

INITIAL STATEMENT OF REASONS AND PUBLIC REPORT
DEPARTMENT OF PESTICIDE REGULATION

Title 3. California Code of Regulations
Amend Sections 6445.5, 6448.1, 6449.1, 6450.1,
6452.2, 6452.3, 6452.4, 6536, and 6626
Pertaining to Field Fumigant Use Requirements

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 6445.5, 6448.1, 6449.1, 6450.1, 6452.2, 6452.3, 6452.4, 6536, and 6626. 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 add and revise existing field fumigation methods in the Sacramento Metro, San Joaquin Valley, South Coast, Southeast Desert, and Ventura ozone nonattainment areas (NAAs) when using 1,3-Dichloropropene, chloropicrin, metam-sodium, or potassium N-methyldithiocarbamate (metam-potassium); amend triggers for fumigant limits in NAAs and the allowance system used to enforce the fumigant limits; and clean-up sections pertaining to licensing and pesticide use reporting requirements related to volatile organic compounds (VOCs).

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.

The proposed regulatory action pertains to seven of the most widely used fumigant active ingredients--methyl bromide, 1,3-Dichloropropene, chloropicrin, dazomet, sodium tetrathiocarbonate, and pesticides that generate methyl isothiocyanate (MITC), such as metam-sodium, and potassium N-methyldithiocarbamate (also 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 control pests in structures and harvested commodities. Measured in pounds, fumigants represent approximately 20 percent of all agricultural pesticides used in California. Because fumigants are usually applied at a rate of several hundred pounds an acre and are very volatile, fumigants account for an even higher proportion of VOCs emitted by pesticides. In some areas of the state, up to three-quarters or more of the pesticide VOCs are from fumigants.

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 a State Implementation Plan (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. The U.S. Environmental Protection Agency (U.S. EPA) designates NAAs in Title 40, Code of Federal Regulations (CFR) section 81.305. In 1994, California's Air Resources Board (ARB) and DPR developed a plan to reduce pesticidal sources of VOCs in five NAAs--Sacramento Metro, San Joaquin Valley, South Coast, Southeast Desert, and Ventura--as part of the California SIP to meet the ozone standard.

In January 2008, DPR adopted regulations (Office of Administrative Law File No. 2007-1219-01S) to achieve a 20 percent reduction of pesticide VOC emissions from 1991 levels in the five NAAs. Those regulations, in part, focus exclusively on fumigant emissions to achieve reductions through controls on application methods and the benchmarks that trigger a cap and allowance system to force reductions if needed.

On July 18, 2008, U.S. EPA revised California's SIP to allow an additional 1.3 tons per day (tpd) of VOCs from pesticides in Ventura in 2008. (73 Federal Register 41277, 41278.) That SIP revision requires a portion of the additional 1.3 tons of emission allowed in 2008 to be reduced each year thereafter until the total 20 percent reduction is reached in Ventura in 2012. In September 2008, DPR amended the regulations (Office of Administrative Law File No. 2008-0828-01S) to make it consistent with the phase-in of 1.3 tpd reduction requirement in Ventura approved by U.S. EPA.

In 2009, ARB submitted a revised SIP to U.S. EPA for the San Joaquin Valley that included a pesticide VOC emissions limit of 18.1 average tpd, reflecting the 12 percent reduction from 1990 levels required by the SIP. The proposed SIP revision also includes a commitment to implement restrictions that reduce VOC emissions from nonfumigant pesticides by 2014. That submission has not yet been approved by U.S. EPA.

DPR proposes the following regulatory amendments:

- Amend Section 6445.5 - Field Fumigation Licensing Requirements

When a field fumigation application is made by a licensed pest control business, the business must have a person holding a qualified applicator license or certificate with the field fumigation pest control subcategory. DPR proposes to amend section 6445.5 to remove "Effective January 1, 2009" as the date is no longer necessary.

- Amend Section 6448.1 - 1,3-Dichloropropene Field Fumigation Methods

Subsection (b) requires specific soil moisture at the time of application and provides a "feel" method to measure soil moisture that is commonly used, and is included on some product labels but is not applicable in this instance. DPR proposes to amend subsection (b)(3) to remove an incorrect description to determine soil moisture for fine texture soils.

