BEFORE THE DIRECTOR OF THE
DEPARTMENT OF PESTICIDE REGULATION
STATE OF CALIFORNIA

In the Matter of TriCal, Inc.
Request for Approval of
Reduced Volatile Organic Compound
Emissions Field Fumigation Method

DECISION
(California Code of Regulations, Title 3, section 6452)

TRICAL, INCORPORATED
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Summary

TriCal, Inc. submitted a request to reclassify the chloropicrin non-tarped, deep shank, broadcast application as a "low emissions" method. As part of the Department of Pesticide Regulation's (DPR's) efforts to reduce volatile organic compound (VOC) emissions, this fumigation method is not allowed within several ozone nonattainment areas (NAAs) during May–October, under Title 3, California Code of Regulations (3 CCR) section 6450.1(c). However, the regulations include a provision for the DPR Director to grant interim approval of fumigation methods with emissions no greater than the field fumigation methods allowed in the regulations (3 CCR section 6452). DPR has completed its evaluation of the fumigation method as specified in 3 CCR section 6452.

No data was submitted, but TriCal Inc. has requested the emission rating for the non-tarp, deep shank, broadcast method be changed from the current 64 percent to 46.3 percent based on a study reviewed by DPR (Barry, 2013). In addition, TriCal, Inc. requests that based on the new emission rating, the non-tarp, deep, strip and non-tarp, GPS-targeted applications should also be considered to be "low-emission" methods. The non-tarped GPS-targeted application is a strip application that is made with equipment that injects the fumigant at intervals targeted for future plantings. DPR has determined that rulemaking is required to reclassify the current non-tarp, deep, broadcast method from high-emission to low-emission. This request cannot be granted interim approval under 3 CCR section 6452. Based on the reduced application rate of the non-tarp, deep, strip and non-tarp, deep, GPS-targeted application the methods can be classified as "low-emission methods" with limits on the application rate. Effective immediately, DPR grants approval for interim use of the non-tarp, deep, strip and non-tarp, deep, GPS-targeted application methods using chloropicrin products, with limits on the application rate. The emission rating assigned to these methods is 64 percent. These methods may be used for three years from the date of this decision.

Background

VOCs contribute to the formation of ozone, a major air pollutant in several regions of California. Under the federal Clean Air Act, California's State Implementation Plan for ozone includes an element to track and reduce VOC emissions from pesticides. On January 25, 2008, DPR adopted regulations to control VOC emissions from fumigants during the May–October peak ozone season in five ozone NAAs: Sacramento Metro, San Joaquin Valley, Southeast Desert, South Coast, and Ventura. The regulations include provisions that only allow fumigation methods for which DPR has adequate data to determine the VOC emission rates. However, the regulations include a provision for interim approval of fumigation methods with emissions no greater than the field fumigation methods allowed in the regulations in the respective areas (3 CCR section 6452).

In a letter dated April 3, 2014 TriCal, Inc. requested that DPR approve an exemption for a non-tarped, deep shank, broadcast application method using chloropicrin. The fumigation method is critical to orchard and vineyard replant in California to control soil-borne disease. TriCal, Inc. asserts that the method is necessary for the control of soil-borne disease in California orchards and vineyards and that new data indicates the emissions from the method would be below the maximum allowed emission rate used to determine "low-emission" methods. TriCal, Inc. also requests that the emission rating determined for the non-tarped, deep shank, broadcast application be applied to non-tarped, deep, strip and non-tarped GPS-targeted application methods.

Regulatory Standards and Considerations

Section 6452, 3 CCR sets different standards by which to evaluate whether a new fumigation method will be allowed; one for the Sacramento Metro and South Coast ozone NAAs, and one for the San Joaquin Valley, Southeast Desert, and Ventura ozone NAAs. Sacramento Metro and South Coast NAAs have a less stringent standard because no further VOC reductions from pesticides are needed in these ozone NAAs. Both "low-emission" and "high-emission" methods can be used in these two areas. Only "low-emission" methods are allowed in the San Joaquin Valley, Southeast Desert, and Ventura ozone NAAs during the May–October peak ozone season. The key information is the emission rating (percent of the fumigant applied that is emitted to the air) and the emission rate (emission rating multiplied by the maximum application rate). Either the emission rating or the emission rate can be no greater than the current methods allowed within the ozone NAAs by the regulations. The following table shows the standard for approval of an interim method for chloropicrin, based on DPR's current emission estimates.

Ozone Nonattainment Area	Maximum Allowed Chloropicrin Emission Rating (percentage)	Maximum Allowed Chloropicrin Emission Rate (pounds/acre)
Sacramento Metro, South Coast	64	256
San Joaquin Valley, Southeast Desert, Ventura	44	176

In assessing whether the new method meets the standard, DPR must assess the scientific data submitted to establish the emission rating, normally consisting of field monitoring data. In evaluating this data, 3 CCR section 6452 requires DPR to consider the following factors:

- Whether the information is sufficient to estimate emissions.
- Whether the results are valid as indicated by the quality control data.
- Whether the conditions studied represent agricultural fields.

