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**This Presentation Will Show The Montana Malmstrom Air
Force Base, And The US Missile Defense bases in Montana,
Ground Water Contamination From Base Operations,
Was Remediated With OSE II**

OSE II has been used on Ground Water, as well
as Underground hydrocarbon and Hydro
Carbon Based spills in the US and Globally
Since 1989



Third-Party Performance Testing

US EPA Testing

US EPA & National Environmental Technology Application Center (NETAC)

A 28-day reduction test concluded that OSE-II significantly reduces petroleum mass.

There have been 35 toxicity tests performed on OSE II in numerous countries, on fresh and ocean water species showing an average LC50 or LD 50 of 1900 ppm or above, there are also eco toxicity and endocrine disruptor tests as well. The US EPA set the virtually non toxic level at 100 ppm or above.

See Link <http://osei.us/wp-content/uploads/35-toxicity-tests.pdf>

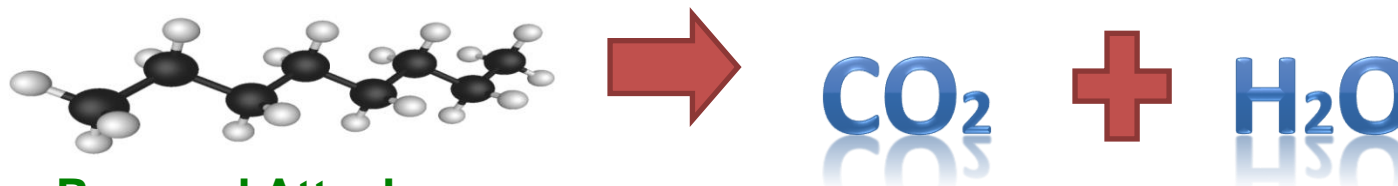
How OSE II Works



Combination of bio-surfactants, enzymes and nutrients

Enables indigenous micro-organisms to efficiently and completely break down contaminant

Leaves only harmless CO₂ and water



Three-Pronged Attack

1. Immediately attacks the molecular structure of the hydrocarbons reducing toxicity to micro organisms.
2. Provides enzymes to act as catalysts increasing metabolic breakdown
3. Provides nutrients to enhance microbial action

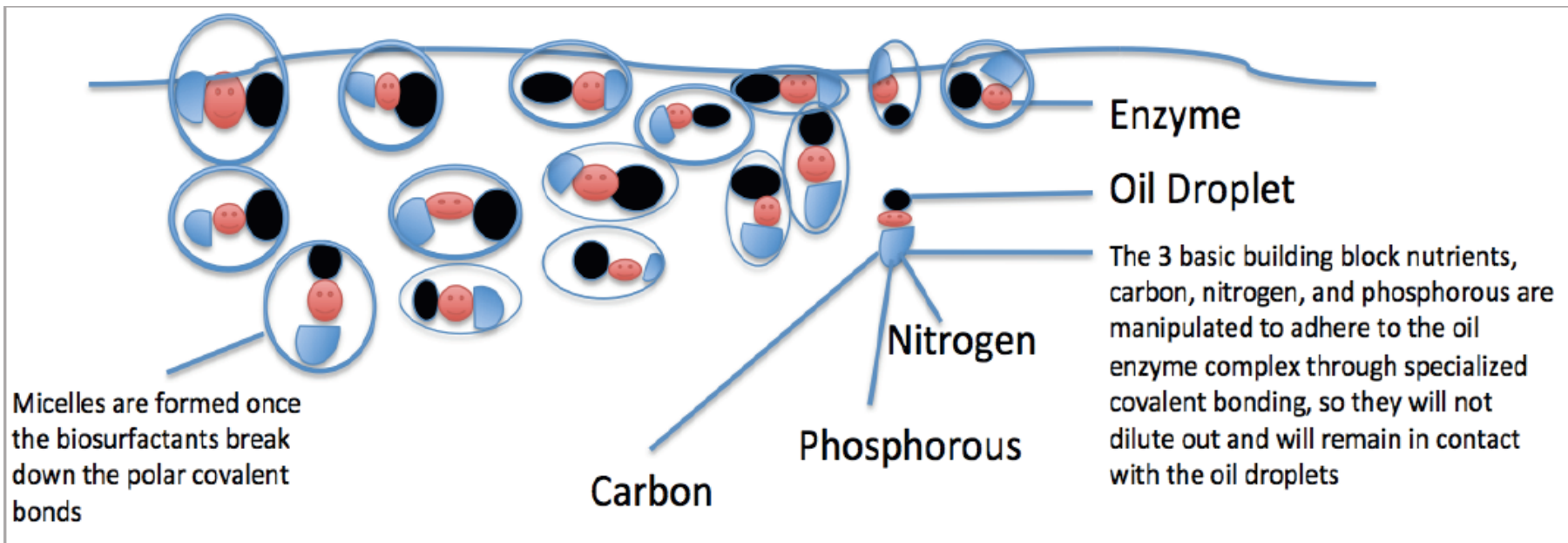


OSE II emulates mother natures own process, except OSE II speeds the process up to reduce hydrocarbons in a matter Of days or weeks in stead of decades, or not all in some scenarios.....

