<table>
<thead>
<tr>
<th>Topic</th>
<th>Slide No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements, Regulations, &amp; Permit Conditions</td>
<td>3-8</td>
</tr>
<tr>
<td>Township Cap</td>
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<td>Notification</td>
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<td>Application</td>
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<td>Buffer Zones</td>
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<td>Tarps</td>
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<td>Worker Safety Requirements</td>
<td>48-52</td>
</tr>
<tr>
<td>Entry Restricted Period</td>
<td>53-56</td>
</tr>
</tbody>
</table>
FEDERAL LABEL CHANGES
Phase 1 (2010)

- Changes Include:
  - Fumigation Management Plan (FMP)
  - Mandatory Good Agricultural Practices (GAPs)
  - Fumigant Safe Handling Information
  - Supervision of Handlers
  - Handler Respiratory Protection
  - Stop Work Triggers
  - Entry Restricted Period
  - Tarp Perforation and Removal

Additional Phase 1 training located at http://www.cdpr.ca.gov/docs/county/training/soilfum/soilfum.htm
FEDERAL LABEL CHANGES

Phase 2 (2012)

- Changes Include:
  - Buffer Zone Tables
  - Buffer Zone “Credits”
  - Buffer Zone Posting Requirements
  - Difficult to Evacuate Sites
  - Certified Applicator Training
  - First Responder Information
  - Community Outreach
  - Emergency Preparedness and Response Measures
  - Fumigation Management Plan (part 2)

Additional Phase 2 training located at http://www.cdpr.ca.gov/docs/county/training/soilfum/soilfum2.htm
For purpose of DPR REGULATIONS, 3CCR, field soil fumigation does not apply to:

- Golf courses
- Tree holes
- Potting soil
- Raised tarp fumigation and nursery fumigation < 1ac.
- Greenhouses & other similar structures

Federal label requirements DO apply
California Code of Regulations (3CCR)

- Division 6. Pesticide and Pest Control Operations
  - 6445 Fumigation- Handling Activities
  - 6447 Methyl Bromide– General Requirements
  - 6447.1 Methyl Bromide Notification Requirements
  - 6447.2 Methyl Bromide Buffer Zone Requirements
  - 6447.3 Methyl Bromide Fumigation Methods

Regulations located at
http://www.cdpr.ca.gov/docs/legbills/calcode/subchpte.htm#a0204
DPR recommends additional permit conditions for the use of Methyl bromide in field fumigations

- Pesticide Use Enforcement Program Standards Compendium Vol. 3. Restricted Materials and Permitting
  - Appendix C. Recommended Permit Conditions
  - Section C.7 Soil Fumigation
    - *Subsection C.7.3 Methyl Bromide (soil fumigation) Recommended Permit Conditions

*http://www.cdpr.ca.gov/docs/enforce/compend/vol_3/append_c_7_3.pdf*
PERMIT CONDITIONS

Include the following:

- Evaluation of local conditions and worksite plan
- Size and duration of buffer zone
- Work day and hour restrictions
- Respirator number and type
- Specific notification procedure
- Restrictions to address local conditions
- Tarp repair response and removal plan
Methyl bromide use does not exceed **171,625 lbs.** in any township during any calendar month

- CAC denies NOI if cap will be reached
- Option to track on consecutive 30-day basis
- CACs coordinate with growers and applicators to allocate methyl bromide use prior to peak season
NOTIFICATION

NOTIFICATION REQUIREMENTS

- Notification to commissioner
  - Notice of Intent (NOI)

- Notification to property owners
  - Initial notification
  - Specific notification

- Notification to employees of other property operators

- Emergency preparedness and response (if applicable)
NOTIFICATION
NOTICE OF INTENT (NOI)

- At least 48 hours prior to fumigation
  - Fumigation can not start earlier than recorded
  - Or later than 12 hours after the start time
  - New NOI must be submitted if fumigation will start after the 12 hours but no 48 hour waiting time

- CAC may allow a single NOI for multiple application blocks to be fumigated sequentially
At least 7 days prior to submission of NOI

Properties 300 feet of outer buffer zone

- Schools
- Residences
- Hospitals
- Convalescent homes
- Onsite employee housing
- Similar sites identified by the commissioner

3CCR 6447.1 (b)(1)
Notification must include:
- Chemical name
- Name, address, and telephone number of operator of property and CAC
- Earliest and latest dates the fumigation will start
- How to request subsequent notification
NOTIFICATION

SPECIFIC NOTIFICATION

- At least 48 hours prior to the start of the fumigation
- Must be requested by the properties that receive initial notification
- Notification includes:
  - Date and time of the start of the fumigation
  - Anticipated expiration of buffer zones
New labels require Emergency Preparedness and Response Measures for neighbors within a specific distance from the buffer zone.

