

How much De-Oil-It do you need ?



De-Oil-It Application Formulation

This document provides an overview of how to think about De-Oil-It application formulation based on initial success stories, some common sense, and referring to the Dilution Guide Below.

DE-OIL-IT "CONCENTRATE DILUTION GUIDE"

HOUSEHOLD	Ratio	MARINE	Ratio	AVIAITON	Ratio
Driveways	3 to 1	Boat Wash	30 to 1	Carbon Build-ups	2 to 1
Pavers	4 to 1	Scuff Marks	5 to 1	Airport Runways	10 to 1
Lawn equipment	2 to 1	Bilge Cleaner	2 to 1	Turbines	2 to 1
Clothes, Shop rags	5 to 1	Bilge Pumps	2 to 1	Engine Parts	2 to 1
Garage Floors	30 to 1	Carbon Build ups	3 to 1		
Shop Floors	30 to 1	Fuel Tanks	3 to 1		
		Boat Docks	3 to 1		
AUTOMOTIVE	Ratio	REMEDIATION	Ratio	INDUSTRIAL	Ratio
Car Wash	30 to 1	On water	1 to 0	Metal Parts	4 to 1
Engine Cleaner	2 to 1	Beaches & Marshes	1 to 0	Hydraulic Lines	2 to 1
Engine Parts	2 to 1	Land down to 100 '	2 to 1	Gummed Deposits	1 to 1
Wheel Rim Cleaner	3 to 1	Retention Ponds	1 to 0	Factory Floors	30 to 1
Car Debugger	5 to 1			Loading Docks	3 to 1
REFINERIES	Ratio	ROADSIDE HAZARD	Ratio	JANITORIAL	Ratio
Drill Rigs	5 to 1	Emergency Spills	2 to 1	Parking Garages	5 to 1
Gas Station Platforms	6 to 1	Fire prevention	1 to 1	Commercial Floors	30 to 1
				Hospital Floors	30 to 1
				Supermarket Floors	30 to 1

The dilution ratios listed are by "parts water" to "parts concentrate". These are estimates only. The actual ratio needed may change depending on the amount and viscosity of the petroleum present for your particular application. Generally, the stronger the concentrate, the better the results.

As the comment in lower black footer denotes the dilution is "left TO right", where on the "left" is water and the "right" De-Oil-It.

A couple of examples

- A. Cleaning Drill Rigs Dilution 5:1 = 5 gallons water + 1 gallon De-Oil-It = 6 gallons of fluid
- B. Factory Floors Dilution 30:1 = 30 gallons water + 1 gallon De-Oil-It = 31 gallons fluid
- C. Remediation (H₂O) Dilution 1:0 is misleading, it really means just add De-Oil-It, we cover this situation later in this document.

How much De-Oil-It do you need ?

As a summary, a simple square footage chart is provided that is discussed in this document how calculations were made. Note that remediation product volume calculation is different and is dependent on application history and current situation contamination viscosity among other attributes.

Sq Ft Coverage												version 1.0					
DISCRIPTION		SIZE	UNIT				CASE		PALLET			Sq.Ft. Coverage (simple cleaning, call for ocean / land remediation quantities)					
UPC Code	Item Name - Item #	Unit Liquid Contents	Unit Photo	Unit Size	Unit Weight	Package	Case / Pack Size	Unit Weight	Pallet Configured	Pallet Sizes	Pallet Weight	2:1	3:1	4:1	5:1	6:1	30:1
7 93573 04793 9	Ready-To-Use Driveway Stain Remover	22oz. Spray Bottle		L 4-1/2"	1.70 lbs.	12 Units	L 13-1/4"	22 lbs.	Block: 14	L 48"	1,272 lbs.						
				W 2-1/4"			W 10"		Tiers: 4	W 40"			Covers	72.0	already mixed at a		
				H 11-1/2"			H 11-7/8"		56 Cases	H 52-1/2"					25:1 dilution		
7 93573 04794 6	Ready-To-Use Boat Bilge Cleaner	22oz. Spray Bottle		L 4-1/2"	1.70 lbs.	12 Units	L 13-1/4"	22 lbs.	Block: 14	L 48"	1,272 lbs.						
				W 2-1/4"			W 10"		Tiers: 4	W 40"			Covers	72.0	already mixed at a		
				H 11-1/2"			H 11-7/8"		56 Cases	H 52-1/2"					25:1 dilution		
7 93573 04795 3	Ready-To-Use Fuel & Oil Spill Eliminator	22oz. Spray Bottle		L 4-1/2"	1.70 lbs.	12 Units	L 13-1/4"	22 lbs.	Block: 14	L 48"	1,272 lbs.						
				W 2-1/4"			W 10"		Tiers: 4	W 40"			Covers	72	already mixed at a		
				H 11-1/2"			H 11-7/8"		56 Cases	H 52-1/2"					25:1 dilution		
7 93573 88933 1	Industrial Strength Concentrate	1-Gallon Jug		L 7-1/4"	8.80 lbs.	6 Units	L 16-1/4"	53 lbs.	Block: 14	L 48"	1,941 lbs.						
				W 4"			W 14-1/8"		Tiers: 4	W 40"		48	65	81	97	113	500
				H 12-1/4"			H 12-1/2"		36 Cases	H 55"							
7 93573 88934 8	Industrial Strength Concentrate	5-Gallon Pail		R	45 lbs.	1 Unit	N/A	N/A	Block: 12	L 48"	1,660 lbs.						
				D 12"			N/A		Tiers: 3	W 40"		242	323	403	484	565	2,500
				H 14.5"			N/A		36 Pails	H 56"							
7 93573 88935 5	Industrial Strength Concentrate	55-Gallon Drum		R 23"	503 lbs.	1 Unit	N/A	N/A	Block: 24	L 48"	2,052 lbs.						
				D 75"			N/A		Tiers: 1	W 40"		2,661	3,548	4,435	5,323	6,210	27,500
				H 34-1/2"			N/A		4 Drums	H 39"							
7 03573 03152 5	Industrial Strength Concentrate	275-Gal. Caged Tote		L	2,200 lbs.	1 Unit	N/A	N/A	1 Tote	N/A	N/A	13,306	17,742	22,177	26,613	31,048	137,500
				W			N/A		N/A	N/A							
				H			N/A		N/A	N/A							
				Tote	998 kg.		51 cu.ft.	998 kg.	275 Gallons	N/A	N/A						
Last Edit	5/4/17	0.062									Gallons	3	4	5	6	7	31

We are going to give four examples of how to calculate application coverage so that you can have a starting point to estimate how much product to utilize. These examples are estimates only and can differ from specific situations depending on the viscosity of the oil, grease or fuel, and also depending on how De-Oil-It is applied.

De-Oil-It needs water and air to activate, patience (time to work), and potentially some follow-up applications. For land remediation we strongly advocate core samples taken before treatment and allow follow-up applications to be based on core sample results lowering the toxicity to acceptable levels or in many cases nearly totally removed. Ocean remediation follow-up applications may be necessary based on the severity of the contamination spill volume.

How much De-Oil-It do you need ?

