



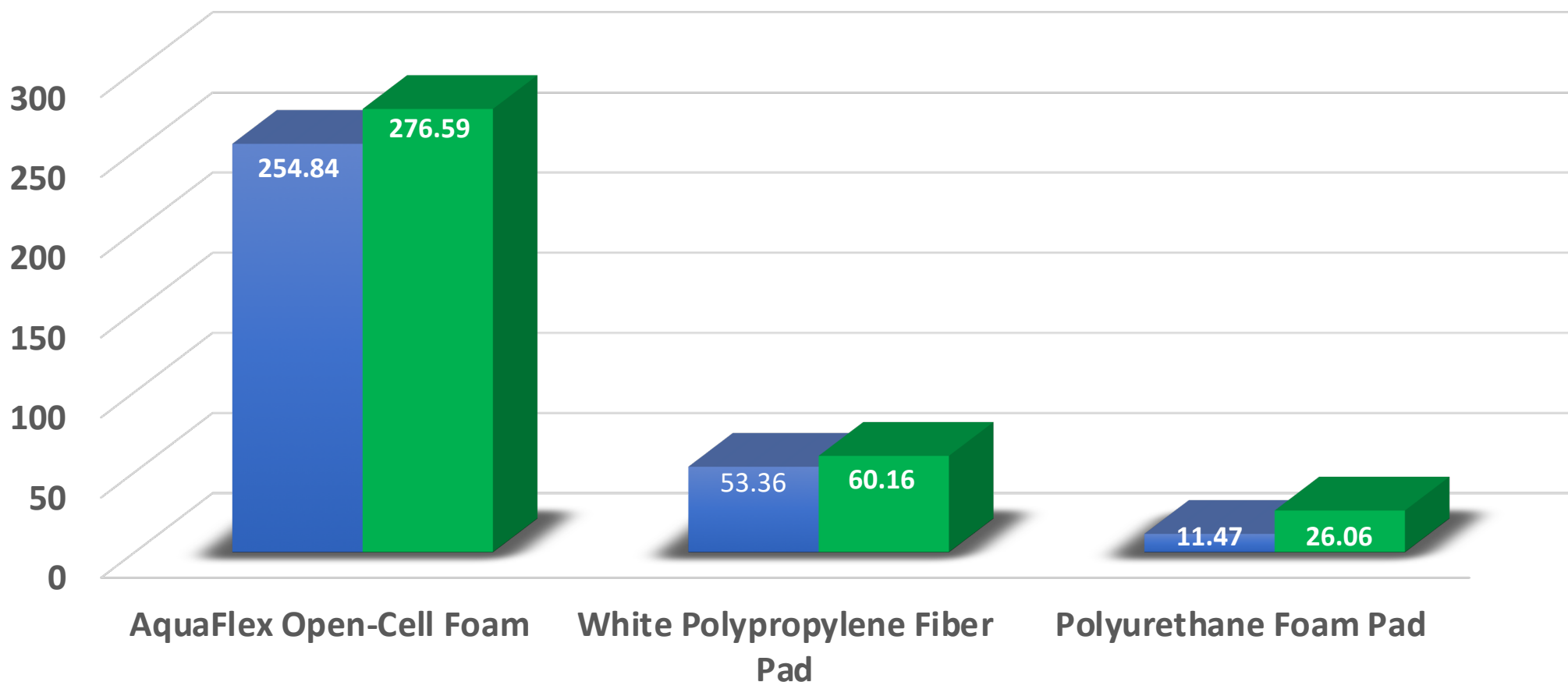
**Bureau of Safety and Environmental Enforcement**  
Promoting Safety, Protecting the Environment and Conserving Offshore Resources

