

INITIAL STATEMENT OF REASONS AND PUBLIC REPORT
DEPARTMENT OF PESTICIDE REGULATION

Title 3, California Code of Regulations
Amend Sections 6000, 6400, 6502, and 6784(b);
Amend sections 6450, 6450.1, 6450.2, and 6450.3, and Renumber to
Sections 6447, 6447.1, 6447.2, and 6447.3; and
Adopt Sections 6445, 6445.5, 6448, 6448.1, 6449, 6449.1, 6450, 6450.1,
6450.2, 6451, 6451.1, 6452, 6452.1, 6452.2, 6452.3, and 6454.4
Pertaining to Field Fumigant Emissions Reduction

This is the Initial Statement of Reasons (ISR) required by Government Code section 11346.2, and the public report specified in section 6110 of Title 3, California Code of Regulations (3 CCR). Section 6110 meets the requirements of Title 14, CCR section 15252, and Public Resources Code section 21080.5 pertaining to certified state regulatory programs under the California Environmental Quality Act.

SUMMARY OF PROPOSED ACTION/PESTICIDE REGULATORY PROGRAM ACTIVITIES
AFFECTED

The Department of Pesticide Regulation (DPR) proposes to amend 3 CCR sections 6000, 6400, 6502, and 6784(b); amend sections 6450, 6450.1, 6450.2, and 6450.3, and renumber to sections 6447, 6447.1, 6447.2, and 6447.3; and adopt sections 6445, 6445.5, 6448, 6448.1, 6449, 6449.1, 6450, 6450.1, 6450.2, 6451, 6451.1, 6452, 6452.1, 6452.2, 6452.3, and 6454.4. The pesticide regulatory program activities that will be affected by the proposal are those pertaining to environmental monitoring and pesticide enforcement. In summary, the proposed action would adopt regulations to reduce smog-producing emissions from field fumigant use and, thereby, will achieve court-ordered state air quality objectives for pesticides.

SPECIFIC PURPOSE AND FACTUAL BASIS

State and federal law mandates that DPR protect human health and the environment by regulating pesticide sales and use and by fostering reduced-risk pest management.

In 2006, a federal court ordered DPR to adopt regulations by January 2008 to achieve a 20 percent reduction of pesticide volatile organic compound (VOC) emissions from 1991 levels in certain regions that do not meet the one-hour ozone standards [ozone nonattainment areas (NAAs)] (Court Order concerning remedies, No. Civ. S-04-822 [E.D. Cal. filed April 6, 2006], enforcing *El Comité Para el Bienestar de Earlimart v. Helliker*, 416 F. Supp. 2d 912 [E.D. Cal. 2006]). These proposed regulations comply with the court order. In a parallel, but unrelated action taken in April 2004, the U.S. Environmental Protection Agency (U.S. EPA) issued a more stringent eight-hour ozone standard. California will submit additional State Implementation Plan (SIP) measures in 2007 to meet the new standard, which will include these regulations.

The proposed regulations were designed to achieve a 20 percent reduction from the 1991 levels in all NAAs, as ordered by the court. Except for fumigation methods and licensing requirements, the

proposed regulations will only apply to NAAs. The proposed restrictions on the fumigation methods and licensing requirements will apply statewide for uniformity and enforceability. Otherwise, implementation of the fumigation and licensing requirements would be difficult because some counties contain both NAAs and areas that are in attainment. This proposal provides for allocation among registrants of fumigant emissions in the San Joaquin, Southeast Desert, and Ventura NAAs. It also prohibits the sale of fumigants for use in those areas except in accordance with an allocation. This is designed to ensure that the total fumigant emissions are brought down to and remain at or below the limits on field fumigant emissions established by the regulations. The registrants will be required to track and report their fumigant emissions within each of the five NAAs, and limit their emissions to their allocations in areas where DPR has allocated fumigant emissions. The registrants will differentiate the emissions resulting from different application methods. The proposed regulations will specify allowable application methods and the percentage of emissions associated with each fumigant and method. If a fumigant registrant exceeds its fumigant emissions allocation or fails to report its fumigant emissions, DPR may seek civil penalties of up to \$10,000 per violation. For subsequent violations, DPR may seek civil penalties of up to \$25,000 per violation and cancel the product registration. If the Sacramento Metro or South Coast NAAs exceed their fumigant emission limits, the regulations will require the Director to establish allocations for those areas as well. In addition, the Director may establish allocations in the Sacramento Metro and South Coast NAAs if it is determined that such allocations are necessary to prevent those areas from exceeding their fumigant emission limits in the future.

VOCs can contribute to the formation of ground-level ozone, which is harmful to human health and vegetation when present at high enough concentrations. The federal Clean Air Act requires each state to submit an SIP for achieving and maintaining federal ambient air quality standards for ozone. An ozone NAA is a geographical region in California that does not meet either federal or state ambient air quality standards. U.S. EPA designates NAAs in Title 40, Code of Federal Regulations (CFR) section 81.305. In 1994, California's Air Resources Board and DPR developed a plan to reduce pesticidal sources of VOCs in NAAs as part of the California SIP to meet the one-hour ozone standard. Under the 1994 SIP, DPR committed to reduce VOC emissions from agricultural applications of pesticides by specified amounts within specified time periods for five NAAs--Sacramento Metropolitan, San Joaquin Valley, South Coast, Southeast Desert, and Ventura.

A report of 2004 pesticide VOC emissions in five NAAs (DPR's *2006 Update of Volatile Organic Compound Emission Inventory* - see Documents Relied Upon section of this ISR) showed decreases for two of the NAAs and increases for the others compared to 2003 data. The Sacramento Metropolitan and South Coast NAAs continue to meet the 1994 SIP targets, but significant efforts are needed to meet the SIP goals in the San Joaquin, Ventura, and Southeast Desert NAAs.

Regulation of fumigant use presents a unique challenge and opportunity for reducing pesticide VOC emissions. Fumigant use accounts for over 40 percent of the pesticide VOCs in the San Joaquin Valley NAA, and 80 percent or more for the Southeast Desert and Ventura NAAs. There are only seven fumigants used, each with distinct and specific pest control properties. Because fumigant products typically do not contain components other than the active ingredient,

they cannot be reformulated to reduce VOC emissions, as is being done with other pesticide products.

Measured in pounds, fumigants represent approximately 20 percent of all agricultural pesticides used in California. Some of the most widely used fumigants include methyl bromide, 1,3-Dichloropropene, chloropicrin, dazomet, sodium tetrathiocarbonate, and pesticides that generate methyl isothiocyanate (MITC), such as metam-sodium and potassium N-methyldithiocarbamate, which also is known by the chemical name metam-potassium. Before planting, farmers use fumigants to control disease, weeds, and pests in the soil. Fumigants are also used to disinfest structures and harvested commodities.

Fumigants are usually applied at a rate of several hundred pounds per acre, compared to a few pounds per acre for most other pesticides, so small proportional decreases in application or emission rates have a greater absolute effect on fumigant emissions. Monitoring data shows that different fumigation methods emit different amounts of VOCs to the air. Based on a memorandum dated April 6, 2007, to John Sanders from Terrell Barry, Frank Spurlock, and Randy Segawa, *"Pesticide Volatile Organic Compound Emission Adjustments for Field Conditions and Estimated Volatile Organic Compound Reductions – Initial Estimates"* (Barry, et. al. memorandum) (see Documents Relied Upon section of this ISR), DPR can reduce fumigant VOC emissions via changes in application methods and elimination of certain "high emission" methods statewide. In 2008, DPR will place some, and potentially all, seven fumigant active ingredients into reevaluation in order to obtain additional emission data for these fumigation methods.

