Contaminants of Emerging Concern
Frequently Asked Questions (version August 5, 2021)

EVALUATION

When do hazardous substance discharges have to be reported and why?

Pursuant to the Spill Compensation and Control Act (N.J.S.A.58:10-23.11b) a "Discharge" is defined as "any intentional or unintentional action or omission resulting in the releasing, spilling, leaking, pumping, pouring, emitting, emptying or dumping of hazardous substances into the waters or onto the lands of the State, or into waters outside the jurisdiction of the State when damage may result to the lands, waters or natural resources within the jurisdiction of the State."

This definition is further refined at the Discharge of Petroleum and Other Hazardous Substances Rules (N.J.A.C. 7:1E-5.3) to exclude discharges of hazardous substances "pursuant to and in compliance with the conditions of a valid and effective Federal or State permit."

A discharge of a hazardous substance is required to be reported pursuant to N.J.A.C. 7:1E-5.3 immediately (within 15 minutes) after a discharge commences by any person or persons responsible for a discharge who knows or reasonably should know of the discharge by calling the Department's Hotline at (877) WARN DEP (927-6337).

Each discharge of a hazardous substance has its own set of facts including, but not limited to, the volume discharged, the duration of the discharge, impacts whether to land and/or water, and who is responsible. The person or persons responsible for discharging a hazardous substance must report the discharge immediately so remediation can begin. The Department will evaluate the facts and use its enforcement discretion to compel responsible parties to investigate and clean up the discharge if they do not do so of their own accord.

For more information regarding incident reporting and timeframes for contaminants of emerging concern (CECs) please review, the Department's administrative guidance "Addressing Contaminants of Emerging Concern (CECs) and Remedial Investigation and Remedial Action Timeframes for Existing Cases" dated The document is available on the Department's web page at https://www.nj.gov/dep/srp/guidance/.

What are the obligations of a person responsible for conducting the remediation (PRCR) relative to contaminants of emerging concern, such as per- and polyfluoroalkyl substances (PFAS), 1,4-dioxane 1,2,3-trichloropropane (1,2,3-TCP) and perchlorate?

A PRCR's obligations for CECs are no different than their obligations for any other contaminant, including but not limited to, notification to the Department via the NJDEP Hotline for all discharges and, as necessary, remediation of any such discharges pursuant to N.J.A.C. 7:26C-1.7.

What are the responsibilities of a licensed site remediation professional (LSRP) relative to CECs such as PFAS, 1,4-dioxane, 1,2,3-TCP and perchlorate?

An LSRP's responsibilities for CECs are no different than their responsibilities for any other contaminant. This includes satisfying all notification requirements and ensuring that the remediation of any such discharges is protective of public health and safety and the environment.

Is sampling required to satisfy the requirement to evaluate CECs (PFAS, 1,4-dioxane, 1,2,3-TCP and perchlorate)?

The evaluation required for PFAS, 1,4-dioxane, 1,2,3-TCP and perchlorate must be conducted by an LSRP or other environmental professional for every site currently undergoing remediation to determine if PFAS, 1,4-dioxane, 1,2,3-TCP and perchlorate is a contaminant of concern and if further investigation or clean up is required. This CEC evaluation does not necessarily require sampling, however, multiple lines of evidence should be considered to determine if sampling and subsequent remediation is required. The results of this evaluation must be included in the next remedial phase report submitted for Department review as previously noted in the Department's administrative guidance for perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) [see Department listservs dated March 13, 2019 (https://www.nj.gov/dep/srp/srra/listserv_archives/2019/20190313_srra.html) and May 28, 2019 (https://www.nj.gov/dep/srp/srra/listserv_archives/2019/20190528_srra.html)].

Will NAICS and SIC codes be used by the Department as a default assumption that an investigation will or will not be required for PFAS?

The Department will not be using the North American Industrial Classification Coding System (NAICS) or Standard Industrial Classification (SIC) codes as default assumptions to determine if PFAS were stored, used or discharged at a specific site. The CEC evaluation must be conducted by an LSRP or other environmental professional on a site-specific basis to determine if the operations at the site may have involved PFAS, if these operations may have involved discharges of PFAS, and if further evaluation or sampling is needed.

