

Range of Treatable Contaminants Guide



Range of Treatable Contaminants

REGENESIS® Products have been used to effectively treat a broad range of groundwater contaminants from petroleum hydrocarbons, to chlorinated solvents, pesticides, and metals. Contact us to discuss the treatability of your contaminant of concern and site details so that we can recommend the most effective REGENESIS solution.

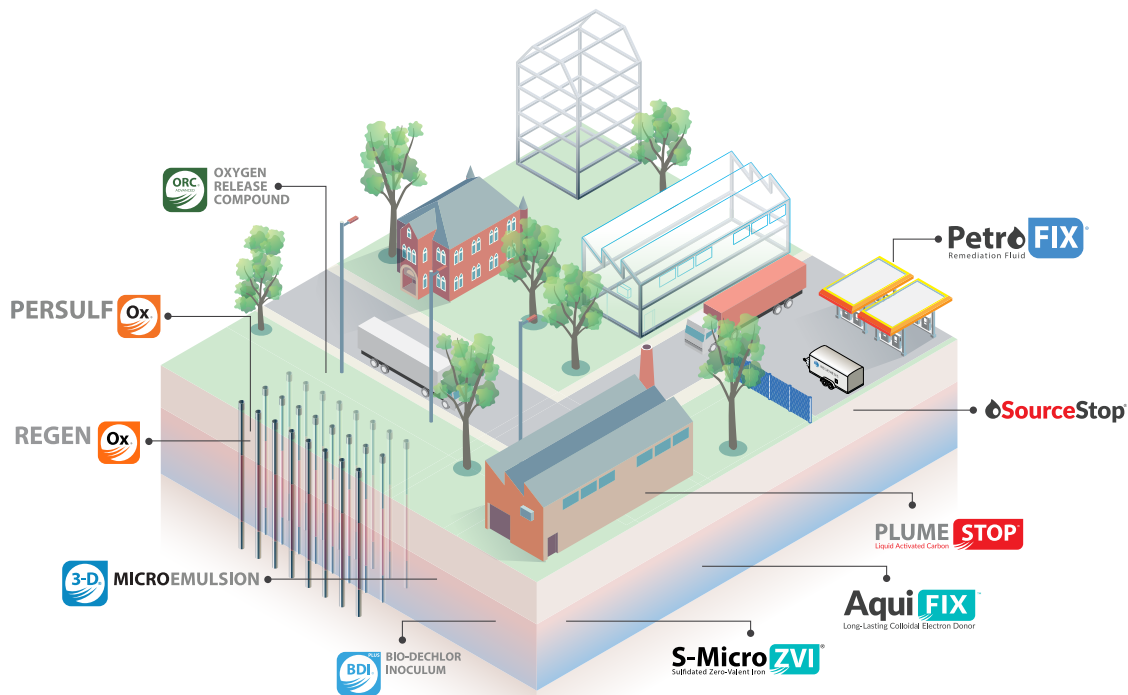
● = Contaminant treatable with REGENESIS Products

Range of Treatable Contaminants	Sorption			ISCO		Aerobic Bio	Anaerobic Bio			ISCR	
	PlumeStop	SourceStop	PetroFix	RegenOx	PersulfOx	ORC Advanced	3DME	AquiFix	BDI Plus	CRS	S-MicroZVI
PFAS											
Perfluoroalkyl carboxylates (PFCAs)	●	●									
Perfluoroalkane sulfonates (PFASs)	●	●									
Chlorinated Solvents											
Tetrachloroethylene (PCE)	●			●	●		●	●	●	●	●
Trichloroethene (TCE)	●			●	●		●	●	●	●	●
Dichloroethene (DCE)	●			●	●		●	●	●	●	●
Vinyl chloride (VC)	●			●	●	●	●	●	●		
Bis(2-chloroethoxy)methane	●			●	●		●	●		●	●
Bis(2-chloroethyl)ether	●			●	●		●	●		●	●
Carbon tetrachloride	●			●	●		●	●		●	●
Chloroethane	●			●	●	●	●	●			
Chloroform	●			●	●		●	●		●	●
Chloromethane	●			●	●		●	●			
Dichloroethane (DCA)	●			●	●	●	●	●	●	●	●*
Dichloropropane	●			●	●		●	●			
Dichloropropene	●			●	●		●	●			
Hexachlorobutadiene	●			●	●		●	●		●	●
Methylene chloride	●			●	●		●	●			
Tetrachloroethane	●			●	●		●	●	●	●	●
Trichloroethane (TCA)	●			●	●		●	●	●	●	●
Trichloropropane	●			●	●		●	●			
Petroleum Hydrocarbons											
Benzene	●		●	●	●	●					
Toluene	●		●	●	●	●					
Ethylbenzene	●		●	●	●	●					
Xylene	●		●	●	●	●					
Creosote (coal tar)	●		●	●	●	●					
Diesel range organics (DRO)	●		●	●	●	●					
Gasoline range organics (GRO)	●		●	●	●	●					
Oil range organics (ORO)	●		●	●	●	●					
Oxygenates											
Methyl tert butyl ether (MTBE)	●		●	●	●	●					
Tert-butyl alcohol (TBA)				●	●	●					