DPR has modeled the proposed regulatory action after existing methyl bromide regulations by placing general and minimum standards for fumigant chemicals and restricting fumigation methods. Although the proposed regulations are modeled after the existing methyl bromide regulations, changes are also being made to those regulations to achieve VOC reductions.

DPR proposes to specify in regulation the total pounds of field fumigant VOC emissions allowed in the NAAs to achieve a 20 percent reduction. DPR will determine a percentage of VOC emissions (percent of pounds applied) to be assigned to each fumigant application method and the method used to calculate emissions. Fumigant applicators would be required to maintain records of fumigant applications in each of the five NAAs, and forward them to product registrants and DPR. Registrants would be required to track and report to DPR the fumigant emissions in each of the five NAAs, and ensure that the emission limits are not exceeded. This regulatory approach is similar to that currently used by 1,3-Dichloropropene (1,3-D) registrants to track 1,3-D emissions (see *California Management Plan: 1,3-Dichloropropene* in Documents Relied Upon section of this ISR).

Additionally, DPR will reduce and document field fumigant VOC emissions by placing use restrictions on field soil fumigation methods, requiring fumigation applications to be made by a pest control business utilizing a qualified applicator holding a license in the proposed subcategory of field fumigation pest control, and requiring persons applying the fumigants in the five NAAs to keep records of each application, and report monthly to the registrant and DPR.

DPR's proposed regulations do not address post-harvest commodity and other types of fumigations, such as raised-tarpaulin nursery of less than one acre, golf courses, tree-site (tree hole), green houses, etc., because such fumigations have a negligible effect on VOC emissions and doing so would significantly add to the complexity of the regulations. In addition, the proposed regulations do not address structural applications because the fumigants used (methyl bromide and sulfuryl fluoride) are either being phased-out (methyl bromide) or not a VOC (sulfuryl fluoride). The intent of the proposed regulations is to achieve a 20 percent VOC emission reduction in the NAAs from field fumigation use. However, if the goals cannot be met, DPR will consider adopting additional regulations in these areas.

In August 2006, DPR held three public workshops in Oxnard, Parlier, and Sacramento to discuss the fumigant regulations and other options to reduce pesticide VOC emission, and to solicit comments on the various implementation options. DPR provided a concept paper "*Pesticide Air Initiative: Strategy to Reduce Toxic and Volatile Organic Compound Emissions from Agricultural and Commercial Structural Pesticides – Concept Paper*" (see Documents Relied Upon section of this ISR) at that time outlining options for meeting new SIP commitments.

The proposed regulatory action pertains to the seven fumigant active ingredients listed below. Common brand names and/or alternative chemical names are given in parentheses as an aid to identification.

- Methyl bromide
- 1,3-Dichloropropene (Telone, Inline)
- Chloropicrin
- Metam-sodium (Vapam, Sectagon)
- Potassium N-methyldithiocarbamate, also known as metam-potassium (K-Pam)
- Dazomet (Basamid)
- Sodium tetrathiocarbonate (Enzone)

After extensive discussions with DPR scientific staff, consultation with scientists representing other agencies, and solicitation of comment from stakeholders representing the regulated public and public interest groups, DPR proposes the following regulatory action.

Amend section 6000 (Definitions)

Propose to amend the existing "buffer zone" definition in section 6000 to reflect the correct section numbers where the term buffer zone applies.

Propose to add the definition of "volatile organic compound." The definition, as taken from the Title 40, CFR section 51.100, is needed to clarify this proposed regulatory action.

Amend section 6400(e) (Restricted Materials)

Current California law and regulations provide for a list of pesticides for which special considerations are indicated. Generally, these restricted materials may only be used by certified applicators that have demonstrated their knowledge and skills to properly use pesticides, and under a permit issued by the county agricultural commissioner (CAC). This permit process is unique to California.

Food and Agricultural Code (FAC) section 14004.5 authorizes the Director, by regulation, to designate and establish a list of restricted materials based upon criteria which includes danger of impairment of public health. Designating a chemical as a state restricted material will provide an effective mechanism which allows CACs to implement feasible mitigation measures through permit conditions.

Six of the seven fumigants subject to this regulatory proposal are currently listed in section 6400 as restricted materials. Thus, before growers or pest control businesses can buy or use methyl bromide, 1,3-Dichloropropene (1,3-D), metam-sodium, potassium N-methyldithiocarbamate (metam-potassium), dazomet, and chloropicrin, they must obtain a permit from the CAC. In addition, they must be certified by DPR as having specialized training in handling and use of pesticides.

Sodium tetrathiocarbonate (Enzone) is not currently designated as a restricted material. The proposed regulatory action would add this chemical to section 6400(e). Addition of the chemical to the restricted materials list will maintain regulatory consistency with other fumigants.

Additionally, the common brand name Basamid is being added to the current restricted material dazomet as an aid to identification.

Adopt section 6445 (Fumigation-Handling Activities)

DPR proposes to move the current list of fumigation-handling activities that are contained in the introductory paragraph of existing section 6450 (Chloropicrin and Methyl Bromide-Field Fumigation) and place it in proposed section 6445. Currently, section 6450 applies to chloropicrin and methyl bromide field fumigation. Since the proposed regulatory action involves additional fumigant chemicals, "fumigation-handling activities" is best placed in a new section applicable to all of them.

DPR also proposes to add new text to section 6445 that is not in existing section 6450, expanding the list of fumigation handling activities to include "assisting in chemigation application and leak repair (chemigating)," "or chemigation equipment" (removal prior to the expiration of the restricted entry interval), and "and other handling activities specified by the label." DPR has determined that these additions are necessary to accommodate activities that could be inadvertently excluded by the current list.

Adopt section 6445.5 (Field Fumigation Licensing Requirements)

Effective January 2009, the proposed section would require all fumigation applications to be made by a licensed pest control business. The operator of the property will still be the permittee under the restricted materials permit issued by the local CAC, but the application will be made by a licensed pest control business. The business must have a qualified applicator licensee (QAL) holding a license to perform work in a newly established subcategory "O" pertaining to field fumigation pest control. In addition, a qualified applicator holder licensed or certified in the proposed subcategory "O" must be present at the application site during fumigation handling activities, except chemigation equipment removal and tarpaulin cutting and removal.

Currently, fumigation applications may be made by private applicators. "Private applicator," as defined in 3 CCR section 6000, is an individual who uses or supervises the use of a pesticide for the purpose of producing an agricultural commodity on property owned, leased, or rented by him/her or his/her employer. Limiting applications to licensed pest control businesses utilizing a QAL holding a license in the subcategory of field fumigation pest control will aid in the reduction of VOC emissions by ensuring that applicators have the specialized training and knowledge required for properly conducting fumigations. In addition, tracking and reporting of fumigant emissions will be more effective and manageable since it will require a smaller population to report their emissions, who have more experience in meeting reporting requirements.

