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Nature in a bottle

Hydrocarbon Remediation

Cost effective bio-remediation agent
Brought to you by Advance Alliance





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Hydrocarbon Remediation

Hydrocarbons in whatever form are generally the most common contaminant that requires remediation due to their widespread occurrence and the risks they pose to humans, animals, environmental and all living organisms.

Ergofito is the most efficient and cost-effective method of remediation for soil, fresh or seawater contaminated by hydrocarbons (Crude oil, petroleum, kerosene, motor oil, tar etc...).

Upon application Ergofito metabolisers begin attacking hydrocarbons and converting them to humus, rendering them a clean, healthy organic fertiliser.

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Uses

Our product is used for:

- Contaminated soils on land
- Both fresh water and seawater spills
- The remediation of oil wells
- The cleaning of drilling mud
- The cleaning of cuttings

Ergofito can be applied by any commercially available spraying apparatus.

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Properties

- Ergofito binds to the oil, so it is effective in breaking down the hydrocarbon, no matter how strong the winds or currents are.
- It takes 5 - 50 minutes to penetrate the molecular walls of the hydrocarbons.
- This breaks down the adhesive properties of the oil, so that it no longer adheres to vessels, animal life, sand, rocks, vegetation, or off-shore structures, etc.
- Within hours the odour will dissipate, and so too the flammable properties of the hydrocarbons.
- Warmer water favours a faster biological action.

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Effective Remediation

- The quantity of Ergofito Aqua required to effectively remediate oil depends on the Total Petroleum Hydrocarbons (TPH) present.
- As a guideline, 4kg of product is required for every barrel of pure oil
- The quantity required will be site and situation dependent on the percentage of TPH present in parts per million (ppm).
- Ergofito Aqua can be applied by handheld sprayers, tank sprayers, booms from vessels, helicopters or aeroplanes.



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Ergofito Metabolisers

- The Metabolisers are highly effective on land, in fresh water and in sea water. The warmer the environment, the more rapidly the metabolisers will be able to break down the Hydrocarbons.
- *The product has been proven many times and is currently in use in the oil industry in Kuwait, Oman, and the USA.*
- The metabolisers can function in temperatures up to 70 degrees C.

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Research

As proven in the university lab in Saudi Arabia, with Aramco backing, once the metabolisers have consumed the oil spill, they will starve and die. There is no risk of the metabolisers making their way into the oil well and consuming the oil there, as it is an anaerobic environment, and they cannot survive.

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Environmentally Friendly

Ergofito is 100% environmentally friendly, and will not cause any harm to the environment or any animal life. The hydrocarbons are simply broken down into proteins and amino acids, forming excellent humus, which can be sold as a fantastic natural fertiliser.

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How does it work?



ATTACKS & CONVERTS

- Ergofito Aqua breaks down hydrocarbons into humus (the organic component of soil) eliminating the need for expensive excavation and disposal.
- The resulting organic matter is rich in nutrients and minerals.
- It decomposes hydrocarbon waste and is suitable for on-site remediation, even in sensitive areas.



DECOMPOSES

- Ergofito Aqua is an organic fluid oil remediation product, that can be used on-site, even in sensitive eco-systems.
- Its natural ingredients, derived from glucides and essential amino acids, stimulate bacteria to produce enzymes that break down hydrocarbons into organic matter.
- It was developed to overcome the limitations of conventional on-site remediation methods.



TRANSFORMS

- Hydrocarbons are converted into bacterial proteins and soluble fatty acids, creating an environmentally friendly biological mud.
- This process is fast, cost-effective and promotes the growth of beneficial organisms and microbes.
- The treated soil can often be reused, while still ensuring human health and environmental protection.



RESULTS

- The use of Ergofito products results in sharp declines in Total Petroleum Hydrocarbon (TPH) levels in treated areas.
- Results are achieved faster and at a lower cost than traditional bio-remediation methods.
- Additionally, the long-term benefit is that these products facilitate natural biodegradation.

Summary

- **Advanced Industries and Ergofito offer the most cost effective and efficient method of dealing with hydrocarbon pollution, with huge cost savings compared to traditional remediation methods.**
- **Ergofito is 100% environmentally friendly, poses no harm to humans, and is easy to apply without the need for protective gear or complex systems.**



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Ergofito Global

- Ergofito has been used as a bio-remediation agent in 48 countries, including the Kingdom of Saudi Arabia, Kuwait, Oman, USA, Iraq, India, Belgium, South Africa, Italy, Spain, Argentina, New Zealand, Australia and Indonesia.