## Open-Cell Foam Sorbents vs. Single-Use White Polypropylene Fiber Sorbents

**As Officially and Independently Tested under ASTM F726 at Ohmsett August-2019**



## ASTM F726 Grams of Diesel Oil Absorbed by Each Sorbent as Tested by Ohmsett



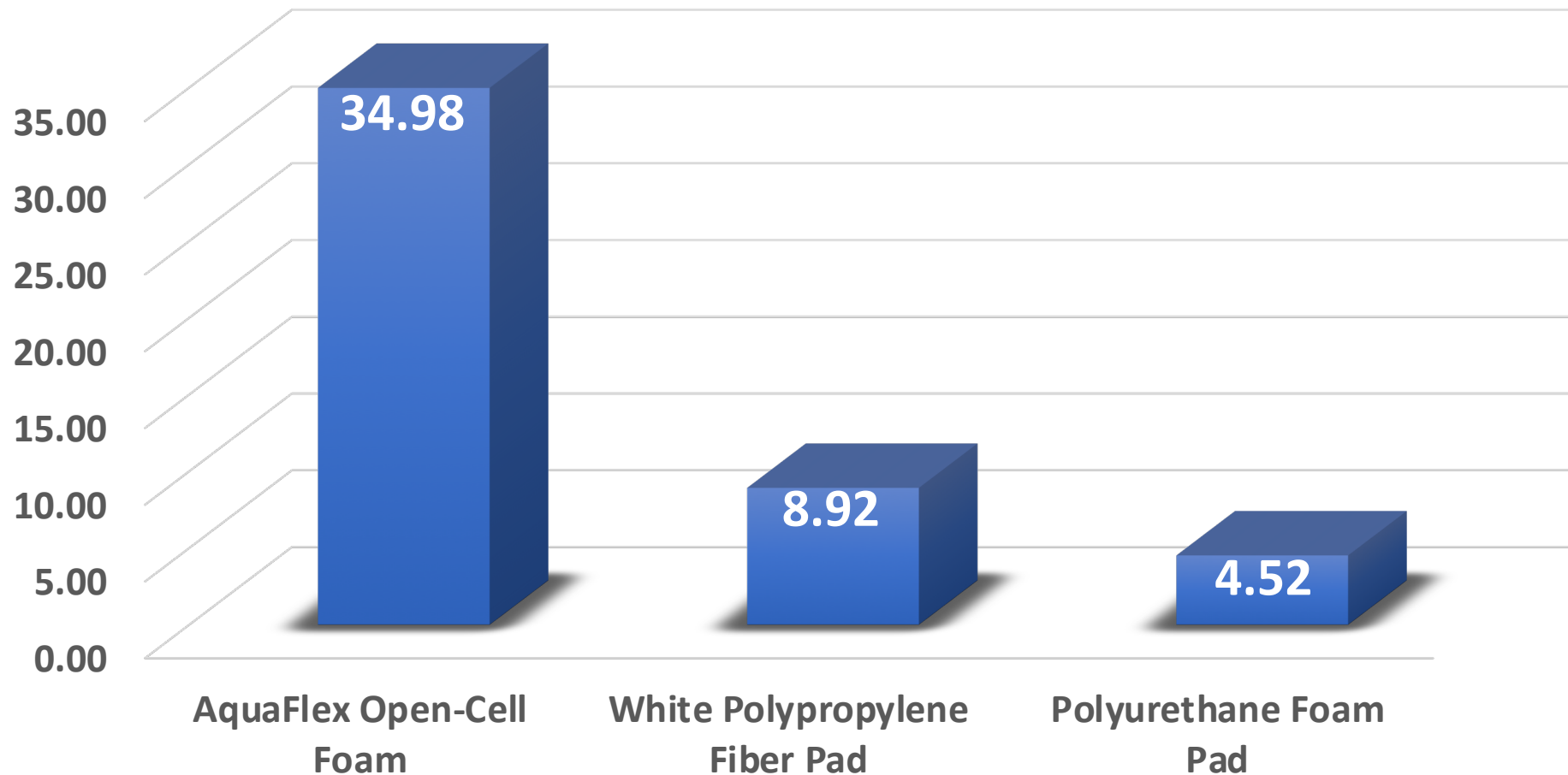
■ Grams of Oil Absorbed by Sorbent After 15 Minutes- Each Sorbent Square 5 and 3/16-inch

■ Grams of Oil Absorbed by Sorbent After 24 Hours- Each Sorbent Square 5 and 3/16-inch



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### ASTM F726 24 Hour Test - Multiple of Absorbed Oil Weight to Sorbent Weight

