

PFAS Interim Soil Standards

November 10, 2022



Celine Cumming & Nicole Kalaigian, Moderators
Contaminated Site Remediation & Redevelopment Program



Continuing Education Credits



SRP Licensing Board has approved
1.5 Technical & 0.5 Regulatory CECs
for this Training Class

Attendance Requirements:

- **Webinar participants:** must be logged-in for the entire session and answer 2 out of 3 poll questions (randomly inserted in the presentation)

CECs: What's the Process?



Since the SRPL Board has approved CECs for the course:

- DEP compiles a list of “webinar” participants eligible for CECs and provides the list to the LSRPA
- LSRPA will email eligible participants a link to an LSRPA webpage with certificate access instructions
- Certificates are issued by the LSRPA after paying a \$25 *processing fee*

Test Your Knowledge



There are 30 days in November:

- A. True
- B. False

**EXAMPLE WEBINAR
QUIZ SLIDE**

Test Your Knowledge



There are 30 days in November:

- A. **True**
- B. False

**EXAMPLE WEBINAR
QUIZ SLIDE**

Question and Answer Segments



- Questions will be read aloud by the moderator as time permits
- Any questions that are not addressed during the presentation will be answered via email

Chat Function



- Please use the chat to advise the Department of technical issues with the presentation
- Please do not use the chat function to comment on presentations or to answer other attendee's questions

Remember!



Please fill out the Course Evaluation here:

<https://www.surveymonkey.com/r/37THXFP>



NJDEP PFAS Interim Standards Training

November 10, 2022

LSRPs: 2.5 Regulatory CECs (Pending)

General Housekeeping

1. **Be sure to respond to poll questions to be eligible to receive Continuing Education Credits.**
2. **Please use the chat feature for questions for the presenters and comments.**
3. **You will receive a link to the online evaluation at the end of the training. Be sure to complete it to give us feedback for the course.**





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Upcoming LSRPA Courses & Events

➤ November 15, 2022 – LSRPA Virtual Member Regulatory Roundtable

NJDEP Compliance Topics

Instructors: Kassidy Klink, LSRP
Sarah Lembo

➤ LSRP Ethics has been rescheduled for December 1, 2022

Instructors: Lawra Dodge, PG, LSRP, Excel Environmental Res.
Mark Heinzelman, Esq., Lowenstein Sandler
Allison Gabala, Esq., Lowenstein Sandler
Marlene Lindhart, CHMM, LSRP, Lindhart Environmental
Joanne Vos, Esq., Maraziti Falcon
Moderator: David Morris, LSRP, CHMM, Tectonic Environmental

Visit [LSRPA.org](https://www.LSRPA.org) for details and registration



Upcoming LSRPA Courses & Events

- **December 8, 2022 – Virtual Beef and Beer Tasting, and Networking Members Only Event**
Thursday, from 6pm – 7pm
- **December 8, 2022 – LSRPA Virtual Member Regulatory Roundtable**
Construction Dewatering Treatment and Permitting Requirements
Instructor: Robert Gaupp, AWT Environmental Services
Moderator: Michael Poland, PE, LSRP, Poland Environmental Consulting

Visit [LSRPA.org](https://www.LSRPA.org) for details and registration





New Jersey Licensed Site
Remediation Professionals
Association



@NJLSRPA



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Thank You!

Introduction from Acting Assistant Commissioner

November 10, 2022



David Haymes, Acting Assistant Commissioner
Contaminated Site Remediation & Redevelopment Program

Interim Remediation Standards and Promulgation Process

November 10, 2022



Allan Motter, Section Chief
Contaminated Site Remediation & Redevelopment Program
Bureau of Environmental Evaluation & Risk Assessment

Interim Remediation Standards Process



7:26D-SUBCHAPTER 6. INTERIM REMEDIATION STANDARDS

7:26D-6.1 Purpose

This subchapter sets forth the procedures that the Department will use to establish interim remediation standards

Interim Remediation Standards Process



7:26D-6.2 Interim remediation standards

(a) The Department may establish an interim remediation standard for:

1. Soil, soil leachate, and indoor air when a contaminant is not listed at N.J.A.C. 7:26D Appendix 1; and
2. Ground water when a contaminant is not listed in the Ground Water Quality Standards, N.J.A.C. 7:9C Appendix, Table 1

(b) The person responsible for conducting the remediation may request that the Department develop an interim remediation standard pursuant to this subchapter and shall use only a Department-developed or approved interim remediation standard

Interim Remediation Standards Process



7:26D-6.2 Interim remediation standards

(c) An interim remediation standard shall be developed as follows:

1. For ground water, using the procedures set forth in the Ground Water Quality Standards at N.J.A.C. 7:9C-1.7(c);
2. For soil:
 - i. For the ingestion-dermal exposure pathway, using the procedures set forth at N.J.A.C. 7:26D Appendix 2, incorporated herein by reference;
 - ii. For the inhalation exposure pathway, using the procedures set forth at N.J.A.C. 7:26D Appendix 3, incorporated herein by reference; or
 - iii. For the migration to ground water exposure pathway, using procedures set forth at N.J.A.C. 7:26D Appendix 4, incorporated herein by reference; or
3. For indoor air for the vapor intrusion exposure pathway, using procedures set forth at N.J.A.C. 7:26D Appendix 5, incorporated herein by reference

Interim Remediation Standards Process



7:26D-6.3 Publication and promulgation of interim remediation standards

- (a) The Department shall publish on its website a listing of all interim remediation standards developed pursuant to this chapter and the technical basis used in their derivation
- (b) Interim soil remediation standards developed pursuant to this chapter shall be replaced with duly promulgated soil remediation standards as soon as reasonably possible

Changes to the Remediation Standards Website



- The link to Interim Remediation Standards Website updated to list contaminants that have an interim standard (methanol, PFOA, PFNA, PFOS and GenX)
- Ingestion-Dermal Exposure Pathway and Migration to Ground Water Exposure Pathway Calculators Updated to include PFAS compounds (demonstration by Erica Snyder and Jennifer Willemsen later in this training)
- Tips for Using NJDEP Remediation Standards Calculators added
- Interim Remediation Standards Website changes will be addressed by Erica Snyder and Jennifer Willemsen later in this training

Changes to the Remediation Standards Website

Interim Remediation Standards Bullet list

Interim Remediation Standards

- [Interim Soil, Soil Leachate, and Indoor Air Criteria, Reporting Limits, and Remediation Standards](#)
 - Methanol
 - Perfluorononanoic acid (PFNA)
 - Perfluorooctanoic acid (PFOA)
 - Perfluorooctane sulfonate (PFOS)
 - Hexafluoropropylene oxide dimer acid and its ammonium salt (GenX)

Remediation Standards Comparison Tables

Remediation Standards Comparison Tables

- [Direct Contact Standards Comparison 1999-2021](#)
- [Ingestion-Dermal Exposure Pathway Soil Remediation Standards 2017-2021](#)
- [Inhalation Exposure Pathway Soil Remediation Standards 2017-2021](#)
- [Migration to Ground Water Exposure Pathway Soil and Leachate Remediation Standards 2013-2021](#)
- [Indoor Air Standards Comparison for the Vapor Intrusion Exposure Pathway 2007-2021](#)
- [Indoor Air RL and SL Comparison for the Vapor Intrusion Exposure Pathway](#)
- [2021 Remediation Standards by Chemical Fraction](#)

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Site Remediation Program

Guidance Documents | Remediation Standards

Remediation Standards

Introduction to Remediation Standards

May 2021

These rules implement the provisions of the [Brownfield and Contaminated Site Remediation Act](#), N.J.S.A. 15:15B-12, and other statutes, by establishing standards for the remediation of contaminated ground water, surface water, soil, soil, or sediment.

On June 3, 2008, the Department adopted new Remediation Standards rules at N.J.A.C. 7:26D. These rules were redrafted without change on April 27, 2015. The soil remediation standards contained in those rules were effective on June 3, 2015.

On September 18, 2017, the Department updated the soil remediation standards for 19 contaminants, as listed in N.J.A.C. 7:26D, Appendix 1, Tables 1A and 1B. The updated soil remediation standards reflect revisions to the toxicity information.

On May 17, 2021, the Department adopted amended rules at N.J.A.C. 7:26D. Included in the amended rules are soil and soil leachate remediation standards for the migration to ground water exposure pathway and indoor air remediation for the vapor intrusion exposure pathway, and ground water (AAs), the existing process for updating remediation standards has been expanded to include soil and soil leachate for the migration to ground water exposure pathway, indoor air, and ground water (AAs).

