AquaBlok®
Composite Particle System

Water is our most precious resource – one that should not be taken for granted.
BIOMIN Inc.
Makers of OilSorb™ The Global Leader in Clay Filtration Media. Since 1985

AquaBlok® + Organoclay™ Pellets as Permeable Barriers

Improves the Uniformity and Performance of Organoclay to Preferentially Adsorb and Sequester a Wide Range of Hydrocarbon and Petroleum based Contaminants in a Remediation Setting

AquaBlok, Ltd., a manufacturer of innovative clay-based composite materials, in cooperation with Biomin, Inc. is pleased to offer a new way to deliver Biomin's proven organoclay product in a way that is low cost and provides for ease of delivery and improved performance.

AquaBlok® +ORGANOCLAY™ provides the following primary benefits, compared to the use of conventional powdered or pelletized organoclay products:

- More efficient use of organoclay through use of a thin coating on a substrate/core
- Greater product effectiveness through higher organoclay surface area
- Improved delivery to sediments through a standing water column
- Lower cost per pound for a target volume
- Ease of handling and placement

Figure 1: AquaBlok® + ORGANOCLAY™ Pellets

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Figure 2: AquaBlok® + ORGANOCLAY™ Pellets being placed into water

AquaBlok® + ORGANOCLAY™ works due to the unique properties of Biomin's organically modified clays. In general terms, it functions on the principle of adsorption through Ionic Bonding. There is no actual exchange, where one particle is substituted for another. Each particle of clay and contaminant infinitely wrestles for possession of the other. This bond is strong enough that the contaminant particle is removed from the water and will not be released without the addition of a significant outside source of energy.

Organoclays have been used for many years in water purification as well as a wide range of other applications related to petroleum contamination. Generally, AquaBlok® + ORGANOCLAY™ can be expected to adsorb between 50-100% of the total weight of the organoclay present in the particle. This percentage of organoclay can vary from 20-40% depending on the desired treatment design, contaminant material and concentration.

AquaBlok® + ORGANOCLAY™ is applicable to a wide range of common contaminant issues as well as a range of very typical remediation site characteristics. Below is a partial listing of both types of sites and contaminants, as well as types of barriers that can be constructed of this material.

Types of Sites/Contaminants:
Manufactured Gas Plants (MGP)
Wood Treatment Facilities (Creosote)
Coal Tar (BTEX)
PAHs / NAPL
PCBs

Types of Barriers:
Sediment Capping
Permeable Reactive Barriers (PRB)
Cut-off Walls / Soil Mixing
Refinery Pipe Racks
Berms / Spill Control Applications

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Figure 3: Organoclay Pellets ready for installation

What Makes AquaBlok® + ORGANOCLAY™ Better

Two important advantages are provided by organoclay products from AquaBlok®. First, the dense aggregate core of the coated particle provides greater mass, effectively delivering organoclay though the water to the sediments, where all of the adsorbent material can be utilized more effectively. Secondly, the larger diameter surface of the organoclay-coated pellet presents a more effective surface area to potential contaminants. This provides for a more efficient use of the high-value organoclay component at a cost that is lower than pure organoclay.

Other important features of AquaBlok® + ORGANOCLAY™

AquaBlok® + ORGANOCLAY™

- Remains permeable, allowing all the adsorbent material to be utilized
- Is hydrophobic, so it is not impacted by lack of water for extended periods of time
- Can be mixed with soil or other permeable media for use in cut-off of lateral seeps
- Can selectively capture discharges from submerged seeps of upland plume related discharges when configured as a “gate” with a “funnel and gate” system
- Will minimize thickness of treatment layer due to efficient use of material in barrier, providing exceptional cost savings
- Significantly reduces handling problems when compared to other traditional methods of permeable barrier construction such as mats

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