

EXHIBIT 1

HONORABLE RICARDO S. MARTINEZ

1 PATTI GOLDMAN (WSB #24426)
ESTHER BARTFELD (WSB #28474)

2 Earthjustice
705 Second Avenue, Suite 203
3 Seattle, WA 98104
4 (206) 343-7340
(206) 343-1526 [FAX]
5 pgoldman@earthjustice.org
ebartfeld@earthjustice.org

6 SHELLEY DAVIS (DCB #41331)
7 VIRGINIA RUIZ (DCB #483800)
Farmworker Justice Fund
8 1010 Vermont Avenue, N.W., Suite 915
Washington, D.C. 20005
9 (202) 783-2628
10 (202) 783-2561 [FAX]
sdavis@nclr.org
11 vruiz@nclr.org

12 AARON COLANGELO (DCB #468448)
Staff Attorney
13 Natural Resources Defense Council
1200 New York Avenue, N.W.
14 Washington, D.C. 20005
15 (202) 289-6868
(202) 289-1060 [FAX]
16 acolangelo@nrdc.org

17 *Attorneys for Plaintiffs United Farm Workers of America,*
AFL-CIO; Sea Mar Community Health Center; Pineros Y
18 *Campesinos Unidos Del Noroeste (“PCUN”); Beyond Pesticides;*
Frente Indigena Oaxaqueno Binacional (“Frente Indigena”);
19 *and Arnulfo Lopez*

20 MICHAEL MEUTER (CSB #161554)
21 DANIELLA PAYES (CSB #224726)
California Rural Legal Assistance, Inc.
22 3 Williams Road
Salinas, CA 93905
23 (831) 757-5221
(831) 757-6212
24 mmeuter@crla.org
dpayes@crla.org

26 *Attorneys for Plaintiff Arnulfo Lopez*

28 MOTION FOR SUMMARY JUDGMENT AND
INJUNCTIVE RELIEF (CV04-0099-RSM)

Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340

1 UNITED STATES DISTRICT COURT
2 FOR THE WESTERN DISTRICT OF WASHINGTON

3 UNITED FARM WORKERS OF AMERICA,) Civ. No. CV04-0099-RSM
4 AFL-CIO; SEA MAR COMMUNITY)
5 HEALTH CENTER; PINEROS Y)
6 CAMPEÑINOS UNIDOS DEL NOROESTE ;) MOTION FOR SUMMARY JUDGMENT
7 BEYOND PESTICIDES, FRENTE) AND INJUNCTIVE RELIEF
8 INDIGENA OAXAQUENO BINACIONAL,)
9 and ARNULFO LOPEZ,) NOTED ON MOTION CALENDAR:
10) NOVEMBER 17, 2005
11)
12)
13)
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Plaintiffs,)
v.)
ADMINISTRATOR, U.S.)
ENVIRONMENTAL PROTECTION)
AGENCY,)
Defendant,)
and)
GOWAN COMPANY, MAKHTESHIM)
AGAN of NORTH AMERICA, INC, and)
BAYER CROPSCIENCE LP,)
Defendant/Intervenors.)

MOTION FOR SUMMARY JUDGMENT AND
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705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340

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INTRODUCTION

This case challenges the pesticide reregistration determinations made by defendant Administrator of the Environmental Protection Agency (“EPA”) for azinphos-methyl (“AZM”) and phosmet, two extremely toxic pesticides. In recent years, AZM has been the likely culprit in more reported worker poisonings and fish kills than most, if not all, pesticides on the market today. EPA determined that both AZM and phosmet cause “unacceptable risks” to workers, as well as harm to the environment. It nonetheless allowed these unacceptable worker risks to continue based solely on the pesticides’ asserted benefits to crop production, despite the availability of alternative and less toxic pest control methods.

Congress enacted the Federal Insecticide, Fungicide and Rodenticide Act (“FIFRA”) as a preventive statute to ensure that pesticides will not “cause unreasonable adverse effects on the environment,” 7 U.S.C. §§ 136a(c)(5)(D), 136b(a)(2), a phrase that FIFRA defines 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 . . .” 7 U.S.C. § 136(bb). The pesticide’s proponents bear the burden of proving that it causes no unreasonable adverse effects. See, e.g., Envtl. Defense Fund (“EDF”) v. EPA, 548 F.2d 998, 1011 (D.C. Cir. 1976). In denying EPA’s motion to dismiss, this Court recognized that “[t]he ‘risk-benefit’ analysis at issue here is a statutory requirement for reregistration,” and that it is “an appropriate exercise of the Court’s power . . . to review these determinations for conformity to the standards set forth in FIFRA.” Order Denying Motion to Dismiss at 14 (Feb. 14, 2005) (citing 7 U.S.C. § 136n(a)). This motion asks the Court to conduct such a review of EPA’s October 2001 Interim Reregistration Eligibility Decisions (“IREDs”) that authorize the continued use of AZM and phosmet on numerous crops based on a fundamentally flawed risk-benefit analysis.

First, EPA allowed what it found to be “unacceptable” risks of worker poisonings and environmental contamination to continue based solely on the pesticides’ asserted economic crop

1 benefits. It never weighed those asserted crop benefits against the human costs of the worker
2 poisonings or the environmental costs of the harm to fish, birds, bees, and endangered species.
3 By basing its reregistration decisions on the benefits side of the equation alone, EPA failed to
4 undertake the risk-benefit balancing that FIFRA commands. Moreover, EPA engaged in
5 quintessentially arbitrary and capricious decisionmaking by failing to analyze or explain in any
6 discernible fashion how the enormous toll to workers, their children, and the environment are
7 outweighed by the asserted economic costs to growers of adopting additional safety precautions
8 or switching to available alternatives. EPA's failure to conduct the FIFRA-mandated risk-
9 benefit balancing infects all of its authorizations of continued uses of these pesticides.

10 Second, EPA justified continued AZM and phosmet uses based on cursory, incomplete
11 benefits assessments that underestimated the viability of safer alternatives and overestimated the
12 costs of shifting away from these two extremely toxic pesticides. To predict the impact of
13 banning these pesticides, EPA relied primarily on unsupported, anecdotal emails from growers
14 and select individuals, without utilizing published, peer reviewed literature or the results of field
15 tests demonstrating the efficacy of less toxic alternatives. For apples and pears, for example,
16 EPA never took into account large-scale, field trials of alternatives funded, in part, by EPA and
17 other federal agencies that found that alternatives produced comparable quantities of apples and
18 similar net profits to growers without relying on AZM and phosmet. Consequently, EPA
19 allowed excessive worker poisoning risks from AZM and phosmet to continue based on
20 inadequate, skewed assessments that improperly overstated the crop benefits of these pesticides.

21 Plaintiffs United Farm Workers et al. ("UFW") ask the Court to declare that EPA acted
22 arbitrarily, capriciously, and contrary to FIFRA's risk-benefit mandates in allowing the
23 continuation of AZM and phosmet uses that pose unacceptable worker and environmental risks:
24 (1) based solely on the asserted economic benefits of the pesticides to crop producers without
25 weighing the crop benefits against the human and societal costs of exposing farmworkers, their
26

1 children, and the environment to these toxic pesticides; and (2) based on an inadequate
2 investigation of crop benefits that ignored published articles and field tests that demonstrate the
3 efficacy of less toxic alternatives.¹

4 BACKGROUND

5 I. AZINPHOS-METHYL AND PHOSMET AND WORKER POISONINGS

6 AZM and phosmet are highly toxic organophosphate insecticides derived from nerve gas
7 used during World War II. Approximately two million pounds of AZM and one million pounds
8 of phosmet are applied each year to fruit, nut, vegetable, and other labor-intensive crops to
9 control a variety of pests, including codling moths on apples and pears. ER 683 at vii; ER 739 at
10 5-6, 62.² EPA first registered AZM for use in the United States in 1959 and phosmet in 1966.
11 ER 683 at vii, 3; ER 739 at iv, 3. Given their widespread use on labor-intensive crops, workers
12 are frequently exposed to these pesticides both during application and afterwards when thinning,
13 pruning, and picking the crop.

14 These organophosphates are acutely toxic to workers. They poison the nervous system
15 by lowering the level of cholinesterase, a blood enzyme essential to proper functioning of the
16 nervous system, which, in turn, inhibits the breakdown of the neurotransmitter acetylcholine.
17 Most reported poisonings and deaths of farmworkers have been attributed to cholinesterase-
18 inhibiting chemicals, like AZM and phosmet. Just a few drops of these pesticides can cause
19 harmful effects. Symptoms include headaches, confusion, dizziness, abdominal cramps,
20 vomiting, diarrhea, blurred vision, muscle spasms, seizures, cessation of breathing, loss of
21

22 ¹ The amended complaint also challenged EPA's reliance on industry worker exposure data that
23 had never been made available for public review, but that claim was dismissed after EPA
24 released the withheld data. Order Granting Voluntarily Dismissal of Claim 3 (Jan. 26, 2005).

25 ² EPA has filed a succession of certified indices of the administrative record, but has not lodged a
26 copy of the administrative record or designated excerpts of that record with the Court.
27 Accordingly, UFW is submitting Excerpts of Record with documents identified by their
28 document number in the Third Amended Index filed on July 7, 2005. Record documents are
cited as "ER ___."

1 consciousness, paralysis, and even death. Acute poisonings or long-term, low-level exposures
2 can cause chronic (long-term) effects, such as permanent nerve damage, loss of intellectual
3 functions, memory loss, and neurological effects. ER 683 at 26.

4 The National Institute for Occupational Safety and Health recommends that workers
5 exposed to AZM be tested to establish baseline cholinesterase levels and that they be removed
6 from exposure when their red blood cell cholinesterase levels drop to or below 40% of the
7 baseline level. ER 683 at 25-26. California Environmental Protection Agency regulations
8 require baseline and periodic testing of workers who mix, load, or apply cholinesterase-inhibiting
9 pesticides and removal of the worker from exposure when cholinesterase levels drop to 70% of
10 the baseline. ER 683 at 26-27. Washington adopted a similar program, which took effect in
11 2004, but no testing program is in place for workers nationally or in any other state. See WAC
12 296-307-148; Rios v. Washington Dept. of Labor & Indus., 145 Wash. 2d 483, 39 P.3d 961
13 (2002) (ordering agency to promulgate medical monitoring rule).

14 AZM, which EPA has given its highest toxicity rating and classified as a restricted use
15 pesticide, ER 683 at 8, is among the registered pesticides responsible for the largest number of
16 reported farmworker poisonings. Poisoning incident data from California, which has the most
17 comprehensive human incident data, reveal a significant incidence of poisonings from AZM. ER
18 683 at 3. In 1998, the California Department of Pesticide Regulation adopted emergency
19 regulations to protect farmworkers exposed to AZM on tree crops and grapes. Id. The required
20 mitigation included extended periods during which treated fields could not be entered, reduced
21 application rates, additional protective equipment, some closed mixing and loading systems, and
22 some deleted uses. In 1999, EPA convinced the registrants to extend the California mitigation
23 and other constraints nationwide and to other uses. ER 683 at 4; ER 710 at 4. Despite these
24 changes, AZM continued to present excessive poisoning risks to farmworkers. ER 710 at 5.

1 II. EPA'S REREGISTRATION DECISIONS FOR AZM AND PHOSMET

2 In late 2001, EPA issued IREDs for AZM and phosmet. As EPA has explained:

3 [W]hen determining whether a pesticide meets the FIFRA risk-benefit standard,
4 the Agency first examines whether occupational and ecological risks fall within
5 an ample prescribed margin of safety. Where they do not, the Agency looks at the
6 possibility of implementing mitigation measures to achieve the desired margins of
7 safety. Where the desired margins cannot be reached, the Agency than
8 determines whether the benefits associated with the use of the pesticide outweigh
9 the remaining risks.