See link http://osei.us/tech-library-pdfs/2011/4-OSEI%20Manual_EmulatingNature.pdf

OSE II's Bio Surfactant Are Produced by a Combination of Plant and Animals

Oil Spill Eater International (OSEI) utilizes bio surfactants as its first mode of action in the Oil Spill Eater II product. The bio surfactants initiate micelle formation when introduced into an oil/water environment. Micelles are activated when mixed with a sufficient amount of water such that each micelle is then completely surrounded by a thin layer of water molecules. **The outside of the micelle is hydrophilic, meaning it likes water, while the interior portion is hydrophobic, meaning it avoids water. This provides a way to dissolve molecules, like fats, oils and grease that do not like water, in water.**





OSE II is Listed By The US EPA and is Safe

US EPA Testing: The US Congress requires the US

EPA to keep a list of products that can be legally used on US Navigable waters, which is why there is a list of products on the National Contingency Plan (NCP) List.

OSE II is listed on the NCP List.

A 28-day mass reduction required by the NCP List concluded that OSE-II significantly reduces petroleum mass. See link to US EPA information on OSE II <https://www.osei.us/wp-content/uploads/US-EPA-notebook-with-technical-information-on-OSE-II-highlighted-section-vi-1.pdf>

Tested by US EPA and found to be completely non-toxic. See link for the 35 Marine Species Toxicity test <https://www.osei.us/wp-content/uploads/35-toxicity-tests.pdf>
Safe for human, animal, plants and marine life. See OSHA Letter link https://www.osei.us/tech-library-pdfs/2011/9-OSEI%20Manual_OSHA.pdf

Does not require any special handling or protective equipment.
Can be applied in-situ or ex-situ, depending on the location.

US AIR FORCE

- **Air Force PBR Contracting – 2009**

- Worldwide Environmental Restoration and Construction (WERC) 09 is a five-year indefinite delivery/indefinite quantity contract. This contract is primarily to provide performance-based environmental and construction services at U.S. Air Force installations worldwide. The contract ceiling of \$3 billion is shared by 20 awardees.

- Beginning in 2011 the Air Force Civil Engineer Center (AFCEC) began to release task order RFPs to awardees

- Prior to the policy change, cleanup efforts focused on achieving remedies in place and individual site remediation, practices that provided only partial cleanup solutions and often required years of expensive follow-up before the property could be returned to unrestricted use.

- “We want to conduct complete cleanups where it is technically feasible and cost effective, and free up these properties to productive private or military uses. It's good for the environment, good for the landowner and good for the taxpayer.”

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- “Successes from these awards show that the new PBR approaches are working to increase the number of site completions where no additional investment of time or money is required by the Air Force, which then leads to the goal of reducing long-term environmental liabilities.”

- **Types of Sites:**

- UST (on base and at Missile Alert Facilities)
- OWS
- Fire Training Areas
- Spill Sites (petroleum, chlorinated solvents, PCBs, metals)
- Landfills

- **Remedial Strategies:**

- Source Removal
- ISEB & ISCO
- Preferred Treatment Enzymatic Bioremediation

Montana DEQ approves the remedial plans to Inject and Utilize OSE II for Malmstrom Air Force Base, and the US Missile Defense bases in Montana



February 6, 2015

Rob Brown
341 CES/CEANQ
39 78th Street N
Malmstrom AFB 59402-7536

Re: Approval of Final Corrective Action Plan Remedial Alternatives Analysis for the Petroleum Release at Missile Alert Facility Foxtrot 1 (F-1), (PL507), Highway 2 Augusta, Montana, Fac. ID# 50-09030, Release #1332

Dear Mr. Brown:

The Department of Environmental Quality (DEQ) has reviewed the Final Corrective Action Plan Remedial Alternatives Analysis (CAP RAA) for the petroleum releases at Missile Alert Facility (M F-1, Augusta, Montana. The CAP RAA, prepared by EMR Incorporated, was received electronically the DEQ on January 30, 2015. The scope of the CAP RAA includes the installation an injection/extraction well near the source area well and conducting a pilot test to determine if a sufficient volume of groundwater can be extracted and re-injected into the shallow aquifer to deliver the calculated volume of Oil Spill Eater II (OSEII) into the subsurface for in-situ enhanced bioremediation (ISEB). If the pilot test is successful, seven (7) additional 4-inch, PVC injection/extraction wells will be installed. Groundwater will be extracted from the remediation wells and treated using granular activated carbon. The treated groundwater will be aerated and re-injected. ORC Advanced® will be injected to further increase dissolved oxygen levels in the groundwater prior to ISEB activities. After ORC Advanced® injections, groundwater will again be extracted from the extraction wells and aerated. After aerating water, OSEII will be added and re-injected into each of the remediation wells.

The Final CAP RAA addresses the DEQ's comments on the Draft-Final CAP RAA and is approved submitted. If you have any questions, please contact me at (406) 841-5051.

Sincerely,

Scott Gestring
DSMOA Project Officer
Federal Facilities/Brownfields Section

Ec. Jeff Humenik
Kaitlin Adkiss
Pat Secomb -
Rob Brown -

Cc: Lewis and Clark County Sanitarian, Environmental Health Division, 316 North Park, Helena, MT 59624

Malmstrom Air Force Base and Missile Defense Application Of OSE II

Text from Jeff on the Malmstrom AFB job site April 21, 2015:

We were able to get 3000 gal injected per point. 1 gal OSEII with 30000 gal of water.

Don

On Apr 3, 2015, at 1:16 PM, NECO <don@nativeeco.com> wrote:

<Malmstrom AFB in situ location.png>

Steven,

This photo is on the official Malmstrom AFB site with the message that it is the in situ project there. Thought you would be interested to see it.

The final results were well below standards established by the State of Montana, and a closure was signed off on.

Don



OSE II Remediating the most sensitive environments, returning them to pre spill conditions