DPR proposes to add subsection (c) specifying post-fumigation water treatment requirements. Proposed subsection (c) consolidates the amount of water required for several different 1,3-Dichloropropene fumigation methods into a single subsection. This subsection also revises the amount of water required per acre depending on the soil texture, with coarse texture soils requiring more water than fine texture soils. Post-fumigation water treatments are used to suppress VOC emissions, but the 0.2 inches of water per acre currently required is incorrect for some soil textures. Monitoring studies documented reduced emissions for fumigations that used 0.4 inches of water per acre. However, water exceeding the specified amounts marginally decreases VOC emissions and can create water quality problems if runoff occurs. The potential for water runoff is greater for fine texture soil than coarse texture soil. Therefore, DPR is proposing to require less water for fine texture soils. Monitoring studies also document reduced emission when water is applied at a rate of 0.15-0.25 inches per hour.

As mentioned above, the amount of water specified in subsections (d)(3)(C) and (d)(4)(D) has been revised and moved to proposed subsection (c). Additionally, current subsections (c), (d), and (e) are being reordered as proposed subsection (d), (e), and (f), as well as citing correct references as a result of reordering.

- Amend Section 6449.1 - Chloropicrin Field Fumigation Methods

As described above, proposed subsection (c)(3) amends the description of determining soil moisture for fine texture soils when using chloropicrin.

- Amend Section 6450.1 - Metam-Sodium and Potassium N-methyldithiocarbamate (Metam-Potassium) Field Fumigation Methods

As previously described, proposed subsection (b)(3) amends the description of determining soil moisture for fine texture soils when using metam-sodium and metam-potassium.

Subsection (c) prohibits most fumigations at night. DPR proposes to amend this subsection to include more exceptions, as described in the discussion for subsections (e)(10) and (e)(11).

As described previously, DPR proposes to add subsection (d) specifying post-fumigation water requirements. This subsection revises the amount of water for post-fumigation water treatments, depending on soil texture, and adds watering rate requirements.

Current subsection (d) describes the field fumigation methods that can be used in the NAAs when applying metam-sodium or metam-potassium. This subsection has been reordered as subsection (e). The amount of water specified in subsections (e)(1)(A), (e)(2)(A), and (e)(3)(A) has been revised and moved to proposed subsection (d).

The flood application method described in proposed subsection (e)(9) has been revised. The amount of water applied has been changed from six to four inches per acre to make it consistent with the amount of water applied for the monitored application used to determine the VOC emissions for this fumigation method.

In January 2008, DPR adopted regulations to control VOC emissions from pesticides during the May 1 through October 31 peak ozone season in the five NAAs. In part, the regulations only allowed fumigation methods for which DPR has adequate data to determine VOC emission rates. However, as part of DPR's efforts to reduce VOC emissions and to provide the necessary flexibility for innovations that reduce emissions to occur, section 6452 established a process to allow the use of a field fumigation method that results in no greater emissions than any of the fumigant methods either not described or excluded from use in sections 6447.3, 6448.1, 6449.1, 6450.1, 6450.2, or 6451.1. Under specific criteria, the Director may grant interim approval of a field fumigation method for up to three years. In 2008, the Director granted interim approval to three fumigation methods for metam-sodium and N-methyldithiocarbamate. DPR proposes to add three fumigation methods into the regulations.

DPR proposes to add subsection (e)(10) allowing a 1:00 a.m. Start/Nontarpaulin/Shallow/Broadcast/ Two Post-Fumigation Water Treatments method. The Responsible Farmers Coalition submitted, and DPR approved, a study that included air monitoring of a fumigant application to a flat field (broadcast) using a tractor with shanks set at a shallow depth (3-10 inches). The monitored fumigation started at 1:00 a.m. and was followed by two post-fumigation water treatments after fumigation. Previous monitoring data indicated that fumigations at night can have high emissions. Therefore, subsection (c) prohibits night fumigations in most cases. The data provided by the Responsible Farmers Coalition supports this night fumigation method with VOC emissions no greater than the “low-emission” methods specified in section 6452. Consistent with the fumigation method monitored, this proposed method specifies the earliest time that fumigation can occur, the post-fumigation water treatments, and the tractor configuration that must be used.

DPR proposes to add subsection (e)(11) allowing a 4:00 a.m. Start/Sprinkler/ Broadcast/Two Post-Fumigation Water Treatments method. Grimmway Farms submitted, and DPR approved, a study that included air monitoring of a fumigant application using sprinklers. The monitored fumigation started at 4:00 a.m. and was followed by two post-fumigation water treatments after fumigation. Previous monitoring data indicated that fumigations at night can have high emissions. Therefore, subsection (c) prohibits night fumigations in most cases. The data provided by Grimmway Farms supports this night fumigation method with VOC emissions no greater than the “low-emission” methods specified in section 6452. Consistent with the fumigation method monitored, this proposed method specifies a maximum application rate less than normally allowed, the earliest time that fumigation can occur, and specifies the post-fumigation water treatments.