10 ER 683 at 67. EPA first found that AZM and phosmet present such alarming worker risks that
11 they are ineligible for reregistration with their currently approved labeling, and next that
12 unacceptable worker risks remained after EPA prescribed mitigation. ER 683 at 67, Cover Letter
13 at 3; ER 739 at 41. EPA nonetheless allowed numerous high-risk crop uses to remain on the
14 market based on one-sided assessments of the pesticides' crop benefits without comparing these
15 asserted benefits to the magnitude of worker, societal, and environmental risks. To understand
16 the pitfalls in these decisions, it is necessary to review: (1) EPA's worker risk determinations for
17 AZM and phosmet; (2) EPA's benefits assessments; and (3) the IREDs.

18 A. EPA's Worker Risk Assessments

19 To assess human health risks, EPA has selected margins of safety to ensure that workers
20 exposed to pesticides will not suffer adverse health effects. It derives these exposure levels from
21 the dose that caused no observed adverse effect in animal laboratory studies, and then it adds
22 safety factors to account for variations and sensitivities among human populations and for
23 uncertainties in extrapolating from animal studies to humans. For occupational exposures, EPA
24 has established a minimum Margin of Exposure ("MOE") of 100, which means that exposures
25 should not drop below 100 times the no observable adverse effect dose in animal studies. The
26 lower the MOE, the greater the risk to workers:

27 Generally, MOEs that are less than 100 exceed the Agency's level of concern for
28 worker risk. An MOE of 100 represents uncertainty factors of 10x for differences
in species sensitivity between animals and humans and another factor of 10x to
account for differences in sensitivity to toxic effects within the human population.

1 Pesticide Registration (“PR”) Notice 2000-9, at 4-5 (Sept. 29, 2000).³

2 In evaluating worker risks, EPA divides worker exposures into two categories: (1) risks
3 to pesticide handlers, workers who mix, load, and apply pesticides; and (2) post-application risks
4 to workers who reenter treated sites to perform tasks such as thinning, pruning, and picking. PR
5 Notice 2000-9, at 5. EPA also applies different mitigation strategies to the two types of
6 exposures. *Id.* at 6-8. When pesticide handler risks exceed EPA’s level of concern (an MOE of
7 less than 100), the agency requires mitigation, beginning with increased personal protective
8 clothing and escalating to engineering controls, such as “closed” closed cabs, to lessen exposures
9 when farmworkers mix, load, and apply the pesticides. To limit post-application exposures, EPA
10 forbids workers from reentering treated fields for specified periods of time to allow residues to
11 dissipate and risks to decline. If mitigation measures cannot bring risks to acceptable levels,
12 EPA finds that the pesticide use poses “unacceptable” worker risks and the inquiry shifts to
13 whether those risks are outweighed by benefits. PR Notice 2000-9, at 5-9.

14 *1. EPA Found That AZM Poses Unacceptable Worker Risks.*

15 In its risk assessments, EPA found that AZM is acutely toxic at relatively low doses and
16 poses serious poisoning risks to workers. ER 703 at 1 & 13; see also ER 701, 704, 705. Dermal
17 exposures create the greatest risks, although inhalation is another path of exposure. ER 683 at
18 22-24. During the reregistration process, registrants amended AZM labels to increase personal
19 protective clothing and equipment, to require engineering controls in some instances, and to
20 lengthen restricted entry intervals (“REIs”), the period after a pesticide application during which
21 workers cannot enter treated fields to perform hand labor, such as pruning or harvesting. ER 683
22 at 27-28. Even with these enhanced safeguards, almost all AZM uses continued to exceed EPA’s
23

24 _____
25 ³ PR Notice 2000-9 sets out the process EPA uses to determine whether organophosphate
26 pesticides present unreasonable worker risks. EPA purported to adhere to this process in the
27 AZM and phosmet IREDs, e.g., ER 739 at 2, 43; ER 683 at 2, but did not include the notice in
28 the certified index. It is attached to this motion as Exh. 1.

1 levels of concern for worker risks. ER 683 at vii-viii.

2 First, for pesticide handlers, EPA assessed both short-term (1-7 days) and intermediate-
3 term (one week to several months) risks for mixing, loading, and applying AZM for 17 major
4 crop groups and nine major agricultural exposure scenarios. ER 683 at 28-36; ER 701 at 7 & 10;
5 see also ER 704, 705. EPA found most exposure scenarios of concern:

6 Even after factoring in exposure reductions provided by closed mixing and
7 loading systems, closed cab application equipment, and all feasible personal
8 protection equipment, safety margins (margins of exposure or MOEs) still fall
9 well below the target of 100 for the majority of pesticide handler exposure
10 scenarios considered.

11 ER 683 at vii; see also id. at 32-36. For example, even after applying engineering controls, the
12 short-term MOE for mixers and loaders of AZM on apples, pears, and plums is 7.3, on almonds
13 and walnuts is 5.5, on pistachios is 4.4, and on blueberries and Brussels sprouts is 15. ER 683 at
14 33-34. These estimates do not account for cumulative exposures when the same individual is
15 engaged in multiple tasks, such as mixing and applying the pesticide. ER 683 at 36.

16 Second, EPA found post-application “[r]isk to field workers who reenter azinphos-methyl
17 treated sites to harvest, thin, prune and perform other post-application activities is of particular
18 concern.” ER 683 at vii-viii; ER 699, 701. EPA determined that the MOEs would be less than
19 10 (posing a risk ten times greater than EPA deems acceptable) for many critical activities under
20 the maximum reentry prohibitions that EPA considered and ultimately required. ER 683 at viii.
21 For example, compared to what EPA considers an acceptable risk (a minimum MOE of 100), the
22 MOE is 1 for hand-thinning apples and plums, 3 for hand-weeding blueberries, and 3 for
23 thinning and weeding immature Brussels sprout plants. Id. at 38-41. EPA also calculated “the
24 number of days that must elapse after pesticide application until residues dissipate and risk to a
25 worker falls below the ‘target’ MOE.” Id. at 71. EPA found that “the risks to re-entry workers
26 are above the level of concern for all assessed activities in all the crops where azinphos-methyl is
27 used. For example, the MOE for hand harvesting in apples . . . is 2. The MOE for hand

1 harvesting apples does not reach 100 until 102 days after application.” *Id.* at 42.

2 2. *EPA Found That Phosmet Poses Unacceptable Worker Risks.*

3 EPA’s risk assessments for phosmet likewise found unacceptable poisoning risks to
4 workers. For both pesticide handler and post-application risks, EPA found unacceptable health
5 risks from some uses even after requiring increased mitigation. ER 739 at 18-34, 49-52; see also
6 ER 753, 754, 755, 757.

7 First, for pesticide handlers, EPA noted risks of concern from certain applications for
8 fruit and nut trees, field and vegetable crops, grapes, and forestry. *Id.* at v. For example, the
9 MOEs for workers who mix and load phosmet for aerial applications are between 27 and 94 for
10 intermediate exposures, lower than EPA’s threshold for unacceptable risks of a 100 MOE. *Id.* at
11 20-26. Even with additional mitigation measures, such as protective clothing, engineering
12 controls, and reducing the number and rates of applications, mixing and loading for aerial and
13 other applications “remain of concern.” *Id.* at 51.

14 Second, workers face even greater risks from post-application exposures during
15 harvesting and thinning activities. Many of these activities result in MOEs lower than 10, an
16 order of magnitude greater risk than EPA’s level of concern. *Id.* at 32-43. The MOEs would be
17 less than 20 for various worker activities for nine uses of phosmet on apples, crabapples,
18 apricots, nectarines, peaches, pears, plums/prunes, highbush blueberries, and grapes. *Id.* at 43,
19 52. It would take 19 and 34 days for the MOE to reach the 100 target for high-exposure
20 activities on apples in the eastern and western United States respectively, 30 days for apricots,
21 peaches, and nectarines, 37 days for pears, 34 days for grapes, and 28 days for high-bush
22 blueberries. *Id.* at 62-77. EPA found “residual risks are still of concern,” and that the “mitigated
23 risks are still high enough that they would outweigh benefits if the benefits changed
24 appreciably.” *Id.* at 42-43.

1 B. EPA's Benefits Assessments for AZM and Phosmet

2 After EPA found unacceptable poisoning risks to workers from uses of AZM and
3 phosmet that could not be mitigated to acceptable levels through protective clothing, engineering
4 controls, or label changes, it prepared 24 benefits assessments that purport to measure the
5 economic impacts if growers could no longer use either AZM or phosmet, or both pesticides on
6 various crops. ER 711-733, 769. EPA truncated the scope of benefits assessments in two
7 respects: (1) EPA quantified the crop impacts of losing these pesticides but not the human,
8 societal, and environmental costs of their continued use; and (2) EPA failed to use readily
9 available scientific literature and field tests demonstrating that replacement pesticides would
10 limit economic harm from canceling AZM and phosmet, but instead relied almost exclusively on
11 anecdotal assertions about the crop repercussions of canceling these pesticides.

12 1. *The Benefits Assessments Fail to Account for the Costs of Exposing*
13 *Workers, Their Families, Communities and the Environment to AZM and*
14 *Phosmet.*

15 The benefits assessments focus exclusively on mitigation for post-application risks, never
16 addressing the crop impacts of additional mitigation to bring pesticide handler risks within
17 acceptable risk thresholds. E.g., ER 712 at iv. For apples, for example, EPA developed four
18 alternative scenarios based on different REIs. EPA assumed that farmers would stop using AZM
19 and phosmet if REIs were longer than 3 and 14 days for phosmet and AZM respectively. Use of
20 either AZM or phosmet or both pesticides would cease under three scenarios. Both pesticides
21 would remain available under the fourth scenario with AZM applications limited to one per
22 season. Since EPA selected the REIs at levels at which growers indicated they would stop using
23 the pesticides, none of the scenarios would eliminate the "unacceptable" risks of worker
24 poisonings. Some reentry periods would need to be as long as one month or more to reduce
25 worker risks below EPA's unacceptable risk level. ER 683 at 38 (102 days for hand-harvesting,
26 thinning, pruning, tying, and training on apples).

27 EPA omitted entirely any assessment of the individual and societal costs of allowing

1 workers to be exposed to “unacceptable” risks. Not only did EPA find that AZM and phosmet
2 cause “unacceptable” risks to workers, but it also had ample evidence of the alarming risks to the
3 workers’ children. Several published, peer reviewed scientific articles document the particularly
4 distressing exposures of farmworker and farm children to these pesticides from drift and take-
5 home residues on workers’ clothing, hair, and skin. ER 797, Exh. 6-7 (submitting two published,
6 peer-reviewed scientific articles documenting pesticide exposures of workers and their families
7 through residues on clothing, household dust, and soil); ER 796 (documenting residential
8 pesticide exposure to farmworker children); ER 991 at 7 (same); ER 710 at 11-12 (referring to
9 EPA-sponsored studies assessing pesticide-exposures and health of farmworkers and their
10 families). Moreover, EPA’s ecological risk assessments prepared as part of the reregistration
11 process found significant environmental impacts, including toxicity to bees, fish, and other
12 aquatic life, contamination of surface waters, and harm to endangered species. Infra at 27-28.
13 Despite EPA’s documentation of such risks, the benefits assessments are one-sided, quantifying
14 the economic consequences to farmers who would be unable to use the pesticides but failing to
15 quantify or otherwise account for the costs of the harm to workers, their children, the
16 environment, or endangered species.

17 2. *EPA Conducted Haphazard, cursory Benefits Assessments That Ignored*
18 *Published Scientific Literature and Field Tests Demonstrating the*
19 *Viability of Alternatives to AZM and Phosmet.*

20 Even though the reregistration process spanned more than three years, EPA left the
21 benefits assessments to the last months, artificially creating “time and resource constraints” that
22 led to truncated assessments. See ER 724 at 8 (pear benefits assessment covered only short-term
23 impacts “[g]iven the time and resource constraints”). While EPA used some data on current
24 crop usage and pesticide programs, it did not compile the available scientific literature and field
25 tests on alternatives to these pesticides.