Our examples

1. A client need to create a diluted 55-gallon drum
2. Estimating square foot coverage (and at same time total diluted solution volume)
3. A land remediation sample
4. A water remediation sample

EXAMPLE 1 of 4: Client makes a diluted 55-gallon drum of De-Oil-It plus water

Our first example comes from an actual government bid in which the bid absolutely required delivery of pre-diluted product. While this is against Greenworld Innovations / De-Oil-It rules of engagement for distributors, dealers and trade we will assist you in this process so that you can gain approval to delivery pre-diluted samples. Clients buying De-Oil-It obviously can dilute the product as they see fit but cannot sell either the concentrate or the diluted product.

A sample task is to clean garage / parking lot floors. This is a perfect task for De-Oil-It and would work using buckets and mop, buckets and brush, or pressure washing. Looking at the dilution guide cleaning floors is typically a 5:1 dilution, meaning 5 parts water and 1 part De-Oil-It.

The final formula for 5:1 dilution 55-gallon drum (with Greenworld Innovations explicit agreement) would work out to 45 gallons of water and 9 gallons of De-Oil-It concentrate. (Actually to get to 55 gallons topped off there is a splash of 108 ounces water and 21 ounces De-Oil-It – still a 5:1 dilution).

NOTE: *In this example a government client wanted to fill an empty 55-gallon drum with a 5:1 diluted De-Oil-It Solution... The top of the 55-gallon drum was outfitted with a pump sprayer.*

5:1 literally means 5 gallons water for every 1 gallon De-Oil-It = 6 gallons of diluted solution. To fill a fifty five gallon drum there would then need to be 9 portions of this diluted solution placed into the drum. In the end, the client added 9 gallons of De-Oil-It and 45 gallons water to create the 55 gallon working solution.

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EXAMPLE 2 of 4: Estimating square foot coverage (and at same time total diluted solution volume)

So let's assume someone wants to buy a 55-gallon drum INDUSTRIAL CONCENTRATE and from this drum they will manage their own dilution.

In example two the client wants to buy a 55-gallon drum and they will make their own dilution (we will keep with the 5:1 dilution for comparison purposes). Further in example 2 the question is HOW MUCH DILUTED SOLUTION CAN I PRODUCE FROM THE CONCENTRATE. This boils down to "how much square footage can a 55-gallon drum of concentrate create using a 5:1 dilution?"

From example 1 we learned that a 5:1 dilution needs about 9 gallons of De-Oil-It and about 46 gallons of water. This is a total of 55 gallons of liquid, diluted.

To estimate how far the product will go we can estimate a couple of things. How many total gallons of 5:1, and then what square footage this can be spread.

There are 6 cuts of a 55 gallon drum to totally use the concentrate to make a 5:1 ratio; $6 \times 9 = 55$.

The same would be for the water requirement to make a 5:1, so $6 \times 45 = 270$ gallons water.

The total 5:1 dilution of liquid is $270 + 55$ or about 325 gallons

How much coverage is 325 gallons?

Starting with some science: there are 7.48 gallons of water per cubic feet (this is a scientific fact, google check us if you like).

But a cubic foot is 1 foot by 1 foot by 1 foot... this means we assume 12 inches standing water! Come on, that's a lot.

If we divide by 12 to just work with 1 inch standing water the space left after this division is about .62 gallons of fluid can be fit into the conceptually chopped down cubic foot.

An inch of standing water is still a lot, I would use 1/10 of this number to get 0.062 gallons to clean a 1 foot 1 foot solid surface.

325 gallons ought to cover approximately about 5240 square feet.

$5240 = (325 \text{ gallons} / (0.062 \text{ gallons} / \text{square foot}))$

How big is their garage / parking lot area to clean??

I would estimate parking lots are closer to 20-30,000 square feet easily. For a 5:1 dilution we claim about 1050 square feet... 30,000 square foot parking lot probably should have 6 drums (5.7 exactly) to cover.

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EXAMPLE 3 of 4: Land Remediation: 2 Drums per Acre

In this example we use direct quotes from those who have already successfully remediated land.

We are told to assume at least two applications, the first one 5:1 dilution with 300 gallons mixed fluid (water + De-Oil-It) per acre, and a second follow-up application of 2:1 dilution using 225 gallons mixed fluid. There could be additional applications once the land is tested (usually taking a core sample and testing for contaminants in PPM or Parts Per Million); applying extra product is then a matter of doing so until the lab tests result in degrading or eliminating the hydrocarbon contaminant.

From successful land remediation results 2 initial applications are formulated as follows

Application 1: 300 gallons at 5:1 is approximately 250 gallons water and 50 gallons De-Oil-It concentrate, whereas

Application 2: 200 gallons at 3:1 is approximately 150 gallons water and 50 gallons De-Oil-It concentrate.

This dual application process can treat ONE ACRE, or 43,560 square feet of land. We are using 110 gallons of de-oil-it (total fluids 450 gallons of water + de-oil-it).

This is roughly **2 Drums per Acre**.

This should treat 30 up to about 100 feet in the ground in time. Total feet in depth depend on porous nature of the land and dew point / humidity / aridness of the land (De-Oil-It has no shelf life and will continue to work as long as there is De-Oil-It, hydrocarbon (oil, grease, or fuel), water and some air.

This is an example from a successful remediation project. The 2 drums (110 gallons of De-Oil-It) is a suggested starting point. The end total amount of De-Oil-It depends on how much contaminant, testing to determine how many PPM (Parts Per Million) contaminant is cleaned.

Notice the difference from the last example; in example 2 we made the case for 1 drum per 5240 square feet. An acre is 43,560 and that would indicate 8.31 drums (round to 9) IF WE WERE TREATING LAND THE SAME WAY AS A SOLID SURFACE. Land remediation shows that less volume of De-Oil-It is just as effective. Why the difference?

For land remediation all the fluid is meant to be used, soaked into the ground, and then left at the site for as long as possible. IT STAYS WHERE IT WAS PUT (in cleaning there is one contact time and the rest goes down a drain). De-Oil-It does not have a shelf life and will continue to work as long as there is available water, air and hydrocarbon.

For the garage floor / parking lot cleaning example, the amount of fluid does not stay and its concentration and total fluid level needs to be a little bit higher for cleaning because after cleaning the fluids are drained (or dried). It's not the same action as land remediation (soaking). However, any remnants of de-oil-it on the cleaned surface can still be activated with water and even humidity.

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Typical contaminants clients have successfully tested on land remediation include eliminating or drastically reducing some / all of the following kinds of contaminants that De-Oil-It can be effective:

- Hydrocarbons with carbon chains C-5 to C-40
- Benzene, Xylene, Toluene
- TCE, PAH, and PCB contamination
- Fuel Oils Fossil Fuels: gasoline, diesel, and aviation gas
- Condensate from Pipeline leakage
- Glycols

Trichloroethylene (TCE) is a chlorinated solvent. **TCE** is used commercially as industrial degreasers, spot removers, and in dry cleaning. **TCE** is not a natural chemical, it is manmade.

