Summary of Assembly Bill 1807/3219

PESTICIDE AIR MONITORING RESULTS

Conducted by the
California Air Resources Board
1986 — 2000

By
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California Department of
Pesticide Regulation

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I. Introduction

Legislation passed in 1983 and 1984 established a regulatory framework for the identification and control of toxic air contaminants. Assembly Bills 1807 and 3219, referred to collectively as AB 1807, mandate that the Department of Pesticide Regulation (Food & Agr. Code, § 14021 et seq.) and the Air Resources Board (Health and Saf. Code, § 39650 et seq.) declare and regulate toxic air contaminants “…which may pose a present or potential hazard to health”. The Air Resources Board (ARB) is responsible for regulating toxic air contaminants in their industrial applications. The Department of Pesticide Regulation (DPR) has jurisdiction over the regulation of the use of pesticides in the production of food, fiber, forest products, ornamental horticulture, and for other uses that include structures, homes, and landscape maintenance.

Pursuant to the requirements of AB 1807, DPR may request ARB to monitor concentrations of pesticides in the ambient community air. DPR may also request ARB to monitor near applications if adequate data are not available. In making these requests, DPR outlines the physical characteristics of pesticides, describes use patterns, and includes monitoring recommendations that pinpoint commodities and counties where, and seasons when highest use occurs.

The resulting monitoring data are used with data from prior air monitoring studies and toxicological data on health effects to determine if any pesticide is a potential threat to human health and should be declared a toxic air contaminant. If a pesticide is identified as a toxic air contaminant, DPR determines the need for and degree of control measures to reduce public exposure. Control measures may include label amendments, applicator training, restrictions on use patterns or locations, changes in application procedures, cancellation of registration, and reclassification as a restricted material. The use of a restricted material is governed by regulations and/or permit conditions which prescribe the time when and the conditions under which use or possession may occur so that there is no danger or hazard to public health, the environment, animals, or crops.
II. The Monitoring Program

ARB coordinates all sampling for both ambient and application site monitoring through the local County Agricultural Commissioner’s Office and the local air quality management district or air pollution control district. For application site monitoring, monitoring sites are arranged through the cooperation of applicators, growers, or owners. Ambient monitoring sites are selected through the cooperation of private companies or government agencies. All monitoring activities are done according to protocols based on guidelines developed by ARB.

A. Monitoring Equipment

Monitoring consists of passing measured quantities of ambient air through a Teflon® or glass fiber filter and/or adsorbent. The adsorbent is typically charcoal or XAD resin and is housed inside Teflon® or glass tubes. The adsorbent tubes generally consist of a primary and secondary section or two separate tubes connected in series. This is done to check for breakthrough of the absorbed pesticide from the primary resin trap to the secondary resin trap. The samplers are designed to operate continuously and are arranged in a “train” design. Each sampling train consists of the resin tubes covered by a shield for protection against sunlight, a rain cover, a flow meter with valve, a train support, and an AC- or DC- powered vacuum pump.

The tubes are prepared for use by breaking off each sealed glass end with immediate insertion into the Teflon® filter fitting. The sample pumps are started and the flow of air through the flow meter is adjusted for the desired measured flow of air. At the end of each sampling period, the stop date and time are recorded. The filters and/or tubes are removed from the sample train, sealed, and then labeled for identification. The filters and/or tubes are stored in iced containers (with wet or dry ice, depending on the stability of the pesticide) until delivered to a laboratory for analysis.
B. **Ambient Air Monitoring**

Ambient air monitoring for a pesticide is conducted in a county of high use during a season of peak use. Three to five monitoring sites are located near agricultural areas frequented by people and expected to receive applications of the pesticide. For security purposes, the air samplers at these sites are usually located atop public buildings such as schools, fire stations, or local government facilities. Duplicate samples are collected at a minimum of three different sites. There is also a monitoring site in an urban background site located away from any expected applications. The background sample represents a low probability of finding the pesticide. If significant levels of the pesticide are detected, this may indicate a high probability of public exposure. In general, samples for ambient air monitoring are collected over 24-hour periods, four samples per week for four to eight weeks.

C. **Application Site Monitoring**

Samplers for application site monitoring are generally placed on each side of the field and in some studies at the field corners, at a distance of about 15 to 20 meters from the edge of the field. Duplicate samples collected downwind at the sampling site are expected to receive the highest concentrations. A meteorological station is placed on-site to record wind speed and direction data. In some cases, temperature and humidity data are also recorded.

The sampling schedule for application site monitoring is as follows:

- A minimum 1-hour background sample within 24 hours prior to application.
- A combined sample consisting of sampling during and 1 hour after application.
- A 2-hour sample from 1 to 3 hours after application.
- A 4-hour sample from 3 to 7 hours after application.
- An 8-hour sample from 7 to 15 hours after application.
- A 9-hour sample from 15 to 24 hours after application.
- Two consecutive 24-hour samples starting at the end of the 9-hour sample.
This schedule is modified for soil fumigant applications to consist of 12-hour sampling periods for three days following the beginning of the application.

III. Ambient Air and Application Site Monitoring Results

Pesticide concentrations are reported in units of micrograms or nanograms of pesticide per cubic meter of air (µg/m$^3$ or ng/m$^3$), and parts per billion or trillion (ppb or ppt). The conversion from units of µg/m$^3$ to ppb or ng/m$^3$ to ppt at standard temperature and pressure is calculated with the following equation:

\[
\text{ppb} = \text{µg/m}^3 \times \frac{24.46}{\text{pesticide molecular weight}}
\]

or

\[
\text{ppt} = \text{ng/m}^3 \times \frac{24.46}{\text{pesticide molecular weight}}
\]

When necessary, method detection limits (MDLs) and estimated quantitation limits (EQLs) were calculated by dividing the amount of pesticide detected by the volume of air sampled in m$^3$. The MDL is defined as the lowest concentration for a particular chemical that the analytical instrument can detect; that is, the laboratory can state that the chemical was detected, but is not sure of the exact concentration. The EQL is defined as the reporting limit above which the laboratory is confident about the concentration of the particular chemical. Results equal to or above the MDL but less than the EQL are reported as “detected”. In this report, except as noted, “maximum positive detections”, a term used by the ARB in reporting results, means maximum air concentrations above the MDL, which includes results reported as “detected”.

Ambient air monitoring for 39 pesticides and 8 pesticide degradation products was conducted in 15 counties from 1986 to 2000. The maximum positive detection, not including samples reported as “detected”, for each pesticide is listed in Table 1. These maxima ranged from 0.001 µg/m$^3$ (0.102 ppt) for methyl parathion in Sutter County to 161 µg/m$^3$ (35.5 ppb) for 1,3-dichloropropene (Telone®) in Merced County.
Application site monitoring for 36 pesticides and 7 pesticide degradation products was conducted in 17 counties from 1986 to 2000. The results are summarized in Table 2. Maximum positive detections ranged from 0.07 µg/m³ (0.006 ppb) for an amitraz application to cotton in Fresno County to 14,100 µg/m³ (3,632 ppb) for a methyl bromide application to peaches in a commodity fumigation chamber in Fresno County.

Copies of the ARB documents summarized in this report are available upon request from:

Mr. Jeffrey Cook, Chief
Quality Management Branch
Monitoring and Laboratory Division
Air Resources Board
1927 13th Street
Sacramento, California 95812
(916) 322-3726 or FAX (916) 327-8525
Table 1. Summary of AB 1807 ambient air monitoring results. The approximate sampling schedule consisted of 24-hour samples collected over a four to eight-week period.

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>County</th>
<th>Dates</th>
<th>Sampling Dates</th>
<th>Maximum Positive Samples µg/m³</th>
<th>2nd Highest Positive Samples µg/m³</th>
<th>MDL (µg/m³)</th>
<th>EQL (µg/m³)</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldicarb</td>
<td>Fresno</td>
<td>3-4/97</td>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.0087</td>
<td>0.03</td>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Kern</td>
<td>6/97</td>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.0087</td>
<td>0.03</td>
<td>70</td>
<td>0</td>
</tr>
<tr>
<td>Amitraz</td>
<td>Fresno/Kings</td>
<td>7-8/99</td>
<td>Detected</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>0.0004</td>
<td>0.002</td>
<td>183</td>
<td>2</td>
</tr>
<tr>
<td>Atrazine</td>
<td>Sacramento/San Joaquin</td>
<td>5-6/99</td>
<td>0.007 0.77 0.006 0.65</td>
<td>Detected</td>
<td>Detected</td>
<td>0.001</td>
<td>0.005</td>
<td>149</td>
<td>55</td>
</tr>
<tr>
<td>Azinphos-methyl</td>
<td>Kern</td>
<td>6-7/87</td>
<td>0.109 8.4 0.076 5.9</td>
<td>Detected</td>
<td>Detected</td>
<td>0.022</td>
<td>NA</td>
<td>170</td>
<td>52</td>
</tr>
<tr>
<td>Benomyl</td>
<td>Kern</td>
<td>2-3/88</td>
<td>0.16 13.5 0.06 5.1</td>
<td>Detected</td>
<td>Detected</td>
<td>0.009</td>
<td>0.047</td>
<td>149</td>
<td>18</td>
</tr>
<tr>
<td>Benomyl/</td>
<td>Fresno/Madera/Merced</td>
<td>1-3/00</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>0.009</td>
<td>0.047</td>
<td>149</td>
<td>18</td>
</tr>
<tr>
<td>BIC</td>
<td>Fresno/Kings</td>
<td>6-8/99</td>
<td>0.017 0.98 0.015 0.87</td>
<td>Detected</td>
<td>Detected</td>
<td>0.002</td>
<td>0.009</td>
<td>225</td>
<td>45</td>
</tr>
<tr>
<td>Bromoxynil</td>
<td>Imperial</td>
<td>1-2/88</td>
<td>0.04 3.5 0.03 2.7</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.007</td>
<td>NA</td>
<td>90</td>
<td>14</td>
</tr>
<tr>
<td>Captan/</td>
<td>Kern</td>
<td>5-6/93</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.013</td>
<td>NA</td>
<td>70</td>
</tr>
<tr>
<td>THPI</td>
<td>Kern</td>
<td>5-6/93</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.026</td>
<td>NA</td>
<td>70</td>
</tr>
<tr>
<td>Carbofuran</td>
<td>Imperial</td>
<td>2-3/95</td>
<td>0.11 12.1 0.084 9.3</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.012</td>
<td>NA</td>
<td>82</td>
<td>19</td>
</tr>
<tr>
<td>Chloropicrin</td>
<td>Monterey</td>
<td>8-9/86</td>
<td>4.60 681 1.90 279</td>
<td>Detected</td>
<td>Detected</td>
<td>0.087</td>
<td>NA</td>
<td>208</td>
<td>44</td>
</tr>
<tr>
<td>Chlorothalonil</td>
<td>Fresno</td>
<td>7-8/89</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.007</td>
<td>NA</td>
<td>185</td>
</tr>
<tr>
<td></td>
<td>Ventura</td>
<td>1-2/90</td>
<td>0.005 0.46 0.004 0.40</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.004</td>
<td>NA</td>
<td>120</td>
<td>5</td>
</tr>
<tr>
<td>Chlorpyrifos/</td>
<td>Tulare</td>
<td>5-6/96</td>
<td>0.815 56.9 0.432 30.1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.0047</td>
<td>0.0094</td>
<td>128</td>
<td>93</td>
</tr>
<tr>
<td>Chlorpyrifos oxon</td>
<td>Imperial</td>
<td>9-10/99</td>
<td>0.23 16.1 0.173 12.1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.0047</td>
<td>0.0094</td>
<td>128</td>
<td>91</td>
</tr>
<tr>
<td>Cycloate</td>
<td>Imperial</td>
<td>9-10/99</td>
<td>0.22 25.0 0.125 14.2</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.0029</td>
<td>0.015</td>
<td>153</td>
<td>90</td>
</tr>
<tr>
<td>DEF</td>
<td>Fresno</td>
<td>8-11/87</td>
<td>0.34 26.4 0.3 23.2</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.001</td>
<td>NA</td>
<td>326</td>
<td>254</td>
</tr>
</tbody>
</table>
Table 1 (continued). Summary of AB 1807 ambient air monitoring results. The approximate sampling schedule consisted of 24-hour samples collected over a four to eight-week period.

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>County</th>
<th>Sampling Dates</th>
<th>Maximum Positive</th>
<th>2nd Highest Positive</th>
<th>MDL&lt;sup&gt;c&lt;/sup&gt;</th>
<th>EQL&lt;sup&gt;d&lt;/sup&gt;</th>
<th># of Samples&lt;sup&gt;e&lt;/sup&gt;</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diazinon</td>
<td>Fresno</td>
<td>1-2/97</td>
<td>0.29 (µg/m³) 23.3 (ppb)</td>
<td>0.28 (µg/m³) 23.0 (ppb)</td>
<td>0.023 (µg/m³)</td>
<td>0.075 (µg/m³)</td>
<td>149 (101)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1-2/98</td>
<td>0.16 (µg/m³) 12.9 (ppb)</td>
<td>0.11 (µg/m³) 8.9 (ppb)</td>
<td>0.002 (µg/m³)</td>
<td>0.01 (µg/m³)</td>
<td>75 (64)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,3-Dichloropropene</td>
<td>Merced</td>
<td>4-5/90</td>
<td>161 (µg/m³) 35,478 (ppt)</td>
<td>139 (µg/m³) 30,638 (ppt)</td>
<td>0.10 (µg/m³)</td>
<td>NA (NA)</td>
<td>117 (78)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2-4/95</td>
<td>7.4 (µg/m³) 1,631 (ppt)</td>
<td>4.1 (µg/m³) 904 (ppt)</td>
<td>0.10 (µg/m³)</td>
<td>NA (NA)</td>
<td>216 (49)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kern</td>
<td>5-12/95</td>
<td>27.0 (µg/m³) 5,950 (ppt)</td>
<td>15.0 (µg/m³) 3,310 (ppt)</td>
<td>0.11 (µg/m³)</td>
<td>NA (NA)</td>
<td>592 (104)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7-8/96</td>
<td>13.0 (µg/m³) 2,865 (ppt)</td>
<td>9.3 (µg/m³) 2,049 (ppt)</td>
<td>0.10 (µg/m³)</td>
<td>NA (NA)</td>
<td>135 (104)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7-9/00</td>
<td>m 135 (µg/m³) 29,749 (ppt)</td>
<td>121 (µg/m³) 26,664 (ppt)</td>
<td>0.010 (µg/m³)</td>
<td>0.051 (µg/m³)</td>
<td>194 (107)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7/00</td>
<td>n 110 (µg/m³) 24,240 (ppt)</td>
<td>81 (µg/m³) 17,849 (ppt)</td>
<td>0.001 (µg/m³)</td>
<td>0.010 (µg/m³)</td>
<td>89 (89)</td>
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</tr>
<tr>
<td>Monterey/Santa Cruz</td>
<td>9-11/00</td>
<td>m 4.34 (µg/m³) 956 (ppt)</td>
<td>3.59 (µg/m³) 791 (ppt)</td>
<td>0.010 (µg/m³)</td>
<td>0.051 (µg/m³)</td>
<td>233 (80)</td>
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</tr>
<tr>
<td></td>
<td>9/00</td>
<td>n 3.60 (µg/m³) 793 (ppt)</td>
<td>1.5 (µg/m³) 331 (ppt)</td>
<td>0.001 (µg/m³)</td>
<td>0.010 (µg/m³)</td>
<td>28 (27)</td>
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</tr>
<tr>
<td>Endosulfan (I)</td>
<td>Fresno</td>
<td>7-8/96</td>
<td>0.14 (µg/m³) 7.43 (ppt)</td>
<td>0.125 (µg/m³) 6.63 (ppt)</td>
<td>0.001 (µg/m³)</td>
<td>0.004 (µg/m³)</td>
<td>120 (97)</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>0.026 (µg/m³) 1.38 (ppt)</td>
<td>0.013 (µg/m³) 0.69 (ppt)</td>
<td>0.004 (µg/m³)</td>
<td>0.012 (µg/m³)</td>
<td>120 (41)</td>
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<tr>
<td>Ethoprop</td>
<td>Imperial</td>
<td>10-11/96</td>
<td>0.24 (µg/m³) 31.0 (ppt)</td>
<td>0.22 (µg/m³) 28.4 (ppt)</td>
<td>0.022 (µg/m³)</td>
<td>0.072 (µg/m³)</td>
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<tr>
<td>EPTC</td>
<td>Siskiyou</td>
<td>4-6/98</td>
<td>0.003 (µg/m³) 0.30 (ppt)</td>
<td>0.002 (µg/m³) 0.20 (ppt)</td>
<td>0.0002 (µg/m³)</td>
<td>0.001 (µg/m³)</td>
<td>148 (24)</td>
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<tr>
<td>Ethyl parathion(IV)</td>
<td>Fresno/Tulare</td>
<td>1/86</td>
<td>0.83 (µg/m³) 69.7 (ppt)</td>
<td>0.69 (µg/m³) 57.9 (ppt)</td>
<td>0.01 (µg/m³)</td>
<td>NA (NA)</td>
<td>112 (73)</td>
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<tr>
<td></td>
<td>Kern/Tulare</td>
<td>1-2/86</td>
<td>0.09 (µg/m³) 7.34 (ppt)</td>
<td>0.07 (µg/m³) 5.69 (ppt)</td>
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<td>NA (NA)</td>
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<tr>
<td></td>
<td>Imperial</td>
<td>9-10/86</td>
<td>0.15 (µg/m³) 12.6 (ppt)</td>
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<td>Ethyl paraxxon</td>
<td>Fresno/Tulare</td>
<td>1/86</td>
<td>0.07 (µg/m³) 5.9 (ppt)</td>
<td>0.04 (µg/m³) 3.36 (ppt)</td>
<td>0.02 (µg/m³)</td>
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<tr>
<td></td>
<td>Kern/Tulare</td>
<td>1-2/86</td>
<td>&lt;MDL (&lt;µg/m³) &lt;MDL (ppt)</td>
<td>&lt;MDL (&lt;µg/m³) &lt;MDL (ppt)</td>
<td>0.02 (µg/m³)</td>
<td>NA (NA)</td>
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<tr>
<td></td>
<td>Imperial</td>
<td>9-10/86</td>
<td>&lt;MDL (&lt;µg/m³) &lt;MDL (ppt)</td>
<td>&lt;MDL (&lt;µg/m³) &lt;MDL (ppt)</td>
<td>0.02 (µg/m³)</td>
<td>NA (NA)</td>
<td>93 (0)</td>
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</tr>
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</table>
Summary of AB 1807 ambient air monitoring results. The approximate sampling schedule consisted of 24-hour samples collected over a four to eight-week period.