DPR proposes to add subsection (e)(12) allowing a Drench method to be used in the NAAs. The Ratto Brothers, Inc., submitted, and DPR approved, a study that included air monitoring of a fumigant application using a tractor that drenches the soil. The data provided by the Ratto Brothers, Inc., supports this fumigation method with VOC emissions no greater than the “low-emission” methods specified in section 6452. Consistent with the fumigation method monitored, this proposed method specifies a maximum application rate less than normally allowed, and post-fumigation water treatments.

Current subsection (e) has also been reordered as subsection (f). Citing correct references as a result of reordering has been made throughout this section.

- Amend Section 6452.2 - Fumigant Volatile Organic Compound Emission Limits

Current subsection 6452.2(a) requires the Director to establish a field fumigant VOC emission limit in the Annual Volatile Organic Compound Emissions Inventory Report pursuant to section 6452.4 for any ozone NAA that exceeds 80 percent of the emission benchmarks during the May 1 through October 31 time period. This subsection does not apply to the Ventura ozone NAA until 2012. Instead, existing subsection 6452.2(c) mandates the fumigant limit and allowance process in Ventura in 2008 through 2011. Setting fumigant emission limits under section 6452.2(a) in turn triggers the requirement for field fumigant permittees to provide information justifying a specific emission allowances request to DPR, for DPR to determine and assign an allowance to each individual permittee, and for the CAC to use the permit process to track and enforce those allowances pursuant to sections 6452.3 and 6452.4.

The proposed amendments to subsection (a) remove the phrase “Beginning in 2011” since these revisions will be effective in 2011, and consolidates the benchmarks for the Ventura ozone NAA in 2010 and 2011 from existing subsection (c) into the chart. The Ventura benchmarks for 2008, 2009, and 2010 in existing subsection (c) are no longer needed.

Additionally, the proposed amendment to subsection (a) revises the “trigger” for fumigant limits in NAAs and provides flexibility to implement fumigant limits even if the trigger level is not reached. The current trigger of 80 percent of the targeted benchmarks is unnecessarily restrictive, based on DPR’s experience with these regulations in 2008 and 2009, and recent trends in pesticide VOC emissions. DPR proposes to revise the trigger from 80 percent of the benchmarks to when emissions reach a level five percent or less below the benchmarks (equivalent to 95 percent of the benchmarks).

The current trigger of 80 percent of the benchmarks (64 percent of 1990 base year emissions) is unnecessarily restrictive based on VOC emission data for 2008. For the San Joaquin Valley NAA, fumigant VOC emissions decreased by 45 percent between 2007 (prior to fumigant VOC regulations) and 2008 (first year of fumigant VOC regulations), mostly due changes in fumigation methods required by the fumigant VOC regulations. The fumigant decrease caused a decrease in total pesticide (fumigant plus nonfumigant) VOC emissions of 16 percent between 2007 and 2008, and a decrease of 29 percent relative to the 1990 base year. This reduction is well in excess of the 12 percent reduction required by the SIP. As anticipated, the fumigant VOC regulations are effective in achieving the SIP goals for a typical pesticide use year.

Despite these reductions substantially above the SIP requirements, the current trigger would have required limits in the San Joaquin Valley NAA in 2010. Since 2008 pesticide VOC emissions were 29 percent less than the 1990 year, additional reductions due to fumigant limits are not needed to comply with the 12 percent reduction required by the SIP. Workload for county agricultural commissioners (CACs) would increase to administer a fumigant limit and allowances, and growers would suffer economic impact for unneeded reductions. In addition, fumigant limits would achieve minimal VOC reductions due to changes in fumigation methods. Between 2007 and 2008, the relative contribution of fumigants to total pesticide VOC emissions decreased from 36 percent to 23 percent in the San Joaquin Valley NAA. Since fumigants now have a relatively smaller contribution, additional fumigant reductions would have minimal impact on total pesticide VOC

emissions. Under the 2009 proposed SIP revision, DPR is obligated to reduce VOC emissions from nonfumigant pesticides. These reductions will be more effective in reducing total pesticide VOC emissions, since nonfumigants make up the majority of pesticide VOC emissions in the San Joaquin Valley NAA. With current emission levels, there is no need for fumigant limits with a trigger of 80 percent of the benchmarks, and less need with future reductions in nonfumigant emissions. Therefore, DPR proposes to revise the trigger for fumigant limits to when emissions reach levels five percent or less below the benchmarks or exceeds the benchmarks (equivalent to 95 percent of the benchmarks).

