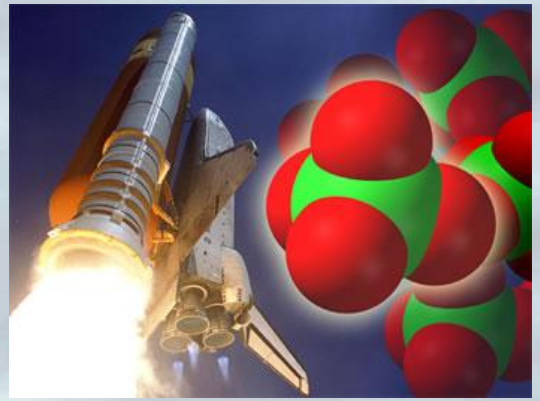
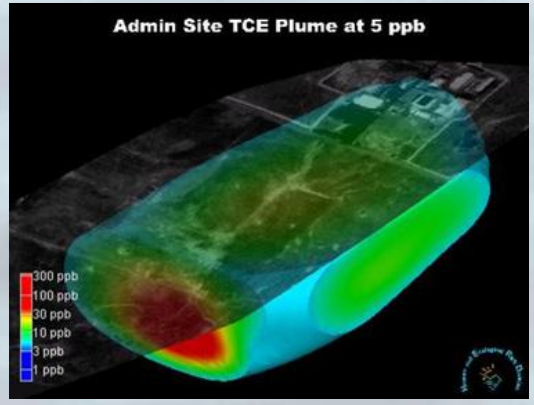
Emerging Constituents

