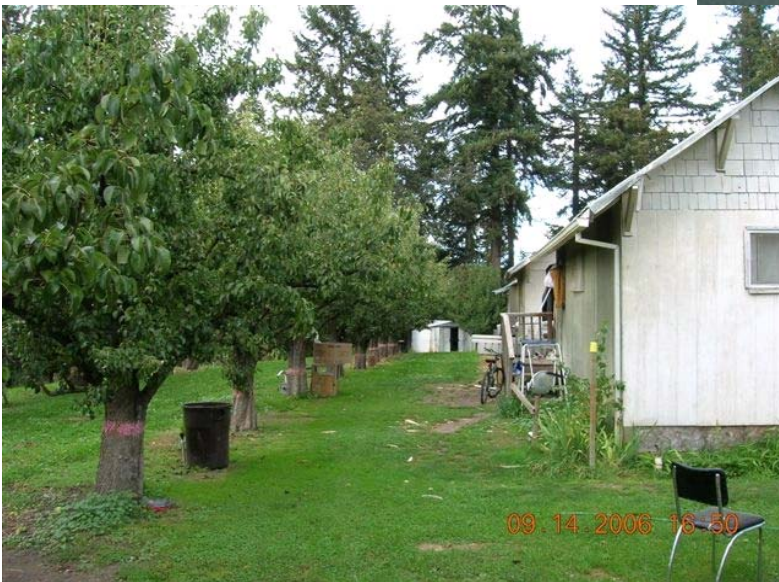


**PESTICIDES IN THE AIR – KIDS AT RISK:
Petition to EPA to Protect Children From Pesticide Drift**



Submitted on behalf of
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TABLE OF CONTENTS

THE U.S. ENVIRONMENTAL PROTECTION AGENCY HAS FAILED TO PROTECT CHILDREN FROM PESTICIDE DRIFT AND MUST TAKE IMMEDIATE STEPS TO CORRECT THESE VIOLATIONS OF FEDERAL PESTICIDE LAWS1

EXECUTIVE SUMMARY 1

I. CHILDREN ARE PARTICULARLY VULNERABLE TO PESTICIDES..... 1

II. CONGRESS DIRECTED EPA TO ENSURE THAT CHILDREN ARE PROTECTED FROM PESTICIDES FROM ALL SOURCES BY THE END OF 2006.2

III. EPA IGNORED CHILDREN WHO ARE POISONED BY SPRAY DRIFT AND VOLATILIZATION DRIFT WHERE THEY LIVE, GO TO SCHOOL, AND PLAY.2

IV. EPA MUST TAKE IMMEDIATE STEPS TO COMPLY WITH ITS LEGAL DUTY TO PROTECT ALL CHILDREN FROM PESTICIDE DRIFT.3

BACKGROUND4

I. PESTICIDE DRIFT POSES SIGNIFICANT RISKS TO CHILDREN’S HEALTH..... 4

A. Children Are More Susceptible to Harm From Pesticides Than Adults..... 4

B. EPA Has Long Recognized That Drift Exposures Can Be Harmful to Children..... 5

C. Documented Evidence Confirms That Pesticide Drift Harms Children..... 7

II. EPA IS VIOLATING FEDERAL LAW BY FAILING TO PROTECT CHILDREN FROM PESTICIDE DRIFT.10

A. Federal Law Requires EPA to Protect Children From Pesticide Drift..... 10

1. Federal Law Governing Pesticides and Food10

2. Federal Law Governing Pesticide Usage.....12

3. Executive Orders on Environmental Justice and Child Health14

B. EPA Has Violated Its Legal Duties by Ignoring Children’s Exposures to Harmful Pesticides Through Drift..... 15

ACTIONS NEEDED TO CORRECT EPA’S LEGAL VIOLATIONS20

I.	EPA MUST CONDUCT PESTICIDE-SPECIFIC ASSESSMENTS OF THE RISKS TO CHILDREN FROM PESTICIDE DRIFT AND MODIFY PESTICIDE REGISTRATIONS TO ELIMINATE EXCESSIVE RISKS TO CHILDREN.	20
II.	EPA SHOULD IMMEDIATELY ADOPT INTERIM NO-SPRAY BUFFERS AROUND HOMES, SCHOOLS, DAYCARE CENTERS, AND PARKS TO PROTECT CHILDREN FROM DRIFT.....	23
	A. EPA Should Take Immediate Action to Ensure that Children Are Protected From Pesticide Drift.	23
	B. EPA Should Impose Interim No-Application Buffer Zones to Protect Children From Exposure to Dangerous Drift-Prone Pesticides.....	25
	CONCLUSION.....	32
	ATTACHMENTS.....	Enclosed CD

THE U.S. ENVIRONMENTAL PROTECTION AGENCY HAS FAILED TO PROTECT
CHILDREN FROM PESTICIDE DRIFT
AND MUST TAKE IMMEDIATE STEPS TO CORRECT THESE
VIOLATIONS OF FEDERAL PESTICIDE LAWS

This petition asks the U.S. Environmental Protection Agency (“EPA”) to remedy ongoing violations of its legal obligations to protect children from unsafe aggregate exposures to pesticides. Specifically, EPA has failed to protect children from exposure to toxic pesticides that drift from agricultural fields and contaminate areas where children congregate, such as homes, park, schools, and daycare centers. To ensure that children are protected from toxic pesticides as required by the law, this petition asks EPA to:

- (1) expeditiously evaluate the exposure of children to pesticide drift and impose safeguards to ensure that children are protected from aggregate pesticide exposures, including pesticide drift;¹ and
- (2) immediately adopt interim prohibitions on the use of toxic drift-prone pesticides such as organophosphates and n-methyl carbamates near homes, schools, parks, and daycare centers or wherever children congregate.

EXECUTIVE SUMMARY

I. CHILDREN ARE PARTICULARLY VULNERABLE TO PESTICIDES.

In 1993, the National Academy of Sciences (“NAS”) released a pivotal study on the heightened vulnerabilities of children to pesticides. The study criticized EPA for treating children like “little adults” and for failing to address their unique susceptibility to pesticides and their exposures based on the foods they eat and their play and exploration activities. Children

¹ The term “drift” as used in this petition includes any airborne movement of pesticides away from a target site during and/or after application, including airborne movement of pesticide droplets, pesticide powders, volatilized vapor-phase pesticides, and pesticide contaminated soil particles.

are especially vulnerable to harm from pesticides because they are growing and developing, eat and drink more per body weight than adults, consume large amounts of certain foods, and engage in activities that increase their exposure such as frequently putting hands or objects into their mouths. NAS recommended that EPA revise its pesticide regulations to account for children's vulnerabilities, consumption patterns, and "exposures from all sources – not just ingestion"²

II. CONGRESS DIRECTED EPA TO ENSURE THAT CHILDREN ARE PROTECTED FROM PESTICIDES FROM ALL SOURCES BY THE END OF 2006.

Congress heeded the NAS recommendations and unanimously passed the Food Quality Protection Act in 1996. That law requires EPA to "ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure" to pesticides.³ "Aggregate exposure" includes "all anticipated dietary exposures and all other exposures for which there is reliable information," including pesticide drift exposures.⁴ Congress gave EPA an August 2006 deadline to bring all pesticides used on foods into compliance with these protective mandates.

III. EPA IGNORED CHILDREN WHO ARE POISONED BY SPRAY DRIFT AND VOLATILIZATION DRIFT WHERE THEY LIVE, GO TO SCHOOL, AND PLAY.

To comply with the new FQPA requirements, EPA developed methods to estimate child and infant pesticide exposures from a variety of sources, including crawling and playing on treated lawns and carpets, putting their hands into their mouths, and playing with pets treated with flea shampoos. These assessments led EPA to cancel numerous home uses of pesticides because of excessive risks to children.

Pesticide drift is another significant route of exposure for children, particularly those who

² NAS, Pesticides in the Diets of Infants and Children, at 307 (1993), Attachment 1 (hereinafter "NAS Report"). This and all attachments are located on the enclosed CD.

³ 21 U.S.C. §§ 346a(b)(2)(C)(ii)(I), (II).