The certified applicator has 2 options to fulfill this requirement:

- **Notification** (required in mebr regulations)
- **Monitoring** (is not needed IF certified applicator follows the notification option, which is NOT identical to the notification required by 3CCR 6447.1(b))
Recommended Permit Condition consolidates the notification regulations (3CCR 6447.1) with the new label notification requirements.

- Within 300 feet of the perimeter of the outer buffer zone operators of the following properties receive notification:
  - Schools, residences, hospitals, convalescent homes, onsite employee housing, or businesses.

- In English and Spanish
- Delivered at least 7 days prior to NOI
Includes

- Name of Chemical(s)
- Name of fumigant product(s) and EPA registration #
- Operator name, business address, and business phone number
- Contact info for the applicator
- Commissioner name, business address, business phone number
Includes (continued)

- Earliest and latest dates that the fumigation will start (must not range more than 4 weeks)
- How to request specific notification (date and time)
- Location of the application block
- Early signs and symptoms of fumigant exposure
- What to do if exposed
- How to find additional information about fumigants.
WORKSITE PLAN

- Operator of property shall submit a worksite plan
  - To the Commissioner (CAC)
  - 7 days prior to submitting notice of intent (NOI)
- CAC shall retain the worksite plan for 1 year after expiration of permit

3CCR 6447 (a)
WORKSITE PLAN

- Method of fumigation
- Acreage and ID of each application block
- Application rate
- Notification procedures
- Work day and work hour restrictions
- Tarp repair response and removal plan
- Description of any activities within buffer zones
- Description of work day, work hour limitation/respiratory protection
Established by the US EPA

Intention is to guide Applicators in planning the fumigation, complying with the label, and preparing in case of an emergency.

Completed prior to start of fumigation

Supervising Certified Applicator is responsible for verifying it is up to date and accurate.

2010 and 2012, Phase 1 and 2 Label Changes
CAC has the option to combine the worksite plan and FMP into one document

Information included:
- Everything on the FMP
- Notification procedures to property operators
- Any activities within the buffer zone(s)
- Any workday/work hour limitations and respiratory protection
Field or portion of field treated in a 24 hour period

Shall not exceed 40 acres unless approved by the director

Tarps must be used for all applications, except for deep shank orchard replant

Addition information on approved application methods can be found at http://www.cdpr.ca.gov/docs/county/training/methbrom/mbfmpics.pdf

3CCR 6447(d),6000 and Phase 2 Labels
Calculation

- Pounds per acre of active ingredient in formulated product
  - MeBr 57/43 at 360 pounds/ acre
  - Rate = 360 x 57%
  - or 360 x .57 = 205.2 pounds/ acre
APPLICATION
POSTING TREATED FIELD

- Post no more than 24 hours prior to start of fumigation
- Remove signs within 3 days from end of REI
- Post at usual points of entry
- Max posting interval 600 ft.
- No fieldworker entry until REI elapsed and signs removed
Signs must include:

- Skull and crossbones symbol
- The words
  - “DANGER”, “NO ENTRE”, “PESTICIDES” and “PESTICIDAS” on the upper part of the sign
  - “KEEP OUT” and “NO ENTRE” on the lower portion of the sign
 Signs must include:

- If REI more than 7 days include on the lower part
  - Date of unrestricted entry
  - Name of operator of property
  - Field identification
BUFFER ZONES
GENERAL RULES

- Measured from edge of application block
- Restrictions begin at start of injection
- In effect at least 48 hours after completion of application (*New Label Requirement*)
- If school is within 300 ft. of the perimeter of the outer buffer zone, the injection shall be completed at least 36 hours prior to the start of a school session
2 Buffer zones, an Inner and an Outer

Label Buffer Zone credits are not allowed

Distances and duration is dependent on:

- Size of application block
- Application rate
- Application method
BUFFER ZONES
INNER BUFFER ZONE

- Minimum distance of 30 feet
- Entry is limited to
  - Transit by vehicle or bicycle
  - Fumigation handling activities
- Must not include buildings (operator owned) unless they are:
  - Unoccupied and do not share a common wall

3CCR 6447.2 (e)(1,2)
Inner buffer zone may extend into:
- Roadways and similar sites used for travel
- Agricultural property if...
  - Written permission is received
  - Buffer zone boundary is posted
  - Workers are notified in a manner they understand
BUFFER ZONES

POSTING INNER BUFFER ZONE

- Signs posted no sooner than 24 hours prior to the start of application
- Signs removed after BZ period up to 3 days after the end of BZ period
- Visible from a distance of 25 feet
- Max posting interval 200 feet
- Placed on BZ perimeter and all usual points of entry
Sign must include:

- Do not walk symbol
- “DO NOT ENTER/NO ENTRE”
- Name of fumigant
- Name of product
- “Fumigant BUFFER ZONE”
- Contact information for the certified applicator in charge of the fumigation

“METHYL BROMIDE INNER BUFFER ZONE”, “KEEP OUT”, and “NO ENTRE”
BUFFER ZONES
OUTER BUFFER ZONE

- Minimum outer BZ distance is 100 feet
- Exception: Minimum 60 feet if:
  - Tarpaulin/Shallow/Broadcast ("Noble Plow")
  - and
  - 10 acres or less
  - and
  - Application rate is 235 lbs./acre or less
BUFFER ZONES

OUTER BUFFER ZONE

- No Posting Requirements
- Entry Limited to:
  - Transit by vehicle or bicycle
  - Fumigation handling activities, and
  - Activities approved by CAC
  - No persons are allowed more than 12 hours in 24 hours

3CCR 6447.2 (f)(2)
Outer buffer zone may extend into:

- Roads, highways, similar sites
- Other property:
  - With permission from other property operator
  - No occupied housing within buffer zone
  - No schools, convalescent hospitals or sensitive sites on property
  - Workers are notified in a manner they understand
Use the Methyl Bromide Field Fumigation Buffer Zone Determination (Rev. 3/13) document* to determine the buffer zone

- Table 1: Fumigation Methods and Emission Ratios
- Table 2: Outer BZ distances
- Table 3: Outer BZ distances for § 6447.3(a)(3)(B)1.
- Table 4: Inner BZ distances
- Table 5: BZ duration (hours)

* http://www.cdpr.ca.gov/docs/emon/methbrom/buffer_determination.pdf
Using the Methyl Bromide Field Fumigation Buffer Zone Determination (Rev. 3/13) document

1. Verify approved fumigation method (Table 1)
2. Determine corresponding emission ratio (Table 1)
3. Determine emission rate and acreage
   - Emission Ratio X Application Rate (AI) = Emission Rate
4. Find outer BZ distance by using the emission rate and total acres on Table 2 or 3
Buffers Zones

Emission Ratio/Rate

- Emission ratio:
  Rate of MeBr volatilized based on fumigation method (listed in the guidance manual)

- Emission rate:
  Emission ratio X application rate

- Adjust rate if strip fumigation
Using the Methyl Bromide Field Fumigation Buffer Zone Determination (Rev. 3/13) document

- Using Table 4. Inner Buffer Zone Distances (feet) for Field Soil Fumigation
- Select appropriate “Acreage” in left-hand column
- Select appropriate “Emission Rate” from the top row
- Buffer Zone distance is where the “Acreage” and “Emission Rate” intersect
More than 12 hrs but less than 36 hrs from the end of injection to beginning of next fumigation (labels prohibit overlap during the first 12 hours)

Combine acreages to determine BZ

Look up BZ distance on Methyl Bromide Buffer Zone Determination document

Total combined acreages not to exceed 40 acres
Using the Methyl Bromide Field Fumigation Buffer Zone Determination (Rev. 3/13) document

- Table 5A, 5B. Buffer Zone Duration
- BZ duration is based on:
  - Application Rate
  - Acreage
  - Fumigation Method
- BZ duration must be based on combined acreage of the application blocks with overlapping methyl bromide outer buffer zones
Methyl bromide applications using any tarp that qualifies for a buffer zone reduction credit (even if the credit is not applied)

Removal/Perforation may take place at minimum, 9 days (216 hours) after the application is complete

List of qualifying tarps can be found at http://www.epa.gov/pesticides/tarpcredits/
TARP REPAIR
RESPONSE PLAN

- Include in worksite plan
- Identify who is responsible for detection and repair
- Decision to repair made by a certified applicator:
  - Permittee
  - Authorized representative
  - Pest control operator
Decision factors:

- Hazards to public, residents, or workers
- Proximity to occupied structures
- Size of damaged area
- Timing of damage
- Feasibility and response time of repair
- Environmental factors (e.g. wind speed/direction)
Repair requirements:
- Testing must be done by certified applicator wearing SCBA
  - Less than 5 ppm, without respirator
    - 1 hour limit
  - Less than 5 ppm, with respirator
    - 10 hour limit
  - 5 ppm or more, SCBA required
For all fumigation-handlers: shovelers, copilots, drivers and supervisors; tarp cutters and removers

Include: handler’s name, activity, date, work days/hours, duration, EPA registration number, brand name

Maintain for two years at central location
When required by these regulations, employees shall wear National Institute for Occupational Safety and Health (NIOSH)-certified respiratory protection, specifically recommended by the manufacturer for use in atmospheres containing less than 5 ppm methyl bromide, during the entire duration of the fumigation-handling activity.

