Attachment 1 – Appendix B:
CWSRF Definition of Emerging Contaminants

Emerging contaminants refer to substances and microorganisms, including manufactured or naturally occurring physical, chemical, biological, radiological, or nuclear materials, which are known or anticipated in the environment, that may pose newly identified or re-emerging risks to human health, aquatic life, or the environment.[26] These substances, microorganisms or materials can include many different types of natural or manufactured chemicals and substances – such as those in some compounds of personal care products, pharmaceuticals, industrial chemicals, pesticides, and microplastics.[27,28]

The main categories of emerging contaminants include but are not limited to:

- **Perfluoroalkyl and polyfluoroalkyl substances (PFAS) and other persistent organic pollutants (POPs)** such as polybrominated diphenyl ethers (PBDEs; used in flame retardants, furniture foam, plastics, etc.) and other persistent organic contaminants such as perfluorinated organic acids, PFAS free foam flame retardants;
- **Biological contaminants and microorganisms**, such as antimicrobial resistant bacteria, biological materials, and pathogens;
- **Some compounds of pharmaceuticals and personal care products (PPCPs)**, including a wide suite of human prescribed drugs (e.g., antidepressants, blood pressure medications, hormones), over-the-counter medications (e.g., ibuprofen), bactericides, fragrances, UV filters (sunscreen agents), detergents, preservatives, and repellents;[29]
    - Insect Repellents, Cosmetics and UV filters: DEET, Methylparabens, Benzophenone[30]
    - Fragrances: HHCB and AHTN (7-acetyl-1,1,3,4,4,6-hexamethyl-1,2,3,4-tetrahydronaphthalene; CAS 21145-77-7; Tonalide)[31]
    - Cosmetic and food preservatives: BHA (butylated hydroxyanisole) and BHT (butylated hydroxytoluene)[32]
    - Veterinary medicines such as antimicrobials, antibiotics, anti-fungals, growth promoters, investigational new animal drugs, and hormones;
    - Substances that illicit endocrine-disrupting chemicals (EDCs), including synthetic estrogens (e.g.,17αethynylestradiol, which also is a PCPP) and androgens (e.g., trenbolone, a veterinary drug), naturally occurring estrogens (e.g.,17ß-estradiol, testosterone), as well as many others (e.g., organochlorine pesticides, alkylphenols)
- **Nanomaterials** such as carbon nanotubes or nano-scale particulate titanium dioxide, of which little is known about either their environmental fate or effects.

---

[26] 2020 White House Office of Science & Technology Policy document which focused on drinking water/human health
[27] Contaminants of Emerging Concern under the Clean Water Act 2019, Congressional Research Services
[28] White Paper Aquatic Life Criteria for Contaminants of Emerging Concern 2008
[29] Peck, A.M. Analytical methods for the determination of persistent ingredients of personal care products in environmental matrices. *Anal Bioanal Chem* **386**, 907–939 (2006). https://doi.org/10.1007/s00216-006-0728-3
[30] Diana Montes-Grajales, Mary Fennix-Agudelo, Wendy Miranda-Castro,
Occurrence of personal care products as emerging chemicals of concern in water resources: A review,
Science of The Total Environment, Volume 595, 2017, Pages 601-614, ISSN 0048-9697,
https://doi.org/10.1016/j.scitotenv.2017.03.286. (https://www.sciencedirect.com/science/article/pii/S0048969717308161)
[31] J Environ Eng (New York). Author manuscript; available in PMC 2010 Feb 1. Published in final edited form as:
J Environ Eng (New York). 2009 Nov 1; 135(11): 1192. doi: 10.1061/(ASCE)EE.1943-7870.0000085
[32] Soliman, Mary A., et al. "Human Pharmaceuticals, Antioxidants, and Plasticizers in Wastewater Treatment Plant and Water Reclamation Plant Effluents." Water Environment Research, vol. 79, no. 2, 2007, pp. 156–167., https://doi.org/10.2175/106143006x111961.

- **Microplastics/Nanoplastics:** synthetic solid particle or polymeric matrix, with regular or irregular shape and with size smaller than 5 mm, of either primary or secondary manufacturing origin, or larger plastic materials that degrade into smaller pieces, including from tire wear (such as 6PPD), which are insoluble in water.[33] Primary microplastics include particles produced intentionally of this very small dimension, like pre-production pellets used as intermediate in plastic production, microbeads for abrasive functions or microfibers that form from synthetic textiles.[34]

Projects that address contaminants with water quality criteria established by EPA under CWA section 304(a), except for PFAS are not eligible for CWSRF Emerging Contaminants funds.

