

Stormwater Runoff Water Quality Newsletter
Devoted to Urban/Rural Stormwater Runoff
Water Quality Management Issues

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This edition of the Newsletter includes information on: US EPA webcast seminars; recent findings concerning new, newly recognized, and emerging chemicals that are known to be, or suspected of being, adverse to drinking water quality and water quality/beneficial uses of waterbodies; OEHHA Draft Public Health Goal for Trihalomethanes, Selenium and Chromium in Drinking Water; release of USGS Study of Pharmaceuticals in Wastewater; an In-Stream Flow Workshop; and the California State Water Resources Control Board's compilation of Water Quality Goals.

US EPA Webcast Seminars

“EPA's Watershed Academy sponsors free Webcast seminars. Offered on a monthly basis, live webcasts are conducted by expert instructors on a range of watershed topics including low impact development, the Clean Water Act, watershed protection and planning, nutrient management, and much more. Participants can register to participate in a live webcast or view the presentations and listen to the streaming audio of archived webcasts.”

http://water.epa.gov/learn/training/wacademy/wacademy_index.cfm

Seminar topics include: * Clean Water Act * Climate Change * Funding * Lakes * Low Impact Development * Nutrient Management * Outreach and Education * Tools and Data * Watersheds: Protection and Planning * Wetlands. Past webcasts concerning the Clean Water Act have included * Monitoring and Assessment Under the Clean Water Act, April 7, 2010 * Introduction to Water Quality Standards, Sept. 10, 2009 * Introduction to the Clean Water Act, July 1, 2009 * Opportunities for Citizen Involvement in the Clean Water Act, April 19, 2006 Past seminars and a schedule of future seminars are available at, http://water.epa.gov/learn/training/wacademy/webcasts_index.cfm

Drinking Water Contaminant Candidate List and Regulatory Determinations

The US EPA has announced the release of Drinking Water Contaminants Candidate List 3 (CCL 3). According to the US EPA: *“CCL 3 is a list of contaminants that are currently not subject to any proposed or promulgated national primary drinking water regulations, that are known or anticipated to occur in public water systems, and which may require regulation under the Safe Drinking Water Act (SDWA). The list includes, among others, pesticides, disinfection byproducts, chemicals used in commerce, waterborne pathogens, pharmaceuticals, and biological toxins. The Agency considered the best available data and information on health effects and occurrence to evaluate thousands of unregulated contaminants. EPA used a multi-step process to select 116 candidates for the final CCL 3. The final CCL 3 includes 104 chemicals or chemical groups and 12 microbiological contaminants.”* Information on the list is available at <http://water.epa.gov/scitech/drinkingwater/dws/ccl/ccl3.cfm>.

ACWA Comments on Constituents of Emerging Concern

“Comments on April 15, 2010 Draft Monitoring Strategies for Chemicals of Emerging Concern (CECs) in Recycled Water: Recommendations of a Science Advisory Panel” from ACWA (Association of California Water Agencies), CASA (California Association of Sanitation Agencies), NWRI (National Water Research Institute), and WaterReuse dated May 15, 2010 are available at

<http://www.acwa.com/sites/default/files/news/water-quality/2010/05/jt-cec-panel-comment-letter-final.pdf>

Compilation of Water Quality Goals

This is a message from the State Water Resources Control Board.

“The Water Quality Goals database has just been updated. This searchable on-line database contains an extensive compendium of numerical water quality limits from the literature for over 860 chemical constituents and water quality parameters. Included are:

- California and Federal Drinking Water Standards (MCLs)*
- California Public Health Goals (PHGs)*
- California State Notification Levels for drinking water*
- Health Advisories, Water Quality Advisories, and Drinking Water Advisories*
- Suggested No-Adverse-Response Levels (SNARLs)*
- Cancer Risk Estimates*
- Health-based criteria from USEPA's Integrated Risk Information System (IRIS)*
- Proposition 65 Safe Harbor Levels*
- California Toxics Rule Criteria to protect human health and aquatic life*
- California Ocean Plan Water Quality Objectives*
- USEPA Recommended Criteria to protect human health and aquatic life*
- Agricultural use protective limits*
- Taste and odor based criteria*

These limits may be used to assess whether beneficial uses of surface water or groundwater are likely to be impaired or threatened.

The Water Quality Goals database is available on the Water Board's website at

http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/. Search for chemical constituents and water quality parameters by name, portion of a name, abbreviation, or Chemical Abstracts Service (CAS) Registry Number. Instructions for using the database are available at

http://www.waterboards.ca.gov/water_issues/programs/water_quality_goals/how_to_use_wqgoals.shtml.

