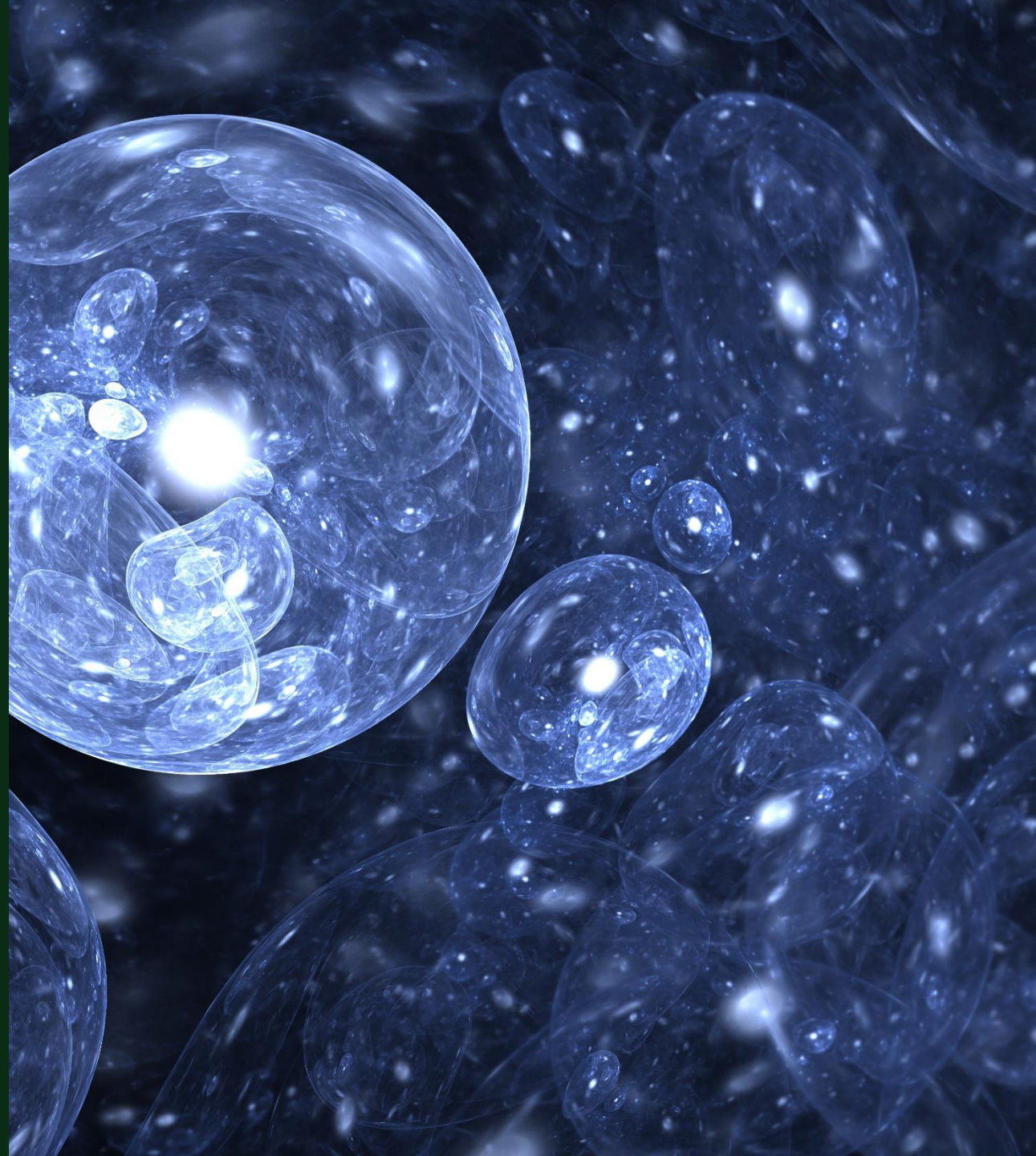
ERM

ERM WEBINAR SERIES: FAST FLUORINATED FACTS

PFAS in the News

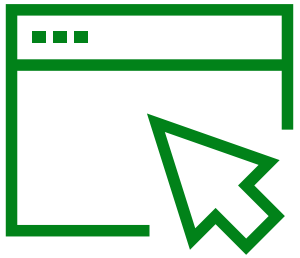
OCTOBER 10TH, 2024



Sustainability is our business

Welcome Participants

Your **lines have been muted** to ensure our presenters are not distracted by background noise