Renumber section 6450 (Chloropicrin and Methyl Bromide-Field Fumigation) to section 6447 and amend it with the following proposed changes.

DPR proposes to delete "chloropicrin and" from the section title. Chloropicrin fumigation will be addressed in proposed sections 6449 and 6449.1. "General Requirements" will be added to the section title for clarification.

In the introductory paragraph of the section, DPR proposes to clarify "tree holes" by placing the term in parentheses following the term "tree-site."

From the introductory paragraph of the section, DPR will also delete "use requirements" and "singly and in combination with chloropicrin or any other pesticide or warning agent" since chloropicrin fumigation will be addressed in proposed sections 6449-6449.1. In addition, DPR proposes to delete the list of fumigation-handling activities. Fumigation-handling activities, as previously discussed, will be in proposed section 6445.

In subsection (a), DPR proposes to change 6450.1 to 6447.1 and 6450.2 to 6447.2 to reflect the proposed renumbering of that section. Similarly in subsection (f), DPR proposes to change 6450.3 to 6447.3. Also in subsection (a), as well as in subsection (c), the phrase "if applicable" has been deleted since all methyl bromide fumigation methods will now require tarpaulins, and a description of the tarpaulin repair response plan is required.

In existing subsection (e), DPR proposes to allow "a reduced emission field fumigation method approved pursuant to section 6452" as another exception to required tarpaulin permeability factors. Also in subsection (e), DPR proposes to replace the words "between" and "and" with "of no less than" and "no more than" for clarity.

Renumber section 6450.1. (Methyl Bromide Field Fumigation Notification Requirements to section 6447.1 and amend it as follows.

In this section, DPR will make two minor grammatical changes, adding the word "new" in subsection (a)(3), and in subsection (b)(1), replacing "from" with "of."

Renumber section 6450.2. (Methyl Bromide Field Fumigation Buffer Zone Requirements) to section 6447.2 and amend it as follows.

In proposed subsection (a), the publication date for the *Methyl Bromide Field Fumigation Buffer Zone Determination* document, which is already incorporated by reference into regulation, is being revised to "Rev. 4/07." The document has been updated to remove the nontarpaulin fumigation methods to reflect proposed changes in methyl bromide field fumigation methods in section 6447.3. A copy of the revised document is included in the rulemaking file and is available upon request from DPR.

DPR also proposes to change references to sections 6450.1 and 6450.2, to 6447.1 and 6447.2, respectively, to reflect the renumbering of those sections.

Renumber section 6450.3. (Methyl Bromide Field Fumigation Methods) to section 6447.3 and amend it as follows.

Existing section 6450.3 states that fumigations shall be made only in accordance with certain restrictions. The regulation specifies criteria that must be complied with for six fumigation methods.

DPR proposes to revise subsection (a) to read:

The methyl bromide field soil fumigation must be made using only the methods listed in this section. In addition to labeling requirements for each of these methods, the following requirements shall apply.

The proposed change will clarify that a fumigation must be made using only the application methods listed in existing section 6450.3, instead of "in accordance with the following restrictions..." as is currently used.

Subsection (a) needs to include a reference to labeling requirements. A product label includes instructions and precautions that must be followed. Labeling is under the jurisdiction of U.S. EPA. U.S. EPA-accepted labeling always includes the statement, "It is a violation of Federal law to use

this product in any manner inconsistent with its labeling." A state cannot require registrants to make changes to labeling, but it can establish additional restrictions via regulation. This is what DPR has done previously with existing sections 6450-6450.3 and proposes to do for those (renumbered) sections and the newly proposed sections pertaining to the other fumigants subject to this regulatory action. DPR has drafted the proposed regulations after reviewing fumigant labeling in order to be consistent with label-required directions for use pertaining to fumigation methods.

Other existing language from subsection (a) will be reworded and moved to proposed subsection (c) to read:

Notwithstanding subsection (a), a reduced volatile organic compound emission field fumigation method approved pursuant to section 6452 or a method for experimental research purposes pursuant to a valid research authorization issued according to section 6260 may be allowed.

Proposed section 6452 is discussed later in this ISR.

As discussed previously in this ISR, monitoring data shows that different fumigation methods emit different amounts to the air. Therefore, the proposed regulatory action will rely in part on changes to fumigation methods and elimination of certain "high emission" methods statewide to reduce VOC emissions.

DPR proposes to delete (a)(1) nontarpaulin shallow/bed, (a)(2) nontarpaulin/deep broadcast, and (a)(6) drip system - hot gas application methods.

DPR will retain the existing field fumigation methods that utilize tarpaulins. These include (a)(3) tarpaulin/shallow/broadcast [renumbered to (1)], tarpaulin/shallow/bed [renumbered to (2)], and (a)(5) tarpaulin/deep/broadcast [renumbered to (3)] methods as currently listed in section 6450.3.

The emissions associated with the application methods deleted and retained are described in the Barry, et. al. memorandum.

For clarity purposes, DPR proposes in the requirements for the tarpaulin/shallow broadcast method to change injection depth language in subsection (a)(1)(C), from "between" with " at least" (10) and "no greater than" (15 inches).

Adopt section 6448 (1,3-Dichloropropene Field Fumigation – General Requirements)

In the introductory paragraph of section 6448, DPR proposes to clarify that for the purposes of this section and sections 6448.1 and 6448.2, field fumigation does not apply to raised-tarpaulin nursery fumigations of less than one acre. The proposed regulatory action focuses on preplant field soil fumigation pertaining to the production of agricultural commodities.

Adopt section 6448.1 (1,3-Dichloropropene Field Fumigation Methods)

DPR relies on field monitoring studies to estimate fumigant emissions. The emission of fumigants under field conditions is a complex process that varies with method of application, soil characteristics, weather conditions, and other factors. The monitoring studies show that VOC emissions can be reduced by controlling or changing key application parameters. To ensure that the emissions estimates are representative, DPR proposes to establish requirements for maximum application rate, application depth, tarpaulin type, soil moisture, and other critical parameters based on application equipment, procedures, and conditions of the monitoring studies. These parameters are described in the Barry, et. al. memorandum.

In proposed subsection (a), DPR has limited application rates to 332 pounds per acre for the mechanical soil injection method because this was the highest application rate used in the monitoring studies to determine emission rates.

For subsection (b), DPR proposes to require that at the time of fumigation, 1,3-D field soil fumigations must be made at a depth of application where soil moisture is at least 50 percent of field capacity for soils coarser than loam soils and at least 25 percent for loam and finer soils. These were the moisture conditions of the monitoring studies to determine emission rates.

Proposed subsection (c) will state:

The 1,3-Dichloropropene field soil fumigation must be made using only the methods listed in this section. In addition to labeling requirements for each of these methods, the following requirements shall apply.

DPR proposes to allow nine fumigation methods. Each method will have specified criteria that must be met. These methods are taken from product labeling and recommended permit conditions. The methods are:

- (1) Nontarpaulin/Shallow/Broadcast or Bed.
- (2) Tarpaulin/Shallow/Broadcast or Bed.
- (3) Nontarpaulin/Shallow/Broadcast or Bed/Three Post-Fumigation Water Treatments.
- (4) Tarpaulin/Shallow/ Broadcast or Bed/Three Post-Fumigation Water Treatments.
- (5) Nontarpaulin/Deep/Broadcast or Bed.
- (6) Tarpaulin/Deep/Broadcast or Bed.
- (7) Nontarpaulin/Deep/Broadcast or Bed/Three Post-Fumigation Water Treatments.
- (8) Tarpaulin/Deep/Broadcast or Bed/Three Post-Fumigation Water Treatments.
- (9) Chemigation (Drip System)/Tarpaulin.