Polycyclic aromatic hydrocarbons (PAHs), also polyaromatic hydrocarbons) are hydrocarbons—organic compounds containing only carbon and hydrogen—that are composed of multiple aromatic rings (organic rings in which the electrons are delocalized). ... **PAHs** are neutral, nonpolar molecules found in coal and in tar deposits

Polychlorinated biphenyls (PCBs) are a group of manmade chemicals. They are oily liquids or solids, clear to yellow in color, with no smell or taste. **PCBs** are very stable mixtures that are resistant to extreme temperature and pressure. **PCBs** were used widely in electrical equipment like capacitors and transformers

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EXAMPLE 4 of 4: Water Remediation: Large oil spill ship or oil rig: 3 drums per 300 gallons spill

Our current best example of water remediation of a large spill of oil is on January 19, 2014 when De-Oil-It was used to help clean up an oil and fuel spill at Point Sable Beach in La Brea Village (Trinidad and Tobago). We include in this document a copy of a newspaper article reviewing this emergency that highlighted using De-Oil-It. We also include Facebook coverage of another spill just a year later, also in Trinidad and Tobago.

In this Point Sable Beach spill, De-Oil-It was brought into the solution well after the spill started as another product was used unsuccessfully. Had the response team used De-Oil-It to begin with the clean-up process would have been much more complete. 4 barrels were used to clean vessels and other items clogged with oil. This was an end of spill cleanup when De-Oil-It was applied; its help at that stage was not only to clean but also to detoxify.

In another spill about 1 year later in Freeport Bahamas whereby De-Oil-It was claimed to have saved 60% on labor and time.

We don't have a lot of data derived from these spills or had other opportunities to provide guidelines, but we do have some pointers.

De-Oil-It is designed specifically to be very effective in water. Tests and the oil spill in Trinidad have shown that one gallon of De-Oil-It can be diluted up to 32 times in water and remain effective. This is a 32:1 dilution naturally, beyond this point according to testing De-Oil-It will remain in this highest dilution point and will not worsen or decline in performance.

32:1 is of course 32 gallons water plus 1 gallon De-Oil-It or 33 gallons. A fifty-five gallon drum therefore should yield 1815 gallons of remediating fluid that can treat approximately 30,000 square feet.

How many gallons of De-Oil-It depends on the viscosity of the oil, the volume of oil, and the rate of new spilled oil adding more contamination.

For large oil spills of a ship or oil rig we do not have data yet to make suggestions. However our purpose of distributor multiple locations is meant in part to provide an opportunity to serve in an emergency and to this end it is important to have a supply of 55-gallon drums and 275-gallon totes.

We will cover large spills first before mentioning spills in a marine, lake, etc. And then we will make a final comment on oil rig gushes on land.

For large oil spills of a ship or oil rig there are two solutions available. The first is "first responder action", meaning to get a degreaser action on the oil as soon as possible to initiate break down of the oil slick to aid in containment and environmentally responsible clean up.

In a "first responder action" De-Oil-It is a great choice as the product eliminates flash point of the spill that will reduce fire risk or all together act as a fire extinguisher. De-Oil-It will immediately start to break

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down the oil. Also compared to competitive products already used in large oil spills De-Oil-It does not “grab oil” and sink to the bottom, and De-Oil-It is non-toxic in its action (it is a non-toxic product and its action on oil spills is to break the hydrocarbon chain into much smaller molecular structure much more vulnerable, and less toxic, to bacteria plus plankton / protozoa that will naturally continue the break down process).

So how much De-Oil-It is needed?

This depends on the amount of oil spilled. Large oil tankers can spew 30-50 million gallons of oil whereas oil rigs have been on record spilling up to 350 million gallons.

This possible size oil spills is formable. Until we are actually tested in action we can't adequately comment on this kind of solution. But we can offer the following lesson learned from the Horizon Oil Spill – here is a snippet, the entire document is in the appendix.

In a 10-minute span after spilling into the sea, 300 gallons of oil can spread to a radius of 160 feet and create a slick a fourth of an inch deep. After that, how far and fast the oil spreads depends upon the water's surface tension—how much the molecules in the water are attracted to one another—and the oil's thickness.

The day after it enters the water, chemicals in the oil begin to transform, both at the water's surface and farther into the water column. Trace elements lurking in water can speed or slow the process while the sun fuels the breakdown, decomposing even the most complex of oil's components over time. The warmer the water temperature and the more sun exposure, the faster the oil breaks down.

During the first few days after a spill, between 20 to 40 percent of oil's mass turns into gases, and the slick loses most of its water-soluble hydrocarbons—what's left are the more viscous compounds that slow down the oil's spread across the water.

By Cassie Rodenberg, Popular Mechanics

May 7, 2010

There are a couple of things to point out. First, the surface tension of oil is critical for initial destruction of the oil slick; to this end De-Oil-It is being approved through the EPA (preliminary testing in Mar 2017 was successful, it's just a matter of completing formalized testing then getting on the EPA list for oil spills) as a surface agent cleaner... meaning De-Oil-It immediately begins work as reducing surface

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tension. This will be a very good choice for first responder action; fresh oil needs to be treated soon as the spill starts. In addition since De-Oil-It naturally removes the flash point of hydrocarbon contamination (fuel, oil or grease spills) a double action of starting to break down the oil and then also preventing fires should set firmly in your mind De-Oil-It is important for emergency spills.

Second in a few days a lot of oil will naturally convert to gas, reducing the volume / mass of the oil spill. But the oil will have concentrated and become more viscous. At this point it might be better to use the super concentration form of De-Oil-It (its called "Malone 98"). This form of De-Oil-It is 50% more concentrated but don't let this fool you, its compounded formula works extremely aggressively on the thickest of oil, and it is also non-toxic. But as a distributor you have to have prior purchases and use of the Industrial Concentrate before we license Super Concentrate "Malone 98" ... the reason is whoever disperses MUST WEAR PROTECTIVE CLOTHING, GLOVES, etc.

On either Industrial Concentrate or Malone 98 ("Super Concentrate") the factory can produce daily approximately 20,000 gallons per shift or about 360 drums (up to about 1200 drums per day).

De-Oil-It is a tool, not an end-to-end solution when compared to a large spill but we can estimate the following:

1. De-Oil-It is a good choice for first responder action
2. De-Oil-It is a good tool for assisting with containment
3. De-Oil-It is a superior tool to control toxicity

Until we fully understand De-Oil-It in action with large spills we can best hope that there is a good supply of distributors with drums and totes on stock. We know our manufacturing plant can produce some 20,000 to well over 30,000 gallons per day.

For ocean / water way spills De-Oil-It Industrial Concentrate should be applied direct without regard to dilution as the water in the ocean will be sufficient. The wave action should be sufficient for agitation of the oil + de-oil-it. But when the oil slick has been reduced by evaporation into gases, the thicker oil could reduce the action of the waves; in this case agitation of the water will need to be performed in some way.

If a flotilla is placed around the spill then initial application of de-oil-it could help to at least start break down for other kinds of agents to assist in completing this action. It might be necessary to then order / apply SUPER CONCENTRATE which is 50% stronger than Industrial Concentrate and works much faster.

De-Oil-It then is probably a tool used in a three part application: First Responder dump what you have, assisting with containment to break down the oil so that other agents can be more effective if not add microbes and enzymes to accelerate De-Oil-It behavior. And one hundred percent De-Oil-It should be a solid choice for toxicity control as the oil spill becomes more in control in the clean up process.