The NAICS/SIC provide information that may be useful for investigators regarding the primary industrial use(s) of a site. The table available at https://www.nj.gov/dep/srp/emerging-contaminants/PFAS_Handling_Industry_Sectors.pdf is a preliminary evaluation that identifies industrial sector codes in NAICS/SIC that may be associated with PFAS use (Note: this table was compiled by Eastern Research Group). This information can be used as a line of evidence, not to eliminate PFAS as a potential contaminant of concern at a site.

Additional PFAS Industrial Sector Resources:

- Reportable Chemicals under EPA Toxic Release Inventory- Federal Register https://www.federalregister.gov/documents/2021/06/03/2021-11586/implementing-statutory-addition-of-certain-per--and-polyfluoroalkyl-substances-pfas-to-the-toxics
- Association Of State Drinking Water Administrators https://www.asdwa.org/wp-content/uploads/2020/05/ASDWA-PFAS-SWP-Technical-Appendix_FINAL3.pdf

When must CECs be evaluated for sites at which remediation is complete and a final remediation document has been issued?

For sites that have received a restricted use or limited restricted use final remediation document, the CEC evaluation is to be conducted for the site or permit-applicable areas of concern (AOCs) and submitted with the next remedial action protectiveness certification. For sites or AOCs that have received an unrestricted use final remediation document, a CEC evaluation is to be conducted in the next triggering event.

INVESTIGATION

What method should I use to analyze potable and non-potable water for PFAS?

The Department offers certification for the USEPA-validated laboratory analytical methods for PFAS in drinking water. These methods are USEPA Methods 533, 537 and 537.1. The Department also offers certification for non-potable-water methods, all of which are laboratory specific, SOP-defined methods. A list of certified laboratories for potable water and non-potable water methods is available on DataMiner (https://www13.state.nj.us/DataMiner) for analysis of PFAS, including PFNA, PFOS, and PFOA.

To find a certified laboratory:

- Select "Search by Category"
- Open the dropdown list and select "Certified Laboratories"
- Click "Submit"
- Scroll down the list (which is in alphabetical order)
- Click on the compound to run the report of certified laboratories

Please note, it is possible for a laboratory to be listed as being certified for a particular parameter [certification obtained through National Environmental Laboratory Accreditation Program (NELAP) primary certification in a state other than New Jersey] but NOT eligible to report data to New Jersey. Therefore, when determining certification status for New Jersey, it is important to also check the laboratory's "Annual Certified Parameter List" in DataMiner. You will need the Lab Number that can be obtained from the steps outlined in the above DataMiner query. Again, once in DataMiner,

- Select "Search by Category"
- Open the dropdown list and select "Certified Laboratories"
- Click "Submit"
- Click "Annual Certified Parameter List"
- Enter Lab Number
- Click "Submit"
- Review the "Eligible to Report NJ Data" column for parameter(s) of interest. If "YES" is entered, the laboratory is deemed acceptable to report data for the parameter(s) in New Jersey.

What method should I use to analyze soil for PFAS?

There are two options available when choosing a PFAS analytical soil method. The first option is available to those whose concerns are immediate and where the Office of Quality Assurance (OQA) does not yet offer certification. The second option will be available later in calendar year 2021.

Option 1:
Uncertified laboratory SOP-defined analytical methods (based on modified USEPA Methods 537, 537.1, or 533) for soils are currently performed by laboratories. In the interim, while the OQA moves forward with offering certification for PFAS in solid/chemical materials (SCM) by a laboratory developed SOP, facilities may request approval through a site-specific Quality Assurance Project Plan (QAPP). Any proposed soil method must be based on an isotope dilution technique, must be included in the required site-specific QAPP pursuant to N.J.A.C. 7:26E-2.2, and must address the data quality objectives and any analytical limitations when using the proposed method. Additionally, although not required, the laboratory proposing the method should hold certification through the OQA in one of the available PFAS methods for which certification exists to demonstrate familiarity with analyzing PFAS compounds.

