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11 **BEFORE THE**
12 **CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION**
13 **STATE OF CALIFORNIA**

14 In the Matter of the Accusation Against:

DPR Case No. R-19-001

15 **DOW AGROSCIENCES LLC**

A C C U S A T I O N

16 9330 Zionsville Road
Indianapolis, IN 46268
17 CA registration numbers 62719-72-ZA, 62719-
79-ZA, 62719-220-ZA, 62719-220-ZC, 62719-
18 301-AA, 62719-575-AA, 62719-591-AA,
62719-615-AA, and SLN CA-040026

19
20 Respondent.

21
22 Acting Director of the California Department of Pesticide Regulation, Val Dolcini,
23 (“Complainant”) alleges:

24 **PARTIES**

25 1. Complainant brings this Accusation solely in his official capacity as the Acting
26 Director of the California Department of Pesticide Regulation (the “Department”).

27 2. Respondent Dow AgroSciences LLC (“Dow”) is a Delaware limited liability
28 company with its principal place of business in Indianapolis, Indiana.

REGISTRATIONS

1
2 3. On or about December 27, 2004, the Department issued a registration for a special
3 local need under United States Code, title 7, section 136v(c) to Dow for a pesticide product
4 containing chlorpyrifos called “Lorsban 75WG” for “Control of Cabbage Aphid Infesting
5 Brassica (Cole) Leafy Vegetables.” This registration has a California registration number of SLN
6 CA-040026. This registration remains in effect today.

7 4. On or about January 23, 2014, the Department issued a registration to Dow for a
8 pesticide product containing chlorpyrifos called “Hatchet.” This registration has a California
9 registration number of 62719-220-ZC. The Department has annually renewed that registration,
10 and the registration remains in effect today.

11 5. On or about January 23, 2014, the Department issued a registration to Dow for a
12 pesticide product containing chlorpyrifos called “Lorsban-4E.” This registration has a California
13 registration number of 62719-220-ZA. The Department has annually renewed that registration,
14 and the registration remains in effect today.

15 6. On or about February 6, 2014, the Department issued a registration to Dow for a
16 pesticide product containing chlorpyrifos called “Cobalt Advanced.” This registration has a
17 California registration number of 62719-615-AA. The Department has annually renewed that
18 registration, and the registration remains in effect today.

19 7. On or about February 12, 2014, the Department issued a registration to Dow for a
20 pesticide product containing chlorpyrifos called “Cobalt.” This registration has a California
21 registration number of 62719-575-AA. The Department has annually renewed that registration,
22 and the registration remains in effect today.

23 8. On or about February 12, 2014, the Department issued a registration to Dow for a
24 pesticide product containing chlorpyrifos called “Lock-On Insecticide.” This registration has a
25 California registration number of 62719-79-ZA. The Department has annually renewed that
26 registration, and the registration remains in effect today.

27 9. On or about February 20, 2014, the Department issued a registration to Dow for a
28 pesticide product containing chlorpyrifos called “Lorsban 75WG.” This registration has a

1 California registration number of 62719-301-AA. The Department has annually renewed that
2 registration, and the registration remains in effect today.

3 10. On or about February 21, 2014, the Department issued a registration to Dow for a
4 pesticide product containing chlorpyrifos called “Dursban 50W in Water Soluble Packets.” This
5 registration has a California registration number of 62719-72-ZA. The Department has annually
6 renewed that registration, and the registration remains in effect today.

7 11. On or about March 8, 2017, the Department issued a registration to Dow for a
8 pesticide product containing chlorpyrifos called “Lorsban Advanced.” This registration has a
9 California registration number of 62719-591-AA. The Department has annually renewed that
10 registration, and the registration remains in effect today.

11 **JURISDICTION**

12 12. Food and Agricultural Code section 12825 provides that the Department may cancel
13 the registration of any pesticide product for specified grounds after a hearing.

14 **STATUTORY AND REGULATORY PROVISIONS**

15 *Registration*

16 13. “Every manufacturer of, importer of, or dealer in any pesticide, except a person that
17 sells any raw material to a manufacturer of any pesticide or a dealer or agent that sells any
18 pesticide that has been registered by the manufacturer or wholesaler, shall obtain a certificate of
19 registration from the department before the pesticide is offered for sale.” (Food & Agr. Code, §
20 12811.)