Finally, an oil rig on land is just as bad as in the ocean. We would suggest that this is possibly a worst condition than an oil rig spill in the ocean only because in the ocean we have the activation and

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acceleration ingredients of WATER plus BACTERIA. On land for a very large spill access to water is critical as this is the activation ingredient for De-Oil-It.

OIL SPILL WATER: One drum can possibly cover 25,000 to 30,000 square feet

In 10 mins 300 gallons of oil can spread to a 160 foot circle or 80,384 square feet as learned in the Horizon Oil Rig accident and other data. This would require 3 drums to manage.

If De-Oil-It were spilled in water with no contamination it cannot physically dilute any more than 32:1, which would in effect cover 27,500 square feet. With a serious oil spill De-Oil-It needs to have a heavier concentration and therefore less square foot coverage. This is not a fault it is a need of more effectively and aggressively breaking down the oil to minimize its spreading and environmental detrimental effects.

A large oil rig disaster of 350,000,000 gallons of oil if desired to treat completely end to end could require approximately 4500 drums or 247,500 gallons covering the square footage of about 4315 acres.

For ocean oil spills applying De-Oil-It non-diluted is recommended, if you want to add water you will not "dilute" the clean-up effort as in some cases this will assist with treating the top of the oil spill (typically the force of spraying De-Oil-It alone can cause penetration into the slick, so having a pre-mix of De-Oil-It and water is not necessary).

Hydrocarbon contamination on land is a harder issue. In one proposal we needed to suggest nearly 8,800 drums for 4400 acres. The difference on land is less water is available, less agitation than the sea, less bacteria and organisms like plankton to consume the broken down oil in a non-toxic form.

Oil Spill Summary

- (A) 1 Drum per Acre or
- (B) 1 Drum per 7777 gallons spilled (nearly 25 minutes of spilling),
- (C) 4 Drums per hour of active oil spilling (i.e. oil gushing)

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Appendix

OIL SPILL OCEAN REMEDIATION

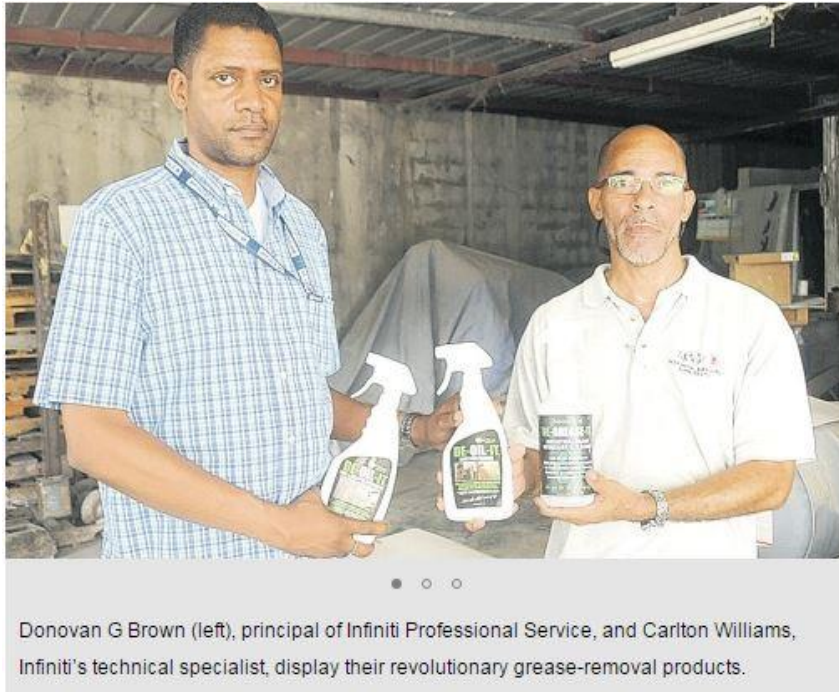
From the TRINIDAD and TOBAGO GUARDIAN newspaper Shaliza Hassanali Published: Sunday, January 19, 2014 Petrotrin workers using the de-oil-it product on pirogues at Point Sable Beach in La Brea, yesterday. Fishermen along the south-western peninsula whose boats were affected by Petrotrin's 11 oil spills were able to clean their vessels for the first time yesterday using a non-toxic product called "de-oil-it" sourced from the United States. On Friday, brothers Andrew and John Collier, owners of Tank Fuel Services Ltd, along with regional lead of the "deoil-it" product David Bovell gave president of the La Brea Fishing Association Alvin La Borde and a small group of fishermen a demonstration of the product in the presence of Petrotrin's officials. The product when applied on areas covered with oil, Bovell said, has the ability to disarm the toxic molecules, leaving surfaces thoroughly clean. The product, they said, apart from being non toxic to humans, animals and the environment, was also water-based and biodegradable. Bovell said La Borde was pleased with the product's effectiveness and gave it his seal of approval. As a result, Petrotrin ordered two barrels of the product. Yesterday, scores of fishermen whose boats were covered in oil last month, were able to clean their vessels at Point Sable in La Brea. Collier (John) said they could supply Petrotrin in excess of 5,000 barrels of de-oil-it daily. Collier could not say how many barrels of the product would be required by Petrotrin. He said one feature of the product was that "one barrel can be diluted 32 times in water." De-oil-it, Collier said, has been approved by the Ministry of Energy. Collier could not say what chemical Petrotrin used before in their clean-up exercise. "Our product is the only one that has worked so effectively." Collier said had Petrotrin used de-oil-it following the initial spill, the clean-up would have already been completed.



Petrotrin workers using the de-oil-it product on pirogues at Point Sable Beach in La Brea, yesterday.

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From the Jamaica Observer newspaper: New cleaning agents to revolutionise market By Brian Bonitto
Associate Editor - Auto & Entertainment bonittob@jamaicaobserver.com Friday, June 05, 2015 Donovan G Brown (left), principal of Infiniti Professional Service, and Carlton Williams, Infiniti's technical specialist, display their revolutionary grease-removal products.



(Photos: Bryan Cummings) IN his search for a powerful, yet environmentally friendly degreaser, Donovan G Brown stumbled upon what he sees as an industry game-changer: De-Grease-It and De-Oil-It. The former gasoline retailer swears by them. "For those nasty and dangerous oil spills on the roads, the De-Oil-It is ideal," said Brown, principal of the Red Hills Road-based Infiniti Professional Services. "Normally, a fire truck would come and wash most of the grease off the road surface using water. The grease that is left on the road is then covered with sand to make it accessible for vehicular traffic. The oil left to the side of the road just stays there, it doesn't break down. What the De-Oil-It does is to naturally break down the oil to a water base so it can be easily washed away," Brown continued. The principal said his products are the environmentally friendly alternatives to all available products currently on the market. The De-Grease-It, according to Brown, is the world's only green degreaser. He describes it as an all-purpose bio-degradable, non-flammable cleaner that can be used indoors and outdoors. [Greenworld Innovations note: De-Grease-It has a different formula than De-Oil-It and is intended for cleaning purposes, such as pressure washing; De-Oil-It is recommended for remediation and should be used in marine environments not De-Grease-It] "It is ideal for removing heavy deposits of grease, oil, dirt and grime. It is also suitable for machinery, engines and concrete floors," he said. Carlton Williams, Infiniti's technical personnel, gave a demonstration of how easily grease could be removed from his hands using the product with only water. He dipped his hands in jelly-like grease in a container. "You see, it doesn't

