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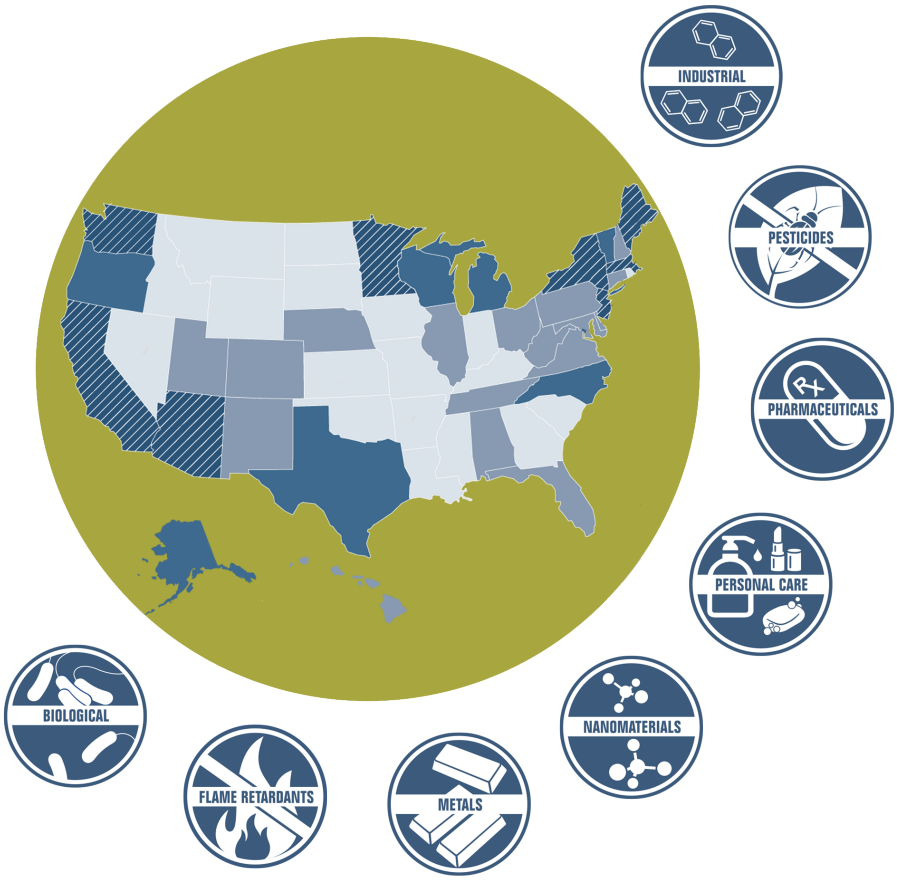
Compendium of State Regulatory Activities on Emerging Contaminants



Health

Environment

Technology

Sustainability

Compendium of State Regulatory Activities on Emerging Contaminants

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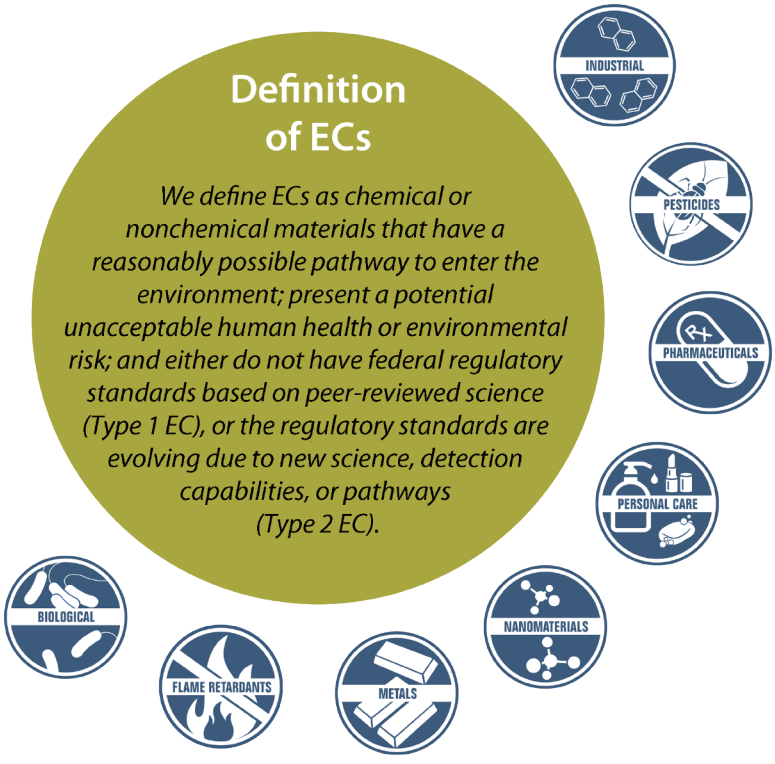
Emerging contaminants (ECs) present unique challenges. Sufficient information, by definition, has not been developed to fully understand risks to human health and the environment, and regulatory science and policy decisions are often inconsistent or nonexistent. Within the U.S., state agencies have authority for executing and overseeing environmental regulations. Variability in funding and risk management strategies across the U.S. has led to differences in EC priorities and regulatory actions. This unpredictable landscape presents challenges for industry to comply with requirements, for the public to understand what levels in the environment are considered protective, and for various regulatory and public health agencies to communicate risks to the public in a manner that promotes confidence and trust.

Integral Consulting Inc. conducted a thorough evaluation of regulatory EC initiatives in all 50 states and the District of Columbia. Based on standardized research methods and one-on-one interviews with state regulatory representatives, this extensive guide identifies agencies and departments addressing ECs, describes monitoring programs and other initiatives, and discusses current or pending actions. The compendium is organized by state, followed by a list of acronyms and a detailed table of ECs for each state.

Definition of ECs

We define ECs as chemical or nonchemical materials that have a reasonably possible pathway to enter the environment; present a potential unacceptable human health or environmental risk; and either do not have federal regulatory standards based on peer-reviewed science (Type 1 EC), or the regulatory standards are evolving due to new science, detection capabilities, or pathways (Type 2 EC).



Methods

State regulatory initiatives for ECs were identified using the following methods:

- State-specific internet keyword searches
- Review of state agency websites
- Review of relevant open-source documents
- Phone surveys with state regulators, project managers, and staff using a standardized questionnaire

States were evaluated based on:

- Level of monitoring of scientific and regulatory developments for ECs
- Level of environmental screening for specific ECs
- Development of regulatory guidance or standards for ECs
- Establishment of a specific EC program

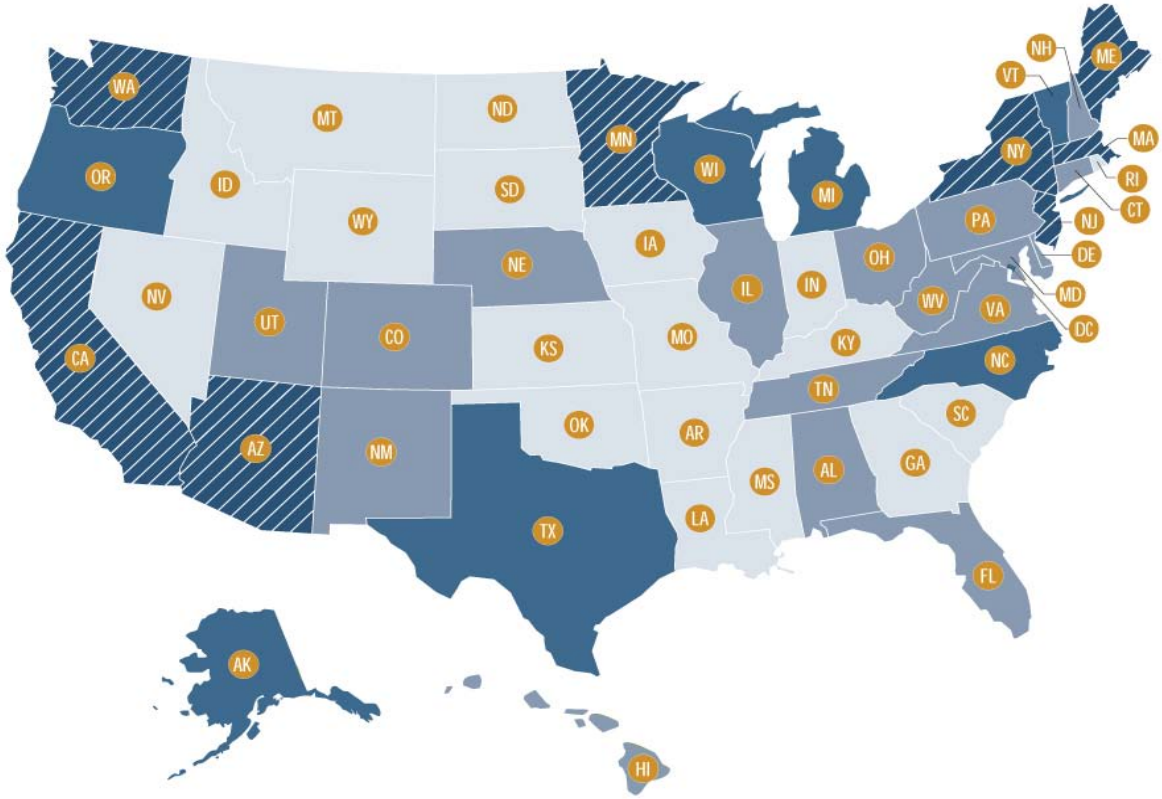
Geography Matters

✓ Only a limited number of states have begun to address ECs by establishing programs aimed at identification, screening, and/or prioritization and evaluation. Some states address ECs across their existing interdepartmental and interagency initiatives.

✓ Most states rely on EC occurrence and toxicity information from federal programs. Some states have additional environmental monitoring programs to expand the target analyte list and to increase the number of sample points in time and space. A few states will also generate toxicity values if not generated by federal agencies or if the state toxicologists have a different interpretation of the available science.

✓ Some states will develop guidelines or standards for ECs despite significant data gaps in exposure or toxicity. How to compensate for existing data gaps varies considerably across state agencies.

The map below provides a comparison of states based on their level of EC activity.



Inactive
State relies exclusively on federal actions, guidance, and regulations.

Limited
State regulators are assessing scientific and regulatory information on ECs and may have conducted response actions in a limited or site-specific manner, but have not implemented a statewide initiative.

Active
State has one or two initiatives or is beginning to gather state-specific information; however, it does not have an explicit program for ECs and does not devote significant resources to EC initiatives.

Very Active
State has specific risk management programs addressing ECs.

FOR MORE INFORMATION

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Information is up to date as of May 2016. Periodic revisions will be made.

Emerging Contaminants

ALABAMA

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State at a Glance

- Alabama Department of Environmental Management (ADEM) follows EPA UCMR
- Addresses ECs on a site-specific basis; however, there is no formal EC program
- ADEM has addressed PFASs due to a site-specific environmental release

State agencies and programs that manage environmental issues	How Alabama addresses ECs
✓ Overarching state agency: ADEM ✓ ADEM is comprised of six divisions – Water Division oversees operations of the Industrial/Municipal Branch, Drinking Water Branch, Water Quality Branch, Office of Water Services, and Stormwater Management Branch ✓ Drinking Water branch oversees surface water source and groundwater source drinking water ✓ ADEM promulgates MCLs for drinking water contaminants under ADEM Administrative Code 335-7 ✓ Alabama Department of Public Health oversees the Bureau of Environmental Services	✓ ADEM uses the EPA definition of ECs ✓ ADEM follows the EPA unregulated chemical list developed under UCMR ✓ No current state target list of ECs ✓ ADEM addresses ECs on a site-specific basis – ADEM has taken specific action toward environmental contamination of PFASs due to a site-specific release ✓ ADEM has stated that chlorpyrifos and dieldrin will be included in environmental occurrence monitoring and fish tissue analyses

EC Spotlight for Alabama

Pesticides: Alabama is starting to address the occurrence of pesticides in surface water and fish throughout the state.

Emerging Contaminants

ALASKA

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State at a Glance

- Currently addresses ECs on a site-specific basis
- No formal EC program
- Has promulgated state-specific cleanup levels for a number of ECs

State agencies and programs that manage environmental issues	How Alaska addresses ECs
✓ Alaska Department of Environmental Conservation (ADEC) – Promulgates drinking water and groundwater cleanup levels (GCLs) ✓ Division of Spill Prevention and Response – Includes the Contaminated Sites Program and the Prevention and Emerging Response Program – Handles site-specific issues of contamination	✓ No active state program or single agency that manages ECs ✓ Has implicitly defined ECs by highlighting sulfolane and PFASs ✓ Monitors for pharmaceuticals as part of the Alaska Fish Monitoring Program ✓ Addresses ECs primarily on a site-specific basis ✓ Has developed GCLs for multiple ECs

EC Spotlight for Alaska

1,4-Dioxane: Alaska promulgated a GCL (2016) of 77 µg/L.

PFASs: Sampling and monitoring are ongoing at multiple sites across the state.

Emerging Contaminants

ARIZONA

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State at a Glance

- Actively evaluating ECs through Advisory Panel on Emerging Contaminants (APEC)
- Has developed drinking water standards for a number of ECs
- Currently monitoring for ECs as practicable

State agencies and programs that manage environmental issues	How Arizona addresses ECs
✓ Arizona Department of Environmental Quality (ADEQ) – Water Quality Division – Hazardous Waste Division – Solid Waste Management Division	✓ ADEQ convened APEC – Created to advise ADEQ and water utilities on ECs and pathogens in drinking water sources – Provides a forum for discussion, planning, and prioritization of EC issues ✓ Has formally defined ECs ✓ Currently preparing a draft report on ECs found in Arizona waters, which will include: – A list of ECs that will be evaluated – Information and recommendations for state utilities – Recommendations for the public – Pharmaceutical drug take-back program information ✓ Manages ECs in specific research and case-by-case situations

EC Spotlight for Arizona

17-beta Estradiol: This EC will be included in the APEC draft report on ECs and is slated to be a priority chemical for evaluation.

Phthalates: ADEQ has derived state drinking water standards for several phthalates not regulated by EPA.

Triclosan: This chemical has been detected in reclaimed water and is slated for inclusion in the APEC draft report on ECs as a priority chemical for evaluation.