26 Instead, EPA staff solicited key information by selectively sending emails and

1 questionnaires to growers, trade groups, and certain experts on AZM and phosmet. For example,
2 one EPA staff person sent the following email soliciting input for the grapes assessment:

3 Hi Guys – Been asked to help out with the benefits assessment of phosmet
4 (imidan) on wine grapes . . . I need to know the pests for which phosmet is
5 usually applied. . . What would happen to the industry if the re-entry was
6 increased to say...21 days, how would that impact the growers? What are the
7 viable alternatives? Are there any? I am looking for any “bones” but
8 unfortunately, I need information right away. . . it is one of those “we need it
9 yesterday” kinda things!”

10 ER 279A; see also ER 265 (similar plea for information on phosmet on kiwis). For the pear
11 benefits assessment, the same employee sent emails asking: “In the different scenarios...what
12 would be the yield (or would it be quality?) loss of 1) phosmet, no azm; 2) no phosmet, but still
13 have azm; and 3) neither product available?” ER 287, 289. While EPA staff made similar
14 inquiries seeking core data for other crops, the record contains few responses. See ER 254, 307,
15 & 996. While the responses are filled with opinions and predictions, no supporting
16 documentation is provided. See, e.g., ER 303, 307. One email asked for a “guestimate,” ER
17 312, and one response cautioned that it consisted of “some of my thoughts off the top of my
18 head. If you want ‘hard data,’ it will take some time.” ER 292.

19 When the California Pear Advisory Board responded to EPA’s request for quality and
20 yield information, it also inquired:

21 Your questions seem to imply a scenario where one or the other (AZM or
22 Phosmet) will no longer be available to pear growers for codling moth control. . . .
23 So, what’s going on here? I hope this isn’t shaping-up to be one of those “poster
24 child” news releases the previous administration . . . used to showcase concern for
25 the environment using bogus science. If so, there will be hell to pay this time
26 around.”

27 ER 287 at 4. EPA reassured the Pear Advisory Board:

28 Don’t look for the “poster child” stuff just yet. We are trying to propose what
would happen economically to growers if these compounds were “lost” as part of
our economic analysis. No one in BEAD [EPA’s Biological & Economic
Analysis Division which prepares benefits assessments] is even speculating that
these compounds are minor in pears (or apples, either). . . .but the risk folks are
hitting us with the “there are plenty of alternatives registered” cards. . I may need

1 to get you to address all those registered active ingredients . . . cuz, you & I (and
2 most of the BEADites) know that just because a product is registered does not
mean that works!!

3 ER 288 at 2.

4 EPA staff relied heavily on the anecdotal information received in response to these email
5 solicitations in developing the benefits assessments. See, e.g., ER 723 at 7 (basing peach REIs
6 on beliefs expressed by entomologist in conversation with EPA staff person). It did so without
7 conducting a search of the published scientific literature and field tests to obtain a fuller, more
8 objective picture of the viability of alternative and less toxic pest management strategies.

9 Nor did EPA solicit public comments until after it had completed its benefits assessments
10 and incorporated them into its IREDs for AZM and phosmet. EPA Answer ¶ 84. When EPA
11 eventually did seek public comment on its benefits assessments and IREDs in the fall of 2001,
12 specifically soliciting “comparative efficacy data of azinphos-methyl and alternatives,” ER 683
13 at 60; ER 685; 66 Fed. Reg. 47,657 (Sept. 13, 2001); 66 Fed. Reg. 59,419 (Nov. 28, 2001),
14 plaintiffs and others submitted numerous published scientific studies and field tests, including
15 federally funded studies demonstrating the efficacy of mating disruption as a less toxic pest
16 control alternatives to AZM and phosmet.⁴ Despite representing that it would make changes to
17 the IREDs based on the comments, ER 739 at 42; ER 712 at iii, EPA admits that it “has never
18 responded to these comments, explained the basis for its assumptions in light of the comments
19 and submitted data, or revised its benefits assessments to modify its assumptions based on the
20 submitted comments and data.” Complaint & Answer ¶ 84.

21 Even without reviewing the published studies and field tests, EPA’s cursory investigation
22 acknowledged the growing use of pheromone mating disruption, a pest management system in

23 ⁴ EPA has refused to put these public comments in the administrative record because it did not
24 consider them in making the IRED determinations. Decl. of Patti Goldman ¶ 3 (July 14, 2005)
25 & Exh. 1-2. UFW is submitting these comments to identify readily available information that
26 EPA failed to consider. Decl. of Shelley Davis (June 30, 2005); Decl. of Aaron Colangelo (July
14, 2005); Decl. of Dan Ford (July 13, 2005); see infra at 17 (describing admissibility of extra-
record evidence showing factors and evidence agency arbitrarily failed to consider).

1 which growers release high concentrations of pheromones that confuse the males making it
2 difficult for them to find and mate with females. ER 683 at 4,6 (apples); ER 724 at 5 (pears).

3 The apple benefits assessment states:

4 The greatest success to date has been with the codling moth. Approximately 50%
5 of the acreage in the Pacific Northwest (90,000) used codling moth mating
6 disruption in 2000.

7 ER 712 at 8, 17. EPA also noted that mating disruption use is expected to increase. *Id.* at 17, 44.

8 For all scenarios in the west, EPA assumed that an additional 25% of acres would use mating
9 disruption. *Id.* at 44-45, 47-48. Even though an entomologist told EPA that mating disruption
10 would increase by 40% to encompass a total of 90% of apple acreage in a full mating disruption
11 program if AZM and phosmet were unavailable, ER 249 at 24, EPA never considered an
12 alternative in which higher percentages of acreage would use full or even partial mating
13 disruption.⁵ Nor did EPA consider the higher premiums growers would obtain if they shifted to
14 the organic market. Moreover, EPA limited its assessment to a two-year time frame, which
15 precluded adjustments and returns that occur over the longer time horizon that is often necessary
16 for growers to shift to nonchemical pest control methods. ER 712 at iv; *see* ER 291 (describing
17 the three-year transition to mating disruption for pears); ER 797, Exh. 5.⁶

18 The benefits assessments made other findings that point to benefits from mating
19 disruption. Specifically, the apple benefits assessment found that: “[s]ome populations of
20 codling moth in CA have developed resistance to AZM and phosmet. Some other areas in the
21 West (OR) have recently experienced reduced efficacy from AZM and phosmet applications
22 against codling moth and they suspect that resistance may be the culprit.” ER 712 at 19. In the

23 ⁵ This same entomologist informed EPA that it had erroneously listed the REI for the pesticide
24 methoxyfenozide as 4 days when it is 4 hours, but EPA never corrected this error in its final
25 apple benefits assessment. *Compare* ER 249 at 2 *with* ER 712 at 8.

26 ⁶ EPA’s pear benefits assessments notes that 85-95% of pear growers participate in mating
27 disruption, yet none of its alternative scenarios explicitly mentions, let alone quantifies, the
28 impacts of mating disruption. ER 724 at 5.

1 pear benefits assessment, EPA noted that mating disruption has decreased both use of AZM and
2 phosmet and pest resistance to chemical pesticides. ER 724 at 5. Despite these findings, the
3 apple nor the pear benefits assessments never quantify the costs of addressing pest resistance to
4 AZM and phosmet. See id. at 6 (resistance leads to more pesticide applications).

5 The assumptions made by EPA staff predetermined the outcome of its benefits
6 assessments. Had EPA considered mating disruption to be a viable alternative in more
7 circumstances and over time, the predicted revenue losses from additional restrictions on AZM
8 and phosmet use on apples and pears would have been far lower.

9 C. EPA’s IREDs Make Reregistration Determinations Based on the Economic
10 Benefits of AZM and Phosmet Without Requiring that the Crop Benefits
11 Outweigh the Unacceptable Risks to Worker and the Environment.

12 EPA documents its decision as to whether a pesticide causes “unreasonable adverse
13 effects” in an IRED. The IREDs for AZM and phosmet, however, compartmentalize the risk and
14 benefit assessments, without conducting the required comparison of the two. Once EPA
15 solidified and reiterated its finding that AZM and phosmet pose unacceptable poisoning risks to
16 workers, EPA shifted its focus to the crop benefits assessments, without ever circling back to
17 compare the benefits to the risks, as FIFRA mandates. EPA made its reregistration decisions
18 based on its monetization of the economic costs to growers of losing AZM, phosmet, or both
19 pesticides, no matter how severe the worker poisoning risks or environmental damage from
20 continued use of these toxic pesticides.

21 *1. AZM IRED*

22 The AZM IRED concludes: “Taking into account both the risks and benefits of
23 azinphos-methyl use, the Agency has determined that all uses of azinphos-methyl are ineligible
24 for reregistration based on their currently approved labeling.” ER 683 at 54. EPA
25 acknowledged that the period of unsafe exposures varies depending on the worker activity. E.g.,
26 ER 683 at 71. For some crops, unacceptable risks will continue for a week or two; for others, the

1 risks will persist for months. See supra at 7-8.

2 The AZM IRED determined which pesticide uses may continue based solely on
3 purported benefits to crops. EPA divided AZM uses into three categories based on its benefits
4 assessments. ER 683 at 68. First, EPA found AZM ineligible for reregistration for 28 crops
5 either because AZM is used on only a small percentage of the crop or alternative pesticides are
6 available. Id. at 68, 71. EPA concluded these uses should immediately be cancelled due to their
7 minimal economic benefits. Id. Second, EPA found seven additional AZM uses ineligible for
8 reregistration. However, because its benefits assessments found moderately high economic
9 benefits for these crops, EPA decided these pesticides could be used, with added mitigation,
10 during a four-year phase-out period to facilitate an orderly transition to alternative pest control
11 systems. Id. at 55, 68-69. Third, for eight crops for which EPA found AZM has significant
12 economic benefits, it allowed time-limited, four-year reregistrations, provided certain mitigation
13 measures are implemented. Id. at 54, 70. Because of the extremely high worker risks, and
14 EPA's belief that "the benefits picture may well change," these reregistrations expire at the end
15 of October 2005, unless the registrant requests and EPA grants an extension. Id. at 70.⁷

16 EPA allowed continued AZM uses for the second and third categories despite finding
17 that: "Even with the most stringent feasible mitigation measures, most of the 15 remaining uses
18 of azinphos-methyl (7 phased-out, 8 time-limited) have estimated exposures resulting in very
19 low MOEs for post-application agricultural workers." Id. at 73. The MOEs would still be less
20 than ten for certain irrigating, scouting, pruning, and thinning activities, posing a far greater risk
21 to workers than EPA deems acceptable. Id. at 33-42. EPA allowed these "unacceptable" worker
22

23 ⁷ The registrants agreed to require additional mitigation for the continuing uses in a May 2002
24 memorandum of agreement ("MOA"), which is attached as Exh. 2. The MOA differs from the
25 AZM IRED in allowing four-year, time-limited registrations for several uses that would have
26 been phased out under the IRED, and EPA justifies the changes based on new benefits
27 information provided by the registrants and growers in seeking to retain AZM and phosmet uses.
28 Exh. 3 to Colangelo Decl. (EPA describing how MOA meets FIFRA standards).

1 risks to continue based solely on the asserted costs of alternative pest control for the crops; EPA
2 never compared these costs to the magnitude of the worker and environmental risks. Id. at 71.

3 *2. Phosmet IRED*

4 The Phosmet IRED determined that: “Based on its current evaluation of phosmet alone,
5 the Agency has determined that phosmet products, unless labeled and used as specified in this
6 document, would present risks inconsistent with FIFRA.” ER 739 at 40-41. While EPA
7 believed most pesticide handler risks could be adequately mitigated by requiring personal
8 protective clothing, engineering, controls, and label constraints, the risks posed by certain aerial
9 and other applications could not be mitigated to acceptable levels. ER 739 at 51. The benefits
10 assessments did not address pesticide handler risks, yet EPA allowed these excessive risks that
11 “remain of concern” to continue. Id. at 51.