⁴ 21 U.S.C. § 346a(b)(2)(A)(ii) (emphasis added); see also 21 U.S.C. § 346a(b)(2)(C)(vi).

live in agricultural areas. The 1993 NAS study on children's risks from pesticides found that agricultural pesticide drift can contribute to kids' overall pesticide exposure and that airborne pesticide residues are generally higher in areas close to agricultural lands.⁵ The California Department of Pesticide Regulation has also documented harmful exposures to the public from pesticide drift. And the Washington State Pesticide Incident Reporting and Tracking Review Panel has found that "[e]xposure to pesticide drift is an important cause of documented pesticide-related illness in Washington."⁶

Inexplicably, EPA has failed to assess children's exposures to pesticides that drift from agricultural sites to homes, schools, daycares, parks, and other places where children may be exposed. EPA's failure comes despite its acknowledgment of its obligation to protect children from drift, which can cause acute poisonings as well as cancer, long-term reproductive and developmental disorders, and other chronic adverse effects. By failing to assess the risk to children who are exposed to agricultural pesticide drift, EPA maintains a double-standard that often provides some protections for kids from pesticides used in urban and residential settings, but leaves kids who live near agricultural sites unprotected and vulnerable to pesticide drift.

In failing to protect these forgotten children, EPA has violated the Food Quality Protection Act. The agency's failure also violates executive orders directing EPA to ensure that its programs do not have disproportionate adverse health impacts on children, minority, and low-income populations.

IV. EPA MUST TAKE IMMEDIATE STEPS TO COMPLY WITH ITS LEGAL DUTY TO PROTECT ALL CHILDREN FROM PESTICIDE DRIFT.

This petition asks EPA to take two immediate steps to comply with its legal duty to

⁵ NAS Report at 308-09, Attachment 1.

⁶ Washington State Pesticide Incident Reporting and Tracking Review Panel, Annual Report: 2005, at 81 (May 2007), Attachment 2.

protect all children from all pesticide exposures:

First, EPA must fully evaluate drift risks for all pesticides that have the potential to move from agricultural sites to areas where children congregate, such as homes, parks, schools, and daycare centers. Based on these assessments, EPA must limit or prohibit pesticide uses that result in children being exposed to unsafe levels of pesticide particles or vapors. In order to adequately protect children, EPA must correct its violations of the FQPA and executive orders more quickly than the current set of pesticide registration reviews, which are not scheduled to be completed until 2022.

Second, to protect children while it conducts the necessary drift exposure assessments and develops pesticide-specific protective measures, EPA should impose no-spray buffer zones for dangerous drift-prone pesticides around homes, schools, parks, daycare centers, and other places where children congregate. EPA has recognized that such buffer zones are an effective method in reducing risks associated with pesticide drift. These buffers should be required for all pesticides that have the potential to drift, including the two classes of widely used nerve toxins (organophosphates and n-methyl carbamates) that cause acute poisonings. EPA has found that young children are already exposed to these two classes of pesticides at or possibly in excess of maximum safe levels, without having considered the additional exposures from drift. EPA must take immediate steps to prevent the additional unassessed drift exposures from harming children while EPA completes the drift risk evaluations.

BACKGROUND

I. PESTICIDE DRIFT POSES SIGNIFICANT RISKS TO CHILDREN'S HEALTH.

A. Children Are More Susceptible to Harm From Pesticides Than Adults.

In 1993, the National Academy of Sciences (“NAS”) published a pivotal study documenting the many ways pesticides pose especially severe risks to infants and children. In

particular, NAS found that pesticides pose heightened risks to children because “[i]nfants and children are growing and developing,” “[t]heir metabolic rates are more rapid than adults,” and “[t]here are differences in their ability to activate, detoxify, and excrete xenobiotic compounds.”⁷ Children are also at heightened vulnerability because they “eat and drink more than adults” in relation to their body weight, they consume large quantities of certain fruits and vegetables, and engage in risky behaviors “such as playing on floors or lawns or putting objects in their mouths.”⁸ The NAS Report found that EPA had failed to assess children’s unique exposures to pesticides and their special susceptibilities to the adverse health effects of such exposures at various stages of development.⁹ Recent EPA-funded research confirms that children can be much more vulnerable to pesticide exposure than adults.¹⁰

B. EPA Has Long Recognized That Drift Exposures Can Be Harmful to Children.

One of the many routes by which children are exposed to pesticides is through pesticide drift. In its 1993 Report on children and pesticides, NAS observed that “[e]xposure to pesticide residues from ambient air sources is generally higher in areas close to agricultural lands and in communities surrounding pesticide manufacturing factories” and also “movement of the more volatile chemicals present potentially significant human exposure.”¹¹ To guard against harms

⁷ NAS Report at 3, Attachment 1.

⁸ EPA, Pesticides and Food: Why Children May be Especially Sensitive to Pesticides (Mar. 2008), Attachment 3.

⁹ NAS Report at 3-7 (1993), Attachment 1.

¹⁰ E.g., Centers for Children’s Environmental Health & Disease Prevention Research, Exposures & Health of Farm Worker Children in California, Attachment 4; see also EPA, Children’s Exposure to Pesticides and Related Health Outcomes, Attachment 5 (cataloguing studies indicating that children are less able to protect themselves from organophosphate poisoning because they have yet to fully develop the “PON1 enzyme,” which is necessary to detoxify these chemicals.).

¹¹ NAS Report at 309, Attachment 1.

associated with pesticide exposures, NAS recommended that “exposure from all sources—not just ingestion—must be considered when estimating total [pesticide] exposure and risk to children.”¹²

For decades, EPA has required pesticide labels to include general admonitions to avoid spray drift, but has recognized that this generalized label direction is inadequate to protect innocent bystanders such as children from pesticide drift. For example, the Worker Protection Standard (“WPS”) regulations contain a provision generally requiring pesticide users to “assure that no pesticide is applied so as to contact, either directly or through drift, any worker or other person”¹³ However, even with such general label directions, EPA found that numerous poisoning incidents were occurring each year and the current drift labeling was “inconsistent or inadequate and for many products unclear to applicators and others.”¹⁴

In order to provide better protections from drift, EPA took two actions. First, it established a “Spray Drift Task Force” (“SDTF”) charged with helping to develop “a generic spray drift database which is expected to be capable of satisfying spray drift data requirements for virtually all pesticide product registrations in the United States and Canada.”¹⁵ The SDTF ultimately developed an evaluation tool—called “AgDRIFT”—that can help estimate exposure from spray drift for individual pesticides.¹⁶ Second, EPA published a notice proposing “improved and more consistent product label statements for controlling pesticide drift in order to

¹² NAS Report at 307, 308-09, Attachment 1.

¹³ 40 C.F.R. § 170.210(a).

¹⁴ EPA, Pesticide Registration (PR) Notice 2001-X Draft: Spray and Dust Drift Label Statements for Pesticide Products, Attachment 6 (hereinafter “Draft Spray Drift PR Notice”).

¹⁵ EPA, Pesticide Registration (PR) Notice 90-3: Announcing the Formation of an Industry-Wide Spray Drift Task Force (Apr. 6, 1990), Attachment 7.

¹⁶ SDTF, AgDRIFT Frequency Asked Questions (July 31, 2003), Attachment 8.

be protective of human health and the environment.”¹⁷ EPA explained why it believed new spray drift label language was necessary:

EPA’s position on pesticide drift is that applicators must not allow pesticide spray or dust to drift from the application site and contact people, animals, and certain sensitive sites, including structures people occupy . . . , parks and recreation areas, nontarget crops, aquatic and wetland areas, woodlands, pastures, or rangelands. The Agency believes this is prudent public policy. It sets high but appropriate standards for applicators to protect people and the environment. . . . EPA believes the suggested labeling in this Notice will reduce risks associated with pesticide drift without a significant reduction in product efficacy. Accordingly, EPA believes that these label statements will help ensure that the requirements of FIFRA are met and, specifically, that pesticides are used in a manner that does not result in “unreasonable adverse effects on the environment.”¹⁸

EPA’s proposal would have placed limits on application equipment, methods, and conditions, such as wind speeds to reduce drift exposures.¹⁹

Despite recognizing that current pesticide labels were “inadequate” to prevent harmful drift, EPA never finalized the proposal to impose greater safeguards to prevent spray drift. Nor has EPA implemented the drift mitigation outlined in the proposal when it registered or reregistered pesticide uses.

C. Documented Evidence Confirms That Pesticide Drift Harms Children.

In 2001, EPA expressed concern about the number of poisoning incident reports and concluded that existing pesticide restrictions are insufficient to prevent harmful spray drift.²⁰ Poisoning incident reports continue to show that pesticide drift poses significant risks to people. For example, in 2006, the Washington State Pesticide Incident Reporting and Tracking Review Panel found that “[e]xposure to pesticide drift is an important cause of documented pesticide-

¹⁷ Draft Spray Drift PR Notice, Attachment 6.

¹⁸ Id.

¹⁹ Id.