Summary and Evaluation of the Submitted Information

In 2007, DPR assigned an application method adjustment factor (emission rating) to deep injection with a high permeability tarp or no tarp broadcast application method for chloropicrin of 64 percent (Barry, et al., 2007). DPR has received a more recent study that measured chloropicrin field emissions from a shank application at a deep injection depth (Ajwa and Sullivan, 2008) with an estimated total mass loss of 46.3 percent for the study application. In 2013, DPR proposed buffer zones for chloropicrin based on the Ajwa and Sullivan (2008) study, and excluded the study used to establish the 2007 emission rating of 64 percent (Barry, 2013). However, it is premature to modify the VOC emission rating for this or other chloropicrin fumigation methods because DPR is reassessing the data used to determine the buffer zones based on comments from the public and peer reviewers. Additionally, 3 CCR section 6449.1(b) currently prohibits this method during May-October, regardless of the emission rating assigned to it. Even if DPR agrees to revise the emission rating from 64 percent to 46 percent, this fumigation method would still be classified as high-emission.

The current emission rating for the non-tarp, deep, shank broadcast is 64 percent; however, the strip method makes an application to only a certain percent of the total application area.[1] The application is made to strips that cover 35–60 percent of the application area which would result in a broadcast equivalent rate of 122.5–210 lbs/acre and a VOC emission rate of 78–134 lbs/acre, respectively, at the maximum label rate of 350 pounds per treated acre.

[1] Strip applications are normally applied in rows or strips to a flat field, and labels frequently refer to application rates on a treated acre basis. Application rates on a treated acre basis must be converted to the broadcast equivalent (strip treated area plus untreated area between strips) to determine compliance with specified application rate limits.

The non-tarped GPS-targeted application is a strip application that is made with equipment that injects the fumigant at set intervals targeted for future plantings. TriCal, Inc indicates that the GPS-targeted application would cover no more than 30 percent of the total application area. At the maximum allowable label application rate for chloropicrin of 350 pounds per treated acre, the broadcast equivalent application rate would be no more than 105 pounds per acre, and the VOC emission rate would be no more than 67 pounds per acre.

All three methods described may be used in combination with 1,3-dichloropropene (1,3-D). The non-tarped, deep, broadcast method for 1,3-D is already designated as a low-emission method, based on an emission rating of 26 percent. No changes are needed for the non-tarped, deep, strip fumigation method or the non-tarped, deep, GPS-targeted fumigation method.

Findings

It is premature to modify the VOC emission rating for the non-tarp, deep, broadcast method because DPR is reassessing the data. DPR may decrease the emission rating after its reassessment of data, but the current emission rating of 64 percent will not be increased. Even if DPR revises the emission rating to 46 percent, or less than 44 percent, reclassifying this method from high-emission to low-emission requires rulemaking. It cannot be changed using the interim approval process specified in 3 CCR section 6452. Current regulations [3 CCR section 6449.1(b)] designate the non-tarp, deep, broadcast method as high-emission, regardless of the assigned emission rating.

Conclusions

The 64 percent emission rating and proposed application rate of up to 210 pounds per broadcast acre would be a VOC emission rate of 134 pounds per acre, meeting the low-emission criteria specified in the table above. Effective immediately, the chloropicrin non-tarped, deep, strip fumigation method and non-tarped, deep, GPS-targeted fumigation method are approved for use in all five ozone NAAs with the following restrictions during May 1 – October 31:

- Chloropicrin application rate must not exceed 210 pounds active ingredient per broadcast acre.
- The total fumigated area must not exceed 60 percent of the application block.
- An individual application block cannot be fumigated more than once in any calendar year (i.e. “split” applications are prohibited).

- Pesticide use reports must identify non-tarped, deep, strip applications using field fumigation method code **1210**.
- Pesticide use reports must identify non-tarped, deep, GPS-targeted applications using field fumigation method code **1211**.

The 1,3-D emission rating of 26 percent for the non-tarped, deep, broadcast fumigation method remains unchanged, and also applies to the non-tarped, deep, strip fumigation method and the non-tarped, deep, GPS-targeted fumigation method.

DPR grants interim approval of this fumigation method for three years from the date of this decision. DPR must adopt regulations to include these new methods prior to the expiration of the interim approval.

By: *Original Signed By* Date: July 31, 2014

Brian Leahy, Director
Department of Pesticide Regulation

References

Ajwa, H. and D. Sullivan. 2008. Monitoring of chloropicrin field emissions from shank applications at shallow and deep injection depths. Sullivan Environmental Consulting, Inc. Laboratory Study ID HA200801. MRID 47576901. CDPR data volume 0199-0130

Barry, T., Spurlock, F., Segawa, R. 2007. Pesticide volatile organic compound emission adjustments for field conditions and estimated volatile organic compound reductions-revised estimates. Memorandum to John Sanders, Dated September 29, 2007. Department of Pesticide Regulation.

Barry, T. 2013. Development of Chloropicrin Buffer Zones. Memorandum to Randy Segawa, dated March 26, 2013. Department of Pesticide Regulation.