



National Pretreatment Program Update – Part III

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Contaminants of Emerging Concern

Pharmaceuticals and Personal Care Products (PPCPs)

- 4-Pronged Approach dealing with PPCPs
 - Strengthening the Science
 - POTW Study
 - Targeted National Sewage Sludge Study Report

Antimicrobial Rule

Prions

Perfluorinated Chemicals

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Antimicrobial Rule

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Perfluorinated Chemicals (PCFs)

Pharmaceuticals & Personal Care Products: 4-Pronged Approach dealing with PPCPs

Strengthening the Science

- POTW Study
- Targeted National Sewage Sludge Survey Report

Improving Public Understanding

Identifying Partnership & Stewardship
Opportunities

Using Regulatory Tools

PPCPs - Strengthening the Science:

Targeted National Sewage Sludge Survey Report

January 2009; EPA 822-R-08-014

- 74 randomly selected POTWs in 35 states
- Samples were collected in 2006 and 2007.
- Results for 145 analytes
 - 28 metals
 - four anions (nitrite/nitrate, fluoride, water-extractable phosphorus)
 - two semi-volatiles
 - four polycyclic aromatic hydrocarbons
 - 11 flame retardants
 - 72 pharmaceuticals, and
 - 25 steroids and hormones

<http://www.epa.gov/waterscience/biosolids/tnsss-overview.html>

PPCPs - Strengthening the Science:

Targeted National Sewage Sludge Survey Report

Next Steps

- Evaluate pollutants detected by the survey.
 - Some analytes were found in all 84 samples, while others were found in none or only a few of the sewage sludge samples.
- Assess the 9 pollutants identified from the 2003 biennial review // determine if additional action may be necessary:

Barium	Beryllium
Manganese	Silver
Fluoranthene	Pyrene
4-chloroaniline	Nitrate
Nitrite	Molybdenum*
- Evaluate literature data

PPCPs - Strengthening the Science:

Targeted National Sewage Sludge Survey Report

Next Steps (continued)

- Conduct exposure and hazard assessment:
 - Toxicity data for human and ecological receptors;
 - Concentrations for which a pollutant is present in sewage sludge (e.g., data from this survey);
 - Chemical and physical properties, including vapor pressure, solubility, and molecular weight;
 - Fate and transport data for pollutants that may be present in sewage sludge, including degradation rates in various media and data on the bioconcentration potential of the pollutant.
- Initiate evaluations of other pollutants in the survey that may warrant further consideration -- depends on the availability of data.

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Other Emerging Contaminant Actions

Rule Development

- Antimicrobial Rule – OPP/AD
 - Comment Period extended to April 6, 2009

- PRIONS – OPP/AD
 - Science Advisory Panel
 - Expect NPRM this summer

- Enforcement Cases:

- Perfluorinated Compounds (PFCs) – OPP/EETD

Implications of Prions as Pest

- “Scientific Issues Associated with Designating a Prion as a Pest”
 - FIFRA Scientific Advisory Panel meeting
 - March 31 - April 1, 2009
- EPA is currently developing:
 - NPRM that describes how EPA proposes to revise its regulations to include prion in the definition of pests
 - EPA Guidance for Efficacy Test Methods for Products Bearing Prion-Related Claims

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What are Perfluorochemicals (PFCs)?

- Perfluorochemicals are:
 - Man-made chemicals with unique fire retardant properties and grease, water and stain repellent properties;
 - Used in manufacturing to make coatings for paper, textile, leather, clothing, thread-sealant tape, non-stick cookware, cable, many other consumer products.

US EPA PFOA Webpage: <http://www.epa.gov/oppt/pfoa>

PFC Health & Environmental Effects

- Numerous studies since 2000 conclude PFCs are:
 - Very persistence in the environment with little or no degradation occurring in air, water or soil;
 - Exhibit a range of toxicities at low doses;
 - Widespread in environment and human blood;
 - Remain in the body for years.

Regulatory Limits on PFCs

- Not currently regulated under federal environmental laws.
- 1/09 EPA issued recommended provisional health advisory (PHA) for drinking water (0.4 ppb for PFOA and 0.2 ppb for PFOS).
 - The PHA values address short-term exposures (weeks to months), not lifetime exposures;
 - are based on sub-chronic effects and are protective of all populations and life stages;
 - are applicable nationally.

http://www.epa.gov/waterscience/criteria/drinking/pha-PFOA_PFOS.pdf

2 PFC Case Examples

- Brainerd, MN: POTW NPDES Permit for POTW expansion delayed
- Parkersburg, WV: Dupont “Washington Works” plant
 - November 2006 EPA Consent Order
 - Now lowering limit to new EPA PHA
 - Ref: EPA Press Release March 13, 2009
 - Class Action suits filed

Available References for PFC Information

- Minnesota Press Release on Brainerd POTW

<http://www.pca.state.mn.us/news/data/newsRelease.cfm?NR=276493&type=2>

- Minnesota 2008 Progress Report: PFCs in Ambient Environment

<http://www.pca.state.mn.us/publications/c-pfc1-02.pdf>

- Minnesota PFC Sample Results

www.pca.state.mn.us/publications/pfc-wwtpsampling.pdf

- EPA Method Detection Report for PFCs (Zhishi report)

- New Jersey DEP Memo: Guidance for PFOA in Drinking Water

http://www.state.nj.us/dep/watersupply/pfoa_dwguidance.pdf

Available References for PFC Information (cont'd)

- Fluorochemical Mass Flows in a Municipal Wastewater Treatment Facility- Oregon study
(<http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pmcentrez&artid=2556954>)
- PFOA Article in Charleston, WV paper
(<http://www.wvgazette.com/News/200903190596>)
- EPA. Development Document for Effluent Limitations Guidelines New Source Performance Standards And Pretreatment Standards for the Organic Chemicals and the Plastics and Synthetic Fibers Point Source Category, Volume I. Industrial Technology Division Office of Water Regulations and Standards U.S. Environmental Protection Agency, Washington, D.C. 20460. October 1987.
- Investigation of PFOS and PFOA in a Wastewater Treatment Plant. Environmental Engineering Research. Volume 43; Pages 105-111. 2006.
- Removal of perfluorinated surfactants by sorption onto granular activated carbon, zeolite and sludge. Chemosphere. 2008. (Department of Chemical and Environmental Engineering, University of Arizona, Tucson, AZ).

Any Questions?

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