Remediation Standards

- [Remediation Standards, N.J.A.C. 7:26D](#) (May 17, 2021)
- [Remediation Standards Proposed](#) (April 6, 2020)
- [Remediation Standards Adoption Package](#) (May 17, 2021)

Interim Remediation Standards

- [Interim Soil, Soil Leachate, and Indoor Air Criteria, Reporting Limits, and Remediation Standards](#)
 - Methanol
 - Perfluorononanoic acid (PFNA)
 - Perfluorooctanoic acid (PFOA)
 - Perfluorooctane sulfonate (PFOS)
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- [Ingestion-Dermal Exposure Pathway Soil Remediation Standards 2017-2021](#)
- [Inhalation Exposure Pathway Soil Remediation Standards 2017-2021](#)
- [Migration to Ground Water Exposure Pathway Soil and Leachate Remediation Standards 2013-2021](#)
- [Indoor Air Standards Comparison for the Vapor Intrusion Exposure Pathway 2007-2021](#)
- [Indoor Air RL and SL Comparison for the Vapor Intrusion Exposure Pathway](#)
- [2021 Remediation Standards by Chemical Fraction](#)

Phase In/Order of Magnitude Guidance

The Department has revised the following guidance documents that will help remediating parties comply with the new remediation standards:

- [Phase-In Period Guidance for the Use of Remediation Standards, N.J.A.C. 7:26D](#) (Updated May 2021)
- [Order of Magnitude Evaluation Guidance](#) (Updated May 2021)
- [Frequently Asked Questions: Order of Magnitude, Phase-In, Vapor Intrusion](#) (Posted September 2021)

Basic and Background Documents

- [Soil and Soil Leachate Remediation Standards for the Migration to Ground Water Exposure Pathway, Basic and Background](#) (May 2021)
- [Soil Remediation Standards for the Ingestion-Dermal Exposure Pathway, Basic and Background](#) (May 2021)
- [Soil Remediation Standards for the Inhalation Exposure Pathway, Basic and Background](#) (May 2021)
- [Indoor Air Remediation Standards for the Vapor Intrusion Exposure Pathway, Basic and Background](#) (May 2021)

Guidance Documents

- [Alternative Remediation Standards Technical Guidance for Soil and Soil Leachate for the Migration to Ground Water Exposure Pathway](#) (Version 1.0 May 2021)
- [Alternative Remediation Standards Technical Guidance for Soil for the Ingestion-Dermal and Inhalation Exposure Pathways](#) (Version 1.0 May 2021)
- [Vapor Intrusion Technical Guidance](#) (Version 1.0 May 2021) - Appendix 2 provides guidance for the derivation and application of Alternative Remediation Standards for Indoor Air
- [Alternative Guidance for the Migration to Ground Water Exposure Pathway Soil Remediation Standards](#) (Version 1.0 October 2021)

Calculators

The Soil and Soil Leachate Migration to Ground Water Exposure Pathway Calculator

- [Soil and Soil Leachate Migration to Ground Water Exposure Pathway Calculator](#) (Version 1.1 October 2022)

This includes the following calculators:

- Soil-Water Partition Equation Calculator
- Synthetic Precipitation Leaching Procedure Calculator
- Dilution-Attenuation Factor Calculator
- Fraction Organic Carbon Calculator
- PFAS SPLP Calculator

Soil Ingestion-Dermal Exposure Pathway Calculator

- [Soil Ingestion-Dermal Exposure Pathway Calculator](#) (Version 1.1 October 2022)

Soil Inhalation Exposure Pathway Calculator

- [Soil Inhalation Exposure Pathway Calculator](#) (Version 1.0 May 2021)

Vapor Intrusion Exposure Pathway Calculator

- [Vapor Intrusion Exposure Pathway Calculator](#) (Version 1.0 May 2021)

The Extractable Petroleum Hydrocarbon Ingestion-Dermal Exposure Pathway Calculator

- [Extractable Petroleum Hydrocarbon Ingestion-Dermal Exposure Pathway Calculator](#) (Version 1.1 August 2022)

This includes the following calculators:

- Category 2 Sample-Specific Residential
- Category 2 Sample-Specific Non-Residential
- Category 1 and 2 Alternative Remediation Standards for Soil (based on Land Use Exposure Scenarios)

Tip for Using NJDEP Remediation Standards Calculators

- [Tip for Using NJDEP Remediation Standards Calculators](#) (Draft) (October 2022)

Extractable Petroleum Hydrocarbon Information

- [Evaluation of Extractable Petroleum Hydrocarbons in Soil Technical Guidance](#) (Version 1.0, 2019)
- [Guidance on the Human Health Based and Ecologically Based Soil Remediation Criteria for Number 2 Fuel Oil and Diesel Fuel Oil](#) (September 2008)

Chromium

- [Chromium](#)

Alternative or Interim Remediation Standards and/or Screening Level Application Forms

- [Alternative or Interim Remediation Standards and/or Screening Level Application Form and Instructions](#)
- [Remediation Standards Notification Considerations](#)

NOTE: The following attainment and compliance documents which pertain specifically to the migration to ground water exposure pathway may be accessed at [www.nj.gov/dep/erp/guidance/](#)

- [Volatile Organic Concentration including methyl tertiary butyl ether \(MTBE\) and tertiary butyl alcohol \(TBA\) derived from Discharges of Petroleum Hydrocarbons](#) (Posted 25 January 2009)
- [Capping of Inorganic and Semi-volatile Contaminants for the Ingestion to Ground Water Pathway](#) (March 2014)
- [Capping of Volatile Contaminants for the Ingestion to Ground Water Pathway](#) (January 2008)

[Remediation Standards Archive page](#)

Changes to the Remediation Standards Website

Calculators

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- [Soil Ingestion-Dermal Exposure Pathway Calculator](#) (Version 1.1 October 2022)

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- Indoor Air Standards Comparison for the Vapor Intrusion Exposure Pathway 2017-2021
- Indoor Air (B1 and B2) Comparison for the Vapor Intrusion Exposure Pathway
- 2021 Remediation Standards by Chemical Priority

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Soil Ingestion-Dermal Exposure Pathway Calculator

- [Soil Ingestion-Dermal Exposure Pathway Calculator](#) (Version 1.1 October 2022)

Soil Inhalation Exposure Pathway Calculator

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[Remediation Standards Archive page](#)

Changes to the Remediation Standards Website

Tips for Using NJDEP Remediation Standards Calculators

Tips for Using NJDEP Remediation Standards Calculators

Please see the below conditions and suggestions, to avoid errors when using the Department's various calculators:

- Be sure to use the most updated version of Microsoft Excel and use the downloaded application, not web-based version.
- Close all other Excel files before using the calculator to develop an ARS.
- Be sure to enable macros.
- Do not copy and paste data into the calculator, but rather enter the data manually.
- Capture data output prior to saving or printing (e.g., take a screenshot).
- If you want to save the calculator with your inputs to refer to later, rename and save as the file as a .xlsx document to disable macros and ensure that the data remains uncorrupted. Note that the user will be unable to re-enable macros and this should only be used to hold data sets for reference. Entering new data for calculations will not be possible.

Inhalation Exposure Pathway Calculator

- When entering depth of contamination, convert the units to centimeters.

PFAS SPLP Calculator

- Laboratory-specific aqueous and soil reporting limits must be entered.



Tips for Using NJDEP Remediation Standards Calculators

- [Tips for Using NJDEP Remediation Standards Calculators \[pdf\]](#) (October 2022)

Interim Soil and Soil Leachate Remediation Standards for PFAS

November 10, 2022



Erica Snyder & Jennifer Willemssen, Research Scientists
Contaminated Site Remediation & Redevelopment Program
Bureau of Environmental Evaluation & Risk Assessment

Interim Soil and Soil Leachate Remediation Standards for PFAS



- Interim Remediation Standards for soil and soil leachate were developed for PFNA, PFOA, PFOS, and GenX
- Publication in New Jersey Register October 17, 2022
- Remediation Standards (N.J.A.C. 7:26D)
 - Ingestion-Dermal Exposure Pathway
 - Inhalation Exposure Pathway
 - Migration to Ground Water Exposure Pathway

Interim Soil and Soil Leachate Remediation Standards for PFAS



Contaminant	CAS No.	Soil Remediation Standard: Ingestion-Dermal Residential (mg/kg)	Soil Remediation Standard: Ingestion-Dermal Nonresidential (mg/kg)	Soil Remediation Standard: Migration to Ground Water (mg/kg)	Soil Leachate Remediation Standard: Migration to Ground Water (µg/L)
PFNA	375-95-1	0.047	0.67	AOC/Site-specific	0.26
PFOA	335-67-1	0.13	1.8	AOC/Site-specific	0.28
PFOS	1763-23-1	0.11	1.6	AOC/Site-specific	0.26
GenX	13252-13-6 & 6203780-3	0.23	3.9	NA	NA

Interim Soil Remediation Standards (SRS) Ingestion-Dermal Exposure Pathway



- SRS for PFNA, PFOA, PFOS, and GenX calculated using the procedures, risk-based equations, and default residential and nonresidential exposure parameters contained at N.J.A.C. 7:26D
- Oral toxicity information and risk assessment methods used to generate SRS are consistent with those used to develop the GWQS and MCLs for PFNA, PFOA, and PFOS. USEPA Office of Water Reference Dose used for GenX
- SRS are based on a Hazard Quotient of 1 for noncarcinogens and a 1 in one million lifetime cancer risk level, pursuant to the Brownfield and Contaminated Site Remediation Act (N.J.S.A. 58:10B-1 et seq.)