LSRPs should use professional judgement when using unvalidated, uncertified soil analytical methods and review any such method prior to its use. While these methods may generally be utilized for purposes such as data to support the development of conceptual site models, investigation and evaluation of source areas, or for the implementation of interim remedial actions, the Department reserves its right to reject any data from an unvalidated, uncertified method to the extent the Department concludes that any particular method is unreliable or inappropriate for a particular purpose.

Option 2:
The USEPA is currently developing and validating an analytical PFAS method that could be used to analyze solids, groundwater, surface water, wastewater, leachate, biosolids and tissue. Prior to the COVID-19 pandemic, USEPA had projected that the draft validated method for multimedia (including solids) would be released in September 2020. Currently, there is no definitive date as to when the method will be published and available; however, it is expected that the method should be available by the end of 2021.

Due to the evolving concerns with potential PFAS contamination and the ever increasing need to remediate sites so contaminated, the Department has determined that it will be offering laboratories the ability to request certification for laboratory developed, SOP-defined PFAS methods in soil as alternate test procedures (ATPs).

The OQA issued a notification announcing the ability for laboratories to apply for PFAS in SCM as an ATP effective July 1, 2021. Once the OQA begins to accept the applications and perform the data package reviews for the certification, they should have the laboratories certified for PFAS in SCM within 4 to 6 months (depending on the number of laboratories applying, whether the applications come to the Department en masse, and the quality of the submittals). During the application review process, if it is determined that an on-site audit be performed prior to granting certification, the certification process could take longer than 6 months. The certification will be specific to each laboratory and will be listed as their SOP#/revision#, similar to how OQA is currently handling the non-potable water PFAS certifications. All applications for this certification will be processed in the order in which they are received.

The Department will update the regulations and guidance as the knowledge and science of PFAS and the analytical methods to accurately quantify these contaminants continues to progress.

What soil criteria/standards should be used when evaluating PFAS contamination?

The Department is currently evaluating the development of Residential and Non-Residential Interim Soil Remediation Standards for the ingestion-dermal exposure pathway for PFOS, PFOA and PFNA. Additional information will be made available as this evaluation proceeds. The migration to ground water pathway is discussed in the following question.

How should the PFAS migration to ground water pathway be evaluated?

The soil migration to ground water pathway is a significant concern and presents several technical challenges. The Synthetic Precipitation Leaching Procedure, SW-846 Method 1312 (SPLP) was not designed for use with PFAS and may not provide optimal results. Addressing the migration to ground water pathway presents difficulties due to the unique characteristics of PFAS. PFAS are mobile and highly soluble,and they have low health-based concentrations established for drinking water. The current state of the associated science is rapidly evolving. The Department and USEPA will be conducting research to identify and address the issues confronting the use of the SPLP for PFAS containing soils.

At this time, the Department recommends delineating to the Laboratory Reporting limits when investigating PFAS in soil. The Department will provide additional information as it becomes available for the PFAS soil migration to groundwater pathway.

How should a commingled plume scenario with PFAS be evaluated?

When evaluating a commingled plume scenario with PFAS, the evaluation should be conducted as outlined in the Department's Commingled Plume Technical Guidance Document (August 2019) (available at https://www.nj.gov/dep/srp/guidance/), similar to any other contaminant of concern. Using the tools outlined in the guidance, an LSRP should gather the appropriate lines of evidence to support the commingled plume claim. For information on PFAS environmental fate and transport processes and site charachterization, see Chapters 5 and 10 of the ITRC PFAS Technical and Regulatory Guidance Document: https://pfas-1.itrcweb.org/5-environmental-fate-and-transport-processes/, https://pfas-1.itrcweb.org/10-site-characterization/ and the associated Fact Sheets https://pfas-1.itrcweb.org/wp-content/uploads/2020/10/f_and_t_508_2020Aug.pdf.

