

Exposed to Potential Liability from PFAS in Groundwater?

PlumeShield:
Guaranteed Long-Term
Elimination of PFAS Risk





PlumeShield guarantees that our advanced PFAS remediation system eliminates the environmental risk of PFAS in groundwater

PlumeShield guarantees the use of PlumeStop®, the only *in situ* remedial technology proven to eliminate PFAS risk, which comprises the installation of strategically-placed filter zones. These filter zones are designed to effectively treat PFAS contaminants, reaching regulatory standards by sorbing the contaminants onto micron-scale carbon particles within the subsurface. Unlike remedial systems which require payment upfront, or when the system is installed, the PlumeShield-guaranteed system offers little financial risk to the property owner or stakeholders. Payment is only due upon documented performance. Additionally, the PlumeShield warranty is available in 10-year increments up to 30 years.

Better Management of Your Estimated Reserves Helps Avoid Costly Surprises

The PlumeShield-guaranteed remediation system involves a site-specific in-place filter design to treat PFAS. The key benefit to you, beyond the ability to address contaminant levels, is payment is due only when treatment goals are achieved in the designated “Performance Monitoring Wells.” This allows for an improved approach to managing costs, better managing your reserve, and avoiding any potential surprises.

Key Benefits

-  Very low cost compared to alternate treatment alternatives
-  Zero financial risk, as payment only due when targets are met
-  All maintenance included
-  10-Year warranty included with an option to extend up to 30 years
-  Rapid results
-  Technology approved by federal and state regulatory bodies
-  Sustainable – no ongoing pumping required
-  Zero waste generated for later disposal
-  Manage costs and avoid surprises
-  Estimate reserve with greater confidence
-  Reduces number of environmental contractors to manage



Benefits Compared to a Pump & Treat System

Technically viable methods currently employed to treat PFAS-contaminated groundwater rely on chemical sorption and can be grouped into two categories: *ex situ* and *in situ*. *Ex situ* treatments are well known, involving mechanical groundwater extraction and filtration using granular activated carbon or other filtration media (i.e., ion-exchange resins). Due to the extensive nature of most PFAS plumes combined with exceedingly low cleanup targets, pump and treat (P&T) systems will require decades of costly operation and maintenance (O&M).

O&M includes periodic changing out of the spent filtration media. As PFOA and PFOS move toward an official designation as a Hazardous Substance, the spent media is soon to become a Hazardous Waste under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

In the end, when factoring in many years of sustained pumping and hazardous waste generation, management and disposal, the cost to install and maintain a PFAS P&T system over a project life cycle will be exorbitant.

The PlumeShield-guaranteed advanced remediation system, by contrast, is an *in situ* PFAS treatment approach that is applied directly into the groundwater aquifer to intercept contaminants that move naturally through established flux zones. As groundwater

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passes through the filter zone, the PFAS sorb onto the carbon, resulting in a clean water discharge from the downgradient edge. By removing PFAS from groundwater, any potential for exposure to the PFAS is eliminated thus removing any risk to human health or the environment.



Guaranteed Performance

No payment until performance goals are met. Independent, third-party modeling suggests that a single PlumeShield-guaranteed treatment will effectively prevent PFAS migration for 50 years.



Substantial Cost Savings

The PlumeShield-guaranteed approach has been shown to be successfully implemented at a fraction of the cost of P&T, resulting in a true lifecycle cost savings of 10x.



Elimination of Hazardous Waste Streams and Recycling of PFAS Contaminants

Keeping the treatment *in situ* eliminates the generation of hazardous waste streams and the associated energy and costs to manage and dispose of them. Additionally, the PlumeShield-guaranteed PFAS treatment approach eliminates the need for landfilling or thermal incineration of spent media, both of which can act as potential pathways for recycling of PFAS back into the environment if they are not properly managed.



A Greener Approach

No power, no noise, and no emissions. The PlumeShield-guaranteed PFAS treatment system works with the natural movement of groundwater, passively sorbing contaminants out of the groundwater upon encountering a barrier. By instituting this passive approach, the generation of greenhouse gases and noise pollution due to pumping are eliminated.