Interim Soil Remediation Standards Inhalation Exposure Pathway



- Interim SRS for the inhalation exposure pathway have not been developed
 - Limited inhalation toxicity information
 - Inadequate chemical properties information

Interim Soil Remediation Standards

Migration to Groundwater Exposure Pathway



- Generic SRS-MGW for PFNA, PFOA, and PFOS **cannot** presently be calculated
- The calculation relies on the soil-water partitioning coefficient (K_d)
 - Up to a five order of magnitude difference in reported K_d values
 - Complexity of PFAS-soil interactions

$$MGW_c = GWRS * \frac{mg}{1000 \mu g} * \left\{ K_d + \frac{\theta_w + (\theta_a * H')}{\rho_b} \right\} * DAF$$

MGW_c Migration to ground water soil criterion

$GWRS$ Ground water remediation standard

K_d Soil-water partition coefficient

θ_w Water-filled soil porosity

θ_a Air-filled soil porosity

H' Henry's law constant

ρ_b Dry soil bulk density

DAF Dilution-Attenuation Factor

Interim Soil Remediation Standards

Migration to Groundwater Exposure Pathway



- SRS-MGW will be calculated on an AOC/site-specific basis using the Synthetic Precipitation Leaching Procedure (SPLP) as described in N.J.A.C. 7:26D

Interim Soil Leachate Remediation Standards Migration to Groundwater Exposure Pathway



- SLRS-MGW for PFNA, PFOA, and PFOS calculated using the procedures, equations, and parameters contained at N.J.A.C. 7:26D
 - GWRS multiplied by the default dilution-attenuation factor (DAF) of 20
- SLRS-MGW are compared to field leachate concentrations calculated using the Department's SPLP calculator

Test Your Knowledge



SPLP can be used to calculate generic SRS-MGW.

- A. True
- B. False

Test Your Knowledge



SPLP can be used to calculate generic SRS-MGW :

- A. True
- B. **False**

SPLP can only be used to develop site/AOC-specific standards.

Interim Soil and Soil Leachate Remediation Standards for PFAS



Contaminant	CAS No.	Soil Remediation Standard: Ingestion-Dermal Residential (mg/kg)	Soil Remediation Standard: Ingestion-Dermal Nonresidential (mg/kg)	Soil Remediation Standard: Migration to Ground Water (mg/kg)	Soil Leachate Remediation Standard: Migration to Ground Water (µg/L)
PFNA	375-95-1	0.047	0.67	AOC/Site-specific	0.26
PFOA	335-67-1	0.13	1.8	AOC/Site-specific	0.28
PFOS	1763-23-1	0.11	1.6	AOC/Site-specific	0.26
GenX	13252-13-6 & 6203780-3	0.23	3.9	NA	NA

Interim Soil and Soil Leachate Remediation Standards Website



- https://www.nj.gov/dep/srp/guidance/rs/interim_soil_ia_rl_rs.html

Table of Interim Soil Remediation Standards for the Ingestion-Dermal Exposure Pathway

Contaminant	CAS No.	Non-Carcinogenic Health-Based Criterion (mg/kg)		Carcinogenic Health-Based Criterion (mg/kg)		Reporting Limit (mg/kg)	Interim Soil Remediation Standard (mg/kg)		Effective Date	Fact Sheet
		Residential Criterion	Nonresidential Criterion	Residential Criterion	Nonresidential Criterion		Residential Standard	Nonresidential Standard		
Perfluorononanoic acid (PFNA)	375-95-1	0.047	0.67	NA	NA	0.001 ³	0.047	0.67	10/17/2022	October 2022
Perfluorooctanoic acid (PFOA)	335-67-1	0.13	1.8	NA ¹	NA ¹	0.001 ³	0.13	1.8	10/17/2022	October 2022
Perfluorooctane sulfonate (PFOS)	1763-23-1	0.11	1.6	NA ²	NA ²	0.001 ³	0.11	1.6	10/17/2022	October 2022
Hexafluoropropylene oxide dimer acid and Its ammonium salt (GenX)	13252-13-6 & 62037-80-3	0.23	3.9	NA	NA	0.01 ³	0.23	3.9	10/17/2022	October 2022

Table of Interim Soil Remediation Standards for the Migration to Ground Water Exposure Pathway

Contaminant	CAS No.	Ground Water Remediation Standard (µg/L)	Migration to Ground Water Soil Criterion (mg/kg)	Soil Saturation Limit (mg/kg)	Reporting Limit (mg/kg)	Interim Soil Remediation Standard (mg/kg)	Effective Date	Fact Sheet
Methanol	67-56-1	4,000	12	160,000	5	12	11/17/2021	April 2022
Perfluorononanoic acid (PFNA)	375-95-1	0.013	Area of concern / Site-specific ¹	NA	0.001 ²	Area of concern / Site-specific ¹	10/17/2022	October 2022
Perfluorooctanoic acid (PFOA)	335-67-1	0.014	Area of concern / Site-specific ¹	NA	0.001 ²	Area of concern / Site-specific ¹	10/17/2022	October 2022
Perfluorooctane sulfonate (PFOS)	1763-23-1	0.013	Area of concern / Site-specific ¹	NA	0.001 ²	Area of concern / Site-specific ¹	10/17/2022	October 2022

Table of Interim Soil Leachate Remediation Standards for the Migration to Ground Water Exposure Pathway

Contaminant	CAS No.	Ground Water Remediation Standard (µg/L)	Soil Leachate Standard* (µg/L)	Effective Date
Perfluorononanoic acid (PFNA)	375-95-1	0.013	0.26	10/17/2022
Perfluorooctanoic acid (PFOA)	335-67-1	0.014	0.28	10/17/2022
Perfluorooctane sulfonate (PFOS)	1763-23-1	0.013	0.26	10/17/2022
Explanation of Terms: CAS No. = Chemical Abstracts System Registration Number				

PFAS Interim Soil Standards

November 10, 2022



Questions?

Use of Calculators to Generate AOC/Site-Specific Standards for PFAS

November 10, 2022



Erica Snyder & Jennifer Willemssen, Research Scientists
Contaminated Site Remediation & Redevelopment Program
Bureau of Environmental Evaluation & Risk Assessment

Alternative Remediation Standard Calculators



- <https://www.nj.gov/dep/srp/guidance/rs/index.html>

Basis and Background Documents

- [Soil and Soil Leachate Remediation Standards for the Migration to Ground Water Exposure Pathway, Basis and Background](#) (May 2021)
- [Soil Remediation Standards for the Ingestion-Dermal Exposure Pathway, Basis and Background](#) (May 2021)
- [Soil Remediation Standards for the Inhalation Exposure Pathway, Basis and Background](#) (May 2021)
- [Indoor Air Remediation Standards for the Vapor Intrusion Exposure Pathway, Basis and Background](#) (May 2021)

Guidance Documents

- [Alternative Remediation Standards Technical Guidance for Soil and Soil Leachate for the Migration to Ground Water Exposure Pathway](#) (Version 1.0 May 2021)
- [Alternative Remediation Standards Technical Guidance for Soil for the Ingestion-Dermal and Inhalation Exposure Pathways](#) (Version 1.0 May 2021)
- [Vapor Intrusion Technical Guidance](#) (Version 5.0 May 2021) - Appendix G provides guidance for the derivation and application of Alternative Remediation Standards for indoor air
- [Administrative Guidance for the Migration to Ground Water Exposure Pathway Soil Remediation Standards](#) (Version 1.0 October 2021)

Calculators

The Soil and Soil Leachate Migration to Ground Water Exposure Pathway Calculator

- [Soil and Soil Leachate Migration to Ground Water Exposure Pathway Calculator](#) (Version 1.1 October 2022)