21 14. “Every registration expires on December 31st of each year except when renewal is
22 applied for within one month thereafter in the manner which is provided for registration.” (Food
23 & Agr. Code, § 12817.)

24 15. “A State may provide registration for additional uses of federally registered pesticides
25 formulated for distribution and use within that State to meet special local needs in accord with the
26 purposes of this subchapter and if registration for such use has not previously been denied,
27 disapproved, or canceled by the Administrator. Such registration shall be deemed registration
28 under section 136a of this title for all purposes of this subchapter, but shall authorize distribution

1 and use only within such State.” (7 U.S.C. § 136v(c)(1).)

2 *Continuous Evaluation*

3 16. “The director shall endeavor to eliminate from use in the state any pesticide that
4 endangers the agricultural or nonagricultural environment, is not beneficial for the purposes for
5 which it is sold, or is misrepresented. In carrying out this responsibility, the director shall
6 develop an orderly program for the continuous evaluation of all pesticides actually registered. [¶]
7 Before a substance is registered as a pesticide for the first time, there shall be a thorough and
8 timely evaluation in accordance with this section. Appropriate restrictions may be placed upon its
9 use including, but not limited to, limitations on quantity, area, and manner of application. All
10 pesticides for which renewal of registration is sought also shall be evaluated in accordance with
11 this section. [¶] The director may establish specific criteria to evaluate a pesticide with regard to
12 the factors listed in Section 12825. The department may establish performance standards and
13 tests that are to be conducted or financed, or both conducted and financed, by the registrants,
14 applicants for registration, or parties interested in the registration of those pesticides.” (Food &
15 Agr. Code, § 12824.)

16 *Cancellation*

17 17. “Pursuant to Section 12824, the director, after hearing, may cancel the registration of,
18 or refuse to register, any pesticide:

- 19 (a) That has demonstrated serious uncontrollable adverse effects either within or
20 outside the agricultural environment.
- 21 (b) The use of which is of less public value or greater detriment to the environment
22 than the benefit received by its use.
- 23 (c) For which there is a reasonable, effective, and practicable alternate material or
24 procedure that is demonstrably less destructive to the environment.
- 25 (d) That, when properly used, is detrimental to vegetation, except weeds, to domestic
26 animals, or to the public health and safety.
- 27 (e) That is of little or no value for the purpose for which it is intended.
- 28 (f) Concerning which any false or misleading statement is made or implied by the

1 registrant or his or her agent, either verbally or in writing, or in the form of any
2 advertising literature.

3 (g) For which the director determines the registrant has failed to report an adverse
4 effect or risk as required by Section 12825.5.

5 (h) If the director determines that the registrant has failed to comply with the
6 requirements of a reevaluation or to submit the data required as part of the
7 reevaluation of the registrant's product.

8 (i) That is required to be registered pursuant to the federal Insecticide, Fungicide, and
9 Rodenticide Act (7 U.S.C. Sec. 136 et seq.) and that is not so registered.

10 In making a determination pursuant to this section, the director may require those practical
11 demonstrations that are necessary to determine the facts.” (Food & Agr. Code, § 12825.)

12 18. “If the director has reason to believe that any of the conditions stated in Section
13 12825 are applicable to any registered pesticide and that the use or continued use of that pesticide
14 constitutes an immediate substantial danger to persons or to the environment, the director, after
15 notice to the registrant, may suspend the registration of that pesticide pending a hearing and final
16 decision. If an accusation pursuant to Chapter 5 (commencing with Section 11500) of Part 1 of
17 Division 3 of Title 2 of the Government Code is not filed within 10 days from the date of the
18 notice, the suspension shall be terminated.” (Food & Agr. Code, § 12826.)

19 19. “The director may cancel a certificate of registration, or, refuse to issue certification
20 to any manufacturer, importer, or dealer in any pesticide that repeatedly violates any of the
21 provisions of this chapter or the regulations of the director. [¶] The proceedings shall be
22 conducted in accordance with Chapter 5 (commencing with Section 11500) of Part 1 of Division
23 3 of Title 2 of the Government Code. The director has all the powers that are granted therein.”
24 (Food & Agr. Code, § 12827.)