Emerging Contaminants

ARKANSAS

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State at a Glance

- No formal state programs for monitoring or evaluating ECs
- State university has worked with USGS and others to examine ECs in north Arkansas streams

State agencies and programs that manage environmental issues	How Arkansas addresses ECs
✓ Arkansas Department of Environmental Quality – Hazardous Waste Division implements state waste management programs – Solid Waste Management Division monitors groundwater near landfills ✓ Water Quality Planning Branch – Develops water quality standards for waterways – Monitors state surface water and groundwater – Prepares a biennial water quality assessment report ✓ Department of Health, Engineering Section, monitors the safety of public water systems using EPA standards	✓ No active state program or single agency that manages ECs ✓ Has not formally defined ECs ✓ University of Arkansas collaborated with USGS, USDA, and Agricultural Research Service – Examined occurrence of pharmaceuticals and other ECs in north Arkansas streams ✓ No monitoring planned

EC Spotlight for Arkansas

Pharmaceuticals: Monitoring efforts in north Arkansas streams revealed frequent detections of caffeine, phenol, and *para*-cresol, among others.

Emerging Contaminants

CALIFORNIA

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State at a Glance

- Has formal Emerging Environmental Challenges (EEC) Program
- Actively monitoring and evaluating multiple ECs: Proposition 65, state environmental monitoring, establishing provisional guidance values

State agencies and programs that manage environmental issues	How California addresses ECs
✓ Overarching state agency: California Environmental Protection Agency ✓ Office of Environmental Health Hazard Assessment (OEHHA) – Conducts risk evaluations for hazardous substances – Includes numerous programs to assess hazards – Proposition 65: Program intended to inform and protect people from potential carcinogens and developmental toxicants ✓ State Water Resources Control Board (SWRCB) – Sets state policy on water rights and quality control ✓ Nine regional water quality control boards – Responsible for adoption and implementation of water quality "basin plans" – Issues water discharge requirements – Performs water quality monitoring and control ✓ Department of Toxic Substances Control (DTSC) – Environmental restoration and enforcement of hazardous waste laws – Environmental Chemistry Lab performs extensive sampling and monitoring of chemicals in environmental samples, consumer products, and biological or human tissue samples	✓ OEHHA established EEC Program – Identifies issues that may pose state challenges in the next 5 to 10 years – Develops EC guidance via public health goals (PHGs)—a PHG is the first step toward drinking water regulation in California ✓ Proposition 65 program ✓ Multiple monitoring strategies – Assess environmental occurrence of chemicals that pose potential human and ecological health risks ✓ SWRCB EC Advisory Panel – Meetings in 2009–2010 addressed EC issues and research needs – Issued table of ECs to monitor in state waters in 2013 ✓ Groundwater Ambient Monitoring and Assessment Program – Provides additional EC monitoring data ✓ Safer Consumer Products: Green chemistry regulations prompted by DTSC to protect consumers from unsafe levels of chemicals in products

EC Spotlight for California

1,4-Dioxane: The drinking water notification level (1 µg/L) triggers additional monitoring and response actions. If drinking water concentrations are higher than the response level (35 µg/L), the drinking water source must be removed from service. No state drinking water MCL or PHG.

Hexavalent Chromium: The drinking water MCL is 10 µg/L (2014).

1,2,3-TCP: The drinking water notification level (0.005 µg/L) triggers additional monitoring and response actions. PHG (0.0007 µg/L) established (2009). No state drinking water MCL.

Emerging Contaminants

COLORADO

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State at a Glance

- No active EC programs or initiatives
- Partners with universities and consortiums to address ECs
- Has developed interim groundwater standards for a few ECs
- One of the first states to ban microbeads in consumer products

State agencies and programs that manage environmental issues	How Colorado addresses ECs
✓ Colorado Department of Public Health and Environment oversees divisions and offices within the department ✓ Water Quality Control Division – Includes the Clean Water Program and Safe Drinking Water Program ✓ Division of Environmental Health and Sustainability – Oversees medication take-back program ✓ Hazardous Materials and Waste Management Division – Manages environmental cleanup, including brownfields, Superfund sites, and federal facilities	✓ Does not actively manage ECs – Leaves data collection and EC regulations to EPA – ECs addressed on a site-specific basis as necessary ✓ No current target list of ECs ✓ Colorado is a stakeholder in the Consortium for Research and Education on Emerging Contaminants – Serves as a mechanism to channel financial support to advance EC research in the region ✓ University of Colorado has produced a report on ECs in Colorado surface waters, reservoirs, and WWTP effluent ✓ Has banned microbeads in soaps and cosmetic products

EC Spotlight for Colorado

Microbeads: Colorado has banned microbeads in soaps and cosmetic products; microbeads must be phased out by 2020.

1,2,3-TCP: Colorado has developed an IGWQS of 0.00037 µg/L (2012).

1,4-Dioxane: Colorado has developed an IGWQS of 0.35 µg/L.

Emerging Contaminants

CONNECTICUT

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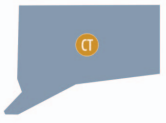
State at a Glance



- No specific department or working group for addressing ECs
- Has developed action levels for MTBE, 1,4-dioxane, and 1,2,3-TCP
- May add ECs to list of additional polluting substances

State agencies and programs that manage environmental issues	How Connecticut addresses ECs
✓ Connecticut Department of Public Health (CTDPH) – Oversees the Drinking Water Section (DWS) – DWS includes the Safe Drinking Water Rule Implementation Unit, Enforcement Unit, Source Assessment and Protection Unit, and Technical Review and Field Assessment Unit ✓ Connecticut Department of Energy and Environmental Protection ✓ Bureau of Water Protection and Land Reuse – Includes the Inland Water Resources Division, Remediation Division, and Planning and Standards Division – Planning and Standards Division oversees the Municipal Water Pollution Control group ✓ Bureau of Natural Resources – Includes the Inland Fisheries Division, Marine Fisheries Division, and Wildlife Division	✓ CTDPH does not have a working list of target ECs ✓ CTDPH has examined UCMR results to determine if certain ECs require monitoring ✓ Has developed a list of additional polluting substances that are not currently regulated – Can be in soil, groundwater, or indoor air ✓ CTDPH may propose action levels for ECs with significant detection frequencies ✓ CTDPH has conducted monitoring sampling for perchlorate and pharmaceuticals ✓ CTDPH is tracking developments on hexavalent chromium at the national level

EC Spotlight for Connecticut

1,4-Dioxane: Connecticut has developed a 3 µg/L action level for 1,4-dioxane in private wells (2013).

1,2,3-TCP: Connecticut has developed a 0.05 µg/L action level for 1,2,3-TCP in private wells (2013).

MTBE: Connecticut has developed a 70 µg/L action level for MTBE in private wells (2013).

Emerging Contaminants

DELAWARE

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State at a Glance

- No formal EC program or target EC list
- State has monitored and assessed ECs such as PBDEs, dioxins, and furans

State agencies and programs that manage environmental issues	How Delaware addresses ECs
✓ Delaware Department of Natural Resources and Environmental Control (DNREC) – Division of Water – Division of Waste and Hazardous Substances ✓ Division of Water includes groundwater and surface water discharges sections, as well as the Water Supply Section ✓ Division of Water and Hazardous Substances manages brownfields and responds to environmental emergencies ✓ The Division of Fish and Wildlife manages natural biotic resources ✓ Delaware Health and Social Services, Division of Public Health – Promulgates drinking water standards for the state's public drinking water systems – Publishes fact sheets on ECs such as MTBE, hexavalent chromium, and alachlor	✓ Has monitored and assessed ECs on a chemical- and site-specific basis ✓ Has conducted monitoring and assessments for PBDEs through the Toxics in Biota monitoring program ✓ DNREC has monitored dioxins and furans in shellfish and fish for over a decade

EC Spotlight for Delaware

Delaware does not currently address any specific EC under state regulatory initiatives.

Emerging Contaminants

FLORIDA

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State at a Glance

- Has defined ECs as "emerging substances of concern"
- Relies on federal guidance and regulations

State agencies and programs that manage environmental issues	How Florida addresses ECs
✓ Florida Department of Environmental Protection (FDEP) – Manages air, waste, water resources, and restoration programs ✓ Water resource management programs – Cover water policy, water quality assessment and restoration, permitting, compliance, and enforcement ✓ Waste management programs – Consist of waste cleanup, petroleum restoration, and permitting and compliance assistance programs ✓ FDEP collaborates with five state water management districts – Complete technical investigations of water resources	✓ FDEP has defined ECs as "emerging substances of concern" ✓ No current target list of ECs ✓ State regulators have discussed researching and monitoring ECs, including pharmaceuticals and flame retardants ✓ Monitoring of ECs conducted on a case-by-case basis – Can be triggered by events such as fish feminization or reproductive hindrance ✓ FDEP has utilized sucralose as a chemical marker for monitoring ECs in surface waters

EC Spotlight for Florida

PBDEs: Florida has conducted occurrence monitoring on PBDEs.

Perchlorate: Florida has developed a cleanup target level for perchlorate.

Emerging Contaminants

GEORGIA

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State at a Glance

- Relies on federal guidance and regulations
- Has developed state surface water guidelines for hexavalent chromium and toxaphene

State agencies and programs that manage environmental issues	How Georgia addresses ECs
✓ Georgia Department of Natural Resources oversees relevant divisions – Coastal Resources Division – Environmental Protection Division – Wildlife Resources Division ✓ Environmental Protection Division implements regulations to protect human health and the environment ✓ Drinking water regulations are governed by the Georgia Rules for Safe Drinking Water, Chapter 291-3-5 ✓ Georgia Department of Public Health oversees the Division of Health Protection – Division of Health Protection manages environmental health, public health laboratory, and emergency preparedness	✓ Relies on federal guidance for addressing ECs ✓ Individual programs in local governments include pharmaceutical take-backs

EC Spotlight for Georgia

Hexavalent Chromium: Georgia has developed acute and chronic surface water standards for hexavalent chromium.

Pesticides: Georgia conducts sampling of unregulated pesticides including aldrin, butachlor, dieldrin, and methoxyclor.

Emerging Contaminants

HAWAII

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State at a Glance

- Conducted statewide monitoring for select ECs, and in collaboration with USGS on endocrine disruptors
- No specific program established to manage ECs
- Historically focused on pesticides

State agencies and programs that manage environmental issues	How Hawaii addresses ECs
✓ Hawaii Department of Health (DOH) – Protects and improves public health and environment via pollution prevention and environmental preservation – 2014 Water Quality Plan describes goals of monitoring for herbicides, pharmaceuticals, and biogenic hormones – Clean Water Branch develops water quality standards and collects data from the Beach Monitoring Program – Safe Drinking Water Branch develops state drinking water standards ✓ Environmental Health Administration – Relevant divisions: Hazard Evaluation and Emergency Response (HEER) Office, and Environmental Management – HEER Office responds to hazardous substance releases, and oversees environmental cleanup – Environmental Management Division implements and maintains programs for air and water pollution, assuring safe drinking water, and proper management of soil and hazardous waste ✓ Department of Agriculture manages pesticide use throughout the state	✓ No active state program or single agency that manages ECs ✓ Conducts environmental monitoring of surface water and groundwater for pesticides and pharmaceuticals ✓ Results from these monitoring surveys may trigger regulatory action, even in the absence of federal standards (e.g., 1,2,3-TCP) ✓ USGS is conducting monitoring studies of pharmaceuticals and other waste indicators in Hawaii public water supply wells ✓ Safe Drinking Water Branch collaborates with the University of Hawaii to assess pharmaceuticals in state wastewater and soils ✓ Wastewater Branch of DOH is revising guidelines for the treatment and use of recycled water

EC Spotlight for Hawaii

1,2,3-TCP: First state to promulgate MCL for 1,2,3-TCP of 0.6 µg/L (2006). State reanalyzed health effects and confirmed MCL validity in 2012.

Pesticides: Several state initiatives have been developed to conduct environmental sampling and monitoring of pesticides in surface water near sugarcane and pineapple plantations.

Emerging Contaminants

IDAHO

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State at a Glance

- No state-led EC program or initiative
- USGS has included Idaho watersheds and waterbodies in various EC environmental monitoring projects, and the University of Idaho is conducting a study of ECs in the Snake River Plain area through 2016

State agencies and programs that manage environmental issues	How Idaho addresses ECs
✓ Idaho Department of Environmental Quality (IDEQ) ✓ Idaho State Board of Environmental Quality oversees environmental rule making – Air Quality Division – Environmental Management and Information Division – Technical Services Division – Waste Management and Remediation Division – Water Quality Division ✓ Idaho Department of Agriculture manages pesticide use	✓ There is no EC program or initiative within IDEQ ✓ IDEQ depends on federal information and policies ✓ Idaho Department of Agriculture has conducted limited and sporadic environmental monitoring of pesticides ✓ IDEQ gains environmental occurrence information from USGS, which has included several Idaho watersheds in various EC environmental monitoring projects

EC Spotlight for Idaho

Idaho does not currently address any specific EC under state regulatory initiatives.

Emerging Contaminants

ILLINOIS

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State at a Glance

- No specific state EC program or initiative; however, monitoring EC information is a priority of the state's interagency advisory committee
- Focuses on prevention—aggressive requirements developed by Illinois to protect community water wells from contamination

State agencies and programs that manage environmental issues	How Illinois addresses ECs
✓ Overarching state agency: Illinois EPA (IEPA) ✓ IEPA includes bureaus for land, air, and water ✓ Illinois Department of Agriculture (IDA) manages pesticide use to prevent adverse effects to human health and the environment ✓ Groundwater Advisory Council (GAC) and Interagency Coordination Committee on Groundwater (ICCG) serve as recommending/approving bodies to state agencies – GAC evaluates and recommends regulations and groundwater protection procedures to the IEPA and IDA, and identifies research and data needs – ICCG works closely with GAC and coordinates data collection, groundwater quality research, and the dissemination of information ✓ Illinois Pollution Control Board oversees the protection of water quality for the state	✓ IDA routinely monitors groundwater and public water supply wells for pesticide and pesticide metabolites ✓ ICCG has recently stated that implementing a monitoring program for ECs in Illinois groundwater is an objective; however, no program currently exists ✓ IEPA collaborates with EPA and USGS to obtain environmental monitoring of select ECs, such as PFASs and hexavalent chromium ✓ IEPA has proposed stringent source water protection plans, including aggressive maximum setback zones to enforce remedial cleanup objectives near community wells, as a method of addressing contamination of source water by ECs that are not removed by conventional drinking water treatment methods

EC Spotlight for Illinois

Microbeads: First state to ban the manufacture and sale of microbeads in personal care products and over-the-counter drugs.

Emerging Contaminants

INDIANA

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State at a Glance

- No specific state EC program or initiative
- Follows federal information and regulations and does not set more stringent standards than the federal EPA
- Monitors public health related to harmful algal blooms

State agencies and programs that manage environmental issues	How Indiana addresses ECs
✓ Overarching state agency: Indiana Department of Environmental Management (IDEM), which includes the Office of Air Quality, Office of Water Quality, and Office of Land Quality ✓ Indiana Department of Natural Resources ✓ Indiana State Department of Health Commissioner	✓ IDEM follows EPA's lead for ECs ✓ IDEM monitors levels of blue-green algae in state's surface water

EC Spotlight for Indiana

Microbeads: Indiana banned the manufacture and sale of microbeads in personal care products except for over-the-counter drugs in 2015.

