U. S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES
April 16, 1999

MEMORANDUM

SUBJECT: Cloransulam-methyl: Results of submitted phytotoxicity studies as condition of registration and surface water advisory statement waiver.
PC Code No. 129116; Case No. 039565; DP Barcode: D252903

TO: J. Tompkins, Chemical Review Manager 25
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FROM: ERB IV Team for Cloransulam-methyl:
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Results of the EFED review of submitted phytotoxicity studies as condition of registration and the surface water advisory statement waiver are attached. The following is an overview of our findings:

MRID 447445-01. H.D. Kirk, M.M. Gilles, J.M. Hugo, and L.G. McFadden. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Exposed Bluegreen Alga, *Anabaena flos-aquae*. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an algal toxicity test. The 120-hour EC_{50} and NOEC for *A. flos-aquae* exposed to 5-hydroxy-DE-565 were 48.3 and 30.0 ppm, respectively. Classification: Core.

MRID 447445-02. H.D. Kirk, M.M. Gilles, J.M. Hugo, and L.G. McFadden. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Exposed Freshwater Diatom, *Navicula pelliculosa.* **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an algal toxicity test. The 120-hour EC_{50} and NOEC for *N. pelliculosa* exposed to 5-hydroxy-DE-565 were 42.7 and 36.3 ppm, respectively. Classification: Core.

MRID 447445-03. H.D. Kirk, M.M. Gilles, and J.M. Hugo. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Exposed Saltwater Diatom, *Skeletonema costatum.* **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an algal toxicity test. The 120-hour EC_{50} and NOEC for *S. costatum* exposed to 5-hydroxy-DE-565 were >93.3 and 93.3 ppm, respectively. Classification: Core.

MRID 447445-04. H.D. Kirk, M.M. Gilles, D.L. Rick, and L.G. McFadden. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Exposed Freshwater Green Alga, *Selenastrum capricornutum* Printz. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an algal toxicity test. The 96-hour EC_{50} and NOEC for *S. capricornutum* exposed to 5-hydroxy-DE-565 were 41.5 and 26.3 ppm, respectively. Classification: Core.

MRID 447445-05. H.D. Kirk, M.M. Gilles, D.L. Rick, and L.G. McFadden. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Exposed Aquatic Plant, Duckweed, *Lemna gibba* L. G-3. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an aquatic plant toxicity test. The 96-hour EC_{50} and NOEC for Duckweed, *Lemna gibba* L. G-3 exposed to 5-hydroxy-DE-565 were 116 and 58.3 ppm, respectively. Classification: Core.

MRID 447445-06. H.D. Kirk, M.M. Gilles, J.M. Hugo, and L.G. McFadden. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Acid Exposed Bluegreen Alga, *Anabaena flos-aquae*. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an algal toxicity test. The 96-hour EC_{50} and NOEC for Bluegreen Alga, *Anabaena flos-aquae* exposed to 5-hydroxy-DE-565 were 33.6 and 26.5 ppm, respectively. Classification: Core.

MRID 447445-07. H.D. Kirk, M.M. Gilles, J.M. Hugo, and L.G. McFadden. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Acid Exposed Freshwater Diatom, *Navicula pelliculosa.* **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an aquatic plant toxicity test. The 96-hour EC_{50} and NOEC for Freshwater Diatom, *Navicula pelliculosa* exposed to 5-hydroxy-DE-565 were 11.9 and 8.7 ppm, respectively. Classification: Core.

MRID 447445-08. H.D. Kirk, M.M. Gilles, and J.M. Hugo. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Acid Exposed Saltwater Diatom, *Skeletonema costatum.* **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an aquatic plant toxicity test. The 96-hour EC_{50} and NOEC for Saltwater Diatom, *Skeletonema costatum* exposed to 5-hydroxy-DE-565 were >103 and 103 ppm, respectively. Classification: Core.

MRID 447445-09. H.D. Kirk, M.M. Gilles, D.L. Rick, L.G. McFadden. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Acid Exposed Freshwater Green Alga, *Selenastrum capricornutum* Printz. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an aquatic plant toxicity test. The 96-hour EC_{50} and NOEC for Freshwater Green Alga, *Selenastrum capricornutum* Printz exposed to 5-hydroxy-DE-565 were 32.6 and 23.1 ppm, respectively. Classification: Core.

MRID 447445-10. H.D. Kirk, M.M. Gilles, J.M. Hugo, and L.G. McFadden. 1998. Phytotoxicological Evaluation of 5-Hydroxy-DE-565 Acid Exposed Aquatic Plant, Duckweed, *Lemna gibba* L. G-3. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an aquatic plant toxicity test. The 96-hour EC_{50} and NOEC for Duckweed, *Lemna gibba* L. G-3 exposed to 5-hydroxy-DE-565 were 132 and 52.6 ppm, respectively. Classification: Core.