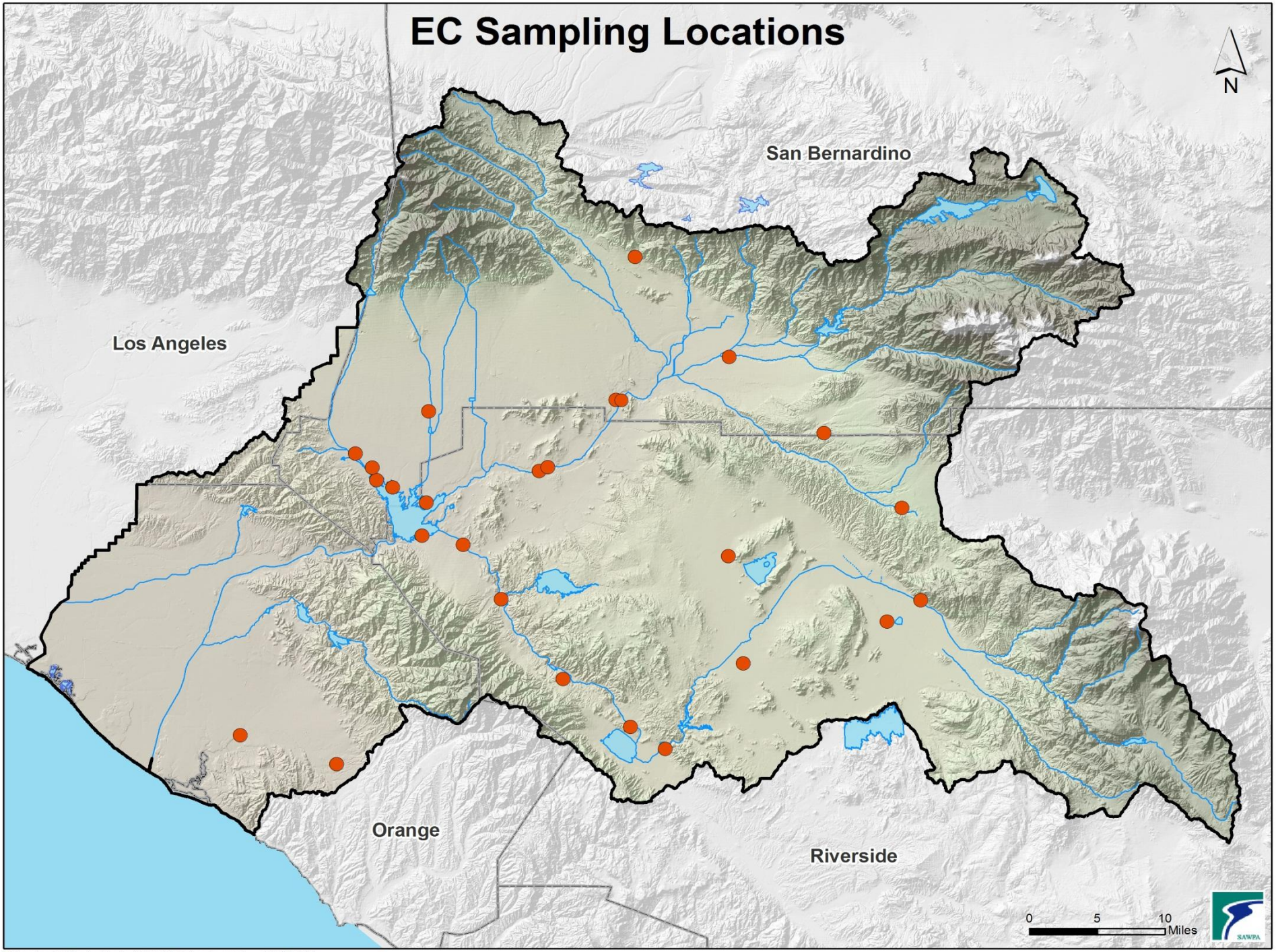

Drug Facts
Active ingredients
Purpose
Triclosan 0.30%
Antigingivitis
Uses aids in the prevention of:
• cavities • plaque • gingivitis
Warnings
Keep out of the reach of children under 6 years of age.
If more than used for brushing is accidentally swallowed, get medical help or contact a Poison Control Center right away.
Drug Facts
Directions
Inactive ingred
Questions
Helps Prevent Cavities • Gingivitis • Plaque
Colgat
Anticavity Fluoride
and Antigingivitis Too

Regulatory Initiatives

- **CDPH: Groundwater Recharge/Reuse Regulation**
- **SWRCB: Recycled Water Policy**
- **EPA: Unregulated Contaminants Monitoring Rule**







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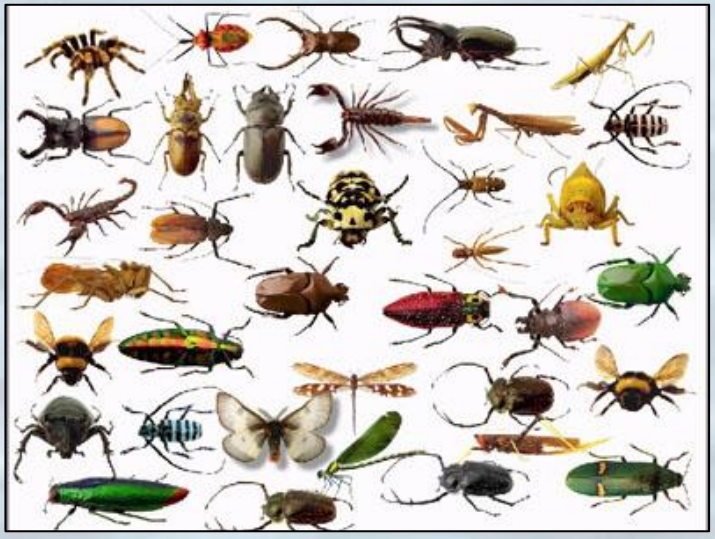
Compound	Primary Use	Frequency of Detection	Reported Range	Common Dose
Acetaminophen (Tylenol)	Analgesic	12% (3 of 26)	ND – 0.000030 mg/L	500 mg
Bisphenol A (BPA)	Plastic Coating	12% (3 of 26)	ND – 0.000045 mg/L	n/a
Caffeine	Food Additive	73% (19 of 26)	ND – 0.000210 mg/L	100 mg
Carbamazepine	Anti-Convulsant	88% (23 of 26)	ND – 0.000390 mg/L	200 mg
DEET	Insecticide	92% (24 of 26)	ND – 0.001300 mg/L	270 mg
Diuron	Herbicide	81% (21 of 26)	ND – 0.000220 mg/L	n/a
17α Ethinyl Estradiol	Synthetic Hormone	0% (0 of 26)	Never Detected	1 mg
17β Estradiol	Natural Hormone	0% (0 of 26)	Never Detected	1 mg
Gemfibrozil	Anti-cholesterol	77% (20 of 26)	ND – 0.000970 mg/L	600 mg
Ibuprofen (Advil)	Analgesic	46% (12 of 26)	ND – 0.000110 mg/L	300 mg
Iopromide	Xray Contrast Agent	65% (17 of 26)	ND – 0.000860 mg/L	500 mg
Naproxen (Aleve)	Analgesic	23% (6 of 26)	ND – 0.000140 mg/L	200 mg
Sulfamethoxazole	Antibiotic	69% (18 of 26)	ND – 0.002900 mg/L	800 mg
TCEP	Flame Retardant	92% (24 of 26)	ND – 0.000930 mg/L	n/a
Triclosan	Antiseptic	58% (15 of 26)	ND – 0.001000 mg/L	1 mg