Emerging Contaminants

IOWA

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State at a Glance

- Iowa Department of Natural Resources (IDNR) conducts limited environmental monitoring and research on ECs in ambient water; however, there has not been an initiative to regulate ECs
- Follows EPA regulations and generally does not develop state standards

State agencies and programs that manage environmental issues	How Iowa addresses ECs
✓ IDNR houses the Environmental Protection Commission (EPC), Natural Resources Commission, Environmental Sciences Division, and Conservation and Recreation Division ✓ Water Quality Bureau and Land Bureau are in the Environmental Services Division of IDNR	✓ IDNR collaborated with USGS in 2013 to survey groundwater for ECs including pharmaceuticals and pesticides. ECs were detected; however, no regulatory initiatives are planned. ✓ IDNR monitors recreational waters for microcystins and is currently using the World Health Organization (WHO) action level as guidance to assess potential for adverse human health effects

EC Spotlight for Iowa

Microcystin: IDNR monitors environmental levels of microcystin in recreational waters throughout the state, using the WHO action level of 20 µg/L as guidance.

Emerging Contaminants

KANSAS

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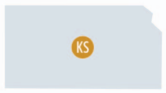
State at a Glance



- No specific state EC program or initiative
- Relies on EPA guidance and regulations

State agencies and programs that manage environmental issues	How Kansas addresses ECs
✓ Overarching state agency: Kansas Department of Health and Environment (KDHE), which includes offices for public health and the environment, among others ✓ Bureaus within the Division of Environment include Air, Environmental Field Services, Environmental Remediation, Health and Environmental Laboratories, Waste Management, and Water	✓ No state EC activities ✓ KDHE relies on EPA guidance and regulations ✓ KDHE has surface water quality criteria protective of human domestic water use, for numerous chemicals including metals, pesticides, and industrial chemicals such as solvents and phthalates

EC Spotlight for Kansas

Pesticides: KDHE has surface water quality criteria for α-HCH and β-HCH.

Emerging Contaminants

KENTUCKY

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State at a Glance

- No EC initiatives or program
- Environmental regulations follow the EPA

State agencies and programs that manage environmental issues	How Kentucky addresses ECs
✓ Overarching state agency: Kentucky Department for Environmental Protection ✓ Kentucky Department for Natural Resources assesses environmental and public health impacts from oil and gas mining and from timber harvesting	✓ Kentucky follows EPA environmental regulations and guidance

EC Spotlight for Kentucky

Kentucky does not currently address any specific EC under state regulatory initiatives.

Emerging Contaminants

LOUISIANA

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State at a Glance

- No state-specific program or initiative for ECs
- Relies on federal standards and guidance
- Louisiana Department of Environmental Quality (LDEQ)–led pharmaceutical disposal awareness program aims to reduce drugs in state waters

State agencies and programs that manage environmental issues	How Louisiana addresses ECs
✓ LDEQ ✓ Center for Environmental Health under the Department of Health and Hospitals, Office of Public Health	✓ State agencies rely on federal environmental and public health regulations and guidance ✓ To reduce pharmaceuticals in state water systems, LDEQ created a pharmaceutical disposal awareness program

EC Spotlight for Louisiana

Louisiana does not currently address any specific EC under state regulatory initiatives.

Emerging Contaminants

MAINE

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State at a Glance

- Maine Department of Environmental Protection (MEDEP) actively monitors for ECs in the state's water systems
- Maintains lists of chemicals of concern (COCs), chemicals of high concern (CHCs), and priority chemicals
- Develops guidance values for ECs in drinking water and environmental cleanup programs

State agencies and programs that manage environmental issues	How Maine addresses ECs
✓ MEDEP ✓ Numerous programs pertaining to air quality, land, spills and site cleanup, waste management, and water – Safer Chemicals in Children's Products – Priority Chemical Toxics Use Reduction ✓ Surface Water Ambient Toxics (SWAT) monitoring program – Determines scope, nature, and toxicity of contamination in surface waters and fisheries ✓ Department of Health and Human Services—Maine Center for Disease Control and Prevention (MECDC) – Environmental Health Program includes Well Water Quality Service, Subsurface Wastewater Program ✓ Guidance documents – MECDC develops maximum exposure guidelines (MEGs) for drinking water – MEDEP develops remedial action guidelines (RAGs)	✓ No formal definition of ECs ✓ Manages ECs in specific research and case-by-case situations ✓ Often sets guidance values for ECs in drinking water and environmental cleanup in advance of federal guidance ✓ Toxic Chemicals in Children's Products Act (2008) – Aims to increase awareness of potential chemical exposure to children from household products – Encourages use of safer alternatives ✓ Requires MEDEP and MECDC to develop and maintain lists of COCs, CHCs, and priority chemicals – COC list (revised 2011): 1,384 chemicals – CHC list (revised 2015): 36 chemicals – Priority chemicals may be subject to reporting requirements and/or regulation

EC Spotlight for Maine

PFASs: MECDC developed health-based MEG for PFOA of 0.1 µg/L (2014). MEDEP established residential groundwater RAGs for PFOS (0.13 µg/L) and PFOA (0.56 µg/L).

Microcystin-LR: The SWAT monitoring program detected levels of microcystin-LR above the World Health Organization level of concern (1.0 µg/L) in surface water.

Flame Retardants: Several specific brominated flame retardants are listed as high-priority contaminants for Maine. The state has passed legislation banning the use of certain flame retardants in residential electronics and upholstery items.

Emerging Contaminants

MARYLAND

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State at a Glance

- No state-specific programs; however, Maryland Department of the Environment (MDE) may respond to ECs on a site-specific basis
- Utilizes academic research information and federal guidance

State agencies and programs that manage environmental issues	How Maryland addresses ECs
✓ MDE ✓ Safe Drinking Water Act Implementation Division within the MDE Water Supply Program	✓ MDE does not address ECs unless there is a site-specific, localized reason ✓ Relies on academic research and federal guidance

EC Spotlight for Maryland

Perchlorate: Maryland has an action level and MCLG of 1 µg/L.

Brominated Flame Retardant: Maryland banned the manufacture, sale, and distribution of products containing pentaBDE or octaBDE in 2008.

Emerging Contaminants

MASSACHUSETTS

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State at a Glance

- Massachusetts Department of Environmental Protection (MassDEP) oversees the Emerging Contaminants Workgroup, which has led EC management strategies since 2007
- Actively monitoring and evaluating multiple ECs for priority contaminants including 1,4-dioxane, cyanobacteria, nanoparticles, perchlorate, pharmaceuticals, PBDE, PCE, and TCE

State agencies and programs that manage environmental issues	How Massachusetts addresses ECs
✓ Overarching state agency: MassDEP ✓ Emerging Contaminants Workgroup – Screening process to identify new ECs – Includes numerous programs to assess hazards – Framework includes 1989 Toxic Use Reduction Act under the Massachusetts Toxic Use Reduction Program—considers persistence, bioaccumulation potential, and toxicity ✓ Massachusetts Interagency Nanotechnology Committee – Formed in 2007 to gather information and raise awareness of potential hazards and uses of nanoparticles and nanotechnology ✓ Drinking water guidance developed with Department of Public Health ✓ Toxicity assessments – MassDEP Bureau of Waste Site Cleanup requests assistance from MassDEP Office of Research Standards, which receives input from the MassDEP Health Effects Advisory Committee	✓ Emerging Contaminants Workgroup establishes the priority list of ECs – Screening process begins with 80 chemicals and ends with top 4 for short-term action – Focuses on tangible outcomes and potential for cross-media contamination ✓ Includes ECs when science and policy are evolving – PCE because of new Integrated Risk Information System inhalation unit risk and oral cancer slope factor from EPA's cancer risk assessment finalized in 2012 – TCE because of new effects data linking it to fatal heart defects (developmental toxicant) ✓ EC chemical profiles – Available on web page, each describes motivation for listing, key elements of MassDEP work plan, and information from EPA and other agencies/institutions ✓ MassDEP Office of Research Standards – Derives toxicity values for use by MassDEP programs when values are unavailable ✓ Funds research on septic systems as sources of pharmaceuticals

EC Spotlight for Massachusetts

1,4-Dioxane: Massachusetts uses a groundwater standard of 0.3 µg/L (2014) for 1,4-dioxane, considered a likely human carcinogen. State occurrence data from UCMR3 indicate approximately 10% detection, ranging from 0.07 to 0.41 µg/L with a median of 0.10 µg/L.

Perchlorate: First state to set a drinking water MCL (2 µg/L).

Emerging Contaminants

MICHIGAN

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State at a Glance

- Manages a priority list of ECs, use occurrence, and toxicity data from EPA, and funds additional studies to monitor ECs in surface water and groundwater
- Priority ECs currently include PFASs, endocrine disruptors, antibiotics, pharmaceuticals, microbeads, PCN, 1,4-dioxane, rocket fuel, triclosan, pesticides, and metabolites

State agencies and programs that manage environmental issues	How Michigan addresses ECs
✓ Michigan Department of Environmental Quality (MDEQ) – 2015 Water Strategy, prepared in cooperation with Michigan Office of the Great Lakes and other agencies, explains the EC list and limitations for current wastewater treatment technologies ✓ Michigan Department of Natural Resources (MDNR) – ECs are one of three chapters in triennial report on "State of Michigan's Environment," coauthored with MDEQ ✓ Toxic Steering Group – Participates in updating the EC list	✓ MDEQ and MDNR do not have a formal EC program, but identification and management is coordinated across multiple departments ✓ Michigan closely tracks EPA's initiatives on ECs, including UCMR3 ✓ Planning to phase out use and sale of microbeads ✓ Funding research to support development of standards, including fate and transport studies and development of treatment technologies ✓ Legislature is targeting 2018 to complete funding, development, and implementation of surface water and groundwater monitoring strategies to detect ECs ✓ Water Resources Division – 2014 final water quality value for PFOS ✓ Department of Community Health – 2012 oral RfD for PFOS developed to support a fish consumption advisory

EC Spotlight for Michigan

PFASs: PFASs were detected in surface water and groundwater near the former Wurthsmith Air Force Base. Human noncancer values for PFOA (0.42 µg/L) and PFOS (0.011 µg/L) were finalized in 2014. MDEQ issued proposed groundwater and soil cleanup standards in April 2016.

PCN: A study in 2000 detected PCN in fish and sediment in lakes and rivers. Monitoring continues under state/federal Chinook and Coho Salmon Trend Monitoring Program, since 2011.

Emerging Contaminants

MINNESOTA

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State at a Glance

- Has a formal program to monitor and assess ECs, including a process for nomination, scoring, preliminary health evaluation, and determining need for state regulation
- Leader in reviewing and developing criteria for ECs and in use of web-based interface
- Has many EC-specific information sheets, including BPA, chlorpyrifos, 1,4-dioxane, microcystin, 1,2,3-TCP, and triclosan
- Health risk limits (HRLs) adopted for carbamazepine, DEET, 1,4-dioxane, 1,2,3-TCP, and TCEP

State agencies and programs that manage environmental issues	How Minnesota addresses ECs
✓ Minnesota Department of Health (MDH) – Four bureaus: Health Protection, Health Improvement, Health Systems, and Health Operations ✓ Health Protection Bureau is composed of the Environmental Health Division; Infectious Disease Epidemiology, Prevention and Control Division; and Public Health Laboratory ✓ Environmental Health Division – Manages drinking water protection, environmental surveillance and assessment, and well management ✓ Two state laws allocate funds to the MDH EC program to address unregulated drinking water contaminants – 2009 Session Laws, Chapter 172, Article 2, Section 7 – 2011 First Special Session Laws, Chapter 6, Article 2, Section 8 ✓ Drinking Water Contaminants of Emerging Concern is the formal EC program	✓ Every 2 years, screens 20 chemicals and provides guidance for up to 10 chemicals ✓ Results shared with federal, state, and academic partners ✓ During evaluation, staff investigate where and how EC is used in the state, potential to enter water supply, and human health toxicity ✓ Health-based guidance established only after conducting exposure and toxicity screenings followed by risk-based selection ✓ Exposure screening identifies likely uses and releases ✓ Toxicity screening examines literature on adverse health effects related to exposure before health-based guidance is established ✓ Risk-based selection involves an assessment of need and feasibility of implementation ✓ EC information sheet summarizes occurrence data, current health risks and guidance values, and information on avoiding exposure

EC Spotlight for Minnesota

Pharmaceuticals: The Rapid Assessment for Pharmaceuticals project includes a monitoring database, developed with USGS, that spans 20 years. The August 2015 Pharmaceutical Water Screening Values Report lists 119 active pharmaceutical ingredients subject to assessment and development of water screening values, below which health risk is not expected. Screening values are 4 to 250 times lower than MDH noncancer guidance values.

PFASs: In 2009–2011, drinking water criteria referred to as chronic HRLs were developed through a formal rule-making process for PFOA (0.3 µg/L), PFOS (0.3 µg/L), PFBA (7 µg/L), and PFBS (7 µg/L). The state determined that science on other PFASs is not sufficient to support either an HRL or a guidance value.

Emerging Contaminants

MISSISSIPPI

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State at a Glance

- No state-specific programs or initiatives for ECs
- Mississippi Department of Environmental Quality (MDEQ) AgChem Program monitors for pesticides and other agriculturally related chemicals, some without federal or state standards, in groundwater

State agencies and programs that manage environmental issues	How Missippi addresses ECs
✓ MDEQ ✓ Mississippi Department of Health	✓ Relies on federal guidance, including guidance from EPA Region 4 ✓ MDEQ's AgChem Program monitors for pesticides in state groundwater

EC Spotlight for Mississippi

Pesticides: Mississippi monitors for pesticides throughout state groundwater.

Emerging Contaminants

MISSOURI

integral consulting inc.

State at a Glance

- No state-specific programs; however, Missouri Department of Natural Resources (MODNR) funds research through the Missouri University of Science and Technology on EC occurrence and removal processes
- Relies on information from federal agencies

State agencies and programs that manage environmental issues	How Missouri addresses ECs
✓ MODNR	✓ Does not have a specific EC program or undertake EC regulatory actions ✓ MODNR funds research through the Missouri University of Science and Technology on EC environmental occurrence and wastewater removal processes ✓ MODNR issues water quality standards for the protection of aquatic life, drinking water supply, and groundwater. Many of these compounds do not have federal standards, such as pesticides and industrial compounds.

EC Spotlight for Missouri

Pharmaceuticals: Missouri funded research to determine levels of pharmaceuticals in natural and drinking water.

