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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460



United States
Environmental Protection
Agency

Office of Pesticide Programs

July 19, 2006

MEMORANDUM

Subject: EnviroTech EUP for BioSide HS 15% (aka Perasan) (63838-2) for Municipal Stormwater Treatment in New Jersey (D327792)

To: Dennis Edwards, Chief
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From: Kathryn Montague, Biologist
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Through: Siroos Mostahimi, Team Leader
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Enviro Tech Chemical Services, Inc., has requested an Experimental Use Permit (EUP) for the use of BioSide HS 15%, ak a PERASAN, treat municipal combined sewer overflow (CSO) and stormwater in the state of New Jersey. The product is a mixture of hydrogen peroxide (H₂O₂) (22 %) and peroxyacetic acid (PAA) (15%). The product will be applied to CSO and stormwaters at rates to achieve PAA residuals from 5-20 ppm.

The Risk Assessment and Science Support Branch (RASSB) has reviewed the proposed EUP program and proposed label for the new wastewater treatment use of Proxitane WW-12, and has the following concerns and recommendations:

- 1) The proposed program will dose the effluent at rates of 5 to 20 ppm as PAA. RASSB recommends that the effluent treated under the EUP be dosed at the maximum rate of 20 ppm for at least part of the program, so that corresponding measurements of PAA level in the outfall can be made to determine a "worst-case" residual PAA. Please note that for the purpose of risk

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assessment for registration of this use, the maximum rate and minimum contact time will be used to estimate residual PAA levels in the outfall. If "real world" measurements are not available to support this scenario, conservative estimates of the residual PAA will be made, which may result in predicted risk to aquatic organisms.

2) For the purpose of a screening-level risk assessment for this EUP program, the assumption is made that the residual PAA in the outfall water is equivalent to the maximum dose of 20 ppm. While RASSB expects that actual levels of PAA in the outfall water will likely be lower, we have no data available at this time to refine this worst-case estimate; the data collected during the EUP program will provide additional information to refine the estimate for the registration risk assessment. Additional efforts to refine models will also be made to account for the dilution of the outfall water into larger bodies of water.

No acceptable ecotoxicity data for PAA have been submitted to the Agency to support the registration of BioSide HS 15% (PERASAN). Data submitted along with this EUP application do not contain sufficient information to meet OPPTS Guideline requirements; however, RASSB has considered the acute endpoints provided in the submitted data as a rough screening assessment to address potential risks to aquatic organisms from the proposed use. A summary of the acute endpoints submitted with this EUP request is provided below. Please note that a full set of acceptable ecotoxicity data are still required to support the registration of the product for the proposed use.

PAA is highly toxic to freshwater algae, with EC50s from 0.44 - 0.49 ppm.

PAA is highly toxic to freshwater aquatic invertebrates with EC50s of 0.27 – 0.67 ppm.

PAA is highly to moderately toxic to freshwater fish, with LC50s of 0.68 – 1.21 ppm.

PAA is moderately toxic to marine fish, with LC50s of 2.17 – 3.78 ppm

PAA is highly to moderately toxic to marine invertebrates, with LC50s of 0.65-2.91 ppm

PAA is highly to moderately toxic to marine algae, with EC50s of 0.63-6.0 ppm.

PAA caused effects to growth of duckweed at rates of 10 ppm,

PAA did not cause effects on seedling emergence of rice at a rate of 60 ppm.

Using the worst-case assumption of 20 ppm PAA in the outfall, high risk LOCs would be exceeded for fish, aquatic invertebrates, and aquatic plants.

Additional data on the environmental fate of these compounds is needed to fully address the risks to these organisms. This EUP should provide some of the necessary information, such as "real-world" monitoring data, to further refine the risk assessment.

Endangered Species Considerations:

Section 7 of the Endangered Species Act, 16 U.S.C. Section 1536(a)(2), requires all federal agencies to consult with the National Marine Fisheries Service (NMFS) for marine and anadromous listed species, or the United States Fish and Wildlife Services (FWS) for listed wildlife and freshwater organisms, if they are proposing an "action" that may affect listed species or their designated habitat. Each federal agency is required under the Act to insure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a

listed species or result in the destruction or adverse modification of designated critical habitat. To jeopardize the continued existence of a listed species means "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of the species." 50 C.F.R. § 402.02.

