

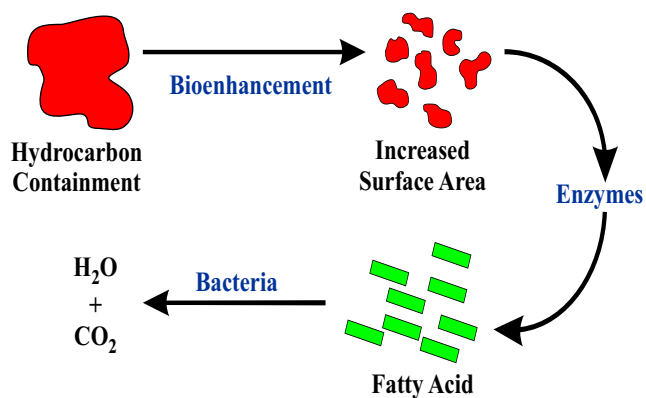
BioRem 2000™ OIL DIGESTER

BENEFITS

- ◆ Designed to digest hydrocarbons in groundwater, open water and soil remediation applications through a powerful blend of microbes, enzymes and nutrients
- ◆ Effective over a wide range of hydrocarbons, including free-product.
- ◆ Biologically converts hydrocarbons into carbon dioxide and water.
- ◆ Available in a ready-to-use liquid formula.
- ◆ Can be combined with other technologies (e.g., bioventing, SVE) to be introduced during any phase of clean-up cycle to enhance site remediation.
- ◆ Listed on the EPA's National Contingency Plan Product Schedule as a bioremediation agent.

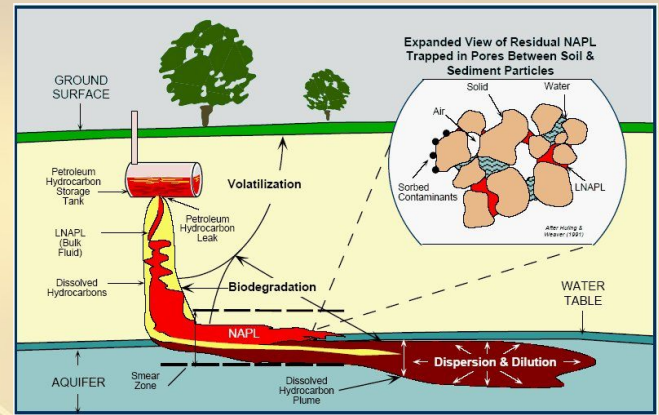
TECHNOLOGY

- ◆ **Biodispersion:** The hydrocarbons are dispersed from macroscopic clumps into smaller droplets.
- ◆ **Solubilization:** The surface area of the hydrocarbons is increased, converting them from hydrophobic to hydrophilic, into a soluble state for cell transport.
- ◆ **Assimilation:** The microbes secrete extra-cellular and intra-cellular enzymes that begin the process of cleavage chopping the long chains of the solubilized hydrocarbons into two carbon units.
- ◆ **Mineralization:** The microbes convert the carbon units into carbon dioxide and water as a source of food for growth and reproduction. Once the reaction is complete, the microbes and enzymes break free and attach to another chain of hydrocarbons in order to repeat the same process.



GROUNDWATER TREATMENT

- ◆ Bioremediates both contaminated soil (source) and groundwater (side-effect).
- ◆ Highly effective at treating non-aqueous phase hydrocarbons ("NAPL") and dissolved hydrocarbons from the subsurface.
- ◆ Assists in the mobilization of non-aqueous phase hydrocarbons ("NAPL") from the vadose zone into the dissolved-phase.
- ◆ Successful on high sorption where pump-and-treat does not work efficiently.
- ◆ It changes the surface of the oil particles from hydrophobic to hydrophilic.
- ◆ Compatible with biosparging and multi-phase extraction.



OPEN WATER TREATMENT



- ◆ Oil consumption begins instantaneously.
- ◆ Effective on weather oils.
- ◆ Can be introduced during any phase of the clean-up life cycle.
- ◆ Compatible with skimmers, floating barriers, dispersants, solvents, detergents and burning techniques.

Uses:

- ◆ Shoreline clean-up.
- ◆ Remediation of sheen in ports.
- ◆ Contained open water spills.
- ◆ Containment ponds.
- ◆ Storm water retention ponds.

SOIL TREATMENT

- ◆ Designed to rapidly loosen trapped contaminants while imparting stabilized oxygen and nutrients.
- ◆ Can be applied topically or injected for bioremediating at any depth on open land or under buildings, pavement, or train tracks.
- ◆ Ideal for use in and around pipe racks, tank farms' and leaking underground storage tanks "LUST" sites.
- ◆ Applications include land farming, composting, bioreactors and soil washing.



CONTAMINATE TREATMENT LIST

Benzene	Naphthalene	Pentane	Acenaphthene	benz[a]anthracene
Xylene	Acrolein	Acetone	Acenaphthylene	benzo[a]pyrene
Toluene	Acrylonitrile	Methanol	Anthracene	benzo[e]pyrene
Ethylbenzene	Alkylamine Oxides	dimethylformamide	Diethylene-glycol	benzo[b]fluoranthene
Heptane	Anthracene	Dioxane	MethylEthylKetone	fluoranthene
Hexane	Styrene	Ethylacetate	Methyl Naphthalene	fluorene

TECHNICAL INFORMATION

Usage	Dilution Ratio	Ready to use
	Appearance	Liquid
Physical Properties	Color	Amber
	pH	7
	Shelf Life	Minimum 1 Year
Packaging	Primary	5, 15, 55 gal.