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>County</th>
<th>Sampling Dates</th>
<th>Maximum Positive</th>
<th>2\textsuperscript{nd} Highest Positive</th>
<th>MDL\textsuperscript{e}</th>
<th>EQL\textsuperscript{d}</th>
<th># of Samples\textsuperscript{e}</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fenamiphos</td>
<td>Fresno</td>
<td>3-5/97</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.005</td>
<td>0.009</td>
<td>145</td>
<td>0</td>
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<tr>
<td>Linuron</td>
<td>Kern</td>
<td>8-9/97</td>
<td>Detected</td>
<td>Detected</td>
<td>0.005</td>
<td>0.015</td>
<td>143</td>
<td>8</td>
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<tr>
<td>Malathion/ Malaoxon</td>
<td>Imperial</td>
<td>2-3/98</td>
<td>0.09</td>
<td>Detected</td>
<td>0.001</td>
<td>0.004</td>
<td>75</td>
<td>74</td>
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<td></td>
<td></td>
<td></td>
<td>0.028</td>
<td>2.2</td>
<td>0.002</td>
<td>0.0079</td>
<td>75</td>
<td>66</td>
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<td>Mancozeb</td>
<td>Kern</td>
<td>4-5/93</td>
<td>&lt;MDL</td>
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<td>0.025</td>
<td>NA</td>
<td>57</td>
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<td>Methidathion/ Methidaoxon</td>
<td>Tulare</td>
<td>6-7/91</td>
<td>0.56</td>
<td>45.2</td>
<td>0.01</td>
<td>0.03</td>
<td>98</td>
<td>38\textsuperscript{k}</td>
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<tr>
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<td></td>
<td></td>
<td>0.11</td>
<td>8.87</td>
<td>0.03</td>
<td>0.09</td>
<td>98</td>
<td>47\textsuperscript{k}</td>
</tr>
<tr>
<td>Methomyl</td>
<td>Fresno</td>
<td>8/87</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.02</td>
<td>NA</td>
<td>98</td>
<td>0</td>
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<tr>
<td>Methyl bromide</td>
<td>Monterey</td>
<td>8-9/86</td>
<td>4.38</td>
<td>1,130</td>
<td>4.2</td>
<td>NA</td>
<td>416</td>
<td>2</td>
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<td>Kern</td>
<td>7-9/00</td>
<td>55.0</td>
<td>14,170</td>
<td>0.007</td>
<td>0.036</td>
<td>194</td>
<td>192</td>
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<tr>
<td></td>
<td>Monterey/Santa Cruz</td>
<td>9-11/00</td>
<td>119</td>
<td>30,659</td>
<td>0.007</td>
<td>0.036</td>
<td>233</td>
<td>233</td>
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<tr>
<td></td>
<td></td>
<td>9/00</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.02</td>
<td>NA</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Methyl parathion/ Methyl paraoxon</td>
<td>Colusa</td>
<td>5-6/86</td>
<td>0.03</td>
<td>2.80</td>
<td>0.0002</td>
<td>NA</td>
<td>96</td>
<td>68</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>0.008</td>
<td>0.771</td>
<td>0.0005</td>
<td>NA</td>
<td>93</td>
<td>40</td>
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<td>Methyl parathion/ Methyl paraoxon</td>
<td>Sutter</td>
<td>5-6/86</td>
<td>0.001</td>
<td>0.102</td>
<td>0.0002</td>
<td>NA</td>
<td>115</td>
<td>21</td>
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<td></td>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.0005</td>
<td>NA</td>
<td>115</td>
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<tr>
<td>Methyl paraoxon MITC\textsuperscript{p}</td>
<td>Kern</td>
<td>7/93</td>
<td>18.0</td>
<td>6020</td>
<td>0.01</td>
<td>NA</td>
<td>32</td>
<td>28</td>
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<tr>
<td>Molinate</td>
<td>Colusa</td>
<td>5/92</td>
<td>1.17</td>
<td>165</td>
<td>0.011</td>
<td>NA</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Monocrotophos\textsuperscript{o}</td>
<td>Fresno</td>
<td>5-6/88</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.005</td>
<td>NA</td>
<td>131</td>
<td>0</td>
</tr>
<tr>
<td>Naled/ Dichlorvos</td>
<td>Tulare</td>
<td>5-6/91</td>
<td>0.082</td>
<td>5.27</td>
<td>NA</td>
<td>0.04</td>
<td>110</td>
<td>16\textsuperscript{k}</td>
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<td></td>
<td></td>
<td>0.059</td>
<td>6.53</td>
<td>NA</td>
<td>0.02</td>
<td>110</td>
<td>20\textsuperscript{k}</td>
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</tbody>
</table>
Table 1 (continued). Summary of AB 1807 ambient air monitoring results. The approximate sampling schedule consisted of 24-hour samples collected over a four to eight-week period.

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>County</th>
<th>Sampling Dates</th>
<th>Maximum Positive</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Highest Positive</th>
<th>MDL&lt;sup&gt;e&lt;/sup&gt;</th>
<th>EQL&lt;sup&gt;d&lt;/sup&gt;</th>
<th># of Samples&lt;sup&gt;e&lt;/sup&gt;</th>
<th># Above MDL&lt;sup&gt;k&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxydemeton-methyl</td>
<td>Monterey</td>
<td>8-9/95</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.0024</td>
<td>0.012</td>
<td>85</td>
<td>0&lt;sup&gt;k&lt;/sup&gt;</td>
</tr>
<tr>
<td>Paraquat</td>
<td>Fresno</td>
<td>8-11/87</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>0.022</td>
<td>NA</td>
<td>318</td>
<td>0</td>
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<tr>
<td>Permethrin</td>
<td>Monterey</td>
<td>8-9/97</td>
<td>Detected</td>
<td>Detected</td>
<td>0.005</td>
<td>0.015</td>
<td>145</td>
<td>6</td>
</tr>
<tr>
<td>Phorate</td>
<td>Fresno</td>
<td>3-5/97</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.0048</td>
<td>0.0093</td>
<td>150</td>
<td>0&lt;sup&gt;k&lt;/sup&gt;</td>
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<tr>
<td>Propargite</td>
<td>Fresno/Kings</td>
<td>6-8/99</td>
<td>1.30</td>
<td>90.7</td>
<td>0.005</td>
<td>0.023</td>
<td>225</td>
<td>160</td>
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<tr>
<td>Simazine</td>
<td>Fresno</td>
<td>2-4/98</td>
<td>0.018</td>
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<td>0.001</td>
<td>0.0042</td>
<td>150</td>
<td>138</td>
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<tr>
<td>Sodium arsenite&lt;sup&gt;o&lt;/sup&gt;</td>
<td>San Joaquin</td>
<td>2-3/87</td>
<td>0.076</td>
<td>NA</td>
<td>0.013</td>
<td>NA</td>
<td>54</td>
<td>33</td>
</tr>
</tbody>
</table>

a - micrograms per cubic meter  
b - parts per trillion  
c - Method Detection Limit for a 24-hour sample  
d - Estimated Quantitation Limit for a 24-hour sample  
e - field blanks and field spikes excluded  
f - less than the EQL but greater than or equal to the MDL  
g - although the data was collected before the use of the term EQL, this value is actually the EQL  
h - Not Applicable  
i - n-Butyl isocyanate  
j - Tetrahydrophthalimide  
k - number of samples above the EQL  
l - S,S,S-tributyl phosphorotrithioate  
m - 6 liter Silcosteel® canisters used for sample collection  
n - charcoal tubes used for sample collection  
o - no longer registered for use in California  
p - Methyl isothiocyanate, a degradation product of Metam-sodium  

Total 9,320 3,168
**Preliminary Draft—Do Not Cite or Quote**

Table 2. Summary of AB 1807 pesticide application site monitoring results. Four to eight air sampling stations surround the field whenever possible, and are sited approximately 20 yards from the edge of the field. The approximate sampling schedule for each station is minimum 1-hour background sample within 24 hours prior to application, combined during and 1-hour after application (AA) sample, 2-hour sample 1-3 hours AA, 4-hour sample 3-7 hours AA, 9-hour sample 15-24 hours AA, and 2 consecutive 24-hour AA samples.

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>County</th>
<th>Date of Applic.</th>
<th>Method</th>
<th>Crop</th>
<th>Rate</th>
<th>Maximum Positive</th>
<th>MDL</th>
<th>EQL</th>
<th>Time</th>
<th># of Samples</th>
<th>Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldicarb</td>
<td>Fresno</td>
<td>6/97</td>
<td>ground</td>
<td>cotton</td>
<td>2.1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.0087</td>
<td>0.03</td>
<td>24</td>
<td>34</td>
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<tr>
<td>Amitraz</td>
<td>Fresno</td>
<td>8/99</td>
<td>aerial</td>
<td>cotton</td>
<td>0.4</td>
<td>0.07</td>
<td>0.006</td>
<td>0.0004</td>
<td>0.002</td>
<td>24</td>
<td>26</td>
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<tr>
<td>Atrazine</td>
<td>Sacramento</td>
<td>6/99</td>
<td>ground</td>
<td>sudan grass</td>
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<td>0.29</td>
<td>0.033</td>
<td>0.001</td>
<td>0.005</td>
<td>24</td>
<td>48</td>
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<tr>
<td>Azinphos-methyl</td>
<td>Glenn</td>
<td>7/94</td>
<td>aerial</td>
<td>walnuts</td>
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<td>1.7</td>
<td>0.13</td>
<td>0.08</td>
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<td>Kern</td>
<td>3/94</td>
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<td>almonds</td>
<td>0.7</td>
<td>0.40</td>
<td>0.047</td>
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<tr>
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<td>Fresno</td>
<td>2/95</td>
<td>ground</td>
<td>almonds</td>
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<tr>
<td>Bic</td>
<td>Kern</td>
<td>2/95</td>
<td>ground</td>
<td>almonds</td>
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<td>0.38</td>
<td>0.032</td>
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<td>94</td>
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<td>Fresno</td>
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<td>alfalfa</td>
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<td>Captan/</td>
<td>Tulare</td>
<td>5/93</td>
<td>ground</td>
<td>grapes</td>
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<td>Chloropicrin</td>
<td>Monterey</td>
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<td>strawberries</td>
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<td>23.8</td>
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<td>48</td>
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<tr>
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<td>oranges</td>
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<td>0.0096</td>
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<td>31</td>
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<td>0.21</td>
<td>0.0048</td>
<td>0.0096</td>
<td>24</td>
<td>31</td>
</tr>
</tbody>
</table>
Summary of AB 1807 pesticide application site monitoring results. Four to eight air sampling stations surround the field whenever possible, and are sited approximately 20 yards from the edge of the field. The approximate sampling schedule for each station is minimum 1-hour background sample within 24 hours prior to application, combined during and 1-hour after application (AA) sample, 2-hour sample 1-3 hours AA, 4-hour sample 3-7 hours AA, 9-hour sample 15-24 hours AA, and 2 consecutive 24-hour AA samples.

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>County</th>
<th>Date of Applic.</th>
<th>Appl. Method</th>
<th>Crop</th>
<th>Rate*</th>
<th>Maximum Positive</th>
<th>MDL*</th>
<th>EQL*</th>
<th>Sample† Time</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycloate</td>
<td>Imperial</td>
<td>10/99</td>
<td>ground</td>
<td>sugar beets</td>
<td>2.58</td>
<td>0.5</td>
<td>0.0568</td>
<td>0.0029</td>
<td>24</td>
<td>76</td>
<td>41</td>
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<tr>
<td>Diazinon</td>
<td>Kings</td>
<td>1/98</td>
<td>ground</td>
<td>peaches</td>
<td>2.0</td>
<td>5.5</td>
<td>0.4</td>
<td>0.002</td>
<td>24</td>
<td>28</td>
<td>28</td>
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<tr>
<td>Endosulfan (I)</td>
<td>San Joaquin</td>
<td>4/97</td>
<td>ground</td>
<td>apples</td>
<td>3.0</td>
<td>3.8</td>
<td>0.2</td>
<td>0.003</td>
<td>8</td>
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<td>34</td>
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<td>Endosulfan (II)</td>
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<tr>
<td>EPTC</td>
<td>Merced</td>
<td>5/97</td>
<td>ground</td>
<td>corn</td>
<td>5.7</td>
<td>12.0</td>
<td>1.5</td>
<td>0.044</td>
<td>12</td>
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<td>23</td>
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<td>Ethoprop</td>
<td>Siskiyou</td>
<td>5/98</td>
<td>ground</td>
<td>potatoes</td>
<td>10.0</td>
<td>0.21</td>
<td>0.02</td>
<td>0.0002</td>
<td>24</td>
<td>33</td>
<td>30</td>
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<tr>
<td>Fenamiphos</td>
<td>Fresno</td>
<td>4/98</td>
<td>ground</td>
<td>grapes</td>
<td>6.0</td>
<td>0.19</td>
<td>0.015</td>
<td>0.005</td>
<td>24</td>
<td>39</td>
<td>33</td>
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<tr>
<td>Linuron</td>
<td>Kern</td>
<td>9/97</td>
<td>ground</td>
<td>carrots</td>
<td>1.25</td>
<td>0.42</td>
<td>0.041</td>
<td>0.005</td>
<td>24</td>
<td>39</td>
<td>33</td>
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<tr>
<td>Malathion/</td>
<td>Imperial</td>
<td>2/98</td>
<td>aerial</td>
<td>alfalfa</td>
<td>1.5</td>
<td>2.4</td>
<td>0.178</td>
<td>0.001</td>
<td>24</td>
<td>39</td>
<td>39</td>
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<tr>
<td>Malaoxon</td>
<td>Kern</td>
<td>5/93</td>
<td>aerial</td>
<td>potatoes</td>
<td>2.0</td>
<td>1.81</td>
<td>NA</td>
<td>0.15</td>
<td>4</td>
<td>32</td>
<td>19</td>
</tr>
<tr>
<td>Mancozeb</td>
<td>Kern</td>
<td>5/93</td>
<td>aerial</td>
<td>potatoes</td>
<td>2.0</td>
<td>0.36</td>
<td>0.031</td>
<td>0.03</td>
<td>24</td>
<td>21</td>
<td>11†</td>
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<tr>
<td>Methidathion/</td>
<td>Tulare</td>
<td>7/91</td>
<td>ground</td>
<td>oranges</td>
<td>1.5</td>
<td>3.16</td>
<td>0.255</td>
<td>0.01</td>
<td>24</td>
<td>21</td>
<td>5†</td>
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<tr>
<td>Methidaoxon</td>
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<td></td>
<td></td>
<td></td>
<td>0.36</td>
<td>0.031</td>
<td>0.03</td>
<td>24</td>
<td>21</td>
<td>5†</td>
</tr>
<tr>
<td>Methomyl</td>
<td>Fresno</td>
<td>9/89</td>
<td>ground</td>
<td>lettuce</td>
<td>0.5</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.08</td>
<td>24</td>
<td>20</td>
<td>0</td>
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<tr>
<td>Methyl bromide</td>
<td>Monterey</td>
<td>9/86</td>
<td>ground</td>
<td>strawberries</td>
<td>194</td>
<td>4.053</td>
<td>1.044</td>
<td>4.2</td>
<td>24</td>
<td>30</td>
<td>53</td>
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<tr>
<td></td>
<td>Fresno</td>
<td>6/92</td>
<td>chamber</td>
<td>peaches</td>
<td>2.5  m</td>
<td>14,100</td>
<td>3,632</td>
<td>0.694</td>
<td>NA</td>
<td>12</td>
<td>30</td>
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</table>
Table 2. (continued) Summary of AB 1807 pesticide application site monitoring results. Four to eight air sampling stations surround the field whenever possible, and are sited approximately 20 yards from the edge of the field. The approximate sampling schedule for each station is minimum 1-hour background sample within 24 hours prior to application, combined during and 1-hour after application (AA) sample, 2-hour sample 1-3 hours AA, 4-hour sample 3-7 hours AA, 9-hour sample 15-24 hours AA, and 2 consecutive 24-hour AA samples.