Each of these allowable methods, as well as methods listed in other proposed sections pertaining to field fumigation methods, must be listed in regulation since proposed section 6452.2 (Fumigant Volatile Organic Compound Emission Registrant Tracking) will assign a percentage of VOC emissions (percent of pounds applied) to each method. Fumigation methods, like those in

regulation for methyl bromide field fumigation, include criteria for cultivation practices such as injection points, soil mixing, and tarpaulin burying, which are intended to reduce emissions. Tarpaulin repair response plans will be required where applicable, and are discussed in proposed subsection (d).

Methods 3, 4, 7, and 8 will require three post-fumigation water treatments, and fumigations must be completed in a time that allows compliance with these water treatments. DPR proposes to utilize these same water treatments for certain fumigation methods pertaining to metam-sodium and potassium N-methyldithiocarbamate (metam-potassium).

Water must be applied by an irrigation method that uniformly covers the treated area in the entire application block. On the day of fumigation, the first water treatment must consist of at least 0.25 inches of water, beginning within 30 minutes of the completion of fumigation. A second post-fumigation water treatment must consist of at least 0.25 inches of water applied starting no earlier than one hour prior to sunset on the day of fumigation, and completed by midnight.

On the day following fumigation, a third post-fumigation water treatment must consist of at least 0.25 inches of water, and must be applied starting no earlier than one hour prior to sunset and completed by midnight. Additional post-fumigation water treatment(s) may be applied at any time provided the treatments discussed above are completed in the specified time periods. These water treatments are consistent with the ones proposed for metam fumigations (section 6450.1).

Like for section 6447.3, DPR proposes to add a subsection (e) pertaining to use of a reduced VOC emission field fumigation method approved pursuant to section 6452 or a method for experimental research pursuant to a valid research authorization issued according to section 6260.

Adopt section 6449 (Chloropicrin Field Fumigation – General Requirements)

As discussed previously in this ISR, general requirements for chloropicrin field fumigation were included in existing section 6450 (renumbered to section 6447). Since this regulatory proposal would place into regulation new standards for additional fumigant chemicals, chloropicrin requirements need to be placed into a new section.

In the introductory paragraph of section 6451, DPR proposes to clarify that for the purposes of this section and section 6451.1, field fumigation does not apply to raised-tarpaulin nursery fumigations of less than one acre. The proposed regulatory action focuses on preplant field soil fumigation pertaining to the production of agricultural commodities.

Adopt section 6449.1 (Chloropicrin Field Fumigation Methods)

Proposed subsection (a) would limit chloropicrin application rates to 400 pounds per acre for all fumigation methods because this is the highest application rate used in the monitoring studies to determine emission rates.

New subsection (b) will require that chloropicrin field soil fumigations must be made using only the methods described in proposed sections 6447.3 or 6448.1. Nontarpaulin methods will be prohibited for products that contain chloropicrin as the sole active ingredient because these methods have higher emissions than tarpaulin methods, and it is feasible for all applicators to switch to a tarpaulin method.

Chloropicrin is usually used in combination with methyl bromide or 1,3-D. Therefore DPR has not listed field fumigation methods in this proposed section. The proposed methods listed in the field fumigation method sections for methyl bromide and 1,3-D will cover chloropicrin fumigations.

Like for sections 6447.3 and 6448.1 (and the other proposed sections pertaining to field fumigation methods), DPR proposes to add a subsection (c) pertaining to use of a reduced VOC emission field fumigation method approved pursuant to section 6452 or a method for experimental research purposes pursuant to a valid research authorization issued according to section 6260.

Adopt section 6450 [Metam-Sodium and Potassium N-methyldithiocarbamate (metam-potassium), and Dazomet Field Fumigation – General Requirements]

In the introductory paragraph of proposed section 6450, DPR clarifies that for the purposes of this section and sections 6450.1 and 6450.2, field fumigation does not pertain to golf courses, tree-site (tree holes), tree applications for prevention of root graft disease transmission, wood decay uses, potting soil, raised-tarpaulin nursery fumigations of less than one acre, and greenhouses and other similar structures. The proposed regulatory action focuses on preplant field soil fumigation pertaining to the production of agricultural commodities.

Adopt section 6450.1 [Metam-sodium and Potassium N-methyldithiocarbamate (metam-potassium) Field Fumigation Methods]

As discussed previously, monitoring studies show that VOC emissions can be reduced by controlling or changing key application parameters. To ensure that the emission estimates are representative, DPR proposes to establish requirements for maximum application rate, application depth, tarpaulin type, soil moisture, and other critical parameters based on application equipment, procedures, and conditions of the monitoring studies.

Proposed subsection (a) would limit application rates to 320 pounds active ingredient per acre for metam-sodium. Application rates must not exceed 350 pounds active ingredient per acre for potassium N-methyldithiocarbamate (metam-potassium). These were the highest applications used in the monitoring studies to determine emission rates.

For subsection (b), DPR proposes to require that field soil fumigations must be made at a depth of application where soil moisture is at least 50 percent of field capacity except for method (7)--flood. Data has shown that water plays a critical role in suppressing off-site movement of MITC and reducing VOC emissions, and is consistent with the conditions of the monitoring studies, as described in the Barry et al. memorandum.

New subsection (c) would limit fumigations to starting no later than one hour after sunrise and to completion no later than one hour before sunset except for method (7)--flood. Data shows that applications during calm periods (e.g., nighttime) have higher emission rates than daylight fumigations (Barry et al. memorandum). There are no time restrictions for flood fumigations. In most cases, water districts determine when water is available and therefore, it would be difficult to comply with this requirement since a flood fumigation could take over 12 hours to complete. These conditions are consistent with label requirements.

For subsection (d), DPR proposes:

The metam-sodium or potassium N-methyldithiocarbamate (metam-potassium) field soil fumigation must be made using only the methods listed in this section. In addition to labeling requirements for each of these methods, the following requirements shall apply.

The methods, each having specified requirements, include:

- (1) Sprinkler/Broadcast or Bed/One Post-Fumigation Water Treatment.
- (2) Sprinkler/Broadcast or Bed/Three Post-Fumigation Water Treatments.
- (3) Nontarpaulin/Shallow/Broadcast or Bed/One Post-Fumigation Water Treatment.
- (4) Nontarpaulin/Shallow/Broadcast or Bed/Three Post-Fumigation Water Treatments.
- (5) Chemigation (Drip System).
- (6) Rotary Tiller/Power Mulcher/Soil Capping.
- (7) Flood.

As mentioned previously, data has shown that water plays a critical role in suppressing off-site movement of MITC and reducing VOC emissions. Therefore, DPR is proposing three post-fumigation water treatment requirements (same as for 1,3-D fumigation methods 3, 4, 7, and 8 discussed on pages 9-10) for Sprinkler method (2) and Nontarpaulin/Shallow/Broadcast or Bed method (4). DPR is proposing one post-fumigation water treatment for Sprinkler method (1) and Nontarpaulin/Shallow/Broadcast or Bed method (3).