The contents of the database may be download in tab-text format for upload to your favorite database program. And changes in the database from previous versions are available for viewing.

Your comments and questions are welcome. The Water Quality Goals is compiled by, Jon B. Marshack, D.Env., Staff Environmental Scientist, Office of Information Management & Analysis, State Water Resources Control Board, 1001 I Street, 15th Floor, 41F

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Contact Dr. Marshack to be added to the email list to receive future announcement of updates.

OEHHA Draft Public Health Goal for Trihalomethanes in Drinking Water

The Office of Environmental Health Hazard Assessment, California Environmental Protection Agency September 2010 has released, for public comments and review, a draft “Public Health Goal for Trihalomethanes in Drinking Water.” The OEHHA announcement states,

“SUMMARY

This document provides a health risk assessment for the four major trihalomethanes (THMs) found in drinking water as a consequence of the chlorination disinfection process, and a proposed Public Health Goal (PHG) for the sum of these, as a Total THM (TTHM) approach. The four THMs are chloroform (CHCl₃), bromoform (CHBr₃), bromodichloromethane (CHBrCl₂, or BDCM), and dibromochloromethane (CHBr₂Cl, or DBCM). The estimated health-protective concentration for chloroform is 0.001 milligram per liter (mg/L) or 1 microgram per liter (µg/L) or 1 part per billion (ppb); for bromoform 5 µg/L; for BDCM 0.4 µg/L; and for DBCM 0.7 µg/L. A proposed PHG of 0.8 µg/L or ppb for TTHMs in drinking water is calculated based on the mean concentrations of each of the four chemicals in California drinking water. The health-protective values for the individual THMs are based on carcinogenicity, associated with a negligible lifetime theoretical cancer risk of one in a million (10⁻⁶). Tumors are induced at a number of sites including liver, kidney, and large intestine by each of the THMs in several rodent studies.” Information on this PHG for THMs is at, <http://www.oehha.org/water/phg/thmdraft061909.html>

OEHHA Extends Comment Period for Public Health Goals for Hexavalent Chromium

Comment period for the “Draft Technical Support Document on Proposed Public Health Goal for Hexavalent Chromium in Drinking Water [09/25/09]” has been extended to November 2, 2010. The OEHHA announcement states:

“The Office of Environmental Health Hazard Assessment (OEHHA) within the California Environmental Protection Agency is hereby announcing a two-week extension of the public comment period on the draft technical support document for the proposed Public Health Goal (PHG) for hexavalent chromium in drinking water. Written comments must now be received at the OEHHA address below by 5:00 p.m. on November 2, 2009 to be considered during this document revision period.” Information on the extension and the original proposed PHG is available at <http://oehha.ca.gov/water/phg/extend092509.html>
<http://oehha.ca.gov/water/phg/chr6draft082009.html>

OEHHA Draft Selenium Public Health in Drinking Water

Announcement of First Public Comment Period and Workshop Draft Technical Support:

“The Office of Environmental Health Hazard Assessment (OEHHA) proposes a public health goal (PHG) of 30 micrograms per liter [µg/L or parts per billion (ppb)] for water-soluble and bioavailable selenium compounds in drinking water. The no observed adverse effect level (NOAEL) is 0.015 milligrams per kilogram of body weight/day (mg/kg-day) for hair loss and nail damage observed in a human population. The evaluation is focused on water-soluble and bioavailable selenium because this is the form of selenium most commonly found in drinking

water.” The document on the Proposed Public Health Goal for Selenium in Drinking Water available at <http://oehha.ca.gov/water/phg/pdf/SeleniumPHG040210.pdf>

USGS Releases Study of Pharmaceuticals in Wastewater

According to Kristina Twigg, Contributing Editor American Water Works Associate Streamlines
Posted: 06/29/2010:

“Contributions from pharmaceutical manufacturing facilities may be responsible for 10- to 1,000-fold increases in wastewater effluent pharmaceutical concentrations, according to a new study by the US Geological Survey.

This is the first study in the US to identify pharmaceutical manufacturing facilities as a significant source of pharmaceuticals to the environment," said Matthew Larsen, USGS associate director for water.

Over the last decade, awareness and concern about pharmaceuticals in the water have grown. They are difficult to remove from the wastewater stream because medicines come in variety of chemical structures, each requiring different treatment methods.

Furthermore, wastewater treatment plants receive pharmaceutical loads from many sources — hospitals, veterinary clinics, households and even pharmaceutical manufacturing facilities.