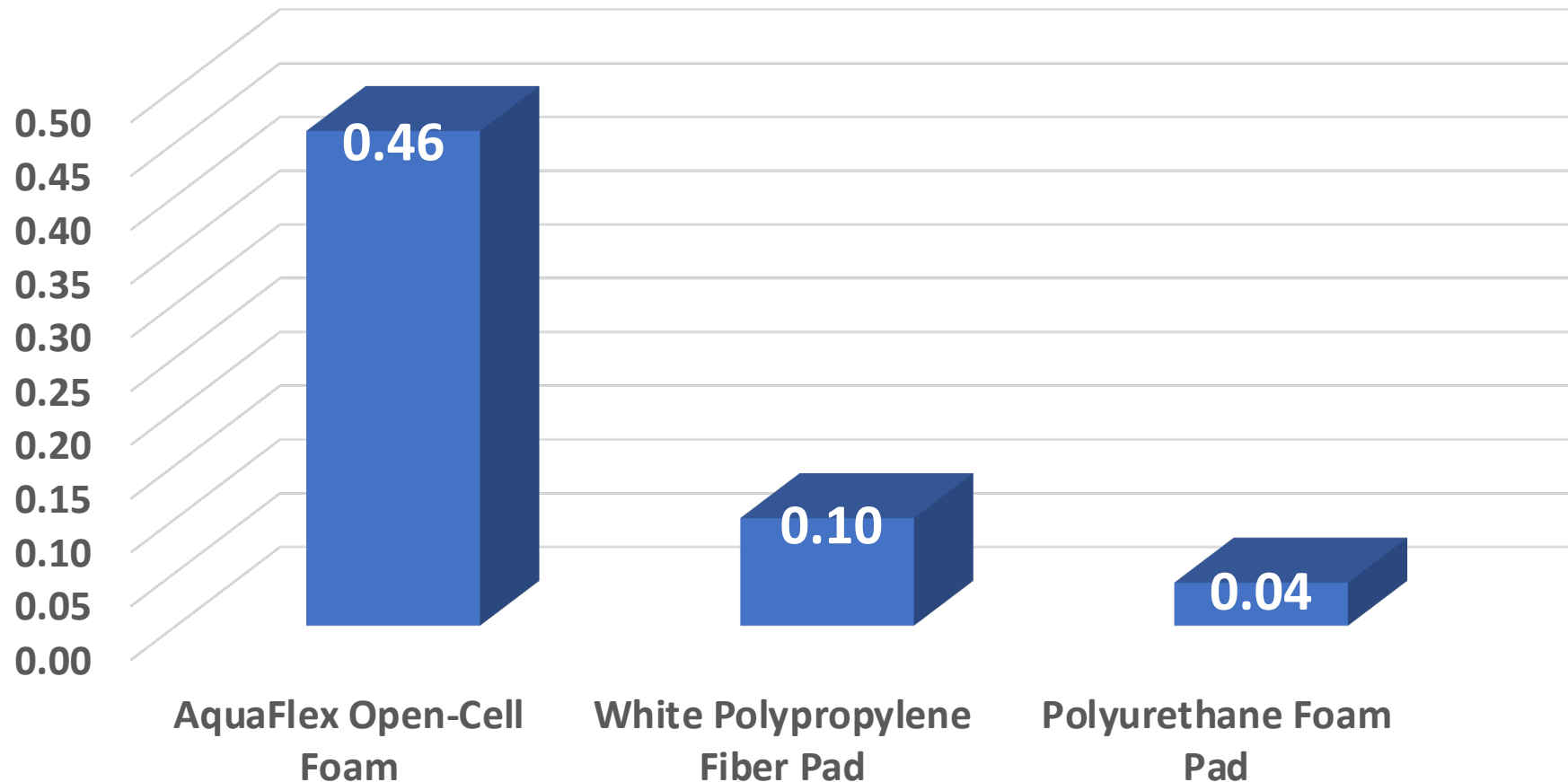






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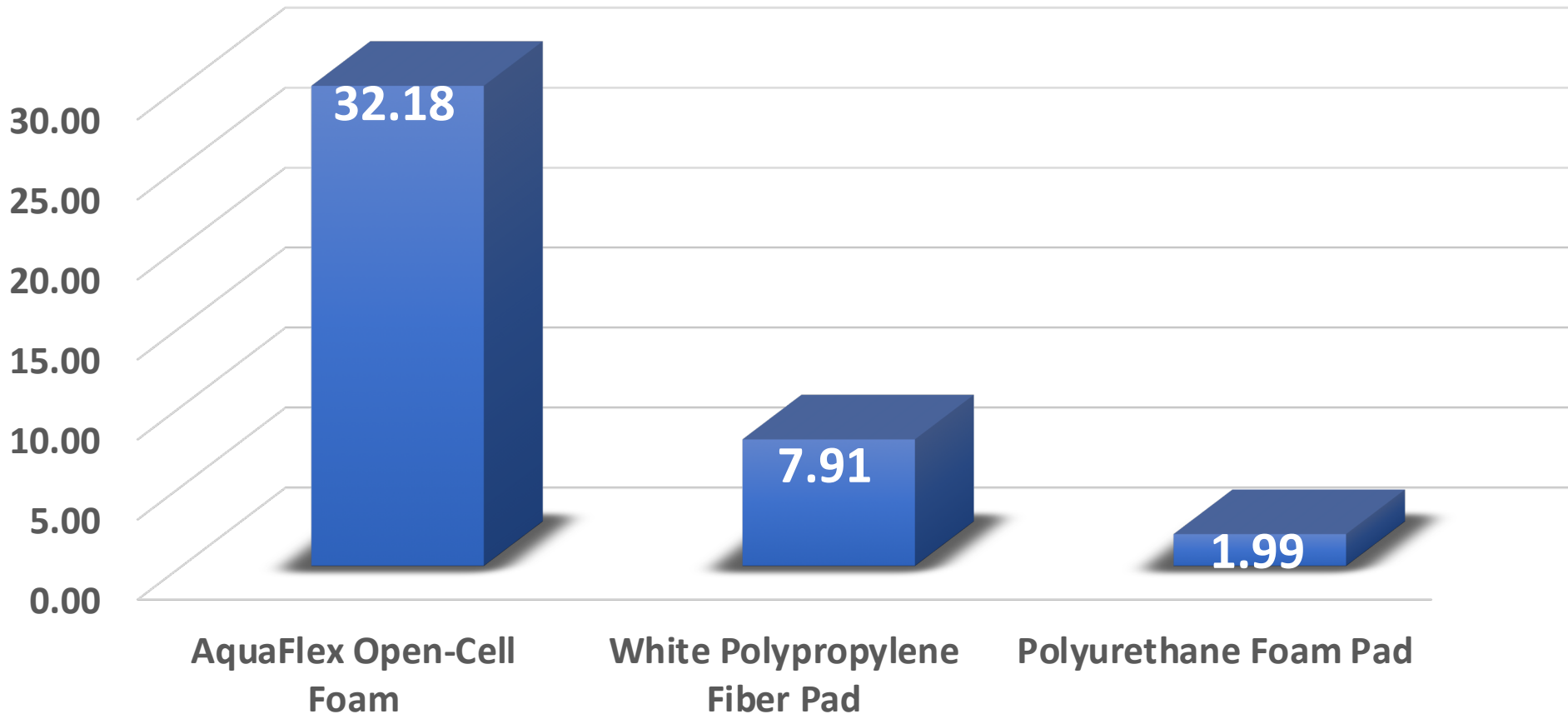
### ASTM F726 24 Hour Test - Gallons of Oil Absorbed per Square