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leave a white residue," he said, after adding a couple drops of De-Grease-It to his hands then rinsing them. "It can also be used in the industrial, marine, automotive, health and janitorial sectors. It has a wide variety of uses. It is non-toxic, non-flammable, non-corrosive and odourless. It can be used on your clothes to remove grease without damaging it," he said. Williams said the De-Oil-It and De-Grease-It would be ideal for the companies with large fleet of vehicles and even the petroleum sector. "It's an American-made product and it is largely used in Australia and Trinidad and Tobago." The team also displayed their line of Fuel Medic fuel treatment system. "Most products on the market are octane enhancers. What we have is the real deal," said Williams. He poured some Fuel Medic treatment on age-old gasoline in a plastic bottle and in seconds it changed from a dark yellow to a lighter colour. "What it does is to remove the water from the old gas. And we have products for both gasoline and in diesel vehicles," said Williams



Tank & Fuel Services added 3 new photos.

June 25, 2015 · 🌐

Oil Spill- Happening as you read this!

Stay tuned for location, details and specifics.

Oil and fuel leaking into the sea. DE OIL IT being utilized to mitigate the spill.

+1 (868) 634-3395

#deoilit #tankandfuel #oilspill



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Tank & Fuel Services A TTFSL associated response team was dispatched and DE OIL IT was immediately applied to the oil spill in the harbor of Freeport, Bahamas.

The oil was contained, degraded and at a 60% labour cost savings.

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DE-OIL-IT They were totally amazed at how well and how quickly DE-OIL-IT worked to clean-up the spill. Virtually all traces of the spill were gone without causing any harm to the environment.

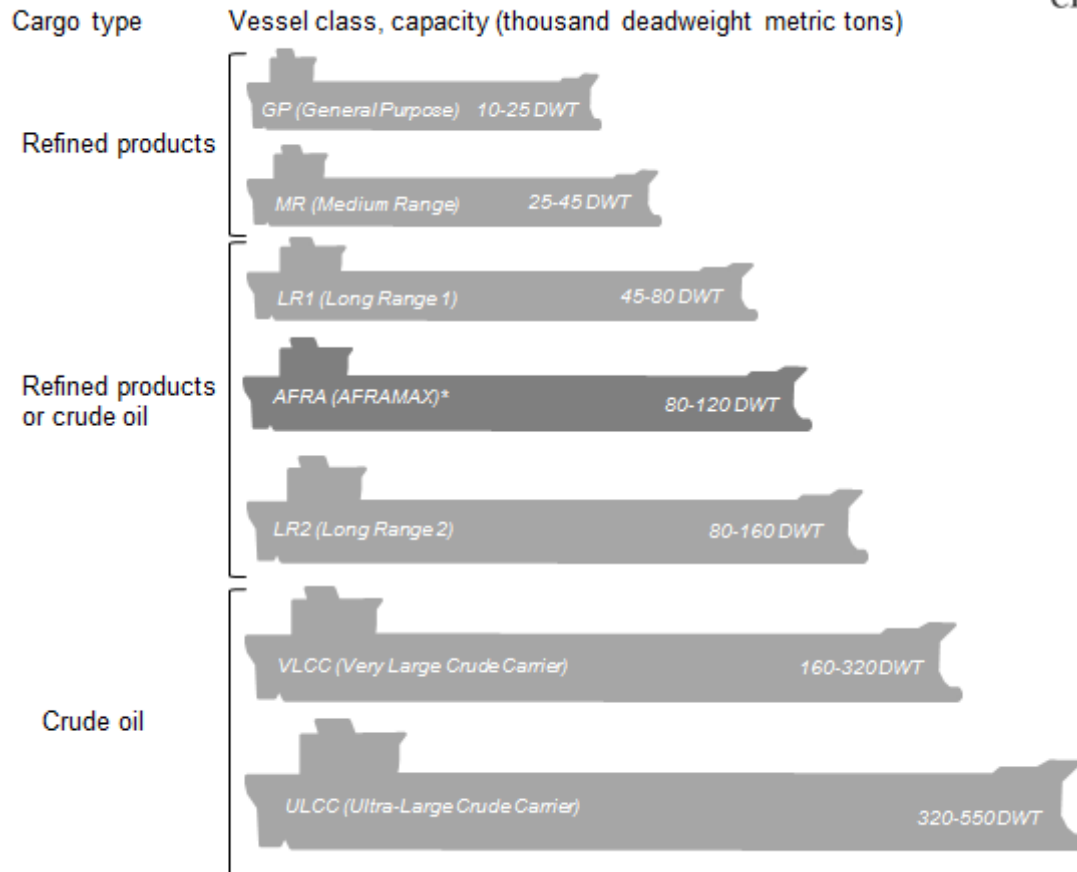
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How much De-Oil-It do you need ?

OIL SPILL DATA

AFRA uses a scale that classifies tanker vessels according to deadweight tons, a measure of a ship's capacity to carry cargo. The approximate capacity of a ship in barrels is determined by using an estimated 90% of a ship's deadweight tonnage, and multiplying that by a [barrel per metric ton conversion factor](#) specific to each type of petroleum product and crude oil, as liquid fuel densities vary by type and grade.

Average Freight Rate Assessment (AFRA) Scale - Fixed



Source: U.S. Energy Information Administration, London Tanker Brokers' Panel

Note: AFRAMAX is not an official vessel classification on the AFRA scale but is shown here for comparison.

The smaller vessels on the AFRA scale, the General Purpose (GP) and Medium Range (MR) tankers, are commonly used to transport cargos of refined petroleum products over relatively shorter distances, such as from Europe to the U.S. East Coast. Their smaller size allows them to access most ports across the globe. A GP tanker can carry between 70,000 barrels and 190,000 barrels of motor gasoline (3.2-8 million gallons) and an MR tanker can carry between 190,000 barrels and 345,000 barrels (8-14.5 million gallons).

Long Range (LR) class ships are the most common in the global tanker fleet, as they are used to carry both refined products and crude oil. These ships can access most large ports that ship crude oil and petroleum products. An LR1

How much De-Oil-It do you need ?

tanker can carry between 345,000 barrels and 615,000 barrels of gasoline (14.5-25.8 million gallons) or between 310,000 barrels and 550,000 barrels of light sweet crude oil.

A classification used to describe a large portion of the global tanker fleet is AFRAMAX. AFRAMAX vessels refer to ships between 80,000 and 120,000 deadweight tons. This ship size is popular with oil companies for logistical purposes, and, therefore, many ships have been built within these specifications. Because the AFRAMAX range exists somewhere between the LR1 and LR2 AFRA scales, the LTBP does not publish a freight assessment specifically for AFRAMAX vessels.