The proposed amendment to subsection (a) is to provide flexibility to implement fumigant limits even if the trigger level is not reached, and is needed primarily for the Ventura NAA. Pesticide VOC emissions for the Ventura NAA in 2008 were 54 percent less than the 1990 base year, well in compliance with the SIP goal of a 20 percent reduction by 2012. These reductions were due to changes in fumigation methods and the fumigant limit required by the VOC regulations beginning in 2008. These reductions are more than anticipated, and emission levels in 2008 would not trigger fumigant limits for 2010 if either the current or proposed trigger was in effect. However, it's likely that the fumigant limit is the primary reason for achieving the reductions required by the SIP. VOC emissions could increase and not comply with the SIP if a fumigant limit was not in effect. This amendment allows the Director to implement a fumigant limit for this and similar situations.

DPR proposes revisions to the method for enforcing fumigant limits in subsections (c) and (d). Revised subsection (c) and new subsection (d) provide additional flexibility for enforcing the fumigant limits. CACs currently enforce fumigant limits using allowances as a condition of restricted materials permits. DPR proposes two additional options for enforcing fumigant limits. The second option is a "track and stop" system in which CACs would track emissions for each fumigation as they occur using notices of intent (NOI) and pesticide use reports. CACs would deny any NOI or permit if and when the fumigant limit is reached. The third option would allow CACs to further restrict fumigation methods to ones with the lowest VOC emissions. The third option is likely not viable for the Ventura NAA using current fumigation methods. However, this may become a viable option if and when new fumigation methods are developed. In addition, any combination of the three options could also be used to enforce the fumigant limit. Since the Ventura NAA consists of a single county, proposed subsection (c) specifies that the Ventura CAC selects the option(s) for the NAA. Since the other NAAs consist of multiple counties, subsection (d) specifies that the Director selects the option(s) for the NAA. The allowance system requires the most resources to enforce the fumigant limit. These revisions give flexibility in achieving the fumigant limit with fewer resources.

DPR proposes to revise subsection 6452.3(a) and move it to subsection 6452.2(e). This subsection has been revised to include all options for enforcing the fumigant limits. This subsection requires CACs to approve an NOI in writing, to ensure that the fumigant limit is not exceeded particularly under the track and stop system.

- Amend Section 6452.3 - Field Fumigant Volatile Organic Compound Emission Allowances

Section 6452.3 revises the information and procedure for field fumigant VOC emission allowances for permittees applying a field fumigant in an ozone NAA for which a fumigant emission limit has been established in section 6452.2 so that each ozone NAA does not exceed the fumigant emission limit.

As described above, subsection (a) has been revised and moved to proposed subsection 6452.2(e). Subsection (b) has been reordered to subsection (a).

DPR proposes to revise the information needed to request an allowance from the CAC in subsection (a). Since all fumigants are restricted materials, the operator identification number (usually used for people applying nonrestricted materials) has been changed to the restricted materials permit number. Some information currently required is not needed to issue allowances, such as some location and application information. The Ventura CAC has developed a system to assign a common fumigant product, fumigation method, and application rate to all requests for a single crop. This provides a more equitable distribution of allowances based solely on the number of acres to be fumigated. Therefore, the following information is no longer required to issue allowances under this system: county; month(s) of application; meridian, township, range, and section; verification of operator of the property; identification of the fumigant products; application rate; and fumigation method. Other CACs have the option of requiring any or all of the deleted information as a permit condition.

DPR proposes to delete subsections (c), (d), and (e) as they are no longer needed because allowances are no longer the only method to enforce the fumigant limit. In addition, the Director was responsible for certain tasks based on the assumption that multiple counties in an NAA would issue allowances. These tasks are more easily done by the CAC, since it is likely that only Ventura County will issue allowances.

- Amend Section 6452.4 - Annual Volatile Organic Compound Emissions Inventory Report

Section 6452.4 requires the Director to issue an annual emissions inventory report for the five ozone NAAs. The department bases the fumigant emission limits on the most current annual emission inventory report. The report includes the analyses of pesticide VOC emissions, emission potentials, emission ratings, and regulatory strategies that will be imposed in the upcoming year to reduce VOC emissions. The report (the emission inventory and all the factors--emission potentials, emission ratings, and analyses) are subject to a 45-day public comment.