Attendees are encouraged to **participate by using the chat/Q&A** via the chat box function – select "All Panelists and Attendees" or only "All Panelists"

A link to the **recording of this session & slides** will be provided in our follow-up email sent next week

Safety Moment

Emergency Plans

- Establish a check-in plan with the PM and your line manager
- Have multiple evacuation routes planned in case the cellular network goes down and you can't get GPS
- Stop Work Authority

Emergency Plans with Family

- Establish a plan
  - Make a Plan Form | Ready.gov – provides a list template that can be easily emailed
  - Build A Kit | Ready.gov – basic disaster supplies kit list and suggested additional emergency supplies
- Identify a few meeting locations and put them in order so everyone knows where to look first. Stash important phone numbers/addresses in wallet or purse.

Agenda/ Contents

1. CANADIAN PFAS REGULATORY UPDATE
2. PFAS ADDITIONS TO TOXIC RELEASE INVENTORY (TRI) REPORTING PROGRAM
3. USEPA OTHER TEST METHOD (OTM) FOR PFAS AIR SAMPLING
4. CERCLA PFAS REPORTABLE QUANTITY CALCULATION

Speakers

Jeremy Hatt

Managing Consultant, Scientist

Lori Dinkelmann

Partner, Sustainable Operations

Mark DiPrinzio

Technical Consulting Director, Engineer

Tim Daniluk

Principal Consultant, Project Management, Geologist

CANADIAN PFAS REGULATORY UPDATE

Jeremy Hatt

Canadas New Reporting Regulation

In July, Canada released a new regulation under CEPA (Section 71) entitled ***"Notice with respect to certain per- and polyfluoroalkyl substances (PFAS)"***. The purpose of this notice is to "collect information on certain PFAS substances, either alone, in mixtures, products, or manufactured items in Canadian commerce for the calendar year 2023". This information will be used by both Health Canada and ECCC to establish baseline commercial use data and support future activities related to PFAS (future intent to regulate the manufacture, import and use of PFAS).

Requires any person who manufactured or imported PFAS or PFAS-containing articles, or used PFAS in the manufacture of a good in 2023 (only) to report

Manufactured a total quantity greater than 1,000 grams of PFAS listed in Schedule 1

Imported a total quantity greater than 100 kg of any PFAS listed in Schedule 1 at a concentration equal to or above 1 ppm

Used a total quantity greater than ten grams of a PFAS listed in Schedule 1

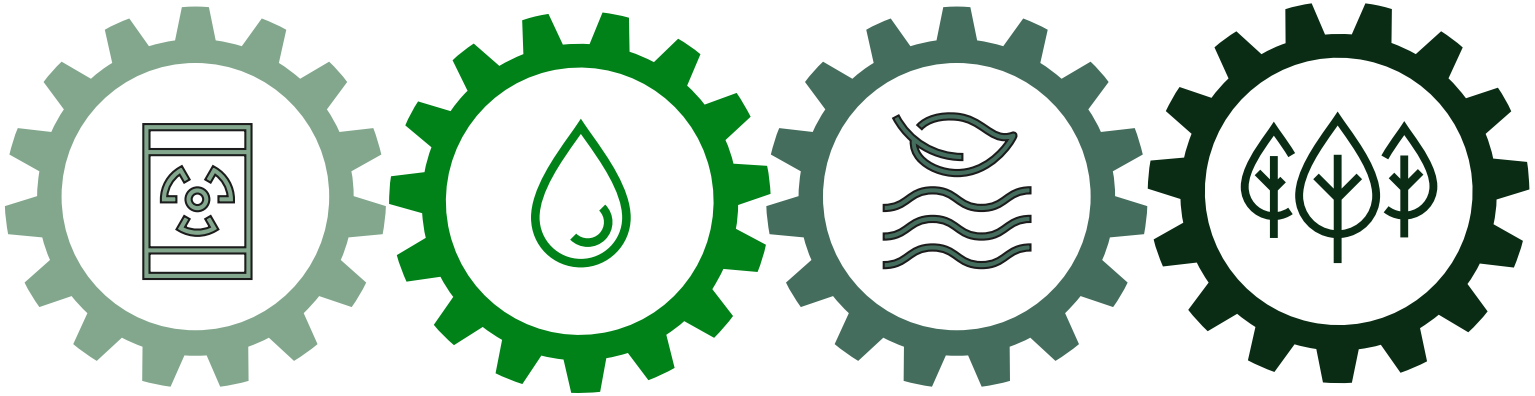
This Regulation has a very short timeline giving businesses only 6 months to gather information – due January 29, 2025, using online reporting system