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>County</th>
<th>Date of Applic.</th>
<th>Applic. Method</th>
<th>Crop</th>
<th>Rate</th>
<th>Maximum Positive</th>
<th>MDL</th>
<th>EQL</th>
<th>Time</th>
<th># of Samples</th>
<th>Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl parathion</td>
<td>Sutter</td>
<td>5/89</td>
<td>aerial</td>
<td>rice</td>
<td>1.0</td>
<td>0.548</td>
<td>0.051</td>
<td>0.009</td>
<td>NA</td>
<td>24</td>
<td>36</td>
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<tr>
<td>MITC</td>
<td>Contra Costa</td>
<td>3/93</td>
<td>ground</td>
<td>tomatoes</td>
<td>57.0</td>
<td>242</td>
<td>81</td>
<td>0.054</td>
<td>NA</td>
<td>12</td>
<td>24</td>
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<tr>
<td>Kern</td>
<td>7/93</td>
<td>ground carrots</td>
<td>155</td>
<td></td>
<td>880</td>
<td>290</td>
<td>0.021</td>
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<td>36</td>
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<td>Kern</td>
<td>8/95</td>
<td>ground carrots</td>
<td>155</td>
<td></td>
<td>250</td>
<td>84</td>
<td>0.088</td>
<td>NA</td>
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<td>33</td>
<td>33</td>
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<tr>
<td>Kern</td>
<td>MITC/</td>
<td>8/95</td>
<td>ground</td>
<td>carrots</td>
<td>155</td>
<td>5.80</td>
<td>2.50</td>
<td>0.309</td>
<td>NA</td>
<td>12</td>
<td>35</td>
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<tr>
<td>Kern</td>
<td>MIC/</td>
<td>5.80</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Molinate</td>
<td>Colusa</td>
<td>5/92</td>
<td>aerial</td>
<td>rice</td>
<td>5.0</td>
<td>22.6</td>
<td>3.19</td>
<td>0.022</td>
<td>NA</td>
<td>24</td>
<td>37</td>
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<tr>
<td>Monocrotophos</td>
<td>Fresno</td>
<td>6/88</td>
<td>ground</td>
<td>cotton</td>
<td>U^d</td>
<td>0.11</td>
<td>0.012</td>
<td>0.005</td>
<td>NA</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Naled/</td>
<td>Tulare</td>
<td>6/95</td>
<td>ground</td>
<td>oranges</td>
<td>0.90</td>
<td>6.3</td>
<td>0.405</td>
<td>NA</td>
<td>0.007</td>
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<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Phorate</td>
<td>Del Norte</td>
<td>8/97</td>
<td>ground</td>
<td>Easter lilies</td>
<td>7.0</td>
<td>0.08</td>
<td>0.008</td>
<td>0.005</td>
<td>0.009</td>
<td>24</td>
<td>39</td>
</tr>
<tr>
<td>Propargite</td>
<td>Fresno</td>
<td>7/99</td>
<td>ground</td>
<td>grapes</td>
<td>1.92</td>
<td>3.50</td>
<td>0.244</td>
<td>0.005</td>
<td>0.023</td>
<td>24</td>
<td>25</td>
</tr>
</tbody>
</table>

Notes:
- MDL: Minimum Detectable Limit
- EQL: Equivalent Quantity Limit
- Time: Number of hours after application
- # of Samples: Number of samples taken
- Above MDL: Number of samples above the MDL
Table 2. (continued) Summary of AB 1807 pesticide application site monitoring results. Four to eight air sampling stations surround the field whenever possible, and are sited approximately 20 yards from the edge of the field. The approximate sampling schedule for each station is minimum 1-hour background sample within 24 hours prior to application, combined during and 1-hour after application (AA) sample, 2-hour sample 1-3 hours AA, 4-hour sample 3-7 hours AA, 9-hour sample 15-24 hours AA, and 2 consecutive 24-hour AA samples.

<table>
<thead>
<tr>
<th>Pesticide</th>
<th>County</th>
<th>Date of Applic.</th>
<th>Applic. Method</th>
<th>Crop</th>
<th>Rate(^{a})</th>
<th>Maximum Positive</th>
<th>MDL(^{d})</th>
<th>EQL(^{e})</th>
<th>Sample Time (^{f})</th>
<th># of Samples Above</th>
<th># Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simazine</td>
<td>Tulare</td>
<td>12/98</td>
<td>ground</td>
<td>oranges</td>
<td>3.6</td>
<td>0.19</td>
<td>0.023</td>
<td>0.001</td>
<td>0.0042</td>
<td>24</td>
<td>44</td>
</tr>
<tr>
<td>Sodium arsenite(^{p})</td>
<td>San Joaquin</td>
<td>3/87</td>
<td>ground</td>
<td>Tokay grapes</td>
<td>U(^{q})</td>
<td>0.26</td>
<td>NA</td>
<td>0.001</td>
<td>NA</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Ziram</td>
<td>Butte</td>
<td>3/94</td>
<td>ground</td>
<td>almonds</td>
<td>4.6</td>
<td>2.26</td>
<td>NA</td>
<td>0.028</td>
<td>NA</td>
<td>12</td>
<td>36</td>
</tr>
</tbody>
</table>

**Table Notes:**

- **a:** pounds active ingredient per acre
- **b:** micrograms per cubic meter
- **c:** parts per billion
- **d:** Method Detection Limit
- **e:** Estimated Limit of Quantitation
- **f:** MDL/EQL sample time
- **g:** field blanks and field spikes excluded
- **h:** Not Applicable
- **i:** n-Butyl isocyanate
- **j:** less than the EQL but greater than or equal to the MDL
- **k:** Tetrahydrophthalimide
- **l:** number of samples above the EQL
- **m:** pounds of active ingredient per 1,000 cubic feet
- **n:** Methyl isothiocyanate, a degradation product of Metam-sodium. Application/crop information is for Metam-sodium
- **o:** Methyl isocyanate, a degradation product of MITC
- **p:** no longer registered for use in California
- **q:** Unknown

**Total:** 1,991 1,035
1. **Aldicarb**

Aldicarb is a soil-applied systemic insecticide/acaricide/nematicide used to control sucking and chewing insects (aphids, whiteflies, and leaf miners), spider mites and nematodes. In 2000, approximately 329,431 pounds were reported used in California, most of which was applied to cotton for the control of aphids and thrips (319,409 pounds). Aldicarb is a restricted material, and not registered for use in Humboldt and Del Norte Counties because of its ability to move through sandy soils with high rainfall to ground water.

Ambient air monitoring was conducted from March 24 to April 11, 1997, at four sites in Fresno County. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with expected applications for cotton planting. Ambient air monitoring was also conducted at four sites in Kern County from June 10 to 27, 1997. The background site was located at the ARB air monitoring station in Bakersfield. Monitoring was scheduled to coincide with expected applications to cotton at “first squaring” (tilling). The results of both studies are summarized in Tables 3 and 4. All 60 samples collected in Fresno County and the 55 collected in Kern County (field blanks and collocated excluded) were less than the MDL (0.0087 µg/m³, 1.1 ppt for a 24-hour sample).

Application site monitoring was conducted in June 1997 before, during, and for 72 hours after an application to a cotton field in Fresno County. A granular formulation of aldicarb was incorporated into the soil at the rate of 2.1 pounds of active ingredient per acre. The results are summarized in Table 5. All 4 background samples and the 30 application samples (field blanks excluded) were less than the MDL (0.0087 µg/m³, 1.1 ppt for a 24-hour sample).
Table 3. Summary of aldicarb ambient air monitoring results in Fresno County. Samples (24-hour) were collected March 24 to April 11, 1997. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest 2nd Positive</th>
<th>Highest Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burrel School, Burrel</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Westside School, Five Points</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>San Joaquin School, San Joaquin</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Helm School, Helm</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>12</td>
<td>0</td>
</tr>
</tbody>
</table>

Total 60 0

*a* micrograms per cubic meter

*b* parts per trillion

*c* field blanks and collocated samples excluded

*d* Method Detection Limit = 0.0087 µg/m³ (1.1 ppt) for a 24-hour sample

*Not Applicable*
Table 4. Summary of aldicarb ambient air monitoring results in Kern County. Samples (24-hour) were collected June 10 to 27, 1997. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples&lt;sup&gt;c&lt;/sup&gt;</th>
<th># Above MDL&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wasco School, Wasco</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;NA</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>McFarland Learning Center, McFarland</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Maple School, Shafter</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>7&lt;sup&gt;th&lt;/sup&gt; Day Adven. School, Shafter</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>11</td>
<td>0</td>
</tr>
</tbody>
</table>

Total 55 0

<sup>a</sup> micrograms per cubic meter

<sup>b</sup> parts per trillion

<sup>c</sup> field blanks and collocated samples excluded

<sup>d</sup> Method Detection Limit = 0.0087 µg/m³ (1.1 ppt) for a 24-hour sample

<sup>e</sup> Not Applicable
Table 5. Summary of air monitoring results after an application of aldicarb to a cotton field (2.1 pounds of active ingredient per acre application rate). Samples were collected in Fresno County during June 1997 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Interval b</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
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<tr>
<td>West</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
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</tr>
<tr>
<td>North</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
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</tr>
<tr>
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<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
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<tr>
<td>South - 2</td>
<td>NS (NS)</td>
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<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
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<td>&lt;MDL (&lt;MDL)</td>
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<tr>
<td>Maximum Positive</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td></td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per billion)

c Method Detection Limit = 0.0087 µg/m^3 (1.1 ppt) for a 24-hour sample
d no sample taken
2. **Amitraz**

Amitraz is a non-systemic insecticide/acaricide used to control pear psylla on pears, and aphids, spider mites, and whiteflies when applied to cotton. It also acts as a synergist for other cotton insecticides. In 2000, more than 8,087 pounds were reported used in California (8,032 pounds used on cotton). Amitraz is not regulated as a restricted material.

Ambient air monitoring was conducted from July 19 to August 27, 1999, at five sites in northern Kings and Fresno Counties. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with expected applications to cotton. The results are summarized in Table 6. Two of the 124 samples analyzed (field blanks and collocated samples excluded) were reported as “detected” (EQL = 1.87 ng/m$^3$, 0.16 ppt; MDL = 0.37 ng/m$^3$, 0.03 ppt for a 24-hour sample). The remaining samples were less than the MDL.

Application site monitoring was conducted in August 1999 before, during, and for 72 hours after an application to a cotton field in Fresno County. Amitraz was aerially applied by helicopter at the rate of 0.4 pounds of active ingredient per acre. The results are summarized in Table 7. Maximum positive detections over the sampling interval ranged from “detected” (EQL = 1.87 ng/m$^3$, 0.16 ppt; MDL = 0.37 ng/m$^3$, 0.03 ppt for a 24-hour sample) to 70.0 ng/m$^3$ (5.8 ppt). Twenty-three of the 26 samples analyzed (field blanks excluded) were less than the MDL.
Table 6. Summary of amitraz ambient air monitoring results in northern Kings and Fresno counties. Samples (24-hour) were collected from July 19 to August 27, 1999. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helm School, Helm</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Westside School, Five Points</td>
<td>Detected</td>
<td>Detected</td>
<td>NA</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Huron School, Huron</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td>Stratford School, Stratford</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td>Lemoore High School, Lemoore</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>124</strong></td>
<td><strong>2</strong></td>
<td><strong>Not Applicable</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*nanograms per cubic meter
*bparts per trillion
*cfield blanks and collocated samples excluded
*dMethod Detection Limit = 0.37 ng/m³ (0.03 ppt) for a 24-hour sample
*eNot Applicable
*fDetected = less than the estimated quantitation limit (EQL) of 1.87 ng/m³ (0.16 ppt) but greater than or equal to the MDL
Table 7. Summary of air monitoring results after an application of amitraz to a cotton field (0.4 poundsof active ingredient per acre application rate). Samples were collected in Fresno County during August 1999 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East - 1</td>
<td>&lt;MDL</td>
<td>70.0</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>70.0</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(5.8)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(5.8)</td>
</tr>
<tr>
<td>East - 2</td>
<td>NS</td>
<td>38.0</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>38.0</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(3.2)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(3.2)</td>
</tr>
<tr>
<td>West</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NS</td>
<td>&lt;MDL</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(NS)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>North</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NS</td>
<td>NS</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>South</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td></td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;MDL</td>
<td>70.0</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>70.0</td>
<td>(Detected)</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(5.8)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(5.8)</td>
</tr>
</tbody>
</table>

*a nanograms per cubic meter (parts per trillion)

*b interval 1 = background on 8/6/99; interval 2 = during and 1.75 hour after application on 8/6-7/99 from 2300-0045; interval 3 = 8/7/99 from 0045-0800; interval 4 = 8/7/99 from 0800-1945; interval 5 = 8/7-8/99 from 1945-0745; interval 6 = 8/8-9/99 from 0745-0745

c Method Detection Limit = 0.37 ng/m³ (0.03 ppt) for a 24-hour sample

d no sample taken

e Detected = less than the Estimated Quanitation Limit (EQL) of 1.87 ng/m³ (0.16 ppt) but greater than or equal to the MDL
3. Atrazine

Atrazine is a pre- and post-emergent selective herbicide. It is widely-used in California to control broadleaf and grassy weeds in corn, sorghum, sudan grass, rangeland, and turf sodgrass. In California, more than 55,284 pounds were reported used in 2000. Atrazine is regulated as a restricted material because of its potential to pollute ground water.

Ambient air monitoring was conducted from May 17 to June 29, 1999, at four sites in Sacramento and San Joaquin Counties. The background site was located at the ARB air monitoring station in downtown Sacramento. Monitoring was conducted to coincide with expected applications to sudan grass. The results are summarized in Table 8. Maximum positive detections ranged from “detected” (EQL = 4.8 ng/m³, 0.56 ppt; MDL = 1.02 ng/m³, 0.12 ppt for a 24-hour sample) at the Marenga Ranch School site in Galt and the Sacramento background site to 6.8 ng/m³ (0.77 ppt) at the County Agricultural Commissioner site in Galt. Of the 119 samples analyzed (field blanks and collocated samples excluded), 74 were below the MDL.