Air-supplying respiratory protection may be used in lieu of chemical cartridge respirators.
<table>
<thead>
<tr>
<th>Method</th>
<th>Rate (lbs.)</th>
<th>Driver</th>
<th>Applicator</th>
<th>Shovel Copilot</th>
<th>Supervisor</th>
<th>Cutter</th>
<th>Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT/S/Be</td>
<td>200</td>
<td>9*</td>
<td>NA</td>
<td>NA</td>
<td>9*</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>NT/D/Br</td>
<td>400</td>
<td>10*</td>
<td>NA</td>
<td>NA</td>
<td>No limit¹</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>T/S/Br</td>
<td>400</td>
<td>8*</td>
<td>NA</td>
<td>4*</td>
<td>4*</td>
<td>No limit¹</td>
<td>No limit²</td>
</tr>
<tr>
<td>T/S/Be</td>
<td>250</td>
<td>No limit</td>
<td>NA</td>
<td>8*</td>
<td>8*</td>
<td>No limit¹</td>
<td>No limit²</td>
</tr>
<tr>
<td>T/D/Br</td>
<td>400</td>
<td>8*</td>
<td>NA</td>
<td>4*</td>
<td>4*</td>
<td>No limit¹</td>
<td>No limit²</td>
</tr>
<tr>
<td>Hot Gas</td>
<td>225</td>
<td>NA</td>
<td>5*</td>
<td>NA</td>
<td>5*</td>
<td>No limit¹</td>
<td>No limit²</td>
</tr>
</tbody>
</table>

3CCR 6784 (b)(3)(A)
## WORKER SAFETY

### WORK HOUR LIMITS

**TABLE 2 - THREE WORKDAYS PER MONTH - NO RESPIRATOR**

<table>
<thead>
<tr>
<th>Method</th>
<th>Rate (lbs.)</th>
<th>Driver</th>
<th>Applicator</th>
<th>Shovel Copilot</th>
<th>Supervisor</th>
<th>Cutter</th>
<th>Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT/S/Be</td>
<td>200</td>
<td>4*</td>
<td>NA</td>
<td>NA</td>
<td>4*</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>NT/D/Br</td>
<td>400</td>
<td>4*</td>
<td>NA</td>
<td>NA</td>
<td>7*</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>T/S/Br</td>
<td>400</td>
<td>4*</td>
<td>NA</td>
<td>3*</td>
<td>3*</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>T/S/Be</td>
<td>250</td>
<td>4*</td>
<td>NA</td>
<td>4*</td>
<td>4*</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>T/D/Br</td>
<td>400</td>
<td>4*</td>
<td>NA</td>
<td>3*</td>
<td>3*</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Hot Gas</td>
<td>225</td>
<td>NA</td>
<td>2*</td>
<td>NA</td>
<td>2*</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

3CCR 6784 (b)(3)(B)
Work hours may be increased if actual application rate is less than the method maximum rate

With or without respirator

Adjusted work hours = (max rate for method actual application rate) x max hrs per 24 hrs
EARLY ENTRY

- No entry allowed except to perform fumigation-handling activities
- Full face respirator must be worn except for:
  - Repair
  - Tarpaulin cutting
  - Tarpaulin removal
ENTRY RESTRICTED PERIOD

- Old labels allow worker reentry after 48 hours
- Reentry time lengthened
  - Highly variable fumigant dissipation rate (soil conditions, application method, tarp type) so could still have high concentrations after 48 hours
- Minimum reentry is 5 days
  - Properly equipped handlers ok, no worker reentry
  - Actual re-entry varies based on application methods
ENTRY RESTRICTED PERIOD

4 SCENARIOS FOR ERP

Untarped

Tarped – Bedded. Perforate but not removed within 14 days

Tarped – Broadcast application

Tarped – Bedded. Perforated and/or remove after 14 days
<table>
<thead>
<tr>
<th>If application is...</th>
<th>and tarp is...</th>
<th>_____ days after application is completed</th>
<th>workers may enter...</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Untarped</td>
<td>-</td>
<td>-</td>
<td>5 days after application is complete</td>
</tr>
<tr>
<td>2. Tarped</td>
<td>Perforated &amp; Removed</td>
<td>within 14 days</td>
<td>after tarp is removed</td>
</tr>
<tr>
<td>3. Tarped</td>
<td>Perforated BUT Not Removed</td>
<td>within 14 days</td>
<td>48 hours after perforating tarps</td>
</tr>
<tr>
<td>4. Tarped</td>
<td>Perforated and/or Removed</td>
<td>more than 14 days</td>
<td>5 days after application is complete</td>
</tr>
</tbody>
</table>

Phase 1 and 2 labels
The End

Monica De Anda
Environmental Scientist
Department of Pesticide Regulation
mdeanda@cdpr.ca.gov