	0	0	<LOD	--	--	--	--
2-Ethyl-6-methylaniline	9	0	0	<LOD	--	--	--	--
Metolachlor ethanesulfonic acid	--	--	--	--	9	0	0	<LOD
Metolachlor oxanilic acid	--	--	--	--	9	0	0	<LOD
Pendimethalin	9	2	22	<LOD-0.046	9	0	0	<LOD
Propyzamide	9	0	0	<LOD	--	--	--	--
Trifluralin	9	5	56	<LOD-0.008 ^b	9	0	0	<LOD
Aromatic Acids								
Aminopyralid	--	--	--	--	9	0	0	<LOD

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Table Pesticides.1 (Continued)

Compound	2002-2009				2016			
	Samples Collected	Samples with Detections	Percent of Samples with Detections	Range of Concentrations (µg/l) ^a	Samples Collected	Samples with Detections	Percent of Samples with Detections	Range of Concentrations (µg/l) ^a
Herbicides and Transformation Products (continued)								
Aromatic Acids (continued)								
Chloramben	--	--	--	--	9	0	0	<LOD
Clopyralid	--	--	--	--	9	0	0	<LOD
Dicamba	--	--	--	--	9	0	0	<LOD
Picloram	--	--	--	--	9	0	0	<LOD
Aryl Triazolinones								
Sulfentrazone	--	--	--	--	9	0	0	<LOD
Benzofurans								
Ethofumesate	--	--	--	--	9	0	0	<LOD
Benzonitriles								
Dichlorbenil	--	--	--	--	9	0	0	<LOD
Chloroarenes								
DCPA (Dacthal)	9	3	33	<LOD-0.0041	9	0	0	<LOD
Cyclodienes								
Flumetsulam	--	--	--	--	9	0	0	<LOD
Isoxazolidinones								
Clomazone	--	--	--	--	9	0	0	<LOD
Nitrophenyls								
Acifluorfen	--	--	--	--	9	0	0	<LOD
Oxadiazoles								
Oxadiazon	--	--	--	--	9	0	0	<LOD
Oxyacetamides								
Isoxaflutole	--	--	--	--	9	0	0	<LOD
RPA 202248	--	--	--	--	9	0	0	<LOD
Phenoxy								
2,4-D	--	--	--	--	9	7	78	<LOD-0.484
2,4-DB	--	--	--	--	9	0	0	<LOD
2,4,5-T	--	--	--	--	9	0	0	<LOD
Dichloroprop	--	--	--	--	9	0	0	<LOD
MCPA	--	--	--	--	9	0	0	<LOD
4-Chloro-2-methylphenol	9	5	56	<LOD-0.0130	--	--	--	--
MCPB	--	--	--	--	9	0	0	<LOD
Mecoprop	--	--	--	--	9	2	22	<LOD-0.0874
Silvex (Fenoprop)	--	--	--	--	9	0	0	<LOD
Pyridazinones								
Norfluzon	--	--	--	--	9	0	0	<LOD
Pyridines								
Fluroxypyr	--	--	--	--	9	0	0	<LOD

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Table Pesticides.1 (Continued)