Emerging Contaminants

MONTANA

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State at a Glance

- No state-specific programs; closely follows Minnesota's EC program
- Has developed state water quality standards (Circular DEQ-7) for ECs without federal MCLs, based on federal guidance values

State agencies and programs that manage environmental issues	How Montana addresses ECs
✓ Montana Department of Environmental Quality (DEQ) – Circular DEQ-7, a list of water quality standards, includes several ECs – Numeric values for contaminants without federal MCLS are from EPA Office of Water health advisories, national recommended water quality criteria (NRWQC), or Integrated Risk Information System toxicity levels	✓ Utilizes information from the Minnesota EC program ✓ Of potential target ECs in the state, initial review of occurrence concentrations and health effects levels led DEQ to conclude that from a human health perspective, most ECs were not raising any major concerns ✓ Developed educational materials for the safe disposal of pharmaceuticals ✓ Has promulgated state groundwater water quality criteria for some contaminants that do not have federal MCLs; however, uses federal EPA guidance values

EC Spotlight for Montana

Pesticides: The state has developed numerous NRWQCs for pesticides.

Emerging Contaminants

NEBRASKA

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State at a Glance

- No state-specific programs; follows federal guidance and regulations
- State initiative for safe and legal pharmaceutical disposal
- Nebraska Department of Environmental Quality (NDEQ) closely monitors microcystin levels in recreational surface water

State agencies and programs that manage environmental issues	How Nebraska addresses ECs
✓ NDEQ	✓ ECs are not addressed by NDEQ ✓ State initiative for safe and legal pharmaceutical waste disposal programs operated by the Nebraska Pharmacists Association ✓ NDEQ performs comprehensive sampling of state surface water for microcystin, using the World Health Organization criterion for recreational waters of 20 µg/L

EC Spotlight for Nebraska

Pharmaceuticals: Nebraska has a state program for the safe disposal of pharmaceuticals.

Emerging Contaminants

NEVADA

integral consulting inc.

State at a Glance

- No state-specific programs
- Follows federal guidance and regulations

State agencies and programs that manage environmental issues	How Nevada addresses ECs
✓ Nevada Department of Conservation and Natural Resources includes the Division of Environmental Protection and Division of Water Resources	✓ No state initiative or program for ECs ✓ Although not a regulatory initiative, the Southern Nevada Water Authority is one of the most sophisticated municipal water quality lab complexes in the world and is used to analyze ECs ✓ Nevada Water Environment Association provides information on the available treatments that can remove ECs from wastewater

EC Spotlight for Nevada

Nevada does not currently address any specific EC under state regulatory initiatives.

Emerging Contaminants

NEW HAMPSHIRE

integral consulting inc.

State at a Glance

- State agencies have addressed ECs as site-specific contaminants
- Develops water quality criteria for ECs on a case-by-case basis

State agencies and programs that manage environmental issues	How New Hampshire addresses ECs
✓ New Hampshire Department of Environmental Services (NHDES) – Waste Management Division and Water Division are key offices – Water Division includes the Drinking Water and Groundwater Bureau, Watershed Management Bureau, and Wetlands Bureau – Water Quality Standard Advisory Committee facilitates public input and provides a forum for water quality issues ✓ New Hampshire Department of Health and Human Services (NHDHHS) – Division of Public Health Services manages public health threats, including biomonitoring studies	✓ NHDES is the primary agency that deals with ECs – Follows EPA regulatory developments and health risk data – Will address an EC if site-specific information indicates a potential risk ✓ NHDES Environmental Health Program makes recommendations concerning EC exposure risks ✓ Currently addressing PFASs, including at the Pease Tradeport Water System ✓ NHDHHS releases documents for frequently asked questions on ECs ✓ NHDES distributes information regarding drug take-back programs

EC Spotlight for New Hampshire

PFASs: New Hampshire is currently addressing PFOA and PFOS. NHDES is using provisional guidance values from the EPA Office of Water and will update those as new information from EPA becomes available. NHDES and NHDHHS are working together to address groundwater cleanup and public health concerns.

1,4-Dioxane: NHDES has developed an ambient groundwater quality standard for 1,4-dioxane at 3 µg/L.

Emerging Contaminants

NEW JERSEY

integral consulting inc.

State at a Glance

- Contaminants of Emerging Concern Workgroup (CECW) formed by New Jersey Department of Environmental Protection (NJDEP) to address ECs
- Actively monitoring and addressing ECs throughout the state
- Established tiered framework for developing water quality standards for ECs

State agencies and programs that manage environmental issues	How New Jersey addresses ECs
✓ NJDEP oversees relevant environmental agencies ✓ Office of Water Resources Management Coordination – Heads the Division of Water Quality, Division of Water Monitoring and Standards ✓ Site Remediation and Waste Management Program – Manages the Division of Remediation Management and Division of Solid and Hazardous Waste Management Program ✓ NJDEP Science Advisory Board provides independent review and advice on technical and scientific issues ✓ New Jersey Drinking Water Quality Institute develops and recommends water quality standards (e.g., MCLs) for NJDEP to issue and enforce	✓ NJDEP Science Advisory Board formed the CECW to address ECs ✓ CECW has developed a four-step framework for assessing EC hazard and exposure potential and need for regulatory action ✓ CECW works directly with Delaware River Basin Commission to identify and investigate ECs in the Delaware River ✓ NJDEP Division of Water Monitoring and Standards has issued numerous groundwater quality standards for contaminants without federal regulations, or that are more stringent than federal regulations or guidance ✓ NJDEP Division of Science, Research and Environmental Health tracks the occurrence of ECs in surface water, groundwater, and public water supplies in New Jersey through closely monitoring other research projects

EC Spotlight for New Jersey

PFASs: New Jersey is actively addressing multiple perfluorinated compounds, including PFNA and PFOA. It is the first state to develop a groundwater quality criterion for PFNA (0.01 µg/L). NJDEP has proposed, but not finalized, a state MCL for PFOA. The state guidance level for drinking water is currently 0.04 µg/L.

1,2,3-TCP: New Jersey has developed a groundwater quality criterion for 1,2,3-TCP of 0.03 µg/L.

1,4-Dioxane: New Jersey has developed a groundwater quality criterion for 1,4-dioxane of 0.4 µg/L.

Emerging Contaminants

NEW MEXICO

integral consulting inc.

State at a Glance

- Relies on EPA guidance on EC research and regulation
- Currently monitoring pharmaceuticals in wastewater

State agencies and programs that manage environmental issues	How New Mexico addresses ECs
✓ New Mexico Environment Department (NMED) – Includes the Water Protection Division, Resource Protection Division, and Environmental Protection Division ✓ NMED Water Division oversees the Drinking Water Bureau, Groundwater Quality Bureau, and Surface Water Quality Bureau ✓ NMED Resource Protection Division oversees the Hazardous Waste Bureau and Department of Energy Oversight Bureau ✓ NMED Environmental Protection Division oversees the Environmental Health Bureau ✓ NMED also manages the Water Quality Control Commission, Environmental Improvement Board, and Wastewater Technical Advisory Committee	✓ Relies primarily on EPA for regulatory developments in addressing ECs ✓ Surface Water Quality Bureau has teamed with EPA to investigate pharmaceuticals and personal care products from WWTPs ✓ Department of Energy Oversight Bureau is currently conducting study on pharmaceuticals in wastewater ✓ Has addressed ECs as site-specific contaminants at Superfund sites

EC Spotlight for New Mexico

Perchlorate: New Mexico has developed an MCLG for perchlorate of 1 µg/L.

Emerging Contaminants

NEW YORK

integral consulting inc.

State at a Glance

- Multiple state agencies collaborate to address ECs
- Actively monitors and evaluates ECs in state waters through various initiatives
- Has addressed ECs on a site-specific basis

State agencies and programs that manage environmental issues	How New York addresses ECs
✓ New York State Department of Environmental Conservation (NYSDEC) oversees multiple relevant offices ✓ Office of Remediation and Materials Management – Oversees the Division of Environmental Remediation and Division of Materials Management ✓ Office of Water Resources – Includes the Division of Water, Hudson River Estuary Program, Great Lakes Program, and New York City Watershed ✓ Office of General Counsel manages the Environmental Justice Program ✓ Public health issues addressed by the New York State Department of Health (NYSDOH), Office of Science and Public Health, and Center for Environmental Health	✓ NYSDOH sets a 50 µg/L limit for all unregulated drinking water contaminants ✓ NYSDEC and NYSDOH collaborated with others on New York's 2015–2025 Ocean Action Plan (OAP) – Provides a framework to address ECs – Includes monitoring, identifying, and assessing EC effects on ecological processes – Proposes water quality standards to protect aquatic life – Includes a plan to enhance the proper disposal of pharmaceuticals and identify ECs in consumer products that might warrant a ban or restriction ✓ OAP also addresses the implementation of the Long Island Pesticide Pollution Prevention Strategy – Technical Review and Advisory Committee assists NYSDEC in investigating and assessing active ingredients in pesticide contaminants – Evaluates toxicity of compounds on finfish and shellfish ✓ NYSDEC established a Pharmaceuticals Work Group to manage pollution in state water ✓ New York Senate has a proposed bill to ban the sale of personal care products that contain microbeads

EC Spotlight for New York

Pharmaceuticals: The Pharmaceuticals Work Group, established under NYSDEC, joined the New England Interstate Water Pollution Control Commission's pharmaceuticals working group.

Flame Retardants: New York has banned children's products that contain certain percentages of flame retardants, including PBDEs and TCEP. NYSDEC/NYSDOH also addressing PFASs in site-specific cases.

Pesticides: OAP is actively pursuing pesticide investigations and evaluations through the Long Island Pesticide Pollution Prevention Strategy.

Emerging Contaminants

NORTH CAROLINA

integral consulting inc.

State at a Glance

- Mostly relies on federal regulations and guidance for ECs, however has promulgated groundwater cleanup standards for several ECs unregulated at the federal level

State agencies and programs that manage environmental issues	How North Carolina addresses ECs
✓ North Carolina Department of Environmental Quality – Oversees the Division of Water Resources, Division of Water Infrastructure, and Division of Water Management ✓ Division of Water Resources – Supervises the Water Quality Regional Operations Section, Water Sciences Section, and Water Planning Section – Public Water Supply Section oversees the Protection and Enforcement Branch – Includes the Environmental Management Commission ✓ Water Planning Section – Comprised of the Classifications and Standards/Rules Review Branch, Ground Water Management Branch, and Nonpoint Source Planning Branch ✓ Water Sciences Section – Includes the Aquatic Toxicology Branch, Biological Assessment Branch, and Ecosystem Branch	✓ Mostly relies on federal guidance in addressing ECs ✓ Has addressed ECs on a site-specific basis ✓ May develop an interim maximum allowable concentration (IMAC) for contaminants found in drinking water or groundwater ✓ Has promulgated groundwater standards (called 2L groundwater standards) for several ECs unregulated at the federal level, including phthalates, MTBE, 1,4-dioxane, and 1,2,3-TCP

EC Spotlight for North Carolina

PFASs: North Carolina has developed a groundwater IMAC for PFOA in response to site contamination and UCMR data.

Phthalates: North Carolina has developed groundwater standards for a number of unregulated phthalates, including dibutyl phthalate, di-n-octyl phthalate, and diundecyl phthalate.

Emerging Contaminants

NORTH DAKOTA

integral consulting inc.

State at a Glance

- Follows EPA lead in addressing ECs
- Tracks potential pollution of state water from agricultural and oil industry practices

State agencies and programs that manage environmental issues	How North Dakota addresses ECs
✓ North Dakota Department of Health, Environmental Health Section ✓ Five main divisions in the Environmental Health Section: Air Quality, Laboratory Services, Municipal Facilities, Waste Management, and Water Quality ✓ Division of Municipal Facilities oversees the Clean Water State Revolving Loan Fund Program, Drinking Water Program, and Drinking Water State Revolving Loan Fund Program ✓ Division of Waste Management includes hazardous waste, solid waste, and underground storage tank programs ✓ Water Quality Division consists of groundwater and surface water protection programs ✓ Special projects address water quality standards and interstate water issues	✓ Examines ECs in a site-specific manner ✓ Follows EPA's lead when developing MCLs for drinking water standards ✓ Has two monitoring programs that focus on agricultural and oil-related chemicals – May address ECs in the future through these programs ✓ Has promulgated state water quality criteria to protect aquatic and human health from pollutants in surface water

EC Spotlight for North Dakota

North Dakota does not currently address any specific EC under state regulatory initiatives.

Emerging Contaminants

OHIO

integral consulting inc.

State at a Glance

- Relies on federal agency regulations and guidance
- Harmful algal blooms (HABs) are an issue for Ohio; the state conducts monitoring and has developed treatment initiatives

State agencies and programs that manage environmental issues	How Ohio addresses ECs
✓ Ohio Environmental Protection Agency (OHEPA) oversees relevant divisions ✓ Division of Drinking Water and Ground Waters oversees source water assessment and protection ✓ Division of Materials and Waste Management handles both hazardous and nonhazardous wastes ✓ Water quality monitoring programs are conducted by the Division of Surface Water, Nonpoint Source Program, and State Water Quality Management Plan Program ✓ Division of Environmental Response oversees site assessments, brownfields management, and Resource Conservation and Recovery Act matters ✓ Ohio Department of Health, Bureau of Environmental Health, disseminates public health information regarding ECs	✓ OHEPA relies on federal regulations and policies regarding ECs ✓ OHEPA's wastewater pretreatment program lists flame retardants, hormones, pharmaceuticals, steroids, nonylphenols, and pesticides as classes of ECs with potential impacts to state water – Identified wastewater as a potential substantial source of ECs in the environment ✓ OHEPA is active in addressing HABs and cyanotoxin treatment ✓ OHEPA works with the Ohio Department of Natural Resources to monitor and remediate impacts on groundwater from nonpoint sources such as feedlots and agricultural practices—most actions are geared toward reducing pollution

EC Spotlight for Ohio

Harmful Algal Blooms: OHEPA has an aggressive monitoring and advisory system to notify the public if harmful algae are detected in public water systems or recreational areas.

Emerging Contaminants

OKLAHOMA

integral consulting inc.

State at a Glance

- Relies on federal agency regulations and guidance
- Coordination between state agencies ensures the protection of surface water and groundwater

State agencies and programs that manage environmental issues	How Oklahoma addresses ECs
✓ Oklahoma Department of Environmental Quality (ODEQ) oversees the Land Protection Division and Water Quality Division ✓ Oklahoma State Department of Agriculture, Food and Forestry (ODAFF) is the lead agency for pesticide control ✓ Oklahoma Water Resources Board (OWRB) adopts the water quality standards for the state in accordance with the federal Clean Water Act	✓ Typically defers to EPA regulations and guidance ✓ Focused on developing rules for indirect potable reuse of treated municipal wastewater ✓ Regulatory standards for indirect potable reuse may include requirements for select ECs ✓ ODAFF prevents the pollution of surface water and groundwater with pesticides and manages a pesticide chemical database and state pesticide concern list ✓ OWRB conducts monitoring surveys of surface water and groundwater, sharing the data with ODEQ and ODAFF

EC Spotlight for Oklahoma

Oklahoma does not currently address any specific EC under state regulatory initiatives.