12 EPA expressed greater concerns for the risks posed to workers who reenter sprayed
13 fields. Id. at 32-34, 43, 52-53. The MOEs are less than 20 for workers harvesting or thinning
14 apples, apricots, peaches, nectarines, plums, and high-bush blueberries, id. at 33, 43, 63-67, 72-
15 75, and the MOEs are less than 10 for workers who enter pear orchards for harvesting and
16 thinning or grape fields for harvesting and pruning. Id. at 34, 70-71, 76-77. It would take 19 and
17 34 days for the MOE to reach the 100 target for high-exposure activities on apples in the eastern
18 and western United States respectively, 30 days for apricots, peaches, and nectarines, 37 days for
19 pears, 34 days for grapes, and 28 days for high-bush blueberries. Id. at 62-77. EPA found that
20 these “residual risks are still of concern,” and that the “mitigated risks are still high enough that
21 they would outweigh benefits if the benefits changed appreciably.” Id. at 42-43. Accordingly,
22 EPA decided (and the registrants agreed in a memorandum of agreement) that longer REIs must
23 be put in place for these nine uses by October 30, 2006, unless the registrants demonstrate that
24 shorter intervals would pass muster under FIFRA. Id. at 42-43, 52-53. The longer REIs would
25 not eliminate the risk concerns, but they would raise the MOEs to approximately 70. Id. at 43.
26

1 STANDARD OF REVIEW

2 This Court has jurisdiction to review the IREDs under 7 U.S.C. § 136n(a). The Court can
3 set aside or remand for further proceedings if it finds the IREDs arbitrary, capricious, or not in
4 accordance with law. See Administrative Procedure Act, 5 U.S.C. § 706. An agency action is
5 arbitrary and capricious if the agency has “entirely failed to consider an important aspect of the
6 problem, offered an explanation for its decision that runs counter to the evidence before the
7 agency, or is so implausible that it could not be ascribed to a difference in view or the product of
8 agency expertise.” Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29,
9 43 (1983). The reviewing court must determine whether the agency failed to consider a relevant
10 factor, Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 415-16 (1971), and whether it
11 provided a reasoned analysis that cogently explains how its action satisfies statutory standards,
12 National Resources Defense Council v. Daley, 209 F.3d 747, 755 (D.C. Cir. 2000).

13 The Court may properly consider evidence beyond the administrative record in order to
14 determine what factors are relevant to the agency’s decision. See, e.g., Asarco, Inc. v. EPA, 616
15 F.2d 1153, 1160 (9th Cir. 1980) (“It will often be impossible, especially when highly technical
16 matters are involved, for the court to determine whether the agency took into consideration all
17 relevant factors unless it looks outside the record to determine what matters the agency should
18 have considered but did not.”). Because UFW challenges the IREDs for failing to consider “an
19 important aspect of the problem” and relevant factors, it has submitted evidence that identifies
20 factors EPA failed to consider. This evidence comes in the form of the expert Declaration of Dr.
21 Frank Ackerman, an expert in cost-benefit analysis, who describes fatal omissions in EPA’s risk-
22 benefit determination and benefits assessments, as well as public comments submitted on the
23 IREDs and benefits assessments that identify publicly available information that EPA did not
24 consider in its benefits assessments and IREDs.

1 ARGUMENT

2 I. FIFRA PLACES THE BURDEN ON REGISTRANTS TO PROVE AND ON EPA TO
3 EXPLAIN HOW CROP BENEFITS OUTWEIGH RISKS TO HUMAN HEALTH AND
4 THE ENVIRONMENT.

5 Pesticides are “poisonous substances” that are “inherently dangerous.” Bates v. Dow
6 Agrosciences, 125 S. Ct. 1788, 1801-02 (2005). FIFRA establishes a regulatory scheme to
7 control the sale, use, and labeling of pesticides. 7 U.S.C. § 136a(a) (pesticide may not be used
8 unless it is registered for the particular use). To register or reregister a pesticide, FIFRA requires
9 EPA to find that “it will not generally cause unreasonable adverse effects on the environment.”
10 7 U.S.C. §§ 136a(c)(5)(D), 136b(a)(2). FIFRA defines “unreasonable adverse effects on the
11 environment” to mean “any unreasonable risk to man or the environment, taking into account the
12 economic, social, and environmental costs and benefits of the use of any pesticide” Id. §
13 136(bb). Once EPA approves a registration and label, it is unlawful to use the pesticide in a
14 manner inconsistent with the label. Id. § 136j(2)(G).

15 FIFRA gives rise to three mandates, each of which is implicated in this case. First, at its
16 core, FIFRA calls for a balancing of health and environmental risks on the one hand against
17 agricultural and other benefits on the other. Several courts, include the Ninth Circuit, have
18 described FIFRA’s risk-benefit standard as requiring a cost-benefit analysis: “FIFRA’s objective
19 is to protect human health and prevent environmental harm from pesticides through a cost-
20 benefit analysis of the pesticides.” Washington Toxics Coalition v. EPA, 2005 WL 1523669 *4
21 (9th Cir. June 29, 2005). EPA cannot evaluate whether a pesticide poses an unreasonable risk
22 based solely on the risks or the benefits. Instead, EPA must “engage[] in a cost-benefit analysis
23 that takes ‘into account the economic, social, and environmental costs and benefits of the use of
24 any pesticide.’” EDF v. EPA, 548 F.2d at 1005. As the Ninth Circuit explained in Merrell v.
25 Thomas, 807 F.2d 776, 780-81 (9th Cir. 1986): “The FIFRA standard distinctly balances the
26 environmental harm of using a pesticides against its economic, social, and environmental
27 benefits” and “reflects the need to balance environmental and agricultural impacts. This is a

1 compromise adopted by Congress that should not be overturned by judges.” The legislative
2 history to FIFRA’s “unreasonable adverse effects” standard elaborates on the required balancing
3 analysis:

4 [T]he balancing of benefit against risk is supposed to take every relevant factor
5 that the Administrator can conceive into account. The question he must decide is
6 “Is it better for man and the environment to register this pesticide, or is it better
7 that this pesticide be banned?” He must consider hazards to farmworkers, hazards
8 to birds and animals and children yet unborn. He must consider the need for food
9 and clothing and forest products, forest and grassland cover to keep the rain when
10 it falls, prevent floods, provide clear water. He must consider aesthetic values,
the beauty and inspiration of nature, the comfort and health of man. All these
factors he must consider, giving each its due. No one should be given undue
consideration, no one should be singled out for special mention, no one should be
considered a “vital” criterion.

11 S. Rep. No. 838, 92d Cong. 2d Sess., reprinted in 1972 U.S.C.C.A.N. 3993, 4032-33.

12 Second, FIFRA assigns the burden of proof to the registrant to prove that a pesticide
13 passes muster under FIFRA’s risk-benefit standard. Courts have uniformly held: “Once risk is
14 shown, the responsibility to demonstrate that the benefits outweigh the risks is upon the
15 proponents of continued registration.” EDF v. EPA, 548 F.2d at 1005 (upholding suspension
16 where registrants and record failed to demonstrate benefits outweighed risks of continued use);
17 see also EDF v. EPA, 510 F.2d 1292, 1302 (D.C. Cir. 1975) (same); Dow Chemical Co. v. Blum,
18 469 F. Supp. 892, 906-07 (E.D. Mich. 1979) (registrants failed to prove that herbicide benefits
19 outweighed risk of spontaneous abortions); 40 C.F.R. § 158.20(b) (registrant required to file
20 sufficient data to allow EPA to make FIFRA risk-benefit judgments). The registrant retains this
21 burden even after obtaining an initial registration. EDF v. EPA, 548 F.2d at 1004 (FIFRA places
22 the burden of proving benefits outweigh risks “at all times on the applicant and registrant.”)
23 (citations omitted); see also Stearns Elec. Paste Co. v. EPA, 461 F.2d 293, 303-05 & n.37 (7th
24 Cir. 1972) (then-Judge Stevens explaining that registrant bears burden of proof for initial
25 registration, reregistration, and avoiding cancellation); 7 U.S.C. § 136d(a)(2) (registrant has
26 ongoing duty to submit any unreasonable adverse effects information to EPA).

1 Third, under FIFRA’s risk-benefit standard: “Once the Administrator has found that a
2 risk inheres in the use of a pesticide, he has an obligation to explain how the benefits of
3 continued use outweigh that risk.” EDF v. EPA, 548 F.2d at 1012. EPA “bears the burden of
4 justifying its lack of action” to protect the public from a pesticide in the face of evidence of
5 serious health hazards. EDF v. EPA, 510 F.2d at 1302; accord EDF v. EPA, 548 F.2d at 1005
6 (FIFRA “places a ‘heavy burden’ of explanation on an Administrator who decides to permit the
7 continued use of a chemical known to produce cancer in experimental animals.”). FIFRA’s
8 burdens of proof place a thumb on the scales in favor of preventing unacceptable health and
9 environmental risks unless the registrant demonstrates overriding benefits. EPA can reregister a
10 hazardous pesticide only upon weighing all the risks and benefits and finding that significant
11 benefits objectively and demonstrably outweighs all the risks and harm caused by the pesticide.

12 **II. EPA ERRONEOUSLY REREGISTERED EXTREMELY HAZARDOUS USES OF
13 AZM AND PHOSMET BASED SOLELY ON THEIR ECONOMIC BENEFITS TO
14 CROP PRODUCTION WITHOUT WEIGHING THOSE BENEFITS AGAINST THE
15 SEVERITY AND MAGNITUDE OF THE RISKS TO WORKERS, THEIR
16 CHILDREN, AND THE ENVIRONMENT.**

16 EPA unlawfully allowed what it found to be “unacceptable” risks of worker poisonings
17 and environmental contamination to continue based upon largely undocumented assertions from
18 pesticide manufacturers and users that it would cost them money to switch to less toxic
19 alternative controls. EPA effectively converted FIFRA from a risk-benefit balancing standard to
20 one in which admittedly “unacceptable” risks to workers – no matter how extreme – are
21 automatically trumped by assertions that switching to safer alternatives would entail costs.
22 Under its approach, EPA reregistered AZM and phosmet uses based solely on its cursory
23 assessment of the additional costs to growers of using available, alternative pest control methods.
24 EPA cancelled uses where alternative pest control costs would be low but allowed extremely
25 hazardous uses to continue where it asserted the costs of alternatives would be relatively high.

26 EPA’s single-minded focus on crop benefits violated FIFRA in two respects. First, EPA

1 failed to engage in the FIFRA-mandated balancing of unacceptable worker risks against crop
2 benefits. Second, in making its risk-benefit determinations, EPA failed to take into account the
3 risks to the workers' families and the demonstrated environmental hazards from use of these
4 pesticides. By elevating crop benefits over all other risks and benefits, no matter how severe or
5 prevalent, EPA failed to give all risks and benefits their due in deciding whether it is better for
6 people and the environment for AZM and phosmet to be banned or registered, as FIFRA
7 requires. See S. Rep. No. 92-838, supra.

8 A. EPA Failed to Conduct the FIFRA-Mandated Balancing of Worker Poisoning
9 Risks Against the Asserted Crop Benefits of Using AZM and Phosmet.

10 In its risk assessments, EPA determined that workers are exposed to unacceptable risks
11 from uses of AZM and phosmet. Many AZM and phosmet uses result in risks far greater,
12 sometimes by an order of magnitude, than posed by an MOE of 100 – the cut-off EPA has
13 established for unacceptable risks. Even with the mitigation prescribed in the IREDs, most uses
14 of AZM and many phosmet uses will continue to pose excessive worker risks. These risks are
15 “unreasonable” unless the registrant can demonstrate that social, economic, and environmental
16 benefits outweigh them.