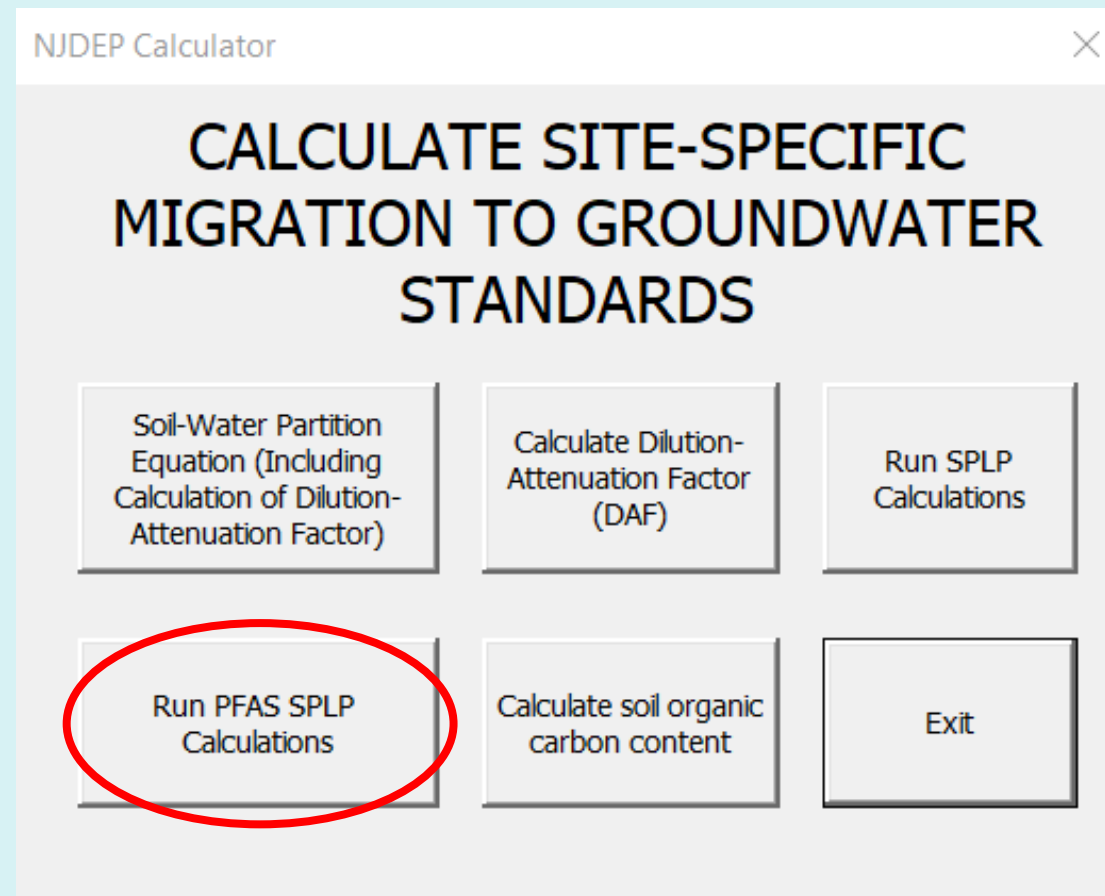
This includes the following calculators:

- Soil-Water Partition Equation Calculator
- Synthetic Precipitation Leaching Procedure Calculator
- Dilution-Attenuation Factor Calculator
- Fraction Organic Carbon Calculator
- PFAS SPLP Calculator

Soil Ingestion-Dermal Exposure Pathway Calculator

- [Soil Ingestion-Dermal Exposure Pathway Calculator](#) (Version 1.1 October 2022)

PFAS SPLP Calculator



PFAS SPLP Calculator



NJDEP 2022 PFAS SPLP Spreadsheet													
Case name/area of concern:						CALCULATE SITE SPECIFIC MGW STANDARD		Reset Spreadsheet		Instructions			
Case number:										Back to MGW Site-Specific Menu			
Sampling date:										Exit			
Contaminant:	Perfluorononanoic Acid (PFNA) ▼					NOTE: USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples Do not enter samples with soil concentrations at or below the soil reporting limit SPLP leachate concentrations may be entered down to the detection limit, but see guidance Enter site-specific dilution-attenuation factor (DAF) if desired							
CAS No:	375-95-1												
Water solubility (mg/L)	NA												
Laboratory-specific aqueous reporting limit (µg/L):													
Laboratory-specific soil reporting limit (mg/kg):													
Ground Water Remediation Std (µg/L)	1.30E-02												
DAF (20, or site-specific if approved):	20												
Leachate Standard (µg/L):	2.60E-01												
Henry's law constant (dimensionless):	0.00E+00												
						Data entry cells (do not skip rows)							
						Optional data entry							
						Calculated or locked cells							
						Indicates that Alternative Remediation Standard needs to be recalculated							
Sample ID	Soil sample weight (kg)	Leachate Volume (L)	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of Leachate	Optional data				Kd (L/kg)	% Contaminant in Leachate	Field leachate concentration (µg/L)	Pass or fail?
						Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)				

PFAS SPLP Calculator

Example 1



NJDEP 2022 PFAS SPLP Spreadsheet													
Case name/area of concern:	Contamination-Is-Ur					CALCULATE SITE SPECIFIC MGW STANDARD		Reset Spreadsheet		Instructions			
Case number:	XYZ									Back to MGW Site-Specific Menu			
Sampling date:	2/22/2022									Exit			
Contaminant:	Perfluorononanoic Acid (PFNA)					NOTE: USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples Do not enter samples with soil concentrations at or below the soil reporting limit SPLP leachate concentrations may be entered down to the detection limit, but see guidance Enter site-specific dilution-attenuation factor (DAF) if desired							
CAS No:	375-95-1												
Water solubility (mg/L)	NA												
Laboratory-specific aqueous reporting limit (µg/L):	1.00E-03												
Laboratory-specific soil reporting limit (mg/kg):	1.00E-03												
Ground Water Remediation Std (µg/L)	1.30E-02												
DAF (20, or site-specific if approved):	20												
Leachate Standard (µg/L):	2.60E-01												
Henry's law constant (dimensionless):	0.00E+00												
						Data entry cells (do not skip rows)							
						Optional data entry							
						Calculated or locked cells							
						Indicates that Alternative Remediation Standard needs to be recalculated							
Sample ID	Soil sample weight (kg)	Leachate Volume (L)	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of Leachate	Optional data				Kd (L/kg)	% Contaminant in Leachate	Field leachate concentration (µg/L)	Pass or fail?
						Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)				
1	0.1	2	0.05	0.1	4.2								
2	0.1	2	0.09	0.2	4.2								
3	0.05	1	0.04	0.07	4.2								
4	0.05	1	0.03	0.1	4.2								

NJDEP 2022 PFAS SPLP Spreadsheet

Case name/area of concern:	Contamination-Is-U.S.
Case number:	XYZ
Sampling date:	2/22/2022

Contaminant:	Perfluorononanoic Acid (PFNA) ▼
CAS No:	375-95-1
Water solubility (mg/L):	NA
Laboratory-specific aqueous reporting limit (µg/L):	1.00E-03
Laboratory-specific soil reporting limit (mg/kg):	1.00E-03
Ground Water Remediation Std (µg/L)	1.30E-02
DAF (20, or site-specific if approved):	20
Leachate Standard (µg/L):	2.60E-01
Henry's law constant (dimensionless):	0.00E+00

CALCULATE SITE SPECIFIC MGW STANDARD

[Reset Spreadsheet](#)

[CLICK HERE if chemical is not on drop-down list, or to enter alternate GWRS](#)

[Instructions](#)

Back to MGW Site-Specific Menu

Exit

NOTE:

USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples

Do not enter samples with soil concentrations at or below the soil reporting limit

SPLP leachate concentrations may be entered down to the detection limit, but see guidance

Enter site-specific dilution-attenuation factor (DAF) if desired

	Data entry cells (do not skip rows)
	Optional data entry
	Calculated or locked cells
	Indicates that Alternative Remediation Standard needs to be recalculated

Sample ID	Soil sample weight (kg)	Leachate Volume (L)	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of Leachate	Optional data				Kd (L/kg)	% Contaminant in Leachate	Field leachate concentration (µg/L)	Pass or fail?
						Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)				
4	0.05	1	0.03	0.1	4.2					280	6.67	0.11	PASS
3	0.05	1	0.04	0.07	4.2					551.4286	3.50	0.07	PASS
1	0.1	2	0.05	0.1	4.2					480	4.00	0.10	PASS
2	0.1	2	0.09	0.2	4.2					430	4.44	0.21	PASS

SPLP RESULTS for

OPTION 1a: All adjusted leachate concentrations are below the leachate criterion

REMEDIATION STANDARD = 0.09 mg/kg

OPTION 1b: Simple inspection of tabulated results to find highest acceptable standard

EVERYTHING PASSED, OPTION 1b NOT VALID

OPTION 2: Remediation standard using site-specific Kd value

Kd ratio = 1.97, AVERAGING Kds OK

Kd USED FOR CALCULATING STANDARD = 435.3571 L/kg

result before rounding = 0.1132 mg/kg

REMEDIATION STANDARD = 0.09 mg/kg (controlled by maximum soil concentration)