For additional questions or for a site review please call (949) 366-8000

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Aromatics											
2-chlorophenol	●			●	●	●					
2,4-dichlorophenol	●			●	●	●					
2,4-dinitrophenol	●			●	●	●					
4-chloro-3-methyl phenol	●			●	●	●					
4-iso-propyltoluene	●			●	●	●					
4-nitrophenol	●			●	●	●					
Chlorobenzene	●			●	●	●					
Chlorotoluene	●			●	●	●	●	●		●	●
Dichlorobenzene	●			●	●	●					
N-butylbenzene	●			●	●	●					
Nitrobenzene	●			●	●	●					
Polycyclic aromatic hydrocarbons (PAHs)	●		●	●	●	●					
Pentachlorophenol	●				●	●	●	●		●	●
Phenol	●			●	●	●					
Propylbenzene	●			●	●	●					
Styrene	●			●	●	●					
Trichlorobenzene	●			●	●	●					
Trimethylbenzene	●			●	●	●					
Haloalkanes											
Dichlorodifluoromethane (Freon 12)	●						●	●		●	●
Trichlorofluoromethane (Freon 11)	●						●	●		●	●
Trichlorotrifluoromethane (Freon 13)	●						●	●		●	●
Pesticides and Herbicides											
2,4-D	●						●	●		●	●
2,4,5-T	●						●	●		●	●
Chlorodane	●						●	●		●	●
DDT, DDD, DDE	●						●	●		●	●
Dieldrin	●						●	●		●	●
Endrin	●						●	●		●	●
Heptachlor epoxide	●						●	●		●	●
Lindane (hexachlorocyclohexane)	●						●	●		●	●
Toxaphene	●						●	●		●	●
Energetics											
DNT	●			●			●	●		●	●
HMX	●			●			●	●		●	●
Nitroglycerine	●			●			●	●		●	●
RDX	●			●			●	●		●	●
TNT	●			●			●	●		●	●
Miscellaneous											
1,4-Dioxane					●						
4-methyl-2-pentanone	●			●	●	●					
Acetone	●			●	●	●					
Bis(2-ethylhexyl)phthalate	●			●	●	●					
Carbon disulfide (CS ₂)				●	●		●	●			
Nitrates							●	●		●	●
Perchlorate							●	●			
Polychlorinated biphenyls (PCBs)	●						●	●			
Heavy Metals											
Chromium (VI)							●	●		●	●

Results will depend on specific site conditions, please discuss your site with a REGENESIS technical manager to determine which technology is most optimal for your site. The information provided is for guidance only. It is recommended that a pilot test or treatability study be performed to verify applicability to your specific contaminant and site conditions. REGENESIS makes no warranty or representation, expressed or inferred, and nothing herein should be construed as to guaranteeing actual results in field use, or permission or recommendation to infringe any patent.



PlumeStop® Liquid Activated Carbon™ is composed of very fine (1-2 micron-size) activated particles suspended in water through a unique, organic polymeric dispersion chemistry that resists clumping and allows permeation through aquifer materials. PlumeStop sorbs to the aquifer matrix soon after injection, rapidly removing contaminants from the groundwater to eliminate risk. It can be co-applied with electron donors, electron acceptors, or used as a stand-alone amendment to treat most organic groundwater contaminants.