25 *Restricted Materials*

26 20. “The director shall, by regulation, designate and establish as necessary to carry out
27 the purposes of this division, a list of restricted materials based upon, but not limited to, any of
28 the following criteria:

- 1 (a) Danger of impairment of public health.
- 2 (b) Hazards to applicators and farmworkers.
- 3 (c) Hazards to domestic animals, including honeybees, or to crops from direct
- 4 application or drift.
- 5 (d) Hazard to the environment from drift onto streams, lakes, and wildlife sanctuaries.
- 6 (e) Hazards related to persistent residues in the soil resulting ultimately in
- 7 contamination of the air, waterways, estuaries or lakes, with consequent damage to
- 8 fish, wild birds, and other wildlife.
- 9 (f) Hazards to subsequent crops through persistent soil residues.” (Food & Agr.
- 10 Code, § 14004.5.)

11 21. Chlorpyrifos, when labeled for the production of an agricultural commodity, is

12 designated as a restricted material. (Cal. Code Regs., tit. 3, § 6400, subd. (e).)

13 22. A restricted material may only be used by or under the supervision of a certified

14 applicator and under a permit issued by a County Agricultural Commissioner. (Food & Agr.

15 Code, §§ 14006.5, 14015; see also Cal Code Regs., tit. 3, §§ 6400-44 [limitations and permit

16 system for restricted materials].)

17 *Toxic Air Contaminant*

18 23. “For purposes of this article, ‘toxic air contaminant’ means an air pollutant that may

19 cause or contribute to an increase in mortality or an increase in serious illness, or which may pose

20 a present or potential hazard to human health.” (Food & Agr. Code, § 14021, subd. (b).)

21 24. “A pesticide shall be identified as a toxic air contaminant if its concentrations in

22 ambient air are greater than the following levels (for the purposes of this Section, a threshold is

23 defined as the dose of a chemical below which no adverse effect occurs): [¶] (a) For pesticides

24 which have thresholds for adverse health effects, this level shall be ten-fold below the air

25 concentration which has been determined by the director to be adequately protective of human

26 health. [¶] (b) For pesticides which do not have thresholds for adverse health effects, this level

27 shall be equivalent to the air concentration which would result in a ten-fold lower risk than that

28 which has been determined by the director to be a negligible risk.” (Cal. Code Regs., tit. 3, §

1 6864.)

2 25. After review by the Office of Environmental Human Health Assessment
3 (“OEHHA”), the California Air Resources Board (“ARB”), and the independent Scientific
4 Review Panel, followed by notice and comment rulemaking, and pursuant to Food and
5 Agricultural Code sections 14022 and 14023, the Department listed chlorpyrifos as a toxic air
6 contaminant effective April 1, 2019. (Cal. Code Regs., tit. 3, § 6860, subd. (a).)

7 26. “For those pesticides for which a need for control measures has been determined
8 pursuant to subdivision (e) or (f) of Section 14023 and pursuant to provisions of this code, the
9 director, in consultation with the agricultural commissioners, air pollution control districts, and air
10 quality management districts in the affected counties, shall develop control measures designed to
11 reduce emissions sufficiently so that the source will not expose the public to the levels of
12 exposure that may cause or contribute to significant adverse health effects.” (Food & Agr. Code,
13 § 14024, subd. (a).) These control measures may include cancellation of registrations. (*Id.*, §
14 14024, subd. (b)(6).) The Department “shall adopt control measures to protect human health”
15 within two years. (*Id.*, § 14024, subd. (c)(1).)

16 **CAUSE FOR CANCELLATION**

17 27. Chlorpyrifos (*O,O*-diethyl-*O*-3,5,6-trichloro-2-pyridyl phosphorothioate) is a broad-
18 spectrum, chlorinated organophosphate pesticide. Chlorpyrifos operates by inhibiting the
19 functions of the nervous system. This is how it kills insects. Acute exposure can have similar
20 effects on humans, resulting in symptoms such as sweating, salivation, vomiting, diarrhea, low
21 blood pressure and heart rate, seizures, and death. These effects are caused by the inhibition of an
22 important enzyme in both insects and mammals called acetylcholinesterase.

