



# Materials for **REMEDATION** and **GEOTECHNICAL SEALING SOLUTIONS**



## >>DELIVERING PROVEN RESULTS<<

At AquaBlok our focus is on supplying materials that provide cost-effective, high-performance solutions to challenging problems. Our materials are simple to apply and will perform better than most alternative approaches over time. Whether you are addressing PCB contamination in a major shipyard or sealing a backyard pond, we have a product and we will provide the support you need.

been manufactured and applied at project sites throughout the US as well as in Canada, Norway, and Australia. With extensive lab, engineering and research capability, AquaBlok stands ready to support our customers to the extent needed. Our extensive experience in project planning, installation and construction quality control makes us a valuable team member for projects large and small.

For over twenty years, AquaBlok products have been applied and rigorously studied by USEPA, top Universities and evaluated under Defense sponsored research. It has been accepted as a final remedy at Superfund Sites and won awards for Navy remediation projects. Materials have

Geotechnical sealing solutions address critical applications such as preventing seepage along pipes, through levees or embankments and sealing ponds. AquaBlok provides an easy to apply, low-cost approach that can be applied in challenging conditions.

**ENVIRONMENTAL REMEDIATION SOLUTIONS**  
 Contaminant sequestration and treatment in a broad range of settings, particularly subaqueous sediments.

**GEOTECHNICAL SEALING SOLUTIONS**  
 Seepage reduction and low permeability/containment alternatives, effective in a wide variety of settings.



the [ AquaBlok ] Composite Particle System®



# ENVIRONMENTAL REMEDIATION APPLICATIONS

20 YEARS  
Successful Material  
Installations



Contaminated Site

## Proven Materials for Isolation, Sequestration and Treatment of Contaminants

Supporting Successful Remedy Implementation

AquaBlok provides patented products to address a wide range of contaminants of concern and remediation challenges. Our products are composite particles that consist of an aggregate core coated with a high performance powdered amendment. This approach provides an economical way to deliver these high value materials in a manner that makes them more effective.

FAST, EFFICIENT  
PLACEMENT



ON-SITE TECHNICAL  
SUPPORT



### LOW-PERMEABILITY MATERIAL



- > Variable Particle Size/Density
- > High Shear Strength
- > Erosion Resistance

**ISOLATES  
CONTAMINATION**

- > Proven Performance: USEPA Superfund Sites

### PERMEABLE MATERIAL



- > Amendments Provide Rapid Kinetics/Removal
- > Uniform Distribution of Amendment in Single Lift
- > Low-Cost Targeted Placement

**TREATS/ REMOVES  
CONTAMINATION**

APPLICATIONS	AquaBlok®	AquaGate+®	CONFIGURATIONS	AquaBlok®	AquaGate+®
MGP Sites (COAL TAR)	○	○	Low Permeability Cap	○	—
Refinery Sites (PAH, DIESEL)	●	●	Cut-Off Wall	●	—
Riverine (PCBS, DIOXIN, PAH)	○	○	Upland PRB	○	○
Ponds (METALS, MERCURY)	●	—	In-Situ Treatment	—	●
Upland Seep Zones (ARSENIC)	○	○	Funnel & Gate	○	○
Surface Water/Soil (PFAS)	—	●	Post-Dredge Backfill	●	●

### AquaGate+® (AMENDMENTS)

Organoclay	EHC-M™	Clinoptilolite	Microbes
Powder Activated Carbon (PAC)	Sulphur Compounds	Organic Carbon	RemBind®
Zero Valent Iron (ZVI)	Aluminium Sulphate	Sorbster™	MicroAMD™

### Key Benefits/Technical Advantages

- Uniform, low-cost delivery through water column
- Creates uniform layers with less material
- No field mixing or blending required
- Installation support; in-house technical support
- Custom-formulated to your specifications

### PFAS (REMEDATION)



RemBind is a proven adsorptive technology that effectively binds and sequesters/immobilizes PFAS in both soil and water. When provided as AquaGate+RemBind, it can passively remove PFAS from groundwater and/or surface water using either an in-ground or above-ground Permeable Reactive Barrier (PRB) configuration. Soil remediation has been successfully performed in both Australia and Europe.

**rembind.com**

RemBind® is a registered trademark of RemBind Pty Ltd, Australia.