²⁰ Id.

related illness in Washington.”²¹ The California Department of Pesticide Regulation (“CDPR”) documented 3,997 reported pesticide drift incidents in California between 1992 and 2007.²²

These reports are admittedly only the tip of the iceberg due to the well-documented disincentives and obstacles to such reporting.²³ In addition, a growing number of epidemiological studies link pesticide drift to specific adverse health effects in humans, including autism spectrum disorders,²⁴ Parkinson’s disease,²⁵ and childhood acute lymphoblastic leukemia.²⁶

Pesticide monitoring and modeling studies further confirm that pesticide drift may pose significant health risks to children who live near fields.²⁷ For example:

²¹ Washington State Pesticide Incident Reporting and Tracking Review Panel, Annual Report: 2005, at 81 (May 2007), Attachment 2; see also Barbara Morrissey, Washington State Department of Health, Spray Drift and Human Health Incidents, Attachment 9.

²² Cal. Dep’t of Pesticide Regulation, California Pesticide Illness Query, Attachment 10.

²³ Pesticide incidents are notoriously underreported. See General Accounting Office, Pesticides: Improvements Needed to Ensure the Safety of Farmworkers and Their Children (Mar. 2000), Attachment 11. EPA has recognized that pesticide incident reporting is of limited usefulness and questionable reliability due to the lack of any consistent national system for collecting such reports, the failure of health professionals and exposed persons to associate symptoms with pesticide exposure, lack of health insurance or financial resources to seek medical attention, and failure to record pesticide poisoning incidents in the various incident databases. EPA, Regulatory Impact Analysis of Worker Protection Standard for Agricultural Pesticides, at V-11 to V-20 (Aug. 1992), Attachment 12.

²⁴ E.g., Roberts, E., et al., Maternal Residence Near Agricultural Pesticide Applications and Autism Spectrum Disorders Among Children in the California Central Valley, *Envtl. Health Perspectives*, Vol. 115, No. 10, at 1482 (Oct. 2007), Attachment 13.

²⁵ E.g., Costello, S., et al., Parkinson’s Disease and Residential Exposure to Maneb and Paraquat From Agricultural Applications in the Central Valley of California, *Am. Journal of Epidemiology*, Vol. 169, No. 8, at 919 (Jan. 2009), Attachment 14.

²⁶ E.g., Rull, R., et al., Residential Proximity to Agricultural Pesticide Applications and Childhood Acute Lymphoblastic Leukemia, *Envtl. Research*, Vol. 109, at 891 (July 2009), Attachment 15.

²⁷ See generally Tupper, K., Written Testimony of Karl Tupper, Staff Scientist, Pesticide Action Network North America for the Illinois Senate Agriculture and Conservation Committee, at 1-6 (Sept. 2009), Attachment 16.

- In 2007, an air monitoring study conducted near the Southwoods Elementary School in Hastings, Florida, detected four pesticides—endosulfan, diazinon, trifluralin, and chlorothalonil. At least one pesticide was found in each of the 39 samples, with three or four of the pesticides detected in 74% of samples, sometimes at levels exceeding levels of concern based on end points selected by the EPA as appropriate for assessing inhalation risk.²⁸ Exposure to these four chemicals is associated with a wide range of adverse health effects—endosulfan interferes with hormones and was linked to autism in an epidemiological study, diazinon is neurotoxic, and trifluralin and chlorothalonil are rated by the EPA as “possible” and “probable” carcinogens, respectively.
- In 2006 and 2007, air monitoring at homes and an elementary school in rural Minnesota also detected chlorothalonil—a fungicide EPA has classified as a “probable” carcinogen—in 123 of the 186 samples analyzed.²⁹
- In Spring 2006, air monitoring in the Yakima Valley of Washington State, an area known for apple and grape production, detected chlorpyrifos—an acutely toxic organophosphate insecticide associated with developmental harm to children—in communities in amounts exceeding levels of concern derived from EPA selected endpoints and including EPA’s FQPA safety factor.³⁰
- Air monitoring in Lindsay, California, found chlorpyrifos in the air at levels exceeding the level of concern for children by up to 7.9 times in 2004, and up to 6.6 times in 2005.³¹
- In 2004, a study by scientists from the University of Washington and Washington State University on the organophosphate methamidophos determined that pesticide volatilization drift “could be a potentially high percentage of inhalation exposure” that “has implications in agricultural communities, where children are allowed to play outside immediately after spraying. . . .”³²

²⁸ Pesticide Action Network North America, Air Monitoring in Hastings, Florida: October 1–December 6, 2007 (Sept. 2008), Attachment 17.

²⁹ Pesticide Action Network North America, Pesticides and Air Pollution in Minnesota: The Frequency of Detection of Chlorothalonil, a Fungicide Used on Potatoes, at 11 Sites in 2006-07, Attachment 18.

³⁰ Farm Worker Pesticide Project & Pesticide Action Network North America, Poisons on the Wind: Community Air Monitoring for Chlorpyrifos in the Yakima Valley (Dec. 2006), Attachment 19.

³¹ Pesticide Action Network North America, Air Monitoring for Chlorpyrifos in Lindsay, California (July 2006), Attachment 20.

³² Ramaprasad, J., et al., The Washington Aerial Spray Drift Study: Assessment of Off-Target Organophosphorus Insecticide Atmospheric Movement by Plant Surface Volatilization, *Atmospheric Environment* 38 at 5703-13 (2004), Attachment 21.

- In 2000, chlorpyrifos was detected in one-third of all ambient air samples collected in California’s San Joaquin Valley at levels that sometimes exceeded the level of concern for young children.³³
- In 1996, the California Air Resources Board (“CARB”) found chlorpyrifos in 74 percent of air samples taken at elementary schools and other sites near orange fields in Tulare County, California.³⁴ CARB has also detected potentially unsafe levels of other pesticides, including methidathion and molinate, in studies conducted between 1986 and 2000.³⁵

These data indicate that pesticide drift is a potentially significant route of exposure for children who live or go to school near agricultural fields. In light of the vulnerabilities of children to pesticides, EPA cannot ensure that children will be protected from harm unless it accounts fully for such exposures.

II. EPA IS VIOLATING FEDERAL LAW BY FAILING TO PROTECT CHILDREN FROM PESTICIDE DRIFT.

A. Federal Law Requires EPA to Protect Children From Pesticide Drift.

1. *Federal Law Governing Pesticides and Food*

The Federal Food, Drug and Cosmetic Act (“FFDCA”) regulates food safety and requires EPA to set “tolerances” (*i.e.*, maximum allowable levels) for pesticide residues in food.³⁶ A pesticide may not be used on a particular food unless EPA has established a tolerance or exemption for that food.³⁷ If a food contains pesticide residues that exceed the levels permitted

³³ Environmental Working Group, Every Breath You Take: Airborne Pesticides in the San Joaquin Valley (Jan. 2001), Attachment 22.

³⁴ CARB, Final Report for the 1996 Chlorpyrifos Monitoring in Tulare County (Apr. 13, 1998), Attachment 23.

³⁵ Lee, S., et al., Community Exposures to Airborne Agricultural Pesticides in California: Ranking of Inhalation Risks, Environmental Health Perspectives, vol. 110, no. 12, at 1175 (Dec. 2002), Attachment 24.

³⁶ 21 U.S.C. §§ 346a(b), (c).

³⁷ 21 U.S.C. § 346a(a)(1).

under a tolerance, the food is characterized as “adulterated” and is unlawful under the FFDCFA.³⁸

In 1996, Congress unanimously adopted the FQPA, which amended the FFDCFA to incorporate NAS’s 1993 recommendations for EPA to ensure that children are protected from pesticide exposures.³⁹ Under the FQPA, before EPA can allow a pesticide residue on a food, the agency must “ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure” to the pesticide.⁴⁰ The FQPA defines “aggregate exposure” to include “all anticipated dietary exposures and all other exposures for which there is reliable information.”⁴¹ The FQPA gave EPA 10 years to bring all uses of pesticides on food into compliance with the new standards.

To implement these statutory mandates, EPA has developed a “risk cup” approach that first quantifies the exposure level for a pesticide that would exceed the safety standard for specific population groups, including fetuses, infants, and children in different age ranges. EPA then adds up exposures from various sources, such as consumption of each food on which the pesticide is used, residues in drinking water, and exposure to the pesticide through residential uses. If aggregate exposures to the pesticide from non-occupational sources “overflow” the risk cup for a particular subpopulation, the pesticide does not meet the FQPA safety standard. EPA will then look for ways to reduce exposure by, for example, eliminating some uses to reduce total exposure to levels that meet the safety standard.

Not surprisingly, given the FQPA’s mandate to protect children, exposures to infants and

³⁸ 21 U.S.C. § 342.

³⁹ H.R. Rep. No. 104-669, Pt. 2, at 43.

⁴⁰ 21 U.S.C. §§ 346a(b)(2)(C)(ii)(I), (II).