Emerging Contaminants

OREGON

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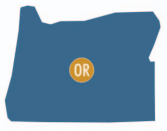
State at a Glance



- State agencies provide general EC information to the public on websites and in reports
- Established initiation levels for numerous ECs, which limit concentrations in wastewater effluent

State agencies and programs that manage environmental issues	How Oregon addresses ECs
✓ Oregon Department of Environmental Quality (ORDEQ) consolidated the Air, Land, and Water Quality divisions into the Operations and Environmental Solutions divisions ✓ Operations Division oversees the Cleanup and Emergency Response Program, Hazardous Waste and Tanks Program, and Surface Water Program ✓ Environmental Solutions Division leads the Watershed Management Program and Water Quality Standards/Assessment Program ✓ Relevant advisory committees include the groundwater steering committee for South Deschutes and North Klamath counties ✓ Public Health Division oversees the Center for Health Protection ✓ Oregon Health Authority disseminates information relating to environmental issues	✓ Oregon Health Authority educates the general public on the potential impact of unregulated contaminants on their health – Includes pharmaceuticals, flame retardants, algal toxins, nanoparticles, and metals ✓ ORDEQ deals with the environmental cleanup of ECs on a case-by-case basis, but is not engaged in active monitoring ✓ ORDEQ has initiation levels for numerous ECs without federal regulations, i.e., the concentration of the pollutant in wastewater effluent that, if exceeded, necessitates a reduction plan under Oregon Revised Statute 468B.140 – ECs with initiation levels for wastewater effluent include PBDEs, PFASs, pesticides, pharmaceuticals, and industrial chemicals such as solvents ✓ Oregon Nanoscience and Microtechnologies Institute (ONAMI) is a nongovernmental, nonprofit organization formed to address safer nanomaterials and nanomanufacturing initiatives

EC Spotlight for Oregon

Nanoparticles: The state provides funding to ONAMI, which has outlined strategies for developing safer nanomaterials.

Wastewater Treatment Effluent: The state established initiation levels for numerous ECs in wastewater effluent, including PBDEs, PFASs, pharmaceuticals, pesticides, and industrial chemicals.

Emerging Contaminants

PENNSYLVANIA

integral consulting inc.

State at a Glance

- Has conducted sampling and monitoring to assess EC occurrence in surface water
- Responded to EPA UCMR results demonstrating PFOS above EPA's provisional health advisory in public drinking water wells

State agencies and programs that manage environmental issues	How Pennsylvania addresses ECs
✓ Pennsylvania Department of Environmental Protection (PADEP) and Department of Health are the primary agencies ✓ PADEP includes the Waste, Air, Remediation, and Water Management divisions and the Bureau of Environmental Cleanup and Bureau of Waste Management ✓ Water Management Division oversees the Bureau of Point and Nonpoint Source Management and the Bureau of Safe Drinking Water ✓ PADEP also oversees relevant boards including the Cleanup Standards Scientific Advisory Board and the Water Resources Advisory Committee	✓ PADEP has collaborated with the USGS Water Science Center to conduct a monitoring study of pharmaceuticals in well and surface waters – Includes monitoring for endocrine-disrupting compounds and pesticides in the Susquehanna River ✓ Has addressed localized PFASs in the public water supply wells identified by EPA's UCMR3 program ✓ Because of an unusually high mortality rate for smallmouth bass, a multistate agency technical committee was formed to develop a monitoring strategy. Endocrine-disrupting compounds, including pesticides and pharmaceuticals, have been identified in surface water. Additional work is ongoing.

EC Spotlight for Pennsylvania

Pesticides: PADEP continues to monitor for pesticides such as metalochlor and atrazine in the Susquehanna River.

PFASs: PADEP has investigated PFOS contamination in two wells of the Horsham Water and Sewer Authority that were idenitfied through the EPA's UCMR3 program.

Emerging Contaminants

RHODE ISLAND

integral consulting inc.

State at a Glance

- Relies on EPA guidance and regulations
- Most concerned with pharmaceuticals, particularly those associated with chemotherapy

State agencies and programs that manage environmental issues	How Rhode Island addresses ECs
✓ Rhode Island Department of Environmental Management (RIDEM) includes the Bureau of Natural Resources and Bureau of Environmental Protection ✓ Bureau of Environmental Protection oversees the Office of Water Resources, Office of Waste Management, and Office of Compliance and Inspection ✓ Department of Health includes the Division of Environmental Health ✓ Center for Water Quality leads the Private Wells Program and Public Drinking Water Program	✓ RIDEM defers to EPA guidance in addressing ECs ✓ RIDEM manages pharmaceuticals that are deemed as hazardous waste from industrial sites ✓ Rhode Island Pollution Discharge Elimination System has been engaged in studying pharmaceuticals – Not currently developing regulations – Investigating chemotherapy drugs entering septic and drinking water systems

EC Spotlight for Rhode Island

Pharmaceuticals: RIDEM is concerned about pharmaceuticals, particularly chemotherapy drugs, entering water supplies but has yet to take specific actions.

Emerging Contaminants

SOUTH CAROLINA

integral consulting inc.

State at a Glance

- Relies of federal agencies for guidance and regulations
- Addresses ECs on a site-specific basis

State agencies and programs that manage environmental issues	How South Carolina addresses ECs
✓ South Carolina Department of Health and Environmental Control (SCDHEC) includes numerous environmental offices – Bureaus of Environmental Health, Environmental Services, Land and Waste Management, and Water, and the Environmental Quality Control Administration ✓ SCDHEC director oversees the Special Deputy of Environmental Affairs, Deputy Director of Ocean and Coastal Resource Management, and Deputy Director of Health Regulation	✓ Will identify and address ECs on a site-specific basis ✓ Generally follows federal EPA and Region 4 guidance and regulations

EC Spotlight for South Carolina

Nanoparticles: The South Carolina SmartState Program has established the Environmental Nanoscience and Risk Center of Economic Excellence, which focuses on the impact of nanotechnology on the environment.

Emerging Contaminants

SOUTH DAKOTA

integral consulting inc.

State at a Glance

- Follows federal regulations and guidance
- No formal EC program or initiative

State agencies and programs that manage environmental issues	How South Dakota addresses ECs
✓ Overarching state agency: South Dakota Department of Environment and Natural Resources	✓ Adopts federal environmental regulations ✓ No state-specific environmental monitoring program for unregulated contaminants

EC Spotlight for South Dakota

South Dakota does not currently address any specific EC under state regulatory initiatives.

Emerging Contaminants

TENNESSEE

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State at a Glance

- Tennessee Department of Environment and Conservation (TDEC) is concerned with ECs in state water and has collected occurrence information through collaboration with the University of Tennessee
- TDEC follows federal regulations and guidance

State agencies and programs that manage environmental issues	How Tennessee addresses ECs
✓ Overarching state agency: TDEC – Includes the Division of Water Resources, Groundwater Management Section ✓ Water Resource Technical Advisory Committee was established in 2007, composed of experts from state agencies, water suppliers, universities, and environmental conservation groups, to serve as an advisory group to TDEC	✓ TDEC collects EC occurrence information – Groundwater Management Section of the Division of Water Resources has collaborated with University of Tennessee to provide information on the presence and concentrations of various ECs, including pharmaceuticals and pesticides in state waters

EC Spotlight for Tennessee

Tennessee does not currently address any specific EC under state regulatory initiatives.

Emerging Contaminants

TEXAS

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State at a Glance

- No state-specific EC program
- Toxicology Division may derive toxicity values and standards for ECs for use by various state environmental divisions
- Texas Commission on Environmental Quality (TCEQ) has protective concentration limits (PCLs) for numerous ECs, including PFASs, BPA, and 1,2,3-TCP

State agencies and programs that manage environmental issues	How Texas addresses ECs
✓ Overarching state agency: TCEQ – Includes divisions for air, waste, and water – Toxicology Division helps TCEQ identify chemical hazards, evaluate exposures, and assess human health risks, ensuring that toxicology principles form the foundations of TCEQ's environmental regulations and policy decisions – TCEQ produces chemical-specific development support documents for the derivation of toxicity values, which follow EPA guidance and methods and provide state-of-the-science information to TCEQ departments	✓ Senate Bill 1757 Project (2009) required TCEQ to study and make recommendations regarding the disposal and fate of pharmaceuticals into Texas wastewater systems – Pharmaceutical Disposal Advisory Group created to develop strategies ✓ TCEQ's Toxicology Division derives toxicity values for some ECs that are deemed necessary for various state regulatory programs, including for use in cleanup standards and air emission standards

EC Spotlight for Texas

PFASs: TCEQ has PCLs for 16 PFASs, including groundwater and soil standards.

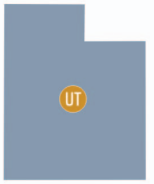
Pharmaceuticals: Senate Bill 1757 Project allowed the formation of a Pharmaceutical Disposal Advisory Group to develop strategies for reducing pharmaceuticals in state surface water and drinking water sources.

Emerging Contaminants

UTAH

integral consulting inc.

State at a Glance



- Relies on federal agencies for guidance and regulations
- Conducts monitoring of select ECs in state wastewater

State agencies and programs that manage environmental issues	How Utah addresses ECs
✓ Utah Department of Environmental Quality (UDEQ)	✓ Proper Disposal of Pharmaceuticals Workgroup – Collaboration between public utilities, police department, city health department, Utah Department of Health, Utah Poison Control Center, and UDEQ ✓ Monitoring for certain pesticides and pharmaceuticals is conducted in state wastewater ✓ Division of Water Quality is continuing to gather occurrence data and assessing the requirements for removing ECs from wastewater

EC Spotlight for Utah

Pharmaceuticals: A statewide collaborative program is in place for the safe disposal of pharmaceuticals by Utah residents.

Emerging Contaminants

VERMONT

integral consulting inc.

State at a Glance

- Vermont Department of Environmental Conservation (VTDEC) has defined ECs and focuses mostly on potential threats to the aquatic environment from pharmaceuticals
- The Vermont Department of Health (VTDOH) maintains a list of "Chemicals of High Concern to Children"
- VTDOH derives drinking water standards for numerous ECs

State agencies and programs that manage environmental issues	How Vermont addresses ECs
✓ VTDEC, including the Department of Environmental Conservation ✓ VTDOH monitors for impacts on public health from exposure to environmental chemicals	✓ VTDEC's Watershed Management Division has defined ECs as "newly identified manmade compounds that result from human usage" ✓ VTDEC's Surface Water Management Strategy includes an objective of minimizing pollution from ECs ✓ Limited sampling for pesticides in state drinking water and groundwater has occurred ✓ VTDEC monitors for blue-green algae toxins in public drinking water systems ✓ VTDOH has created a list of ECs of high concern to children's health, including chemicals commonly found in personal care products – Manufacturers with chemicals on this list must disclose information about these chemicals to VTDOH ✓ VTDOH drinking water health advisories and action levels are often derived for ECs, such as 1,4-dioxane and 1,2,3-TCP

EC Spotlight for Vermont

Pharmaceuticals: VTDOH and VTDEC have programs to monitor and assess potential impacts of these ECs on children's health and aquatic environments throughout the state.

PFOA: VTDOH and VTDEC are addressing public health concerns regarding PFOA in public drinking water. VTDOH derived a health advisory at 0.02 µg/L.

Emerging Contaminants

VIRGINIA

integral consulting inc.

State at a Glance

- Follows federal guidance and regulations
- Virginia Department of Environmental Quality (VADEQ) uses the term "microconstituents" to refer to many different classifications of ECs detected in the environment
- Has collaborated in USGS occurrence studies in select locations

State agencies and programs that manage environmental issues	How Virginia addresses ECs
✓ Overarching state agency: VADEQ ✓ Three citizen regulatory boards also administer environmental regulations: State Water Control Board, Waste Management Board, and Air Pollution Control Board	✓ Follows federal guidance and regulations ✓ Defines the term "microconstituents" as natural or manmade compounds that are detected in the environment with a potential effect on organism development and human health ✓ Collaborates with federal agencies such as USGS to obtain information on the levels of ECs in state water and fish ✓ Much of VADEQ's focus is on the prevention of microconstituents, such as pharmaceuticals, from entering the environment

EC Spotlight for Virginia

Pharmaceuticals: A statewide program is in place for the safe disposal of pharmaceuticals by Virginia residents.

Emerging Contaminants

WASHINGTON

integral consulting inc.

State at a Glance

- Has a formal definition for ECs and a specific program
- Addresses ECs under the Toxics Studies Program; identifies, prioritizes, and then conducts monitoring and in-depth evaluation of ECs to advise on possible legislation and regulation

State agencies and programs that manage environmental issues	How Washington addresses ECs
✓ Overarching state agency: Washington State Department of Health, Department of Ecology (ECY) ✓ Programs under ECY include Water Resources, Water Quality, Shorelands and Environmental Assistance; Waste 2 Resources; Hazardous Waste and Toxics Reduction; Environmental Assessment; Spill Prevention Preparedness and Response; and Toxics Cleanup – ECY's Environmental Assessment Program monitors toxic chemicals in the environment through a Toxics Studies Unit initiative	✓ Defines ECs as "contaminants not commonly monitored for in the environment, but have known or suspected ecological or human health effects" ✓ ECY identifies, monitors environmental occurrence, collects detailed information, and develops prioritized lists for ECs ✓ Toxics Studies Unit monitors groundwater, freshwater, coastal waters, sediment, soil, and fish tissue for ECs ✓ ECY formal chemicals of concern list includes ECs such as pharmaceuticals, brominated flame retardants, and chlorinated pesticides ✓ Chemicals of high concern to children list includes ECs such as BPA, lead, phthalates, parabens, 1,4-dioxane, and PFOS ✓ Chemical action plans, which are comprehensive evaluations, not legislation or regulatory requirements, have been developed for brominated flame retardants and lead, among others

EC Spotlight for Washington

Brominated Flame Retardants: In 2008, Washington passed legislation that restricts the use of PBDEs in products sold in the state. Also, the state requires manufacturers to report all PBDEs used in consumer products.

Pharmaceuticals: Washington has conducted numerous environmental occurrence studies looking for pharmaceuticals in various environmental media. The state has also addressed the ability of their municipal wastewater treatment facilities to remove these ECs.