Over the history of AFRA, vessels grew in size and newer classifications were added. The Very Large Crude Carrier (VLCC) and Ultra-Large Crude Carrier (ULCC) were added as the global oil trade expanded and larger vessels provided better economics for crude shipments. VLCCs are responsible for most crude oil shipments around the globe, including in the North Sea, home of the crude oil price benchmark Brent. A VLCC can carry between 1.9 million and 2.2 million barrels of a WTI type crude oil. With current WTI prices near \$92 per barrel, a fully loaded VLCC could carry about \$100 million dollars' worth of crude oil.

There are a small number of ULCC vessels currently in use, as their size requires special facilities limiting the number of places where these vessels can load and offload. These massive vessels can carry around 2 million barrels to 3.7 million barrels of crude oil. The only U.S. port that can handle such large vessels while fully loaded is the [Louisiana Offshore Oil Port \(LOOP\)](#)

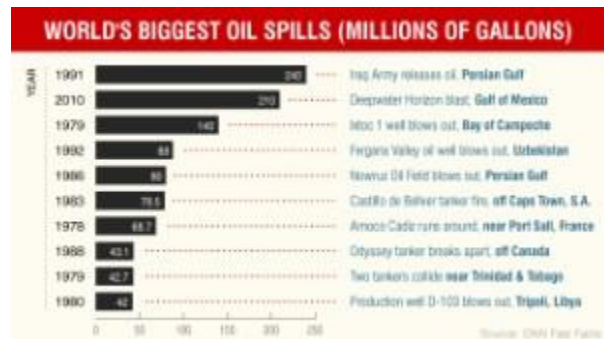
Ten Largest Oil Spills:

- 1. January 1991** - During the [Gulf War](#), Iraqi forces intentionally release [252-336 million gallons](#) of oil into the Persian Gulf.
- 2. April 20, 2010** - An explosion occurs on board the BP-contracted Transocean Ltd. Deepwater Horizon oil rig, spilling approximately 210 million gallons of oil in the Gulf of Mexico.
- 3. June 3, 1979** - Ixtoc 1, an exploratory well, blows out, spilling 140 million gallons of oil into the Bay of Campeche off the coast of Mexico.
- 4. March 2, 1992** - A Fergana Valley oil well in Uzbekistan blows out, spilling 88 million gallons of oil.
- 5. February 1983** - An oil well in the [Nowruz Oil Field in Iran begins spilling oil](#). One month later, an Iraqi air attack increases the amount of oil spilled to approximately 80 million gallons of oil.
- 6. August 6, 1983** - The Castillo de Bellver, a Spanish tanker, catches fire near Cape Town, South Africa, spilling more than 78 million gallons of oil.
- 7. March 16, 1978** - The Amoco Cadiz tanker runs aground near Portsall, France, spilling more than 68 million gallons of oil.
- 8. November 10, 1988** - The tanker Odyssey breaks apart during a storm, spilling 43.1 million gallons of oil northeast of Newfoundland, Canada.

How much De-Oil-It do you need ?

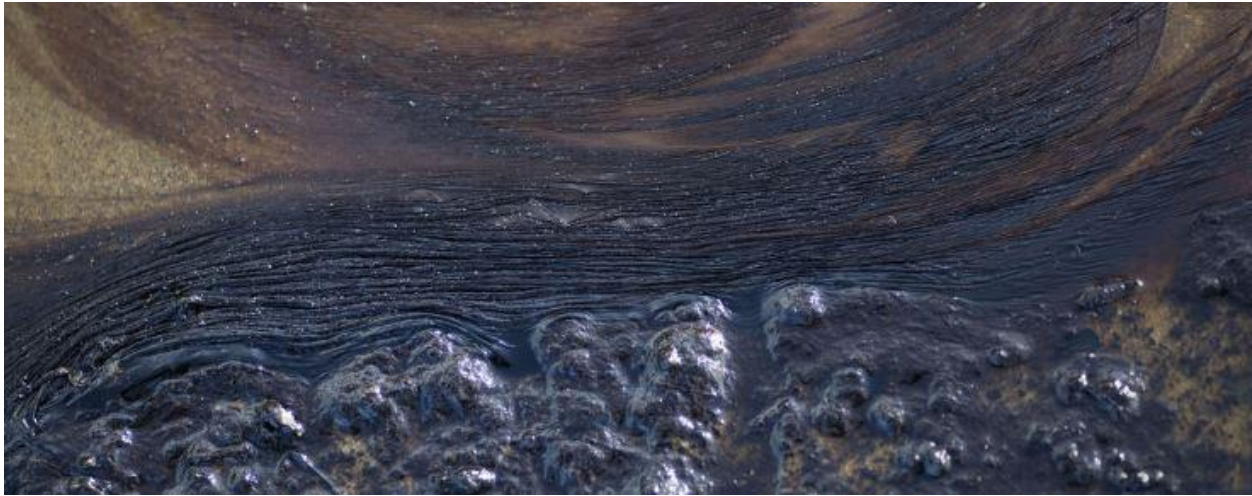
9. July 19, 1979 - The Atlantic Empress and the Aegean Captain tankers collide near Trinidad and Tobago. The Atlantic Empress spills 42.7 million gallons of oil. On August 2, the Atlantic Empress spills an additional 41.5 million gallons near Barbados while being towed away.

10. August 1, 1980 - Production Well D-103 blows out, spilling 42 million gallons of oil southeast of Tripoli, Libya.



How Oil Breaks Down in Water

Nature has its own chemical processes to minimize oil's impact in seawater—can human dispersant efforts measure up?



By Cassie Rodenberg

May 7, 2010

This article was originally published in May 2010, shortly after the Deepwater Horizon oil spill in the Gulf of Mexico. Earlier this week, an oil pipeline off the coast of Santa Barbara ruptured, spilling more than 20,000 gallons of crude oil over a 4-mile stretch of ocean. The leak has been stopped, but the damage is likely to affect wildlife in the surrounding areas.

Initiatives to scrub the Gulf of oil are moving forward. One method includes spraying chemicals to break up and sink globs of oil before the slick spreads to the shorelines—but using chemicals to clean up the ocean is controversial because the environmental consequences are unknown. The sea has its own way of handling the problem, but researchers worry that the water's processes won't act fast enough to save coastal shores from damage. Of course, science informs the debate. Here's what happens on a molecular level when oil hits ocean water.

How much De-Oil-It do you need ?

As soon as oil hits water, the ocean begins its deconstruction. In fact, the marine environment handles oil much like a human body handles alcohol: destroying, metabolizing and depositing the excessive compounds—in oil's case, hydrocarbons—then transforming the compounds into safer substances, says Stanislav Patin, chairman of the Aquatic Toxicology Committee under the Russian Academy of Sciences and international expert on marine pollution.

NOT ALL OIL LIVES AND DIES AT THE SURFACE.

Here's how it breaks down.

In a 10-minute span after spilling into the sea, 300 gallons of oil can spread to a radius of 160 feet and create a slick a fourth of an inch deep. After that, how far and fast the oil spreads depends upon the water's surface tension—how much the molecules in the water are attracted to one another—and the oil's thickness.

The day after it enters the water, chemicals in the oil begin to transform, both at the water's surface and farther into the water column. Trace elements lurking in water can speed or slow the process while the sun fuels the breakdown, decomposing even the most complex of oil's components over time. The warmer the water temperature and the more sun exposure, the faster the oil breaks down.