For method (1), Sprinkler/One Post-Fumigation Water Treatment, DPR proposes to state in subsection (d)(1)(A) that a fumigation must be made over a minimum of six hours and in a minimum of 0.80 inch of water, or applied at a concentration no more than 1 gallon of product per 290 gallons of water. DPR believes a metering approach results in an even application and prevents the potential off-site movement of higher concentrations if the chemical were applied over a shorter duration.

Proposed subsection (d)(1)(B) states that for this method, the fumigation must be completed in a time that allows compliance with one post-fumigation water treatment. This water treatment is the same as for the first water treatment for 1,3-D described on pages 9-10 of this ISR

For method (2) Sprinkler/Three Post-Fumigation Water Treatments, like for method (1), DPR proposes in subsection (d)(2)(A) that a fumigation must be made over a minimum of six hours and

in a minimum of 0.80 inch of water, or applied at a concentration no more than 1 gallon of product per 290 gallons of water.

These are the water treatments included in the monitoring studies to determine emission rates.

DPR proposes to add a subsection (e) pertaining to use of a reduced VOC emissions field fumigation method approved pursuant to section 6452 or a method for experimental research purposes pursuant to a valid research authorization issued according to section 6260.

Adopt section 6450.2 (Dazomet Field Fumigation Methods)

Proposed subsection (a) would require that fumigations start no earlier than one hour after sunrise and be completed no later than one hour before sunset. This same text is used in proposed section 6450.1.

Proposed subsection (b) would limit field soil fumigation of dazomet to methods specifically identified in the labeling. In addition to labeling requirements, the fumigation must employ four post-fumigation water treatments.

The first three post-fumigation water treatments would be the same as required (and previously described in this ISR) for 1,3-D, metam-sodium, and potassium N-methyldithiocarbamate (metam-potassium) field fumigation methods, with an additional treatment as follows:

On the second day following application, a fourth post-application water treatment, consisting of at least 0.25 inches, shall be applied starting no earlier than one hour prior to sunset and completed by midnight.

The fourth post-application water treatment is consistent with labeling and monitoring studies where data has shown that this will reduce VOC emissions.

Additional post-fumigation water treatment(s) may be applied at any time provided the four treatments specified are completed in the specified time periods. These are the water treatments included in the monitoring studies to determine the emission rates.

DPR proposes to add a subsection (c) pertaining to use of a reduced VOC emission field fumigation method approved pursuant to section 6452 or a method for experimental research purposes pursuant to a valid research authorization issued according to section 6260.

Adopt section 6451 (Sodium Tetrathiocarbonate Field Fumigation – General Requirements)

In the introductory paragraph of section 6451, DPR proposes to clarify that, for the purpose of this section and section 6451.1, field fumigation does not apply to tree-site (tree holes) and raised-tarpaulin nursery fumigations of less than one acre, and greenhouses and other similar structures.

The proposed regulatory action focuses on preplant field soil fumigation pertaining to the production of agricultural commodities.

Adopt section 6451.1 (Sodium Tetrathiocarbonate Field Fumigation Methods)

Proposed subsection (a) would limit field soil fumigations of sodium tetrathiocarbonate to methods specifically identified in the labeling without additional restrictions.

DPR proposes to add a subsection (b) pertaining to use of a reduced VOC emission field fumigation method approved pursuant to section 6452 or a method for experimental research purposes pursuant to a valid research authorization issued according to section 6260.

Adopt section 6452 (Reduced Volatile Organic Compounds Emissions Field Fumigation Methods)

DPR proposes to adopt section 6452 allowing it to approve use of a new field fumigation method that reduces emissions relative to a comparable method specified in section 6452.2(b). Research is underway to develop new application methods (e.g., new tarpaulins, irrigation techniques, lower application rates) with lower emissions than the methods described here. This will provide the necessary flexibility for innovations that reduce emissions to occur.

Proposed subsection (b) would require the Director to issue a public notice stating the reasons for its approval of a field fumigation method under subsection (a). The notice will be posted on DPR's Web site.

Adopt section 6452.1 (Fumigant Volatile Organic Compound Emission Records and Reporting)

As discussed on page three of this ISR, DPR proposes to specify in regulation the total pounds of fumigant emissions allowed for each ozone NAA. DPR will specify a percentage of VOC emissions (percent of pounds applied) for each fumigation method and how to calculate the fumigant product emissions. In order to determine if fumigant products are within their allowable emission limits in each ozone NAA, it is necessary for fumigant applicators to keep a record and report each field fumigation. Proposed section 6452.1 would specify the recordkeeping and reporting requirements for fumigant applicators.

Proposed subsection (a) would require, for each of the five ozone NAAs as specified in Title 40 CFR section 81.305, any person who applies the field fumigants methyl bromide, 1,3-D, chloropicrin, metam-sodium, potassium N-methyldithiocarbamate (metam-potassium), dazomet, or sodium tetrathiocarbonate to maintain records of fumigant applications.

Proposed subsection (b) lists the information that must be included in the record for each fumigation:

- (1) Name of fumigant product;
- (2) U.S. EPA registration number of fumigant product;
- (3) Total amount of product applied;

- (4) Date of application;
- (5) Ozone NAA specified in subsection (a)(2) or location by county, section, township, range, base, and meridian where the fumigant was applied; and
- (6) Fumigation method used, as specified in section 6452.2(b), or the method used pursuant to sections 6452 or 6452.4.

DPR requires full reporting of pesticide use. Reports are filed monthly with the CAC in the county where the applications occur. CACs then submit reports to DPR and the information is entered into a statewide database. Section 6624 (Pesticide Use Records) and section 6627 (Monthly Summary Pesticide Use Reports) cover this reporting. Since these pesticide use records include most of the information required by proposed subsection (b), proposed subsection (c) allows these pesticide use records to meet the requirements of this section provided the fumigation method as specified in subsection (b)(6) is appended to the use record.

Proposed subsection (d) would require that any person who applies field fumigants to report the specified information to the product registrant's designated contact for the fumigant product used and to DPR. The report must be delivered to DPR and the registrant by the 10th day of the month following the month in which the fumigation was performed. If the report is mailed, the postmark shall be the date of delivery. The Department requires the information on method of application in order to determine the VOC emissions. The reporting deadline and mailing requirements are consistent with the reporting requirements in section 6626.

DPR proposes in subsection (e) that the records required pursuant to this section must be retained for two years and made promptly available to the Director or CAC upon request, which is consistent with other reporting requirements. By compiling the use records during the season, DPR can exercise enforcement oversight of the limits.

Adopt section 6452.2 (Fumigant Volatile Organic Compound Emission Registrant Tracking)

As discussed in the previous proposed section, any person who applies field fumigants within the five specified ozone NAAs must report the specified information to the product registrant's designated contact for the fumigant product used.

