1,3-Dichloropropene Mitigation and Pilot Program

Edgar Vidrio

July 9, 2020

SCIENTIFIC REVIEW PANEL ON TOXIC AIR CONTAMINANTS

Agenda

1. Background
2. Mitigation Approach
3. Pilot Program
4. Connection of Pilot Program to AB617 selected community: Shafter
5. Q&A

1,3-Dichloropropene(1,3-D)

- Pre-plant soil fumigant used to control nematodes, insects, and disease organisms.
- Major uses in California include fruit and nut trees, strawberries, grapes, and carrots crops.
- Listed as a restricted material and requires a permit from the local county agricultural commissioner to apply.
- Various mitigation measures to control exposure to 1,3-D have been in place since 1995.
- DPR's is proposing additional requirements focused on reducing short-term acute risk to children and infants.

Mitigation Approach

- Options Generally Available to Address Acute Exposures:
  - Increase distance between application and sensitive receptors
  - Limit amount of 1,3-D applied
  - Increase soil moisture requirements
  - Require use of lower-emitting application methods

- DPR used air monitoring data in combination with computer modeling (HYDRUS and AERFUM) to identify various mitigation measures.

- Computer modeling indicates that use of totally impermeable film (TIF) tarps results in minimal additional mitigation measures needed to remain below regulatory targets.

Mitigation Approach

- Use of TIF tarps is not feasible for all crops in SJV; DPR is exploring alternative options to reduce 1,3-D emissions to a level comparable to TIF tarps.
- US EPA and DPR offer a 60% buffer zone reduction credit when TIF tarps are used in certain fumigant applications.
- Computer modeling shows that 60% emission reduction equates to at least a 60% buffer zone reduction for most field sizes or application rates.
- For this mitigation effort, DPR aims to reduce 1,3-D emissions by at least 60% compared to the standard 18” depth untarped application method.
- DPR has identified several options that result in 1,3-D emission reductions of at least 60% compared to a standard fumigation[1].

[1] DPR Posted Mitigation Document:
https://www.cdpr.ca.gov/docs/risk/rcd/13-d_pilot_mitigation_options_march_2020.pdf

Pilot Program

- Considerations:
  - 1,3-D is extensively used [~12.6m lbs. applied (2011-2015)].
  - No commercial-scale alternative currently available.
  - Proposed mitigation measures could be costly.
  - Not all proposed measures may be feasible or achieve the desired emission reductions.

- Pilot Program to start in Fall 2020 in selected high-use areas near the towns of Delhi (Merced and Stanislaus Counties), Parlier (Fresno County), and Shafter (Kern County).