OPTION 3: Remediation standard using linear regression

Soil concentration midrange = .06

Number of points above midrange = 1

Enough points above midrange? NO

R-Square high enough? YES

Leachate criterion within range of leachate concentrations? NO

OPTION 3 NOT VALID

Regression of SPLP results

PFAS SPLP Calculator

Example 2



NJDEP 2022 PFAS SPLP Spreadsheet						CALCULATE SITE SPECIFIC MGW STANDARD Reset Spreadsheet		Instructions					
Case name/area of concern:	CancerCluster, LLC												
Case number:	ABC												
Sampling date:	1/11/2022												
Contaminant:	Perfluorooctanoic Acid (PFOA) ▼					CLICK HERE if chemical is not on drop-down list, or to enter alternate GWRS		Back to MGW Site-Specific Menu					
CAS No:	335-67-1												
Water solubility (mg/L)	NA												
Laboratory-specific aqueous reporting limit (µg/L):	1.00E-03												
Laboratory-specific soil reporting limit (mg/kg):	1.00E-03												
Ground Water Remediation Std (µg/L)	1.40E-02												
DAF (20, or site-specific if approved):	20												
Leachate Standard (µg/L):	2.80E-01												
Henry's law constant (dimensionless):	0.00E+00												
						NOTE: USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples Do not enter samples with soil concentrations at or below the soil reporting limit SPLP leachate concentrations may be entered down to the detection limit, but see guidance Enter site-specific dilution-attenuation factor (DAF) if desired							
						Data entry cells (do not skip rows)							
						Optional data entry							
						Calculated or locked cells							
						Indicates that Alternative Remediation Standard needs to be recalculated							
Sample ID	Soil sample weight (kg)	Leachate Volume (L)	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of Leachate	Optional data				Kd (L/kg)	% Contaminant in Leachate	Field leachate concentration (µg/L)	Pass or fail?
						Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)				
1	0.1	2	0.1	0.27	4.2								
2	0.1	2	0.1	0.26	4.2								
3	0.05	1	0.05	0.26	4.2								
4	0.05	1	0.5	0.01	4.2								

Alternative Remediation Standard Calculators



- <https://www.nj.gov/dep/srp/guidance/rs/index.html>

Basis and Background Documents

- [Soil and Soil Leachate Remediation Standards for the Migration to Ground Water Exposure Pathway, Basis and Background](#) (May 2021)
- [Soil Remediation Standards for the Ingestion-Dermal Exposure Pathway, Basis and Background](#) (May 2021)
- [Soil Remediation Standards for the Inhalation Exposure Pathway, Basis and Background](#) (May 2021)
- [Indoor Air Remediation Standards for the Vapor Intrusion Exposure Pathway, Basis and Background](#) (May 2021)

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- [Alternative Remediation Standards Technical Guidance for Soil and Soil Leachate for the Migration to Ground Water Exposure Pathway](#) (Version 1.0 May 2021)
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- [Administrative Guidance for the Migration to Ground Water Exposure Pathway Soil Remediation Standards](#) (Version 1.0 October 2021)

Calculators

The Soil and Soil Leachate Migration to Ground Water Exposure Pathway Calculator

- [Soil and Soil Leachate Migration to Ground Water Exposure Pathway Calculator](#) (Version 1.1 October 2022)

This includes the following calculators:

- Soil-Water Partition Equation Calculator
- Synthetic Precipitation Leaching Procedure Calculator
- Dilution-Attenuation Factor Calculator
- Fraction Organic Carbon Calculator
- PFAS SPLP Calculator

Soil Ingestion-Dermal Exposure Pathway Calculator

- [Soil Ingestion-Dermal Exposure Pathway Calculator](#) (Version 1.1 October 2022)



NJDEP 2022 Ingestion/Dermal Combined Child/Adult Calculator

Site Name:			Date:	
Contaminant:	Hexafluoropropylene oxide dimer acid (GenX)	CAS No.:	13252-13-6 & 62037-80-	
		Evaluated by:		

$$ID_c = \frac{TR * AT}{(10^{-6} kg / mg) * [(CSF_o * IFS_{adj})]}$$

$$IFS_{adj} = \frac{EF_c * ED_c * IR_c}{BW_c}$$

$$THQ = \frac{THQ * AT * ED * BW}{(10^{-6} kg / mg) * [(1/RfD_o * IR) + (1/RfD_d * SA * AF * ABS_d)]}$$

$$IR_c * ED_c * SA_c * AF_c + \frac{EF_a * ED_a * SA_a * AF_a}{BW_a}$$

N-Nitrosodiphenylamine
 2,2'-oxybis(1-chloropropane)
 Pentachlorophenol
 Perfluorononanoic acid (PFNA)
 Perfluorooctanoic acid (PFOA)
 Perfluorooctane sulfonate (PFOS)
 Phenol
 Polychlorinated biphenyls (PCBs)

$$IR_c * ED_c * SA_c * AF_c + \frac{EF_a * ED_a * SA_a * AF_a}{BW_a}$$

Parameter	Definition	Units	Residential Scenario	Alternative Scenario	Soil Reporting Limit (mg/kg) =	0
TR	Target Cancer Risk	unitless	1.00E-06	1.00E-06		
THQ	Target Hazard Quotient	unitless	1	1		
AT	Averaging Time	days/year	365	365		
LT	Lifetime	years	70	70		
EF _c	Exposure Frequency - child	days/year	350	350		
EF _a	Exposure Frequency - adult	days/year	350	350		
ED _c	Exposure Duration - child	years	6	6		
ED _a	Exposure Duration - adult	years	20	20		
CSF _o	Oral Cancer Slope Factor	(mg/kg-day) ⁻¹	NA	NA		
CSF _d	Dermal Cancer Slope Factor	(mg/kg-day) ⁻¹	NA	NA		
RfD _o	Oral Reference Dose	mg/kg-day	0.000003	0.000003		
RfD _d	Dermal Reference Dose	mg/kg-day	0.000003	0.000003		
IFS _{adj}	Age-Adjusted Soil Ingestion Rate	mg/kg	36750	36750		
DFS _{adj}	Age-Adjusted Soil Dermal Contact Factor	mg/kg	103390	103390		
ABS _d	Dermal Absorption Fraction	unitless	NA	NA		
BW _c	Body Weight - child	kg	15	15		

Calculated or locked cell

Required data entry

Optional data entry/modification

CLICK HERE if Chemical is not on drop-down list

Instructions

Reset

Back to Ingestion/Dermal Site-Specific Menu

Exit

Synthetic Precipitation Leaching Procedure (SPLP) and Soil Remediation Standards for the Migration to Ground Water Exposure Pathway

November 10, 2022



Greg Toffoli, Section Chief
Contaminated Site Remediation & Redevelopment Program
Bureau of Environmental Evaluation & Risk Assessment

Interim Soil Remediation Standards

Migration to Groundwater Exposure Pathway



- Generic SRS-MGW for PFNA, PFOA, and PFOS **cannot** presently be calculated
- The calculation relies on the soil-water partitioning coefficient (K_d)
 - Up to a five order of magnitude difference in reported K_d values
 - Complexity of PFAS-soil interactions

$$MGW_c = GWRS * \frac{mg}{1000 \mu g} * \left\{ K_d + \frac{\theta_w + (\theta_a * H')}{\rho_b} \right\} * DAF$$

MGW_c Migration to ground water soil criterion

$GWRS$ Ground water remediation standard

K_d Soil-water partition coefficient

θ_w Water-filled soil porosity

θ_a Air-filled soil porosity

H' Henry's law constant

ρ_b Dry soil bulk density

DAF Dilution-Attenuation Factor

Synthetic Precipitation Leaching Procedure (SPLP) and Soil Remediation Standards for the Migration to Ground Water Exposure Pathway



- National concern that PFAS adsorbs onto SPLP apparatus
- No empirical data existed to demonstrate efficacy of PFAS extra extraction using SPLP
- Lack of data makes using SPLP to develop SRS-MGW questionable

Test Your Knowledge



One of the reasons a generic SRS-MGW cannot presently be calculated for PFNA, PFOA, and PFOS is because there is up to a five order of magnitude difference in reported K_d values.

- A. True
- B. False

Test Your Knowledge



One of the reasons a generic SRS-MGW cannot presently be calculated for PFNA, PFOA, and PFOS is because there is up to a five order of magnitude difference in reported K_d values.