Application site monitoring was conducted in June 1999 before, during and for 72 hours after an application to a sudan grass field in Sacramento County. Atrazine was applied by ground spray equipment at the rate of 1.9 pounds of active ingredient per acre. The results are summarized in Table 9. Maximum positive detections over the sampling interval ranged from 17.0 ng/m³ (2.0 ppt) to 290 ng/m³ (33.0 ppt). Eighteen of the 48 samples collected (field blanks excluded) were reported as “detected” (EQL = 4.8 ng/m³, 0.56 ppt; MDL = 1.02 ng/m³, 0.12 ppt for a 24-hour sample) and 7 were below the MDL.
Table 8. Summary of atrazine ambient air monitoring results in Sacramento and San Joaquin counties. Samples (24-hour) were collected from May 17 to June 29, 1999. The ARB air monitoring station in Sacramento was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Concentration $^{a}$ kg/m³</th>
<th>Positive $^{b}$ ppt</th>
<th>2nd Highest Concentration $^{c}$ kg/m³</th>
<th>Positive $^{d}$ ppt</th>
<th>Mean Concentration $^{e}$ kg/m³</th>
<th>Positive $^{f}$ ppt</th>
<th># of Samples $^{g}$</th>
<th># Above MDL $^{h}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arcohe School, Herald</td>
<td>5.7</td>
<td>0.65</td>
<td>Detected $^{i}$</td>
<td>Detected $^{j}$</td>
<td>2.9</td>
<td>0.33</td>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>Marenga Ranch School, Galt</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>2.1</td>
<td>0.24</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td>County Ag. Commisioner, Galt</td>
<td>6.8</td>
<td>0.77</td>
<td>Detected</td>
<td>Detected</td>
<td>2.1</td>
<td>0.2</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Reclamation District Yard, Lodi</td>
<td>$&lt;$MDL</td>
<td>$&lt;$MDL</td>
<td>$&lt;$MDL</td>
<td>$&lt;$MDL</td>
<td>1.0</td>
<td>0.11</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Sacramento</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>1.2</td>
<td>0.14</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>119</strong></td>
<td><strong>45</strong></td>
</tr>
</tbody>
</table>

$^{a}$ nanograms per cubic meter  
$^{b}$ parts per trillion  
$^{c}$ "Detected" results were factored into the average as (MDL+EQL)/2 = 3.1 kg/m³ and  
$^{d}$ "<MDL" results were factored into the average as MDL/2 = 1.0 kg/m³  
$^{e}$ field blanks and collocated samples excluded  
$^{f}$ Method Detection Limit = 1.02 kg/m³ (0.12 ppt) for a 24-hour sample  
$^{g}$ Detected = less than the estimated quantitation limit (EQL) of 4.8 kg/m³ (0.56 ppt) but greater than or equal to the MDL  

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Table 9. Summary of air monitoring results after an application of atrazine to a sudan grass field (1.9 pounds of active ingredient per acre application rate).

Samples were collected in Sacramento County during June 1999 before, during and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval</th>
<th>Maximum Positive</th>
<th>a ng/m(^3) (ppt)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>East - 1</td>
<td></td>
<td></td>
<td>11.0</td>
</tr>
<tr>
<td></td>
<td>(1.2)</td>
<td></td>
<td>(Detected)</td>
</tr>
<tr>
<td>East - 2</td>
<td></td>
<td></td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td></td>
<td>(Detected)</td>
</tr>
<tr>
<td>West</td>
<td></td>
<td></td>
<td>Detected</td>
</tr>
<tr>
<td></td>
<td>(Detected)</td>
<td></td>
<td>(MDL)</td>
</tr>
<tr>
<td>North</td>
<td></td>
<td></td>
<td>Detected</td>
</tr>
<tr>
<td></td>
<td>(Detected)</td>
<td></td>
<td>(Detected)</td>
</tr>
<tr>
<td>South</td>
<td></td>
<td></td>
<td>Detected</td>
</tr>
<tr>
<td></td>
<td>(Detected)</td>
<td></td>
<td>(Detected)</td>
</tr>
<tr>
<td>Maximum</td>
<td></td>
<td></td>
<td>Detected</td>
</tr>
<tr>
<td>Positive</td>
<td>(1.2)</td>
<td></td>
<td>(Detected)</td>
</tr>
</tbody>
</table>

\(^a\) nanograms per cubic meter (parts per trillion)


\(^c\) Detected = less than the Estimated Quantitation Limit (EQL) of 4.8 ng/m\(^3\) (0.56 ppt) but greater than or equal to the MDL

\(^d\) no sample taken

\(^e\) Method Detection Limit = 1.02 ng/m\(^3\) (0.12 ppt) for a 24-hour period
4. Azinphos-methyl

Azinphos-methyl (Guthion®) is a nonsystemic insecticide used to control sucking and chewing insects (aphids, mites, grasshoppers, armyworms, etc.) on a variety of fruits, field crops, vegetables, ornamentals, and nuts. In 2000, it was most widely used in California on almonds (83,656 pounds), pistachios (34,624 pounds), and apples (23,291 pounds). Azinphos-methyl is regulated as a restricted material.

Ambient air monitoring was conducted from June 22 to July 16, 1987 at five sites in Kern County. The background site was located at the ARB air monitoring station in Bakersfield. Monitoring was scheduled to coincide with expected applications to almond orchards. The monitoring results are summarized in Table 10. Maximum positive detections ranged from 0.028 µg/m³ (2.2 ppt) at the School District Office site in Shafter and the background site in Bakersfield to 0.109 µg/m³ (8.4 ppt) at the Pond School site in Pond. Over 69 percent of the total number of samples analyzed were below the MDL (0.022 µg/m³, 1.7 ppt for a 24-hour sample).

Application site monitoring was conducted in July 1994 before, during, and for 72 hours after an application to a walnut orchard in Glenn County. Azinphos-methyl was aerially applied at the rate of 2 pounds of active ingredient per acre. The results are summarized in Table 11. Positive detections occurred only during one sampling interval (during and one hour after application), and ranged from 0.69 µg/m³ (0.05 ppb) to 1.7 µg/m³ (0.13 ppb). Nearly 87 percent of the total number of samples analyzed (field blanks excluded) were below the MDL (0.08 µg/m³, 0.01 ppb for a 12-hour sample).
Table 10. Summary of azinphos-methyl ambient air monitoring results in Kern County. Samples (24-hour) were collected from June 22 to July 16, 1987. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Highest µg/m³</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Positive&lt;sup&gt;a&lt;/sup&gt; µg/m³</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Positive&lt;sup&gt;a&lt;/sup&gt; ppt</th>
<th>Mean µg/m³</th>
<th>Positive&lt;sup&gt;b&lt;/sup&gt; µg/m³</th>
<th>Positive&lt;sup&gt;b&lt;/sup&gt; ppt</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pond School, Pond</td>
<td>0.109</td>
<td>0.06</td>
<td>4.6</td>
<td>0.044</td>
<td>3.4</td>
<td></td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>McFarland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Center</td>
<td>0.053</td>
<td>0.039</td>
<td>3.0</td>
<td>0.037</td>
<td>2.9</td>
<td></td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>Browning Road School</td>
<td>0.076</td>
<td>0.035</td>
<td>2.7</td>
<td>0.035</td>
<td>2.7</td>
<td></td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>Fire Station, Wasco</td>
<td>0.034</td>
<td>0.021</td>
<td>1.6</td>
<td>0.26</td>
<td>2.0</td>
<td></td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>School District Office, Shafter</td>
<td>0.028</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.028</td>
<td>2.2</td>
<td></td>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>0.028</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.028</td>
<td>2.2</td>
<td></td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>mean of collocated samples
<sup>b</sup>mean of samples above the MDL
<sup>c</sup>micrograms per cubic meter
<sup>d</sup>parts per trillion
<sup>e</sup>Method Detection Limit = 0.022 µg/m³ (1.7 ppt) for a 24-hour sample
Table 11. Summary of air monitoring results after an application of azinphos-methyl to a walnut orchard (2.0 pounds of active ingredient per acre application rate). Samples were collected in Glenn County during July 1994 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>&lt;MDL</td>
<td>1.5</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.11)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.11)</td>
</tr>
<tr>
<td>West</td>
<td>&lt;MDL</td>
<td>1.6</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.12)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>North - 1</td>
<td>&lt;MDL</td>
<td>1.7</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.13)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>North - 2</td>
<td>&lt;MDL</td>
<td>1.2</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.09)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>South - 1</td>
<td>&lt;MDL</td>
<td>0.69</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>0.69</td>
</tr>
<tr>
<td></td>
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<td>(0.05)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
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<td>(&lt;MDL)</td>
<td>(0.05)</td>
</tr>
<tr>
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<td>&lt;MDL</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.86</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.07)</td>
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<td>Maximum</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>1.7</td>
</tr>
<tr>
<td>Positive</td>
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<td>(0.13)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.13)</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per billion)

b interval 1 = background on 7/28/94; interval 2 = during and 1 hour after application from 0600-0900 on 7/29/94; interval 3 = 7/29/94 from 0900-1030; interval 4 = 7/29/94 from 1030-1430; interval 5 = 7/29/94 from 1430-1930; interval 6 = 7/29-30/94 from 1930-0730; interval 7 = 7/30-31/94 from 0730-0730; interval 8 = 7/31-8/1/94 from 0730-0730

c Method Detection Limit = 0.08 µg/m³ (0.01 ppb) for a 12-hour sample
5. **Benomyl / BIC (n-Butyl isocyanate)**

Benomyl (Benlate®) is a systemic foliar fungicide used to control a wide range of diseases in field crops, mushrooms, fruits, nuts, ornamentals, and turf. BIC (n-butyl isocyanate) is a degradation product of benomyl. In 2000, more than 118,600 pounds were reported used in California. Benomyl is not regulated as a restricted material.

Ambient air monitoring was conducted from February 8 to March 3, 1988 at four sites in Kern County. The background site was located at the ARB air monitoring station in Bakersfield. Monitoring was scheduled to coincide with expected applications to almond orchards. The results are summarized in Table 12. Maximum positive detections ranged from 0.05 \( \mu g/m^3 \) (4.2 ppt) at the Browning Road School site in McFarland to 0.16 \( \mu g/m^3 \) (13.5 ppt) at the Bakersfield background site. Nearly 95 percent of the total number of samples analyzed were below the MDL (0.05 \( \mu g/m^3 \), 4.2 ppt for a 24-hour sample).

Ambient air monitoring for benomyl and BIC was also conducted from January 31 to March 10, 2000 at four sites in Fresno, Madera, and Merced counties. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with expected applications to almond orchards, grape vineyards, and stone fruits. The results are summarized in Tables 13 and 14. Of the 119 samples analyzed for benomyl (field blanks and collocated samples excluded), 5 were reported as “detected” (EQL = 47.2 ng/m^3, 4.0 ppt; MDL = 9.44 ng/m^3, 0.8 ppt for a 24-hour sample) and the remaining were below the MDL. All of the 119 samples analyzed for BIC were below the MDL (1390 ng/m^3, 343 ppt for a 24-hour sample).

Application site monitoring was conducted in March 1994 before, during, and for 72 hours after an application to an almond orchard in Kern County. Benomyl was applied by a ground-based air blast sprayer at the rate of 0.66 pound of active ingredient per acre. The results are summarized in Table 15. Maximum positive detections over the
sampling interval ranged from 0.10 µg/m³ (11.7 ppt) to 0.4 µg/m³ (46.7 ppt). Twenty-eight of the 32 samples analyzed (field blanks excluded) were below the MDL (0.1 µg/m³, 11.7 ppt for a 12-hour sample). Application site monitoring was also conducted in February 1995 before, during, and for 72 hours after an application to an almond orchard in Kern County. Benomyl was applied by a ground-based air blast sprayer at the rate of 0.66 pound of active ingredient per acre. The results are summarized in Table 16. All 32 samples analyzed (field blanks excluded) were below the MDL (0.22 µg/m³, 0.02 ppb for an 8-hour sample).

In addition, application site monitoring for benomyl and BIC was conducted in February 2000 before, during, and for 72 hours after an application to an almond orchard in Fresno County. Benomyl was applied by tractor blower spray equipment at the rate of 0.5 pound of active ingredient per acre. The results are summarized in Tables 17 and 18. Of the 94 samples analyzed for benomyl (field blanks excluded), 6 were positive detections with a maximum positive of 380 ng/m³ (32.0 ppt). Four samples were reported as “detected” (EQL = 47.2 ng/m³, 4.0 ppt; MDL = 9.44 ng/m³, 0.8 ppt for a 24-hour sample), and the remaining were below the MDL. Of the 94 samples analyzed for BIC (field blanks excluded), 6 were reported as “detected” (EQL = 7000 ng/m³, 1729 ppt; MDL = 1390 ng/m³, 343 ppt for a 24-hour sample), and the remaining were below the MDL.
Summary of benomyl ambient air monitoring results in Kern County. Samples (24-hour) were collected from February 8 to March 3, 1988. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest µg/m³</th>
<th>Positive ppt</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Highest µg/m³</th>
<th>Positive ppt</th>
<th>Mean µg/m³</th>
<th>Positive ppt</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pond School, Pond</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>Browning Road School, McFarland</td>
<td>0.05</td>
<td>4.2</td>
<td>0.05</td>
<td>4.2</td>
<td>0.05</td>
<td>4.2</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>Learning Center, McFarland</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Wasco High School, Wasco</td>
<td>0.06</td>
<td>5.1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.06</td>
<td>5.1</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Bakersfield</td>
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<td>13.5</td>
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<td>&lt;MDL</td>
<td>0.16</td>
<td>13.5</td>
<td>13</td>
<td>1</td>
</tr>
</tbody>
</table>

*<sup>a</sup>* micrograms per cubic meter  
*<sup>b</sup>* parts per trillion  
*<sup>c</sup>* mean of samples above the MDL  
*<sup>d</sup>* Method Detection Limit = 0.05 µg/m³ (4.2 ppt) for a 24-hour sample  
*<sup>e</sup>* Not Applicable

**Total** 77 4
Table 13. Summary of benomyl ambient air monitoring results in Fresno, Madera, and Merced counties. Samples (24-hour) were collected from January 31 to March 10, 2000. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest 2nd Positive</th>
<th>2nd Positive</th>
<th>Highest Positive</th>
<th>Mean</th>
<th>Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ng/m³</td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
<td>ppt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Howard School, Madera</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Plainsburg School, Merced</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>NC</td>
<td>NC</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Riverview School, Parlier</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Schelby School, Livingston</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>Fresno</td>
<td>Detected</td>
<td>Detected</td>
<td>&lt;MDL</td>
<td>NC</td>
<td>NC</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>119</td>
<td>7</td>
</tr>
</tbody>
</table>

*a*nanograms per cubic meter

*b*parts per trillion

*c*field blanks and collocated samples excluded

*d*Method Detection Limit = 9.44 ng/m³ (0.8 ppt) for a 24-hour sample

"*"Detected" = less than the estimated quantitation limit (EQL) of 47.2 ng/m³ (4.0 ppt) but greater than or equal to the MDL

*e*Not Calculated (analytical complications)
Table 14. Summary of BIC (n-butyl isocyanate) ambient air monitoring results in Fresno, Madera, and Merced counties. Samples (24-hour) were collected from January 31 to March 10, 2000. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Howard School, Madera</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>695 171.5</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Plainsburg School, Merced</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>695 171.5</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Riverview School, Parlier</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>695 171.5</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Schelby School, Livingston</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>695 171.5</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>695 171.5</td>
<td>24</td>
<td>0</td>
</tr>
</tbody>
</table>

**Total** 119 0

**Notes:**
- nanograms per cubic meter
- parts per trillion
- MDL results were factored into the average as MDL/2 = 695 ng/m³
- Field blanks and collocated samples excluded
- Method Detection Limit = 1390 ng/m³ (343 ppt) for a 24-hour sample
Table 15. Summary of air monitoring results after an application of benomyl to an almond orchard (0.66 pounds of active ingredient per acre application rate). Samples were collected in Kern County during March 1994 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.40</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.10</td>
<td>0.40</td>
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</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(11.7)</td>
<td>(46.7)</td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.10</td>
<td>0.10</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(11.7)</td>
<td>(11.7)</td>
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</tr>
<tr>
<td>Northwest</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>0.20</td>
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<tr>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(23.4)</td>
<td>(23.4)</td>
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</tr>
<tr>
<td>Maximum</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>0.40</td>
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</tr>
<tr>
<td>Positive</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(23.4)</td>
<td>(46.7)</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) micrograms per cubic meter (parts per trillion)

\(^b\) interval 1 = background on 3/7/94 from 0615-0715; interval 2 = during application on 3/7/94 from 0815-1200; interval 3 = during application on 3/7/94 from 1200-1630; interval 4 = 3/7/94 from 1630-2000; interval 5 = 3/7-8/94 from 2000-0700; interval 6 = 3/8/94 from 0700-1800; interval 7 = 3/8-9/94 from 1800-0700; interval 8 = 3/9-10/94 from 0700-0700

\(^c\) Method Detection Limit = 0.1 µg/m³ (11.7 ppt) for a 12-hour sample
Table 16. Summary of air monitoring results after an application of benomyl to an almond orchard (0.66 pounds of active ingredient per acre application rate). Samples were collected in Kern County during February 1995 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td>West</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>&lt;MDL</td>
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<tr>
<td>North</td>
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<tr>
<td>South</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
</tbody>
</table>

| Maximum Positive | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL | <MDL |

Notes:

- a micrograms per cubic meter (parts per billion)
- b interval 1 = background on 2/15-16/95; interval 2 = during application on 2/16/95 from 0700-1600;
  interval 3 = 2/16/95 from 1600-1800; interval 4 = 2/16/95 from 1800-2200; interval 5 = 2/16-17/95 from 2200-0800;
  interval 6 = 2/17-18/95 from 0800-0830; interval 7 = 2/18/95 from 0830-1730;
  interval 8 = 2/18-19/95 from 1730-0830

- c Method Detection Limit = 0.22 µg/m³ (0.02 ppb) for an 8-hour sample
Table 17. Summary of air monitoring results after an application of benomyl to an almond orchard (0.5 pounds of active ingredient per acre application rate). Samples were collected in Fresno County during February 2000 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ng/m³ (ppt)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
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</tr>
<tr>
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</tr>
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</tr>
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<td>(&lt;MDL)</td>
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<td>(NS)</td>
<td>(NS)</td>
<td>(NS)</td>
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<td>(NS)</td>
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Summary of air monitoring results after an application of benomyl to an almond orchard (0.5 pounds of active ingredient per acre application rate). Samples were collected in Fresno County during February 2000 before, during, and for 72 hours after application.