During the first few days after a spill, between 20 to 40 percent of oil's mass turns into gases, and the slick loses most of its water-soluble hydrocarbons—what's left are the more viscous compounds that slow down the oil's spread across the water.

DURING THE FIRST FEW DAYS AFTER A SPILL, BETWEEN 20 TO 40 PERCENT OF OIL'S MASS TURNS INTO GASES.

When components of crude oil evaporate and its lighter fractions dissolve or are chemically transformed, oil clumps form. These sticky masses are found in all types of water environments, in open and coastal waters and on beaches. They have an uneven shape and can measure tenths of inches to 4 inches in length. The oily masses serve as a base for developing bacteria and one-celled algae, while invertebrates such as crustaceans, resistant to the impact of oil, use them as shelter. These clumps can exist from months to years in enclosed seas and for years in the open ocean—eventually, they degrade.

How much De-Oil-It do you need ?

But not all oil lives and dies at the surface. Between 10 and 30 percent of the oil is absorbed by sediments and suspended materials and deposited on the bottom of the sea. This generally occurs in coastal zones and shallow waters where water mixes readily and more particles float. Usually, oil drifts in the same direction as the wind, though storms and water turbulence can speed up the spread of the oil. This movement in turn can degrade parts of the oil into separate fragments that spread far away from the initial spill. As these fragments move further offshore and into deeper areas, sediment absorption becomes a much slower process. While sediments latch onto oil components, so do filter feeders and plankton. Planktonic organisms absorb the oil/water mix and dump it at the bottom of the ocean when they excrete other metabolites. Once at the bottom, though, the decomposition rate of the oil halts almost completely because of lack of oxygen, and heavy oil fragments can be preserved inside sediments for years.

IN A 10-MINUTE SPAN, 300 GALLONS OF OIL CAN SPREAD TO A RADIUS OF 160 FEET.

From deep-sea sediment to bobbing clumps, oil quickly loses its original properties and breaks off into hydrocarbon components, with many different chemical compositions and existing in different forms. These forms can prove toxic to marine life, but after a time—with weathering, feasting micro-organisms and solar decomposition—the water self-purifies, as intermediate compounds gradually disappear and water and carbon dioxide reform.

To speed the process, researchers use oil dispersants, specialized chemical agents, to change the physical and chemical composition of oil. Basically, these chemicals work to mix oil and water better than normally possible so that the oil sinks deeper into the water column. Burying the oil a little deeper means that surface slicks won't float toward shorelines as readily. However, mixing these chemicals into water has long been a controversial process, as they have proved toxic to some marine organisms.

Greenworld Innovations, Corp (“De-Oil-It”) note on article: *There are two approaches to breaking down oil spills Dispersants and Surface Agent Cleaner. According to required EPA testing a dispersant decomposes oil and then draws into the water column quickly, but in most cases energy is required and in most products this is accomplished through solvents meaning the result is highly toxic. One of the competitors to De-Oil-It, Coexits, has been the posterchild of using a dispersant during the Horizon Oil Spill with the result of the clean up being much more toxic to the environment. De-Oil-It is tested as a Surface Agent Cleaner*

How much De-Oil-It do you need ?

and as such and as formulated does not release decomposed oil into the water column too fast; instead, de-oil-it begins a degrading process whereby the hydrocarbon chain is separated and then capped off by a non-hazardous action to separate water molecules and then attaching hydrogen and oxygen molecules to ends of a simpler less toxic hydrocarbon mini-chain and ends up as a surface emulsion. The resulting emulsion continues to break down hydrocarbons as long as there is a contaminant, De-Oil-It, water and air. The final result renders the hydrocarbon chain into much smaller very less toxic forms that are more permeable by natural occurring bacteria and possibly enzymes (used in various remediation practices). In addition De-Oil-It provides two more important attributes for massive oil spill remediation. The first was providing a surface emulsion so that oil is not made to disappear by dropping it to the bottom. Second, De-Oil-It immediately inhibits flash point meaning the contaminant will not catch fire, and will at the same time prevent nauseous fumes. Third, as a surface cleaning agent, tension is relieved on the oil surface so that it does not stick to objects, animals, etc.

The Gulf of Mexico Is Still Dying

Posted on [July 29, 2014](#) by [Site Administrator](#)

Pathogenic Micro-organisms Proliferate Due To Polluted And Poisoned GOM 'Bioterrain'

by [Gulf Oil Spill Remediation Cyber-Conference](#)

There have been several significant developments over the past few decades in the Gulf of Mexico (GOM) which now require special and immediate attention. The multitude of oil spills — both large and small — require extraordinary remediation measures, as well as the application of safe and proven technologies which will not make the existing hydrocarbon pollution worse. There are other major sources of water pollution in the GOM which have also become apparent, particularly since the eye-opening 2010 BP oil spill.

The Gulf of Mexico is Dying: A Special Report On The BP Gulf Oil Spill

The *BP Gulf Oil Spill* drew the world's attention to the GOM for a variety of reasons. The sheer volume of oil spilt was unprecedented, as were its profound and lasting effects on a large geographic area. Because it occurred in such a large body of water, many population centers were adversely impacted as they continue to be up to this very day. However, it was the incompetent and negligent oil spill response from BP that received the justified scrutiny of the entire world.

Some have since advanced the notion that global oil spill response has been forever changed for the better, because of how profoundly BP mismanaged the spill for all to see. In this regard, they speak of a literal sea change regarding the methodologies and modalities, process and procedure, science and technology that are now accepted by many of the nations of the world.

The entire world watched in horror as millions of gallons of the dispersant [Corexit](#) were used to 'disappear' the gushing oil in the Macondo Prospect throughout 2010 and beyond. Disappearing the oil actually meant sinking it, after micronizing it, so that both BP and the US Federal Government could be 'applauded' for a successful response. However, the known health risks/dangers and environmental damage caused by *Corexit* became so well publicized that it has now been banned in those countries which have learned from the BP fiasco. The following article provides more details in this regard.

Dispersant Use Like Corexit Sees Precipitous Decline Worldwide

The single revelation about the ramped up toxicity of Corexit-treated oil served to awaken many stakeholders about the safety of dispersant use in our coastal waters. More importantly, this issue also triggered a variety of concerns about the overall condition of the Gulf of Mexico. Residents along the GOM coast, business owners, annual vacationers, property owners and the like began to research and discover the true state of the Gulf.

How much De-Oil-It do you need ?

It was through a confluence of many disparate circumstances during the gushing, “ginormous” oil volcano which brought to light the following critical observations about the overall status of the Gulf of Mexico. These various perceptions and insights, when considered in the aggregate and within a much larger context, have allowed to surface an assessment of the GOM which can no longer be denied or ignored.

Dispersant Use Like Corexit Sees Precipitous Decline Worldwide

Posted on July 26, 2012 by State of the Nation

Dispersant Use Like Corexit Sees Precipitous Decline Worldwide

Most nations now favor non-toxic alternatives for oil spill response, especially bio-remediation agents

Unknown to many throughout the Gulf of Mexico (GOM) advocacy network, the BP Gulf oil spill has triggered a sea change in the way that oil spills are addressed around the world. Only because of the indiscriminate use of Corexit by BP throughout the Gulf did this environmental assault rise to a level of awareness necessary to change the status quo. The public outcry within the USA and beyond was heard by nations everywhere who have since been confronted with cleaning up massive oil spills.