⁴¹ 21 U.S.C. § 346a(b)(2)(A)(ii) (emphasis added); see also 21 U.S.C. § 346a(b)(2)(C)(vi) (In setting tolerances, EPA “shall consider . . . available information concerning the aggregate exposure levels of consumers . . . to the pesticide chemical and to other related substances, including dietary exposure . . . and exposure from other non-occupational sources . . .”).

children have often been the driving force behind pesticide cancellations and use limitations under the FQPA. For example, in 1997, EPA began a phase-out of almost all food uses of vinclozolin after finding that the pesticide posed unacceptable risks of sexual deformities in male fetuses.⁴² In 2000 and 2001, EPA began a phase-out of almost all home and garden uses of the organophosphates chlorpyrifos and diazinon after determining that residential uses of these pesticides cause the child risk cup for each of these pesticides to overflow.⁴³ Most recently, in May 2009, EPA revoked all tolerances for carbofuran after determining that “estimated exposures significantly exceeded EPA’s level of concern for children.”⁴⁴ However, EPA has left children who are exposed to many of these same chemicals that drift from agricultural sites unprotected.

2. *Federal Law Governing Pesticide Usage*

Congress enacted the Federal Insecticide, Fungicide, and Rodenticide Act (“FIFRA”) in 1947 to protect farmers from adulterated and ineffective pesticides. FIFRA had no health or environmental standards until 1972, when Rachel Carson’s book Silent Spring and the controversy over DDT prompted Congress to amend FIFRA to incorporate health and environmental standards.⁴⁵

Under FIFRA, EPA must register a pesticide before it can be sold or used in the United States.⁴⁶ To register or reregister a pesticide use, EPA must ensure that the chemical will

⁴² EPA, R.E.D. Facts: Vinclozolin (Oct. 2000), Attachment 25.

⁴³ EPA, Occupational/Residential Handler and Postapplication Residential Risk Assessment for Chlorpyrifos, at 6 (Oct. 1999); Attachment 26; EPA, Diazinon Revised Risk Assessment and Agreement with Registrants, at 2-3 (Jan. 2001), Attachment 27.

⁴⁴ 74 Fed. Reg. 23,046, 23,052 (May 15, 2009).

⁴⁵ See Pub. L. No. 92-516, 86 Stat. 996 (1972); H.R. Rep. No. 511, 92d Cong., 1st Sess. (1971).

⁴⁶ 7 U.S.C. § 136a.

perform its intended function without causing any “unreasonable adverse effects on the environment.”⁴⁷ FIFRA defines this standard as “any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide”⁴⁸ In applying this standard, EPA must undertake a comprehensive assessment of all risks from a pesticide encompassing “every relevant factor that the Administrator can conceive into account,”⁴⁹ including pesticide drift.

The FQPA amended FIFRA’s “unreasonable adverse effects” definition to include “a human dietary risk from residues that result from a use of a pesticide in or on any food inconsistent with the [FQPA] standard.”⁵⁰ Accordingly, EPA can register a pesticide only if there is reasonable certainty of no harm from aggregate exposure to the pesticide under the FQPA standard.⁵¹ EPA can impose use restrictions as necessary to meet this standard, which are included on the legally enforceable pesticide label. The August 2006 deadline for bringing food-use pesticides into compliance with the FQPA extends to both tolerances under the FFDCFA and registrations under FIFRA.⁵²

⁴⁷ 7 U.S.C. § 136a(c)(5)(C).

⁴⁸ 7 U.S.C. § 136(bb)(1).

⁴⁹ See S. Rep. No. 838, 92d Cong. 2d Sess., reprinted in 1972 U.S.C.C.A.N. 3993, 4032-33; see also EPA, General Principles for Performing Aggregate Exposure and Risk Assessments, at 9 (Nov. 28, 2001), Attachment 28 (“The FQPA-amended FIFRA also speaks to the requirement that [EPA] evaluate risks on an aggregate basis.”).

⁵⁰ 7 U.S.C. § 136(bb)(2).

⁵¹ E.g., EPA, General Principles for Performing Aggregate Exposure and Risk Assessments, at 9 (Nov. 28, 2001), Attachment 28 (“[T]he [FIFRA] standard for making decisions whether to register or continue registration of a pesticide for food-use must satisfy the standards in the FFDCFA.”).

⁵² Use restrictions are set out on the EPA-approved label affixed to the product. A pesticide may not be used in a manner inconsistent with the label. If EPA determines that a pesticide registration does not comply with FIFRA, it may commence administrative proceedings to

3. *Executive Orders on Environmental Justice and Child Health*

Two executive orders issued during the 1990s also require EPA to protect children from pesticide drift. First, the 1994 Environmental Justice Executive Order requires EPA to ensure that its actions do not have disproportionate impacts on low-income and/or minority populations.⁵³ Specifically, EPA and other executive agencies must, to the maximum extent practicable, “identify[] and address[] . . . disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”⁵⁴ In furtherance of this mandate, EPA is required to “collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income” and “use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations”⁵⁵

Second, the 1997 Executive Order on Children’s Health⁵⁶ requires EPA to protect children from environmental health and safety risks. Specifically, EPA is required to “ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health or safety risks . . . that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breath [sic], the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or

cancel the pesticide’s registration or amend the registration to require additional safeguards. 7 U.S.C. § 136d(b).

⁵³ Exec. Order No. 12,898, 59 Fed. Reg. 7,629 (Feb. 11, 1994).

⁵⁴ Id. at § 1-101.

⁵⁵ Id. at § 3-302(a).

⁵⁶ Exec. Order No. 13,045, 62 Fed. Reg. 19,885 (Apr. 23, 1997).

are exposed to).”⁵⁷ Viewed together, these two executive orders require EPA, in making pesticide registration and tolerance decisions, to assess pesticide drift exposures along with all other pesticide exposures to ensure that pesticide exposures do not disproportionately impact children, low income populations, and/or minority populations.

B. EPA Has Violated Its Legal Duties by Ignoring Children’s Exposures to Harmful Pesticides Through Drift.

EPA’s record of compliance with its mandate to protect children from all pesticide exposures, including drift, is dismal. In the vast majority of cases, EPA has not even examined pesticide drift exposures, let alone imposed protections necessary to prevent harmful exposures to children.

As illustrated by its actions on chlorpyrifos, EPA has essentially applied a double standard, protecting urban children, but not protecting rural kids or suburban and ex-urban children that live or go to school near agricultural areas. Chlorpyrifos is a nerve poison that has been used in the United States since 1965 to kill insects in homes, schools, parks, and farms.⁵⁸ Chlorpyrifos is also associated with birth defects and impacts on human reproduction.⁵⁹ In 2000, EPA prohibited most home and residential uses of chlorpyrifos,⁶⁰ which the agency heralded as “particularly good news for children, who are among the most vulnerable to the risks posed by pesticides.”⁶¹ However, children are also exposed to chlorpyrifos particles that drift from target sites during application, and vapors that drift from the fields for days or even weeks after

⁵⁷ Id. at §§ 1-101(b), 2-202(b).

⁵⁸ EPA, Interim Reregistration Eligibility Decision for Chlorpyrifos, at 9-10 (Sept. 2001), Attachment 29 (hereinafter “Chlorpyrifos IRED”).

⁵⁹ EPA, Human Health Risk Assessment: Chlorpyrifos, at 15-16 (June 2000), Attachment 30.

⁶⁰ EPA, Human Health Risk Assessment: Chlorpyrifos, at 3-10 (June 2000), Attachment 30.

⁶¹ EPA, Administrator Carol M. Browner, Dursban Announcement, Remarks Prepared for Delivery June 8, 2000, Attachment 31.

application.⁶² Unfortunately, EPA ignored and continues to disregard the harm to kids in or near agricultural communities when chlorpyrifos drifts from farms and contaminates the air at nearby schools, homes, parks, and daycare centers. Even as recently as 2006, EPA re-authorized use of chlorpyrifos on apples, citrus, cotton, corn, and many other crops without any protections to reduce drift exposures, despite considerable evidence (discussed above) that chlorpyrifos drifts from farms into nearby communities at alarming levels.⁶³

EPA's failure to protect children from pesticide drift is not limited to chlorpyrifos. For example:

- Endosulfan is an organochlorine pesticide included on EPA's endocrine disruptor screening list and designated as a suspected endocrine disruptor by the Illinois EPA and the European Union.⁶⁴ Due to its toxicity, its ability to travel far distances after application, and its ability to bioaccumulate, endosulfan has been banned in over 60 countries around the world.⁶⁵ California Department of Pesticide Regulation ("CDPR") air monitoring has detected endosulfan drift in the air adjacent to agricultural sites at levels that pose toxic risks to bystanders.⁶⁶ Additional air monitoring data has detected endosulfan in the ambient air near schools and other locations where bystanders can be exposed.⁶⁷ Despite this evidence, EPA reregistered endosulfan in 2002 for dozens of food uses without considering drift exposures and their contribution to risk to children.