Kuwait Oil Company
شركة نفط الكويت

- USA - EPA Certified



Product

→ Microbes that naturally digest/metabolise oil
Refined oil to crude oil
Oil Refineries
Harbours
Oil Spills
Garages

Ergofito Aqua

Bioremediation Agent

COMPONENT	%
Organic Nitrogen (N)	0.2
Organic Carbon (C)	35
Potassium (K ₂ O)	1.5
Phosphorus Pentoxide (P ₂ O ₅)	1
Sorbitan Mono Laurate (Ethoxylated)	31
Organic Carbons Blend	25
Water	6.3

1 Kg

STANDARDS FOR STORAGE
Sheltered, dry storage at a temperature between 5° C and 45° C without major daily fluctuations. Should there be a swelling of the container loosen the lid to allow the gas to escape . Product is not flammable.

CAUTION
Shake before use. When the product is used on leaves do not apply during the hottest hours of the day. In sensitive species do not use during flowering period. In the event of accidental discharge of the product, absorb with inert materials and deal with these according to the local regulations.

APPLICATION
REFER TO TECHNICAL BROCHURE

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Head to ergofitobio.com for more information.



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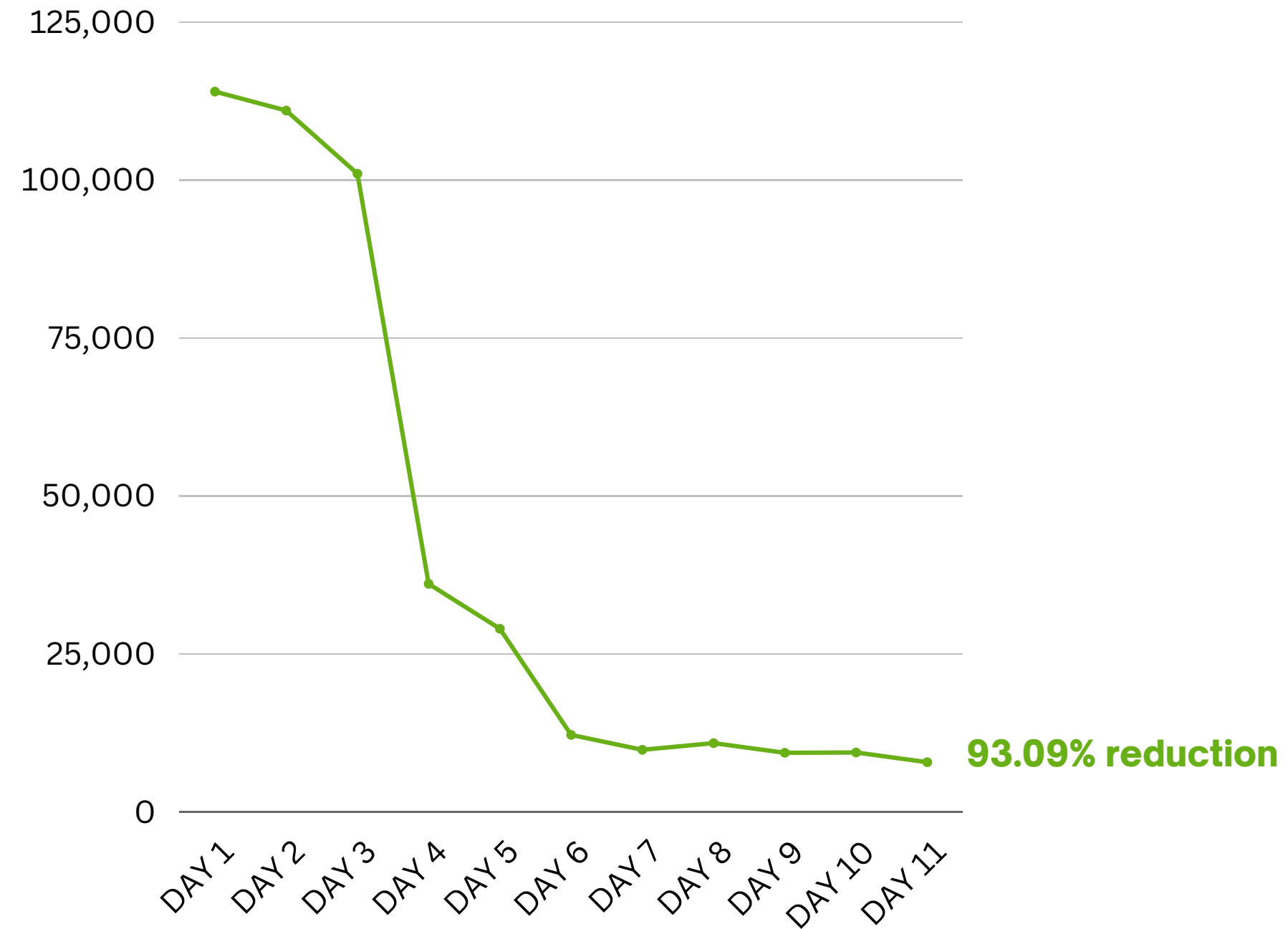
Measured in ppm of Hydrocarbon pollution