Here's a short list of oil spills which have occurred since the BP oil spill in the Gulf.

How much De-Oil-It do you need ?

Spill / Vessel ♦	Location ♦	Dates ♦	Min Tonnes ♦	Max Tonnes ♦	Link(s) ♦
Nigeria oil spill	 Nigeria, Bonga Field	December 21, 2011	5,500	5,500	[7]
TK Bremen	 France, Brittany, Erdevén	December 16, 2011	220	220	[8]
Campos Basin oil spill	 Brazil, Campos Basin, Frade Field	November 7, 2011 – November 15, 2011	89	400	[9] [10]
North Sea oil spill	 United Kingdom, North Sea, Gannet Alpha platform	August 10, 2011 – August 13, 2011	216	216	[11]
2011 Yellowstone River oil spill	 United States, Billings, Montana, Yellowstone River	July 1, 2011	105	140	[12]
Bohai Bay oil spill	 China, Bohai Bay	June 4, 2011 – June 19, 2011	204	204	[13] [14]
2011 Little Buffalo Oil Spill	 Canada, Alberta	April 29, 2011	3,800	3,800	[15][16]
Mumbai-Uran pipeline spill	 India, Mumbai, Arabian Sea	January 21, 2011	40	55	[17][18]
Fiume Santo power station	 Italy, Sardinia, Porto Torres	January 11, 2011	15	15	[19]
Mumbai oil spill / MV MSC Chitra and MV Khalifa 3	 India, Mumbai, Arabian Sea	August 7, 2010 – August 9, 2010	400	800	[20][21][22]
Barataria Bay oil spill	 United States, Barataria Bay, Gulf of Mexico	July 27, 2010 – August 1, 2010	23	45	[23][24][25][26]
Talmadge Creek oil spill	 United States, Kalamazoo River, Calhoun County, Michigan	July 26, 2010	2,800	3,250	[27][28]
Xingang Port oil spill	 China, Yellow Sea	July 16, 2010 – July 21, 2010	1,500	90,000	[29] [30]
Jebel al-Zayt oil spill	 Egypt, Red Sea	June 16, 2010 – June 23, 2010	not known	not known	[31]
Red Butte Creek oil spill	 United States, Salt Lake City, Utah	June 11, 2010 – June 12, 2010	65	107	[32][33]
Trans-Alaska Pipeline spill	 United States, Anchorage, Alaska	May 25, 2010	400	1,200	[34]
MT Bunga Kelana 3	 Singapore, Singapore Strait	May 25, 2010	2,000	2,500	[35][36][37]
2010 ExxonMobil oil spill	 Nigeria, Niger Delta	May 1, 2010	3,246	95,500	[38][39][40]
Deepwater Horizon	 United States, Gulf of Mexico	April 20, 2010 – July 15, 2010	492,000	627,000	[41]

SOURCE: Wikipedia – List of oil spills

This list does not contain hundreds of other oil spills around the globe which have never been properly cleaned up. This list only includes those spills that have risen to a certain volume of oil spilt; therefore, many other spills do not appear which are in urgent need of remediation. For example, the Niger River Delta is an area which has seen numerous oil spills that have gone addressed for years.

UN confirms massive oil pollution in Niger Delta

The BP Gulf Oil Spill revealed the truth about Corexit which would have otherwise stayed hidden.

Although a great environmental tragedy, the BP oil spill in the GOM has had at least one extremely important benefit to the world community. This unintended benefit took the form of blowing the whistle on the use of the highly toxic dispersant Corexit. The name given to Corexit was chosen to subliminally lead one to believe that it corrects oil spills when it really doesn't. Corexit effectively hides the oil by dispersing it in a minute form which makes it much more difficult to remediate.

Only by “blowing up” in the Gulf of Mexico with such dramatic fireworks was the world's attention captured long enough so that the practice of wanton dispersant spraying would be exposed. As we have seen everywhere else on the planet, even in the USA's backyard at Prince William Sound, Alaska, very little real change has ever occurred. The revelations oozing from the Gulf have had, and will continue to have, tremendous effects on oil spill response globally for decades to come.

How much De-Oil-It do you need ?



The Deepwater Horizon explodes and burns before sinking into the Gulf of Mexico. Steve Pedigo, CEO of OSEI Corporation in Dallas, TX has been invited to shorelines around the world to put on demonstrations for OSE-II, a bio-remediation product which has been approved by the EPA. OSE II has been the bio-remediation agent of choice for various US military oil spills in places where their operations have required a quick, clean and effective approach.

Mr. Pedigo was recently invited to the coastline of the Middle East to put on a demonstration of OSE-II. The results of this presentation, as well as a number of other demonstrations given at other oil spill sites around the world by Pedigo, have produced a very positive response to bio-remediation agents.

According to Mr. Pedigo, the BP oil spill response using Corexit in the Gulf marked a turning point for dispersant use. The wanton use of a toxic (per the EPA NCP notebook) product like Corexit precipitated so much negative and justified criticism that it was instrumental in changing the 'minds' of entire nations. They quickly became aware of the many toxic side effects and collateral damage associated with chemical dispersants like Corexit. Mr. Pedigo also pointed out the veritable sea change in attitude which has taken place throughout the oil spill response industry itself. With the exception of the USA, many countries will never go back to the highly questionable and environmentally-damaging use of dispersants like Corexit.

How much De-Oil-It do you need ?

Along with many other affected and concerned parties, the Gulf Oil Spill Remediation Conference questions why the US Coast Guard, EPA, NOAA and Departments of Interior and Energy have yet to request an immediate termination of Corexit use in the Gulf of Mexico. The OSE-II product has been approved for use and even utilized by the US Armed Forces with great success. Yet the EPA persists in favoring Corexit in remediating oil spills in US territorial waters.

Dr. Tom Termotto, former National Coordinator of the Gulf Oil Spill Remediation Conference, declared back in January of 2011 that:

“We need to unite and ignite a public awareness campaign, using [“The Hidden Crisis in the Gulf”](#) video to educate the broad public about the existence of an unusually safe and non-toxic, easily applied, and highly effective bio-remediation agent. We have received numerous recommendations from all over the world for the past 8+ months regarding various mitigation techniques and bio-remediation alternatives for the Gulf of Mexico. When we heard about Oil Spill Eaters II, and the fact that it is EPA-approved (NCP listed) and has demonstrated its effectiveness at least 14 times on the BP Gulf Oil Spill, we wondered why it wasn’t being used 24/7 throughout the GOM.” These and other questions need to be satisfactorily addressed before the GOM ecosystems are forever altered. Chemical destruction on the order of the BP oil spill ought to be minimized however possible. Particularly in light of the massive amount of hydrocarbon effluent which poured into the GOM in 2010, measures should be taken to mitigate this petrochemical disaster, not make it worse. In the view of many experts, Corexit has only made the whole Gulf situation much worse, even if it did ‘disappear’ a lot of the oil.