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Table 17 (continued). Summary of air monitoring results after an application of benomyl to an almond orchard (0.5 pounds of active ingredient per acre application rate). Samples were collected in Fresno County during February 2000 before, during, and for 72 hours after application.

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a nanograms per cubic meter (parts per trillion)
b interval 1 = background 2/24-25/00 from 1635-0805; interval 2 = during application on 2/25/00 from 0805-1825; interval 3 = 2/25-26/00 from 1825-0700; interval 4 = during application on 2/26/00 from 0700-1030; interval 5 = 2/26/00 from 1030-1130; interval 6 = 2/26/00 from 1130-1330; interval 7 = 2/26/00 from 1330-1645; interval 8 = 2/26-27/00 from 1645-0735; interval 9 = 2/27/00 from 0735-1650; interval 10 = 2/27-28/00 from 1650-0730; interval 11 = 2/28-29/00 from 0730-0735
c Method Detection = 9.44 ng/m³ (0.8 ppt) for a 24-hour sample
d no sample taken
e Detected=less than the estimated quantitation limit (EQL) of 47.2 ng/m³ (4.0 ppt) but greater than or equal to the MDL
Table 18. Summary of air monitoring results for BIC (n-butyl isocyanate) after an application of benomyl to an almond orchard (0.5 pounds of active ingredient per acre application rate). Samples were collected in Fresno County during February 2000 before, during, and for 72 hours after application.

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</tr>
</tbody>
</table>
Table 18 (continued). Summary of air monitoring results for BIC (n-butyl isocyanate) after an application of benomyl to an almond orchard (0.5 pounds of active ingredient per acre application rate). Samples were collected in Fresno County during February 2000 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
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<th>4</th>
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<th>6</th>
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</table>
Table 18 (continued). Summary of air monitoring results for BIC (n-butyl isocyanate) after an application of benomyl to an almond orchard (0.5 pounds of active ingredient per acre application rate). Samples were collected in Fresno County during February 2000 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval</th>
<th>Interval a</th>
<th>Interval b</th>
<th>Interval c</th>
<th>Interval d</th>
<th>Interval e</th>
<th>Interval f</th>
<th>Interval g</th>
<th>Interval h</th>
<th>Interval i</th>
<th>Interval j</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Site 4</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
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</table>

*a ng/m³ (ppt) nanograms per cubic meter (parts per trillion)

b interval 1 = background 2/24-25/00 from 1635-0805; interval 2 = during application on 2/25/00 from 0805-1825; interval 3 = 2/25-26/00 from 1825-0700; interval 4 = during application on 2/26/00 from 0700-1030; interval 5 = 2/26/00 from 1030-1130; interval 6 = 2/26/00 from 1130-1330; interval 7 = 2/26/00 from 1330-1645; interval 8 = 2/26-27/00 from 1645-0735; interval 9 = 2/27/00 from 0735-1650; interval 10 = 2/27-28/00 from 1650-0730; interval 11 = 2/28-29/00 from 0730-0735

c Method Detection = 1390 ng/m³ (343 ppt) for a 24-hour sample

d no sample taken

e Detected=less than the estimated quantitation limit (EQL) of 7000 ng/m³ (1729 ppt) but greater than or equal to the MDL
6. **Bifenthrin**

Bifenthrin (Capture®) is a broad spectrum insecticide/acaricide/miticide primarily used in California to control a variety of insects in cotton. In 2000, more than 31,047 pounds were reported used in California (3,457 pounds used on cotton). Bifenthrin is not regulated as a restricted material.

Ambient air monitoring was conducted from June 24 to August 4, 1999, at seven sites in Fresno and Kings counties. The background site was located at the ARB air monitoring station in Fresno. Monitoring was conducted to coincide with expected applications to cotton. The results are summarized in Table 19. Maximum positive detections ranged from “detected” (EQL = 9.3 ng/m³, 0.54 ppt; MDL = 1.86 ng/m³, 0.11 ppt for a 24-hour sample) at the School Bus Barn site in Kingsburg to 17.0 ng/m³ (0.98 ppt) at the Helm School site in Helm. Of the 174 samples analyzed (field blanks and collocated samples excluded), 29 were found to be “detected” and 134 were below the MDL.

Application site monitoring was conducted in July 1999 before, during, and for 72 hours after an application to an alfalfa field in Fresno County. Bifenthrin was aerially applied at the rate of 0.1 pound of active ingredient per acre. The results are summarized in Table 20. Maximum positive detections over the sampling interval ranged from 29.0 ng/m³ (1.68 ppt) to 270 ng/m³ (15.6 ppt). Fourteen of the 38 samples analyzed (field blanks excluded) were reported as “detected” (EQL = 9.3 ng/m³, 0.54 ppt; MDL = 1.86 ng/m³, 0.11 ppt for a 24-hour sample) and 15 were below the MDL.
Table 19. Summary of bifenthrin ambient air monitoring results in Fresno and Kings counties. Samples (24-hour) were collected from June 24 to August 4, 1999. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Highest</th>
<th>Positive</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Highest</th>
<th>Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
<td>ppt</td>
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<tr>
<td>Helm School, Helm</td>
<td>17.0</td>
<td>0.98</td>
<td>15.0</td>
<td>0.87</td>
<td>4.6</td>
<td>0.27</td>
<td>22</td>
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<td>San Joaquin School, San Joaquin</td>
<td>15.0</td>
<td>0.87</td>
<td>10.0</td>
<td>0.6</td>
<td>3.9</td>
<td>0.23</td>
<td>22</td>
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<td>Huron School, Huron</td>
<td>12.0</td>
<td>0.69</td>
<td>9.9</td>
<td>0.57</td>
<td>2.3</td>
<td>0.13</td>
<td>22</td>
</tr>
<tr>
<td>Stratford School, Stratford</td>
<td>12.0</td>
<td>0.69</td>
<td>Detected</td>
<td>Detected</td>
<td>2.0</td>
<td>0.11</td>
<td>21</td>
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<tr>
<td>Alvina School, Caruthers</td>
<td>14.0</td>
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<td>12.0</td>
<td>0.69</td>
<td>2.5</td>
<td>0.14</td>
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<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>0.05</td>
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<td>Detected</td>
<td>1.9</td>
<td>0.11</td>
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<td><strong>174</strong></td>
<td><strong>40</strong></td>
<td><strong>174</strong></td>
<td><strong>40</strong></td>
<td><strong>174</strong></td>
</tr>
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</table>

<sup>a</sup> nanograms per cubic meter  
<sup>b</sup> parts per trillion  
<sup>c</sup> "Detected" results were factored into the average as (MDL+EQL)/2 = 5.6 ng/m³ and "MDL" results as MDL/2 = 0.93 ng/m³  
<sup>d</sup> field blanks and collocated samples excluded  
<sup>e</sup> Method Detection Limit = 1.86 ng/m³ (0.11 ppt) for a 24-hour sample  
<sup>f</sup> Detected = less than the estimated quantitation limit (EQL) of 9.3 ng/m³ (0.54 ppt) but greater than or equal to the MDL
**Table 20.** Summary of air monitoring results after an application of bifenthrin to an alfalfa field (0.1 pound of active ingredient per acre application rate). Samples were collected in Fresno County during July 1999 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval b</th>
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<th>7</th>
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<td>270</td>
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<td>Detected</td>
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<td>(Detected)</td>
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<td>(9.83)</td>
<td>(Detected)</td>
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<td>(Detected)</td>
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<td>(Detected)</td>
<td>(0.49)</td>
<td>(15.6)</td>
<td></td>
</tr>
</tbody>
</table>

*a* nanograms per cubic meter (parts per trillion)

*b* interval 1 = background on 7/17-18/99; interval 2 = during application on 7/18/99 from 0215-0455; interval 3 = 7/18/99 from 0455-0705; interval 4 = 7/18/99 from 0705-1005; interval 5 = 7/18/99 from 1005-1925; interval 6 = 7/18-19/99 from 1925-0725; interval 7 = 7/19/99 from 0725-1915; interval 8 = 7/19-20/99 from 1915-0715; interval 9 = 7/20-21/99 from 0715-0715

*c* Method Detection Limit = 1.86 ng/m³ (0.11 ppt) for a 24-hour sample

*d* Detected = less than the estimated quantitation limit (EQL) of 9.3 ng/m³ (0.54 ppt) but greater than or equal to the MDL

*e* no sample taken
7. **Bromoxynil**

Bromoxynil (Buctril®) is a selective, contact herbicide used for post-emergent control of annual broadleaf weeds in crops such as small grains (wheat, barley, oats), alfalfa, and garlic. In California, nearly 116,125 pounds were reported used in 2000 (octanoate salt). Bromoxynil is regulated as a restricted material.

Ambient air monitoring was conducted from January 6 to February 2, 1988 at four sites in Imperial County. The background site was located at the Air Pollution Control District Office in El Centro. Monitoring was conducted to coincide with anticipated applications for the control of certain broadleaf weeds. The results are summarized in Table 21. Maximum Positive detections ranged from 0.02 µg/m³ (1.77 ppt) at the Post Office site in Brawley to 0.04 µg/m³ (3.5 ppt) at the Fire Department site in Calipatria. Of the total number of samples analyzed, more than 84 percent were below the MDL (0.007 µg/m³, 0.6 ppt for a 24-hour sample).

Application site monitoring was conducted in January 1992 before, during, and for 72 hours after an application to a wheat field in Imperial County. Bromoxynil was aerially applied at the rate of 0.33 pound of active ingredient per acre. The results are summarized in Table 22. Maximum positive detections over the sampling interval ranged from 0.14 µg/m³ (0.01 ppb) to 2.34 µg/m³ (0.21 ppb). Of the 42 samples analyzed (field blanks excluded), 21 were below the MDL (0.05 µg/m³, 0.004 ppb for a 3.5-hour sample). Application site monitoring was also conducted in January 1995 before, during, and for 72 hours after an application to an onion field in Imperial County. Bromoxynil was applied by tractor at the rate of 0.125 pound of active ingredient per acre. The results are summarized in Table 23. All of the 45 samples analyzed (field blanks excluded) were below the MDL (0.11 µg/m³, 0.01 ppb for a 3.5-hour sample).
Table 21. Summary of bromoxynil ambient air monitoring results in Imperial County. Samples (24-hour) were collected from January 6 to February 2, 1988. The Air Pollution Control District Office in El Centro was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive&lt;sup&gt;c&lt;/sup&gt;</th>
<th># Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Station, Calipatria</td>
<td>0.04 3.5</td>
<td>0.03 2.7</td>
<td>0.02 1.9</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>Post Office, Brawley</td>
<td>0.02 1.77</td>
<td>0.01 1.0</td>
<td>0.01 1.1</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Meadows Union School, Holtville</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Felipe &amp; Ramon School, Heber</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>El Centro</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>90</strong></td>
<td><strong>14</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> micrograms per cubic meter  
<sup>b</sup> parts per trillion  
<sup>c</sup> mean of samples above the MDL  
<sup>d</sup> Method Detection Limit = 0.007 µg/m³ (0.6 ppt) for a 24-hour sample  
<sup>e</sup> Not Applicable
Table 22. Summary of air monitoring results after an application of bromoxynil to a wheat field (0.33 pound of active ingredient per acre application rate). Samples were collected in Imperial County during January 1992 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeast 1-1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>2.34</td>
<td></td>
<td>0.38</td>
<td>0.18</td>
<td>0.02</td>
<td>&lt;MDL</td>
<td>2.34</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.21)</td>
<td></td>
<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.002)</td>
<td>(&lt;MDL)</td>
<td>(0.21)</td>
</tr>
<tr>
<td>Southeast 1-2</td>
<td>&lt;MDL</td>
<td>0.16</td>
<td>1.80</td>
<td></td>
<td>0.42</td>
<td>0.24</td>
<td>0.03</td>
<td>&lt;MDL</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.01)</td>
<td>(0.16)</td>
<td></td>
<td>(0.04)</td>
<td>(0.02)</td>
<td>(0.003)</td>
<td>(&lt;MDL)</td>
<td>(0.16)</td>
</tr>
<tr>
<td>Southeast 2-1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td></td>
<td>0.14</td>
<td>0.33</td>
<td>0.02</td>
<td>&lt;MDL</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td></td>
<td>(0.03)</td>
<td>(0.02)</td>
<td>(0.002)</td>
<td>(&lt;MDL)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>Southeast 2-2</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td></td>
<td>0.09</td>
<td>0.57</td>
<td>0.31</td>
<td>&lt;MDL</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td></td>
<td>(0.05)</td>
<td>(0.03)</td>
<td>(0.002)</td>
<td>(&lt;MDL)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Northwest -1</td>
<td>&lt;MDL</td>
<td>0.81</td>
<td>&lt;MDL</td>
<td></td>
<td>0.33</td>
<td>0.31</td>
<td>0.02</td>
<td>&lt;MDL</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.07)</td>
<td>(&lt;MDL)</td>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.002)</td>
<td>(&lt;MDL)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>Northwest-2</td>
<td>&lt;MDL</td>
<td>0.99</td>
<td>0.24</td>
<td></td>
<td>0.57</td>
<td>0.31</td>
<td>0.02</td>
<td>&lt;MDL</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.09)</td>
<td>(0.02)</td>
<td></td>
<td>(0.05)</td>
<td>(0.03)</td>
<td>(0.002)</td>
<td>(&lt;MDL)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;MDL</td>
<td>0.99</td>
<td>2.34</td>
<td></td>
<td>0.57</td>
<td>0.31</td>
<td>0.03</td>
<td>&lt;MDL</td>
<td>2.34</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.09)</td>
<td>(0.21)</td>
<td></td>
<td>(0.05)</td>
<td>(0.03)</td>
<td>(0.003)</td>
<td>(&lt;MDL)</td>
<td>(0.21)</td>
</tr>
</tbody>
</table>

*a micrograms per cubic meter (parts per billion)

*b interval 1 = background; interval 2 = during application; interval 3 = 110 minutes sample time; interval 4 = 310 minutes sample time; interval 5 = 720 minutes sample time; interval 6 = 1375 minutes sample time; interval 7 = 1390 minutes sample time; c Method Detection Limit = 0.05 µg/m³ (4.42 ppt) for a 3.5-hour sample
Table 23. Summary of air monitoring results after an application of bromoxynil to an onion field (0.25 pound of active ingredient per acre application rate). Samples were collected in Imperial County during January 1995 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>East</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>West</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td></td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>North</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>South - 1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>(&lt;MDL)</td>
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<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>South - 2</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>Positive</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per billion)
b interval 1 = background on 1/19/95; interval 2 = during application on 1/19/95 from 1400-1730; interval 3 = 1/19/95 from 1730-2000; interval 4 = 1/19/95 from 2000-2330; interval 5 = 1/19-20/95 from 2330-0730; interval 6 = 1/20/95 from 0730-1430; interval 7 = 1/20/95 from 1400-2000; interval 8 = 1/20-21/95 from 0730-1430; interval 9 = 1/21-22/95 from 1430-1400

c Method Detection Limit = 0.11 µg/m³ (0.01 ppb) for a 3.5-hour sample
8. **Captan / THPI (Tetrahydrophthalimide)**

Captan (Orthocide®) is a fungicide used to control fungal diseases in a wide variety of crops. It is applied as a foliar spray, a preplant soil treatment, or as a seed treatment. Tetrahydrophthalimide (THPI) is a degradation product of captan. In 2000, the greatest uses in California were on almonds (299,375 pounds), strawberries (188,956 pounds), and prunes (80,302 pounds). Captan is regulated as a restricted material.

Ambient air monitoring for captan and THPI was conducted from May 11 to June 4, 1993, at three sites in Kern County. The background site was located at the ARB air monitoring station in Bakersfield. Monitoring was scheduled to coincide with expected applications to grape vineyards. The results are summarized in Tables 24 and 25. All samples analyzed were below the MDL (captan MDL = 0.013 µg/m³, 1.1 ppt and THPI MDL = 0.026 µg/m³, 4.3 ppt for 24-hour samples).

