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EPA in Cooperation with NETAC a Group out of
Pittsburgh University performed Efficacy and Toxicity Testing
on OSE II for the EPA NCP Protocol Development.

The Summary follows

The OSEI Corporation supplied OSE II to Hap Prichard of the US EPA in 1992. The EPA performed two separate tests a 48 hour exposure test and a 96 hour exposure test, on two different species *Mysidopsis Bahia*, and *Menidia beryllina*. The *Mysidopsis Bahia* tests also contained a static renewal LC50 for 48 hours and 96 hours with OSE II, and a 7 day toxicity test as well.

The test information is contained in the five pages following this summary, as well as the freedom of information request that was honored over five (5) years after it was requested for these tests shows the OSEI Corporation received this information from the US EPA. The test information with the redacted black outs, is as the OSEI Corporation received them, from the US EPA.

Toxicity tests are performed to show the potential effects of a product to marine species. The larger or higher the number the less toxic the product is. LC 50, the LC means lethal concentration, or the concentration of a product to produce death of the test species.

The US EPA's first toxicity test of OSE II was on *Mysidopsis Bahia* for 48 hours of exposure, and for 96 hours of exposure. The 48 hour exposure toxicity test showed OSE II's toxicity value to be between 5,661 to 7,927 for an average of 6,698. The 96 hour exposure toxicity test showed OSE II's toxicity value to be between 3,125 to 6,250 for an LC 50 of 5,970. These two test shows the US EPA has proven OSE II to be virtually non toxic.

The US EPA static renewal LC 50 with OSE II and the *Mysidopsis Bahia* was >5,700 for the 48 hour exposure, and >5,700 for the 96hr as well. The EPA established values for OSE II with this species for both exposure times proves OSE II is virtually non toxic.

The US EPA went on to perform a seven (7) day toxicity test with OSE II and the *Mysidopsis Bahia*. The LC 50 was 2,225 to 3,133, for an LC 50 value of 2,500 which for a seven (7) day toxicity test is phenomenally non toxic.

The US EPA performed toxicity tests on a second species for the EPA/NETAC testing *Menidia beryllina*. The first test on this species was for an exposure time of 48 hours, and the LC 50 value was 6,250 to 12,500 for an LC 50 value of 8,839. The second test with the *Menidia beryllina* was for the exposure time of 96 hours, and the value was

between 6,250 and 12,500 as well for an LC 50 of 8,839. These two test show the US EPA proving OSE II is virtually non toxic on a second species

These toxicity tests associated with the US EPA/NETAC testing as well as the numerous other toxicity tests that have been performed with OSE II by the US EPA and other governments, and for other governments by the OSEI Corporation overwhelmingly prove OSE II is safe for any marine environments species. These toxicity tests show that when OSE II is utilized for a spill there is real value obtained by using OSE II since it converts a spill to CO 2 and water while limiting and or reducing the toxicity of the spill to the environment.

Steven Pedigo
OSEI Corporation



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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June 25, 2003

OFFICE OF
RESEARCH AND DEVELOPMENT

Mr. George Lively
Oil Spill Eater International Corp.
13127 Chandler Drive
Dallas, Texas 75243

RECEIVED
BY *DAJ* DATE 6-30-03

re: Freedom of Information Act Request HQ-RIN-01971-02

Dear Mr. Lively:

In response to your request for records under the Freedom of Information Act, we were asked to search for and provide data generated using Product C at the Gulf Ecology Division (GED) during the development of oil spill bioremediation protocols. The research involved several laboratories, both within the Office of Research and Development and outside of the Agency.

We are providing these data as an enclosure to this letter, at no cost to you. We also offer a quick explanation of these data in the hopes that it will facilitate your understanding and use.

It is important to note that we used a variety of commercial bioremediation products (CBAs) to develop and evaluate test systems and protocols for the purpose of assessing the efficacy and environmental safety (toxicity) of current and future oil spill bioremediation agents; thus, any data generated with a particular (CBA) was not primarily for the intent of evaluating the product but rather for the purpose of evaluating the test systems under development. These CBAs were provided to us, blind coded, by NETAC—at no time during the collection of these data did we know the actual name of the vendor or product, and thus none of the data will have a vendor's name or product identification associated with it.

In our data, we sometimes refer to Product C as Product 1 - 3 or as CBA C; we have also referred to it by another letter (see manuscript information, below). Data generated at GED was developed through collaborative studies (two cooperative agreements) with the University of West Florida. Throughout the course of evaluating the tests systems, data from more than one CBA might be discussed in notebooks on the same day. Where we have included copies of this data, we have crossed through information that does not respond to FOIA Request HQ RIN-01971-02.

In order to put the data provided in its proper perspective, a copy of a publication and parts of a manuscript are provided to serve as entry points to understanding the data, logs, and materials in this package.

Protocol development utilized a tiered approach of increasingly complex test systems for product evaluation, which is described in more detail in the EPA publication EPA/600/X-93/001 (mentioned below). There were three primary aspects of this research which were conducted at GED that generated data with CBA C:

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MENIDIA BERYLLINA 96-H STATIC TEST WITH
PRODUCT C (CBA C)

Table 3. 48, 96 h, and 7-d LC50 values (95% conf. lim.)* for CBAs in static and static-renewal tests using *M. beryllina* and *M. bahia*.

CBA	static LC50		static-renewal LC50		
	48-h	96-h	48-h	96-h	7-d
<i>Mysidopsis bahia</i>					
B	6,698 (5,661-7,927)	5,970 (3,125-6,250)	>5,700	>5,700	2,500 (2,225-3,133)
<i>Menidia beryllina</i>					
B	8,839 (6,250-12,500)	8,839 (6,250-12,500)	---		

*Nominal concentrations (mg/L).
 *Short-term chronic test not conducted.