Fines can reach $25,000-500,000

Other Draft and Pending Federal Regulations

Prohibition
Current - Prohibition of Certain Toxic Substances Regulation

Soil & GW
Canadian Soil and Groundwater Quality Guidelines (ECCC)



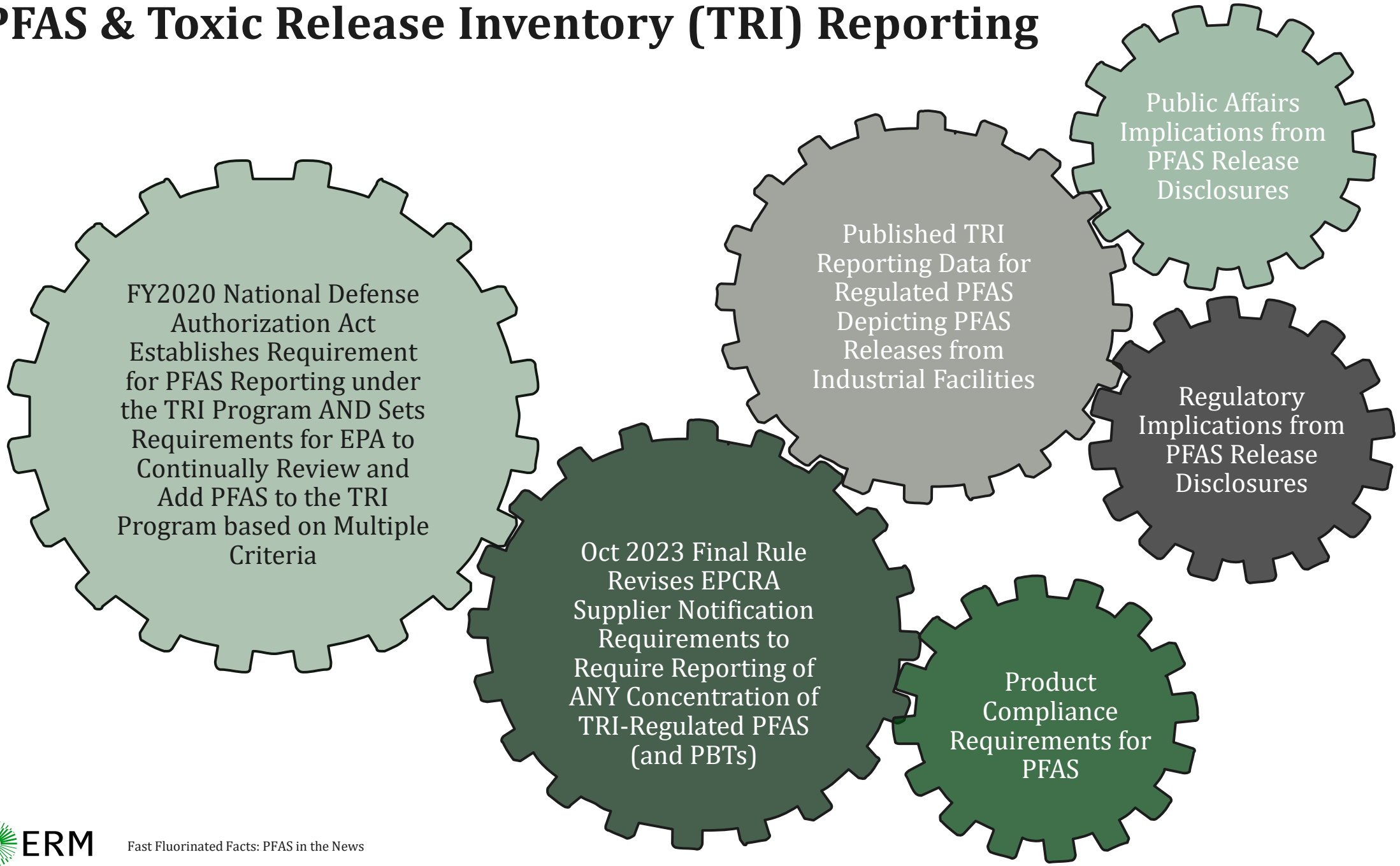
Drinking Water
Draft Objective for PFAS in Drinking Water

Contamination
Current- Contaminated Sites Framework (Provincial Only)

