

BAPPG/BACWA Wastewater Pesticides Watch List

Currently registered pesticides that may occur in wastewater

Priority	Basis for Priority Assignment	Pesticides	
1 – High Concern	a) POTW effluent monitoring data ¹ exceeding benchmarks b) Known cause of process interference c) Present in recycled water or biosolids at concentrations that limit use d) SF Bay area receiving water 303(d) listing for the pesticide or degradate	Pyrethroids [#] (21 chemicals ²) Fipronil [#] Imidacloprid [#]	
2 – Moderate Concern	a) Pesticide contains a Clean Water Act Priority Pollutant b) SF Bay area receiving water 303(d) listing for the pesticide, degradate or contaminant that also has non-pesticide sources	Copper pesticides ⁺ Silver pesticides ⁺ Zinc pesticides (including Ziram) ⁺	
3 – Possible Concern	Monitoring data ¹ approaching <u>or</u> wastewater discharge modeling predicting: a) effluent or receiving water benchmark exceedances b) process interference c) limitations on use of recycled water or biosolids <u>or</u> used for pet flea control	ADBAC ⁺ Amitraz [#] Ammonium bromide 1,2-Benzisothiazolin-3-one (BIT) Bronopol (Bioban) Carbendazim (MBC) Chlorhexidine Chlorinated isocyanurates ⁺ Clothianidin DDAC ⁺ Dichlobenil [^] Dinotefuran [#] Diquat dibromide [^] Folpet Halohydantoin ⁺ Indoxacarb [#]	IPBC Malathion (lice) Metam sodium [^] Methoprene [#] Nanopesticides (all) o-Benzyl-p-chlorophenol (OBPC) Othilinone o-Phenyl phenol Polyhexamethylenebiguanidine (PHMB) ⁺ Pyriproxyfen ^{##} Spinetoram [#] Tetrachlorvinphos [#] (TCVP) Triclosan Tri-n Butyl Tetradecyl Phosphonium Chloride (ITPC)
Pools & hot tubs	Avoiding collection system backups	Busan-77 ⁺ Chlorine ⁺ Hypochlorites ⁺ Sodium bromide ⁺ Sodium tetraborate ⁺⁴ (plus chemicals above with “+”)	
Pending	New pesticides that could threaten wastewater depending on uses approved and market volumes for existing minor indoor uses	Abamectin Broflanilide Chlorfenapyr Chlorantraniliprole Cyantraniliprole Cyclaniliprole Neonicotinoids not listed above ³ Novaluron SI-183 (1R-Phenothrin)	
No Concern	No tracking trigger	Most of the 1,000 existing pesticides	
Unknown	Lack of information. No systematic screening has ever been completed for urban pesticides.	Unknown	

¹Not necessarily data from SF Bay Area

²Pyrethroids = Allethrin, Bifenthrin, Cyfluthrin, Cyhalothrin, Cypermethrin, Cyphenothrin, Deltamethrin, Esfenvalerate, Etofenprox, Flumethrin, Imiprothrin, Metofluthrin, Momfluorothrin, Permethrin, Prallethrin, Resmethrin, Sumethrin [d-Phenothrin], Tau-Fluvalinate, Tefluthrin, Tetramethrin, Tralomethrin

³Neonicotinoids = Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, Nitenpyram, Thiacloprid, Thiamethoxam

⁴EPA Registration Review name: “Boric acid/Sodium Salts”

⁺Has pool and/or hot tub use in California

[^]Has root control use in California

[#]Has pet flea/tick use

Swimming Pool and Hot Tub Pesticides

Halohydantoins:

- Trichloro-S-Triazinetrione
- 1-Bromo-3-Chloro-5,5-Dimethyl Hydantoin
- 1,3-Dichloro-5,5-Dimethylhydantoin
- 1,3-Dichloro-5-Ethyl-5-Methylhydantoin
- 1,3-Dibromo-5,5-Dimethylhydantoin
- Imidazolidinedione

Hypochlorites: Calcium Hypochlorite, Sodium Hypochlorite, Potassium Hypochlorite, Lithium Hypochlorite

Chlorinated isocyanurates: Sodium Dichloro-S-Triazinetrione, Sodium Dichloro-S-Triazinetrione Dihydrate

Copper:

- Copper Sulfate (Pentahydrate)
- Copper Ethanolamine Complexes Mixed
- Copper Triethanolamine Complex
- Copper Citrate
- Copper

Quats/ADBAC and DDAC family chemicals:

- Alkyl (50%C14, 40%C12, 10%C16) Dimethylbenzyl Ammonium Chloride
- Alkyl (60%C14, 30%C16, 5%C12, 5%C18) Dimethylbenzyl Ammonium
- N-Dialkyl (60%C14, 30%C16, 5%C12, 5%C18) Methyl Benzyl Ammonium Chloride
- Alkyl (68%C12, 32%C14) Dimethylethylbenzyl Ammonium Chloride
- Didecyl Dimethyl Ammonium Chloride
- Alkyl (58%C14, 28%C16, 14%C12) Dimethylbenzyl Ammonium Chloride
- Alkyl (67%C12, 25%C14, 7%C16, 1%C8,C10,C18) Dimethylbenzyl Ammonium Chloride
- Alkyl (95%C14, 3%C12, 2%C16) Dimethyl Benzyl Ammonium Chloride
- Alkyl (50%C14, 40%C12, 10%C16) Dimethylbenzyl Ammonium Saccharinate
- Alkyl (61%C12,23%C14,11%C16,2.5%C8 & C10,2.5%C18) Dimethyl Benzyl Ammonium Chloride
- Alkyl (67%C12, 25%C14, 7%C16, 1%C18) Dimethylbenzyl Ammonium Chloride

Silver:

- Metallic Silver
- Silver Chloride
- Silver Iodide, Colloidal

Others:

- Busan-77 [Poly(Oxyethylene) (Dimethylimino) Ethylene (Dimethylimino) Ethylene Dichloride]
- Sodium Bromide (EPA "Inorganic halides")
- Zinc Sulfate Monohydrate
- Polyhexamethylene Biguanidine (PHMB)
- Chlorine
- Sodium Tetraborate (Pentahydrate) (EPA "Boric Acid/Sodium Salts")
- Pyriproxyfen