Fumigant registrants would use the reported information to track the fumigant emissions of their products and report fumigant emissions in each of the NAAs. In proposed section 6453.3(d), a registrant would be prohibited from selling a product for use in an NAA in excess of its allocation. Further, no other person could sell a product for use in an NAA subject to allocation without the permission from the registrant. Violation of these sections will be subject to enforcement action. DPR will incorporate the tracking information into its pesticide VOC emission inventory. The SIP requires tracking of emissions for the entire year. However, its control measures are focused on the period between May 1 and October 31, because that is the peak "ozone forming" season.

Proposed subsection (a) requires registrants to (1) identify a designated contact to receive reports specified in section 6452.1 and provide the contact information to all persons who apply or distribute their field fumigants, and (2) track the air emissions from their field fumigant products.

Proposed subsection (b) specifies how fumigant product emissions shall be determined. Except for metam-sodium, potassium N-methyldithiocarbamate (metam-potassium), and sodium tetrathiocarbonate, the formula multiplies the pounds applied of active ingredient(s) of each registered product by the percentage of VOC emissions (percent of pounds applied) or the percentage set pursuant to section 6452. For metam-sodium and potassium N-methyldithiocarbamate, these pesticides are assumed to undergo 100 percent conversion to methyl isothiocyanate and the VOC emissions are a percentage of methyl isothiocyanate. To calculate the pounds of methyl isothiocyanate, multiply the pounds of metam-sodium active ingredient by 0.566, or the pounds of potassium N-methyldithiocarbamate active ingredient by 0.503. For sodium tetrathiocarbonate, this pesticide is assumed to undergo 100 percent conversion to carbon disulfide and the VOC emissions are a percentage of carbon disulfide. To calculate the pounds of carbon disulfide, multiply the pounds of sodium tetrathiocarbonate active ingredient by 0.4087.

Also, subsection (b) will include a table showing each fumigant, the allowable fumigation methods for each chemical, and a percentage of VOC emissions (percent of pounds applied) for each method. Each fumigation method listed in the table will have a cross reference to the 3 CCR section where requirements for the method are found.

The percentage of VOC emissions for each application method is based on the available monitoring data, as described in the Barry et al. memorandum.

The fumigants and the methods for each as listed in the table in subsection (b) are limited, of course, to currently registered fumigant products and methods found in the directions for use on product labeling, and any applicable restrictions established currently in regulation or proposed in this regulatory action. DPR recognizes that research and development may be underway leading to the registration of new fumigant chemicals intended to supplement or replace fumigants in use today. Proposed section 6452.4 (Interim Percentage of Volatile Organic Compound Emissions for New Fumigants) will provide a mechanism to accommodate such fumigants. That proposed section is discussed at a later point in this ISR.

Proposed subsection (c) would require that registrants of additional fumigants for which a percentage of VOC emissions has been set pursuant to section 6452.4 to track the air emissions pursuant to subsection (a)(1) and (a)(2). The fumigant product emissions shall be determined by multiplying the pounds applied of active ingredient(s) of each registered product by the percentage determined pursuant to section 6452.4.

Proposed subsection (d) would require registrants to submit an annual field fumigation emissions report to the Director by March 1 of each year for the previous calendar year, that summarizes the month-by-month emissions for each of their products within each ozone NAA. The emission report must contain, but is not limited to:

1. Pounds applied for each fumigation method.
2. Pounds of emission.

DPR proposes a subsection (e) requiring retention of these records for two years, which is consistent with other recordkeeping requirements.

Adopt section 6452.3 (Fumigant Volatile Organic Compound Emission Limits):

While changes to fumigation methods, including elimination of certain "high emission" methods will play a substantial role in the reduction of fumigant VOCs in ozone NAAs, this alone does not assure that DPR's VOC reduction goals will be met. Therefore, DPR is proposing VOC emission limits in the specified ozone NAAs from May 1 through October 31. The May 1 through October 31 timeframe is the "ozone season" in California when the ozone standard is exceeded most frequently.

This management approach is similar to that used by 1,3-D registrants to track 1,3-D emissions. The guidelines of the *California Management Plan: 1,3-Dichloropropene*, establishes allocation limits to minimize the levels of the amount of 1,3-D in the atmosphere. Township limits are based on the adjusted total pounds of 1,3-D used. Registrants track 1,3-D emissions as part of the management plan.

Pesticide VOC emissions are calculated by multiplying the pounds of pesticides applied by the percentage of VOC emissions. The Barry et al. memorandum shows the estimated emissions for each NAA based on these calculations, and indicates that application method changes between 1990-91 and proposed here are insufficient to achieve the required VOC reductions in at least one NAA. While application method changes since 1990-91 have lowered emission rates, increased fumigant use in these areas more than offset the application method reductions.

Limits on fumigant emissions during the May through October period within each NAA, either alone or in combination with application method changes, are sufficient to achieve the court-ordered VOC reductions. The Barry et al. memorandum describes the fumigant emission limits that would achieve the required emission targets, assuming VOC emissions from non-fumigant pesticides remain the same as 2004. Without changes in application method, meeting the fumigant emission limits would require as much as a 50 percent reduction in the amount of fumigant used during the May through October period in the San Joaquin Valley, Southeast Desert, and Ventura NAAs.

Proposed section 6452.3 includes two tables pertaining to the ozone NAAs and field fumigant emission limits during the May 1 through October 31 time period in 2008 and in subsequent years.

The first table, contained in proposed subsection (a), sets the Maximum Total Pounds of VOC Emissions from Field Fumigation from May 1 through October 31 in the three NAAs where significant efforts are needed to meet the 1994 commitments. These totals, as described in the

Barry et al. memorandum, would limit emissions in these three NAAs--from all fumigant active ingredients covered by this regulatory proposal--to 1,400,000, 120,000, and 700,000 pounds, respectively.

Proposed subsection (b) would establish a process for the Director to determine the emission allocation for each registrant in each of the ozone NAA during the period May 1 through October 31, 2008. The emission allocations will be determined based on a process that would provide the registrants or other affected individuals the opportunity to provide written comments or additional information for DPR to review in order to decide whether the initial fumigant emission allocation warrants any changes. By May 1, 2008, registrants of products containing active ingredients referenced in section 6452.2 would have to limit VOC emissions from those products during May 1 through October 31, 2008, to these allocations.

- (1) The Director shall determine a fumigant emission allocation for each registrant based on the following factors:
 - (A) Pest management needs;
 - (B) Advancement of reduced emission methods;
 - (C) Expected changes to specific use patterns for field fumigants;
 - (D) Share of the field fumigant market;
 - (E) Allocation requests submitted by the registrant; and
 - (F) Regulatory changes that impact allowed use.
- (2) A *Notice of Field Fumigant Emission Allocation* shall be given to the allocated registrants and made available to the public. The notice will include the initial fumigant emission allocation for each registrant and basis for such allocation. The notice will be posted on DPR's Web site.
- (3) A 30-day public comment period will be provided to allow for submission of written statements or arguments to the Director for review before making final fumigant emission allocations.
- (4) The Director will determine a final fumigant emission allocation for each registrant by May 1, 2008.

For emission allocations in 2009 and subsequent years, proposed subsection (c) would require the Director to determine the emission allocation for each registrant in each of the three ozone NAAs. The allocation process similar to proposed subsection (b), with the addition of using the field fumigation emissions report provided by the registrants (commencing with the 2010 field fumigation allocation) pursuant to section 6452.2(d). Again, this process would provide the registrants or other affected persons the opportunity to provide written comments or additional information for DPR to review in order to decide whether the initial fumigant emission allocation warrants any changes.

