Cross-cutting area: Disposal of PFAS contaminated materials & investigation derived waste

Remediation PFAS Guidance

Goal: Determine that PFAS-containing waste is properly characterized and managed. PFAS are classified as a hazardous waste under MERLA due to their potential to be a hazard to human health or the environment. Despite this definition, PFAS are not a listed or a characteristic hazardous waste under the federal Resource Conservation and Recovery Act (RCRA) law.

Waste and contaminated environmental media are produced during the site investigation and remediation life cycle stages. The need to dispose of PFAS-impacted materials may be present during other stages. This section applies to all life-cycle stages and cross-cutting areas. PFAS-impacted materials require proper transport, treatment, storage, and disposal to minimize potential risks to human health and the environment.

Definition: PFAS-impacted materials include but are not limited to environmental media, equipment, filter media, and rinse water, associated with a PFAS site investigation, remedial activities, or implementation of site institutional controls. These materials may be potentially impacted or known to be impacted.

Actions

Action 1: Characterize waste

During this stage, the potential risk to human health and the environment associated with the investigation derived waste (IDW) is determined. Samples of each media type will be assessed for PFAS. The process is similar to the Site Investigation stage where samples of each media type are collected to evaluate the presence of PFAS.

Prior to sample collection, ensure that potentially impacted waste materials are stored on-site in appropriate containers. The Minnesota Pollution Control Agency (MPCA) PFAS Sampling Guide (https://www.pca.state.mn.us/sites/default/files/p-eao2-27.pdf) outlines specific types of storage materials for potentially impacted media including:

- Aqueous media (e.g., drinking water, surface water and groundwater)
- Solid matrices (e.g., sediment and soil):
- Biological matrices (e.g., fish tissue)

Sample collection procedures are described in the Site Investigation section and outlined in the MPCA Sampling Guidance (https://www.pca.state.mn.us/sites/default/files/p-eao2-27.pdf). Ensure that the representative samples collected from IDW are:

- Media-specific
- Sufficient number to accurately represent the materials
- Appropriate sample type (i.e. grab, composite, etc.)

Appropriate analytical methods for each media type will be used to identify PFAS presence. See Table 2-1 in the *Site Investigation section* for a list of methods. Analytical results will be used to evaluate potential risk to receptors through a comparison against existing screening criteria for PFAS. Screening criteria may also be used as *de minimis* concentrations for impacted environmental media to determine the proper disposal options. Screening criteria could include applicable ambient concentrations for certain media or risk-based criteria for

groundwater, surface water, soil, and soil leaching values. See the Risk Assessment section for additional details on processes for determining whether waste has been impacted by PFAS. If it is determined that the on-site environmental media has been impacted, remedial approaches will be identified and the IDW generated as part of the investigation will need to be handled appropriately.

Action 2: Evaluate need for on-site treatment

If analytical results indicate that PFAS values exceed ambient or risk-based values, on-site treatment methods will ensure that the site is not re-exposed to contamination. On-site remedial options allow the mitigation of potential harm to human health and/or the environment. Materials used to treat the impacted media will also require appropriate waste management. The Remediation section provides additional information about current methods and technologies.

Action 3: Identify appropriate disposal options

If IDW cannot be treated on-site or the impacted media must be moved off-site, the waste should be evaluated and properly manifested. If the material to be disposed of is contaminated environmental media, reach out to the MPCA for a hazardous waste determination. If the material is going to be disposed of, two options exist for acceptance at a landfill depending on if the waste is a solid waste or a hazardous waste:

- If the waste is a solid waste, it may be disposed of at a RCRA subtitle D landfill dependent on the facilities Industrial Solid Waste Management Plan.
- If the waste is a hazardous waste, it must be disposed of at a RCRA subtitle C landfills.
    - Non-hazardous waste may be disposed of at a hazardous waste landfill but not vice-versa.

Off-site treatment at a permitted RCRA incinerator may also be an option.

Action 4: Ensure liability remains with appropriate party

Ensure that liability for the appropriate management of the waste remains with the party that generated the waste by properly filling out all waste manifests.