PFAS ADDITIONS TO TOXIC RELEASE INVENTORY (TRI) REPORTING PROGRAM

Lori Dinkelmann

PFAS & Toxic Release Inventory (TRI) Reporting



TRI Regulated PFAS – Current and Proposed

PFAS Added Initally Under NDAA 7321(b) & Annually under 7321(c):

- 189 individual PFAS added to the program for Reporting Years 2020-2023
- 7 more were automatically added for RY2024 reports due July 1, 2025
- 5 more slated for automatic addition for RY2025 reports due July 1, 2026

EPA Published Proposed Rule on October 8th - Proposes Listing of Additional PFAS under NDAA 7321(d):

- Proposes 16 individual PFAS and 15 PFAS categories, representing over 100 new individual PFAS
  - First time PFAS categories will be a factor
    - Categories currently include "the acid and associated salts, acyl/sulfonyl halides and anhydride" - EPA is NOT providing CAS# listings for these categories, so applicability will have to be determined by regulated community
    - Includes reclassification of ~30 currently regulated PFAS into one of the 15 PFAS categories
  - ALL PFAS are proposed with a 100 lb reporting threshold, including the categories
    - Note: a 100 lb reporting threshold is not dictated by Congress in 7321(d)
    - EPA applying 100 lb as they "find it appropriate to maintain consistency for all chemicals added pursuant to the NDAA"…given the proposed PFAS have "similar properties" as current TRI-regulated PFAS
  - ALL PFAS are proposed for addition to "Chemicals of Special Concern" List
    - No de minimis exemption, no Form A, no range code
    - Per EPA, "even small quantities of releases of these chemicals can be of concern"
  - EPA will take comments on the proposed rule for 60 days; deadline December 9, 2024

Proposed Rule: https://www.govinfo.gov/content/pkg/FR-2024-10-08/pdf/2024-22966.pdf

