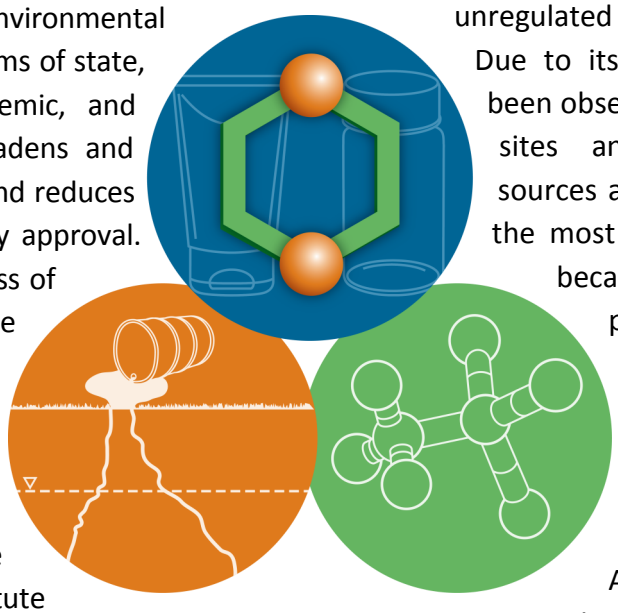
# 1,4-Dioxane

## The Interstate Technology and Regulatory Council (ITRC) is excited to have started a Team in January 2019 on 1,4-Dioxane.

ITRC is a state-led coalition dedicated to reducing barriers to the use of innovative environmental technologies. ITRC represents over 1,000 individuals, across 50 states, working to produce guidance and training on innovative environmental solutions. Bringing together teams of state, federal, tribal, industry, academic, and stakeholder experts, ITRC broadens and deepens technical knowledge and reduces barriers to expedient regulatory approval. Since 1995, the collective success of this coalition has generated huge benefits to the environment, inspired new technical innovations, and saved hundreds of millions of dollars.



ITRC is a program of the Environmental Research Institute of the States, managed by the Environmental Council of the States. This partnership is based on a commitment to protect and improve human health and the environment across the country.

## 1,4-DIOXANE

1,4-Dioxane (1,4-DX) is a heterocyclic ether used as a stabilizer in chlorinated solvents. From the 1950s until the 1990s, 1,4-DX was commonly used and consequently found at many solvent sites. Today, 1,4-DX is used in household products and food, such as shampoos, detergents, cosmetics, adhesives, food additives, and packaging.

1,4-DX is released into the surrounding environment from wastewater discharge, unintended spills, leaks, historical disposal practices of host solvents, and unregulated manufacturing waste streams. Due to its widespread use, 1,4-DX has been observed at impacted groundwater sites and potable drinking water sources across the country. It is one of the most mobile organic contaminants because of its low absorption potential and miscibility. Unlike other chlorinated solvents, 1,4-DX plumes are longer and lower in concentration because of its physical-chemical properties. Additionally, low 1,4-DX concentrations within comingled plumes of various chemical characteristics pose challenges for conventional treatment technologies.

In 2016, the Toxic Substances Control Act requested 1,4-DX to be subject to chemical risk evaluations. Later in 2017, the U.S. EPA classified it as “likely to be carcinogenic to humans” in excess of certain limits. 1,4-DX’s widespread presence, especially in drinking water, suggests that it will be identified as a Contaminant of Concern (COC) in the near future.

## THE 1,4-DIOXANE TEAM

1,4-DX is not detected using standard volatile organic compound analytical methods, and lab analytical methods are hindered by the ability to separate 1,4-DX from water samples. Field screening methods are not readily available to assess contamination at a site. Additionally, 1,4-DX does not readily degrade with conventional wastewater treatment methods, distillation, or air-sparge pump and treat. Even though there are many available and successful remediation technologies, they are often considered cost-prohibitive treatment options, especially for low concentration sources. For this reason, it is essential to develop and examine remediation technologies and monitoring networks.

1,4-DX is difficult to detect, monitor, and remediate. While some states have devised health standards, many states do not have sufficient guidelines for handling 1,4-DX contamination and expressed a need for input on how to manage this contaminant.

This Team will help fill the 1,4-DX knowledge gap by producing factsheets, a technical-regulatory guidance document, and training curricula that reviews the technical knowledge and regulatory barriers related to 1,4-DX. Topics include, but are not limited to:

- Sources of Contamination
- Detection Technologies
- Remediation Technologies
- Regulatory Framework
- Risk Communication

### JOIN THE TEAM!

The 1,4-Dioxane Team began in January 2019! By joining the Team, you will have the opportunity to contribute to the guidance document and training materials. To join, click here: http://itrcweb.org/Membership/TeamRegistration

### GENERAL PROJECT SCHEDULE

There will be monthly conference calls to develop the online guidance document and training materials. The document will be sent to ITRC members for external review in mid-2020 and will be publicly available in December 2020.

## FOR MORE INFORMATION, PLEASE CONTACT THE CO-TEAM LEADERS:


**Gladys Liehr**
Gladys.Liehr@flhealth.gov

**Kitty Hiortdahl**
Kirsten.Hiortdahl@ncdenr.gov