Application site monitoring for captan and THPI was conducted in May 1993 before, during, and for 72 hours after an application to a grape vineyard in Tulare County. Captan was applied by ground equipment at the rate of 3.9 pounds of active ingredient per acre. The results are summarized in Tables 26 and 27. Maximum positive detections for captan over the sampling interval ranged from 0.28 µg/m³ (0.02 ppb) to 0.47 µg/m³ (0.04 ppb). Thirty-six of the 40 samples analyzed were below the MDL (0.013 µg/m³, 1.1 ppt for a 24-hour sample). All samples analyzed for THPI were below the MDL (0.026 µg/m³, 4.3 ppt for a 24-hour sample).
Table 24. Summary of captan ambient air monitoring results in Kern County. Samples (24-hour) were collected from May 11 to June 4, 1993. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>µg/m³ ppt</td>
<td>µg/m³ ppt</td>
<td></td>
</tr>
<tr>
<td>Edison School, Bakersfield</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL NA</td>
<td>14 0</td>
</tr>
<tr>
<td>Arvin High School, Arvin</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL NA NA</td>
<td>14 0</td>
</tr>
<tr>
<td>Mountain View School, Lamont</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL NA NA</td>
<td>14 0</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL NA NA</td>
<td>14 0</td>
</tr>
</tbody>
</table>

*micrograms per cubic meter
*b parts per trillion
*c field blanks and collocated samples excluded
*d Method Detection Limit = 0.013 µg/m³ (1.1 ppt) for a 24-hour sample
*e Not Applicable
Table 25. Summary of tetrahydrothallimide (THPI) ambient air monitoring results in Kern County. Samples (24-hour) were collected from May 11 to June 4, 1993. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest 2nd Highest</th>
<th>Positive 2nd Positive</th>
<th>Mean Positive</th>
<th># ofSamples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>µg/m³</td>
<td>ppt</td>
<td>µg/m³</td>
<td>ppt</td>
<td>µg/m³</td>
</tr>
<tr>
<td>Edison School, Bakersfield</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
</tr>
<tr>
<td>Arvin High School, Arvin</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
</tr>
<tr>
<td>Mountain View School, Lamont</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
</tr>
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</table>

Total 56 0

<table>
<thead>
<tr>
<th></th>
<th>µg/m³</th>
<th>ppt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td>Positive</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<tr>
<td>Mean</td>
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<td>&lt;MDL</td>
</tr>
<tr>
<td># of Samples</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>µg/m³</th>
<th>ppt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td>Positive</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td>Mean</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td># of Samples</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

*micrograms per cubic meter

*p parts per trillion

*c field blanks and collocated samples excluded

*d Method Detection Limit = 0.026 µg/m³ (4.3 ppt) for a 24-hour sample

*e Not Applicable
Table 26. Summary of air monitoring results after an application of captan to a grape vineyard (3.9 pounds of active ingredient per acre application rate). Samples were collected in Tulare County during May 1993 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>&lt;MDL</td>
<td>0.28</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.28</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)(0.02)</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
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</tr>
<tr>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)(0.002)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)(0.04)</td>
</tr>
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</tr>
<tr>
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<td>0.35</td>
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<td>(&lt;MDL)</td>
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</tr>
<tr>
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<td>&lt;MDL</td>
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<td>&lt;MDL</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;MDL</td>
<td>0.47</td>
<td>&lt;MDL</td>
<td>0.03</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>(&lt;MDL)</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)(0.04)</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per billion)
b interval 1 = background on 5/24/93 from 1300-1800; interval 2 = during application on 5/25/93 from 0500-0730; interval 3 = 5/25/93 from 0730-0930; interval 4 = 5/25/93 from 0930-1330; interval 5 = 5/25/93 from 1330-1800; interval 6 = 5/25-26/93 from 1800-0630; interval 7 = 5/26-27/93 from 0630-0630; interval 8 = 5/27-28/93 from 0630-0630
c Method Detection Limit = 0.013 µg/m³ (1.1 ppt) for a 24-hour sample
**PRELIMINARY DRAFT—DO NOT CITE OR QUOTE**

Table 27. Summary of air monitoring results for tetrahydrophthalimide (THPI) after an application of captan to a grape vineyard (3.9 pounds of active ingredient per acre application rate). Samples were collected in Tulare County during May 1993 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>West</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>North</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>&lt;MDL</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>South - 1</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>South - 2</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td>Positive</td>
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<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
</tbody>
</table>

* micrograms per cubic meter (parts per billion)

* interval 1 = background on 5/24/93 from 1300-1800; interval 2 = during application on 5/25/93 from 0500-0730; interval 3 = 5/25/93 from 0730-0930; interval 4 = 5/25/93 from 0930-1330; interval 5 = 5/25/93 from 1330-1800; interval 6 = 5/25-26/93 from 1800-0630; interval 7 = 5/26-27/93 from 0630-0630; interval 8 = 5/27-28/93 from 0630-0630

* Method Detection Limit = 0.026 µg/m³ (4.3 ppt) for a 24-hour sample
9. Carbofuran

Carbofuran (Furadan®) is an insecticide/acaricide/nematicide used to control soil borne and foliar insects in a variety of crops. The greatest uses in 2000 in California were on alfalfa (65,333 pounds), grapes (22,414 pounds), and rice (15,895 pounds). Carbofuran is regulated as a restricted material.

Ambient air monitoring was conducted from February 14 to March 10, 1995, at four sites in Imperial County. The background site was located at the Air Pollution Control District Office in El Centro. Monitoring was scheduled to coincide with expected applications to alfalfa. The results are summarized in Table 28. Maximum positive detections ranged from 0.014 µg/m³ (1.5 ppt) at the El Centro background site to 0.11 µg/m³ (12.1 ppt) at the PM-10 Monitoring Station site in Imperial. More than 76 percent of the total number of samples analyzed were below the MDL (0.012 µg/m³, 0.001 ppb for a 24-hour sample).

Application site monitoring was conducted in March and April 1993 before, during, and for 72 hours after an application to an alfalfa field in Imperial County. Carbofuran was applied with a ground-based boom sprayer at the rate of 0.63 pound of active ingredient per acre. The results are summarized in Table 29. Maximum positive detections throughout the monitoring period ranged from 0.11 µg/m³ (0.01 ppb) to 0.66 µg/m³ (0.07 ppb). More than 31 percent of the total number of samples analyzed (field blanks excluded) were below the MDL (0.012 µg/m³, 0.001 ppb for a 24-hour sample).
Table 28. Summary of carbofuran ambient air monitoring results in Imperial County. Samples (24-hour) were collected from February 14 to March 10, 1995. The Air Pollution Control District Office in El Centro was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive aµg/m³ b ppt</th>
<th>2nd Highest Positive µg/m³ ppt</th>
<th>Mean Positive µg/m³ ppt</th>
<th># of Samples d</th>
<th># Above MDL e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Department, Calipatria</td>
<td>0.031 3.4</td>
<td>&lt;MDL &lt;MDL</td>
<td>0.015 1.7</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>PM-10 Monitoring Station, Imperial</td>
<td>0.11 12.1</td>
<td>0.084 9.3</td>
<td>0.042 4.6</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Meadows Union School, Holtville</td>
<td>0.027 3.0</td>
<td>0.023 2.3</td>
<td>0.027 3.0</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>Felipe &amp; Ramon School, Heber</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA</td>
<td>0</td>
</tr>
<tr>
<td>El Centro</td>
<td>0.014 1.5</td>
<td>&lt;MDL &lt;MDL</td>
<td>0.014 1.5</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td>68</td>
<td>19</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter  
b parts per trillion  
c mean of samples above the MDL  
d field blanks and collocated samples excluded  
e Method Detection Limit = 0.012 µg/m³ (0.001 ppb) for a 24-hour sample  
f Not Applicable
Table 29. Summary of air monitoring results after an application of carbofuran to an alfalfa field (0.6 pounds of active ingredient per acre application rate). Samples were collected in Imperial County during March and April 1993 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval a/</th>
<th>Positive a/</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
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<tr>
<td>East</td>
<td>&lt;MDL</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.07)</td>
</tr>
<tr>
<td>West</td>
<td>&lt;MDL</td>
<td>0.29</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>North - 1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>North - 2</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
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<tr>
<td>South</td>
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<tr>
<td>Maximum</td>
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<td>0.66</td>
</tr>
<tr>
<td>Positive</td>
<td>(&lt;MDL)</td>
<td>(0.07)</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per billion)

b interval 1 = background on 3/31/93 from 0800-0930; interval 2 = during application on 3/31/93 from 1000-1100; interval 3 = 3/31/93 from 1100-1400; interval 4 = 3/31/93 from 1400-1730; interval 5 = 3/31/93 from 1730-2100; interval 6 = 3/31-4/1/93 from 2100-0700; interval 7 = 4/1-2/93 from 0700-0600;

Method Detection Limit = 0.012 µg/m³ (0.001 ppb) for a 24-hour sample.
10. Chloropicrin

Chloropicrin (Chlor-O-Pic®) is a soil and commodity fumigant. It is also combined with other fumigants to act as a warning agent. The greatest use in California in 2000 was on strawberries (2,361,655 pounds). Chloropicrin is regulated as a restricted material.

Ambient air monitoring was conducted from August 26 to September 18, 1986, at three sites in Monterey County. The background site was located at Peninsula Hospital in Monterey. Monitoring was scheduled to coincide with anticipated applications to control nematodes in strawberry fields. The results are summarized in Table 30. Maximum positive detections ranged from 0.38 µg/m³ (57.2 ppt) at the Elkhorn School site in Elkhorn to 4.6 µg/m³ (681 ppt) at the Aromas School site in Aromas. Nearly 79 percent of the total samples analyzed were below the MDL (0.087 µg/m³, 13.0 ppt for a 4-hour sample).

Application site monitoring was conducted in September 1986 before, during, and for four days after an application to a strawberry field in Monterey County. Chloropicrin was injected into the soil at the rate of 95 pounds of active ingredient per acre. The results are summarized in Table 31. Maximum positive detections at each site ranged from 4.92 µg/m³ (730 ppt) to 160 µg/m³ (23800 ppt). Approximately 17 percent of the total number of samples analyzed were below the MDL (0.087 µg/m³, 13.0 ppt for a 4-hour sample).
Table 30. Summary of chloropicrin ambient air monitoring results in Monterey County. Samples (24-hour) were collected from August 26 to September 18, 1986. The Peninsula Hospital in Monterey was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Highest Positive&lt;sup&gt;b&lt;/sup&gt;</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>µg/m³</td>
<td>ppt</td>
<td>µg/m³</td>
<td>ppt</td>
</tr>
<tr>
<td>Aromas School, Aromas</td>
<td>4.6</td>
<td>681</td>
<td>1.9</td>
<td>279</td>
</tr>
<tr>
<td>Elkhorn School, Elkhorn</td>
<td>0.38</td>
<td>57.2</td>
<td>0.15</td>
<td>22.5</td>
</tr>
<tr>
<td>Old Corral Flea Market, Prunedale</td>
<td>1.28</td>
<td>191</td>
<td>0.67</td>
<td>99.7</td>
</tr>
<tr>
<td>Monterey</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td>Total</td>
<td>208</td>
<td>44</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> mean of collocated samples  
<sup>b</sup> mean of samples above the MDL  
<sup>c</sup> micrograms per cubic meter  
<sup>d</sup> parts per trillion  
<sup>e</sup> Method Detection Limit = 0.087 µg/m³ (13.0 ppt) for a 4-hour sample  
<sup>f</sup> Not Applicable
Table 31: Summary of air monitoring results after an application of chloropicrin to a strawberry field (95 pounds of active ingredient per acre application rate). Samples were collected in Monterey County during September 1986 before, during, and for 4 days after application.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive (^a) (\mu g/m^3)</th>
<th>Highest Positive (^b) ppt</th>
<th>Mean Positive (^b) (\mu g/m^3)</th>
<th># of Samples</th>
<th># Above (^b) MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest</td>
<td>4.92 (730)</td>
<td>7.4 (110)</td>
<td>1.14 (170)</td>
<td>22</td>
<td>12</td>
</tr>
<tr>
<td>Southeast(^f)</td>
<td>61.1 (91080)</td>
<td>54.9 (8100)</td>
<td>9.41 (1400)</td>
<td>38</td>
<td>36</td>
</tr>
<tr>
<td>Southeast(^g)</td>
<td>160 (23800)</td>
<td>23.5 (3430)</td>
<td>13.2 (1970)</td>
<td>36</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>96</td>
<td>80</td>
</tr>
</tbody>
</table>

\(^a\) mean of collocated samples  
\(^b\) mean of samples above the MDL  
\(^c\) micrograms per cubic meter  
\(^d\) parts per trillion  
\(^e\) Method Detection Limit = 0.087 \(\mu g/m^3\) (13.0 ppt) for a 4-hour sample  
\(^f\) located 67 meters downwind from the edge of the field  
\(^g\) located 175 meters downwind from the edge of the field
11. Chlorothalonil

Chlorothalonil (Bravo®, Daconil®) is used to control fungal diseases in a wide variety of crops. In 2000, the greatest uses in California were on tomatoes (261,145 pounds), onions (82,334 pounds), potatoes (72,166 pounds), and celery (61,033 pounds). Chlorothalonil is not regulated as a restricted material.

Ambient air monitoring was conducted from July 5 to August 3, 1989, at four sites in Fresno County. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with expected applications to tomatoes to control blackmold. The results are summarized in Table 32. All 92 samples analyzed (field blanks and collocated samples excluded) were less than the MDL (7.0 ng/m³, 0.65 ppt for a 24-hour sample). Ambient air monitoring was also conducted from January 8 to February 2, 1990, at three sites in Ventura County. The background site was located at the Air Pollution Control District Office in Ventura. Monitoring was scheduled to coincide with expected applications to celery. The results are summarized in Table 33. The maximum positive and second highest positive detections were 0.005 µg/m³ (0.46 ppt) and 0.004 µg/m³ (0.40 ppt), respectively, at the Animal Control Shelter site in Camarillo. Nearly 96 percent of the total number of samples analyzed were below the MDL (0.004 µg/m³, 0.4 ppt for a 24-hour sample).

Application site monitoring was conducted during February 1992 before, during, and for 72 hours after an application to a celery field in Ventura County. Chlorothalonil was aerially applied at the rate of 1 pound of active ingredient per acre. The results are summarized in Table 34. Maximum positive detections over the sampling interval ranged from 0.034 µg/m³ (3.0 ppt) to 0.158 µg/m³ (14.0 ppt). Twelve of the 48 samples analyzed were below the MDL (0.004 µg/m³, 0.4 ppt for a 24-hour sample).
Table 32. Summary of chlorothalonil ambient air monitoring results in Fresno County. Samples (24-hour) were collected from July 5 to August 3, 1989. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cantua School, Cantua Creek</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Martin Gunderson School, Five Points</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>U.C. Field Station, Five Points</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Police Station, Huron</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