Compound	2002-2009					2016				
	Samples Collected	Samples with Detections	Percent of Samples with Detections	Range of Concentrations (µg/l) ^a	Herbicides and Transformation Products (continued)	Samples Collected	Samples with Detections	Percent of Samples with Detections	Range of Concentrations (µg/l) ^a	
Pyridines (continued)										
Imazapyr	--	--	--	--		9	5	56	<LOD-0.163	
Imazethapyr	--	--	--	--		9	0	0	<LOD	
Triclopyr	--	--	--	--		9	1	11	<LOD-0.209	
Substituted Uracils										
Bromacil	32	7	22	<LOD-2.24		9	0	0	<LOD	
Salfufenacil	--	--	--	--		9	0	0	<LOD	
Thiadiazines										
Bentazon	--	--	--	--		9	0	0	<LOD	
Thiocarbimates										
Butylate	1	0	0	<LOD		--	--	--	--	
Eptam	1	0	0	<LOD		9	0	0	<LOD	
Triazines										
Atrazine	29	19	68	<LOD-0.49		9	1	11	<LOD-0.0581	
Deethylatrazine	9	6	67	<LOD-0.098 ^b		9	1	11	<LOD-0.765	
Deisopropylatrazine	--	--	--	--		9	1	11	<LOD-0.0606	
Diaminotrazine	--	--	--	--		9	0	0	<LOD	
Hexazinone	9	0	0	<LOD		9	0	0	<LOD	
Prometon	37	16	43	<LOD-0.054		9	0	0	<LOD	
Prometryn	9	0	0	<LOD		9	0	0	<LOD	
Simazine	9	1	11	<LOD-0.048		9	0	0	<LOD	
Terbutylazine	9	0	0	<LOD		--	--	--	--	
Triazolones										
Thiocarbazono-methyl	--	--	--	--		9	0	0	<LOD	
Triazinones										
Metribuzin	9	0	0	<LOD		9	0	0	<LOD	
Metribuzin DA	--	--	--	--		6	0	0	<LOD	
Metribuzin DADK	--	--	--	--		6	0	0	<LOD	
Triketones										
Bicyclopyrone	--	--	--	--		9	0	0	<LOD	
Mesotrione	--	--	--	--		9	0	0	<LOD	
Tembotrione	--	--	--	--		9	0	0	<LOD	
Ureas										
Diuron	--	--	--	--		9	4	44	<LOD-0.297	
3,4-Dichloroaniline	8	4	50	<LOD-0.203		--	--	--	--	
Halosulfuron-methyl	--	--	--	--		9	0	0	<LOD	
Linuron	--	--	--	--		9	0	0	<LOD	
Metsulfuron-methyl	--	--	--	--		9	0	0	<LOD	

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Table Pesticides.1 (Continued)

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Herbicides and Transformation Products (continued)								
Ureas (continued)								
Nicosulfuron	--	--	--	--	9	0	0	<LOD
Sulfometuron-methyl	--	--	--	--	9	0	0	<LOD
Terbutiuron	9	2	22	<LOD-0.014 ^b	--	--	--	--
Herbicide Safeners^c								
Unclassified								
Cyrosulfamide	--	--	--	--	9	0	0	<LOD
Insect Repellants								
Unclassified								
DEET (N,N-Diethyl-meta-toluamide)	32	22	69	<LOD-0.29	--	--	--	--
Insecticides and Transformation Products								
Carbamates								
Aldicarb	1	0	0	<LOD	--	--	--	--
Aldicarb sulfone	1	0	0	<LOD	9	0	0	<LOD
Aldicarb sulfoxide	1	0	0	<LOD	9	0	0	<LOD
Carbaryl	38	8	21	<LOD-0.267 ^b	9	0	0	<LOD
Carbofuran	1	0	0	<LOD	9	0	0	<LOD
Methiocarb	1	0	0	<LOD	--	--	--	--
Methomyl	1	0	0	<LOD	--	--	--	--
Oxamyl	1	0	0	<LOD	--	--	--	--
Propoxur	1	0	0	<LOD	--	--	--	--
Diamides								
Chlorantraniliprole	--	--	--	--	9	0	0	<LOD
Cyfluprole	--	--	--	--	9	0	0	<LOD
Neonicotinoids								
Acetamiprid	--	--	--	--	9	0	0	<LOD
Clothianidin	--	--	--	--	9	0	0	<LOD
Dinotefuran	--	--	--	--	9	0	0	<LOD
Flupyradifurone	--	--	--	--	9	0	0	<LOD
Imidacloprid	--	--	--	--	9	0	0	<LOD
Thiacloprid	--	--	--	--	9	0	0	<LOD
Thiamethoxam	--	--	--	--	9	0	0	<LOD
Organochlorides								
Dieldrin	9	0	0	<LOD	--	--	--	--
Pentachlorophenol	26	12	46	<LOD-3.1	--	--	--	--
Organophosphorus								
Azinphos-methyl	9	0	0	<LOD	--	--	--	--
Azinphos-methyl-oxon	9	0	0	<LOD	--	--	--	--