⁶² E.g., Farm Worker Pesticide Project & Pesticide Action Network North America, [Poisons on the Wind: Community Air Monitoring for Chlorpyrifos in the Yakima Valley](#) (Dec. 2006), Attachment 19; Pesticide Action Network North America, [Air Monitoring for Chlorpyrifos in Lindsay, California](#) (July 2006), Attachment 20.

⁶³ EPA, [Organophosphorus Cumulative Risk Assessment - 2006 Update](#) (Aug. 2006), Attachment 32.

⁶⁴ Inst. for Env't & Health, [Chemicals Purported to be Endocrine Disruptors: A Compilation of Published Lists](#) (Mar. 2005), Attachment 33.

⁶⁵ See PIC Circular 29 at 399, Attachment 34; see also Endosulfan Draft Risk Profile, prepared by the Persistent Organic Pollutants Review Committee of the Stockholm Convention (April 2009), Attachment 35.

⁶⁶ Cal. Dep't of Pesticide Regulation, [Endosulfan Risk Characterization Document Volume I](#) (August 2008), Attachment 36.

⁶⁷ E.g., Pesticide Action Network North America, [Air Monitoring in Hastings, Florida: October 1–December 6, 2007](#) (Sept. 2008), Attachment 17.

- Both EPA and California have determined that oxydemeton-methyl (“ODM”) is a developmental and reproductive toxicant.⁶⁸ ODM is an organophosphate registered for use in agriculture, primarily on Brussels sprouts, broccoli, and cauliflower, and lettuce.⁶⁹ EPA has acknowledged that exposure to ODM may cause reproductive effects such as reduced fertility, viability, ovarian and testicular weights, and increased estrous cycles.⁷⁰ The California DPR drift incident database reports 155 drift incidents associated with agricultural use of ODM between 1992 and 2007 in California alone.⁷¹ Again, EPA reregistered ODM in 2006 without assessing or mitigating the risks posed by drift.
- Ethoprop is an organophosphate pesticide that EPA has classified as a likely human carcinogen.⁷² EPA has acknowledged incidents in which ethoprop drifted following application and caused poisoning of children and other bystanders.⁷³ A 1998 study by the California Air Resources Board found concentrations of ethoprop in the air at application sites and in the ambient air at an elementary school approximately one-quarter mile from the nearest agricultural fields.⁷⁴ EPA ignored these exposures and risks when it reregistered ethoprop in 2006.
- The California Department of Pesticide Regulation (“CDPR”) determined in 1999 that the organophosphate methyl parathion was a toxic air contaminant (“TAC”) because the pesticide “may cause or contribute to increases in serious illness or death, or . . . may pose a present or potential hazard to human health.”⁷⁵ Based on air monitoring data, CDPR estimated that the risk to infants from application site exposure to methyl parathion far exceed what EPA typically considers acceptable.⁷⁶ Despite this evidence, EPA ignored potential child drift exposures near application sites when it made registration decisions for methyl parathion in 2003 and 2006.⁷⁷

⁶⁸ EPA, Interim Reregistration Eligibility Decision for ODM, at 10-12 (Aug. 2002), Attachment 37 (hereinafter “ODM IRED”); Cal. EPA, Chemicals Known to the State to Cause Cancer or Reproductive Toxicity, at 14 (Sept. 2009), Attachment 38.

⁶⁹ ODM IRED at 5, Attachment 37.

⁷⁰ ODM IRED at 10, 46, Attachment 37.

⁷¹ CDPR, California Pesticide Illness Query, Attachment 10.

⁷² EPA, Interim Reregistration Eligibility Decision for Ethoprop, at 14 (Sept. 2001), Attachment 39 (hereinafter “Ethoprop IRED”).

⁷³ Ethoprop IRED at 35, Attachment 39.

⁷⁴ Cal. Air Resources Bd., Final Report for the 1998 Ethoprop Air Monitoring (Dec. 1998), Attachment 40.

⁷⁵ CDPR, Toxic Air Contaminant Program, Attachment 41.

⁷⁶ CDPR, Evaluation of Methyl Parathion as a Toxic Air Contaminant: Executive Summary, at ix, Attachment 42.

⁷⁷ See EPA, Reregistration Eligibility Decision for Methyl Parathion, at 23-24 (May 2003), Attachment 43.

EPA's systematic failure to protect children from drift affects all children and violates the FQPA, which requires EPA to ensure that aggregate exposure to pesticides is safe for children,⁷⁸ and the 1997 Executive Order on Children's Health, which mandates that EPA protect children from disproportionate harm from pesticides and other environmental poisons.⁷⁹

In addition, pesticide drift has disproportionate impacts on children from low income households. Farmworker families tend to be poor—on average, a farmworker family earned an annual income ranging from \$15,000 to \$17,499 in 2003.⁸⁰ In the top five agricultural counties in Texas (the state with the most acres of agriculture), between 10 to 30 percent of children live below the poverty line.⁸¹ Likewise, in California (the top agricultural state by revenue), between 24 to 32 percent of children under the age of 17 live in poverty in the top three agricultural counties (compared with the state average poverty rate of 12.4%).⁸²

Pesticide drift also has disproportionate impacts on children in minority populations. The

⁷⁸ In light of EPA's systemic failure to protect children from pesticide drift and other flaws in EPA's pesticide risk-benefit assessment process, a broad coalition of farmworker and public health groups have attempted to compel EPA to more adequately address pesticide risks through several lawsuits that are now pending in the federal courts. See UFW v. Adm'r., EPA, No. C04-0099C (W.D. Wash.) (filed Jan. 13, 2004) (challenging reregistrations for AZM and phosmet); UFW v. Adm'r., EPA, No. C07-3950 JF (N.D. Cal.) (filed July 30, 2007) (challenging reregistrations for chlorpyrifos); PANNA v. EPA, No. C08-1814 MHP (N.D. Cal.) (filed Apr. 4, 2008) (challenging reregistrations for methidathion, oxydemeton-methyl ("ODM"), methamidophos, and ethoprop); PANNA v. EPA, 08-3542 MPH (N.D. Cal.) (filed July 24, 2008) (challenging reregistrations for endosulfan); UFW v. EPA, No. C08-3595 MHP (N.D. Cal.) (filed July 28, 2008) (challenging reregistrations for diazinon).

⁷⁹ Exec. Order No. 13,045, 62 Fed. Reg. 19,885 (Apr. 23, 1997).

⁸⁰ National Center for Farmworker Health, Migrant and Seasonal Farmworker Demographics (2009), Attachment 44.

⁸¹ United States Department of Agriculture, 2007 County-Level Poverty Rates for TX (Dec. 2008), Attachment 45.

⁸² Alice Larson, Migrant and Seasonal Farmworker Enumeration Profiles Study: California (Sept. 2000), Attachment 46.

vast majority of U.S. farmworkers are of Latin American origin—approximately 83 percent of U.S. farmworkers are of Latin American ancestry.⁸³ A majority of these farmworkers have children,⁸⁴ and these children live and go to school near the agricultural sites where their parents work. For example, in California over 73 percent of children attending schools within 1.5 miles of sites where at least 10,000 pounds of pesticides were applied in 1998 were non-white.⁸⁵ Similarly, in 2008 approximately 53 percent of students in Washington State’s top five agricultural counties were non-white (the statewide average was 31 percent).⁸⁶

The Environmental Justice Executive Order requires EPA to address disproportionate impacts of pesticide use on minority and low income populations, and the Child Health Executive Order requires EPA to address risks to children from pesticides. Contrary to these obligations, EPA has ignored a pesticide exposure pathway that directly and pervasively affects low income minority children who live near the fields. Indeed, for certain pesticides, such as chlorpyrifos and diazinon, EPA maintains a double-standard by protecting children from urban and residential uses, but ignoring exposures to children who live, play, and go to school near fields. These failures not only violate EPA’s statutory obligations, they also violate EPA’s obligations to address disproportionate impacts to children, minority, and low-income populations when it authorizes pesticide uses.

⁸³ United States Department of Labor, The National Agricultural Workers Survey (Oct. 2006), Attachment 47.

⁸⁴ Id.

⁸⁵ Environmental Working Group, Every Breath You Take: Airborne Pesticides in the San Joaquin Valley (Jan. 2001), Attachment 22.

⁸⁶ School Data Direct, District-by-District Query, available at <http://www.schoolatadirect.org/> (select “District” in the brown search box at the top of the screen, enter the district “Name” and “State” in the respective boxes. then click on the hyperlink for the district) (last viewed September 24, 2009).