While the Department is not currently aware of any definitive forensic methods, the use of analyte ratios or evaluation of the site-specific PFAS (using the entire suite of PFAS provided by the analytical method) may prove helpful in determining if a commingled scenario exists.

How should PFAS ground water contamination migrating onto a site from an off-site source be evaluated?

The evaluation of PFAS migrating onto a site from an off-site source is the same as an evaluation for any other contaminant and requires the completion of an entire site preliminary assessment that includes the evaluation of any potential PFAS that may have been used at the site. In some situations, a site

investigation may also be required to rule out any PFAS contribution from the site. The process for evaluating and gathering the lines of evidence to make the off-site source claim are outlined in the Department's Off-Site Source Ground Water Investigation Technical Guidance (September 2018) (https://www.nj.gov/dep/srp/guidance/) and Administrative Guidance for Addressing Unknown Off-Site Sources of Contamination (January 2016) (https://www.nj.gov/dep/srp/guidance/).

How should an LSRP address the detection of PFAS that do not have a Ground Water Quality Standard (GWQS)?

All detected contaminants must be reported in accordance with the analytical method. All discharges must be remediated pursuant to applicable rules and guidance in accordance with N.J.S.A. 58:10c-14c. The LSRP must ensure that the remediation is protective of public health and safety and the environment based upon all information in the possession of the LSRP and the PRCR. If the PRCR and/or LSRP has information regarding the presence of PFAS or other CEC that is not currently a listed hazardous substance, the PRCR is still responsible for the remediation (including investigation) of such contaminant if the PRCR has reason to believe the presence of the contaminant poses a risk to public health or safety or the environment.

Does the detection of CECs in excess of the applicable standard at a site currently being remediated trigger additional public notification requirements?

The detection of a new contaminant of concern, in and of itself, would not trigger new or additional public notification requirements where such notification previously has been made for other contaminants. However, where CECs are discovered in excess of thresholds requiring public notification, the notification requirements apply just as they would for other non-CEC constituents. Information on the CECs should be included in the communications that are prescribed under the existing notification requirements pursuant to the Administrative Requirements for the Remediation of Contaminated Sites:

- the initial and periodic communications pursuant to N.J.A.C. 7:26C-1.7(h);
- the communications required when a determination has been made that contamination has migrated off site pursuant to N.J.A.C. 7:26C-17(l); and
- the public notification pursuant to the requirements of N.J.A.C. 7:26C-7.3 when the Department establishes a ground water classification exception area.

Does an existing Remediation Funding Source (RFS) need to be reevaluated and amended to address CECs?

An existing RFS must be reevaluated in accordance with N.J.A.C. 7:26C-5.11 to address CECs just as it would be for any other changes to site conditions which have the potential to increase or decrease the cost of the remediation. The RFS cost estimate must include all costs to complete the remediation of all areas of concern and all impacted media through all phases of remediation, including any long-term operation, maintenance and monitoring costs for anticipated engineering controls. The estimate should be inclusive of all known contaminants, including CECs. As with any contaminant, the proposed remediation and cost estimate for CECs should be based in part on the LSRP's professional judgment using known, available data in connection with the anticipated end-use for the site. See this link for information regarding RFS: https://www.nj.gov/dep/srp/rfs/.

There are waste classification and CERCLA concerns for disposal of PFAS-contaminated soil prior to the adoption of PFAS soil standards. Are there disposal facilities that will accept PFAS-contaminated soil?

Legally acceptable soil disposal options currently do exist for PFAS-contaminated soil. However, the characteristics of PFAS and their long-term ramifications has made disposal (i.e., landfill disposal) potentially problematic. Many landfills may not accept PFAS-contaminated wastes. The Interstate Technology and Regulatory Council (ITRC) Technical and Regulatory Guidance Document (https://www.itrcweb.org/) includes information on treatment technologies, and provides a complete description of remediation options and their effectiveness. It should be noted that potential concerns have been identified for incineration, which is thought to destroy PFAS at optimal temperature and residence times, but effectiveness remains uncertain. USEPA is currently studying the conditions needed to achieve full mineralization/destruction of PFAS. USEPA is currently drafting Interim Guidance on Destroying and Disposing of Certain PFAS and PFAS-Containing Materials (https://www.epa.gov/pfas/interim-guidance-destroying-and-disposing-certain-pfas-and-pfas-containing-materials-are-not).

