



A New Green Model of Accelerated Petroleum Hydrocarbon Remediation

**GULF CLEANUP DEFENSE COLLABORATION MEETING
WEST PALM BEACH, FLORIDA**



NONTOX Petroleum Hydrocarbon Remediation/Cleaning

▶ Releasing Natural Bio-catalytic Forces ◀

NONTOX is a biocatalytic system in a liquid concentrate that rapidly breaks down the molecular structure of petroleum hydrocarbons, stimulating an accelerated natural biological bio-remediation of petroleum hydrocarbon pollutants.

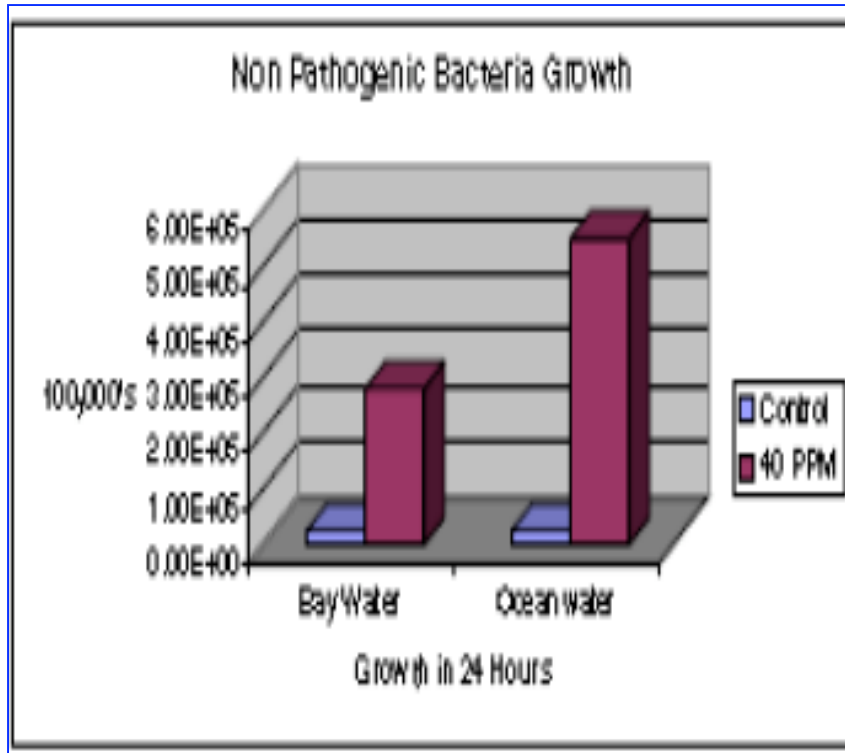
- Superior performance in accelerating bio-remediation of total petroleum hydrocarbons.
- Non-toxic and safe to humans, animals, marine life and plant life.
- NONTOX works in concert with indigenous ecosystem microbiology. No cultured or foreign bacteria are introduced.
- Reduces fire hazards by increasing flash point and auto ignition thresholds.
- Increases work safety through the reduction of VOCs associated with crude oil, petroleum derivatives, and dispersants.

The Successful Bio-remediation of Petroleum Hydrocarbons as a 3-Phase Process

1. Rapidly breaks down the molecular structure of petroleum hydrocarbons to a form which can be readily assimilated by the indigenous bacteria in seawater and shoreline ecologies.
2. Stimulates the proliferation of naturally occurring non-pathogenic heterotrophic bacteria. NONTOX has been shown in a University of California study to significantly increase beneficial bacterial activity in bay water by 12,857% and ocean water by 14,333%.
3. The most toxic elements of hydrocarbon pollutants, the light volatiles, have been shown to degrade within minutes and hours, with the total petroleum hydrocarbon (TPH) pollutants reduced by 90% within 96 hours.

Using Nature's Own Mechanisms for Accelerated Bio-Remediation

Demonstrates BOC's ability to proliferate non-pathogenic (harmless) bacteria in bay water and ocean water in a 24-hour period of time.



Independent laboratory studies have shown NONTOX to dramatically reduce petroleum levels by 90% in 48 to 96 hours.

Days	Untreated	NonTox™
0	30	88
1	18	11
3	24	5.1
7	29	13
14	33	14
21	34	11
28	27	8.4
Total Reduction	10%	90%

Simple Application Procedures

Tidal Wetland Grasses:

Recommended application procedure in grassy areas is best at low tide to maximize exposure of contaminated plants and the natural agitation of the seawater.

- For best results, the product should be applied to contaminated areas of the plant and shoreline with a high pressure spray hose, with a foaming nozzle.
- Allow the solution to soak 24 hours, or through the next tidal cycle, and reapply. Each follow-up application should show significant reductions of the oil slick.

Open Ocean:

Recommended application procedure in open ocean oil spills is to use high pressure spray hoses with NONTOX injected into the water at high dilutions directly onto the surface oil slick. Subsurface injection of NONTOX is also highly recommended.

Beaches:

Recommended application procedure on beaches is with water tank trucks that can deliver wash down spraying into the sand so that the bio-catalyst can flush down deeply to break down the concentrated oil that resides subsurface.

Clean Up Operations:

Recommended application procedures for managing VOC exposure and fire prevention of contaminated waste materials, such as booms and other oil spill wastes, NONTOX can be applied at dilutions of 50 x 1 for immediate elimination of VOCs, plus initiating accelerated bio-remediation of the petroleum hydrocarbons.