PFASs: Washington conducted a statewide survey of the occurrence of 11 PFASs in surface water, WWTP discharge, fish, and osprey eggs (2010). A chemical action plan for PFASs is underway, and is expected to be finalized in 2017.

Emerging Contaminants

WASHINGTON, DC

integral consulting inc.

State at a Glance

- Washington, DC follows federal regulations and guidance for ECs
- The Potomac Drinking Water Source Protection Partnership (DWSPP) works with DC regulatory agencies to support collaboration and advance the science of ECs; work includes research funding, environmental occurrence studies, and communication products

State agencies and programs that manage environmental issues	How Washington, DC addresses ECs
✓ Overarching state agency: The Washington, DC Department of Energy and Environment, Environmental Services Administration ✓ District of Columbia Water and Sewer Authority, known as DC Water, is an independent authority that serves to provide and improve wastewater and water treatment services ✓ Potomac DWSPP helps address the issue of ECs in drinking water by leveraging research and resources across water suppliers and government agencies	✓ DC Water maintains up-to-date information for the public on ECs on a website called "Emerging Water Quality Issues" ✓ Testing for ECs is comprised of drinking water tests required by the EPA UCMR program ✓ Through partnership with DWSPP, DC Water aims to address the issue of ECs in drinking water – DWSPP Emerging Contaminants Workgroup tracks research on ECs in the Potomac River and monitors regional information on occurrence, potential health and ecological impacts, and treatability and management ✓ The Water Quality Assurance Amendment Act of 2012 requires DC Water to test wastewater effluent for endocrine-disrupting compounds to provide occurrence information to the state government ✓ Pharmaceuticals in drinking water are a particular focus for DC Water

EC Spotlight for Washington, DC

Pharmaceuticals: Washington, DC has a targeted media campaign to ensure the safe and correct disposal of pharmaceuticals.

Emerging Contaminants

WEST VIRGINIA

integral consulting inc.

State at a Glance

- No state-specific EC initiatives
- Limited regulatory actions due to site-specific industrial release of PFASs

State agencies and programs that manage environmental issues	How West Virginia addresses ECs
✓ Overarching state agency: West Virginia Department of Environmental Protection (DEP) – Environmental Enforcement Office oversees compliance with numerous environmental regulations	✓ DEP and other state agencies rely on federal guidance and regulations ✓ Because of a site-specific industrial release, West Virginia has responded to environmental contamination of PFASs

EC Spotlight for West Virginia

PFASs: Because of a site-specific industrial release of a PFAS into state surface and drinking water, the state has been involved in litigation related to these chemicals.

Emerging Contaminants

WISCONSIN

integral consulting inc.

State at a Glance

- Follows federal guidance and regulations
- Pharmaceutical Waste Working Group conducts environmental occurrence studies and promotes safe disposal practices across the state

State agencies and programs that manage environmental issues	How Wisconsin addresses ECs
✓ Overarching state agency: Wisconsin Department of Natural Resources (DNR)	✓ DNR participates in EPA's Great Lakes Restoration Initiative, which includes issues related to ECs ✓ DNR has an established Pharmaceutical Waste Working Group, which emphasizes prevention and actively monitors pharmaceuticals in the environment – Statewide programs for the proper and safe disposal of pharmaceuticals ✓ DNR established enforcement standards for groundwater protection that often differ from federal guidance or drinking water standards

EC Spotlight for Wisconsin

Pharmaceuticals: The Pharmaceutical Waste Working Group aims to reduce pharmaceutical waste impacts on the state's environmental and public health.

Microbeads: Wisconsin passed legislation to restrict the use and manufacture of microbeads within the state.

Emerging Contaminants

WYOMING

integral consulting inc.

State at a Glance

- Follows federal guidance and regulations
- EPA Region 8 responsible for Safe Drinking Water Act oversight
- Through the University of Wyoming, participates in Consortium for Research and Education on Emerging Contaminants (CREEC)

State agencies and programs that manage environmental issues	How Wyoming addresses ECs
✓ Overarching state agency: Wyoming Department of Environmental Quality ✓ EPA Region 8 implements the federal Safe Drinking Water Act and oversees monitoring, reporting, and water testing throughout the state	✓ Follows federal guidance and regulations for environmental regulations ✓ University of Wyoming is a stakeholder in CREEC

EC Spotlight for Wyoming

Wyoming does not currently address any specific EC under state regulatory initiatives.

Acronyms and Abbreviations

1,2,3-TCP	1,2,3-trichloropropane
BPA	bisphenol A
EC	emerging contaminant
EPA	U.S. Environmental Protection Agency
GCL	groundwater cleanup level
IGWQC	interim groundwater quality criterion
IGWQS	interim groundwater quality standard
MCL	maximum contaminant level [enforceable]
MCLG	maximum contaminant level goal
MTBE	methyl *tert*-butyl ether
octaBDE	octabromodiphenyl ether
PBDE	polybrominated diphenyl ether
PCE	tetrachloroethylene
PCN	polychlorinated naphthalene
pentaBDE	pentabromodiphenyl ether
PFAS	perfluoroalkyl substance
PFBA	perfluorobutyric acid
PFBS	perfluorobutane sulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
RfD	reference dose
TCE	trichloroethylene
TCEP	tris(2-chloroethyl)phosphate
UCMR	Unregulated Contaminant Monitoring Rule
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WWTP	wastewater treatment plant
α-HCH	*alpha*-hexachlorocyclohexane
β-HCH	*beta*-hexachlorocyclohexane

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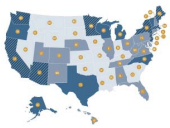

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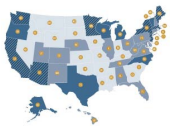

State-by-State Table of Emerging Contaminants

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Alabama	PESTICIDES, FLAME RETARDANTS	Pesticides	--	Pesticides	Occurrence monitoring	1	--		
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Site-specific action	1	--	--	
		Perfluorooctanoic acid	PFOA	Flame retardants	Site-specific action	1	--	--	
Alaska	INDUSTRIAL, PESTICIDES, METALS, FLAME RETARDANTS	Sulfolane	--	Industrial	Occurrence monitoring	1	--	--	--
		alpha-Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	1	GCL	0.14	2016
		beta-Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	1	GCL	0.47	2016
		n-Butyl benzyl phthalate	BBP	Industrial	Numeric standard	1	GCL	7,300	2016
		Dibutyl phthalate	DBP	Industrial	Numeric standard	1	GCL	3,700	2016
		Di-n-octyl phthalate	DNOP	Industrial	Numeric standard	1	GCL	1,500	2016
		n-Nitrosodimethylamine	NDMA	Industrial	Numeric standard	1	GCL	0.017	2016
		Methyl *tert*-butyl ether	MTBE	Industrial	Numeric standard	1	GCL	470	2016
		Perchlorate	--	Industrial	Numeric standard	1	GCL	26	2016
		Hexavalent chromium	Cr(VI)	Metals	Numeric standard	1	GCL	100	2016
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	GCL	0.12	2016
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	GCL	77	2016
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Assessing	1	--	--	--
		Perfluorooctanoic acid	PFOA	Flame retardants	Assessing	1	--	--	--
Arizona	PHARMACEUTICALS, BIOLOGICAL, INDUSTRIAL, FLAME RETARDANTS, PESTICIDES, METALS, PERSONAL CARE	Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Naegleria fowleri	--	Biological	Other (mentioned/web page)	1	--	--	--
		Legionella pneumophila	--	Biological	Other (mentioned/web page)	1	--	--	--
		Hepatitis A virus	--	Biological	Other (mentioned/web page)	1	--	--	--
		Di-n-octyl phthalate	DNOP	Industrial	Numeric standard	2	DWS	2,800	2008
		Dibutyl phthalate	DBP	Industrial	Numeric standard	2	DWS	700	2008
		n-Butyl benzyl phthalate	BBP	Industrial	Numeric standard	2	DWS	1,400	2008
		1,4-Dioxane	1,4-DX	Industrial	Occurrence monitoring	1	--	--	--
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Perfluorooctanoic acid	PFOA	Flame retardants	Other (mentioned/web page)	1	--	--	--
		n-Nitrosodimethylamine	NDMA	Industrial	Numeric standard/ occurrence monitoring	2	DWS	0.001	2008
		N,N-Diethyl-meta-toluamide	DEET	Pesticides	Other (mentioned/web page)	1	--	--	--
		Hexavalent chromium	Cr(VI)	Metals	Numeric standard	2	DWS	21	2008
		Sulfamethoxazole	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		17-beta Estradiol	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
		Triclosan	--	Personal care products	Other (mentioned/web page)	1	--	--	--
		alpha-Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	2	DWS	0.006	2008
		beta-Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	2	DWS	0.02	2008
		Bromomethane	--	Pesticides	Numeric standard	2	DWS	9.8	2008

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Arkansas	PHARMACEUTICALS	Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
California	INDUSTRIAL, PESTICIDES, METALS, PHARMACEUTICALS, PERSONAL CARE, FLAME RETARDANTS	1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	NL	1	2010
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	PHG	0.0007	2009
		Hexavalent chromium	Cr(VI)	Metals	Numeric standard	2	MCL	10	2014
		Bis(2-ethylhexyl) phthalate	DEHP	Industrial	Numeric standard	2	MCL	4	1997
		n-Butyl benzyl phthalate	BBP	Industrial	Other (mentioned/web page)	1	--	--	--
		p-Nonylphenol	--	Industrial	Other (mentioned/web page)	1	--	--	--
		Bifenthrin	--	Pesticides	Other (mentioned/web page)	1	--	--	--
		Permethrin	--	Pesticides	Other (mentioned/web page)	1	--	--	--
		Chlorpyrifos	--	Pesticides	Other (mentioned/web page)	1	--	--	--
		Estrone	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		17-beta Estradiol	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Galaxolide	HHCB	Personal care products	Other (mentioned/web page)	1	--	--	--
		Bisphenol A	BPA	Industrial	Other (mentioned/web page)	1	--	--	--
		Ibuprofin	--	Personal care products	Other (mentioned/web page)	1	--	--	--
		Diclofenac	--	Personal care products	Other (mentioned/web page)	1	--	--	--
		Triclosan	--	Personal care products	Other (mentioned/web page)	1	--	--	--
		Polybrominated diphenyl ether 47	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Polybrominated diphenyl ether 99	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Perfluorooctanoic acid	PFOA	Flame retardants	Occurrence monitoring	1	--	--	--
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Occurrence monitoring	1	--	--	--
		Fipronil	--	Pesticides	Occurrence monitoring	1	--	--	--
		Methyl *tert*-butyl ether	MTBE	Industrial	Numeric standard	2	MCL	13	1999
		n-Nitrosodimethylamine	NDMA	Industrial	Numeric standard	1	PHG	0.003	2006
		Dibromochloropropane	DBCP	Pesticides	Numeric standard	2	MCL	0.2	1999
		Microbeads	--	Personal care products	Ban	1	--	--	--
		Bis(2-ethylhexyl) phthalate	DEHP	Industrial	Numeric standard	2	MCL	4	1997
		Perchlorate	--	Industrial	Numeric standard	2	MCL	6	2007
Colorado	PERSONAL CARE, PESTICIDES, INDUSTRIAL	Microbeads	--	Personal care products	Ban	1	--	--	2015
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	IGWQS	0.00037	2012
		n-Nitrosodimethylamine	NDMA	Industrial	Numeric standard	1	IGWQS	0.00069	2012
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	IGWQS	0.35	2012

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Connecticut	PHARMACEUTICALS, INDUSTRIAL, PESTICIDES, METALS	Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Methyl *tert*-butyl ether	MTBE	Industrial	Numeric standard	1	AL	70	2013
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	AL	3	2013
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	AL	0.05	2013
		Trichloroethylene	TCE	Industrial	Numeric standard	2	AL	1	2013
		Hexavalent chromium	Cr(VI)	Metals	Occurrence monitoring	1	--	--	--
Delaware	INDUSTRIAL	Tetrachloroethylene	PCE	Industrial	Numeric standard	2	MCL/CCR	1	2014
		Trichloroethylene	TCE	Industrial	Numeric standard	2	MCL/CCR	1	2014
		Methyl *tert*-butyl ether	MTBE	Industrial	Numeric standard	2	MCL/CCR	10	2014
Florida	INDUSTRIAL, FLAME RETARDANTS, PESTICIDES	Tetrachloroethylene	PCE	Industrial	Numeric standard	2	MCL	3	2014
		Trichloroethylene	TCE	Industrial	Numeric standard	2	MCL	3	2014
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Occurrence monitoring mentioned in document	1	--	--	--
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	CTL	3.2	--
		alpha-Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	1	CTL	0.006	--
		beta-Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	1	CTL	0.002	--
		Methyl *tert*-butyl ether	MTBE	Industrial	Numeric standard	1	CTL	20	--
		Perchlorate	--	Industrial	Numeric standard	1	CTL	4	--
Georgia	PESTICIDES, METALS	Methoxychlor	--	Pesticides	Numeric standard	1	ISC	0.03	2015
		Hexavalent chromium	Cr(VI)	Metals	Numeric standard	1	ISFCC	11	2015
		Toxaphene	--	Pesticides	Numeric standard	1	ISFCC	0.0002	2015
Hawaii	PESTICIDES, INDUSTRIAL	1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	2	MCL	0.6	2005
		Dieldrin	--	Pesticides	Numeric standard	1	MRL	0.01	2014
		Ethylene dibromide	EDB	Pesticides	Numeric standard	2	MCL	0.04	2014
		Dibromochloropropane	DBCP	Pesticides	Numeric standard	2	MCL	0.04	2014
		Perchlorate	--	Industrial	Numeric standard	1	ADVL	26	--
Idaho	PHARMACEUTICALS, PESTICIDES	Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Nitrate	--	Pesticides	Other (mentioned/web page)	2	--	--	--
Illinois	METALS, PHARMACEUTICALS, PERSONAL CARE, FLAME RETARDANTS, PESTICIDES, BIOLOGICAL	Hexavalent chromium	Cr(VI)	Metals	Occurrence monitoring	1	--	--	--
		Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Microbeads	--	Personal care products	Banned	1	--	--	2014
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Perfluoroalkyl substances	PFASs	Flame retardants	Occurrence monitoring	1	--	--	--
		Methamphetamine	--		Other (mentioned/web page)	1	--	--	--
		Alachlor	--	Pesticides	Other (mentioned/web page)	1	--	--	--
		Cyanobacteria	--	Biological	Occurrence monitoring	1	--	--	--
		Total Chromium	--	Metals	Occurrence monitoring	2	--	--	--