4 Million Gallons

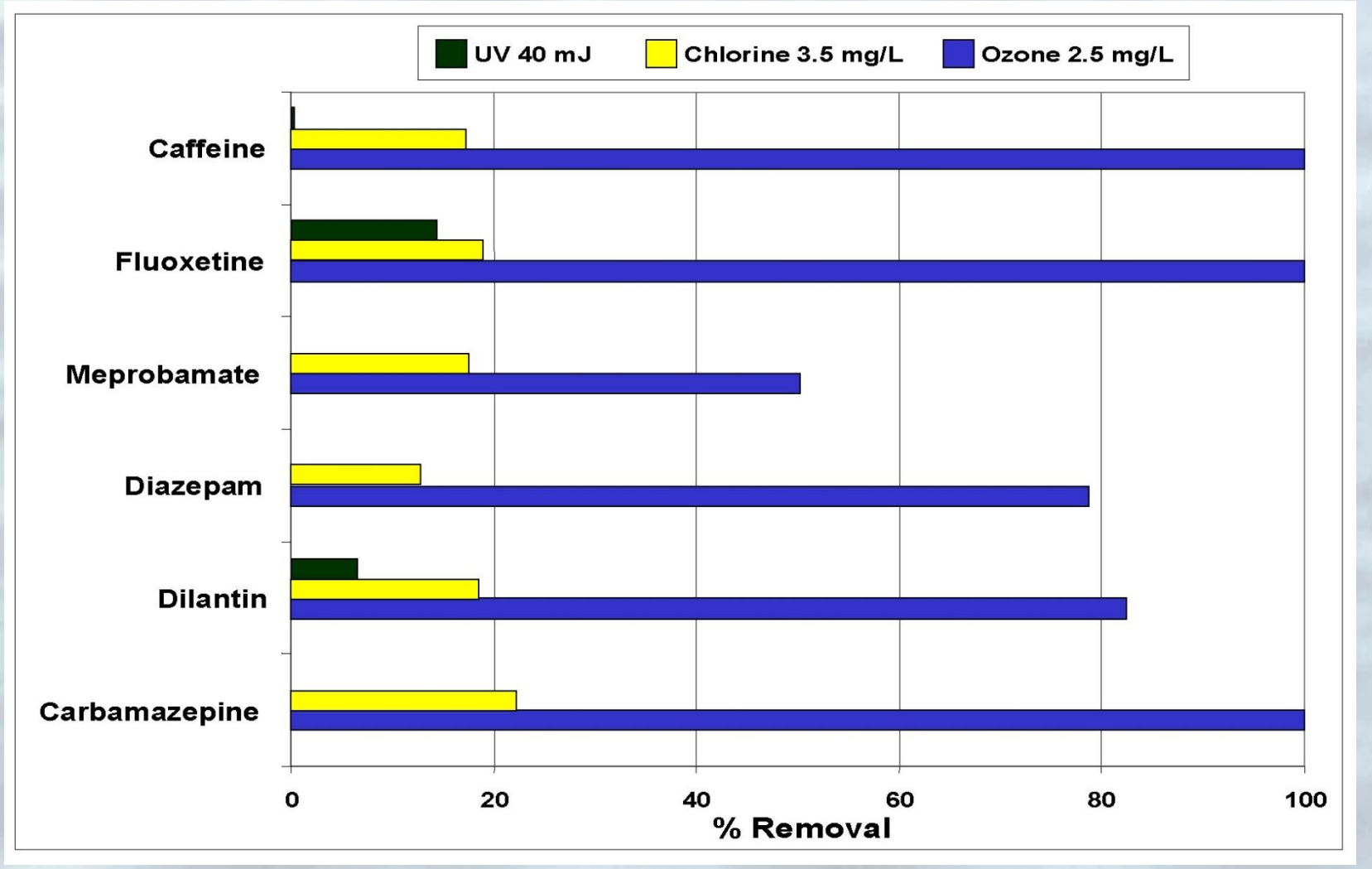
of Recycled Water

= 1 Tylenol Capsule

FDA Standards for Food Contaminants



Treatment Effectiveness



New Recycled Water Policy Requirements

ATTACHMENT A

REQUIREMENTS FOR MONITORING CONSTITUENTS OF EMERGING CONCERN FOR RECYCLED WATER

The purpose of this attachment to the Recycled Water Policy (Policy) is to provide direction to the Regional Water Quality Control Boards (Regional Water Boards) on monitoring requirements for constituents of emerging concern[1] (CECs) in recycled municipal wastewater, herein referred to as "recycled water." The monitoring requirements and criteria for evaluating monitoring results in the Policy are based on recommendations from a Science Advisory Panel[2]. The monitoring requirements pertain to the production and use of recycled water for groundwater recharge reuse[3] by surface and subsurface application methods. The monitoring requirements apply to recycled water producers, including entities that further treat or enhance the quality of recycled water supplied by municipal wastewater treatment facilities, and groundwater recharge reuse facilities.