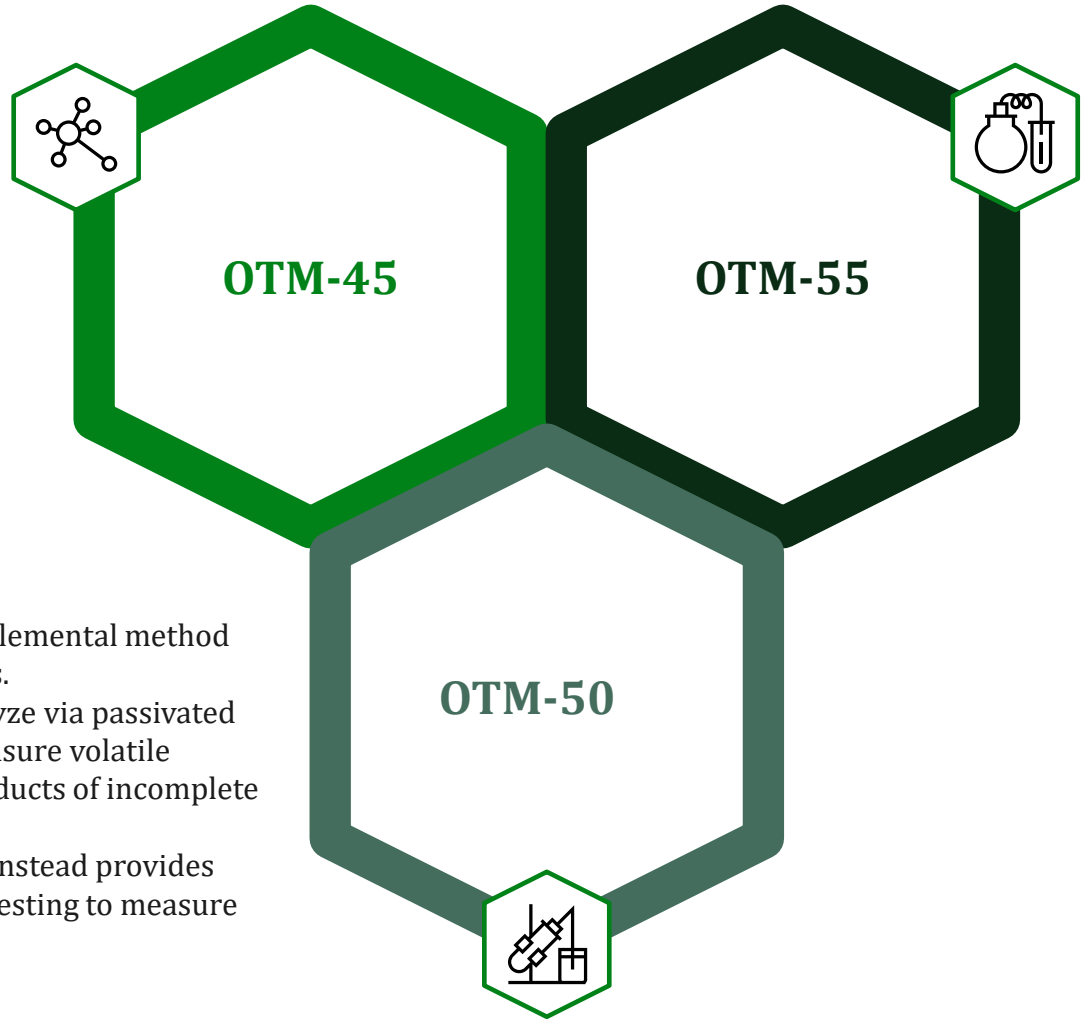
USEPA OTHER TEST METHOD (OTM) FOR PFAS AIR SAMPLING

Mark DiPrinzio

Testing for PFAS in Air – Stack Level Emissions

Options to measure for PFAS in the vapor phase is limited, but test methods continue to evolve.
EPA continues to develop procedures and guidance to expand the type and number of PFAS compounds that can be measured.

- OTM-45, issued in January 2021, was the first method developed to measure PFAS from stationary sources.
- OTM-45 employs a modified Method 5 sample train and provides capability to measure approximately 50 PFAS compounds that are semi-volatile organics and particulate-bound PFAS.

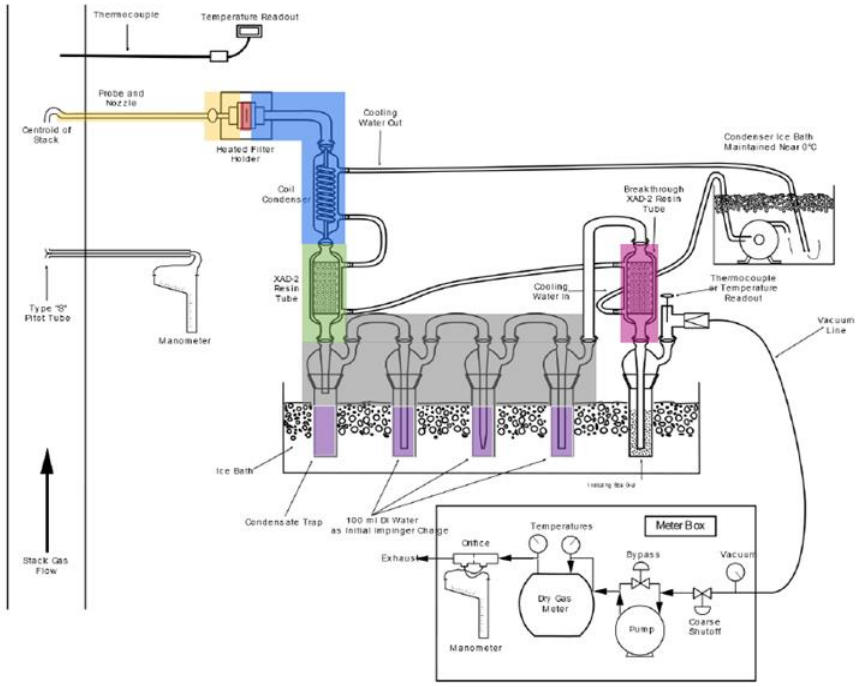


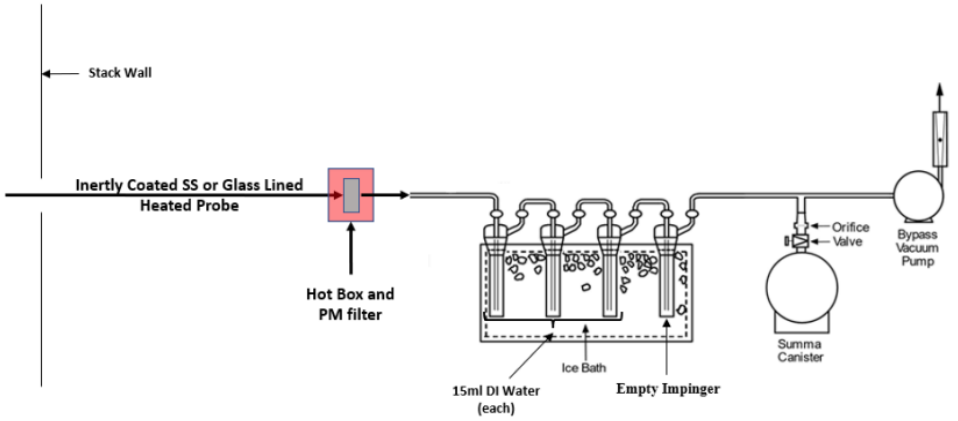
- OTM-55 is under development to further expand the types of PFAS that can be measured in the vapor phase, including fluorotelomer alcohols, as well as additional PIC/PIDs.