10 Year Standard Warranty

Additional coverage
available for up to 30 years

Warranty

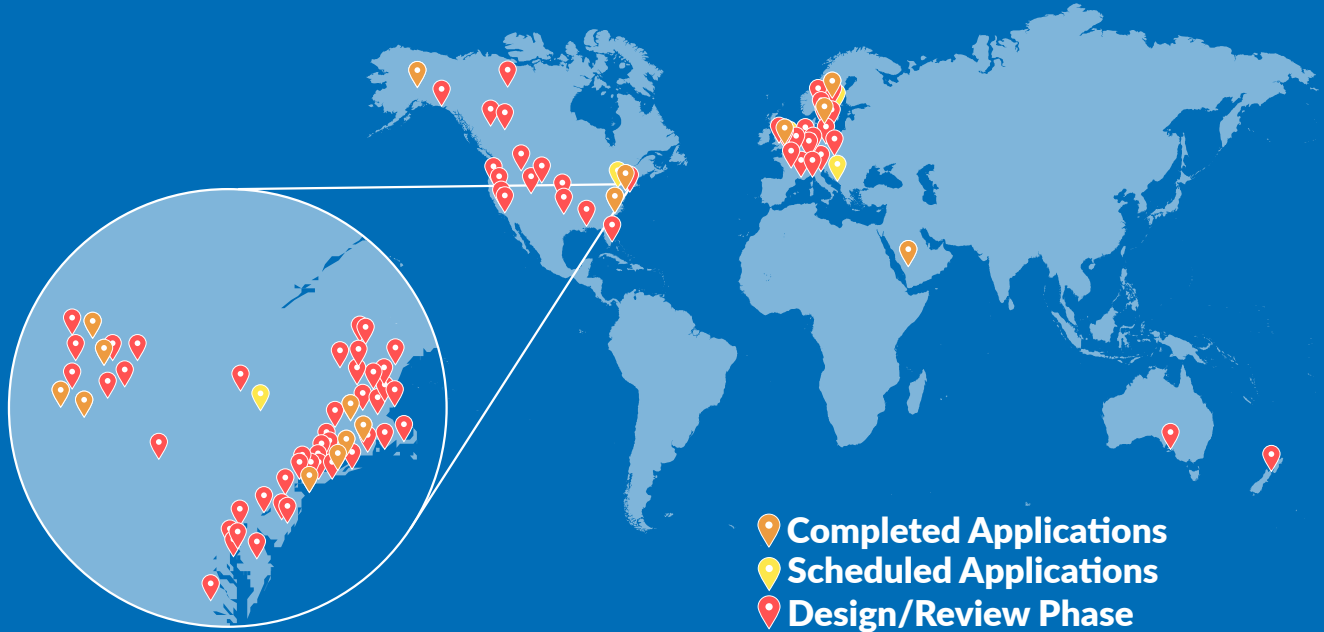
Trust that the Performance is Backed by the PlumeShield Extended Warranty

It is reassuring to know that PlumeShield provides a 10-year warranty. If a longer period warranty is required, REGENESIS can offer additional warranties up to 30 years, allowing you to be confident that PFAS risk and liability is effectively managed and eliminated for years to come.



Interested in learning if your site is right for PlumeShield?

Our team of dedicated technical sales managers are available to meet with you and your environmental and risk management teams to determine if your site is a good candidate for the PlumeShield-guaranteed system.



Proven Results

A Team With Proven PFAS Remedial Success



The PlumeShield-guaranteed system is installed and commissioned by the highly experienced REGENESIS Remediation Services team (RRS) and will require no further operation or maintenance. As this is a sustainable, environmentally responsible approach, you are able to reduce your carbon footprint as the remediation requires:

- ➔ No groundwater pumping
- ➔ No system operation
- ➔ No hazardous waste handling
- ➔ No thermal incineration or reactivation



Installation Steps To Guarantee Peak Performance:



Design Verification Testing performed by technical field experts



FluxTracer deployment/analysis to target subsurface contaminant mass flux zones



Site-Specific Design including:

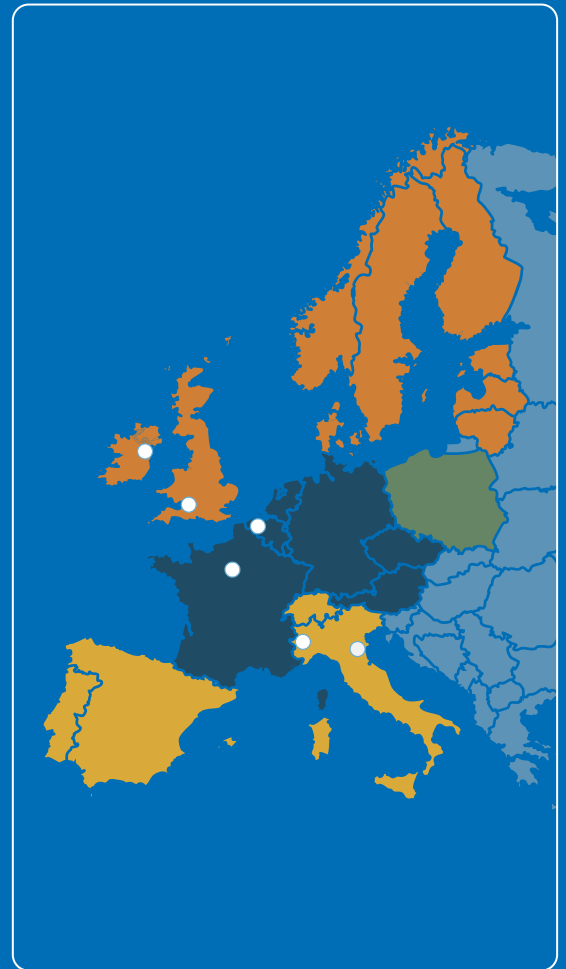
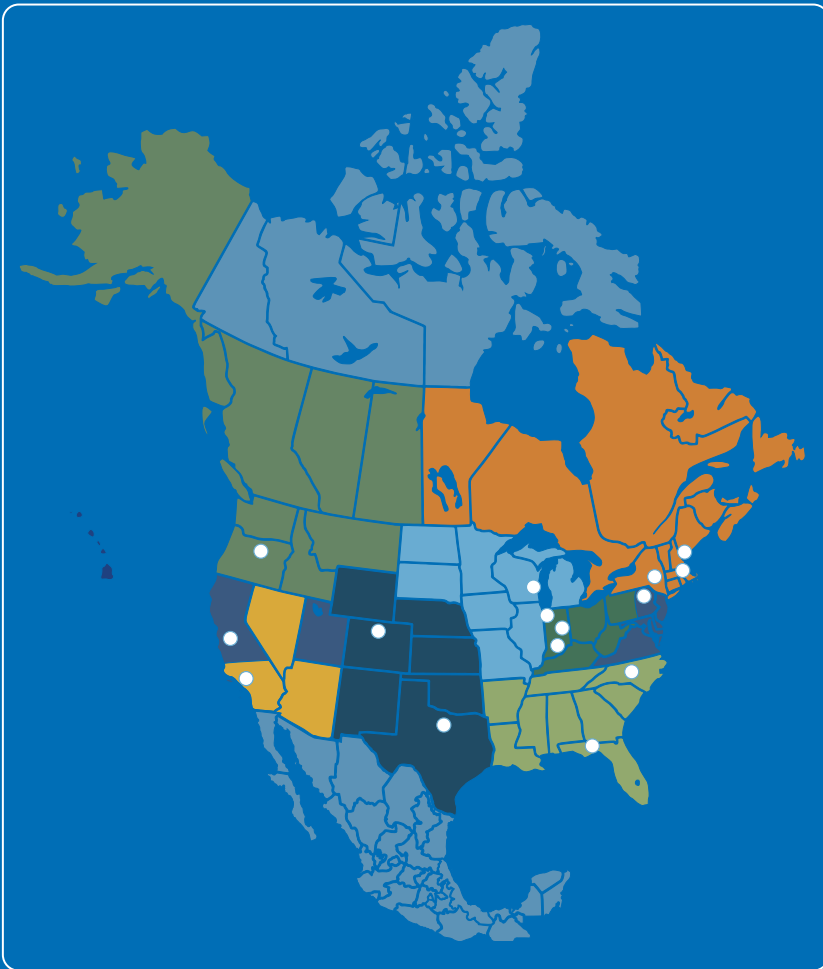
- ➔ Identification of Performance Monitoring Wells
- ➔ Performance criteria (performance goals for specific PFAS species to be achieved in Performance Monitoring Wells)
- ➔ Placement of filter zone(s) on site to accommodate future reinjection as may be required under requested warranty period.
- ➔ Dosing
- ➔ Spacing



Installation of PlumeStop Filter Zone(s)

- ➔ Product delivery, injection services, and site support
- ➔ REGENESIS will work with consultant to obtain necessary regulatory approvals

We're Ready to Help You Find the Right Solution For Your Site



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