MRID 447445-11. H.D. Kirk, M.M. Gilles, J.M. Hugo, and L.G. McFadden. 1998. Phytotoxicological Evaluation of DE-565 Acid Exposed Bluegreen Alga, *Anabaena flos-aquae*. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an algal toxicity test. The 96-hour EC_{50} and NOEC for Bluegreen Alga, *Anabaena flos-aquae* exposed to 5-hydroxy-DE-565 were 7.42 and 3.65 ppm, respectively. Classification: Core.

MRID 447445-12. H.D. Kirk, M.M. Gilles, J.M. Hugo, and L.G. McFadden. 1998. Phytotoxicological Evaluation of DE-565 Acid Exposed Freshwater Diatom, *Navicula pelliculosa*. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for aquatic plant toxicity test. The 120-hour EC_{50} and NOEC for *N. pelliculosa* exposed to DE-565 acid were 59.1 and 47.5 ppm, respectively. Classification: Core.

MRID 447445-13. H.D. Kirk, M.M. Gilles, and J.M. Hugo. 1998. Phytotoxicological Evaluation of DE-565 Acid Exposed Saltwater Diatom, *Skeletonema costatum*. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an aquatic plant toxicity test. The 120-hour EC_{50} and NOEC for *S. costatum* exposed to DE-565 acid were >90.8 and 18.0 ppm, respectively. Classification: Core.

MRID 447445-14. D.P. Milazzo, L.M. Massaro, H.D. Kirk, J.M. Hugo, and M.D. Martin. 1995. XDE-565 Acid: The Toxicity to the Green Alga, *Selenastrum capricornutum* Printz. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an algal toxicity test. The 120-hour EC_{50} and NOEC for *S. capricornutum* exposed to DE-565 acid were 7.6 and 0.3 ppb, respectively. Classification: Core.

MRID 447445-15. H.D. Kirk, M.M. Gilles, J.M. Hugo, and L.G. McFadden. 1998. Phytotoxicological Evaluation of DE-565 Acid Exposed Aquatic Plant, Duckweed, *Lemna gibba* L. G-3. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for aquatic plant toxicity test. The 120-hour EC_{50} and NOEC for Duckweed, *Lemna gibba* L. G-3 exposed to DE-565 acid were 135 and 61.1 ppm, respectively. Classification: Core.

MRID 447445-16. J.R. Porch, H. Krueger, and R.W. McCormick. 1999. Effect of Three Soil Metabolites of Cloransulam-methyl on the Emergence and Vegetative Vigor of Non-Target Terrestrial Plants (Tier I/II). **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for a seedling emergence study with terrestrial plants. The two hydroxy metabolites do not affect the emergence and growth of the ten tested plant species. The demethylated metabolite only affected the growth of one dicot species (radish), with EC_{25} and NOEL values of 0.052 and 0.019 lb ai/A, respectively. Classification: Core.

MRID 447445-16. J.R. Porch, H. Krueger, and R.W. McCormick. 1999. Effect of Three Soil Metabolites of Cloransulam-methyl on the Emergence and Vegetative Vigor of Non-Target Terrestrial Plants (Tier I/II). **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for a vegetative vigor study with terrestrial plants. The two hydroxy metabolites do not affect the growth of the ten tested plant species. The demethylated metabolite affected the growth of four dicot species (cucumber, radish, sunflower, and tomato). The EC_{25} and NOEL values for the most sensitive species (radish) were 0.013 and 0.005 lb ai/A, respectively. Classification: Core.

MRID 447445-17. H.D. Kirk, J.M. Hugo, and L.G. McFadden. 1997. Phytotoxicological Evaluation of XDE-565 (NAF-75 Formulation) with a Freshwater Green Algae, *Selenastrum capricornutum*. **Conclusions:** This study is scientifically sound and fulfills the guideline requirements for an algal toxicity test. The 96-hour EC_{50} and NOEC for *S. capricornutum* exposed to the NAF-75 formulation of XDE-565 were 2.7 and 0.9 ppb ai, respectively. Classification: Core.

Request for Waiver of Surface Water Advisory

Dow AgroSciences has not provided sufficient document to support their waiver request regarding the removal of the registration condition requiring a Surface Water Advisory, and the need for surface water monitoring, phytotoxic trigger values requiring mitigation, or any additional phytotoxicity studies. EFED is still concerned that, given the phytotoxicity concerns for the parent at low concentrations, contact with surface water contaminated with cloransulam methyl, either through overland flow, runoff, irrigation, or other means, may lead to damage to nontarget crops and plants.