17 After EPA determined that workers are exposed to unacceptable risks from uses of AZM
18 and phosmet, EPA shifted its focus to the economic benefits from continued use of these
19 pesticides, and it never circled back to compare those benefits with the worker risks. Despite the
20 burden placed on registrants to demonstrate overriding benefits, and on EPA to explain cogently
21 how benefits outweigh the risks, EPA allowed AZM and phosmet uses to remain on the market
22 based solely on EPA's unadorned conclusion that assertedly high economic benefits to producers
23 outweigh the risks to workers. ER 683 at 67-68 (explaining that EPA made its reregistration
24 decisions based on the relative crop benefits); ER 739 at 53 (reregistering uses where EPA
25 believed crop benefits “high”).

26 EPA predicated its reregistration decisions solely on its economic ranking of crop

1 benefits and then announced its conclusion that the benefits outweigh the risks for certain crops
2 without ever conducting the statutorily mandated comparison of the two. It is well-settled that
3 merely “[r]eferencing a requirement is not the same as complying with that requirement,” Sugar
4 Cane Growers Coop. v. Veneman, 289 F.3d 89, 97 (D.C. Cir. 2002); and “[s]tating that a factor
5 was considered . . . is not a substitute for considering.” Getty v. Fed. Sav. & Loan Ins. Corp.,
6 805 F.2d 1050, 1055 (D.C. Cir. 1986); see id. at 1057 (a “conclusory recitation” failed to satisfy
7 a statutory requirement that the agency “consider” a factor).

8 FIFRA requires more than sequential discussions of risks and benefits with the
9 reregistration decision predicated solely on the crop benefits. As the Senate Report stresses, no
10 one factor “should be considered a ‘vital’ criterion.” S. Rep. 838, supra. The fact of a benefit
11 cannot be determinative in isolation. The pesticide’s proponents must demonstrate that benefits
12 clearly outweigh health and environmental hazards, and EPA must compare the magnitude and
13 nature of the risks and benefits in an objective manner, neither of which was done here.

14 In the past, EPA has appropriately concluded that “individual decisions on initial or
15 continued registration must depend on a complex administrative calculus, in which the ‘nature
16 and magnitude of the foreseeable hazards associated with use of a particular product’ is weighed
17 against the ‘nature of the benefit conferred’ by its use.” EDF v. EPA, 465 F.2d 528, 536 (D.C.
18 Cir. 1972). In that case challenging EPA’s refusal to suspend two pesticides undergoing
19 cancellation proceedings, the D.C. Circuit held that EPA’s cursory reliance on benefits to avoid
20 suspension was inadequate:

21 The Administrator’s mere mention of these products’ major uses, emphasized by
22 EPA, cannot suffice as a discussion of benefits, even though the data before him
23 . . . reflected the view that aldrin-dieldrin pesticides are the only control presently
24 available for some twenty insects which attack corn and for one pest which poses
25 a real danger to citrus orchards . . . The interests at stake here are too important to
26 permit the decision to be sustained on the basis of speculative inference as to what
27 the Administrator’s findings and conclusions might have been regarding benefits.

28 465 F.2d at 539. EPA must compare the risks and benefits and provide a thorough and reasoned

1 explanation for how it strikes the balance.

2 The FIFRA-mandated balancing is absent from the AZM and phosmet IREDs. EPA
3 failed entirely to conduct risk-benefit balancing of pesticide handler risks given that its benefits
4 assessments focused exclusively on post-application risks and never considered the necessity for
5 the handler tasks that expose workers to unacceptable risks. EPA applied some mitigation for
6 handler risks, but the agency concedes that these mitigation measures are inadequate to reduce
7 the risks below EPA’s level of concern for numerous uses and many remain an order of
8 magnitude worse than EPA’s threshold for worker risks. E.g., ER 683 at vii, 32-36; ER 739 at v,
9 20-26, 51. The benefits assessments provide no basis for comparing the unacceptable handler
10 risks and crop benefits for these uses, even though PR Notice 2000-9 calls for a full analysis of
11 usage benefits to determine whether the risks from the particular task are outweighed by benefits.
12 PR Notice 2000-9 at 9. For example, EPA never asked whether phosmet could still be used for
13 particular crops without aerial spraying, which produced risks that “remain of concern” despite
14 the mitigation newly required in the IREDs. See ER 739 at 20-26, 51. Nor did EPA ask whether
15 particular AZM or phosmet application tasks could be conducted using greater engineering
16 controls, such as closed cabs with air conditioning and charcoal filtration systems, to reduce
17 worker exposure. EPA nonetheless reregistered hazardous AZM and phosmet uses in a vacuum
18 without conducting any discernible comparison of the “unacceptable” risks to pesticide handlers,
19 including the number of workers at risk and the severity of adverse health effects, to the benefits
20 under chosen mitigation and other scenarios that would lessen the severity of those risks.

21 For post-application risks, EPA found the uses eligible for reregistration where EPA’s
22 benefits assessments came up with relatively high benefits to crop production. Conversely,
23 where the agricultural benefits were low, EPA found the uses ineligible for reregistration.
24 Nowhere did EPA compare economic benefits to the nature and magnitude of the harm to
25 workers. EPA’s risk assessments provided ample information on the nature and magnitude of
26

1 the worker risks that could provide a basis for comparing relatively high-benefit uses to the
2 magnitude of the significant worker risks. For example, EPA’s risk assessments document
3 serious injuries from the use of these pesticides, ranging from acute poisoning symptoms, such as
4 vomiting, dizziness, and cramps, to permanent memory loss, convulsions, paralysis, and death.
5 E.g., ER 683 at 26. Alternatively, the AZM IRED attests to AZM’s acute toxicity, classifying it
6 as a restricted use pesticide because it has the highest acute toxicity rating. ER 683 at 6. AZM’s
7 acute toxicity and its status as one of the worst worker poisoning pesticides on the market should
8 weigh in the FIFRA balance. See, e.g., ER 256, 996 (noting that peach growers substituted
9 phosmet for AZM because of AZM’s acute toxicity to workers); ER 849 (Harry and David
10 similarly stopped using AZM, but not phosmet, on pears).

11 EPA’s risk assessments and IREDs offer several other measures of the magnitude of the
12 worker risks as well. For example, EPA assessed the extent to which each activity would expose
13 workers to risks above its level of concern, and it correlated each exposure with an MOE. MOEs
14 of less than 10, which EPA found for many uses, pose a risk ten times greater than EPA deems
15 acceptable. E.g., ER 683 at 38-41. EPA also estimated the number of days workers would be
16 exposed to unsafe levels for each activity and crop. Depending on the task performed, unsafe
17 exposures may continue for days, weeks, or in some cases even months. E.g., id. at 42. In
18 addition, EPA estimated the number of workers who perform various tasks. For example,
19 approximately 45,000 workers harvest apples, which has an MOE of 2 for AZM, and 8,000
20 workers harvest sweet cherries, which has an MOE of 3 for AZM, both with the REIs required in
21 the IREDs. E.g., id. at 90, 97. Inexplicably, EPA treated all AZM and phosmet risks as
22 interchangeable, even though different numbers of workers would be exposed to unsafe levels
23 for varying amounts of time and AZM’s acute toxicity is far greater than phosmet’s. E.g., id. at
24 67 (“The occupational risks associated with azinphos-methyl do not differ dramatically among
25 most uses of the pesticide . . .”).

1 Moreover, EPA originally considered exploring alternative scenarios with longer REIs
2 for AZM and phosmet for apples than those embodied in the final IREDs. ER 1009 (1 AZM
3 application per season with a 21 REI compared to the 14-day REI in the IRED and a 7-day REI
4 for phosmet compared to the 3-day REI in the IRED). ER 1009. The record provides no
5 explanation for deleting these scenarios in the final apple benefits assessment. Nor does the
6 record reveal why EPA rejected the final apple benefits assessment scenario that would have
7 limited AZM applications to one application per season. ER 712 at 48. While none of these
8 rejected scenarios would have reduced worker risks to levels EPA deems acceptable, they would
9 have allowed EPA to explore the economic impacts of greater mitigation for worker risks than
10 those analyzed and ultimately selected.

11 In contrast to the AZM and phosmet IREDs, EPA has, in the past, incorporated the risks
12 to workers (along with other risks) into its benefits assessments. For example, when EPA
13 refused to suspend DDT registrations, it discussed alternatives and found that “[p]recipitous
14 removal of DDT from interstate commerce would force widespread resort to highly toxic
15 alternatives in pest control on certain crops. The widespread poisonings, both fatal and nonfatal,
16 which may reasonably be projected present an intolerable short-term hazard.” EDF v. EPA, 465
17 F.2d at 539 n.9. EPA included in its DDT benefits assessment an evaluation of health risks from
18 an accelerated shift to those alternatives. In this way, its benefits assessment integrated both
19 health risks and economic benefits.

20 For AZM and phosmet, EPA quantified the benefits to crop production that would be lost
21 if AZM, phosmet, or both became unavailable. While it may not be possible to convert all the
22 risks and benefits to a precise mathematical formula, once EPA chose to rely heavily on a
23 monetization of crop benefits, it had to articulate the magnitude of the risks in a way that could
24 be compared to the economic benefits in an objective fashion. Instead, EPA reregistered
25 extremely hazardous uses of AZM and phosmet based solely on the costs to growers of utilizing
26

1 alternatives, no matter how severe the worker risks. By failing to integrate and balance the full
2 risks and benefits, EPA violated FIFRA.

3 B. EPA Failed to Take Societal and Environmental Risks into Account in Making its
4 AZM and Phosmet Reregistration Decisions.

5 Because EPA never balanced the magnitude of the worker risks and economic benefits in
6 making its “unreasonable adverse effects” determination, it overlooked not only the costs to
7 workers from pesticide poisonings, but also societal and environmental costs of continued use of
8 these pesticides. For example, farmworker children are exposed to pesticides that drift onto
9 homes and schools and that are brought home on their parent’s clothing, hair, and skin. As a
10 published scientific article documents:

11 Children of farmers and agricultural field workers are likely to have a high
12 potential for pesticide exposure, even if they are not involved in farm activities
13 related to exposure. Pesticide exposure could occur from a number of sources
14 such as contaminated soil, dust, work clothing, water, and food, and through drift,
15 the deposition of a pesticide off target. In many agricultural communities,
16 residential home sites are close to or surrounded by fields or orchards. Pesticides
17 can be tracked into the home on shoes or by pets and become part of a household
18 dust “reservoir.” . . . Young children spend a large portion of their time on the
19 floor or ground and can easily come in direct contact with yard soil or dust by
20 putting hands and objects in their mouths frequently and thereby ingesting soil or
21 dust.

22 “Pesticides in Household Dust & Soil: Exposure Pathways for Children of Agricultural
23 Families,” Envtl. Health Perspectives, Vol. 103(12): 1126 (1995) (ER 797, Exh. 7). This study
24 found AZM in 100% of the dust samples from agricultural households and significantly higher
25 concentrations of AZM and other organophosphate pesticides in agricultural vs. nonagricultural
26 families. See also “Pesticide Exposure Assessment of Workers & Their Families,” Occupational
27 Medicine, Vol. 12(2): 221 (1997) (ER 797, Exh. 6).

28 EPA is well aware of the disturbing risks faced by farmworker and farm families. In
March 2000, the General Accounting Office released a report (previously discussed with EPA)
entitled: Pesticides: Improvements Needed to Ensure the Safety of Farmworkers & Their

1 Children (March 2000) (Exh. 3).⁸ The report recommended and EPA agreed to assess more fully
2 the pesticide risks to farmworker children both in their homes and in the fields when they go to
3 work with their parents or play in the fields. Id. at 25. As noted in the report, EPA received a
4 petition in 1998 to base food safety standards on exposures to farmworker children as in
5 identifiable subpopulation facing substantially greater pesticide exposures from sources other
6 than food. Id. at 4, 8-9. While EPA has yet to respond to the petition, it has identified the need
7 to revise its methods of accounting for residential and farmworker children's exposures, and it
8 has funded several studies assessing the effects of the farmworker children's exposures. Id. at 4,
9 9; ER 710 at 11-12. In the AZM reregistration process, commenters repeatedly urged EPA to
10 take into account the particularly high exposures of farm and farmworker children, id.; ER 796,
11 yet EPA ignored the risks or costs of exposing farmworker children to adverse health effects in
12 allowing continued uses of these pesticides.