Remediation trial Report

Prepared For:

**SAUDI ARAMCO SHELL REFINERY
COMPANY**

SASREF



HYDROCARBON REDUCTION IN A CONTAMINATED SOIL STOCKPILE WITH THE USE OF ERGOFITO OVER 11 DAYS



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Remediation trial Report

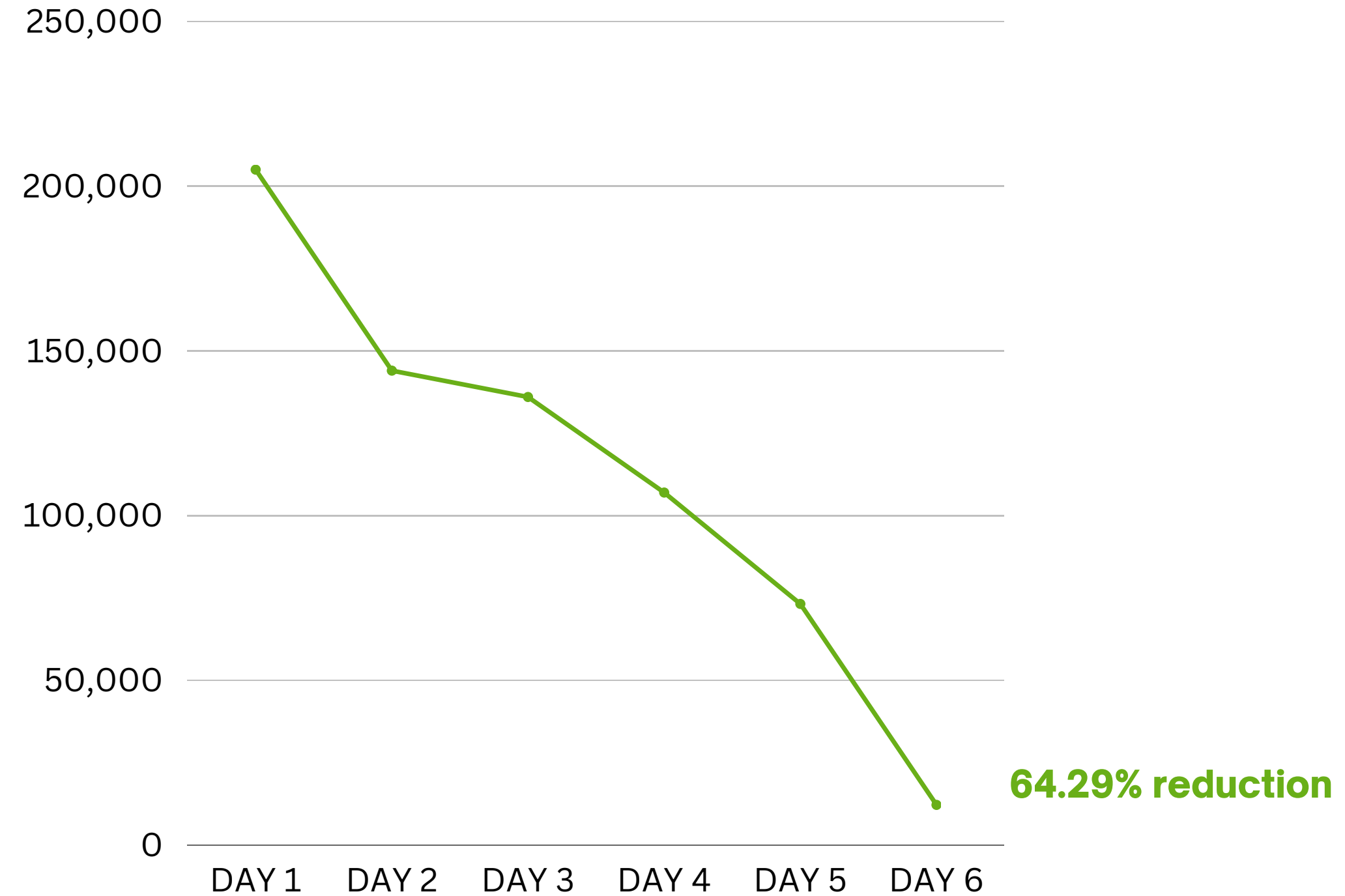
Prepared For:

**SAUDI ARAMCO SHELL REFINERY
COMPANY**

SASREF



Measured in ppm of Hydrocarbon pollution



HYDROCARBON REDUCTION IN HEAVY END SLUDGE STOCKPILE WITH THE USE OF ERGOFITO OVER 5 DAYS



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King Abdulaziz University

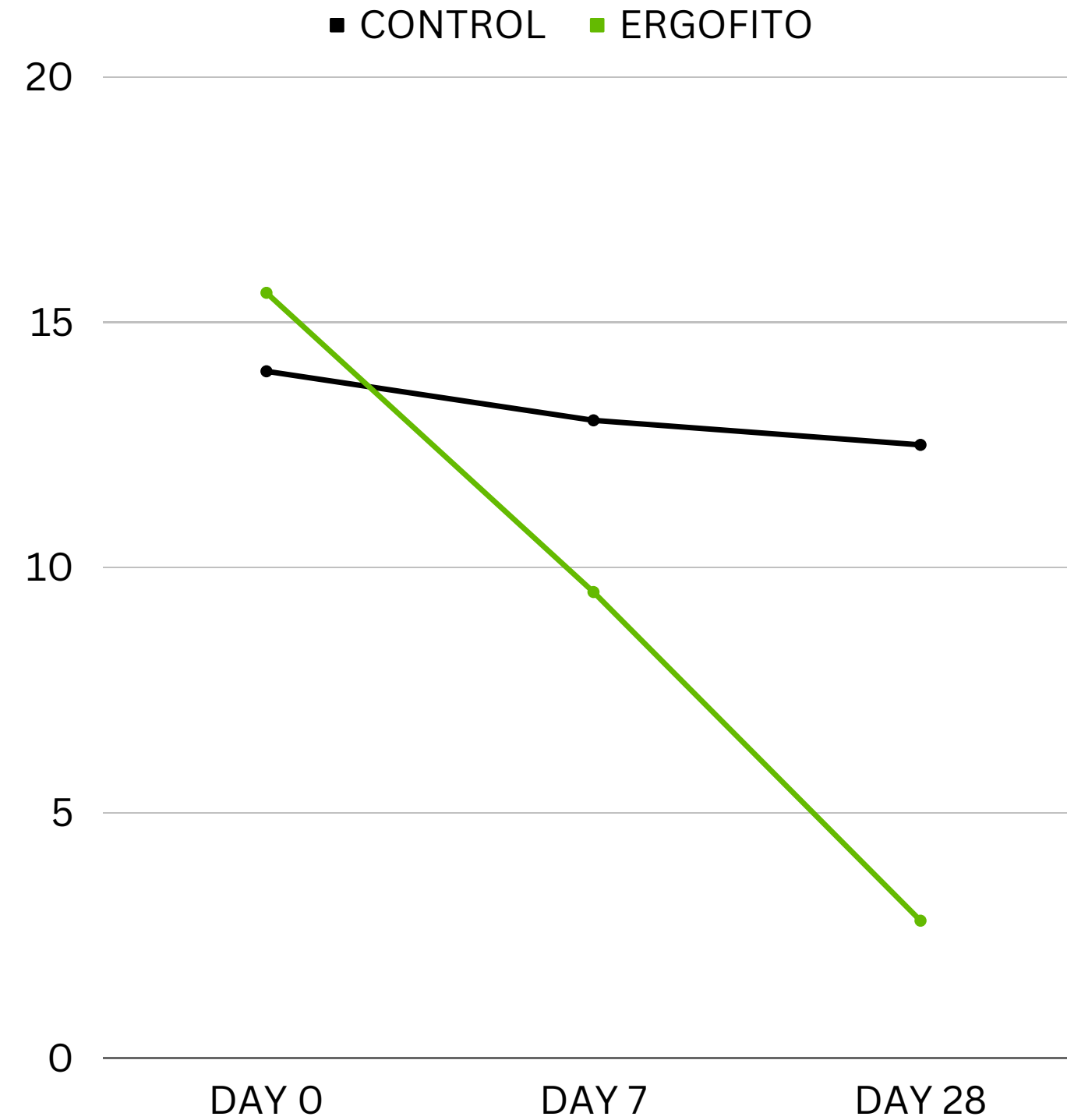
Faculty of Science

Biochemistry Department

Houses of Expertise

Consultations of Lab Analysis

Measured in mg/ml



82% reduction

THE GRAVIMETRIC LOSS OF CRUDE OIL FROM SEA WATER BY ERGOFITO AQUA AFTER 28 DAYS



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King Abdulaziz University

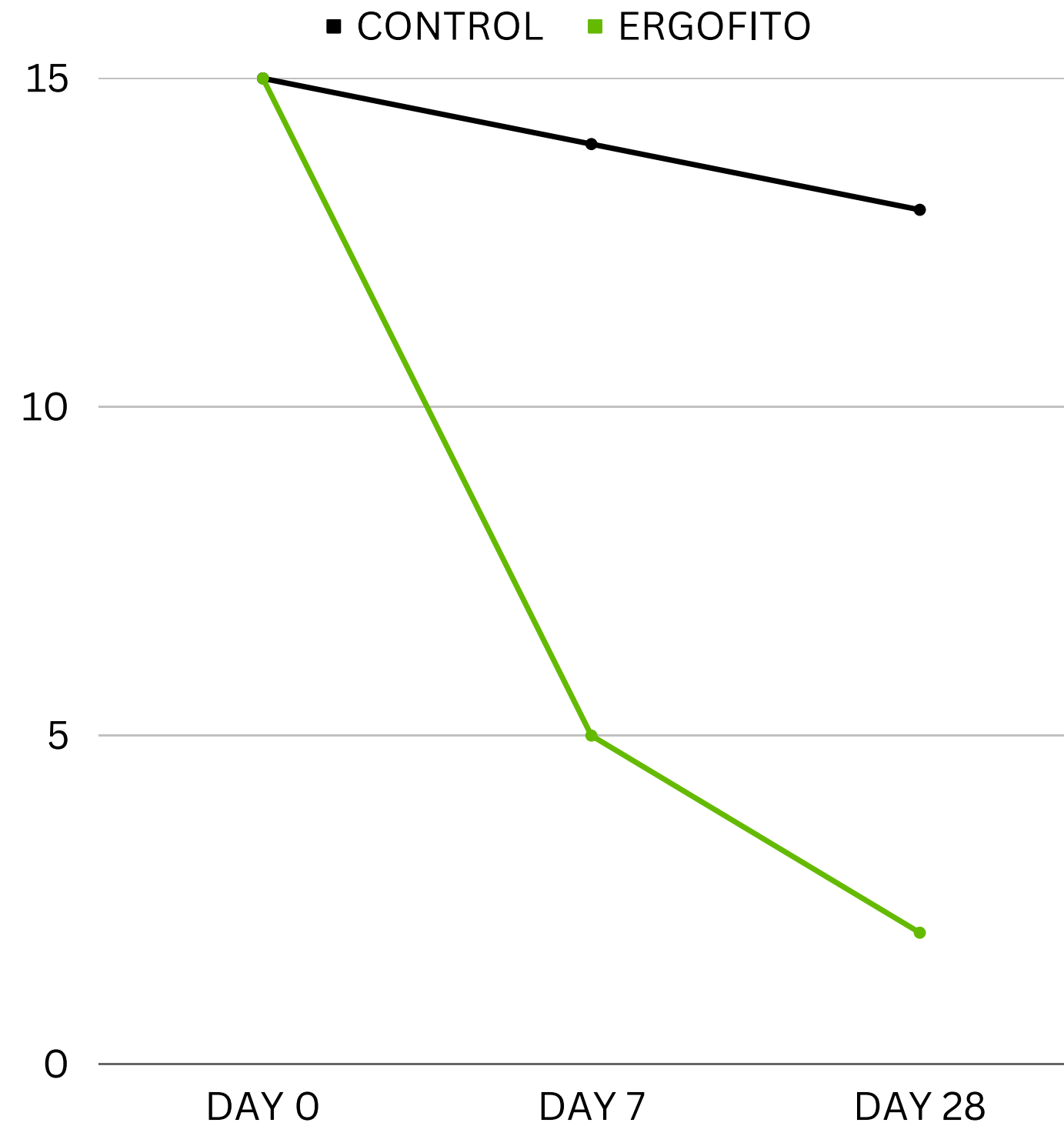
Faculty of Science

Biochemistry Department

Houses of Expertise

Consultations of Lab Analysis

Measured in mg/ml



87% reduction

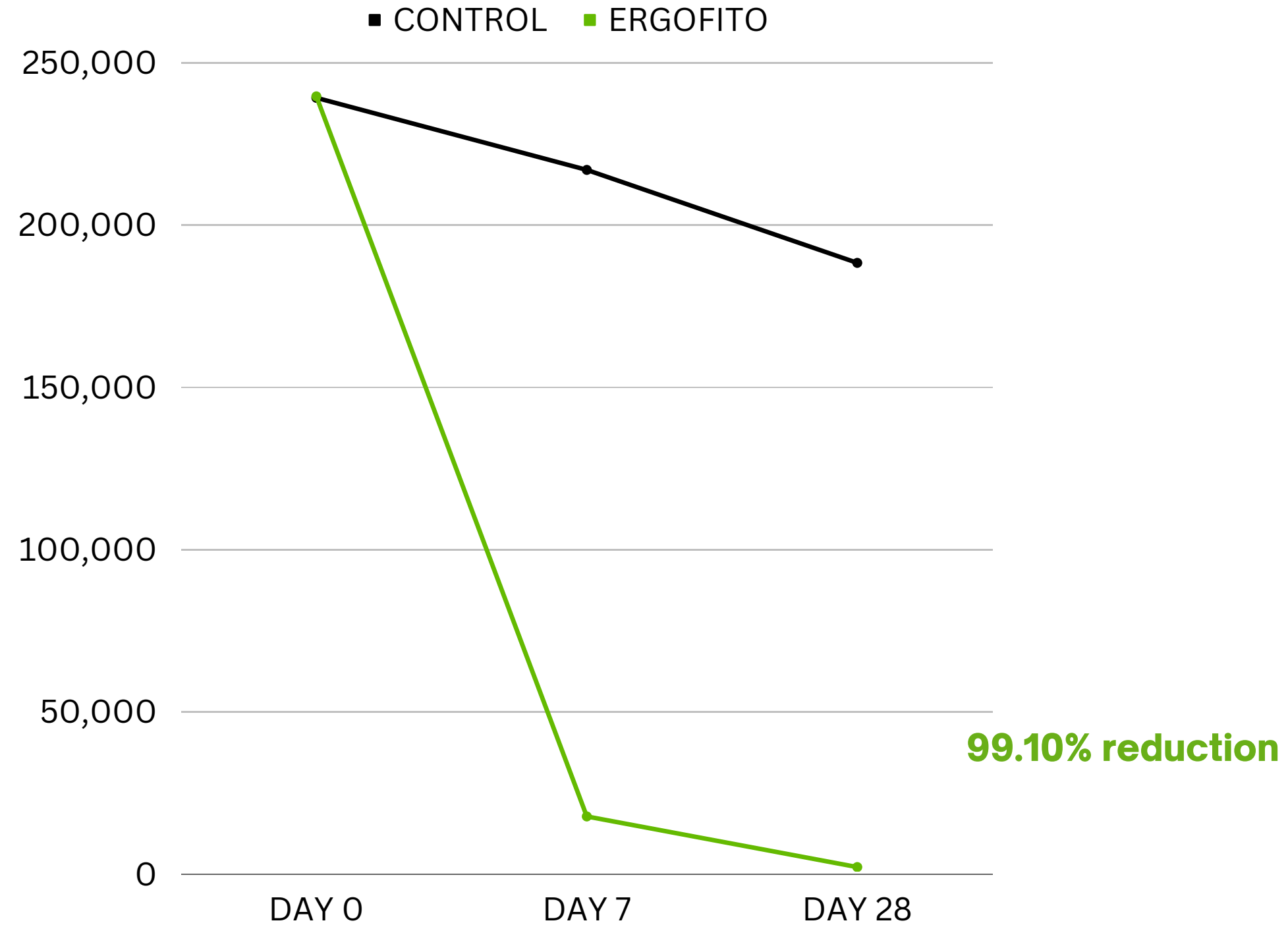
THE GRAVIMETRIC LOSS OF CRUDE OIL IN SOIL BY ERGOFITO AQUA AFTER 28 DAYS



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Measured in PPM



EPA BIOREMEDIATION TEST ON CRUDE OIL WITH ERGOFITO