- A. **True**
- B. False

Synthetic Precipitation Leaching Procedure (SPLP) and Soil Remediation Standards for the Migration to Ground Water Exposure Pathway



- CSRRP to determine if SPLP is a viable approach
 - Design and coordinate a multi-laboratory research experiment
 - Perform full validation and data review
 - Conclude if SPLP could be used to establish site-specific SRS-MGW

SPLP Research Design Laboratory Criteria



- Laboratories were chosen based on certification status
 - Certified for SPLP
 - Certified for user-defined non-potable water method
- Laboratories used their own methods for the study
- Methods were similar among the laboratories
 - SPLP
 - Analytical – 537.1 analyte list with isotope dilution

SPLP PFAS Research Design

Fortification Levels



- 5 different fortified/spiked leachate concentrations (containing PFOA, PFNA, PFOS, GenX and 14 additional PFAS), 3 duplicate analyses
 - 10 ng/L (n = 2)
 - 50 ng/L (n = 1)
 - 250 ng/L (n = 2)
 - 500 ng/L (n = 1)
 - 1000 ng/L (n = 2)
 - Sample blank (0 ng/L)

SPLP Research Design – Methodology Overview



Sample Preparation

Leachate Fluid tumbled (16 – 20 hours)

Filtration of leachate fluid



Extraction of leachate fluid



Concentration of extract



After leachate fluid processing, MeOH rinse
of equipment



Concentration of MeOH rinse



Analysis

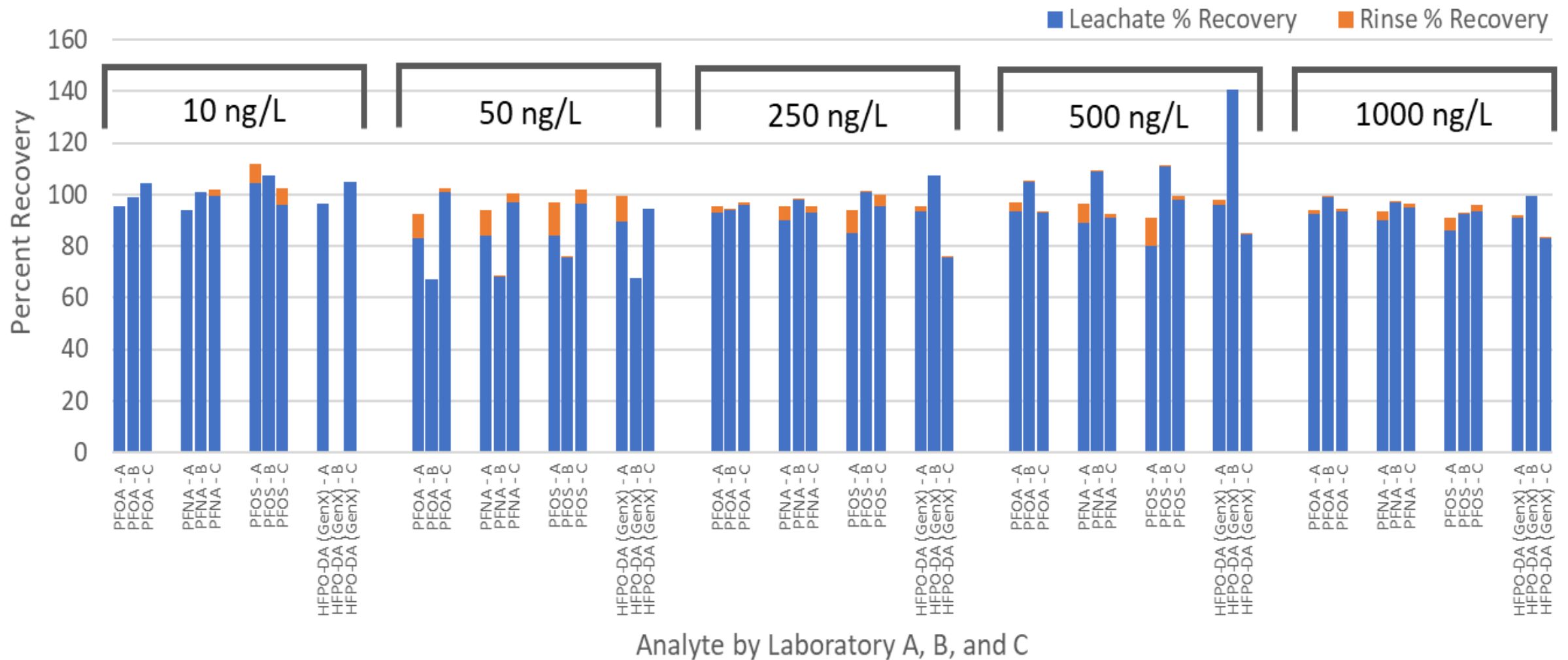
Comparison of Laboratory SPLP methods



	<u>Leachate Vol. (L)</u>	<u>SPLP extraction time (hrs.)</u>	<u>Filtration post- extraction?</u>	<u>MeOH rinse Vol. (mL)</u>	<u>Leachate vol. (mL) extracted by SPE</u>	<u>SPE Extraction solvent Vol. (MeOH)</u>	<u>Concentrated Vol. (mL)</u>	<u>LC injection Vol. (μL)</u>	<u>Purchased Fortification Standards</u>
Lab A	1	19	yes, Glass fiber filter	80 to 110	125	2 x 5 mL of MeOH with NH ₄ OH	1 mL (MeOH:H ₂ O solution)	4	Absolute Standards
Lab B	2	16	yes, 0.70 um filter, 0.25 um syringe filter when transferring final extract	70	250-300	28 mL	1 mL (MeOH:H ₂ O, 80:20)	3	Wellington and Cambridge Isotopes
Lab C	2	18.25	yes	~70	240-283	2 x 4 mL aliquots	10 mL (MeOH:H ₂ O, 80:20)	20	Wellington

PFOA, PFNA, PFOS, and Gen X

Percent Recoveries (across 5 spike conc.)



Leachate: SPLP Percent Recoveries for PFAS



Contaminant	CAS No.	10.0 ng/L	50.0 ng/L	250 ng/L	500 ng/L	1000 ng/L	Total Averages
PFNA	375-95-1	98.2	82.9	93.6	96.3	94.0	93.0
PFOA	335-67-1	99.5	83.6	94.2	97.1	95.1	93.9
PFOS	1763-23-1	102.7	85.2	93.7	96.1	90.6	93.7
GenX	13252-13-6 & 6203780-3	100.7	83.9	91.9	107	91.2	94.9

MeOH Rinsate: SPLP Percent Recoveries for PFAS



Contaminant	CAS No.	Range of Three Labs	Total Averages
PFNA	375-95-1	0 – 10.2	2.6
PFOA	335-67-1	0 – 9.6	1.4
PFOS	1763-23-1	0 – 13	4.4
GenX	13252-13-6 & 6203780-3	0 – 9.8	1.1

Leachate: SPLP Percent Recoveries with %RSD for PFAS

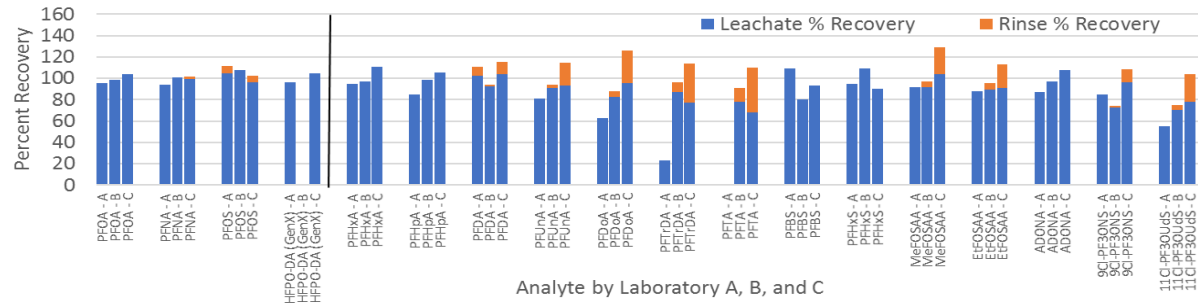


Contaminant	CAS No.	10 ng/L	50 ng/L	250 ng/L	500 ng/L	1000 ng/L
		Three Lab Average				
PFNA	375-95-1	98.2 ± 3.8	82.9 ± 17.4	93.6 ± 11.3	96.3 ± 11.3	94.0 ± 3.6
PFOA	335-67-1	99.5 ± 4.4	83.6 ± 20.2	94.2 ± 1.6	97.1 ± 7.0	95.1 ± 3.7
PFOS	1763-23-1	102.7 ± 5.7	85.2 ± 12.4	93.7 ± 8.7	96.1 ± 16.0	90.6 ± 4.5
GenX	13252-13-6 & 6203780-3	100.7 ± 5.9	83.9 ± 17.3	91.9 ± 17.3	107.0 ± 27.6	91.2 ± 9.1