- **ng/m³**: nanograms per cubic meter
- **ppt**: parts per trillion
- **NA**: Not Applicable
- **MDL**: Method Detection Limit = 7.0 ng/m³ (0.65 ppt) for a 24-hour sample
- **Total**: 92 samples, 0 above MDL
Table 33. Summary of chlorothalonil ambient air monitoring results in Ventura County. Samples (24-hour) were collected from January 8 to February 2, 1990. The Air Pollution Control District Office in Ventura was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Highest</th>
<th>Positive&lt;sup&gt;a&lt;/sup&gt;</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Highest</th>
<th>Positive&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Mean</th>
<th>Positive&lt;sup&gt;b&lt;/sup&gt;</th>
<th># of Samples</th>
<th># Above &lt;sup&gt;c&lt;/sup&gt;MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Control Shelter, Camarillo</td>
<td>0.005 µg/m³ 0.46 µg/m³</td>
<td>0.004 ppt 0.4 ppt</td>
<td>0.004 µg/m³ 0.4 µg/m³</td>
<td>0.004 µg/m³ 0.41 µg/m³</td>
<td>30</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tierra Vista School, Oxnard</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>30</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxnard High School, Oxnard</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>30</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventura</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>30</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>mean of collocated samples  
<sup>b</sup>mean of samples above the MDL  
<sup>c</sup>µg/m³ (0.4 ppt) for a 24-hour sample  
<sup>d</sup>parts per trillion  
<sup>e</sup>Method Detection Limit = 0.004 µg/m³ (0.4 ppt) for a 24-hour sample  
<sup>f</sup>Not Applicable
Table 34. Summary of air monitoring results after an application of chlorothalonil to a celery field (1.0 pound of active ingredient per acre application rate). Samples were collected in Ventura County during February 1992 before, during and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
</tr>
<tr>
<td>East 1 - 1</td>
<td>&lt;MDL</td>
<td>0.158</td>
<td>0.122</td>
<td>0.098</td>
<td>0.026</td>
<td>0.043</td>
<td>0.051</td>
<td>0.034</td>
<td>0.158</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.014)</td>
<td>(0.011)</td>
<td>(0.009)</td>
<td>(0.002)</td>
<td>(0.004)</td>
<td>(0.005)</td>
<td>(0.003)</td>
<td>(0.014)</td>
</tr>
<tr>
<td>East 1 - 2</td>
<td>&lt;MDL</td>
<td>0.119</td>
<td>0.127</td>
<td>0.103</td>
<td>0.034</td>
<td>0.039</td>
<td>0.052</td>
<td>0.030</td>
<td>0.127</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.011)</td>
<td>(0.012)</td>
<td>(0.009)</td>
<td>(0.003)</td>
<td>(0.004)</td>
<td>(0.005)</td>
<td>(0.003)</td>
<td>(0.012)</td>
</tr>
<tr>
<td>East 2 - 1</td>
<td>&lt;MDL</td>
<td>0.030</td>
<td>0.058</td>
<td>0.046</td>
<td>0.013</td>
<td>0.016</td>
<td>0.018</td>
<td>0.012</td>
<td>0.058</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.003)</td>
<td>(0.005)</td>
<td>(0.004)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.002)</td>
<td>(0.001)</td>
<td>(0.005)</td>
</tr>
<tr>
<td>East 2 - 2</td>
<td>&lt;MDL</td>
<td>0.035</td>
<td>0.053</td>
<td>0.046</td>
<td>0.010</td>
<td>0.024</td>
<td>0.017</td>
<td>0.016</td>
<td>0.053</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.003)</td>
<td>(0.005)</td>
<td>(0.004)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.002)</td>
<td>(0.001)</td>
<td>(0.005)</td>
</tr>
<tr>
<td>West -1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.034</td>
<td>0.023</td>
<td>0.010</td>
<td>0.016</td>
<td>0.034</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.003)</td>
<td>(0.002)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>West -2</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.034</td>
<td>0.023</td>
<td>0.014</td>
<td>0.017</td>
<td>0.034</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.003)</td>
<td>(0.002)</td>
<td>(0.001)</td>
<td>(0.002)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;MDL</td>
<td>0.158</td>
<td>0.127</td>
<td>0.103</td>
<td>0.034</td>
<td>0.043</td>
<td>0.052</td>
<td>0.034</td>
<td>0.158</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.014)</td>
<td>(0.012)</td>
<td>(0.009)</td>
<td>(0.003)</td>
<td>(0.004)</td>
<td>(0.005)</td>
<td>(0.003)</td>
<td>(0.014)</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per billion)

b interval 1 = background on 2/18/92 from 1630-1700; interval 2 = during application on 2/20/92 from 1200-1315; interval 3 = 2/20/92 from 1315-1515; interval 4 = 2/20/92 from 1515-2015; interval 5 = 2/20-21/92 from 2015-0630; interval 6 = 2/21/92 from 0630-1315; interval 7 = 2/21-22/92 from 1315-1315; interval 8 = 2/22-23/92 from 1315-1315

c Method Detection Limit = 0.004 µg/m³ (0.367 ppt) for a 24-hour sample
12. Chlorpyrifos / Chlorpyrifos oxon

Chlorpyrifos (Dursban®, Lorsban®) is a non-systemic insecticide used to control pests in structures, and on animals and a variety of agricultural commodities. The greatest use in California in 2000 was for structural pest control (428,918 pounds), followed by agricultural use on cotton (289,649 pounds), almonds (226,037 pounds), Alfalfa (225,242 pounds), and oranges (162,632 pounds). Chlorpyrifos oxon is a degradation product of chlorpyrifos. Chlorpyrifos is not regulated as a restricted material.

Ambient air monitoring for chlorpyrifos and chlorpyrifos oxon was conducted from May 28 to June 30, 1996, at four sites in Tulare County. The background site was located at the ARB air monitoring station in Visalia. Monitoring was scheduled to coincide with expected applications to orange orchards. The results are summarized in Tables 35 and 36. Maximum positive detections for chlorpyrifos ranged from 0.039 µg/m³ (2.72 ppt) at the Visalia background site to 0.815 µg/m³ (56.9 ppt) at the Sunnyside Union School site in Strathmore. Of the 103 samples analyzed (field blanks and collocated samples excluded), 74 were above the EQL (0.0094 µg/m³, 0.656 ppt for a 24-hour sample). Maximum positive detections for chlorpyrifos oxon ranged from 0.06 µg/m³ (4.2 ppt) at the Visalia background site to 0.230 µg/m³ (16.1 ppt) at the Kaweah School site in Exeter. Seventy-four of the 103 samples analyzed were above the EQL (0.0094 µg/m³, 0.655 ppt for a 24-hour sample).

Application site monitoring for chlorpyrifos and chlorpyrifos oxon was conducted in June 1996 before, during, and for 72 hours after an application to an orange orchard in Tulare County. Chlorpyrifos was applied by ground-based rig blower equipment at the rate of 6 pounds of active ingredient per acre. The results are summarized in Tables 37 and 38. Maximum positive detections over the sampling interval for chlorpyrifos ranged
from 14.7 µg/m³ (1.03 ppb) to 47.2 µg/m³ (3.29 ppb). All of the 31 samples analyzed (field blanks excluded) were above the EQL (0.0096 µg/m³, 0.670 ppt for a 24-hour sample). Maximum positive detections for chlorpyrifos oxon ranged from 1.41 µg/m³ (0.103 ppb) to 3.0 µg/m³ (0.22 ppb). All of the 31 samples analyzed were above the EQL (0.0096 µg/m³, 0.669 ppt for a 24-hour sample).
Table 35. Summary of chlorpyrifos ambient air monitoring results in Tulare County. Samples (24-hour) were collected from May 28 to June 30, 1996. The ARB air monitoring station in Visalia was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest</th>
<th>Positive</th>
<th>2nd Highest</th>
<th>Positive</th>
<th>Mean</th>
<th>Positive</th>
<th># of Samples</th>
<th># Above EQL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>µg/m³</td>
<td>ppt</td>
<td>µg/m³</td>
<td>ppt</td>
<td>µg/m³</td>
<td>ppt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunnyside Union School, Strathmore</td>
<td>0.815</td>
<td>56.9</td>
<td>0.052</td>
<td>3.63</td>
<td>0.081</td>
<td>5.65</td>
<td>21</td>
<td>15</td>
</tr>
<tr>
<td>Jefferson School, Lindsay</td>
<td>0.432</td>
<td>30.1</td>
<td>0.311</td>
<td>21.7</td>
<td>0.093</td>
<td>6.49</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>Kaweah School, Exeter</td>
<td>0.412</td>
<td>28.7</td>
<td>0.123</td>
<td>8.58</td>
<td>0.072</td>
<td>5.02</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Lindcove Field Station, Exeter</td>
<td>0.168</td>
<td>11.7</td>
<td>0.163</td>
<td>11.4</td>
<td>0.048</td>
<td>3.35</td>
<td>20</td>
<td>15</td>
</tr>
<tr>
<td>Visalia</td>
<td>0.039</td>
<td>2.72</td>
<td>0.029</td>
<td>2.02</td>
<td>0.027</td>
<td>1.88</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>103</strong></td>
<td><strong>74</strong></td>
</tr>
</tbody>
</table>

*a* micrograms per cubic meter  
*b* parts per trillion  
*c* mean of samples above the EQL  
*d* field blanks and collocated samples excluded  
*e* Estimated Quantitation Limit = 0.0094 (0.656 ppt) for a 24-hour sample
Table 36. Summary of chlorpyrifos oxon ambient air monitoring results in Tulare County. Samples (24-hour) were collected from May 28 to June 30, 1996. The ARB air monitoring station in Visalia was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive&lt;sup&gt;c&lt;/sup&gt;</th>
<th># of Samples&lt;sup&gt;d&lt;/sup&gt;</th>
<th># Above EQL&lt;sup&gt;e&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
<td>µg/m³</td>
</tr>
<tr>
<td>Sunnyside Union School, Strathmore</td>
<td>0.090</td>
<td>0.087</td>
<td>0.030</td>
<td>21</td>
<td>16</td>
</tr>
<tr>
<td>Jefferson School, Lindsay</td>
<td>0.173</td>
<td>0.150</td>
<td>0.048</td>
<td>21</td>
<td>18</td>
</tr>
<tr>
<td>Kaweah School, Exeter</td>
<td>0.230</td>
<td>0.134</td>
<td>0.068</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Lindcove Field Station, Exeter</td>
<td>0.174</td>
<td>0.054</td>
<td>0.036</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Visalia</td>
<td>0.060</td>
<td>0.017</td>
<td>0.020</td>
<td>21</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>103</td>
<td>74</td>
</tr>
</tbody>
</table>

<sup>a</sup>micrograms per cubic meter

<sup>b</sup>parts per trillion

<sup>c</sup>mean of samples above the EQL

<sup>d</sup>field blanks and collocated samples excluded

<sup>e</sup>Estimated Quantitation Limit = 0.0094 (0.655 ppt) for a 24-hour sample
Table 37. Summary of air monitoring results after an application of chlorpyrifos to an orange grove (6.0 pounds of active ingredient per acre application rate). Samples were collected in Tulare County during June 1996 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling</th>
<th>Interval</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East - 1</td>
<td>1.57</td>
<td>8.60</td>
<td>14.7</td>
<td>2.76</td>
<td>2.19</td>
<td>4.47</td>
<td>8.62</td>
<td>4.88</td>
<td>14.7</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.60)</td>
<td>(1.03)</td>
<td>(0.19)</td>
<td>(0.15)</td>
<td>(0.31)</td>
<td>(0.60)</td>
<td>(0.34)</td>
<td>(1.03)</td>
</tr>
<tr>
<td>East - 2</td>
<td>NSc</td>
<td>12.60</td>
<td>47.2</td>
<td>2.60</td>
<td>4.21</td>
<td>4.35</td>
<td>9.08</td>
<td>4.93</td>
<td>47.2</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(0.87)</td>
<td>(3.29)</td>
<td>(0.18)</td>
<td>(0.29)</td>
<td>(0.30)</td>
<td>(0.63)</td>
<td>(0.34)</td>
<td>(3.29)</td>
</tr>
<tr>
<td>North</td>
<td>0.69</td>
<td>8.58</td>
<td>10.3</td>
<td>0.25</td>
<td>1.11</td>
<td>27.7</td>
<td>8.55</td>
<td>4.47</td>
<td>27.7</td>
</tr>
<tr>
<td></td>
<td>(0.048)</td>
<td>(0.60)</td>
<td>(0.72)</td>
<td>(0.17)</td>
<td>(0.08)</td>
<td>(1.93)</td>
<td>(0.57)</td>
<td>(0.31)</td>
<td>(1.93)</td>
</tr>
<tr>
<td>South</td>
<td>2.07</td>
<td>25.4</td>
<td>0.16</td>
<td>0.51</td>
<td>5.32</td>
<td>4.62</td>
<td>4.39</td>
<td>2.84</td>
<td>25.4</td>
</tr>
<tr>
<td></td>
<td>(0.14)</td>
<td>(1.77)</td>
<td>(0.01)</td>
<td>(0.04)</td>
<td>(0.37)</td>
<td>(0.32)</td>
<td>(0.31)</td>
<td>(0.20)</td>
<td>(1.77)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>2.07</td>
<td>25.4</td>
<td>47.2</td>
<td>2.76</td>
<td>5.32</td>
<td>27.7</td>
<td>9.08</td>
<td>4.93</td>
<td>47.2</td>
</tr>
<tr>
<td></td>
<td>(0.14)</td>
<td>(1.77)</td>
<td>(3.29)</td>
<td>(0.19)</td>
<td>(0.37)</td>
<td>(1.93)</td>
<td>(0.63)</td>
<td>(0.34)</td>
<td>(3.29)</td>
</tr>
</tbody>
</table>

*a* micrograms per cubic meter (parts per billion)

*b* interval 1 = background on 6/3-4/96 from 2100-0600; interval 2 = application plus 1 hour on 6/4/96 from 0600-1130; interval 3 = 6/4/96 from 1130-1315; interval 4 = 6/4/96 from 1315-1730; interval 5 = 6/4-5/96 from 1730-0400; interval 6 = 6/5/96 from 0400-1235; interval 7 = 6/5-6/96 from 1235-0600; interval 8 = 6/6-7/96 from 0600-0600

*c* no sample taken
Table 38. Summary of air monitoring results for chlorpyrifos oxon after an application of chlorpyrifos to an orange grove (6.0 pounds of active ingredient per acre application rate). Samples were collected in Tulare County during June 1996 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling 1</th>
<th>Sampling 2</th>
<th>Sampling 3</th>
<th>Interval 1</th>
<th>Interval 2</th>
<th>Interval 3</th>
<th>Interval 4</th>
<th>Interval 5</th>
<th>Interval 6</th>
<th>Interval 7</th>
<th>Interval 8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East - 1</td>
<td>0.08</td>
<td>0.39</td>
<td>1.76</td>
<td>1.85</td>
<td>0.28</td>
<td>0.65</td>
<td>0.95</td>
<td>0.81</td>
<td>1.85</td>
<td>(0.006)</td>
<td>(0.03)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>East - 2</td>
<td>NS</td>
<td>0.76</td>
<td>3.0</td>
<td>1.90</td>
<td>0.34</td>
<td>0.60</td>
<td>0.98</td>
<td>0.87</td>
<td>3.0</td>
<td>(NS)</td>
<td>(0.06)</td>
<td>(0.22)</td>
</tr>
<tr>
<td>North</td>
<td>0.03</td>
<td>0.61</td>
<td>1.61</td>
<td>0.62</td>
<td>0.11</td>
<td>1.50</td>
<td>0.57</td>
<td>0.88</td>
<td>1.61</td>
<td>(0.002)</td>
<td>(0.05)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>South</td>
<td>0.11</td>
<td>1.41</td>
<td>0.14</td>
<td>0.71</td>
<td>0.35</td>
<td>0.66</td>
<td>0.37</td>
<td>0.41</td>
<td>1.41</td>
<td>(0.008)</td>
<td>(0.103)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>0.11</td>
<td>1.41</td>
<td>3.0</td>
<td>1.90</td>
<td>0.35</td>
<td>1.50</td>
<td>0.98</td>
<td>0.88</td>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\* micrograms per cubic meter (parts per billion)

\* interval 1 = background on 6/3-4/96 from 2100-0600; interval 2 = application plus 1 hour on 6/4/96 from 0600-1130; interval 3 = 6/4/96 from 1130-1315; interval 4 = 6/4/96 from 1315-1730; interval 5 = 6/4-5/96 from 1730-0400; interval 6 = 6/5/96 from 0400-1235; interval 7 = 6/5-6/96 from 1235-0600; interval 8 = 6/6-7/96 from 0600-0600

\* no sample taken
13. Cycloate

Cycloate (Ro-Neet®) is a preplant selective herbicide used to control annual grasses and several broadleaf weeds in sugar beets, table beets, and spinach. The greatest use in California in 2000 was on spinach (21,804 pounds). Cycloate is not regulated as a restricted material.

Ambient air monitoring was conducted from September 2 to October 15, 1999, at four sites in Imperial County. The background site was located at the Air Pollution Control District Office in El Centro. Monitoring was scheduled to coincide with expected applications to sugar beets. The results are summarized in Table 39. Maximum positive detections ranged from 0.019 µg/m³ (2.16 ppt) at the background site in El Centro to 0.220 µg/m³ (25.0 ppt) at the Fire District site in Heber. Of the 115 samples analyzed (field blanks and collocated samples excluded), 45 were reported as “detected” (EQL = 0.015 µg/m³, 1.7 ppt; MDL = 0.0029 µg/m³, 0.33 ppt for a 24-hour sample) and 43 were below the MDL.