Foot of Sorbent





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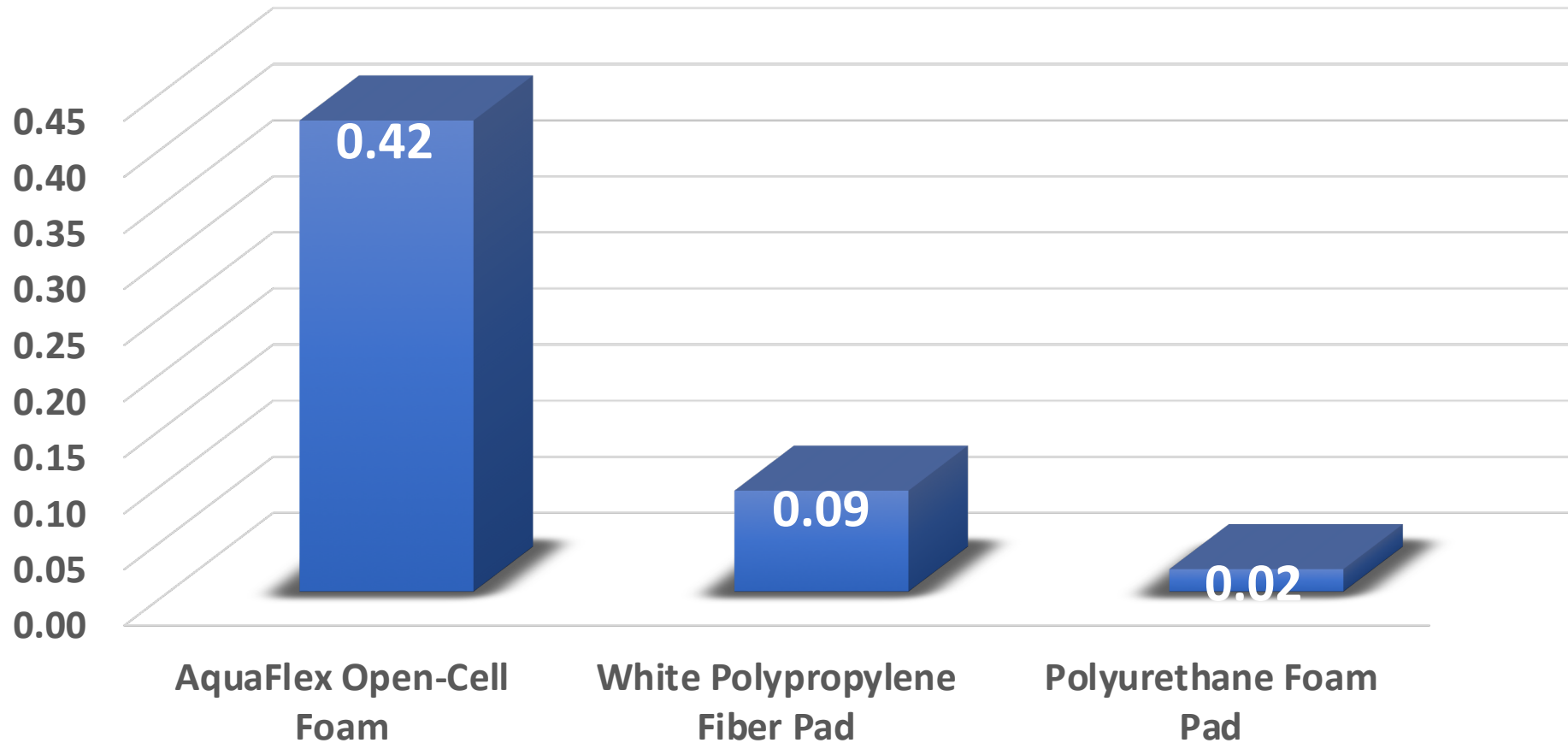
### ASTM F726 15 Minute Test - Multiple of Absorbed Oil Weight to Sorbent Weight