Parties may consider management of investigation generated materials either on site or off site. The Technical Requirements for Site Remediation at N.J.A.C. 7:26E-1.5 provides that soils from drill cuttings and test pit excavations may be returned to the original location provided that:

1. Drill cuttings are returned in accordance with the Well Construction and Maintenance; Sealing of Abandoned Wells rules, N.J.A.C. 7:9D;
2. Neither free product nor residual product is present;
3. The contamination present is addressed as part of the remediation of the AOC in compliance with this chapter; and
4. The replacement of the soil does not pose any additional threat to public health, safety, or the environment.

Waters generated during remediation must be sampled prior to disposal. If found to be contaminated, the water must be treated and managed with the Department's approval or the water will need to be treated off site at a licensed facility.

How are remediation timeframes for CECs addressed for active cases?

See the Department's administrative guidance titled "Addressing Contaminants of Emerging Concern (CECs) and Remedial Investigation and Remedial Action Timeframes for Existing Cases" dated July 30, 2021. The document is available on the Department's web page at https://www.nj.gov/dep/srp/guidance/.

Would the Department consider an RAO notice created for PFAS remediation wherein the remediation is considered complete based on available science to allow sites to meet applicable mandatory remediation timeframes?

The Department is not considering the addition of a PFAS-specific notice to the RAO.

What is required if a source of CEC contamination is identified during the remedial action protectiveness certification evaluation?

As would be required for any other contaminant, the discharge must be reported to the Department's Hotline at (877) WARN DEP (927-6337). A new set of timeframes will be established for the CEC incident in accordance with the Department's administrative guidance titled "Addressing Contaminants of Emerging Concern (CECs) and Remedial Investigation and Remedial Action Timeframes for Existing Cases" dated July 30, 2021. The document is available on the Department's web page at https://www.nj.gov/dep/srp/guidance/. The existing soil or ground water Remedial Action Permit should not be used to manage the investigation of the newly identified CEC.

Would prior Preliminary Assessment/Site Investigation/Remedial Investigation/Remedial Action (PA/SI/RI/RA) reports have to be amended if an AOC is found to be a source of a newly identified CEC?

The Department does not require the amendment of previously submitted documents when new contaminant information is discovered, however, if the newly identified CEC is being remediated under the existing case, the next submission must include the new information in accordance with the Technical Requirements for Site Remedation, N.J.A.C. 7:26E. If the CEC is being remediated as a new case, then the information would be provided with the applicable report, again, in accordance with the Technical Requirements for Site Remedation, N.J.A.C. 7:26E.

Will the Department accept a determination that PFAS contamination detected at a site is attributable to a contaminated water supply and, as an off-site source, would not require remediation by the property owner or operator at that location?

LSRPs and other environmental professionals should employ the use of multiple lines of evidence, their best independent professional judgement and available Department guidance documents including, but not limited to, the Off-Site Source Ground Water Investigation Technical Guidance (September 2018) (https://www.nj.gov/dep/srp/guidance/) and the Administrative Guidance for Addressing Unknown Off-Site Sources of Contamination (January 2016) (https://www.nj.gov/dep/srp/guidance/) to make such a determination. The Department will evaluate these claims on a case-by-case basis.

The Department has established a Technical Consultation process to allow LSRPs, other environmental professionals, and remediating parties to discuss technical issues to achieve compliance with the Department's applicable regulatory requirements and technical guidance. Please note, any recommendations provided by the Department during a Technical Consultation do not constitute a "Department approval" for any proposal or plan. Additional information on technical consultations can be found at https://www.nj.gov/dep/srp/srra/technical_consultation/.