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Indiana		Microbeads	--	Personal care products	Banned	1	--	--	2015
Iowa		Herbicides	--	Pesticides	Other (mentioned/web page)	1	--	--	--
		Insecticides	--	Pesticides	Other (mentioned/web page)	1	--	--	--
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Pesticide degradates	--	Pesticides	Other (mentioned/web page)	1	--	--	--
		Pharmaceuticals	--	Pharmaceuticals	Source prevention effort	1	--	--	--
		Microcystin	--	Biological	Numeric standard	1	AL	20	--
		Perchlorate	--	Industrial	Numeric standard	1	ADVL	4.9	--
Kansas		Perchlorate	--	Industrial	Numeric standard	1	ADVL	10.9	--
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	Tier 2 RBSL	8.49	2015
		alpha -Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	1	SWQC	0.0039	--
		beta -Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	1	SWQC	0.014	--
		n-Nitrosodimethylamine	NDMA	Industrial	Numeric standard	1	SWQC	0.00069	--
		Pentachlorophenol	PCP	Pesticides	Numeric standard	1	SWQC	0.28	--
		Tetrachloroethylene	PCE	Industrial	Numeric standard	2	SWQC	0.8	--
		Trichloroethylene	TCE	Industrial	Numeric standard	2	SWQC	2.7	--
Kentucky		Perchlorate	--	Industrial	Other (mentioned/web page)	1	--	--	--
Louisiana		Pharmaceuticals	--	Pharmaceuticals	Source prevention effort	1	--	--	--
		Personal care products	--	Personal care products	Source prevention effort	1	--	--	--
Maine		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Occurrence monitoring	1	--	--	--
		Hexavalent chromium	Cr(VI)	Metals	Numeric standard	1	MEG	20	2012
		Perchlorate	--	Industrial	Numeric standard	1	MEG	0.8	2012
		1,4-Dioxane	--	Industrial	Numeric standard	1	MEG	4	2012
		Methyl *tert* -butyl ether	MTBE	Industrial	Numeric standard	1	MEG	35	2012
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	MEG	0.01	2012
		Microcystin	--	Biological	Occurrence monitoring	1	--	--	--
		alpha -Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	1	MEG	0.06	2012
		beta -Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	1	MEG	0.2	2012
		Lindane	γ-HCH	Pesticides	Numeric standard	2	MEG	0.03	2012
		Bisphenol A	BPA	Industrial	Numeric standard	1	--	--	--
		n -Butyl benzyl phthalate	BBP	Industrial	Numeric standard	1	MEG	200	2012
		Bis(2-ethylhexyl) phthalate	DEHP	Industrial	Numeric standard	2	MEG	30	2012

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Maine (cont.)		Nonylphenol	NP	Industrial	Numeric standard	1	--	--	--
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Numeric standard	1	GWRAG	0.56	2016
		Perfluorooctanoic acid	PFOA	Flame retardants	Numeric standard	1	MEG	0.1	2014
Maryland		Methyl *tert* -butyl ether	MTBE	Industrial	Numeric standard	1	AL	20	--
		Bisphenol A	BPA	Industrial	Assessing	1	--	--	--
		Phthalates	--	Industrial	Assessing	1	--	--	--
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Ban	1	--	--	--
		Perchlorate	--	Industrial	Numeric standard	1	MCLG	1	--
Massachusetts		1,4-Dioxane	--	Industrial	Numeric standard	1	ORSGL	0.3	2011
		Cyanobacteria	--	Biological	Occurrence monitoring	1	--	--	--
		Nanoparticles	--	Nanoparticle/nanomaterial	Occurrence monitoring	1	--	--	--
		Perchlorate	--	Industrial	Numeric standard	2	MCL	2	--
		Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
		Methyl *tert* -butyl ether	MTBE	Industrial	Numeric standard	1	ORSGL	70	1992/2000
		n-Nitrosodimethylamine	NDMA	Industrial	Numeric standard	1	ORSGL	0.01	--
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
Michigan		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Perchlorate	--	Industrial	Other (mentioned/web page)	1	--	--	--
		Nonylphenol ethoxylate	NPE	Industrial	Other (mentioned/web page)	1	--	--	--
		Bisphenol A	BPA	Industrial	Other (mentioned/web page)	1	--	--	--
		Phthalates	--	Industrial	Other (mentioned/web page)	1	--	--	--
		Personal care products	--	Personal care products	Other (mentioned/web page)	1	--	--	--
		Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Other (mentioned/web page)	1	Rule 57 HNV	0.011	--
		Perfluorooctanoic acid	PFOA	Flame retardants	Other (mentioned/web page)	1	Rule 57 HNV	0.42	--
		Polychlorinated naphthalenes	PCNs	Industrial	Other (mentioned/web page)	1	--	--	--
		Nanomaterials	--	Nanoparticle/nanomaterial	Other (mentioned/web page)	1	--	--	--
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	RDWCS	85	--
		Triclosan	--	Personal care products	Other (mentioned/web page)	1	--	--	--
		Microbeads	--	Personal care products	Other (mentioned/web page)	1	--	--	--
		n -Propylbromide	nPB	Industrial	Other (mentioned/web page)	1	--	--	--

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State	EC Group	EC	Abbreviation	EC Category	Reason for Inclusion	EC Type (1 or 2)[a]	Health Advisory Established (GW/DW)	Health Standard Value (ppb)	Year Updated or Promulgated
Minnesota		Acetaminophen	--	Pharmaceuticals	Numeric standard	1	HGV	200	2014
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	HGV	1	2015
		Microcystin	--	Biological	Numeric standard	1	HGV	0.1	2015
		Octylphenol	--	Industrial	Numeric standard	1	HGV	100	2015
		Nonylphenol	NP	Industrial	Numeric standard	1	HGV	20	2015
		n-Butyl benzyl phthalate	BBP	Industrial	Numeric standard	1	HGV	100	2012
		Dibutyl phthalate	DBP	Industrial	Numeric standard	1	HGV	20	2012
		Triclosan	--	Personal care products	Numeric standard	1	HGV	50	2014
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	HGV	0.003	2011
		Perfluorobutanesulfonic acid	PFBS	Flame retardants	Numeric standard	1	CHRL	7	2011
		Perfluorobutyric acid	PFBA	Flame retardants	Numeric standard	1	CHRL	7	2011
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Numeric standard	1	CHRL	0.3	2009
		Perfluorooctanoic acid	PFOA	Flame retardants	Numeric standard	1	CHRL	0.3	2009
		Acrylamide	--	Industrial	Numeric standard	1	HGV	0.2	2014
		Bisphenol A	BPA	Industrial	Numeric standard	1	HGV	20	2012
		Carbamazepine	--	Pharmaceuticals	Numeric standard	1	HGV	40	2011
		Chlorpyrifos	--	Pesticides	Numeric standard	1	HGV	0.6	2013
		N,N-Diethyl-meta-toluamide	DEET	Pesticides	Numeric standard	1	HGV	200	2010
		Desvenlafaxine	--	Pharmaceuticals	Numeric standard	1	HGV	20	2015
		2,4-Dichlorophenoxyacetic acid	2,4-D	Pesticides	Numeric standard	1	HGV	70	1993
		Formaldehyde	--	Industrial	Numeric standard	2	HGV	1,000	1994
		Isobutanol	--	Industrial	Numeric standard	1	HGV	300	2014
		Methyl *tert*-butyl ether	MTBE	Industrial	Numeric standard	1	HGV	60	2013
		Metribuzin degradates	--	Pesticides	Numeric standard	1	HGV	10	2010
		Pyraclostrobin	--	Pesticides	Numeric standard	1	HGV	100	2011
		Sulfamethazine	--	Pesticides	Numeric standard	1	HGV	100	2013
		Sulfamethoxazole	--	Pharmaceuticals	Numeric standard	1	HGV	100	2013
		Tetrahydrofuran	--	Industrial	Numeric standard	1	HGV	100	1995
		Triclocarban	--	Personal care products	Numeric standard	1	HGV	100	2013
		Triclopyr	--	Pesticides	Numeric standard	1	HBV	300	1999
		Tris(2-chloroethyl) phosphate	--	Flame retardants	Numeric standard	1	HGV	5	2011
		Tris(1,3-dichloroisopropyl) phosphate	TDCPP	Flame retardants	Numeric standard	1	HGV	0.8	2013
		Venlafaxine	--	Pharmaceuticals	Numeric standard	1	HGV	10	2015
		17 alpha-Ethinylestradiol	--	Pharmaceuticals	Occurrence monitoring/assessing	1	--	--	--

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State	EC Group	EC	Abbreviation	EC Category	Reason for Inclusion	EC Type (1 or 2)[a]	Health Advisory Established (GW/DW)	Health Standard Value (ppb)	Year Updated or Promulgated
Minnesota (cont.)		Nonylphenol	NP	Industrial	Occurrence monitoring/assessing	1	--	--	--
		Octylphenol	--	Industrial	Occurrence monitoring/assessing	1	--	--	--
		Perfluorohexane sulfonic acid	PFHxS	Flame retardants	Assessing	1	--	--	--
Mississippi	PESTICIDES	Pesticides	--	Pesticides	Occurrence monitoring	--	--	--	--
Missouri	PESTICIDES, INDUSTRIAL, PHARMACEUTICALS	*alpha*-Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	1	DWS	0.0022	2014
		beta-Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	1	DWS	0.0022	2014
		Tetrachloroethylene	PCE	Industrial	Numeric standard	2	DWS	0.8	2014
		Pharmaceuticals	--	Pharmaceuticals					
		Perchlorate	--	Industrial	Numeric standard	1	ADVL	10.9	--
Montana	PHARMACEUTICALS, PERSONAL CARE, PESTICIDES, INDUSTRIAL	Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
		Personal care products	--	Personal care products	Occurrence monitoring	1	--	--	--
		alpha-Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	1	NRWQC	0.026	2012
		beta-Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	1	NRWQC	0.091	2012
		Methyl *tert*-butyl ether	MTBE	Industrial	Numeric standard	1	NRWQC	30	2012
		Chlorpyrifos	--	Pesticides	Numeric standard	1	HA	20	2012
		n-Butyl benzyl phthalate	BBP	Industrial	Numeric standard	1	NRWQC	1,500	2012
		Diethyl phthalate	DEP	Industrial	Numeric standard	1	NRWQC	17,000	2012
		Dibutyl phthalate	DBP	Industrial	Numeric standard	1	NRWQC	2,000	2012
		Dimethyl phthalate	DMP	Industrial	Numeric standard	1	NRWQC	270,000	2012
		Fipronil	--	Pesticides	Numeric standard	1	HA	1	2012
Nebraska	BIOLOGICAL, PHARMACEUTICALS	Microcystin	--	Biological	Occurrence monitoring	1	HA	20	--
		Pharmaceuticals	--	Pharmaceuticals	Source prevention effort	1	--	--	--
Nevada	INDUSTRIAL, FLAME RETARDANTS, PHARMACEUTICALS	Perchlorate	--	Industrial	Numeric standard	1	AL	18	1999
		Perfluorobutanesulfonic acid	PFBS	Flame retardants	Numeric standard	1	BCL	667	
		Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
New Hampshire	FLAME RETARDANTS, PHARMACEUTICALS, PERSONAL CARE, INDUSTRIAL	Perfluoroalkyl substances	PFASs	Flame retardants	Occurrence monitoring	1	--	--	--
		Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Personal care products	--	Personal care products	Other (mentioned/web page)	1	--	--	--
		1,4-Dioxane	1,4-DX	Industrial	Occurrence monitoring	1	AGQS	3	2005
		Perchlorate	--	Industrial	Numeric standard	1	PHG	1	--

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State	EC Group	EC	Abbreviation	EC Category	Reason for Inclusion	EC Type (1 or 2)[a]	Health Advisory Established (GW/DW)	Health Standard Value (ppb)	Year Updated or Promulgated
New Jersey		Perchlorate	--	Industrial	Numeric standard	1	IGWQC	5	2007
		Carbon tetrachloride	Carbon tet	Industrial	Numeric standard	1	MCL	2	2009
		Chlordane	--	Pesticides	Numeric standard	1	MCL	0.5	2009
		Chlorobenzene	--	Industrial	Numeric standard	1	MCL	50	2009
		1,1-Dichloroethane	1,1-DCA	Industrial	Numeric standard	1	MCL	50	2009
		1,2-Dichloroethane	1,2-DCA	Industrial	Numeric standard	1	MCL	2	2009
		1,1-Dichloroethylene	1,1-DCE	Industrial	Numeric standard	1	MCL	2	2009
		Methyl *tert* -butyl ether	MTBE	Industrial	Numeric standard	1	MCL	70	2009
		Methylene chloride	DCM	Industrial	Numeric standard	1	MCL	3	2009
		Naphthalene	--	Industrial	Numeric standard	1	MCL	300	2009
		1,1,2,2-Tetrachloroethane	TeCA	Industrial	Numeric standard	1	MCL	1	2009
		Tetrachloroethylene	PCE	Industrial	Numeric standard	2	MCL	1	2009
		1,2,4-Trichlorobenzene	--	Industrial	Numeric standard	2	MCL	9	2009
		1,1,1-Trichloroethane	TCA	Industrial	Numeric standard	2	MCL	30	2009
		1,1,2-Trichloroethane	1,1,2-TCA	Industrial	Numeric standard	2	MCL	3	2009
		Trichloroethylene	TCE	Industrial	Numeric standard	2	MCL	1	2009
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	IGWQC	0.4	2015
		Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
		Personal care products	--	Personal care products	Occurrence monitoring	1	--	--	--
		Cyanobacteria	--	Biological	Occurrence monitoring	1	--	--	--
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Occurrence monitoring	1	--	--	--
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	GWQC	0.03	--
		Perfluorononanoic acid	PFNA	Flame retardants	Numeric standard	1	IGWQC	0.01	2015
		Perfluorooctanoic acid	PFOA	Flame retardants	Occurrence monitoring	1	GL	0.04	2007
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Occurrence monitoring	1	--	--	--
New Mexico		Perchlorate	--	Industrial	Numeric standard	1	MCLG	1	2014
		Hexavalent chromium	Cr(VI)	Metals	Occurrence monitoring	1	--	--	--
		Perfluorooctanoic acid	PFOA	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Other (mentioned/web page)	1	--	--	--
		1,4-Dioxane	1,4-DX	Industrial	Occurrence monitoring	1	--	--	--
		Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--