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### ASTM F726 15 Minute Test - Gallons of Oil Absorbed per Square Foot of Sorbent





# White Polypropylene Fiber Sorbents / Needless Filling of Landfills

Toxic to the Soil - 1,200 Years to Degrade

(Pictures from ExxonMobil Pipeline Spill in Yellowstone River, Laurel, MT and Pipeline Spill in Mayflower, AR)





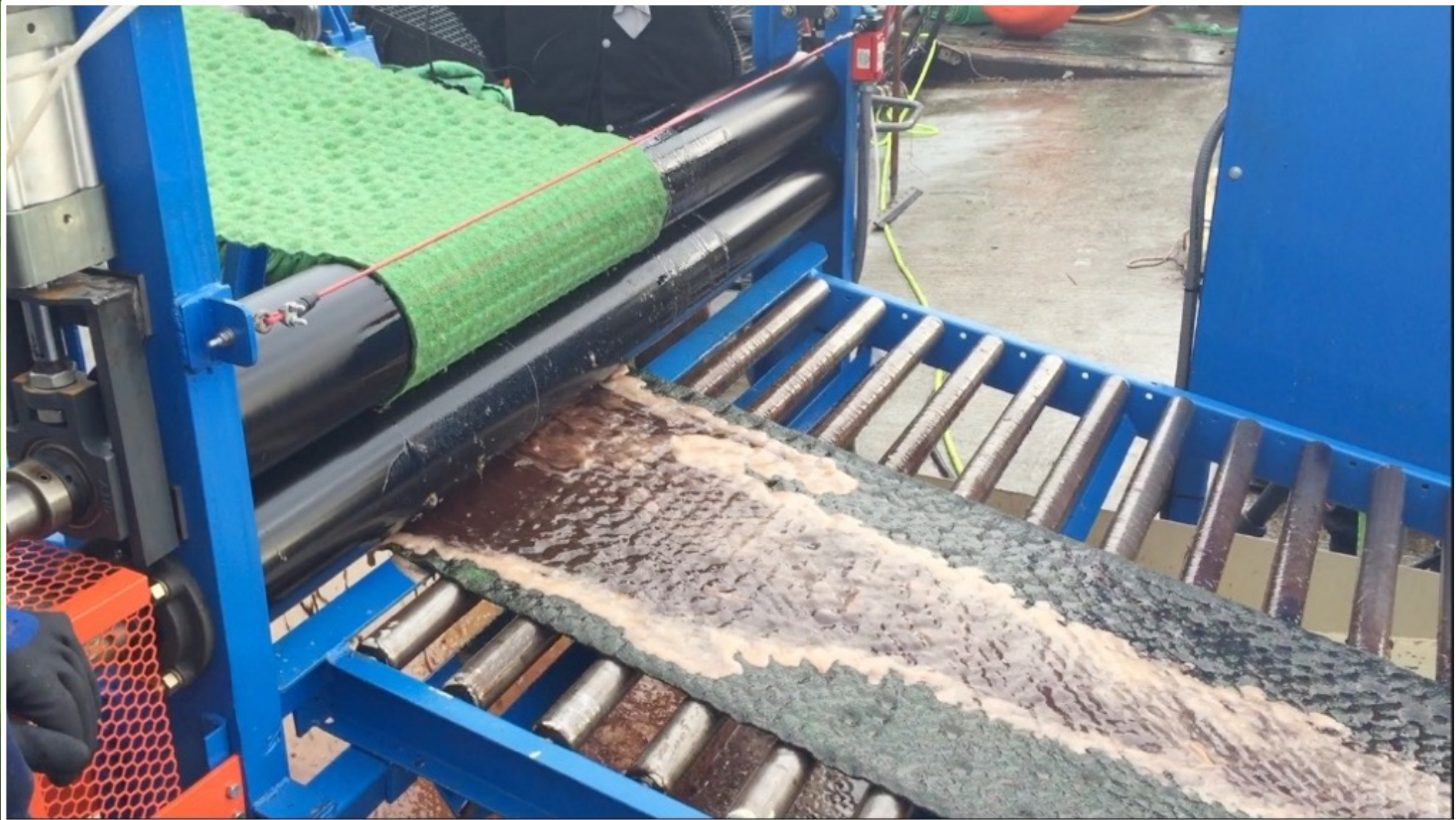
# Failed Single Use White Plastic Booms and Pads Filling Landfills Needlessly