Emergency Management

http://www.epa.gov/oem/content/ncp/products/ergofit.htm
Last updated on Tuesday, August 09, 2011

You are here: [EPA Home](#) [Emergency Management](#) [NCP Subpart J](#) [NCP Product Schedule](#)
ERGOFIT MICRO MIX AQUA

ERGOFIT MICRO MIX AQUA

TECHNICAL PRODUCT BULLETIN: B-67
USEPA, OIL PROGRAM CENTER
LISTING DATE: JULY 27, 2011
"ERGOFIT MICRO MIX AQUA"

I. NAME, BRAND, OR TRADEMARK

ERGOFIT MICRO MIX AQUA
Type of Product: Bioremediation Agent (Microbiological Culture, Enzyme Additive, Nutrient Additive)

II. NAME, ADDRESS, AND TELEPHONE NUMBER OF MANUFACTURER/CONTACT

ERGOFIT USA LLC
40 E. Main Street #379
Newark, DE 19711
Phone: (302) 235-3085
Fax: (801) 846-8043
Mobile: (985) 722-8882 or (310) 739-9773
E-mail: info@micromix-usa.com
Web Site: www.micromix-usa.com
(Mr. Warren Russell, US Factory Representative)

III. NAME, ADDRESS, AND TELEPHONE NUMBER OF PRIMARY DISTRIBUTORS

Systems Research International, Inc.
13 Hermitage Court
Destrehan, LA 70047-3626
