PHASE II SOIL FUMIGATION

• BUFFER ZONES FOR METHYL BROMIDE
  – Labeling – In CA use CA regulatory BZ distances
  – Labeling “distance” = CA Inner BZ
    ○ Same distance but labeling restrictions
  – CA Outer BZ
    ○ Use Methyl Bromide Field Soil Fumigation Buffer Zone Determination (Rev. 3/13)
PHASE II SOIL FUMIGATION

- BUFFER ZONES FOR ALL OTHER PHASE 2 SOIL FUMIGANTS
  - Compare labeling BZ with permit conditions
    - Use the larger BZ
    - Use the labeling restrictions (unless permit is more restrictive)
PHASE II SOIL FUMIGATION

- RESIDENTIAL AREAS WITHIN BUFFER ZONES

- Buffer zones may include residential areas *if* occupants provide written agreement to vacate

- For methyl bromide products with <20% chloropicrin, **air monitoring** inside residences is **required** after buffer zone period ends

- Storage buildings in BZ must be unoccupied or share wall with an occupied structure
PHASE II SOIL FUMIGATION

- **OVERLAP OF BZS**
  - Time elapsed – earlier application completed until next application started. (12 hours)

- **AG AREAS NOT CONTROLLED BY OWNER/OPERATOR**
  - Need written agreement that provides that all persons will be kept out of BZ

- **ROADS/RIGHTS OF WAY**
  - Entry prohibited except for vehicle & bicycle transit

- **PUBLIC AREAS**
  - Written permission from responsible agency
  - Entry prohibited
PHASE II SOIL FUMIGATION

TRANSIT THROUGH BUFFER ZONES

• Allowed:
  - Vehicular and bicycle traffic on public and private roadways

• Prohibited:
  - Pedestrians
  - Bus stops or places where people wait for public transit
PHASE II SOIL FUMIGATION

BUFFER ZONE DURATION

- MBr regulations – 36 hours
- Metam permit conditions – 24 hours
- Labeling – 48 hours
PHASE II SOIL FUMIGATION

CALIFORNIA BZ CREDITS

- Chloropicrin & 1,3-D with chloropicrin only
  - Tarp – 20–60% (Under specific conditions, ENF-12-21 amended)
  - Water treatment – 15% (only when approved by label)
  - Potassium thiosulfate treatment – 15% (NOT ALLOWED)
  - Tarp Symmetry system – 10% (NOT ALLOWED)
  - Soil organic content – 10–30% (NOT ALLOWED)
  - Soil clay content – 10% (NOT ALLOWED)
  - Soil temperature – 10% (NOT ALLOWED)
### PHASE II SOIL FUMIGATION

#### CA BUFFER ZONE CREDITS

Conditions apply – see ENF 12-21 (Amended)

<table>
<thead>
<tr>
<th>Condition</th>
<th>MeBr</th>
<th>Chloropicrin</th>
<th>Metam</th>
<th>Dazomet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of high barrier tarp</td>
<td>30 or 60</td>
<td>30 or 60</td>
<td>15 or 30</td>
<td>NA</td>
</tr>
<tr>
<td>Organic matter content</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 1% -2%</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>&gt; 2% -3%</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>&gt; 3%</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Clay content &gt; 27%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 50 F (center pivot and shank)</td>
<td>NA</td>
<td>10</td>
<td>20</td>
<td>NA</td>
</tr>
<tr>
<td>&gt; 50-70 F (center pivot and shank)</td>
<td>NA</td>
<td>NA</td>
<td>10</td>
<td>NA</td>
</tr>
<tr>
<td>&gt; 50-70 F (drip irrigation, flood irrigation, and rotary tiller and spray blade applications)</td>
<td>NA</td>
<td>NA</td>
<td>10</td>
<td>NA</td>
</tr>
<tr>
<td>Symmetry application system, high barrier tarp, &lt;100 lb ai/A</td>
<td>NA</td>
<td>40 or 70</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Potassium thiosulfate seal with water applied over tarp</td>
<td>15</td>
<td>15</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Water seal applied over tarp</td>
<td>NA</td>
<td>10</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Max reduction</strong></td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>40</td>
</tr>
</tbody>
</table>
CALIFORNIA BZ CREDITS

- **Methyl Bromide**
  - No buffer zone reduction credits are allowed

<table>
<thead>
<tr>
<th>Condition</th>
<th>MeBr % Reduction</th>
<th>Chloropicrin % Reduction</th>
<th>Metam % Reduction</th>
<th>Dazomet % Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of high barrier tarp</td>
<td>30 or 60</td>
<td>30 or 60</td>
<td>15 or 30</td>
<td>NA</td>
</tr>
<tr>
<td>Organic matter content</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 1% -2%</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>&gt; 2% -3%</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>&gt; 3%</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Clay content &gt; 27%</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Soil Temp</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 50 F (pivot and shank)</td>
<td>NA</td>
<td>20</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>&gt; 50-70 F (center pivot and shank)</td>
<td></td>
<td></td>
<td>10</td>
<td>NA</td>
</tr>
<tr>
<td>&gt; 50-70 F (drip irrigation, flood irrigation, and rotary tiller and spray blade application)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symmetry application system, high barrier tarp, &lt;100 lb ai/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium thiosulfate seal with water applied over tarp</td>
<td>15</td>
<td>15</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Water seal applied over tarp</td>
<td>NA</td>
<td>10</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Max reduction</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>40</td>
</tr>
</tbody>
</table>
PHASE II SOIL FUMIGATION

DIFFICULT TO EVACUATE SITES

• BZ more than 300 feet – 1/4 mile
• BZ 300 feet or less 1/8 mile
• Metam Permit
  - No schools in session within ½ mile
  - Some exceptions for applications of 5 acres or less for some methods
• MBR Regulation
  - No schools in session within 300 feet of Outer BZ
PHASE II SOIL FUMIGATION

EPA WEB BASED BUFFER ZONE CALCULATOR

- Tool to determine buffer zone distances
- Internet accessible
- Ability to save, retrieve, edit, and print
- Optional; no information collected by EPA
- May integrate into EPA’s web-based program for FMPs
The End

Jim Walsh
C/O Monica DeAnda
DPR Enforcement
mdeanda@cdpr.ca.gov