When this section was adopted in 2008, subsection (c) was included to clarify that the emission ratings in Table 22 in the September 29, 2007 Barry, Spurlock, and Segawa memorandum to John Sanders, were to be used to determine the emissions, and that the ratings may be modified prior to issuing the final emissions inventory report. Each year, the emission ratings are presented in a table in the draft report for the public to comment prior to issuing the final VOC emissions inventory report. DPR proposes to delete subsection (c) since reference to "Table 22" is no longer necessary.

DPR also proposes to renumber subsection (a) and make editorial corrections to subsections (a)(3) and (b).

- Amend Section 6536 - Field Fumigation Licensing Requirements

As previously mentioned, when a field fumigation application is made by a licensed pest control business, the business must have a person holding a qualified applicator license or certificate with the field fumigation pest control subcategory. When section 6536 was adopted, a provision allowing a person to be issued a qualified applicator license or qualified applicator certificate in the field fumigation pest control subcategory under a “grandfather” procedure where the examination requirements and fee would be waived if the applicant met certain criteria specified in subsection (b) was included. DPR proposes to delete subsection (b) since the provision to “grandfather” into the field fumigation pest control subcategory has expired.

- Amend Section 6626 - Pesticide Use Reports for Production Agriculture

Current subsection 6626(d) required a copy of the use report for fumigant applications made in the five ozone NAAs to be submitted to DPR along with the specific field fumigation method used appended to the report through December 31, 2008. This requirement was adopted because implementation of incorporating these reporting requirements into the existing use report system had to be delayed due to necessary changes to DPR's infrastructure. DPR proposes to delete subsection (d) as this reporting requirement is now reported through the existing pesticide use reporting system, and re-alphabetize subsections (e), (f), and (g) as a result of this deletion. DPR also proposes to delete reference to subsection (d) from subsection (c) and the date from current subsection (e), as these are not longer applicable, and remove an incorrect reference citation.

CONSULTATION WITH OTHER AGENCIES

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.

Additionally, DPR consulted with ARB during the development of the text of proposed regulations and the CACs during the development of the proposed regulations.

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.

ECONOMIC IMPACT ON BUSINESSES

The proposed regulations will not have a significant adverse economic impact upon business. The document relied upon to make this determination is listed in the “Documents Relied Upon” section of this initial statement of reasons and is available from DPR.

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

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.

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 (and revised in 2007 and 2009), ARB and DPR developed a plan to reduce pesticidal sources of VOCs in NAAs as part of the California SIP to meet the ozone standard.

DOCUMENTS RELIED UPON

1. DPR 2008. *Director's Decision Concerning the Responsible Farmers Coalition's Request for Approval of Reduced Volatile Organic Compound Emissions Field Fumigation Methods*. Mary-Ann Warmerdam, Director, Department of Pesticide Regulation. February 29, 2008.
2. Review of "Field Volatility of Methyl Isothiocyanate After Application of Metam-Sodium by Chemigation and Shank Injection Comparing Standard Water Sealing with Pulsed Water Sealing." February 26, 2008. Memorandum from Terrell Barry, Shifang Fan, and Pamela Wofford to Randy Segawa, Environmental Program Manager, Environmental Monitoring Branch, DPR.
3. DPR 2008. *Director's Decision Concerning the Ratto Brothers, Inc.'s Request for Approval of Reduced Volatile Organic Compound Emissions Field Fumigation Methods*. Mary-Ann Warmerdam, Director, Department of Pesticide Regulation. May 15, 2008.
4. DPR 2008. *Director's Decision Concerning Grimmway Farms' Request for Approval of Reduced Volatile Organic Compound Emissions Field Fumigation Methods*. Mary-Ann Warmerdam, Director, Department of Pesticide Regulation. August 14, 2008.
5. Annual Report of Volatile Organic Compound Emissions from Pesticides: Emissions for 1990-2008. Department of Pesticide Regulation, Environmental Monitoring Branch. Sacramento. April 2010.
6. Economic Analysis for Proposed Regulation DPR 10-004. California Environmental Protection Agency, Agencywide Economic Analysis Unit, Air Resources Board. Memorandum from Stephen Storelli to Linda Irokawa-Otani, DPR Regulations Coordinator. July 20, 2010.