Phone: (985) 764-1692
Mobile: (985) 722-8882
E-mail: info@micromix-usa.com
Web Site: www.micromix-usa.com
(Mr. Ram Ramachandran, Principal Engineer)

IV. SPECIAL HANDLING AND WORKER PRECAUTIONS FOR STORAGE AND FIELD APPLICATION

1. Flammability: Water-based, Non-flammable
2. Ventilation: Needs no ventilation; aqueous-based organic product; does not emit hazardous vapors. Some CO2 may build up.
3. Skin and eye contact; protective clothing; treatment in case of contact: ERGOFIT MICRO MIX AQUA is not a dermal irritant. Avoid eye contact, and wear goggles when using product. Eyewash for quick and copious eye flushing should be available on site. Seek prompt medical attention should contact occur and if irritation persists. Protective rubber gloves are suggested during handling. ERGOFIT MICRO MIX AQUA has a smell of fermentation and yeast. The product does not give off harmful vapors. Long storage will cause build CO2 in water vapor.
- 4.a. Maximum storage temperature: 104°F
- 4.b. Minimum storage temperature: 32°F
- 4.c. Optimum storage temperature range: 57°F to 97°F
- 4.d. Temperatures of phase separation and chemical changes: above 113°F

V. SHELF LIFE

ERGOFIT MICRO MIX AQUA has a recommended shelf life of 5 years. After 5 years at

VII. TOXICITY AND EFFECTIVENESS

a. Toxicity:
NA

b. Effectiveness:
Bioremediation Agent Effectiveness Test (40 CFR 300.900), Federal Register September 15, 1994:

Summary Data Table:

DAYS	PRODUCT	TOTAL MEAN 3 REPS/PROD ALKANES (ppm)	RED% 28 DAYS	TOTAL MEAN AROMATICS (ppm)	RED% 28 DAYS
0	CONTROL PRODUCT	239,235 239,686	0 0	16,502 17,431	0 0
7	CONTROL PRODUCT	217,023 17,819	9.30 92.6	10,942 9,606	33.70 44.90
28	CONTROL PRODUCT	188,379 2,216	21.3 99.10	8,989 3,100	45.50 82.20

Results of Gravimetric Analysis:

Percentage (%) Decrease in Weight of Oil on Day 28

Control: 1.7%
Product: 45.6%



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Contact Us

For any questions or clarifications on our presentation.

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