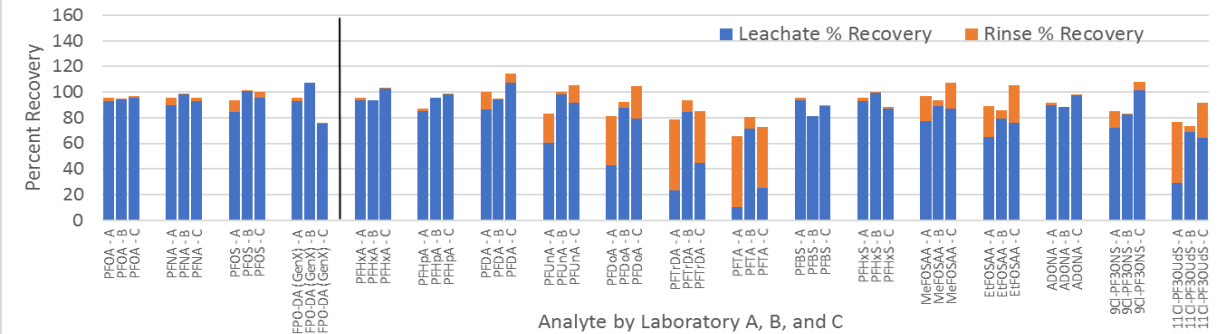
SPLP PFAS Percent Recoveries



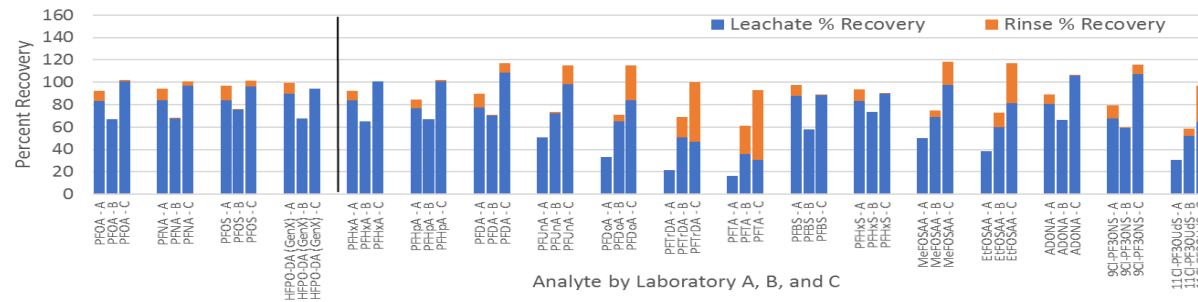
10 ng/L Spike Concentration



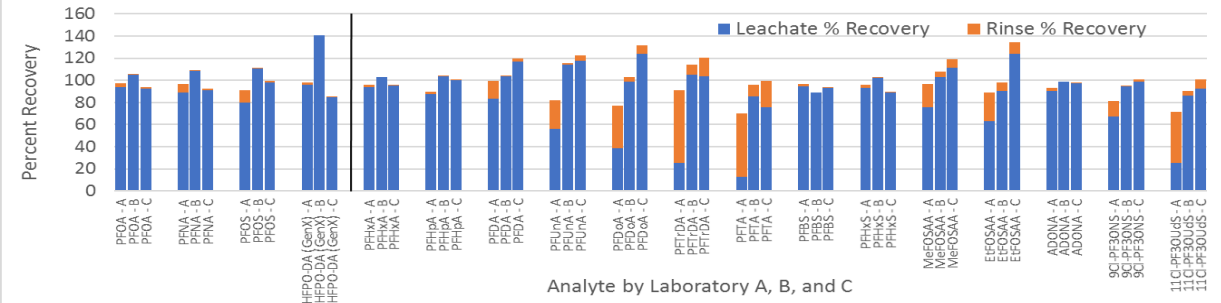
250 ng/L Spike Concentration



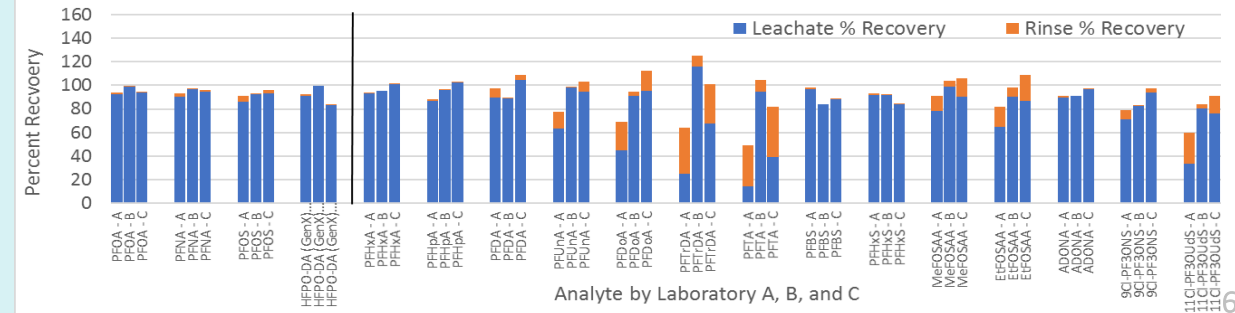
50 ng/L Spike Concentration



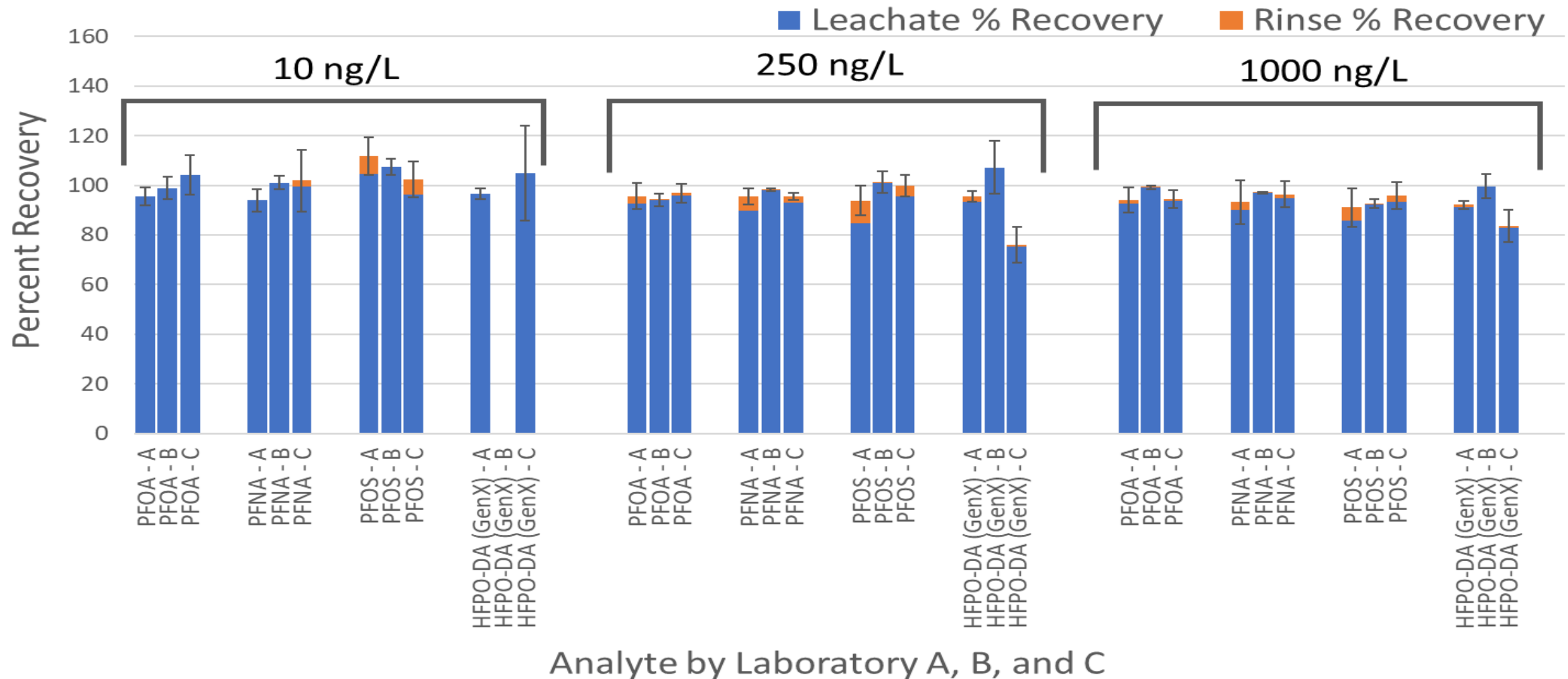
500 ng/L Spike Concentration



1000 ng/L Spike Concentration



Duplicate Analyses: Average Percent Recoveries with %RSD



Synthetic Precipitation Leaching Procedure (SPLP) Research Conclusions



- Data indicate acceptable percent recoveries for PFOA, PFNA, and PFOS without having to modify the SPLP method
- Data indicate acceptable percent recoveries for GenX
- SPLP can be used to generate site-specific SRS-MGW using the ARS process
- Data and conclusions will be shared with other state agencies and EPA

PFAS Interim Soil Standards

November 10, 2022



Questions?