# GEOTECHNICAL SEALING SOLUTIONS



## AquaBlok Sealing & Seepage Control Technology

Successfully Applied to a Wide Range of Geotechnical Applications

AquaBlok is a composite bentonite aggregate manufactured by coating conventional gravel with sodium bentonite clay, using a proprietary binder. The result is a unique product that is easy to install, that swells and self-compacts once hydrated to form a waterproof barrier. AquaBlok remains plastic; conforming to complex shapes like pipes, sheet pile walls, water control structures, and other infrastructure. AquaBlok is durable; will withstand freeze-thaw cycles and extensive dryness and will self-heal when re-hydrated. AquaBlok can achieve low permeability ( $1 \times 10^{-8}$  cm/sec or lower), forming a seal without the need for mechanical compaction.

*The superior qualities of AquaBlok have proven to exceed alternative options in performance, convenience and ease of implementation—all of which result in lower project costs.*

### Key Benefits/Technical Advantages

- Efficient delivery of high-value sodium bentonite at relatively low concentrations
- Improved uniformity and reliable seal in inches rather than feet
- No field mixing or blending
- Low cost handling & installation
- Can be applied in wet or dry conditions
- No mechanical compaction required

SEEPAGE CONTROL	POND SEALING	REPAIRS
Dam / Levee Enhancement	Pond Lining, Sealing, Capping / Closure	Wildlife Damage & Repairs
Cutoff Walls / Hydraulic Barriers	Irrigation Channel / Waterway Lining	Structure / Pipe Repair <small>(Inflow &amp; Infiltration)</small>
Trench Dams / Anti-Seep Collars	Wastewater Containment	Synthetic Liner Repair

### Annular Sealants

**HoleBLOK<sup>4060</sup>**™ is a bentonite-coated composite material that performs better than traditional bentonite pellets at a lower cost. HoleBlok+ is the first annular sealant material to include reactive amendments to address sorption and chemical "rebound" or "draw-down" effects in monitoring wells, as can occur with the use of typical coated bentonite pellets.

### Wetland Restoration



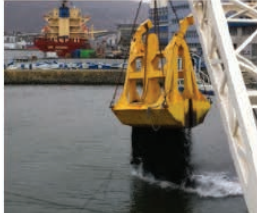
is an alternative to traditional means of plant propagation in wetland/aquatic settings with significant advantages over seed or plugs in many scenarios. The typical formulation of dry product relies on the nutrients available in the surrounding water and underlying sediment to support germination and nourish sustained growth.

# PROJECT SERVICES + SUPPORT

## Product Installation & Placement



BULK BAG



CLAMSHELL



CONVEYOR



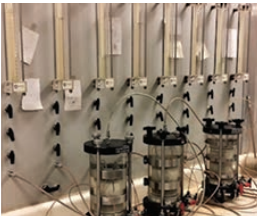
EXCAVATOR



AIR DROP

AquaBlok materials can be placed with most conventional installation equipment. The approach is generally guided by site-specific factors and access to the placement area. The listing above illustrates some of the equipment and installation methods that have been successfully employed.

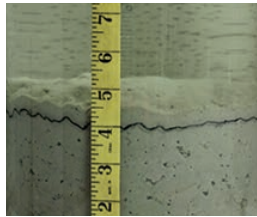
## Lab & Technical Support



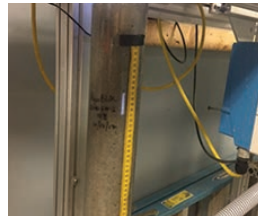
HYDRAULIC  
CONDUCTIVITY



FREEZE-THAW



HYDRATION/EXPANSION



EROSION TESTING



TURBIDITY & TSS

Project-specific design mixes and coverage rates, within the context of site-specific remedial designs, may require the completion of preliminary laboratory or bench-scale testing. For example, development of cap thickness, slope stability, erosion resistance or other parameters can be evaluated. AquaBlok has laboratory facilities and equipment to perform a wide range of basic laboratory testing and to assist in the development and testing of various product formulations.

## On-Site Manufacturing

Significant cost savings can be achieved on larger projects by manufacturing on or near the project site. This can eliminate the need for packaging or transport. Near site manufacturing may also enable the use of just-in-time material delivery for reduced storage and faster installation. On-site manufacturing has been performed at locations throughout the US as well as in Norway and Australia.



## Field Support Installation QA/QC

AquaBlok has supported customers through hundreds of material installations. Coordination of material supply, storage and placement is key to making the remedy as cost-effective as possible. In addition, we provide planning, support and execution for construction quality assurance and quality control, insuring that the material is installed as designed. While we do not actually install the material, AquaBlok can provide on-site representation and assistance in implementation.



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