# AquaFlex as Previously Tested in Outdoor Tank at Ohmsett in 2014

Wringing and Recovery of Oil / Open-Cell Foam Reused Over and Over Again





Status Quo of Inaction  
with Polypropylene  
Fiber Sorbents Not  
Efficiently Removing Oil  
from Water and  
Needlessly Filling  
Landfills...

No Longer Acceptable...







# Sustainability

## Sustainability: It's our business.

Clean Harbors recognizes that sustainability stewardship is a core aspect of our brand and a key component of our long-term business success. Sustainability is our responsibility to the environment, society and the economy. We are committed to working with stakeholders to enhance business value while minimizing negative impacts and seeking opportunities for improvement.

### Our comprehensive Sustainability program demonstrates several of the Company's objectives:

- To identify key impact areas within the three elements of sustainability (environmental, social and economic);
- To measure those key impacts, set targets and manage performance;
- To continuously improve, based on ongoing evaluation of our impact areas;
- To prevent pollution and comply with all applicable legal and regulatory requirements; and
- To leverage our operations, our supply chain, and our products and services to improve sustainability performance.

In support of these commitments, Clean Harbors will continue to assess the environmental, social and economic impact of our operations and our products. We will use information gathered through our ongoing sustainability efforts to identify enhancements to our business model, as well as specific activities that could mitigate the Company's impacts on the environment, society and the economy.





SERVICES INDUSTRIES LOCATIONS

# Sustainability

*“In support of these commitments, Clean Harbors will continue to assess the environmental, social and economic impact of our operations and our products. We will use information gathered through our ongoing sustainability efforts to identify enhancements to our business model, as well as specific activities that could mitigate the Company’s impacts on the environment, society and the economy.”*



# From ExxonMobil's 2017 Sustainability Report

"ExxonMobil is committed to excellence in environmental performance. It takes every single one of us, every day. It's simply how we work."



**Kylie Bishop**

Environmental engineer, ExxonMobil  
Chemical Scotland



# AquaFlex Demonstration for ExxonMobil in Mayflower, AR 2013

## ExxonMobil's Obie Cambre with Scott Smith of AquaFlex







**AquaFlex as Deployed and Endorsed by BP and the American Petroleum Institute (“API”) in the Deepwater Horizon Gulf of Mexico Oil Spill**



Note: Oil is attracted to and removed by AquaFlex Pad

Note: White Pad remains "white"

USA  
TODAY

## After BP oil spill, thousands of ideas poured in for cleanup

Updated 11/15/2010 3:25 PM

By Julie Schmit, USA TODAY



Scott Smith of Collect Technologies shows his oil-absorbing Opflex foam.

Costner.