13 EPA is guilty of a similar omission for environmental risks. At one point, EPA stated
14 that potential environmental impacts of shifts to other pest control must be taken into account.
15 ER 739 at 44 (stakeholders must provide evidence to support assertions of environmental harm
16 from alternatives). Yet EPA failed to consider environmental risks from using AZM and
17 phosmet and the costs of that environmental harm in deciding whether the economic benefits of
18 AZM and phosmet outweigh their risks. Environmental impacts are absent from EPA's risk-
19 benefit calculus even though the AZM IRED reveals that the remaining AZM uses:

20 have associated environmental risk . . . [that] potentially are significant. There is
21 a potential for spray drift and runoff into water bodies with the most drift being
22 associated with aerial applications. Azinphos-methyl is very highly toxic to
23 freshwater and marine fish and to invertebrates, and if it enters a water body in
24 sufficient quantities, it can result in death and reproductive effects in aquatic
organisms. There is also potential exposure to birds, mammals, and bees from
direct spray, drift, and surface residues. Azinphos-methyl is highly to very highly

25 _____
26 ⁸ Public comments submitted by Natural Resources Defense Council reference this report and
describe it extensively. Colangelo Decl. Exh. 1, 2.

1 toxic to birds and small mammals, and exposure can result in death and
2 reproductive effects. Azinphos-methyl also is highly toxic to honeybees.

3 ER 683 at 73; see also id. at 45 (surface water contamination from AZM runoff and spray drift);
4 id. at 49 (risks to birds); id. at 58 (extreme toxicity to bees); id. at 67 (“there are still concerns for
5 aquatic and terrestrial organisms from run-off and off-site drift”).

6 AZM has been the subject of more reported fish kills and other aquatic incidents than any
7 other pesticide, id. at 46-47, 52, and the U.S. Geological Survey detected AZM above levels
8 established for protection of aquatic life in watersheds throughout the country. Id. at 53. In past
9 biological opinions, the U.S. Fish and Wildlife Service has found that AZM is likely to
10 jeopardize the survival and recovery of over 60 separate threatened or endangered species, and
11 has recommended mitigation that EPA still has not implemented. Id. at 52. Moreover, while the
12 IRED imposes mitigation for some environmental risks, EPA concluded that it would need to
13 consult with the Fish and Wildlife Service and National Marine Fisheries Service to ensure that
14 remaining risks would not jeopardize the survival of endangered species. Id. at 106. The
15 Phosmet IRED likewise noted risks to birds, fish, other aquatic species, mammals, and
16 endangered species, as well as high toxicity to bees. ER 739 at v-vi.

17 Under FIFRA, EPA must determine whether a pesticide use presents an “unreasonable
18 risk . . . taking into account the economic, social, and environmental costs and benefits of the use
19 of any pesticide.” 7 U.S.C. § 136(bb). EPA predicated its reregistration decisions on the relative
20 economic benefits of the pesticides to growers. It failed to “take into account” the social and
21 environmental costs and benefits, as FIFRA explicitly requires. Accordingly, “[t]here is no basis
22 whatsoever for EPA’s conclusion that the benefits to growers outweigh the costs to farmworkers
23 and to the natural environment,” even though there are ample tools for assessing the costs of
24 environmental harm, including some that have long been employed by federal agencies.
25 Ackerman Decl. ¶ 48; see Ohio v. Dept. of Interior, 880 F.2d 432 (D.C. Cir. 1989) (setting aside
26 regulations that limited quantification of recoverable natural resource damages). EPA’s failure

1 to incorporate into its IREDs the risks and costs of AZM and phosmet to farmworker children,
2 society, and the environment violates FIFRA’s mandate to consider all costs and benefits and is
3 arbitrary and capricious.

4 C. EPA Deviated from Reasoned Decisionmaking By Basing its Reregistration
5 Decision on Economic Crop Benefits Rather than a Discernible and Documented
6 Balancing of Risks and Benefits.

7 FIFRA mandates that EPA compare risks and benefits, and EPA justifiably decided, as
8 part of this analysis, to assess the viability of alternatives to AZM and phosmet. In doing so,
9 however, the agency failed to do what the law requires and conduct a reasoned and balanced
10 assessment of all the costs and benefits of continued AZM and phosmet use and the alternatives.

11 In other contexts where an agency must consider alternatives and it does so by
12 quantifying their economic costs, the courts have required a credible assessment of both costs
13 and benefits. Where, for example, an agency analyzes economic impacts in an environmental
14 impact statement (“EIS”) prepared in accordance with the National Environmental Policy Act
15 (“NEPA”), 42 U.S.C. § 4332, it must do so fairly without omitting important information or
16 skewing the analysis to favor a particular alternative. 40 C.F.R. § 1500.1; Animal Defense
17 Council v. Hodel, 840 F.2d 1432, 1439 (9th Cir. 1988). In Sierra Club v. Sigler, 695 F.2d 957,
18 975-76 (5th Cir. 1983), when the agency “*chose* to trumpet the benefits of bulk cargo activities in
19 the EIS as a ‘selling point’ for the oil project,” the court held that it “cannot tip the scales of an
20 EIS by promoting possible benefits while ignoring their costs. Simple logic, fairness, and the
21 premises of cost-benefit analysis, let alone NEPA, demand that a cost-benefit analysis be carried
22 out objectively.” Id. at 979 (emphasis in original). An EIS cannot avoid disclosing the
23 accompanying costs or it would be a sham. Id.

24 NEPA establishes a procedural disclosure and analysis requirement, not substantive
25 decisionmaking criteria like FIFRA’s risk-benefit standard. Moreover, on its face, NEPA
26 mandates an assessment of a reasonable range of alternatives, while that requirement is only

1 implicit in FIFRA’s risk-benefit standard. EPA based its reregistration decision on its conclusion
2 that the economic consequences of switching to alternatives outweighed the risks of continued
3 AZM and phosmet uses. Rational agency decisionmaking requires that once EPA decided to
4 base its decision on a comparison of alternatives, it had to undertake a fair consideration of all
5 costs and benefits of those alternatives. EPA “cannot tip the scales . . . by promoting possible
6 benefits while ignoring their costs” to workers and the environment. Sierra Club v. Sigler, 695
7 F.2d at 979.

8 EPA’s myopic focus on its quantification of crop benefits deviates from reasoned and
9 defensible decisionmaking. In the past, EPA has employed a broader, more holistic assessment
10 of risks and benefits in deciding whether to register or cancel registrations of other pesticides.
11 For example, while EPA cancelled most DDT registrations because of the health and
12 environmental hazards, it left registrations in place for uses certified to be necessary to protect
13 public health. EDF v. EPA, 489 F.2d 1247, 1252, 1254 (D.C. Cir. 1973). To provide a
14 foundation for that decision, EPA assessed public health impacts on the benefits side of the
15 equation, not just economic benefits. In contrast, the only benefits that EPA considered for AZM
16 and phosmet are those aiding crop production, and EPA based its decision on this narrow
17 configuration of the benefits side of the ledger.

18 Not only are EPA’s benefits assessments and IREDs far narrower in focus than EPA’s
19 past risk-benefit determinations, but they fail to build a foundation for a rational and fully
20 explained risk-benefit decision. As Dr. Frank Ackerman, an economics professor with extensive
21 expertise in cost-benefit analysis explains “EPA makes no attempt to determine whether the
22 costs to farmworkers outweigh the benefits to growers”:

23 EPA makes no attempt to quantify the costs to farmworkers – or to their families
24 and nearby communities – resulting from the use of AZM and phosmet. (Since
25 some medical costs are paid for by Medicaid or subsidized care at federally
26 subsidized migrant clinics, the health costs imposed by pesticides are also, in part,
costs that are borne by the nation as a whole). This deviates from EPA practice in

1 many other cases, in which the agency has called for quantification and monetary
2 valuation of costs to human health and the natural environment.

3 Ackerman Decl. ¶ 23; see also id. ¶ 24 (“there is no justification for ignoring health costs
4 altogether, as EPA’s quantitative economic analysis has done in this case.”). Dr. Ackerman
5 describes how economists assess the costs of illnesses and deaths, and he identifies sources of
6 data on pesticide poisonings and other impacts that EPA could have used had it chosen to
7 integrate risks into its benefits assessments in a quantitative manner. Id. ¶¶ 17-18, 24-35.

8 Rather than integrate risks and benefits into its benefits assessments, EPA
9 compartmentalized its inquiry, focusing solely on risks at the outset and shifting to economic
10 benefits once the risks proved unacceptable. Id. ¶ 47 (“the comparison of costs and benefits
11 presented by EPA is completely uncertain, due to the near total absence of necessary information
12 about quantitative impacts on anything except apple growers’ finances”). EPA’s benefits
13 assessments failed to consider the costs of exposing workers to risks from AZM and phosmet,
14 and the IREDs never correlated the risks and benefits. As Dr. Ackerman explained: “It is not
15 clear whether EPA believes that the benefits to growers obviously exceed the value of the costs
16 to farmworkers, or whether the agency has chosen to consider only one side of the equation.
17 Either alternative is of course unacceptable; explicit evaluation of the effects on farmworkers is
18 necessary. By failing to discuss the comparison between benefits to growers and costs to
19 workers, EPA’s current treatment of the issue implies that the value of workers’ health is
20 negligible or irrelevant.” Ackerman Decl. ¶ 9. “Nothing like a reasonable cost-benefit analysis
21 has been presented; instead, the available information suggests that the harm to health and the
22 environment could outweigh the modest benefits to growers from the use of these two
23 pesticides.” Id. ¶ 48. EPA’s refusal to consider the magnitude of the poisoning risks posed to
24 workers reflects an “insensitivity” that “is unbecoming and inappropriate.” Love v. Thomas, 858
25 F.2d 1347, 1362 (9th Cir. 1988) (overturning EPA’s suspension of pesticide because it failed to

1 adequately assess economic benefits).⁹

2 Moreover, Dr. Ackerman concludes that EPA “omit[ed] a substantial part of the risk
3 picture” by failing to provide any quantitative or other objective assessment of the potential
4 damage to the natural environment, including water quality, salmon, and endangered species.
5 Ackerman Decl. ¶ 10. As a result, “the IRED does not contain even the rudiments of a risk-
6 benefit analysis considering harm to endangered species,” including salmon which are a unique
7 resource to the Northwest and the subject of several valuation studies. Id. ¶ 39. Dr. Ackerman
8 concludes that “it is impossible to assess the costs and benefits of pesticide use without
9 considering this factor[, namely h]ow much damage pesticide runoff [is] causing to the salmon
10 of the Northwest or other endangered species,” and that damages to endangered species might
11 “range in the tens or hundreds of million dollars by ordinary cost-benefit standards” Id. ¶¶ 45,
12 47. EPA’s approach also runs counter to federal guidance that calls for an assessment of all
13 potential impacts, including any “decrease in the risk of extinction of endangered species” and
14 the rate of use of public goods, such as fisheries or water. OMB Guidance on Economic
15 Analysis of Federal Regulations under Exec. Order 12,866, at 5, 23 (Jan. 11, 1996) (Exh. 4).¹⁰

16 By failing to balance economic benefits against the nature and magnitude of the risks to
17 workers, their children, and the environment, EPA failed to make its reregistration decisions on
18 the risk-benefit balancing compelled by FIFRA and “entirely failed to consider an important
19 aspect of the problem . . .” Motor Vehicle Mfrs., 463 U.S. at 43; see also Brower v. Evans, 257

20
21 _____
22 ⁹ EPA justifies focusing solely on benefits by asserting that the worker risks do not differ
23 dramatically among most crops because most worker risks will still fall below the margin of
24 safety even with the required mitigation. ER 683 at 67. Not only did EPA document risks that
25 vary by as much as an order of magnitude, thereby disproving this assertion, but the Ninth
26 Circuit rejected EPA’s analogous argument that EPA can avoid assessing regional or crop-
27 specific impacts because all the health risks were comparable. Love, 858 F.2d at 1362.