[33] J.P.G.L. Frias, Roisin Nash, Microplastics: Finding a consensus on the definition, Marine Pollution Bulletin, Volume 138, 2019, Pages 145-147, ISSN 0025-326X, https://doi.org/10.1016/j.marpolbul.2018.11.022. (https://www.sciencedirect.com/science/article/pii/S0025326X18307999)

[34] Silvia Galafassi, Luca Nizzetto, Pietro Volta, Plastic sources: A survey across scientific and grey literature for their inventory and relative contribution to microplastics pollution in natural environments, with an emphasis on surface water

Attachment 1 – Appendix C:
Detailed List of DWSRF Emerging Contaminants Project and Activity Examples

Below are non-exhaustive lists of DWSRF-eligible projects and activities under the BIL DWSRF Emerging Contaminants capitalization grants. For a project or activity to be eligible for funding under this appropriation, it must be otherwise DWSRF eligible, and the primary purpose must be to address emerging contaminants in drinking water with a focus on perfluoroalkyl and polyfluoroalkyl substances (PFAS) Projects that address any contaminant listed on any of EPA's Contaminant Candidate Lists are eligible (i.e., CCL1 – draft CCL5).

From the DWSRF Infrastructure Fund:

- Emerging contaminants costs associated with the construction of a new treatment facility or upgrade to an existing treatment facility that addresses emerging contaminants.
- Development of a new source (i.e., new/replacement well or intake for a public water system) that addresses an emerging contaminant issue [Note: water rights purchases must still meet the criteria in the Class Deviation for Water Rights].
- Consolidation with another water system that does not have emerging contaminants present or has removal capability.
- Costs for planning and design and associated pre-project costs.
- Infrastructure related to pilot testing for treatment alternatives.
- Creation of a new community water system to address unsafe drinking water provided by individual (i.e., privately-owned) wells or surface water sources.

From the DWSRF Set-asides:

- Direct technical assistance to public water systems (of any size) with emerging contaminants and treatment problems which could lead to a loan application.
- PFAS and other emerging contaminants project pre-development activities (such as determining if and where there is a problem).
- Technical assistance for eligible systems to diagnose emerging contaminants problems at their water systems.
- Project planning, preliminary engineering, and design.
- Funding state PWSS staff who are working on PFAS and emerging contaminants oversight.
- Incorporating training on PFAS and emerging contaminants into state operator certification materials.
- Obtain test kits/laboratory equipment for systems to test for newly recognized contaminants of concern and training to use that equipment.
- Pilot testing and studies on improving public water system operation.
- Source water protection activities (e.g., developing source water protection plans, well abandonment, etc.).
- Conducting initial, special (non-routine/non-compliance) monitoring to establish a baseline understanding of a contaminant of concern or operation of newly-used technology.

Attachment 1 – Appendix D:
Detailed List of DWSRF Lead Service Line Replacement Project and Activity Examples

Below are non-exhaustive lists of DWSRF-eligible projects and activities under the BIL DWSRF Lead Service Line Replacement (LSLR) capitalization grants. For a project or activity to be eligible for funding under this appropriation, it must be otherwise DWSRF eligible and be a LSLR project or associated activity *directly connected* to the identification, planning, design, and replacement of lead service lines. Any project funded under this appropriation involving the replacement of a lead service line must replace the entire lead service line, not just a portion, unless a portion has already been replaced.

From the DWSRF Infrastructure Fund:

- Complete removal of lead service lines (public and privately owned portion) or service lines made of galvanized iron or galvanized steel (that are currently or have previously been downstream of lead components) and replacement with a pipe that meets the requirements established under 40 CFR 143 and which complies with state and local plumbing codes and or building codes.
- Removal of lead or galvanized goosenecks, pigtails, and connectors, and replacement with an acceptable material that meets the requirements established under 40 CFR 143 and which complies with state and local plumbing codes and or building codes.
- Replacement of curb stops, curb stop boxes, and other service line appurtenances that are removed as part of full LSLR.
- Site restoration, including landscaping, sidewalks, driveways, etc. if the removal was necessary to replace the lead service line.
- Permit fees if the fees are normal, required, and specific to the LSLR. It is recommended that communities waive these fees.
- Temporary pitcher filters or point-of-use (POU) devices certified by an American National Standards Institute accredited certifier to reduce lead during or for a short time period after LSLR projects.
- Development or updating of lead service line inventories, including locating and mapping lead service lines.
    - Methods of investigation to develop inventories could include visual observation, water quality sampling (non-compliance), excavation, vacuum or hydro-excavation, statistical analysis, or other emerging technologies.
- Planning and design for infrastructure projects listed above.
- Non-routine lead sampling (if not for compliance purposes) as part of a LSLR project.

From the DWSRF Set-asides:

- Planning and design for LSLR infrastructure projects.
- Developing or updating lead service line inventories, including locating and mapping lead service lines.
- Providing technical assistance to small water systems undertaking lead service line inventories or construction projects.
- Funding state staff and contractors to work on LSLR education and outreach and inventory plans, etc.
- Non-routine lead sampling (if not for compliance purposes).