**Cover story**

Most of the ideas weren't workable: freeze the well into submission or bury it in a nuclear explosion. Many of the ideas had already been tried or discarded. Some of the ideas would've created other problems: dump popcorn from airplanes to soak up oil but create a tasty toxic treat for marine life. But more than 100 ideas were good enough to

Please see COVER STORY next page ▶

**in different way**

**AQUAFLEX**

## In Action: Proven in BP Oil Spill

*First commercial use was during Macondo disaster, delivering unmatched results*

**Endorsed and Recommended by BP and the American Petroleum Institute ("API")**





You are here: [Home](#) ▶ [Gulf Coast activity](#) ▶ [Cleanup updates](#) ▶ Specialized foam takes on new role in Gulf cleanup

DATE: September 1, 2010 9:42:04 AM CDT

## Specialized foam takes on new role in Gulf cleanup

Alternative Response Technology  
API Study-Progressing Learnings

Early in the Gulf response, Kinnaird was impressed by a product demonstration of Opflex and contacted Lou Weltzer, who was stationed in the Critical Resources Unit in New Orleans with responsibility for evaluating cleanup materials. After receiving his own product demonstration, Weltzer placed an order for a truckload of the material. Subsequent orders from BP total about two million square feet. Weltzer also began contacting associates at other locations to spread awareness of Opflex's capabilities. Since the experience with BP, Smith has received an order from the Chinese government to assist in the Dalian Oil Port cleanup, as well as a range of other cleanup operations throughout the country, which continues to solidify Opflex's role as a new and effective method for oil spill cleanup.



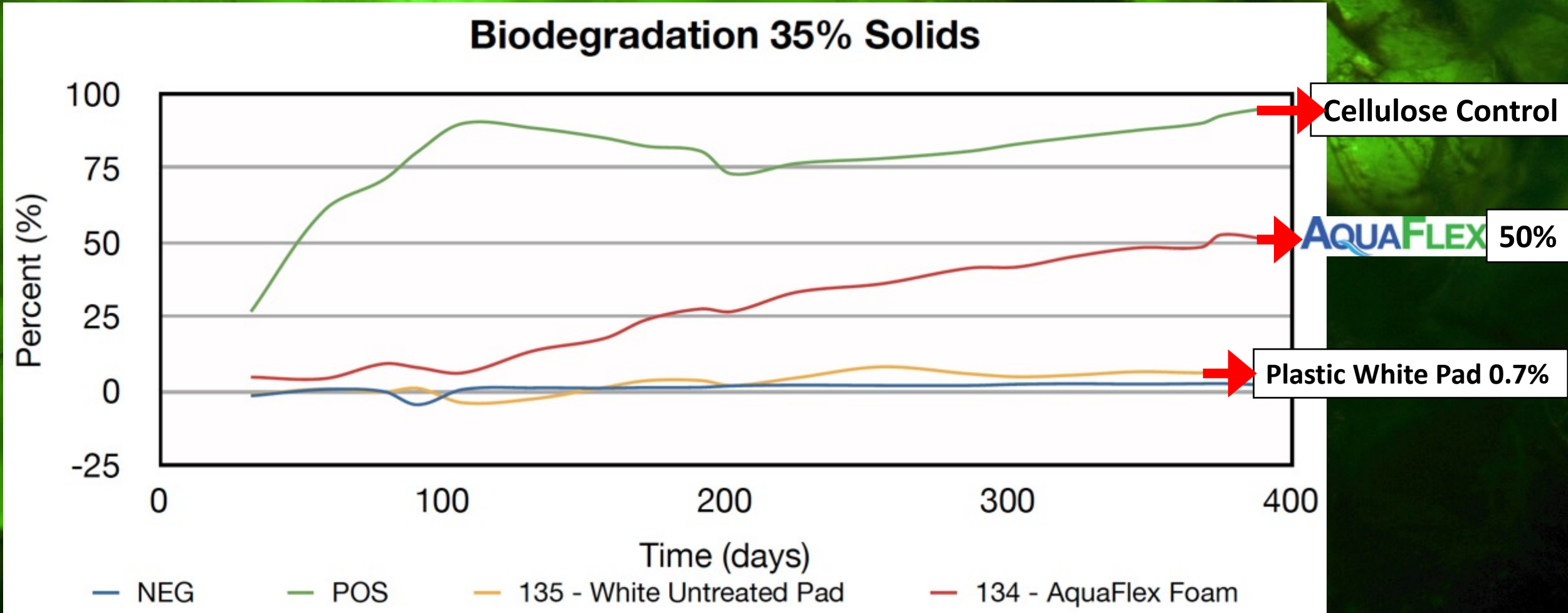


**AquaFlex Technology Proven in The Real World**



# AquaFlex Reusable Open-Cell Biodegradable Elastomeric Foam vs. Single Use Plastic White Pads as Tested for Biodegradability in a Landfill Under ASTM D5226