ACTIONS NEEDED TO CORRECT EPA'S LEGAL VIOLATIONS

By maintaining registrations for hundreds of pesticides without accounting for and protecting children from pesticide drift, EPA is in violation of federal pesticide laws and executive orders directing it to protect minority and low-income populations as well as children from adverse health effects. To remedy these ongoing violations of law, this petition asks EPA to: (1) expeditiously evaluate the exposure of children to pesticide drift and impose safeguards to ensure that children are protected from aggregate pesticide exposures, including drift; and (2) immediately adopt interim controls that prohibit use of toxic drift-prone pesticides near homes, schools, parks, daycare centers, and other locations where children congregate.

I. EPA MUST CONDUCT PESTICIDE-SPECIFIC ASSESSMENTS OF THE RISKS TO CHILDREN FROM PESTICIDE DRIFT AND MODIFY PESTICIDE REGISTRATIONS TO ELIMINATE EXCESSIVE RISKS TO CHILDREN.

EPA cannot register a pesticide unless it has ensured that the chemical will perform its intended function without causing any “unreasonable adverse effects on the environment,” which is defined to include violations of the FQPA safety standard.⁸⁷ By registering or reregistering pesticides without accounting for drift risks to children, EPA has overlooked a potentially significant route of exposure and has failed to fulfill its ongoing legal duty to protect all children from unsafe aggregate exposures to food-use pesticides. When a registered pesticide use poses unreasonable adverse effects or violates the FQPA safety standard, EPA must amend the registration or cancel offending uses.

To bring its pesticide registrations into compliance with these legal obligations, EPA must take two steps for all FFDCA-regulated pesticides. First, EPA must fully assess the exposure of children to drift from registered pesticide uses and determine whether such

⁸⁷ 7 U.S.C. § 136a(c)(5)(C).

exposures pose excessive risks. Such assessments must encompass applications of pesticides by ground sprayers, broadcast equipment, and aerial equipment, all of which have the potential to drift from application sites during and immediately after application.⁸⁸ In addition, depending on certain variables, such as the physical characteristics of the pesticide and meteorological conditions, pesticides can volatilize for hours or days after application and drift as a vapor thousands of feet from application sites.⁸⁹ To address all pathways through which children may be over-exposed to pesticides, EPA's assessments must evaluate inhalation, oral, and dermal exposures to both spray drift and volatilization drift.

Second, based on the results of the drift exposure assessments, EPA must limit pesticide uses as necessary to protect children from drift. Such limitations would likely take the form of amendments to pesticide registrations, but might also lead to cancellations of uses that pose particularly high risks to children.

EPA has long recognized the need to assess drift exposures and incorporate necessary safeguards into pesticide registrations. For example, EPA's 2001 spray drift proposal indicated that the agency would conduct pesticide-by-pesticide reviews to determine "whether one or more no-spray zones and their distance(s) are necessary for products using available information about the pesticide's uses and risk assessments."⁹⁰ Likewise, in many of EPA's pesticide reregistration eligibility decisions, EPA specifically identified drift risks as a data gap needing further

⁸⁸ See Draft Spray Drift PR Notice, Attachment 6.

⁸⁹ See, e.g., Ramaprasad, J., et al., The Washington Aerial Spray Drift Study: Assessment of Off-Target Organophosphorus Insecticide Atmospheric Movement by Plant Surface Volatilization, Atmospheric Environment 38, at 5703-13 (2004), Attachment 21.

⁹⁰ Draft Spray Drift PR Notice, Attachment 6 ("EPA in its risks management decisions will determine whether one or more no-spray zones and their distance(s) are necessary for products using available information about the pesticide's uses and risk assessments.").

assessment.⁹¹ When EPA was called on to protect rural children as an FQPA subpopulation and revoke tolerances for several specific pesticides, EPA recognized the potentially significant risks associated with pesticide drift and acknowledged the need to further analyze and incorporate that risk into EPA's aggregate exposure assessments for drift-prone pesticides.⁹²

EPA may be inclined to conduct these required drift assessments as part of FIFRA's pesticide registration review program, under which EPA plans to review pesticides originally registered before October 2007 by 2022.⁹³ While the pesticide registration review process should and indeed must assess drift exposures, it is not an appropriate vehicle for correcting the legal violations highlighted in this petition for two reasons. First, while EPA currently plans to initiate registration reviews for approximately 70 pesticides per year over the next four years, the agency has set no dates for completing those reviews, except to say that it "expects a total of about 710 pesticide cases comprising 1,136 pesticide active ingredients to undergo registration review by 2022."⁹⁴ Thirteen years is far too long to allow children to be exposed to pesticide drift without any EPA assessment of the risks posed to kids. Second, the registration review process is designed to address *new evidence* of risks and exposures that emerges after 2007. In

⁹¹ E.g., EPA, Interim Reregistration Eligibility Decision for Methidathion, at 19-20 (Apr. 2002), Attachment 48 ("The Agency recognizes that there are many issues related to the use of agricultural chemicals in the general population, i.e., spray drift exposures and exposures to farm worker children and farm residents. The Agency is in the process of developing guidance and procedures for characterizing these kinds of risks.").

⁹² Imidacloprid; Order Denying Objections to Issuance of Tolerance, 69 FR 30042, 30050 and 30054-55 (May 26, 2004); Order Denying Objections to Issuance of Tolerances, 70 FR 46706, 46730 (August 10, 2005). In these decisions, EPA chose not to identify farm children as a sensitive subpopulation under the FFDCa. This petition does not seek such a designation, but rather asks EPA to protect all children from the dangers of pesticide drift. Indeed, even in EPA's response to the petition, the agency agreed that pesticide drift exposure is a problem that needs to be addressed on a pesticide-specific basis.

⁹³ 7 U.S.C. § 136a(g)(1)(iii)-(iv).

⁹⁴ 74 Fed. Reg. 10,576 (Mar. 11, 2009).

other words, Congress assumed that all pesticide uses would be brought into compliance with the FQPA's protection mandates for children through the reregistration decisions completed by 2007. This premise is faulty for drift exposures since EPA ignored such exposures entirely in making its reregistration decisions.

Given this backdrop, EPA must implement an accelerated schedule for completing drift assessments and modifying registrations that prioritizes assessments based on the suspected degree of risk to children posed by the pesticide. EPA could undertake such accelerated reviews either through modifications to the registration review program or by utilizing other authorities. See, e.g., 7 U.S.C. § 136w(a)(1) (general rulemaking authority); 40 C.F.R. § 154.7 (special review).

II. EPA SHOULD IMMEDIATELY ADOPT INTERIM NO-SPRAY BUFFERS AROUND HOMES, SCHOOLS, DAYCARE CENTERS, AND PARKS TO PROTECT CHILDREN FROM DRIFT.

EPA should also adopt immediate interim measures to ensure that children are not harmed by pesticide drift while EPA completes the pesticide-specific drift assessments. Specifically, the agency should impose interim no-spray buffers around locations where children congregate, such as schools, homes, daycare centers, and parks, to prevent unassessed pesticide drift exposures to children. These measures should apply to organophosphates, n-methyl carbamates, and all other pesticides that are (1) registered for application by ground sprayers, broadcast equipment, and/or aerial equipment; and (2) suspected of causing acute poisonings, cancer, endocrine disruption, developmental effects, and/or reproductive effects.

A. EPA Should Take Immediate Action to Ensure that Children Are Protected From Pesticide Drift.

EPA has already determined that children may be exposed to many pesticides at or near levels that EPA considers unsafe without assessing drift risks. Indeed, according to EPA's own

assessments, children are possibly already at risk of being exposed to unsafe levels of two classes of pesticides—organophosphates and n-methyl carbamates.⁹⁵ These classes of pesticides are acutely toxic nerve poisons that are associated with other serious adverse health effects, including endocrine disruption, cancer, and developmental and reproductive effects. In EPA’s 2006 cumulative risk assessment for organophosphates, the agency determined that the cumulative risk cup for organophosphates was overflowing for children aged 3 to 5 nationally, and also for children aged 1 to 5 in southern Florida.⁹⁶ EPA similarly found in 2007 that the risk from n-methyl carbamates overflowed the cumulative risk cup for children aged 1 to 5 nationally.⁹⁷

EPA allowed children to continue to be exposed to organophosphates and n-methyl carbamates at levels exceeding its regulatory thresholds by asserting that its cumulative risk assessments may have overstated the risks.⁹⁸ This justification is undercut by EPA’s failure to account for drift exposures in either the organophosphate or the n-methyl carbamate cumulative risk assessment. By leaving out a potentially significant route of exposure from its cumulative

⁹⁵ EPA made these findings pursuant to the FFDCA requirement that EPA assess risks of cumulative exposure to pesticides that share a “common mechanism of toxicity.” See 21 U.S.C. § 346a(b)(2)(C)-(D). In these cumulative risk assessments, EPA considers pesticide “exposures from food, drinking water, and residential sources” to “approximate as closely as possible people’s actual exposures and potential risks resulting from current uses of these pesticides in different parts of the country.” EPA, Assessing Pesticide Cumulative Risk (June 2008), Attachment 49. EPA also makes risk cup findings for individual pesticides and, in some cases, has cancelled pesticide uses to ensure that exposure to those individual pesticides conforms with the FQPA safety standard and “fit” within their individual pesticide risk cups. E.g., EPA, Chlorpyrifos Facts (Feb. 2002), Attachment 50; EPA, Carbaryl IRED Facts (Oct. 2004), Attachment 51.