Proposed subsection (d) would prohibit a registrant from exceeding its allocation and would prohibit a person from selling a product containing active ingredients referenced in section 6452.2 or 6452.4 for field fumigation use in an area which the Director has established allocations pursuant to subsection (b) or (c) unless the registrant authorized that sale. This section makes the emission limit enforceable by making each fumigant registrant legally responsible for its emission allocation.

Proposed subsection (e) requires the Director to establish an allocation allowance pursuant to subsection (c) for the Sacramento Metro or South Coast NAAs if the emission limits specified in subsection (f) may be exceeded. Subsection (f) establishes the field fumigation allocation limits for these two areas during the May 1 through October 31 time period. This provision will allow the Director to establish allocations if he or she determines such allocations are necessary to prevent the Sacramento Metro and South Coast NAA from exceeding their field fumigant emission limits in the future.

Adopt section 6452.4 (Interim Percentage of Volatile Organic Compound Emissions for New Fumigants)

DPR recognizes that research and development may be underway leading to the registration of new fumigant chemicals intended to supplement or replace fumigants in use today. Proposed section 6452.4 will provide a mechanism to accommodate such fumigants in a timely manner for an interim period. During the interim period, DPR could prepare rulemaking proposals to adopt applicable VOC emission limits for the new fumigant into regulation.

DPR proposes in subsection (a) that for each new field fumigant VOC not specified in section 6452.2(a), the Director will set an interim percentage of VOC emission for each of its field fumigation method(s) for a period not to exceed three years.

Proposed subsections (b)-(f) cover DPR's process for determination and approval for an interim percentage of VOC emission. It will be based on scientific data demonstrating fumigant emissions. A *Notice of Interim Percentage of VOC Emission* will then be given to the registrant. The notice will include the basis for such determination and will be posted on DPR's Web site.

A 30-day public comment period will be provided to allow for submission of written statements or arguments to the Director for review before determining an interim percentage of VOC emission. The Director will determine the percentage of VOC emission within 30 working days from the close of the public comment period.

The registrant of the fumigant will be subject to the provisions in sections 6452.2 and 6452.3.

Amend Article 4 heading to read Field Fumigation Use Requirements and Adopt Article 5 heading to read: Article 5 Use Requirements

DPR proposes to restructure these headings for clarity purposes.

Renumber section 6452 to 6453 to read:

6453. Chloropicrin and Methyl Bromide - Nursery and Commodity Fumigation.

As discussed on page 13 of this ISR, section 6452 will now pertain to reduced VOC emissions field fumigation methods. Therefore, a new section is needed for Chloropicrin and Methyl Bromide - Nursery and Commodity Fumigation.

Amend section 6502 (Applications):

In subsection (c), DPR proposes to revise application form revision dates (Rev. 4/07) for QAL and Qualified Applicator Certificate (QAC) applications. The application forms, which are currently incorporated by reference, will be revised to reflect the new subcategory "O" for field fumigation pest control. Copies of the revised forms are included in the rulemaking file and are available upon request from DPR.

Adopt section 6536 (Field Fumigation Licensing Requirements)

As discussed under proposed section 6445.5 on page 5 of this ISR, and in the preceding paragraph, field fumigation pest control will be a new subcategory "O," and included on the revised application forms. Proposed subsection (a) requires that a person who performs or supervises field fumigation applications pursuant to section 6445.5 must hold a QAL or QAC in the new subcategory.

Proposed section 6536(b) will include a provision allowing a person to be issued a QAL or QAC in the field fumigation pest control subcategory, under a "grandfather" procedure where the examination requirements and fee will be waived if the applicant meets certain criteria, including possession of a valid QAL or QAC in specified categories, 24 months of technical experience, verification of the experience from a pest control business, and proof of attendance of 4 hours of fumigation training within 12 months of the effective date of this section. There are licensed QALs or QACs currently performing or supervising field fumigation applications in a professional capacity and retesting would be unnecessary.

Amend section 6784 (Field Fumigation):

Existing section 6784 includes language with provisions pertaining to field soil fumigation using methyl bromide singly and in combination with chloropicrin or any other pesticide or warning agent.

As discussed previously in this ISR, general requirements for chloropicrin field fumigation are included in existing section 6450 (renumbered to section 6447). Since this proposal would place standards for additional fumigant chemicals into regulation, chloropicrin requirements will be placed in proposed sections 6451-6451.1 pertaining only to that chemical.

Therefore, DPR proposes to delete in subsection (b) the phrase, "singly and in combination with chloropicrin or any other pesticide or warning agent." Similar changes will be made to subsection (b)(2)(B). Section 6784 will pertain only to field soil fumigations using methyl bromide.

For subsection (b)(3)(B)2. Table 1. Maximum Work Hours and Table 2. Maximum Work Hours in a Maximum Three (3) Workdays Per Calendar Month, DPR proposes to delete nontarpaulin shallow/bed, nontarpaulin/deep/broadcast, and drip system--hot gas application methods, since these methods are proposed to be deleted from proposed section 6447.3. As described in the Barry et al. memorandum, these methods have higher emissions than comparable tarpaulin methods.

CONSULTATION WITH OTHER AGENCIES

DPR regularly consults with other agencies during the development of proposed regulations. As required by FAC section 12981, DPR consulted with the Office of Environmental Health Hazard Assessment during the development of the text of proposed regulations, and they concurred with the development of the regulations. DPR has also consulted with the Department of Industrial Relations and the University of California at Davis.

Additionally, DPR consulted with the California Air Resources Board during the development of the text of proposed regulations and the CACs during the development of the proposed regulations.

DPR consulted with the California Department of Food and Agriculture during the development of the text of proposed regulations, as specified in FAC section 11454, and the February 6, 1992, Memorandum of Agreement that was developed per FAC section 11454.2.

ALTERNATIVES TO THE PROPOSED REGULATORY ACTION

DPR has not identified any feasible alternatives to the proposed regulatory action that would lessen any adverse impacts, including any impacts on small businesses, and invites the submission of suggested alternatives.

DPR's long-term commitment is to work cooperatively with commodity groups and researchers on agronomically viable ways to reduce reliance on fumigants. For the immediate future, reduction in VOC emissions can be achieved through changes in fumigant application practices.

As discussed in the Notice of Proposed Regulatory Action that was published in the *California Regulatory Notice Register*, DPR has determined that the adoption of this regulation will have a significant cost impact on representative private persons or businesses. DPR has determined that the proposed regulation is a "major regulation" as defined in Health and Safety Code section 57005. A major regulation is any California Environmental Protection Agency (Cal/EPA) regulation that will have an economic impact of more than \$10 million on California business. DPR made this determination based upon an economic impact assessment performed by Cal/EPA. This economic impact assessment is listed in the "Documents Relied Upon" section of the ISR for this proposed regulatory action and is available from DPR. The Cal/EPA economic impact assessment estimated

the first-year cost of the regulation at approximately \$10-\$120 million. The economic impact assessment addresses these assumptions and the adjustments made to the estimates, as well as the overall reliability of the estimate.