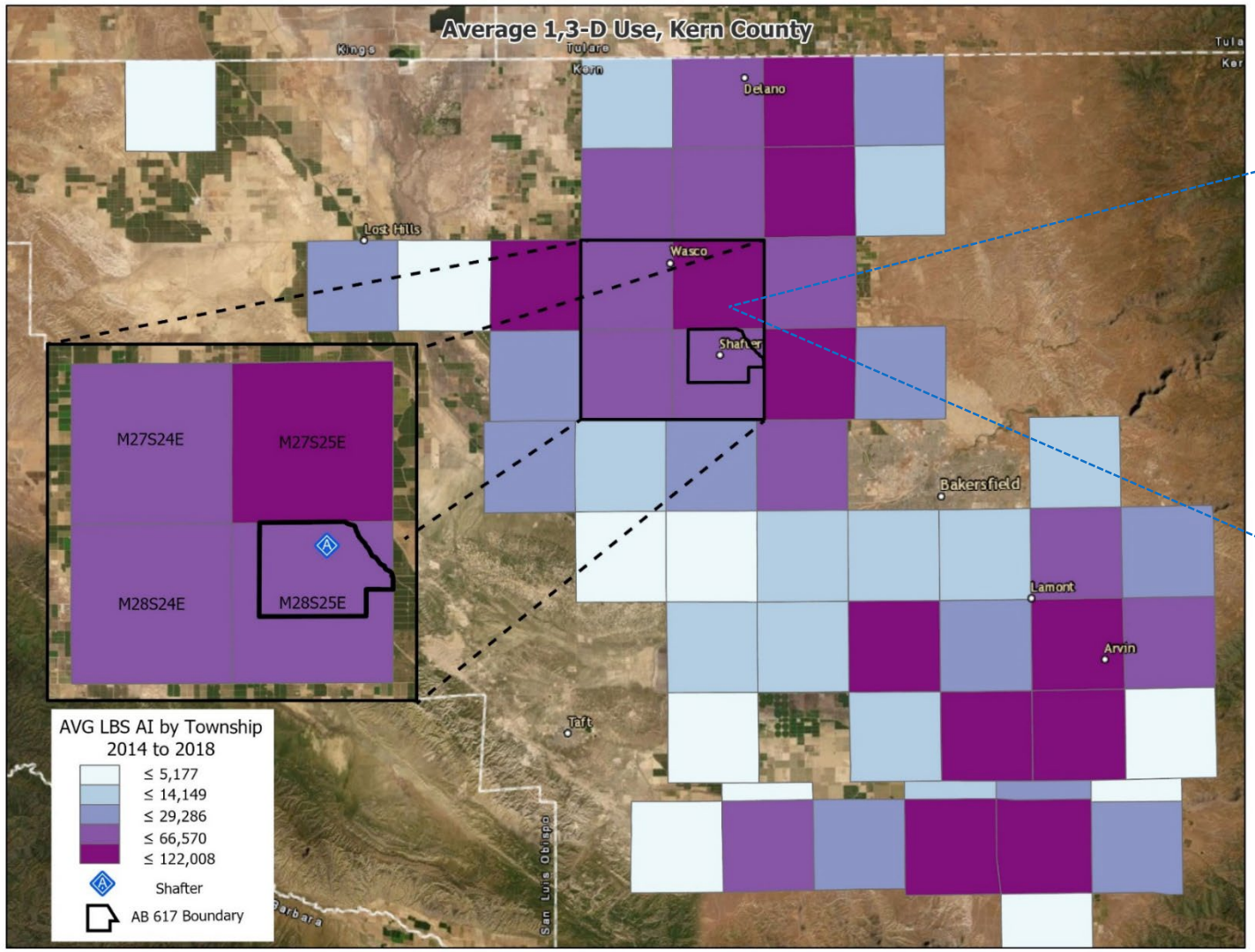
- The Pilot Program may include the following emissions reduction options:
  - Fumigant injection at deeper soil depths
  - Increasing soil moisture
  - Complete and partial TIF tarping
  - Application rate reductions
  - Acreage limits
  - Setbacks from occupied sensitive sites

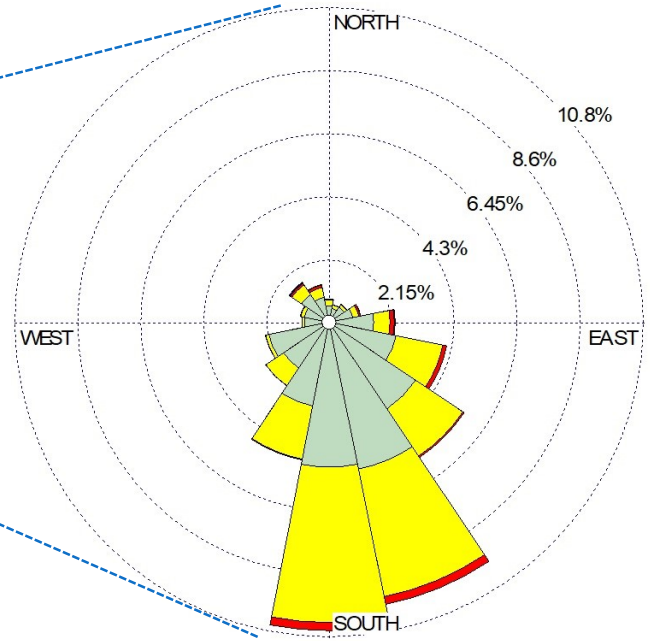
Pilot Program

- **Pilot Program Objectives:**
  - To collect and evaluate monitoring data from new methods to validate computer modeling estimates, and
  - To evaluate feasibility of proposed mitigation options, and
  - To evaluate effectiveness of mitigation options aimed towards reducing emissions of 1,3-D for statewide implementation.

- **Air monitoring efforts during Pilot Program:**
  - Weekly ambient air monitoring at a station within Pilot Program area.
  - Application-site monitoring studies to measure and validate emissions (flux) from proposed application methods.

Pilot Program and AB 617 Interaction





Questions?

Thank You.

Edgar Vidrio, Chief
Environmental Monitoring Branch
California Department of Pesticide Regulation
Edgar.Vidrio@cdpr.ca.gov