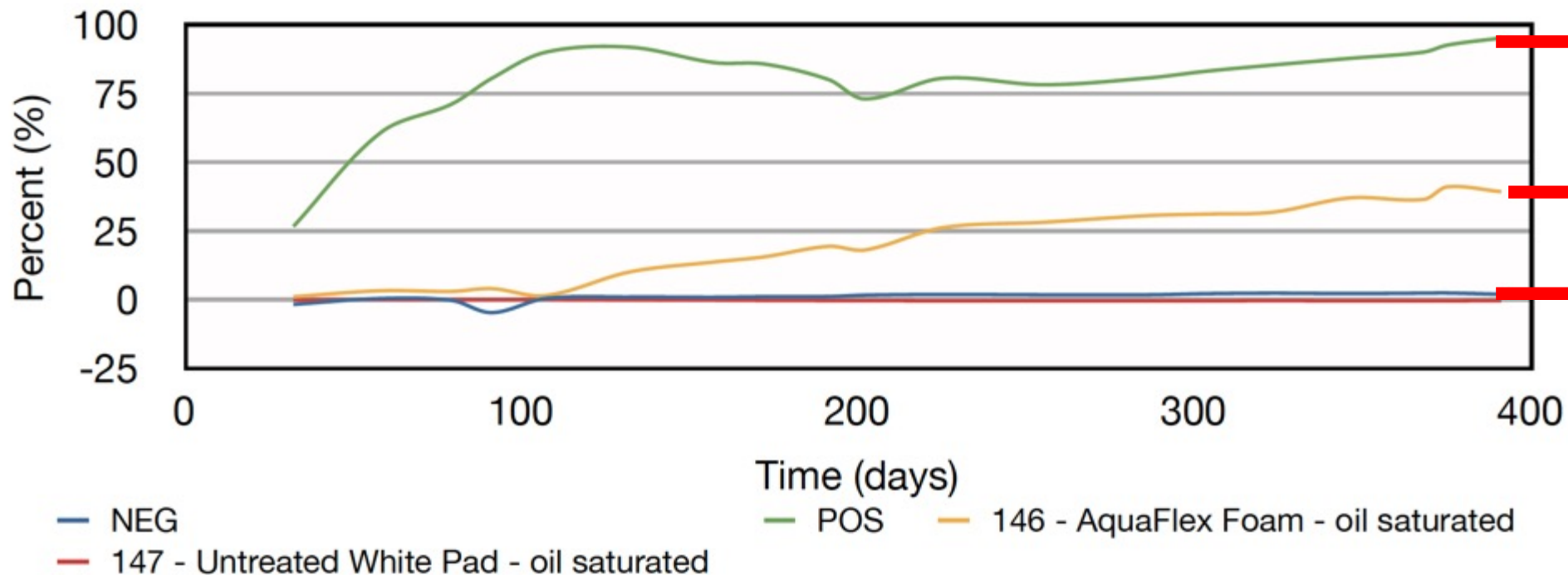
Baseline Test No Oil Saturation or Exposure to Oil



# AquaFlex Reusable Open-Cell Biodegradable Elastomeric Foam vs. Single Use Plastic White Pads as Tested for Biodegradability in a Landfill Under ASTM D5226

After Oil Saturation

## Biodegradation 35% Solids



Cellulose Control

**AQUAFLEX** 40%

Plastic White Pad 0%



## Single Use Plastic White Sorbents



- Single Use Plastic – NO Re-Use
- Absorbs From 0X – 10X Its Weight in Oil
- Absorbs Water and Sinks
- **Does Not Biodegrade In Landfills Under ASTM D5526**
- **0% Biodegradation After ~390 days**

- Multiple Use Open-Cell Foam Elastomer - Up to 50X Re-Use
- Absorbs From 20X – 35X Its Weight in Oil
- Repels Water and Never Sinks
- **Proven Biodegradability In Landfills Under ASTM D5526**
- **40% Biodegradation After ~390 days**
- Proven/Endorsed By BP/API In 2010 Gulf Oil Spill
  - Wrung Out, Centrifuged, & Re-Used By BP At Least 25 Times
  - Sent to Non-Hazardous Municipal Landfill in Plaquemines Parish. LA

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