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Table Pesticides. 1 (Continued)

Compound	2002-2009				2016			
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Organophosphorus (continued)								
Chlorpyrifos	38	1	3	<LOD-0.02 ^b	9	0	0	<LOD
Chlorpyrifos oxygen analog	9	0	0	<LOD	9	0	0	<LOD
Diazinon	38	5	13	<LOD-0.0455	9	0	0	<LOD
Diazoxon (Diazinon oxygen analog)	9	0	0	<LOD	9	0	0	<LOD
Dichlorvos	33	1	3	<LOD-0.02 ^b	--	--	--	--
Dicrotophos	8	0	0	<LOD	--	--	--	--
Dimethoate	10	0	0	<LOD	9	0	0	<LOD
Ethion	9	0	0	<LOD	9	0	0	<LOD
Ethion monoxon	9	0	0	<LOD	9	0	0	<LOD
Fenamiphos	9	0	0	<LOD	9	0	0	<LOD
Fenamiphos sulfone	9	0	0	<LOD	9	0	0	<LOD
Fenamiphos sulfoxide	8	0	0	<LOD	9	0	0	<LOD
Fonofos	9	0	0	<LOD	--	--	--	--
Fonofos oxygen analog	7	0	0	<LOD	--	--	--	--
Isofenphos	9	0	0	<LOD	--	--	--	--
Malathion	10	1	10	<LOD-0.018 ^b	9	0	0	<LOD
Malaoxon	9	0	0	<LOD	--	--	--	--
Methidathion	9	0	0	<LOD	--	--	--	--
Methyl-parathion	10	0	0	<LOD	9	0	0	<LOD
Methyl-paraoxon	9	0	0	<LOD	--	--	--	--
Parathion	1	0	0	<LOD	--	--	--	--
Phorate	10	0	0	<LOD	--	--	--	--
Phorate oxygen analog	9	0	0	<LOD	--	--	--	--
Phosmet	8	0	0	<LOD	--	--	--	--
Phosmet oxygen analog	7	0	0	<LOD	--	--	--	--
Phostebupirim (Tebupirimfos)	--	--	--	--	9	0	0	<LOD
Terbufos	10	0	0	<LOD	--	--	--	--
Terbufos oxygen analog sulfone	9	0	0	<LOD	--	--	--	--
Phenylpyrazoles								
Fipronil	9	0	0	<LOD	--	--	--	--
Desulfinylfipronil	9	0	0	<LOD	--	--	--	--
Desulfinylfipronil amide	9	3	33	<LOD-0.006 ^b	--	--	--	--
Fipronil sulfide	9	1	11	<LOD-0.006 ^b	--	--	--	--
Fipronil sulfone	9	0	0	<LOD	--	--	--	--
Pyrethroids								
Bifenthrin	2	0	0	<LOD	--	--	--	--
Cis-Permethrin	9	0	0	<LOD	--	--	--	--

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Table Pesticides.1 (Continued)

Compound	2002-2009				2016			
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Insecticides and Transformation Products (continued)								
Pyrethroids (continued)								
Cyfluthrin	11	0	0	<LOD	9	0	0	<LOD
Cyhalothrin	2	0	0	<LOD	9	0	0	<LOD
Cypermethrin	11	0	0	<LOD	9	0	0	<LOD
Esfenvalerate	2	0	0	<LOD	9	0	0	<LOD

^a <LOD indicates less than the limit of detection.

^b Maximum concentration was estimated.

^c Herbicide safeners are compounds that accelerate the decomposition of an herbicide.

Source: U.S. Geological Survey, Wisconsin Department of Natural Resources, and SEWRPC