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OSE II LEACHATE SOLUTION

The OSEI Corporation has been remediating hydrocarbon, hydrocarbon-based, carbon-based contaminants since 1989. OSE II has cleaned up over 70,000 spills, and is the Global leader in clean ups.

OSE II is safe for humans per our US OSHA letter see link [https://www.osei.us/tech-library-pdfs/2011/9-OSEI%20Manual OSHA.pdf](https://www.osei.us/tech-library-pdfs/2011/9-OSEI%20Manual%20OSHA.pdf) OSE II is also extremely safe for aquatic species. There have been over 54, LC50, LD50, Or EC50 toxicity tests performed on OSE II, 41 of these tests are on ocean/salt water species, and 13 have been performed on fresh water species, which are generally more associated with leachate from trash piles. The US EPA set the standard of virtually non-toxic at 100 ppm or mg/l or greater as being virtually non-toxic, OSE II's average LC50, LD50 is 1900 ppm or mg/l to 19000 ppm or mg/l showing is far less toxic than even virtually non-toxic.

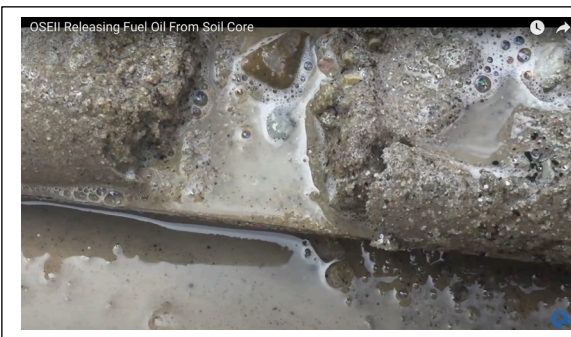
The OSEI Corporation Conjunction with the US EPA had a performed a dispersant test, which is a test to show if a product can sink 62% of the oil in 30 minutes. The test with OSE II showed (0) zero percent effectiveness to sink oil, in fact OSE II produced a negative number (14.56 minus 62 equals -47.44), which means OSE II causes carbon based material to float, or produces hydraulic lift.



Soil Core sample contaminated with oil



OSE II being applied to the soil core



Oil lifting out of the soil core

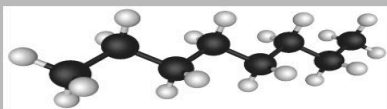


Oil lifting out of and running off of the soil core

OSE II also reduces smells of manure's, human waste, industrial waste and trash leachate, as well as the trash itself. OSE II is a three-phase product how it works.

How OSE II Works

- **Combination of bio-surfactants, enzymes and nutrients**
- **Enables indigenous micro-organisms to efficiently and completely break down contaminant**
- **Leaves only harmless CO₂ and water**



OSE II is listed on the EPA approved listed, and is listed by California Fish and Game as well for spills.

OSE II emulates mother natures own process, see link for more details [https://www.osei.us/tech-library-pdfs/2011/4-OSEI%20Manual EmulatingNature.pdf](https://www.osei.us/tech-library-pdfs/2011/4-OSEI%20Manual%20EmulatingNature.pdf)

OSE II will eliminate smells in seconds, once applied to the trash pile, leachate from the pile or leachate ponds. OSE II applied directly to a trash pile will also help redcue the organics to CO₂ and water, reducing the volume of the trash pile. (OSE II does not readily breakdown plastics, metals, or inorganics, however anything that is organic based will have the potential of being remediated to Co₂ and water.

The reason OSE II is superior to other products, is due to the fact OSE II when applied first reduces toxicity of the waste/leachate by breaking down the molecular structure of the waste, and at the same time decreases clumps, and increases surface area through the biosurfactants in OSE II, and reduce the oil and grease, eliminating its adhesion properties, in order for remediation of the waste to more quickly occur.

The Enzymes then attach to the broken-down molecules of the increased surface area of the waste, which act as catalyst to speed up the bio-chemical reactions, to further reduce the waste/leachate. OSE II also enhances the bacteria in the pond, increasing its numbers dramatically each minute, which increases the bacteria digesting the waste to CO₂ and water.

OSE II's ability to quickly breakdown the molecular structure of the waste also helps nitrates to be used up completely, through the balanced nutrients of Nitrogen Carbon and Phosphorous, which allows the entire nitrogen/nitrates and carbon and phosphorus to be used as cellular building blocks, since balance N, C, P, can be fully

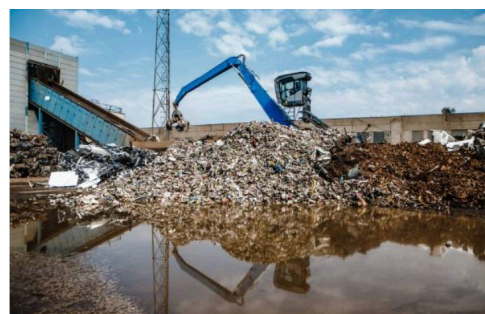
utilized for cells, and this utilization helps prevent nitrates from becoming nitrites, and causing the increase in nitrites due to the extended time they require to be broken down, with nitrogen fixing bacteria.

Pond or retention area overflow or release:

The other great thing with OSE II is if there was an overflow of the effluent pond, retention area, it would not cause any harm downstream, since OSE II has no harmful chemicals, through toxicity tests in 11 countries see link <https://www.osei.us/toxicity-tests> OSE II is safe for the environment and will protect and recover the benthic layer see link <https://www.osei.us/wp-content/uploads/Republic-of-Korea-Shoreline-Clean-with-recommendations-from-ITOPF-for-shoreline-clean-ups-2022.pdf> OSE II is safe for humans see link [https://www.osei.us/tech-library-pdfs/2011/9-OSEI%20Manual OSHA.pdf](https://www.osei.us/tech-library-pdfs/2011/9-OSEI%20Manual%20OSHA.pdf) in fact OSE II will act as a fertilizer for plants downstream from where the effluent escapes the pond or retention area. This would eliminate fish kills/marine species kills as well as any plant dis-colorizations, which in turn eliminates fines, and would eliminate any downstream clean-up costs as well.



OSE II will help reduce the volume of trash piles by remediating the organics to CO₂ and water, while eliminating smells



Leachate from trash piles can actually be reapplied to the trash piles in order to facilitate further remediation of the organics in the trash piles



Leachate ponds, once OSE II is applied it is a matter of minutes for OSE II to mix equally with the effluent, at which time the leachate smell would reduce to virtually no smell.

Once the smell is reduced, the OSEI Corporation recommends setting up at least two trash pumps on each end, and more pumps if the leachate pond is massive, to circulate the effluent liquid, as well as injecting aeration to speed up the complete remediation of any contaminants to CO2 and water



Whether there is a sophisticated leachate pond system, or a pipe discharging effluent into an unlined pond, a small trash pile or acres/Hectares of trash, OSE II can help reduce the volume of the trash, remediate the leachate effluent, and or reduce, the toxic smells.

Steven Pedigo