IDENTIFICATION OF ANY SIGNIFICANT ADVERSE ENVIRONMENTAL EFFECT THAT CAN REASONABLY BE EXPECTED TO OCCUR FROM IMPLEMENTING THE PROPOSAL

The proposed action would reduce smog-producing emissions from field fumigant use and, thereby, will achieve state air quality goals for pesticides.

DPR's review of the proposed action showed that no significant adverse effect to California's environment can reasonably be expected to occur from implementing the proposal. Therefore, no alternatives or mitigation measures are proposed to lessen any significant adverse effects on the environment.

In reaching this conclusion, DPR considered the possible effects discussed below. Applicators are expected to take one or more of the following actions to comply with the regulations: use of lower emission application methods, reduce application rates, reduce the acres fumigated, and shift fumigant applications outside the peak ozone season. DPR expects most of the required emission reductions to come through use of lower emission application methods, generally tarping, post-fumigation water treatments, and drip chemigation.

Air Quality: Shifting fumigations outside the peak ozone season could cause current particulate emissions from tractors and other application equipment to shift from summer to late fall or early spring. However, increased fumigations and associated particulate emissions during the winter peak particulate season are less likely due to wet fields and other constraints. Current DPR regulations and U.S. EPA label restrictions that are designed to prevent acute or chronic toxic exposure are sufficient to avoid any adverse effects of toxic emissions from any increased use of fumigants in the months preceding or following the ozone season that may result from shifting the timing of applications. In addition, the restriction of allowable application methods in the proposed regulations will reduce air emissions of the fumigants. Emissions of fumigants included in the proposed regulation have little or no contribution to particulate matter pollution, acid rain, climate change, or other air quality impacts.

Water Quality: DPR's evaluation of the post-fumigation water treatments and drip chemigation applications show virtually no potential for ground water contamination by the fumigants with the estimated irrigation increases.

Solid Waste: The disposal of solid waste may increase slightly due to use of plastic tarpaulins under the proposed regulations, but the increase is not expected to be significant since a great majority of the fumigations already use tarpaulins where that is a feasible mitigation measure.

Resource/Energy Use: Post-fumigation water treatments will require the increased use of water, with their associated energy use and other effects. However, the relative increase over current water

use is believed to be negligible. Some applicators will change from tractor applications to chemigation to reduce emissions. Irrigation (chemigation) will require increased water use, with the associated energy use and other effects. However, less diesel fuel and other desirable effects associated with decreased tractor use will offset these impacts.

Other: It is possible that use of reduced fumigant application rates could cause increased use of other non-fumigant pesticides. For example, reduced rates of fumigants may not control certain plant diseases or nematodes, potentially causing increased use of other fungicides and nematicides. However, disease and nematicide control are primary reasons to fumigate, so it's unlikely that fumigant rates too low to control these pests would be used.

Reducing the acreage fumigated would cause the previously fumigated fields to be converted to crops that do not use fumigants or to nonagricultural uses. The most likely conversions in specific areas are unknown at this time. Except for the Ventura area, DPR expects that growers in all areas can, and will, meet the emission limits primarily through changing application methods, and thus the regulations will not cause a significant reduction in the number of acres fumigated or conversion of agricultural land to other uses. In Ventura, it is estimated that the number of acres currently fumigated would be reduced by nearly a third, or about 10,000 acres to comply with the regulations. The value of the crops grown on those acres is estimated at up to \$80 million. Growers would be expected to avoid that loss by converting the land to other crops or uses. Thus, in Ventura there is a potential risk that some of these acres would be converted to non-agricultural uses that have greater adverse environmental impacts. However, this risk is speculative, since the potential uses are unknown.

EFFORTS TO AVOID UNNECESSARY DUPLICATION WITH FEDERAL REGULATIONS

The proposed regulatory action does not duplicate or conflict with any regulations contained within the CFR. There are no regulations within the CFR that address this issue.

As noted in this ISR, the federal Clean Air Act requires each state to submit a SIP for achieving and maintaining federal ambient air quality standards, including the standard for ozone. In 1994, the Air Resources Board and DPR developed a plan to reduce pesticidal sources of VOCs in NAAs as part of the California SIP to meet the one-hour ozone standard.

Also, as previously noted, in April 2004, U.S. EPA issued a more stringent 8-hour ozone standard, likely requiring additional VOC reductions. California will prepare a new SIP for 2007 and will need additional VOC reductions from all sources to meet the new ozone standard.

DOCUMENTS RELIED UPON

1. Federal Order concerning remedies, No. Civ. S-04-822 (E.D. Cal. Filed April 6, 2006).
2. Decision in *El Comite Para el Bienestar de Earlimart v. Helliker*, 416 F. Supp. 2d 912 (E.D. Cal. 2006)
3. Pesticide Volatile Organic Compound Emission Adjustments for Field Conditions and Estimated Volatile Organic Compound Reductions - Initial Estimates. April 6, 2007. Memorandum from Terrell Barry, Frank Spurlock, and Randy Segawa to John S. Sanders, Branch Chief, Environmental Monitoring Branch, DPR.
http://www.cdpr.ca.gov/docs/empm/pubs/ehapreps/analysis_memos/1903_Sanders.pdf
4. 2006 Update of Volatile Organic Compound Emission Inventory. Department of Pesticide Regulation. October 26, 2006. Includes October 24, 2006 memorandum, *2006 Update to the Pesticide VOC Inventory: Estimated Emissions 1990-2004*, from Tamara L. Roush, Ph.D. to John S. Sanders, Branch Chief, Environmental Monitoring Branch, DPR.
<http://www.cdpr.ca.gov/docs/pur/vocproj/vocinvent06.pdf>
5. California Management Plan: 1,3-Dichloropropene. Department of Pesticide Regulation. January 30, 2002. <http://www.cdpr.ca.gov/docs/dprdocs/methbrom/telone/mgmtplan.pdf>
6. Pesticide Air Initiative: Strategy to Reduce Toxic and Volatile Organic Compound Emissions from Agricultural and Commercial Structural Pesticides--Concept Paper. July 25, 2006.
<http://www.cdpr.ca.gov/docs/empm/airinit/concept.pdf>
7. State Implementation Plan for Agricultural and Commercial Pesticides. November 15, 1994.
8. U.S. Environmental Protection Agency Region 9: Air Programs. Ozone (O₃) Attainment Designations in Region 9 (1-hour Standard).http://www.epa.gov/region09/air/maps/r9_o3.html
9. Title 40--Protection of Environment, Chapter 1, Environmental Protection Agency, Part 81--Designation of Areas for Air Quality Planning Purposes, Subpart C_Section 107 Attainment Status Designations. Sec. 81.305 California. <http://frwebgate.access.gpo.gov/cgi-bin/get-cfr.cgi?YEAR=2005&TITLE=40&PART=81&SECTION=305&SUBPART=&TYPE=TEXT>
10. Draft - Air Resources Board's Proposed State Strategy for California's 2007 State Implementation Plan. Release Date: January 31, 2007.
<http://www.arb.ca.gov/planning/sip/2007casip.htm>
11. Consultation on Draft Regulations on Fumigants. California Environmental Protection Agency, Agencywide Economic Analysis Unit, Air Resources Board. Memorandum from Bill Dean to Linda Irokawa-Otani, Regulations Coordinator, DPR. April 18, 2007.