Groundwater recharge by surface application is the controlled application of water to a spreading area for infiltration resulting in the recharge of a groundwater basin. Subsurface application is the controlled application of water to a groundwater basin or aquifer by a means other than surface application, such as direct injection through a well.

The California Department of Public Health (CDPH) shall be consulted for any additional monitoring requirements for recycled water use found necessary by CDPH to protect human health.

[1] For this Policy, CECs are defined to be chemicals in personal care products, pharmaceuticals including antibiotics, antimicrobials; industrial, agricultural, and household chemicals; hormones; food additives; transformation products, inorganic constituents; and nanomaterials.

[2] The Science Advisory Panel was convened in accordance with provision 10.b. of the Policy. The panel's recommendations were presented in the report; *Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water – Recommendations of a Science Advisory Panel*, dated June 25, 2010.

[3] As used in this attachment, use of recycled water for groundwater recharge reuse has the same meaning as indirect potable reuse for groundwater recharge as defined in Water Code section 13561(c), where it is defined as the planned use of recycled water for replenishment of a groundwater basin or an aquifer that has been designated as a source of water supply for a public water system.

Table 1 – CECs to be Monitored

Constituent	Constituent Group	Relevance/Indicator Type	Reporting Limit (µg/L)
GROUNDWATER RECHARGE REUSE - SURFACE APPLICATION			
17β-estradiol	Steroid hormones	Health	0.001
Caffeine	Stimulant	Health & Performance	0.05
N-Nitrosodimethylamine (NDMA)	Disinfection byproduct	Health	0.002
Triclosan	Antimicrobial	Health	0.05
Gemfibrozil	Pharmaceutical	Performance	0.01
Iopromide	Pharmaceutical	Performance	0.05
N,N-Diethyl-meta-toluamide (DEET)	Personal care product	Performance	0.05
Sucralose	Food additive	Performance	0.1
GROUNDWATER RECHARGE REUSE - SUBSURFACE APPLICATION			
17β-estradiol	Steroid hormones	Health	0.001
Caffeine	Stimulant	Health & Performance	0.05
NDMA	Disinfection byproduct	Health & Performance	0.002
Triclosan	Antimicrobial	Health	0.05
DEET	Personal care product	Performance	0.05
Sucralose	Food additive	Performance	0.1

µg/L – Micrograms per liter

Analytical methods for laboratory analysis of CECs shall be selected to achieve the reporting limits presented in Table 1. The analytical methods shall be based on methods published by the United States Environmental Protection Agency, methods certified by CDPH, or peer reviewed and published methods that have been reviewed by CDPH, including those published by voluntary consensus standards bodies such as the Standards Methods Committee and the American Society for Testing and Materials International. Any modifications to the published or certified methods shall be reviewed by CDPH and subsequently submitted to the Regional Water Board in an updated quality assurance project plan.

CDPH *Recommendations:*

(A) Hydroxy Aromatic: Acetominophen, Benzyl salicylate, Bisphenol A, Estrone, Hexyl salicylate, Isobutylparaben, Methyl salicylate, Nonylphenol, Oxybenzone, Propylparaben, Salicylclic acid, Triclosan, Clorfibric Acid

(B) Amino/Acylamino Aromatic: Sulfamethoxazole, Atorvastatin, Triclocarban

(C) Nonaromatic with carbon double bonds: Acetyl cedrene, Carbamazepine, Codeine, Hexylcinnamaldehyde, Methyl ionine, OTNE, Simvastatin hydroxyl, Terpineol

(D) Deprotonated Amine: Atenolol, Caffeine, Diclofenac, EDTA, Erythromycin-H_2O, Fluoxetine, Metoprolol, Nicotine, Norfluoxetine, Ofloxacin, Paraxanthine, Pentoxifylline, Trimethoprim

(E) Alkoxy Polyaromatic: Naproxen, Propranolol

(F) Alkoxy Aromatic: Gemfibrozil, Hydrocodone

(G) Alkyl Aromatic: Benzophenone, Benzyl acetate, Bucinal, DEET, Dilantin, Dibutyl Phthalate, Diphenhydramine, Galazolide, Ibuprofen, Indolebutyric acid, Primidone, Tonalide

(H) Saturated Aliphatic: Iopromide, Isobornyl acetate, Meprobamate, Methyl dihydrojasmonate

(I) Nitro Aromatic: Musk ketone, musk xylene