23 28. Historically, the Department has analyzed and mitigated the human health effects of
24 chlorpyrifos by focusing and relying on data relating to acetylcholinesterase inhibition caused by
25 chlorpyrifos exposure.

26 29. Recent research has shown that chlorpyrifos also causes development neurotoxicity in
27 children and sensitive populations at exposure levels substantially lower than those that induce
28 overt toxicity or inhibit acetylcholinesterase activity. Developmental neurotoxicity effects

1 include adverse effects on cognition, attention span, motor control, anxiety, and the structure of
2 the brain.

3 30. In 2016, 2017, and 2018, five in vivo animal studies were published in peer-reviewed
4 journals that analyzed the developmental neurotoxicity effects of chlorpyrifos. The lowest
5 observed effect levels (the lowest dose at which there is an observed toxic effect) or no observed
6 effect levels (the highest dose at which there is not an observable toxic effect) of these studies
7 were much lower – up to ten times lower – than those in studies focused only on
8 acetylcholinesterase inhibition effects. These recent in vivo animal studies, along with
9 epidemiological studies, formed the basis for the Department’s evaluation of chlorpyrifos as a
10 toxic air contaminant – which was conducted in consultation with OEHHA and ARB, and was
11 reviewed by the Scientific Review Panel – and for the establishment of developmental
12 neurotoxicity as the critical endpoint for chlorpyrifos.

13 31. In 2017, the Developmental and Reproductive Toxicant Identification Committee, a
14 group of expert scientists appointed by the Governor under Proposition 65, independently
15 reviewed whether or not chlorpyrifos has been clearly shown by scientifically valid testing
16 according to generally accepted principles to cause developmental toxicity and thus should be
17 listed under Proposition 65. Their unanimous decision was to list chlorpyrifos as a chemical
18 known to the State of California to cause developmental toxicity.

19 32. In June 2018, the Department submitted and presented its toxic air contaminant
20 evaluation findings for chlorpyrifos to California’s Scientific Review Panel. OEHHA also
21 prepared and submitted findings to the Scientific Review Panel, which supported identifying
22 chlorpyrifos as a toxic air contaminant and establishing developmental neurotoxicity as the
23 critical endpoint for chlorpyrifos. The Scientific Review Panel held public meetings to consider
24 the information on December 13, 2017, January 23, 2018, March 2, 2018, June 12, 2018, and July
25 30, 2018.

26 33. The Department issued its “Final Toxic Air Contaminant Evaluation of Chlorpyrifos
27 and Risk Characterization of Spray Drift, Dietary, and Aggregate Exposures to Residential
28 Bystanders” (“Risk Characterization Document”) in July 2018. The Department thoroughly

1 evaluated the developmental neurotoxicity effects of chlorpyrifos in the Risk Characterization
2 Document.

3 34. The Scientific Review Panel provided its formal findings to the Department after its
4 July 30, 2018 meeting. Those findings included that “[t]he estimated bystander exposures to
5 Chlorpyrifos are at levels that cause concern about the associated health risks.” The Scientific
6 Review Panel concluded that the Department’s assessment of developmental neurotoxicity risks
7 from chlorpyrifos was “based on sound scientific knowledge, and represents a balanced
8 assessment of our current scientific understanding.” The Scientific Review Panel recommended
9 that chlorpyrifos be listed as a toxic air contaminant based on the Department’s assessment of
10 developmental neurotoxicity risks.

11 35. In November 2018, the Department released revised interim recommended permit
12 conditions for chlorpyrifos to County Agricultural Commissioners. Those recommendations
13 became effective January 1, 2019 and include prohibiting aerial applications, limiting uses to
14 critical uses, and requiring buffer zones of one quarter mile. Buffer zones are the area that
15 surrounds a pesticide application block in which certain activities are restricted for a specified
16 period of time.