- OTM-50 was issued in January 2024 as a supplemental method to measure additional PFAS in stack emissions.
- OTM-50 provides methods to collect and analyze via passivated ceramic lined stainless steel cannisters to measure volatile fluorinated compounds, including certain products of incomplete combustion and destruction (PIC/PID).
- OTM-50 is not a replacement to OTM-45, but instead provides procedures to extend the capability for stack testing to measure additional PFAS compounds.

OTM-45/50/55

OTM	Target	Example Compounds
OTM-45	≥C4	PFBA, PFHxA, PFOA, PFNA, PFDA, PFBS, PFOS, FOSA, HFPO-DA
OTM-50	C_1-C_8 PICs	CF_4, C_2F_6, C_2F_4, CHF_3, C_3F_8, CH_3F, C_2HF_5, C_3F_6, C_3F_6O, C_4F_{10}, C_5HF_{11}, C_6HF_{13}, C_8HF_{17}
OTM-55	FTOHs PICs	FTOH





CERCLA PFAS REPORTABLE QUANTITY CALCULATION/DETERMINATION

Tim Daniluk

PFAS CERCLA Release Assessment – Approach/Calculations

- 8 July 2024: PFOA and PFOS including their salts and structural isomers listed hazardous substances under CERCLA (Superfund)
- Reportable quantity: any release above one (1) pound in a 24-hour period
- No prescriptive guidance in place
- Must evaluate air, groundwater, stormwater, and wastewater

PFAS CERCLA Release Assessment – Process

Media Type	Analytical Input	Facility Data	Other	Assumptions	Calculation
Air	Stack testing	Production Rates	Emission factor	Consistent emissions over time per unit production	Concentration x emission factor x production rate x time
Stormwater	Sampling	Rainfall event	Calculated runoff volumes using imprevious area	6" rainfall in 24 hours	Concentration x runoff volume
Wastewater	Sampling	Water usage	Divide usage by operating days	Representative water usage	Concentration x water usage/operating days
Groundwater	Sampling	Groundwater gradient Slug test results	Divide discharge boundary into transects Delineate vertically into discrete zones	Homogeneous transects	Concentration x area x gradient x hydraulic conductivity

- Build relationships with other departments
  - Maintenance, water treatment, facilities
- May require additional media sampling or proxy data from other locations

PFAS CERCLA Release Assessment – Results

	Site 1		Site 2	
	PFOA (lbs/24-hour period)	PFOS (lbs/24-hour period)	PFOA (lbs/24-hour period)	PFOS (lbs/24-hour period)
Air	1.08E-02	2.48E-05	6.82E-03	1.10E-05
Stormwater	6.12E-05	1.17E-05	6.26E-05	1.19E-05
Wastewater	7.08E-05	3.75E-16	2.82E-05	1.49E-16
Groundwater North Shallow	9.12E-05	9.26E-08	1.91E-03	5.26E-07
Groundwater South Shallow	1.05E-04	1.07E-07		
Groundwater Deep	3.58E-04	0.00E+00		
TOTALS	**1.15E-02**	**3.67E-05**	**8.82E-03**	**2.40E-05**

CONCLUSION: Although ng/L values for a given media may look large, it takes very large volumes and concentrations to reach the 1 lb/24 hr period reporting threshold.

Thank you

If further information is required, please contact Nadine Weinberg at nadine.weinberg@erm.com

Hotlinks

Additional Resources:

Canadian Draft and Pending Federal Regulations - Quicklinks:

- Canadian Toxic Substances List - Schedule 1 of CEPA
- Environment Canada - July 2024, Notice with respect to certain per- and polyfluoroalkyl substances (PFAS)
- Alberta *Tier 1 Soil and Remediation Guidelines*
- British Columbia - *Contaminated Sites Regulation*