PFAS Interim Soil Standards

November 10, 2022



Break

Training will resume shortly

Interim Remediation Standards and Applicability

November 10, 2022



Allan Motter, Section Chief
Contaminated Site Remediation & Redevelopment Program
Bureau of Environmental Evaluation & Risk Assessment

Applicability of the PFAS Interim Remediation Standards Process



- Applicable to all sites in the CSRR Program
 - If PA or equivalent evaluation rules out PFAS, then no need to collect samples for PFAS analysis
 - If SI indicates no PFAS above Interim Remediation Standards, then no need to carry forward to RI/RA
 - No order of magnitude provision as there were no previous standards
 - No phase-in period as there were no previous standards (effective and enforceable as of October 17, 2022); however, similar to the interim ground water standards, there will be an allowance to create a separate case with separate timeframes to address these soil contaminants

Applicability of the PFAS Interim Remediation Standards Process



- When do I need to address PFAS
 - New Sites
 - Address PFAS in PA or Equivalent Evaluation
 - (i.e., #2 fuel oil vs. #2 fuel oil fire with firefighting foam applied)
 - Active Sites
 - Address PFAS in PA Addendum (or Equivalent Evaluation) or via SI/RI Sampling
 - Sites that Received Restricted RAO
 - Address PFAS in the Next Biennial Protectiveness Certification
 - Sites that Received Unrestricted RAO
 - Address in PA or Equivalent Evaluation when Site Reenters CSRR Program

Contaminants of Emerging Concern (CEC) Timeframes

November 10, 2022



Rafael Rivera, Section Chief
Contaminated Site Remediation & Redevelopment Program
Bureau of Case Assignment & Initial Notice

Guidance Document



- Addressing Contaminants of Emerging Concern (CECs) and Remedial Investigation and Remedial Action Timeframes for Existing Cases (October 17, 2022)
- <https://www.nj.gov/dep/srp/guidance>
 - Administrative Guidance Section
 - Contaminants of Emerging Concern: timeframe issues for existing cases

New CEC Discharges



- CECs identified as a new discharge shall be reported to DEP Hotline (1-877-Warn-DEP, 1-877-927-6337) or WARN NJDEP App
- **Two options for CECs discharges:**
 - 1. Merge the new incident via the Confirmed Discharge Notification (CDN) online service into the existing case (LSR Activity)**
 - Remediation must be completed within the existing case timeframes
 - Extension requests are an option only if the timeframes have not passed and in compliance or time to request an extension has not passed (30 days for Regulatory-60 days for Mandatory)
 - 2. Do not merge the CEC incident into the existing case by not selecting the existing case (LSR Activity) during CDN submission**
 - New timeframes will be established based on when the CEC discharge was identified
 - Retention to new case (LSR Activity) required
 - Annual Remediation Fee Form (ARFF) service required-CAT-1+ Media Fee, if applicable (Only one GW fee is required if two active cases (LSR Activities))
 - All required submissions (IRE, RI, RA)

NOTE: Check the DataMiner Case Tracking Tool report for timeframes associated with each case (LSR Activity)

CDN Service

[My Workspace](#)[User Profile](#)[Certifications](#)[Payments](#)[Documents and Forms](#)[Permit Folder](#)

Version: 10.0.22

Currently logged in: Rafael Rivera (RAFAELRIVERA)

Server: Server_1

007216

US GAS BERLIN CIRCLE LLC

[Help](#) | [Logout](#)

Combine Incident with Existing Case

Click the checkbox 'I do not see a suitable activity' if you do not want to combine the incident with an existing case.

The grid below contains a list of Activities (Cases) that are associated with the Facility that you selected on the previous 'Facility Selection' page. Please select an Activity (Case) only if your client is associated with the Activity and would like this Discharge to be combined with that Activity, and the existing remedial timeframes will be met. If your client is not associated with any of these Activities or does not want this Discharge combined, do not make a selection of an Activity and select the checkbox stating 'I do not see a suitable activity listed above'. If an Activity (Case) is not chosen, one will be created automatically.

Select	Activity Number	Activity Type	Case Tracking Number	Status	Status Date	Case Name	Document Title
☐	LSR200001	LSRP New Case	184157	Active	11/09/2020	US GAS BERLIN CIRCLE LLC (GULF)	20-06-18-1251-38

Clicking a column title will sort the table by that column.

☐ I do not see a suitable activity listed above.

[Clear](#)[Continue](#)

Please Note

You may click on a previously visited page (above) to navigate back to that screen.

Select: “I do not see a suitable activity listed above” if you **DO NOT** want to merge into the existing case and establish new timeframes

Test Your Knowledge



When a CEC is discovered at a site, it can be merged with the existing case, or a new case can be created.

- A. True
- B. False

Test Your Knowledge



When a CEC is discovered at a site, it can be merged with the existing case, or a new case can be created.

- A. **True**
- B. False

If an Entire Site Response Action Outcome (RAO-E) is pursued/required (e.g., ISRA) and CEC is not tracked under the existing case:

- RAO-As must be issued for all non-CEC areas of concern (AOCs) for the existing case (LSR Activity) within the established timeframes
- Billing will be turned off for the existing case (LSR Activity) if the only remaining AOC is the CEC being tracked under a new case (LSR Activity). Must request to stop billing and ARFF will be required for new CEC case (LSR Activity) to include GW, if applicable
- The requirement for RAO-E will be deferred to the timeframe established for the CEC case (LSR Activity)
- RAO-E can be issued when both the existing case (LSR Activity) and CEC case (LSR Activity) are complete

Expedited Timeframe



The Department reserves the right to establish an expedited timeframe for any case in accordance with N.J.A.C. 7:26C-3. Such situations include, but are not limited to, cases involved in litigation, cases posing imminent risk to public health and safety or the environment, and cases subject to direct Department oversight

Example for New CEC Case (LSR Activity)



- CEC Soils Only Case
 - Date Remediation Required to be Initiated 10/17/22
 - Remedial Investigation Regulatory timeframe 10/17/2025 (MTF 10/17/2027)
 - Remedial Action Regulatory timeframe 10/17/2028 (MTF 10/17/2030)
- CEC GW Case
 - Date Remediation Required to be Initiated 5/17/22
 - Remedial Investigation Regulatory timeframe 5/17/2027 (MTF 10/17/2029)
 - Remedial Action Regulatory timeframe 5/17/2032 (MTF 10/17/2034)

- **General Questions/Extensions/Lengthening/Media/DataMiner Concerns**
 - BCAIN Duty Officer (609) 292-2943
 - SRWM_NJEMS@dep.nj.gov (Data errors only)
- **Remediation Timeframes**
 - Consequences if Missed/Direct Oversight Requirements
 - Including denials to Extension Requests
 - Compliance Assistance Duty Officer 609-633-1480

Submit all Remedial Timeframe Notifications via email to
srp_submissions@dep.nj.gov

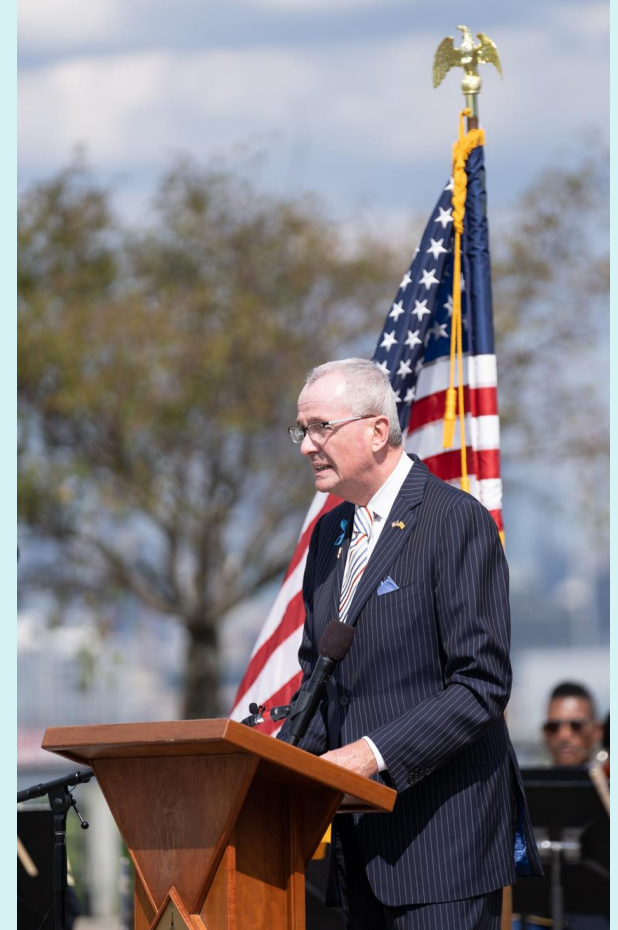
Paper copies will not be required, unless requested by the Department

PFAS Interim Soil Standards

November 10, 2022



Questions?



Thank you!