28 ¹⁰ While the OMB Guidance pertains only to federal regulations, and there are no comparable
mandates to conduct a full cost-benefit analysis for FIFRA reregistrations, it provides sound
guidance to consider environmental, not just easily quantifiable economic, impacts.

1 F.3d 1058, 1067 (9th Cir. 2001) (action invalid where agency failed to consider factor essential to
2 an informed decision). EPA’s unacceptable risk findings got the pesticides through the door, but
3 once in the room, the risks fell away and EPA made the reregistration decisions solely on the
4 basis of economic benefits. Because EPA’s risk benefit analysis is one-sided, lacking a risk side
5 of the equation, its reregistration decisions for AZM and phosmet violate FIFRA.

6 III. EPA CONDUCTED AN INADEQUATE INVESTIGATION AND ARBITRARILY
7 IGNORED AVAILABLE INFORMATION DEMONSTRATING THE EFFICACY OF
8 ALTERNATIVES TO AZM AND PHOSMET.

9 EPA allowed workers to be exposed to “unacceptable risks” from AZM and phosmet
10 based solely on its view of the relative crop benefits of the various uses. EPA’s ranking of
11 economic benefits, in turn, hinged on its assumptions concerning the viability of alternatives. It
12 admittedly used its best professional judgment to predict the likely impacts of various
13 alternatives, claiming that other sources were unavailable. ER 712 at iv. However, EPA lacked
14 data to back up its assumptions, and it failed to conduct an adequate investigation of the
15 available information demonstrating the efficacy of alternatives to AZM and phosmet. By using
16 EPA staff’s subjective judgment instead of peer-reviewed scientific literature and field tests
17 studying alternative pest control methods, EPA’s benefits assessments suffer from the proverbial
18 “garbage in, garbage out” problem.

19 The Ninth Circuit addressed a flawed benefit analysis in Love v. Thomas, 858 F.2d 1347
20 (9th Cir. 1988), in a challenge brought by farmers and food processors to EPA’s emergency
21 suspension of dinoseb in the Pacific Northwest. EPA had suspended dinoseb nationwide based
22 on evidence that it caused sterility and birth defects, but the court found its analysis of dinoseb
23 uses in the Northwest “cursory,” “incomplete,” and “rushed.” Id. at 1358. In particular, EPA
24 relied on a “flawed and incomplete” study, “scanty” data, and its own limited information,
25 “conducted only a cursory evaluation of the availability of alternative pesticides and the
26 consequent economic impacts,” failed to seek information about alternatives from outside

1 sources or the public, and made only limited telephone calls to select individuals at Land Grant
2 universities. Id. at 1358-60 & n.18. The court found that EPA had amassed insufficient
3 information for an accurate assessment of the viability of alternatives; that a minimal
4 investigation would have revealed pertinent, unconsidered information; and that EPA failed to
5 follow-up on leads it had about information relevant to alternatives. Id. at 1360-62. “Without
6 any investigation of those economic effects, however, the EPA could not do even a rough and
7 ready balancing.” Id. at 1361-62.

8 As in Love, EPA conducted an inadequate investigation of the impacts of losing AZM
9 and phosmet for various crops. While EPA needed to act quickly to suspend pesticides causing
10 an imminent hazard in Love, EPA had no justification for its cursory evaluation of alternatives to
11 AZM and phosmet. Indeed, EPA had more than two years after it made “unacceptable” risks
12 findings for AZM before it issued the AZM IRED. See ER 683, 703. EPA consulted statistical
13 data on current usage patterns, but it used its professional judgment and information input to
14 predict grower responses if AZM or phosmet were unavailable for various crops. E.g., ER 712 at
15 iv, 9, 20. EPA staff solicited input from growers and trade groups that favored retaining AZM
16 and phosmet uses without seeking comment from farmworker advocates or the general public.
17 And EPA staff apparently accepted at face value the assertions made by these advocates and
18 individuals. For example, EPA embraced grower and industry assertions about secondary pest
19 outbreaks and the purported economic impacts of switching to alternatives. ER 739 at 62, 64,
20 65, 73, 75, 76, 84. Grower and industry comments likewise provided the sole basis for EPA’s
21 findings that longer REIs would disrupt the workforce by preventing workers from performing
22 certain tasks at convenient times. Id. at 63-65, 73, 75, 77, 84. Similarly, EPA assumed that
23 growers would stop using phosmet on peaches if REIs were longer than 30 days based on the
24 input from one entomologist. ER 723 at 7. EPA’s narrow inquiry provided an incomplete
25 picture of the likely impacts of various REIs or the loss of AZM and phosmet.
26

1 EPA ignored readily available information on the viability of alternative pest control
2 systems and most particularly on pheromone mating disruption, which EPA recognizes is
3 growing in use throughout the west to control codling moths on apples. ER 712 at 3
4 (“[p]heromone mating disruption for codling moth is a widely accepted practice in the West
5 Region”); ER 724 at 5 (“[m]ost pear growers (85-95%) participate in using a mating disruption
6 scheme for codling moth,” which “has reduced the use of organophosphates and resistance to the
7 organophosphates has apparently been decreasing”). In its apple benefits assessment, EPA
8 assumed an increase in mating disruption up to a fixed percentage of acres for all alternative
9 scenarios postulated for the west:

10 Assume a change in the number of acres using mating disruption. Currently an
11 estimated 50% of acreage is managed using mating disruption. Assume an
12 additional 25% of the acres would adopt a full program at a cost of \$120 per acre.
13 The 50% already in the program would move to a full program at an additional
14 costs of \$60 per acre. The remaining 25% of the acreage would not take part in
15 mating disruption.

16 ER 712 at 44-47; see also id. at 48 (scenario 4 assumed usage of a half-program rather than a full
17 program for 75% of acreage).

18 In fixing this cap, EPA relied on its cursory queries, even though it ignored one
19 entomologists’ view that mating disruption would increase to 90% of the apple acreage if AZM
20 and phosmet were both unavailable. ER 249 at 24. EPA justified relying on its informal
21 exchanges and its subjective professional judgment by claiming that studies assessing grower
22 and regional impacts of alternatives to AZM and phosmet “were not available for our use.” E.g.,
23 ER 712 at 20. This assertion is demonstrably false.

24 In anticipation of increasing regulatory constraints on AZM and phosmet, federal
25 agencies, including EPA, funded large-scale field tests of mating disruption as an alternative, less
26 toxic pest control method for apples and pears. A published, peer-reviewed assessment of an
27 apple field test, partially funded by the U.S. Department of Agriculture, found mating disruption
28 to be an effective pest control measure in controlling pests on apples without the detrimental

1 effects of neurotoxic pesticides. “Review of Codling Moth Areawide Suppression Program in
2 the Western U.S.” J. Agric. Entomol., Vol. 15 (4): 327-33, 1998 (Davis Exh. 5).¹¹ During the
3 first year, pest damage levels in mating disruption orchards were comparable to those in
4 chemically treated orchards, but mating disruption damage levels were much lower in the second
5 and third years. Id. at 332. Mating disruption slowed the development of resistance to AZM,
6 freed natural pest predators from population crashes caused by AZM, reduced spraying costs,
7 and protected workers. Id. at 328-29, 332. An EPA-funded field test on pears produced similar
8 results. Mating disruption cost less and resulted in higher profits than current chemical pest
9 management strategies in the second and third years when net cost savings per acre were
10 substantial (\$66-79 per acre). Final Report: WA State Pear IPM Project, at 11 (Jan. 2001) (Ford
11 Exh. 1). In a federally supported, large-scale field test on apples and pears in Washington State,
12 mating disruption provided acceptable pest control and yields even in areas with a significant
13 risk of codling moth damage. “Building a Pheromone-Based Multi-Tactic Pest Management
14

15 ¹¹ Although EPA eventually did seek public input on its benefits assessments, it did so only after
16 the assessments had been completed and incorporated into the IREDs. UFW is submitting public
17 comments and studies documenting the efficacy of alternatives to identify the available
18 information that EPA did not consider into its benefits assessments and IREDs. See Asarco, 616
19 F.2d at 1160 (extra-record evidence admissible to show factors and evidence agency failed to
20 consider). EPA has never explained the basis for its assumptions in light of the comments and
21 submitted data, nor has it revised its benefits assessments, IREDs, or MOAs with the registrants
22 based on the submitted comments and data. It is arbitrary and capricious for EPA to solicit
23 public input on its benefits assessments and never circle back to rethink those decisions in light
24 of the contrary data and evidence submitted in the public comments. See Beno v. Shalala, 30
25 F.3d 1057, 1073-76 (9th Cir. 1994) (failure to respond to comments contravening agency
26 rationale constitutes failure to consider relevant factors); United States v. Nova Scotia Food
27 Products Corp., 568 F.2d 240, 251-52 (2d Cir. 1977) (same error when agency failed to expose
28 science underlying agency action to public view and comment). Under the MOAs, the
registrants may submit data in an attempt to justify renewing the AZM time-limited registrations
in October 2005, and to avoid extending the REIs for phosmet in October 2006. It would
compound EPA’s arbitrary actions for it to renew the time-limited AZM registrations or abandon
the longer phosmet REIs without fully analyzing and responding to the public comments
submitted several years ago. Should this Court remand the IREDs to EPA, it should direct EPA
to consider and respond to the public comments, and integrate the evidence on alternatives into
future IREDs and MOAs.

1 System for Western Orchards,” 2001 Areawide II Report: Washington State (Ford Exh. 2).¹²

2 In addition to these large-scale federally funded field tests, other published articles attest
3 to the efficacy of mating disruption as an alternative to AZM and phosmet. A study undertaken
4 by Washington State University found that organic apple production using mating disruption
5 produced comparable apple yields to organophosphates but with higher soil quality and
6 preferable environmental impacts. “Sustainability of Three Apple Production Systems,” Nature,
7 410:926-30 (2001) (Davis Exh. 6). A California Department of Pesticide Regulation program
8 led to reduced use of organophosphates of 59% in the first year and 70-83% in later years.
9 Apple BIFS Annual Progress Report – Nov. 2000 (Davis Exh. 8). Another study found net
10 profits – despite higher costs – for pheromone mating disruption because of higher yields and
11 because the apples could be sold in the premium organic market. “Granny Smith Conversions to
12 Organic Show Early Success,” Cal. Agriculture, Vol. 48(6): 36-44 (1994) (Davis Exh. 7).
13 Although EPA assessed the economic losses from selling apples for processed foods instead of in
14 the more profitable fresh apple market, it never considered the higher profits obtainable in the
15 organic food market if alternatives to toxic pesticides were used. Ackerman Decl. ¶¶ 18, 20, 21;
16 E.g., ER 724 at 19; ER 193 at 54.

17 Not only did EPA fail to consider readily available studies documenting the efficacy and
18 cost-effectiveness of mating disruption, but its benefits assessments span a 1-2 year time frame,
19 which is too short for growers to make an orderly transition to alternatives. E.g., ER 712 at iv;
20 ER 724 at 8. In fact, EPA had before it evidence that pheromone mating disruption, although
21 generally not cost-effective in the first year, has cost less than AZM and phosmet and become
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23 ¹² EPA failed to reference or address this and other Washington State University studies in its
24 benefits assessments even though it queried a professor from that university who co-authored at
25 least one report, who participated in the large-scale field test, and who told EPA it had
26 underestimated future use of mating disruption. ER 249 at 24, 52. Moreover, EPA drew upon
other U.S. Department of Agriculture reports, while ignoring this one, and some university
publications, but not these. See, e.g., ER 712 at 62; ER 724 at 26.