These facilities are required by the US Environmental Protection Agency manufacturing effluent discharge and emission regulations to pre-treat their effluent before sending it to public utilities. In addition, the high cost of active pharmaceutical ingredients should discourage waste.

Yet, the USGS study reveals that these facilities make previously underestimated contributions to the pharmaceutical load of wastewater treatment plants.

The five-year study compared two New York treatment plants that receive more than 20 percent of their wastewater from pharmaceutical formulation facilities with one that receives none. USGS researchers tested wastewater outflow for commonly detected pharmaceuticals including muscle relaxers, opioid pain relievers and anti-anxiety medication.

They also compared these results to a national survey of 23 treatment plants that do not receive effluent from pharmaceutical formulation facilities, although half of these plants do receive hospital wastewater.

Even so, the maximum drug concentration of all 24 treatment plants lacking pharmaceutical manufacturing effluent was generally less than one ppb (1 microgram/L), which is the equivalent of one drop of water in an Olympic-sized swimming pool.

However, samples from the two treatment plants receiving pharmaceutical effluent revealed a complex mix of medications. Some samples exposed pharmaceutical concentrations that were 10 times to 1,000 times higher than average. For example, researchers found concentrations of

metaxalone, a muscle relaxer, at 3,800 ppb (3,800 micrograms/L) and oxycodone, an opioid pain reliever, at 1,700 ppb (1,700 micrograms/L).

Research about both the human and animal health effects of low level pharmaceutical exposure is ongoing. However, higher levels of pharmaceuticals introduced by manufacturing facilities may present risks previously unaccounted for by current toxicological assessments.

This study and additional information about water quality can be found online.” at Manufacturing Facilities Release Pharmaceuticals to the Environment <http://www.usgs.gov/newsroom/article.asp?ID=2477>

In-Stream Flow Workshop

The University of California, Davis Center for Aquatic Biology and Aquaculture (UCD-CEC) Instream Flow Assessment Program has announced the upcoming “Instream Flow Assessment Workshop” to be held on Tuesday, December 7, 2010 at the UC Davis Buehler Alumni and Visitor Center from 10 AM to 4 PM. Registration is due on or before October 29th, 2010. A registration form and detailed information about the Workshop can be downloaded from: <http://animalscience.ucdavis.edu/Instream/workshop.htm>

The contact for the workshop is: Paciencia (Cincin) Young, Ph. D. Administrative Officer, Instream Flow Assessment Program, Center for Aquatic Biology and Aquaculture, University of California, 1 Shields Avenue Davis, CA 95616 Phone (530)752-9546 <http://animalscience.ucdavis.edu/Instream/main.htm>

1,4-Dioxane and Other Solvent Stabilizers

A new book is available entitled, “Environmental Investigation and Remediation: 1,4-Dioxane and Other Solvent Stabilizers,” by Thomas K. G. Mohr, P.G., E.G., H.G. with chapters by William H. DiGuseppi, P.G., and Julie A. Stickney, Ph.D., DABT. Preview the book at: <http://www.the14dioxanebook.com>

1,4 dioxane is a common groundwater pollutant at hazardous chemical sites that, until recently, was overlooked in monitoring groundwater for potentially hazardous chemicals. The Agency for Toxic Substances and Disease Registry (ATSDR) discusses the occurrence and health threat of this chemical at <http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=954&tid=199>

There, ATSDR stated, “1,4-Dioxane is a clear liquid that easily dissolves in water. It is used primarily as a solvent in the manufacture of chemicals and as a laboratory reagent; 1,4-dioxane also has various other uses that take advantage of its solvent properties. 1,4-Dioxane is a trace contaminant of some chemicals used in cosmetics, detergents, and shampoos. However, manufacturers now reduce 1,4-dioxane from these chemicals to low levels before these chemicals are made into products used in the home.”

Water Quality Standards Academy for December 13 -17 in Washington, DC (Crystal City)

The US EPA is offering its Water Quality Basics Course – “Water Quality Standards Academy” – December 13-17, 2010. According to its announcement, “*The ‘Water Quality Standards Academy’ is a basic, introductory course designed for those with fewer than six months of*

experience with water quality standards. This is a comprehensive and highly structured course that introduces participants to all aspects of the water quality standards program, including the interpretation and application of the water quality standards regulation: water body designated uses, the development of water quality criteria (including human health, aquatic life, nutrient and biological), antidegradation policies, implementation, State/Tribal standards adoption and EPA review.”

For information about this course and application, go to
<http://www.glec-online.com/form.htm>