Tool 4.4: Considerations for Determining the Feasibility of In Situ Water Treatment

LIMITATION: The following table represents the state of technologies as of January 2022. EPA, DoD, and other agencies are leading ongoing research and technology evaluation, and users of this guidebook should refer to those agencies for the most up-to-date information on technologies and their applicability to the remediation project in question.

In Situ Groundwater Treatment Remedies — Major Factors Affecting Costs		
Item	**Potential to Affect Costs**	**Rationale**
	Capital	
System Design	High	Selection of a more intensive treatment (such as a grid-type layout in the source) may attain remedial goals faster than a barrier system along a property line.
Site Constraints	High	Site geology, hydrogeology (e.g., groundwater flow rates), current and future use, and other site factors which would affect placement of remediation elements.
PFAS Concentrations	High	PFAS concentrations will determine the quantity of in situ treatment media required.
Presence of Co-Contaminants (VOCs, sulfate, etc.)	High	Co-contaminants will have a significant impact on media consumption.
Treatment Goals	Medium-High	Goals will affect the degree of treatment (e.g., number of units required, type of units).
	O&M	
Hazardous Waste Regulations	High	Pending changes in PFAS hazardous waste classification will have significant impacts on long-term disposal costs for any soil generated as part of construction or spent media generated as part of gate changeouts, etc.

In Situ Groundwater Treatment Remedies — Major Factors Affecting Costs		
Item	**Potential to Affect Costs**	**Rationale**
Spent Media Generation/ Replacement Rates	High	Determination of site-specific spent media generation and replacement rates is critical to determining costs; spent media generation may be impacted by co-contaminant loadings

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