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New York	PHARMACEUTICALS, FLAME RETARDANTS, PESTICIDES, METALS, INDUSTRIAL, PERSONAL CARE	Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
		alpha-Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	1	AWQC- DW	0.01	1998
		beta-Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	1	AWQC-DW	0.04	1998
		Hexavalent chromium	Cr(VI)	Metals	Numeric standard	1	AWQC- DW	50	1998
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	AWQC-DW	0.04	1998
		Dibromochloropropane	DBCP	Industrial	Numeric standard	1	MCL	0.2	
		Perfluorooctanoic acid	PFOA	Flame retardants	Other (mentioned/web page)	1	HA	0.1	2016
		Microbeads	--	Personal care products	Ban	1	--	--	
		Perchlorate	--	Industrial	Numeric standard	1	MCLG	5	2014
North Carolina	INDUSTRIAL, PESTICIDES, FLAME RETARDANTS	Dibutyl phthalate	DBP	Industrial	Numeric standard	1	2L GWS	700	2013
		Diethyl phthalate	DEP	Industrial	Numeric standard	1	2L GWS	6,000	2013
		Di-n-octyl phthalate	DNOP	Industrial	Numeric standard	1	2L GWS	100	2013
		Diundecyl phthalate	DUP	Industrial	Numeric standard	1	2L GWS	100	2013
		Dieldrin	--	Pesticides	Numeric standard	1	2L GWS	0.002	2013
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	2L GWS	3	2013
		Methyl *tert*-butyl ether	MTBE	Industrial	Numeric standard	1	2L GWS	20	2013
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	2L GWS	0.005	2013
		n-Nitrosodimethylamine	NDMA	Industrial	Numeric standard	1	2L GWS	0.0007	2013
		Perfluorooctanoic acid	PFOA	Flame retardants	Numeric standard	1	IMAC	2	2006
North Dakota	PESTICIDES	Pesticides	--	Pesticides	Occurrence monitoring	--	--	--	--
Ohio	FLAME RETARDANTS, BIOLOGICAL	Perfluorooctanoic acid	PFOA	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Microcystin	--	Biological	Other (mentioned/web page)	1	--	--	--
		Cyanobacteria	--	Biological	Occurrence monitoring	1	--	--	--
Oklahoma	INDUSTRIAL	n-Nitrosodimethylamine	NDMA	Industrial	Other (mentioned/web page)	1	--	--	--
		1,4-Dioxane	1,4-DX	Industrial	Other (mentioned/web page)	1	--	--	--
Oregon	PERSONAL CARE, PESTICIDES, PHARMACEUTICALS, FLAME RETARDANTS, NANOMATERIALS, METALS	Personal care products	--	Personal care products	Source prevention effort	1	--	--	--
		alpha-Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	1	IL	0.006	--
		beta-Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	1	IL	0.04	--
		Bifenthrin	--	Pharmaceuticals	Numeric standard	1	IL	0.02	--
		Fipronil	--	Pharmaceuticals	Numeric standard	1	IL	15	--
		Polybrominated diphenyl ether 47	PBDEs	Flame retardants	Numeric standard	1	IL	0.7	2009
		Polybrominated diphenyl ether 99	PBDEs	Flame retardants	Numeric standard	1	IL	0.7	2009
		Polybrominated diphenyl ether 100	PBDEs	Flame retardants	Numeric standard	1	IL	0.7	2009

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Oregon (cont.)		Polybrominated diphenyl ether 153	PBDEs	Flame retardants	Numeric standard	1	IL	1	2009
		Polybrominated diphenyl ether 209	PBDEs	Flame retardants	Numeric standard	1	IL	0.1	2009
		Perfluoroheptanoic acid	PFHpA	Flame retardants	Numeric standard	1	IL	300	2009
		Perfluorononanoic acid	PFNA	Flame retardants	Numeric standard	1	IL	1	2009
		Perfluorooctane sulfonamide	PFOSA	Flame retardants	Numeric standard	1	IL	0.2	2009
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Numeric standard	1	IL	300	2009
		Perfluorooctanoic acid	PFOA	Flame retardants	Numeric standard	1	IL	24	2009
		Triclosan	--	Personal care products	Numeric standard	1	IL	70	--
		Microbeads	--	Personal care products	Ban	1	--	--	--
		Nanomaterials	--	Nanoparticle/nanomaterial	Source prevention effort	1	--	--	--
		Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
		Hexavalent chromium	Cr(VI)	Metals	Other (mentioned/web page)	1	--	--	--
Pennsylvania	PHARMACEUTICALS, PESTICIDES	Hormones	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
		Pesticides	--	Pesticides	Occurrence monitoring	1	--	--	--
		Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
Rhode Island	FLAME RETARDANTS, PHARMACEUTICALS, PERSONAL CARE, INDUSTRIAL	Polybrominated diphenyl ethers	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Triclosan	--	Personal care products	Other (mentioned/web page)	1	--	--	--
		Alkylphenols	--	Industrial	Other (mentioned/web page)	1	--	--	--
South Carolina	PHARMACEUTICALS, INDUSTRIAL, NANOMATERIALS, FLAME RETARDANTS	Pharmaceuticals	--	Pharmaceuticals	Source prevention effort	1	--	--	--
		Perchlorate	--	Industrial	Other (mentioned/web page)	1	--	--	--
		Nanomaterials	--	Nanoparticle/nanomaterial	Occurrence monitoring	1	--	--	--
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
		Endocrine-disrupting chemicals	EDCs	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Perfluorooctanoic acid	PFOA	Flame retardants	Other (mentioned/web page)	1	--	--	--
South Dakota		--	--	--	--	--	--	--	--
Tennessee		--	--	--	--	--	--	--	--
Texas	FLAME RETARDANTS, INDUSTRIAL, PESTICIDES, METALS, PHARMACEUTICALS	Perfluoro-n-pentanoic acid	PFPeA	Flame retardants	Numeric standard	1	PCL	0.093	2016
		Perfluoroundecanoic acid	PFUnA	Flame retardants	Numeric standard	1	PCL	0.29	2016
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Numeric standard	1	PCL	0.56	2016
		Perfluorohexanoic acid	PFHxA	Flame retardants	Numeric standard	1	PCL	0.093	2016
		Perfluorododecanoic acid	PFDoA	Flame retardants	Numeric standard	1	PCL	0.29	2016
		Perfluorooctanoic acid	PFOA	Flame retardants	Numeric standard	1	PCL	0.29	2016
		Perfluorodecanoic acid	PFDA	Flame retardants	Numeric standard	1	PCL	0.37	2016
		Perfluorodecane sulfonic acid	PFDS	Flame retardants	Numeric standard	1	PCL	0.29	2016

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State	EC Group	EC	Abbreviation	EC Category	Reason for Inclusion	EC Type (1 or 2)[a]	Health Advisory Established (GW/DW)	Health Standard Value (ppb)	Year Updated or Promulgated
Texas (cont.)		Perfluorohexane sulfonic acid	PFHxS	Flame retardants	Numeric standard	1	PCL	0.093	2016
		Perfluorobutyric acid	PFBA	Flame retardants	Numeric standard	1	PCL	71	2016
		Perfluorobutanesulfonic acid	PFBS	Flame retardants	Numeric standard	1	PCL	34	2016
		Perfluoroheptanoic acid	PFHpA	Flame retardants	Numeric standard	1	PCL	0.56	2016
		Perfluorononanoic acid	PFNA	Flame retardants	Numeric standard	1	PCL	0.29	2016
		Perfluorotetradecanoic acid	PFTeDA	Flame retardants	Numeric standard	1	PCL	0.29	2016
		Perfluorotridecanoic acid	PFTrDA	Flame retardants	Numeric standard	1	PCL	0.29	2016
		Perfluorooctane sulfonamide	PFOSA	Flame retardants	Numeric standard	1	PCL	0.29	2016
		Bisphenol A	BPA	Industrial	Numeric standard	1	PCL	0.0012	--
		alpha -Hexachlorocyclohexane	α-HCH	Pesticides	Numeric standard	1	PCL	0.14	--
		beta -Hexachlorocyclohexane	β-HCH	Pesticides	Numeric standard	1	PCL	0.51	--
		Hexavalent chromium	Cr(VI)	Metals	Numeric standard	1	PCL	100	2015
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	PCL	9.1	2015
		Methyl *tert* -butyl ether	MTBE	Industrial	Numeric standard	1	PCL	240	2015
		Sulfolane	--	Industrial	Numeric standard	1	PCL	320	2015
		Tetrachloroethylene	PCE	Industrial	Numeric standard	2	PCL	5	2015
		Trichloroethylene	1,2,3-TCP	Industrial	Numeric standard	2	PCL	5	2015
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	PCL	0.03	2015
		Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Perchlorate	--	Industrial	Numeric standard	1	PCL	17	2015
		*Note - there are many more ECs for which there are PCLs.							
Utah	PHARMACEUTICALS PERSONAL CARE	Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
		Personal care products	--	Personal care products	Occurrence monitoring	1	--	--	--
Vermont	FLAME RETARDANTS INDUSTRIAL PESTICIDES PHARMACEUTICALS METALS BIOLOGICAL	Perfluorooctanoic acid	PFOA	Flame retardants	Numeric standard	1	VHA	0.02	2016
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	VHA	0.3	2015
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	IGWQS	3	--
		Perchlorate	--	Industrial	Numeric standard	1	VHA	2.2	2015
		Perchlorate	--	Industrial	Numeric standard	1	IGWQS	4	--
		Methyl *tert* -butyl ether	MTBE	Industrial	Numeric standard	1	VHA	11.3	2015
		1,2,3-Trichloropropane	1,2,3-TCP	Pesticides	Numeric standard	1	VHA	0.02	2015
		Bisphenol A	BPA	Industrial	Restriction	1	--	--	--
		Trimethyl benzene	--	--	Numeric standard	1	VHA	5.1	2015
		2,4,6-Trinitrotoluene	TNT	Industrial	Numeric standard	1	VHA	0.8	2015
		Pharmaceuticals	--	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
		Manganese	Mn	Metals	Numeric standard	2	VHA	300	2015

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Vermont (cont.)		Naphthalene	--	Industrial	Numeric standard	1	VHA	20	--
		Pentachlorophenol	PCP	Industrial	Numeric standard	2	VAL	0.1	--
		Dibromochloropropane	--	Industrial	Numeric standard	2	VAL	0.02	--
		Tetrachloroethylene	PCE	Industrial	Numeric standard	2	VAL	1	--
		Trichloroethylene	TCE	Industrial	Numeric standard	2	VAL	0.5	--
		Perfluorooctanoic acid	PFOA	Flame retardants	Numeric standard	1	IGWQS/VHA	0.02	--
		Cyanobacteria	--	Biological	Occurrence monitoring	1	--	--	--
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Other (mentioned/web page)	1	--	--	--
Virginia		Microbeads	--	Personal care products	Source prevention effort / occurrence monitoring	1	--	--	--
		Nonylphenol	NP	Industrial	Other (mentioned/web page)	1	--	--	--
		Personal care products	--	Personal care products	Source prevention effort / occurrence monitoring	1	--	--	--
		Pesticides	--	Pesticides	Occurrence monitoring	1	--	--	--
Washington		Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
		Personal care products	--	Personal care products	Occurrence monitoring	1	--	--	--
		alpha -Hexachlorocyclohexane	α-HCH	Industrial	Numeric standard	1	GWQC	0.001	--
		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	GWQC	7	--
		n-Nitrosodimethylamine	NDMA	Industrial	Numeric standard	1	GWQC	0.002	--
		Polycyclic aromatic hydrocarbons	PAHs	Industrial	Source prevention effort	2	GWQC	0.01	--
		Tetrachloroethylene	PCE	Industrial	Numeric standard	2	GWQC	0.8	--
		Trichloroethylene	TCE	Industrial	Numeric standard	2	GWQC	3	--
		Polybrominated diphenyl ethers	PBDEs	Flame retardants	Source prevention effort	1	--	--	--
		Perfluorooctanesulfonic acid	PFOS	Flame retardants	Source prevention effort	1	--	--	--
		Bisphenol A	BPA	Industrial	Other (mentioned/web page)	1	--	--	--
		Endocrine-disrupting chemicals	EDCs	Pharmaceuticals	Other (mentioned/web page)	1	--	--	--
Washington, DC		Pharmaceuticals	--	Pharmaceuticals	Occurrence monitoring	1	--	--	--
West Virginia		Perfluorooctanoic acid	PFOA	Flame retardants	Occurrence monitoring	1	AL	0.5	--
Wisconsin		1,4-Dioxane	1,4-DX	Industrial	Numeric standard	1	ES	3	2011
		Methyl *tert* -butyl ether	MTBE	Industrial	Numeric standard	1	ES	60	2011
		Perchlorate	--	Industrial	Numeric standard	1	ES	1	2011
		Pharmaceuticals	--	Pharmaceuticals	Source prevention effort	1	--	--	--
		Personal care products	--	Personal care products	Source prevention effort	1	--	--	--
		Endocrine-disrupting chemicals	EDCs	Pharmaceuticals	Source prevention effort	1	--	--	--

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Wyoming		--	--	--	--	--	--	--	--

Notes:

Inactive. State is not engaged in active monitoring or rule making and typically defers to EPA.
Limited. State may have conducted limited EC initiatives, or site-specific response actions, but have not implemented a statewide initiative.
Active. State has one or two initiatives, regulations, and/or guidance and may monitor EC information but does not have an explicit program.
Very Active. State is heavily engaged in EC activities, including a specific program or working group to address ECs.

[a] A Type 1 EC is a chemical or nonchemical material that does not have a federal standard (such as an MCL) based on peer-reviewed science.
A Type 2 EC is a chemical or nonchemical material whose federal and/or state regulatory standards are evolving due to new science, detection capabilities, or pathways.

2L GWS = North Carolina Administrative Code 2L groundwater standards
ADVL = advisory level
AGQS = ambient groundwater quality standard
AL = action level
AWQC-DW = ambient water quality standard—drinking water source
BCL = basic comparison level
BPA = bisphenol A
CHRL = chronic health risk limit
CTL = cleanup target level
DWS = drinking water standard
EC = emerging contaminant
ES = enforcement standard
GCL = groundwater cleanup level
GL = guidance level
GW/DW = groundwater and drinking water
GWQC = groundwater quality criterion
GWRAG = groundwater remedial action guideline
HA = health advisory
HBV = health-based value
HGV = health-based guidance value
HNV = human noncancer value
IGWQC = interim groundwater quality criterion
IGWQS = Interim groundwater quality standard
IL = initiation level
IMAC = interim maximum allowable concentration
ISC = in-stream criteria (shall not be exceeded under 7-day, 10-year minimum or higher stream flow)
ISFCC = in-stream freshwater chronic criteria (shall not be exceeded under 7-day, 10-year minimum or higher stream flow)
MCL = maximum contaminant level [enforceable]
MCL/CCR = maximum contaminant level in consumer confidence report units
MCLG = maximum contaminant level goal
MEG = maximum exposure guideline
MRL = method reporting limit
NL = notification level
NRWQC = national recommended water quality criteria
ORSGL = Office of Research and Science guidance level [State of Massachusetts]
PCL = protective concentration level
PHG = public health goal
ppb = parts per billion
RBSL = risk-based screening level
RDWCS = residential drinking water cleanup standard
SWQC = surface water quality criteria
VAL = Vermont action level
VHA = Vermont health advisory