SourceStop® is a colloidal activated carbon (CAC) amendment applied to the vadose zone, capillary fringe and groundwater of PFAS source areas to rapidly remove high levels of PFAS from the dissolved phase. The sequestration of the PFAS eliminates or drastically reduces the movement of mass from the source area, enhancing the natural attenuation of the plume and avoiding impact to downgradient receptors.

PetroFix® is a colloidal activated carbon technology used to remediate total petroleum hydrocarbons (TPHs) from contaminated environments. Petrofix uses a proprietary formula of activated carbon to adsorb total petroleum hydrocarbons. It then adds electron acceptors to stimulate hydrocarbon biodegradation.

RegenOx® is an *in situ* chemical oxidation (ISCO) reagent used to directly oxidize contaminants. Its unique catalytic component generates a range of highly oxidizing free radicals that rapidly and effectively destroy a range of target contaminants including both petroleum hydrocarbons and chlorinated compounds. RegenOx is an injectable, two-part ISCO reagent combining a solid sodium percarbonate based alkaline oxidant (Part A), with a liquid mixture of sodium silicates, silica gel and ferrous sulfate (Part B), resulting in a powerful contaminant destroying technology.

PersulfOx® is an advanced *in situ* chemical oxidation (ISCO) reagent that destroys organic contaminants found in groundwater and soil through abiotic chemical oxidation reactions. It is an all-in-one product with a built-in catalyst which activates the sodium persulfate component and generates contaminant-destroying free radicals without the costly and potentially hazardous addition of a separate activator.

ORC Advanced® is an engineered, oxygen-release compound developed for enhanced, *in situ* aerobic bioremediation of petroleum hydrocarbon contaminants in groundwater and saturated soils. Containing 17% by weight molecular oxygen, ORC Advanced provides a controlled release of molecular oxygen-an electron acceptor that optimizes microbial utilization in a treatment zone for up to 12 months post-application.

3-D Microemulsion® is an easy-to-apply remedial amendment for the *in situ* treatment of chlorinated solvent-contaminated aquifers. The patented technology, applied as a micellar suspension, provides a controlled, self-distributing hydrogen source to facilitate biologically mediated enhanced reductive dechlorination. 3-D Microemulsion's unique chemistry enables its distribution by naturally flowing groundwater while persisting for years after injection, resulting in much greater treatment coverage and faster degradation rates than other electron donor amendments.

AquiFix™ is a solid, colloidal remediation amendment for the *in situ* treatment of chlorinated solvent-contaminated aquifers, designed for direct mixing and co-application with PlumeStop. The novel formulation, patent-pending, includes a nutrient-enriched, solid-phase, fatty acid source that quickly establishes and sustains enhanced reductive dechlorination over long timeframes (e.g., ten years post-injection). AquiFix's optimized hydrogen release profile significantly improves remediation efficacy and reduces life-cycle costs to treat these contaminants.

BDI PLUS® (Bio-Dechlor INOCULUM Plus) is an enriched natural consortium containing *Dehalococcoides sp.* and other dechlorinating microbes for biologically augmenting enhanced reductive dechlorination remedies. Co-applied with electron donor amendments such as 3-D Microemulsion and AquiFix, BDI PLUS has proven to improve chlorinated solvent remediation efficiency.

CRS® (Chemical Reducing Solution) is an iron-based amendment for *in situ* chemical reduction (ISCR) of halogenated hydrocarbon contaminants such as chlorinated ethenes and ethanes. CRS is a pH neutral, liquid iron solution easily mixed with 3-D Microemulsion before injection into contaminated groundwater. CRS is a soluble, food-grade source of ferrous iron (Fe²⁺), designed to precipitate reduced iron sulfides, oxides, and/or hydroxides.

S-MicroZVI® is a colloidal suspension of sulfidated zero-valent iron that promotes the destruction of a wide range of organic pollutants including chlorinated solvents, pesticides, haloalkanes and energetics. S-MicroZVI is engineered to promote rapid contamination degradation through multiple pathways which leads to faster cleanup while minimizing daughter product formation. Compared to larger particle size ZVI products, S-MicroZVI's 2-3 micron-sized particles, suspended in a proprietary polymer, make it easy to handle and simple to inject, leading to significantly better reagent distribution.