⁹⁶ EPA, Organophosphorus Cumulative Risk Assessment: 2006 Update, at 13 (Aug. 2006), Attachment 32 (hereinafter “OP Cumulative Risk Assessment”).

⁹⁷ EPA, Revised N-Methyl Carbamate Cumulative Risk Assessment, at 225 (Sept. 2007), Attachment 52 (hereinafter “NMC Cumulative Risk Assessment”).

⁹⁸ OP Cumulative Risk Assessment at 15, Attachment 32; NMC Cumulative Risk Assessment at 225 n.22, Attachment 52.

assessment, EPA has not ensured that cumulative exposures to organophosphates and n-methyl carbamates comply with the FQPA safety standard. The omission of drift exposures from these cumulative assessments is particularly troublesome because many organophosphate and n-methyl carbamate pesticides are prone to drift and have been implicated in reported drift poisoning incidents. Indeed, one of the most commonly used organophosphates, chlorpyrifos, has been detected in several air monitoring studies, sometimes at possibly unsafe levels.

By failing to account for drift exposures in its organophosphate and n-methyl carbamate cumulative risk assessments, EPA has potentially understated children's exposure to these pesticides. According to EPA's own analysis, the cumulative risks from organophosphates and n-methyl carbamates is at or is even in excess of regulatory thresholds for some groups of children without accounting for the drift exposures. There is therefore no room left in the risk cup for additional exposures to children from drift.

B. EPA Should Impose Interim No-Application Buffer Zones to Protect Children From Exposure to Dangerous Drift-Prone Pesticides.

Petitioners ask EPA to immediately impose no-application buffer zones (designated areas around critical sites where pesticide applications are prohibited) around schools, homes, daycare centers, and parks to prevent drift exposures of children to toxic pesticides. EPA has recognized that such buffer zones can effectively reduce risks associated with pesticide drift. For example, EPA's own spray drift modeling indicates that spray drift concentrations are highest "adjacent to the treated area" and that levels "decrease with increasing distance from the treated area."⁹⁹ Likewise, in its 2001 spray drift proposal, EPA found that no application buffer zones effectively reduce harmful drift exposures.¹⁰⁰

⁹⁹ 69 Fed. Reg. at 30,055.

¹⁰⁰ Draft Spray Drift PR Notice, Attachment 6.

Buffer zones are a workable and efficient drift mitigation strategy.¹⁰¹ Indeed, in the few limited instances in which the agency has considered human exposures to pesticide drift, EPA has required no-spray buffer zones were necessary to reduce drift exposures. For example, EPA recently reregistered several soil fumigants (chloropicrin, dazomet, metam sodium/potassium, methyl bromide, and iodomethane), which are easily transported in the wind because the pesticides have an extremely high vapor pressure and are applied as a gas to soil before planting or for structural pest control.¹⁰² Due to their acute toxicity and propensity to drift and volatilize, soil fumigants “have a well-documented history of causing large-scale human exposure incidents up to several thousand feet from treated fields.”¹⁰³ One such mass poisoning incident occurred in 2003, when the soil fumigant chloropicrin drifted from an application site into homes and a daycare center that were approximately one-quarter mile away, poisoning over 165 people (including 62 people under the age of 14).¹⁰⁴ To reduce exposure to these acutely toxic fumigants, EPA prescribed buffer zones around application sites ranging from 25 feet to one-half mile.¹⁰⁵

Another example is azinphos-methyl (“AZM”), an acutely toxic organophosphate pesticide. In 2001, without considering drift exposures, EPA found that AZM is so dangerous and causes so many poisonings of workers that it was not eligible for reregistration under

¹⁰¹ Declaration of D. Ken Giles, Ph.D., at 10-11 (Nov. 22, 2002), Attachment 53.

¹⁰² See 74 Fed. Reg. 26,690 (June 3, 2009); EPA, Extension of Conditional Registration of Iodomethane (Methyl Iodide), Attachment 54; EPA, Amended Reregistration Eligibility Decision for Methyl Bromide, at 18-19 (May 27, 2009), Attachment 55.

¹⁰³ EPA, Amended Reregistration Eligibility Decision for Methyl Bromide, at 18-19 (May 27, 2009), Attachment 55.

¹⁰⁴ Center for Disease Control, Brief Report: Illness Associated with Drift of Chloropicrin Soil Fumigant into a Residential Area (Aug. 20, 2004), Attachment 56.

¹⁰⁵ EPA, Buffer Zone Fact Sheet (May 27, 2009), Attachment 57.

FIFRA's unreasonable adverse effects standard.¹⁰⁶ EPA cancelled dozens of AZM uses and allowed other uses to continue for an additional four years to allow growers to shift to alternatives.¹⁰⁷ At the end of this transition period, EPA again found all AZM uses were ineligible for reregistration due to the nerve poisoning risks to workers. However, EPA allowed some AZM uses to continue during a six-year phase-out (ending in 2012) with additional mitigation required to reduce risks during the phase-out period.¹⁰⁸ In identifying appropriate mitigation, EPA used the AgDRIFT model to conduct a cursory examination of the efficacy of buffer zones and ultimately imposed 60-foot no-use buffers around houses and other occupied dwellings for all uses of AZM.¹⁰⁹ Although this assessment was limited to dermal and oral ingestion exposures (it did not consider inhalation exposures), and indicated that buffers larger than the 60-foot buffer ultimately imposed were required,¹¹⁰ EPA's decision to impose the 60-foot buffer is an acknowledgment that no-spray buffers around sensitive sites can protect children and other bystanders from pesticide drift exposures.¹¹¹

Other federal agencies have similarly found that no-application buffer zones are an effective method for minimizing pesticide drift. For example, the National Marine Fisheries Service ("NMFS") recently issued two biological opinions concluding that three organophosphate pesticides (chlorpyrifos, diazinon, and malathion), and three carbamate

¹⁰⁶ EPA, Interim Reregistration Eligibility Decision for Azinphos-Methyl, at 55 (Oct. 2001), Attachment 58.

¹⁰⁷ Id.

¹⁰⁸ EPA, Final Decisions for the Remaining Uses of Azinphos-methyl, at 1 (Nov. 2006), Attachment 59.

¹⁰⁹ EPA, Final Decisions for the Remaining Uses of Azinphos-methyl, at 1 (Nov. 16, 2006), Attachment 59.

¹¹⁰ EPA, Determination of Buffer Zones for AZM Applications, at 2 (Oct. 2006), Attachment 60.

¹¹¹ EPA, Final Decisions for the Remaining Uses of Azinphos-methyl, at 8 (Nov. 16, 2006), Attachment 59.

pesticides (carbaryl, carbofuran, and methomyl) are jeopardizing the survival and recovery of endangered and threatened salmon and steelhead populations in Washington, Oregon, and California.¹¹² To reduce the movement of these pesticides from application sites into salmon-bearing waters, NMFS prescribed no-application buffers ranging from 50 to 1,000 feet.¹¹³ NMFS has also issued several biological opinions prescribing buffers from salmon and steelhead habitat for aerial, ground spraying, and broadcast spraying of herbicides in connection with Bureau of Land Management and Forest Service noxious weed control programs.¹¹⁴

In addition, pursuant to the Endangered Species Act, federal courts have ordered EPA to impose buffer zones around wildlife habitat while the agency develops and implements pesticide-specific mitigation measures.¹¹⁵ The first such case involved threatened and endangered salmon and steelhead. Based on evidence demonstrating the efficacy of no-spray buffers to lessen the migration of pesticides into rivers and streams, and scientific evidence and past practice, a federal district court directed EPA to impose no-spray buffers of 60 feet for

¹¹² NMFS, Biological Opinion: Environmental Protection Agency Registration of Pesticides Containing Chlorpyrifos, Diazinon, and Malathion (Nov. 2008), Attachment 61 (hereinafter “OP Biological Opinion”); NMFS, Biological Opinion: Environmental Protection Agency Registration of Pesticides Containing Carbaryl, Carbofuran, and Methomyl (Apr. 2009), Attachment 62 (hereinafter “NMC Biological Opinion”).