To facilitate compliance with the requirements of the Endangered Species Act subsection (a)(2) the Environmental Protection Agency, Office of Pesticide Programs has established procedures to evaluate whether a proposed registration action may directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of any listed species (U.S. EPA 2004). After the Agency's screening-level risk assessment is performed, if any of the Agency's Listed Species LOC Criteria are exceeded for either direct or indirect effects, a determination is made to identify if any listed or candidate species may co-occur in the area of the proposed pesticide use. If determined that listed or candidate species may be present in the proposed use areas, further biological assessment is undertaken. The extent to which listed species may be at risk then determines the need for the development of a more comprehensive consultation package as required by the Endangered Species Act.

The following species are listed as Endangered or Threatened in the state of New Jersey. Taxa highlighted in bold could potentially be affected by the use proposed in this EUP.

Birds:

- Eskimo curlew (*Numenius borealis*) – Endangered
- Bald eagle (*Haliaeetus leucocephalus*) – Endangered
- Piping plover (*Charadrius melodus*) – Endangered - Critical habitat

Terrestrial mammals:

- Indiana bat (*Myotis sodalis*) – Endangered – Critical habitat

Marine mammals:

- Northern right whale (*Eubaleena glacialis*, incl. *australis*) – Endangered - Critical habitat

Terrestrial plants:

- American chaffseed (*Schwalbea americana*) - Endangered
- Knieskern's beaked-rush (*Rhynchospora knieskernii*) - Threatened
- Small-whorled pogonia (*Isotria medeoloides*) – Threatened

Aquatic/Semi-Aquatic Plants

- Sensitive joint-vetch (*Aeschynomene virginica*) – Threatened**
- Swamp pink (*Helonias bulleta*) – Threatened**

Fish:

- Shortnose sturgeon (*Acipenser brevirostrum*) – Endangered**

Reptiles (aquatic/semi-aquatic):

Bog turtle, Northern population (*Clemmys muhlenbergii*) – Threatened

Conclusions:

Using the worst-case assumption of 20 ppm PAA in the outfall, high risk LOCs would be exceeded for fish, aquatic invertebrates, and aquatic plants. There are Federally listed species in the fish, aquatic reptiles, and aquatic plant taxa present in the state of New Jersey, which could potentially be affected by the use proposed in this EUP. RASSB recommends that the registrant confirm that endangered or threatened species will not be exposed to PPA residues from the use of this EUP.

If you have any questions, please contact Kathryn Montague (703/305-1243 or montague.kathryn@epa.gov).

Species Occurrence in Selected States and Selected Taxa

No species were excluded

All Medium Types Reported

*Mammal, Marine mml, Bird, Amphibian, Reptile, Fish, Crustacean, Bivalve, Gastropod,
Arachnid, Insect, Dicot, Monocot, Ferns, Conf/cycds, Lichen*

New Jersey

New Jersey

(12) species:

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Bird

Curlew, Eskimo	<i>Numerius borealis</i>	Endangered	Terrestrial	No
Eagle, Bald	<i>Haliaeetus leucocephalus</i>	Threatened	Terrestrial	No
Plover, Piping	<i>Charadrius melodus</i>	Endangered	Terrestrial	Yes

Dicot

Chaffseed, American	<i>Schwalbea americana</i>	Endangered	Terrestrial	No
Joint-vetch, Sensitive	<i>Aeschynomene virginica</i>	Threatened	Terrestrial, Brackish	No

Fish

Sturgeon, Shortnose	<i>Acipenser brevirostrum</i>	Endangered	Saltwater, Freshwater	No
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Mammal

Bat, Indiana	<i>Myotis sodalis</i>	Endangered	Subterraneous, Terrestrial	Yes
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Marine mml

Whale, northern right	<i>Eubalaena glacialis (incl. australis)</i>	Endangered	Saltwater	Yes
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Monocot

Beaked-rush, Knieskern's	<i>Rhynchospora knieskernii</i>	Threatened	Terrestrial	No
Pink, Swamp	<i>Helonias bullata</i>	Threatened	Terrestrial, Freshwater	No
Pogonia, Small Whorled	<i>Isotria medeoloides</i>	Threatened	Terrestrial	No

Reptile

Turtle, Bog (Northern population)	<i>Clemmys muhlenbergii</i>	Threatened	Terrestrial, Freshwater	No
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No species were selected for exclusion.

Dispersed species included in report.