17 36. On May 28, 2019, after consultation with OEHHA, ARB, the California Department
18 of Food and Agriculture, and local air pollution control districts and air quality management
19 districts, the Department issued a Risk Management Directive for chlorpyrifos, based on its July
20 2018 Risk Characterization Document for chlorpyrifos and the Scientific Review Panel’s review
21 of the 2018 Risk Characterization Document and findings. The Risk Management Directive set
22 the reference concentration and reference dose for chlorpyrifos, which define the levels at or
23 below which exposure to chlorpyrifos would have negligible risk to human health.

24 37. The Department calculated a reference concentration of 4.05 micrograms per cubic
25 meter for inhalation exposure to chlorpyrifos and a reference dose for aggregate exposure of
26 0.0001 milligrams per kilogram per day for dietary exposure to chlorpyrifos based on
27 developmental neurotoxicity risks, taking into account uncertainties about translating these
28 animal effects to human effects as well as uncertainties about heightened effects on children and

1 other sensitive populations through the use of standard uncertainty factors.

2 38. One human health risk is due to inhalation, incidental hand-to-mouth, and dermal
3 exposures to chlorpyrifos when it is applied by way of ground application (that is, “drift”). At the
4 reference concentration calculated by the Department, the inhalation risks from drift caused by
5 the vast majority of chlorpyrifos applications can only be minimized to an acceptable level using
6 buffer zones greater than a quarter mile, distances which are not required by the product labels or
7 recommended by the Department’s interim recommended permit conditions. Aerial applications
8 of chlorpyrifos would also result in unacceptable exposure from drift, but are should not occur
9 under the Department’s interim recommended permit conditions.

10 39. Because of these inhalation risks, the use of the pesticide products registered by Dow
11 named Cobalt, Cobalt Advanced, Hatchet, Lock-On Insecticide, Lorsban 75WG, Lorsban
12 Advanced, and Lorsban-4E, and the special local needs registration for Lorsban 75WG for
13 Control of Cabbage Aphid Infesting Brassica (Cole) Leafy Vegetables are detrimental to public
14 health, and cancellation of those registrations is appropriate under Food and Agricultural Code
15 section 12825, subdivision (d).

16 40. Another human health risk is due to dietary ingestion of chlorpyrifos that remains on
17 agricultural produce as a residue after application of chlorpyrifos products. The amount of
18 residue that remains on some commonly consumed agricultural produce after application of
19 chlorpyrifos is well above the reference dose calculated by the Department when taking into
20 account consumption of the produce.

21 41. Because of these dietary risks (separate or together from the inhalation risks), the use
22 of the pesticide products registered by Dow named Hatchet, Lorsban 75WG, Lorsban Advanced,
23 and Lorsban-4E are detrimental to public health, and cancellation of those registrations is
24 appropriate under Food and Agricultural Code section 12825, subdivision (d).


25 42. The product Dursban 50W in Water Soluble Packets does not have any uses that are
26 proper under the product label registered with the Department and the Department’s interim
27 recommended permit conditions, and cancellation of that registration is appropriate under Food
28 and Agricultural Code section 12825, subdivision (e).

1 **PRAYER**

2 **WHEREFORE**, Complainant requests that a hearing be held on the matters herein alleged
3 and that, following the hearing, the California Department of Pesticide Regulation issue a
4 decision:

- 5 1. Cancelling the following registrations, effective immediately:
- 6 • Cobalt (CA # 62719-575-AA);
 - 7 • Cobalt Advanced (CA # 62719-615-AA)
 - 8 • Dursban 50W in Water Soluble Packets (CA # 62719-72-ZA);
 - 9 • Hatchet (CA # 62719-220-ZC);
 - 10 • Lock-On Insecticide (CA #62719-79-ZA);
 - 11 • Lorsban 75WG (CA # 62719-301-AA);
 - 12 • Lorsban Advanced (CA # 62719-591-AA);
 - 13 • Lorsban-4E (CA # 62719-220-ZA); and
 - 14 • the special local needs registration for Lorsban 75WG for Control of Cabbage Aphid
15 Infesting Brassica (Cole) Leafy Vegetables (CA SLN # CA-040026); and
- 16 2. Taking such other and further action as deemed necessary and proper.

17 Dated: August 14, 2019

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19 _____
20 VAL DOLCINI
21 Acting Director
22 California Department of Pesticide
23 Regulation
24 State of California
25 *Complainant*

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