¹¹³ OP Biological Opinion at 393-96, Attachment 61; NMC Biological Opinion at 489-91, Attachment 62. EPA recently responded to the first of these decisions with a plan to implement buffers ranging from 100 to 1,000 feet from salmon habitat for chlorpyrifos, diazinon, and malathion. EPA, Response to NMFS November 18, 2008, Final Biological Opinion (Sept. 10, 2009), Attachment 63.

¹¹⁴ E.g., NMFS, Nez Perce National Forest Noxious Weeds Programmatic Biological Opinion (Jun. 2009), Attachment 64; NMFS, Reinitiation of Bureau of Land Management’s 2002 Noxious Weeds Programmatic Biological Opinion (Jul. 2007), Attachment 65; NMFS, Vale District Noxious Weed Control Program, FY2003-2013, Union, Wallowa, Grant, and Umatilla Counties Biological Opinion (May 2003), Attachment 66.

¹¹⁵ See Wash. Toxics Coal. v. EPA, No. C01-0132 (W.D. Wash. Jan. 22, 2004) (order), Attachment 67; Ctr. for Biological Diversity v. Johnson, No. 02-1580-JSW (N.D. Cal. Oct. 20, 2006) (order), Attachment 68; see also Ctr. for Biological Diversity v. EPA, No. 07-2794-JCS (N.D. Cal. June 30, 2009) (Stipulated Injunction and Proposed Order), Attachment 69.

ground applications and 300 feet for aerial applications.¹¹⁶ The Ninth Circuit upheld this injunction imposing interim protection while EPA brings its pesticide registrations into compliance with legal requirements.¹¹⁷ Ultimately, these interim buffers proved to be too small to prevent harm to the salmon and steelhead and to comply with the law for the organophosphate and carbamate pesticides that have since undergone full review under the ESA.¹¹⁸

Some state and local jurisdictions have also adopted buffer zones to protect children and other populations from pesticides. For example, in North Carolina, pesticide applications are prohibited within 100 feet of residences, and aerial applications are prohibited within 300 feet of schools, hospitals, nursing homes, churches, and businesses.¹¹⁹ New Jersey has also prohibited aerial application of pesticides within 100 feet of certain residences and 300 feet of schools, hospitals, nursing homes, churches, and other buildings.¹²⁰ And numerous counties in California have adopted no-spray buffers of various sizes around homes and schools.¹²¹

Petitioners ask EPA to impose similar no-spray buffer zones for toxic drift-prone pesticides around places where children congregate such as schools, homes, daycare centers, and parks. The interim buffer zone should be at least 60 feet from these sensitive sites for ground spraying (including spraying with ground boom and air-blast equipment).¹²² For aerial

¹¹⁶ Wash. Toxics Coal. v. EPA, No. C01-0132 (W.D. Wash. Jan. 22, 2004) (order), Attachment 67.

¹¹⁷ Wash. Toxics Coal. v. EPA, 413 F.3d 1024, 1035 (9th Cir. 2005).

¹¹⁸ OP Biological Opinion at 393-96, Attachment 61; NMC Biological Opinion at 489-91, Attachment 62.

¹¹⁹ N.C. Admin. Code tit. 2, r. 9L.1005(b), (e).

¹²⁰ N.J. Admin. Code tit. 7, § 30-10.6(q), (s).

¹²¹ See PANNA, Secondhand Pesticides: Airborne Pesticide Drift in California, at 45-46 (2003), Attachment 70.

¹²² See Declaration of D. Ken Giles, Ph.D., at 9 (Nov. 22, 2002), Attachment 53.

applications, EPA should impose a 300-foot horizontal no spray buffer around these sensitive sites.¹²³

These 60-foot and 300-foot buffers will reduce spray drift risks considerably,¹²⁴ but they will likely be insufficient to fully protect children from drift. For example, in EPA assessing the required 60-foot buffer zones for AZM, the agency recognized that larger buffers may be needed to ensure that children were not exposed to ground applications of AZM at levels exceeding what EPA typically considers acceptable, particularly from air-blast applications (although EPA ultimately declined to implement the larger buffers).¹²⁵ Many drift-prone pesticides are more toxic than AZM and are applied at higher rates than those authorized for AZM, indicating that buffers even larger than those needed for AZM may be necessary. In addition, the interim buffers sought in this petition are designed to protect from spray drift only; they do not address the volatilization drift exposures. It is therefore critical that, in addition to imposing the 60- and 300-foot interim buffers, EPA expeditiously complete pesticide-specific drift evaluations that assess both spray and volatilization drift exposures and determine whether larger buffers, and other mitigation are necessary to protect children from pesticide drift.

EPA has various mechanisms at its disposal to instate no-spray buffers that reduce drift exposures to children. For example, EPA has long resorted to the issuance of notices (called “pesticide registration notices” or “PR notices”) to inform registrants of label amendments that are necessary to ensure compliance with FIFRA and to avoid cancellation or misbranding proceedings. EPA described this process when it initiated the Label Improvement Program,

¹²³ Id.

¹²⁴ Id.

¹²⁵ EPA, Determination of Buffer Zones for AZM Applications, at 1-3 (Oct. 2006), Attachment 60.

which was “designed to upgrade pesticide labels in certain areas that contribute to the protection of health and environmental safety” but “are not adequately addressed in present labeling, and cannot await the development of registration standards.”¹²⁶ EPA has utilized this PR notice process to protect the public and the environment from pesticides. For example, EPA issued PR notices limiting pesticide uses that pose dangers to farmworkers,¹²⁷ and restricting rodenticide and termiticide uses and formulations that can harm children, pets, and wildlife.¹²⁸ EPA should exercise that same authority to ensure that children are protected from pesticide drift.

Alternatively, EPA could impose the no-spray buffers under its broad authority “to prescribe regulations to carry out the provisions of” the statute.¹²⁹ For example, under this authority, EPA adopted the “Worker Protection Standard” (“WPS”), a suite of generally applicable regulations designed to reduce illness and injury to workers and their families, including through measures to lessen drift.¹³⁰ The requirements imposed through the WPS regulations must be incorporated into FIFRA pesticide labels, which makes them enforceable under FIFRA.¹³¹

¹²⁶ 45 Fed. Reg. 37,884, 37,884 (June 5, 1980).

¹²⁷ EPA, Pesticide Registration (PR) Notice 83-2: Pesticide Label Improvement Program for Farmworker Safety (Mar. 1983); see also EPA, Pesticide Registration (PR) Notice 95-5: Labeling Revisions Required by the Worker Protection Standard for Sale or Distribution of Certain Agricultural Pesticides After October 23, 1995 (Sept. 1995), Attachment 71.

¹²⁸ EPA, Pesticide Registration (PR) Notice 94-7: Label Improvement Program for the Revision of Use Directions for Commensal Rodenticides and Statement of the Agency’s Policies on the Use of Rodenticide Bait Stations (Sept. 1994), Attachment 72; EPA, Pesticide Registration (PR) Notice 96-7: Termiticide Labeling (Oct. 1996), Attachment 73.

¹²⁹ See 7 U.S.C. § 136w(a)(1).

¹³⁰ 40 C.F.R. §§ 170.1-170.250.

¹³¹ 40 C.F.R. § 156.206(b); see also 40 C.F.R. § 170.210(a) (Requiring pesticide handlers and handler employers to “assure that no pesticide is applied so as to contact, either directly or through drift, any worker or other person, other than an appropriately trained and equipped handler.”).

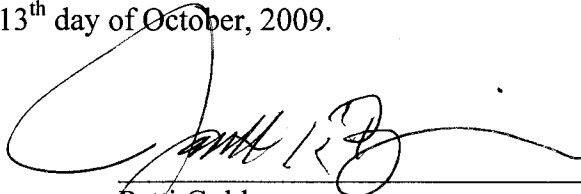
CONCLUSION

For these reasons, Petitioners petition EPA to take the following actions:

- 1) Conduct pesticide-specific drift assessments for all pesticides with the potential to drift and impose measures necessary to protect children from harmful drift exposures; and
- 2) For toxic drift-prone pesticides, including organophosphates and n-methyl carbamates, immediately adopt interim no-spray buffer zones of at least 60 feet for ground applications and 300 feet for aerial applications around areas where children may congregate such as homes, schools, parks, playfields, and daycare centers.

Please do not hesitate to call us if you have questions or would like to discuss the contents of this petition.

Respectfully submitted this 13th day of October, 2009.



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