1 profitable in the second and third years. See ER 797 (Exh. 5); ER 291; ER 193 at 54. A 1-2 year
2 timeframe is inadequate to assess the costs to growers of losing AZM and phosmet in the face of
3 evidence that a longer time frame is necessary for a smooth transition to alternatives. Cf. EDF v.
4 EPA, 548 F.2d at 1011 (EPA appropriately took into account the transition period to alternative
5 pest control strategies).

6 Investigating the viability of alternatives is an essential component of a risk-benefit
7 analysis. EPA has previously based cancellation decisions, in part, on the availability of
8 nonchemical alternatives, e.g., EDF v. EPA, 510 F.2d at 1302, and courts have faulted agencies
9 for blindly placing faith in their chosen approach without thoroughly and fairly exploring
10 alternatives. See EDF v. EPA, 548 F.2d at 1011 (“Especially in the absence of a serious threat to
11 the nation’s corn, there is no requirement that a pesticide can be suspended only if alternatives to
12 its use are absolutely equivalent in effectiveness.”). For example, in EDF v. EPA, 465 F.2d at
13 539, the D.C. Circuit chastised EPA for refusing to suspend two hazardous pesticides based on
14 their current uses without investigating alternatives brought to its attention:

15 Our conclusion that a mere recitation of a pesticide’s uses does not suffice as an
16 analysis of benefits is fortified where, as here, there was a submission, by EDF,
17 that alternative pest control mechanisms are available for such use. The analysis
18 of benefit requires some consideration of whether such proposed alternatives are
19 available or feasible, or whether such availability is in doubt.

19 In an analogous context, OMB’s cost-benefit guidance requires that regulatory economic
20 analyses consider “the most important alternative approaches to the problem and provide the
21 agency’s reasoning for selecting the proposed regulatory action over such alternatives.” OMB
22 Guidance at 7. Similarly, under NEPA, the Fourth Circuit found an EIS invalid because it
23 overstated recreation benefits of the proposed dam: “For an EIS to serve [its] functions, it is
24 essential that the EIS not be based on misleading economic assumptions.” Hughes River
25 Watershed Council v. Glickman, 81 F.3d 437, 446 (4th Cir. 1996). Likewise, the Seventh Circuit
26 concluded that an Army Corps’ economic analysis relied on inaccurate data, unexplained

1 assumptions, and outdated reports: “If the Corps bases its conclusions on entirely false premises
2 or information . . . we would have difficulty describing its conclusions as reasoned.” Van
3 Abbema v. Fornell, 807 F.2d 633, 639-42 (7th Cir. 1986); see also Johnston v. Davis, 698 F.2d
4 1088, 1094 (10th Cir. 1983) (unqualified use of artificially low discount rate in economic
5 analysis, resulted in misleading EIS that violated NEPA).

6 Dr. Ackerman concludes that EPA’s benefit “figures cannot be credited because they
7 were arrived at without a fair evaluation of the benefits of leading alternatives. If the available
8 alternatives would be almost as profitable as the continued use of AZM and phosmet, then the
9 net benefit that should be attributed to the pesticides is only the small different between the status
10 quo and the next-best alternative.” Ackerman Decl. ¶ 8. A credible economic analysis must
11 consider the full range of alternatives and “[t]o this end, an economist would search the available
12 literature to identify the alternatives and assess their feasibility and relative costs.” Id. ¶ 18. Dr.
13 Ackerman concludes, based on a brief search of the available literature, that EPA “overlooked
14 viable alternative technologies, overstated the costs of using alternatives, and underestimated the
15 benefits of alternative methods.” Id.

16 As the D.C. Circuit stated in rejecting EPA’s refusal to suspend hazardous pesticides
17 based on speculative inferences: “the specific decision must be explained, not merely
18 explainable . . .” EDF v. EPA, 465 F.2d at 539. While EPA clearly believed mating disruption
19 had proven effective and would increase in use, EPA arbitrarily assumed only a limited
20 expansion of mating disruption without reconciling that assumption with available information
21 about its efficacy and decreasing costs over time. By minimizing mating disruption as a viable
22 alternative pest management strategy, EPA improperly predetermined the outcome of many of its
23 benefits assessments. EPA conducted a cursory and incomplete investigation of alternatives to
24 AZM and phosmet that ignored readily available information about alternatives, including
25 studies funded by or made available to EPA. As in Love, without a credible and complete
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1 investigation, “EPA could not do even a rough and ready balancing.” *Id.* at 1362. As a result,
2 EPA failed to provide an adequate justification for its failure to assume greater use of less toxic
3 alternatives and offered no discernible path that explains its prediction that usage of mating
4 disruption would be capped or that the costs from longer AZM and phosmet REIs would be
5 prohibitively high. EPA’s risk-benefit analysis was fatally flawed and falls far short of FIFRA’s
6 mandates.

7 CONCLUSION

8 The Court should declare that EPA acted arbitrarily, capriciously, and contrary to FIFRA
9 in making reregistration decisions that allow continued uses of AZM and phosmet that pose
10 unacceptable risks to workers based on a one-sided analysis of the crop benefits to growers
11 without weighing those benefits against the full risks to workers, their families, and the
12 environment, and by failing to conduct an adequate investigation of alternatives that included
13 readily available published articles, field tests, and other information attesting to the efficacy of
14 less toxic alternative pest control methods. The Court should enjoin EPA to make, on an
15 expeditious basis, new reregistration decisions for AZM and phosmet: (1) that are based on a full
16 risk-benefit balancing; and (2) that incorporate published scientific articles, field tests, and other
17 credible data on alternatives, as well as the public comments submitted on the AZM and
18 phosmet benefits assessments and IREDs.

19 Respectfully submitted this 15th day of July, 2005.

21 /s/ Patti Goldman
22 PATTI GOLDMAN (WSB 24426)
23 ESTHER BARTFELD (WSB 28474)
24 Earthjustice
25 705 Second Avenue, Suite 203
26 Seattle, WA 98104
27 (206) 343-7340
28 (206) 343-1526 [FAX]
pgoldman@earthjustice.org
ebartfeld@earthjustice.org

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3
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SHELLEY DAVIS (DCB 41331)
VIRGINIA RUIZ (DCB 483800)
Farmworker Justice Fund
1010 Vermont Avenue, N.W., Suite 915
Washington, D.C. 20005
(202) 783-2628
(202) 783-2561 [FAX]
sdavis@nclr.org
vruiz@nclr.org

AARON COLANGELO (DCB 468448)
Staff Attorney
Natural Resources Defense Council
1200 New York Avenue, N.W.
Washington, D.C. 20005
(202) 289-6868
(202) 289-1060 [FAX]
acolangelo@nrdc.org

Attorneys for Plaintiffs United Farm Workers of America, AFL-CIO; Sea Mar Community Health Center; Pineros Y Campesinos Unidos Del Noroeste (“PCUN”); Beyond Pesticides; Frente Indigena Oaxaqueno Binacional (“Frente Indigena”), and Arnulfo Lopez.

MICHAEL MEUTER (CSB 161554)
DANIELLA PAYES (CSB 224726)
California Rural Legal Assistance, Inc.
3 Williams Road
Salinas, CA 93905
(831) 757-5221
(831) 757-6212
mmeuter@crla.org
dpayes@crla.org

Attorneys for Plaintiff Arnulfo Lopez

CERTIFICATE OF SERVICE

I am a citizen of the United States and a resident of the State of Washington. I am over 18 years of age and not a party to this action. My business address is 705 Second Avenue, Suite 203, Seattle, Washington 98104.

On July 15, 2005, I served a true and correct copy of:

- 1. MOTION FOR SUMMARY JUDGMENT AND INJUNCTIVE RELIEF;
- 2. NOTICE OF FILING EXCERPTS OF THE ADMINISTRATIVE RECORD WITH ATTACHMENTS;
- 3. DECLARATION OF FRANK ACKERMAN and EXHIBITS;
- 4. DECLARATION OF AARON COLANGELO and EXHIBITS;
- 5. DECLARATION OF SHELLEY DAVIS and EXHIBITS;
- 6. DECLARATION OF DAN G. FORD and EXHIBITS;
- 7. DECLARATION OF PATTI GOLDMAN and EXHIBITS;
- 8. [PROPOSED] ORDER MOTION FOR SUMMARY JUDGMENT AND INJUNCTIVE RELIEF.

on the following parties:

Cynthia J. Morris
 Christina B. Parascandola
 U.S. Department of Justice
 Environment and Natural Resources Division
 Environmental Defense Section
 P.O. Box 23986
 Washington, D.C. 20026-3986

- via facsimile
- via overnight courier
- via first-class U.S. mail
- via hand delivery
- via e-mail
- via electronic service by Clerk

Street Address:
 601 D Street, N.W., Room 8132
 Washington, D.C. 20004
 (202) 616-7554 (Cynthia) (Phone)
 (202) 514-3097 (Christina) (Phone)
 (202) 514-8865 (Fax)
 Attorneys for Federal Defendants

Earthjustice
 705 Second Ave., Suite 203
 Seattle, WA 98104
 (206) 343-7340

1 Eric Andreas
David B. Weinberg
2 Wiley Rein & Fielding LLP, LLP
1776 K Street NW
3 Washington DC 20006
(202) 719.7000 (Phone)
4 (202) 719-7049 (Fax)
Attorneys for Defendant-Intervenor Applicants
5 *Makhteshim Agan of North America, Inc. and Bayer*
Cropscience LP

- via facsimile
- via overnight courier
- via first-class U.S. mail
- via hand delivery
- via e-mail
- via electronic service by Clerk

6
7 James L. Magee
Jeffrey A. Beaver
2801 Alaskan Way, Suite 300
8 Seattle, WA 98121-1128
(206) 624-8300 (Phone)
9 (206) 340-9599 (Fax)
Attorneys for Defendant-Intervenor Applicants
10 *Makhteshim Agan of North America, Inc. and Bayer*
Cropscience LP

- via facsimile
- via overnight courier
- via first-class U.S. mail
- via hand delivery
- via e-mail
- via electronic service by Clerk

11
12 Bethami Auerbach
Lynn L. Bergeson
Bergeson & Campbell
13 1203 Nineteenth Street, N.W., Suite 300
Washington, D.C. 20036-2401
14 (202) 557-3800 (Phone)
(202) 557-3836 (Fax)
15 *Attorneys for Defendant-Intervenor Applicant Gowan*
Company

- via facsimile
- via overnight courier
- via first-class U.S. mail
- via hand delivery
- via e-mail
- via electronic service by Clerk

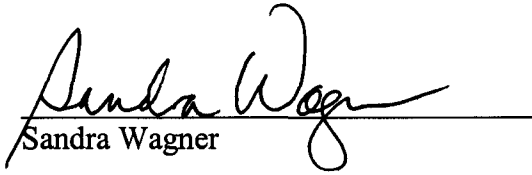
16
17 Beth S. Ginsberg
Stoel Rives
600 University Street, Suite 3600
18 Seattle, WA 98101-3197
(206) 624-0900 (Phone)
19 (206) 386-7500 (Fax)
Attorneys for Defendant-Intervenor-Applicant Gowan
20 *Company*

- via facsimile
- via overnight courier
- via first-class U.S. mail
- via hand delivery
- via e-mail
- via electronic service by Clerk

21
22
23
24
25

1 I, Sandra Wagner, declare under penalty of perjury that the foregoing is true and correct.

2 Executed on this 15th day of July, 2005, at Seattle, Washington.

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4  _____
5 Sandra Wagner

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19
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21
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24
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Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
(206) 343-7340