Application site monitoring was conducted in October 1999 before, during, and for 72 hours after an application to a sugar beet field in Imperial County. Cycloate was applied by ground-based spray, mulch and incorporation equipment at the rate of 2.58 pounds of active ingredient per acre. The results are summarized in Table 40. Maximum positive detections over the sampling interval ranged from “detected” (EQL = 0.015 µg/m³, 1.7 ppt; MDL = 0.0029 µg/m³, 0.33 ppt for a 24-hour sample) to 0.50 µg/m³ (56.8 ppt). Of the 76 samples analyzed (field blanks excluded), 30 were reported as “detected” and 35 were below the MDL.
Table 39. Summary of cycloate ambient air monitoring results in Imperial County. Samples (24-hour) were collected from September 2 to October 15, 1999. The Air Pollution Control District Office in El Centro was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mulberry School, Brawley</td>
<td>0.033 3.75</td>
<td>0.027 3.07</td>
<td>0.011 1.25</td>
</tr>
<tr>
<td>Westmorland School, Westmorland</td>
<td>0.038 4.32</td>
<td>0.036 4.09</td>
<td>0.013 1.48</td>
</tr>
<tr>
<td>Fire District, Heber</td>
<td>0.220 25.0</td>
<td>0.125 14.2</td>
<td>0.025 2.83</td>
</tr>
<tr>
<td>ARB Monitoring Station, Calexico</td>
<td>0.091 10.3</td>
<td>0.017 1.93</td>
<td>0.010 1.14</td>
</tr>
<tr>
<td>El Centro</td>
<td>0.019 2.16</td>
<td>0.017 1.93</td>
<td>0.006 0.68</td>
</tr>
</tbody>
</table>

Total: 115 72

*micrograms per cubic meter

*parts per trillion

"Detected" results were factored into the average as (MDL+EQL)/2 = 8.76 ng/m³ and "MDL" results as MDL/2 = 1.46 ng/m³

*field blanks and collocated samples excluded

*Method Detection Limit = 2.91 ng/m³ (0.33 ppt) for a 24-hour sample
Table 40. Summary of air monitoring results after an application of cycloate to a sugar beet field (2.58 pounds of active ingredient per acre application rate). Samples were collected during October 1999 in Imperial County before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampled Interval</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>North 1</td>
<td>NS&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Detected&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Detected (Detected)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (Detected)</td>
<td>Detected</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (Detected)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (Detected)</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
</tr>
<tr>
<td>North 2</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>Detected</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td></td>
</tr>
<tr>
<td>North 3</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>Detected</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>Detected</td>
<td>Detected</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>Detected</td>
<td>Detected</td>
<td></td>
</tr>
<tr>
<td>North 4</td>
<td>NS&lt;sup&gt;c&lt;/sup&gt; (NS)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>Detected</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td></td>
</tr>
<tr>
<td>South 1</td>
<td>NS&lt;sup&gt;c&lt;/sup&gt; (NS)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>Detected</td>
<td>Detected (Detected)</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td></td>
</tr>
<tr>
<td>South 2</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>500 (56.8)</td>
<td>46.0 (5.22)</td>
<td>150 (17.0)</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt; (MDL)</td>
<td>Detected (Detected)</td>
<td>Detected (Detected)</td>
<td>500 (56.8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 40. (Continued). Summary of air monitoring results after an application of cycloate to a sugar beet field (2.58 pounds of active ingredient per acre application rate). Samples were collected during October 1999 in Imperial County before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>South 3 - 1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>290</td>
<td>150</td>
<td>98.0</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>Detected</td>
<td>290</td>
</tr>
<tr>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>(Detected)</td>
<td>(32.9)</td>
<td>(17.0)</td>
<td>(11.1)</td>
<td>&lt;MDL</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(32.9)</td>
</tr>
<tr>
<td>South 3 - 2</td>
<td>NS</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>290</td>
<td>150</td>
<td>Detected</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>Detected</td>
<td>290</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>&lt;MDL</td>
<td>(Detected)</td>
<td>(32.9)</td>
<td>(17.0)</td>
<td></td>
<td>&lt;MDL</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(32.9)</td>
</tr>
<tr>
<td>South 4</td>
<td>NS</td>
<td>&lt;MDL</td>
<td>27.0</td>
<td>Detected</td>
<td>39.0</td>
<td>110</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>Detected</td>
<td>110</td>
</tr>
<tr>
<td></td>
<td>NS</td>
<td>&lt;MDL</td>
<td>(3.07)</td>
<td>(4.43)</td>
<td>(12.5)</td>
<td></td>
<td>&lt;MDL</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(12.5)</td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>27.0</td>
<td>500</td>
<td>150</td>
<td>150</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>500</td>
</tr>
<tr>
<td>Positive</td>
<td>&lt;MDL</td>
<td>(Detected)</td>
<td>(3.07)</td>
<td>(56.8)</td>
<td>(17.0)</td>
<td>(17.0)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(56.8)</td>
</tr>
</tbody>
</table>

* nanograms per cubic meter (parts per trillion)

b interval 1 = background on 10/5-6/99 from 1545-0630; interval 2 = during application on 10/6/99 from 0630-0800, 1145-1645;
interval 3 = 10/6-7/99 from 1645-0700; interval 4 = during application on 10/7/99 from 0700-1700;
interval 5 = 10/7-8/99 from 1700-0720; interval 6 = 10/8/99 from 0720-1130; interval 7 = 10/8/99 from 1130-1800;
interval 8 = 10/8-9/99 from 1800-0745; interval 9 = 10/9-10/99 from 0745-0745

c no sample taken

d "Detected" = less than the estimated quantitation limit (EQL) of 15.0 ng/m$^3$ (1.7 ppt) but greater than or equal to the MDL

Method Detection Limit = 2.91 ng/m$^3$ (0.33 ppt) for a 24-hour sample
14. DEF (S,S,S-tributyl phosphorotrithioate)

DEF (Folex®) is a plant growth regulator primarily used as a harvest aid to defoliate cotton. In 2000, approximately 339,706 pounds were used in California. DEF is regulated as a restricted material.

Ambient air monitoring was conducted from August 31 to November 4, 1987, at four sites in Fresno County. The background sites were located at the ARB air monitoring stations in Fresno and Bakersfield. Monitoring was scheduled to coincide with expected cotton defoliation activities. The results are summarized in Table 41. Maximum positive detections ranged from 0.005 µg/m³ (0.4 ppt) at the background site in Fresno to 0.33 µg/m³ (26.0 ppt) at the West Side Field Station site in Five Points. Twenty-two percent of the total number of samples analyzed (field blanks and collocated samples excluded) were less than the MDL (0.001 µg/m³, 0.09 ppt for a 24-hour sample).
Table 41. Summary of DEF (S,S,S-tributyl phosphorotrithioate) ambient air monitoring results in Fresno County. Samples (24-hour) were collected from August 31 to November 4, 1987. The ARB air monitoring stations in Fresno and Bakersfield were the background sites.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive $^a$</th>
<th>2nd Highest Positive $^a$</th>
<th>Mean Positive $^b$</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Station, Tranquility</td>
<td>0.21 µg/m³, 16.0 ppt</td>
<td>0.21 µg/m³, 16.0 ppt</td>
<td>0.75 µg/m³, 5.8 ppt</td>
<td>68 Samples</td>
<td>62 MDL</td>
</tr>
<tr>
<td>San Joaquin School, San Joaquin</td>
<td>0.19 µg/m³, 15.0 ppt</td>
<td>0.18 µg/m³, 14.0 ppt</td>
<td>0.05 µg/m³, 3.9 ppt</td>
<td>56 Samples</td>
<td>51 MDL</td>
</tr>
<tr>
<td>West Side Field Station, Five Points</td>
<td>0.33 µg/m³, 26.0 ppt</td>
<td>0.29 µg/m³, 23.0 ppt</td>
<td>0.11 µg/m³, 8.7 ppt</td>
<td>64 Samples</td>
<td>64 MDL</td>
</tr>
<tr>
<td>Day Care Center, Huron</td>
<td>0.12 µg/m³, 9.0 ppt</td>
<td>0.09 µg/m³, 7.0 ppt</td>
<td>0.03 µg/m³, 2.1 ppt</td>
<td>66 Samples</td>
<td>65 MDL</td>
</tr>
<tr>
<td>Fresno</td>
<td>0.005 µg/m³, 0.4 ppt</td>
<td>0.004 µg/m³, 0.3 ppt</td>
<td>0.004 µg/m³, 0.3 ppt</td>
<td>40 Samples</td>
<td>8 MDL</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>0.01 µg/m³, 0.9 ppt</td>
<td>0.004 µg/m³, 0.3 ppt</td>
<td>0.008 µg/m³, 0.6 ppt</td>
<td>32 Samples</td>
<td>4 MDL</td>
</tr>
</tbody>
</table>

Total: 326 samples, 254 above MDL

$^a$mean of collocated samples
$^b$mean of samples above the MDL
$^c$micrograms per cubic meter
$^d$parts per trillion
$^e$Method Detection Limit = 0.001 µg/m³ (0.09 ppt) for a 24-hour sample
15. Diazinon

Diazinon is a nonsystemic insecticide/nematicide used to control flies, aphids, and spider mites on soil, fruit, vegetables, and ornamentals. In 2000, nearly 1,053,407 pounds were reported used in California. Diazinon is not regulated as a restricted material.

Ambient air monitoring was conducted from January 13 to February 24, 1997, at four sites in Fresno County. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with the use of diazinon as a dormant spray in orchards. The results are summarized in Table 42. Maximum positive detections ranged from “detected” (EQL = 75.0 ng/m$^3$, 6.0 ppt; MDL = 23.0 ng/m$^3$, 1.8 ppt) at the background site in Fresno to 290 ng/m$^3$ (23.3 ppt) at the Unified District Office in Reedley. Of the 121 samples analyzed (field blanks and collocated samples excluded), 57 were reported as “detected” and 38 were below the MDL. Ambient air monitoring was repeated for three weeks from January 12 to February 2, 1998, using the same background and monitoring sites. Monitoring was again scheduled to coincide with the use of diazinon as a dormant spray in almond and stone fruit orchards. The results are summarized in Table 43. Maximum positive detections ranged from 29.0 ng/m$^3$ (2.33 ppt) at the Fairmont School site in Sanger to 160 ng/m$^3$ (12.9 ppt) at the Parlier High School site in Parlier. Seventeen of the 60 samples analyzed (field blanks and collocated samples excluded) were reported as “detected” (EQL = 10.0 ng/m$^3$, 0.83 ppt; MDL = 2.1 ng/m$^3$, 0.17 ppt for a 24-hour sample) and 10 were below the MDL.

Application site monitoring was conducted in January 1998 before, during, and for 72 hours after an application to a dormant peach orchard in Kings County. Diazinon was applied by ground-based spray rig equipment at the rate of 2.0 pounds of active ingredient per acre. The results are summarized in Table 44. Maximum positive detections over the sampling interval ranged from 3.0 µg/m$^3$ (0.24 ppb) to 5.50 µg/m$^3$ (0.44 ppb). All 39 samples analyzed (field blanks excluded) were above the EQL (0.01 µg/m$^3$, 0.83 ppt for a 24-hour sample).
Table 42. Summary of diazinon ambient air monitoring results in Fresno County. Samples (24-hour) were collected from January 13 to February 24, 1997. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
</tr>
<tr>
<td>Centerville School, Centerville</td>
<td>120</td>
<td>9.64</td>
<td>91.0</td>
<td>7.31</td>
<td>Detected</td>
</tr>
<tr>
<td>Parlier High School, Parlier</td>
<td>280</td>
<td>22.5</td>
<td>260</td>
<td>20.9</td>
<td>98.0</td>
</tr>
<tr>
<td>Unified District Office, Reedley</td>
<td>290</td>
<td>23.3</td>
<td>270</td>
<td>21.7</td>
<td>98.0</td>
</tr>
<tr>
<td>Fairmont School, Sanger</td>
<td>77.0</td>
<td>6.19</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
</tr>
<tr>
<td>Fresno</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>83</td>
<td></td>
<td></td>
<td>121</td>
</tr>
</tbody>
</table>

*nanograms per cubic meter
*parts per trillion

"Detected" results were factored into the average as (MDL+EQL)/2; "<MDL" values not used to calculate the mean

*field blanks and collocated samples excluded

*Method Detection Limit = 23.0 ng/m³ (1.8 ppt) for a 24-hour sample

*Detected = less than the estimated quantitation limit (EQL) of 75.0 ng/m³ (6.0 ppt) but greater than or equal to the MDL
Table 43. Summary of diazinon ambient air monitoring results in Fresno County. Samples (24-hour) were collected from January 12 to February 2, 1998. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest a ng/m³</th>
<th>Positive b ppt</th>
<th>2nd Highest a ng/m³</th>
<th>Positive b ppt</th>
<th>Mean a ng/m³</th>
<th>Positive c ppt</th>
<th># of Samples d</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centerville School, Centerville</td>
<td>96.0</td>
<td>7.72</td>
<td>31.0</td>
<td>2.49</td>
<td>15.0</td>
<td>1.21</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Parlier High School, Parlier</td>
<td>160</td>
<td>12.9</td>
<td>111</td>
<td>8.92</td>
<td>49.0</td>
<td>3.94</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Unified District Office, Reedley</td>
<td>46.0</td>
<td>3.70</td>
<td>36.0</td>
<td>2.89</td>
<td>22.0</td>
<td>1.77</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Fairmont School, Sanger</td>
<td>29.0</td>
<td>2.33</td>
<td>27.0</td>
<td>2.17</td>
<td>9.80</td>
<td>0.79</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>Fresno</td>
<td>40.0</td>
<td>3.21</td>
<td>35.0</td>
<td>2.81</td>
<td>11.0</td>
<td>0.88</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td></td>
<td><strong>50</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a nanograms per cubic meter

*b parts per trillion

"Detected" results were factored into the average as (MDL+EQL)/2 = 6.2 ng/m³; "<MDL" as MDL/2 = 1.0 ng/m³

*field blanks and collocated samples excluded

*Method Detection Limit = 2.1 ng/m³ (0.17 ppt) for a 24-hour sample
Table 44. Summary of air monitoring results after an application of diazinon to a dormant peach orchard (2.0 pounds of active ingredient per acre application rate). Samples were collected in Kings County during January 1998 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East - 1</td>
<td>0.029</td>
<td>1.70</td>
<td>1.80</td>
<td>3.00</td>
<td>1.10</td>
<td>0.084</td>
<td>0.094</td>
<td>0.13</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.14)</td>
<td>(0.15)</td>
<td>(0.24)</td>
<td>(0.09)</td>
<td>(0.007)</td>
<td>(0.008)</td>
<td>(0.01)</td>
<td>(0.24)</td>
</tr>
<tr>
<td>East - 2</td>
<td>NS</td>
<td>1.30</td>
<td>1.70</td>
<td>3.00</td>
<td>1.30</td>
<td>0.15</td>
<td>0.08</td>
<td>0.125</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(0.10)</td>
<td>(0.14)</td>
<td>(0.24)</td>
<td>(0.10)</td>
<td>(0.01)</td>
<td>(0.006)</td>
<td>(0.01)</td>
<td>(0.24)</td>
</tr>
<tr>
<td>West</td>
<td>0.034</td>
<td>3.80</td>
<td>5.20</td>
<td>5.50</td>
<td>1.50</td>
<td>3.00</td>
<td>2.40</td>
<td>0.60</td>
<td>5.50</td>
</tr>
<tr>
<td></td>
<td>(0.003)</td>
<td>(0.31)</td>
<td>(0.42)</td>
<td>(0.44)</td>
<td>(0.12)</td>
<td>(0.24)</td>
<td>(0.19)</td>
<td>(0.05)</td>
<td>(0.44)</td>
</tr>
<tr>
<td>North</td>
<td>0.075</td>
<td>3.10</td>
<td>2.90</td>
<td>3.50</td>
<td>0.80</td>
<td>0.15</td>
<td>0.94</td>
<td>0.17</td>
<td>3.50</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.25)</td>
<td>(0.23)</td>
<td>(0.28)</td>
<td>(0.06)</td>
<td>(0.01)</td>
<td>(0.07)</td>
<td>(0.01)</td>
<td>(0.28)</td>
</tr>
<tr>
<td>South</td>
<td>0.028</td>
<td>0.87</td>
<td>1.40</td>
<td>3.40</td>
<td>1.30</td>
<td>0.17</td>
<td>0.058</td>
<td>0.14</td>
<td>3.40</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.07)</td>
<td>(0.11)</td>
<td>(0.27)</td>
<td>(0.10)</td>
<td>(0.01)</td>
<td>(0.005)</td>
<td>(0.01)</td>
<td>(0.27)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>0.075</td>
<td>3.80</td>
<td>5.20</td>
<td>5.50</td>
<td>1.50</td>
<td>3.00</td>
<td>2.40</td>
<td>0.60</td>
<td>5.50</td>
</tr>
<tr>
<td></td>
<td>(0.006)</td>
<td>(0.31)</td>
<td>(0.42)</td>
<td>(0.44)</td>
<td>(0.12)</td>
<td>(0.24)</td>
<td>(0.19)</td>
<td>(0.05)</td>
<td>(0.44)</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per billion)

b interval 1 = background on 1/26-27/98 from 1700-0930; interval 2 = during application on 1/27/98 from 0930-1500; interval 3 = 1/27/98 from 1500-1700; interval 4 = 1/27/98 from 1700-2100; interval 5 = 1/27-28/98 from 2100-0530; interval 6 = 1/28/98 from 0530-1300; interval 7 = 1/28-29/98 from 1300-1200; interval 8 = 1/29-30/98 from 1200-1200

c no sample taken
16. 1,3-Dichloropropene (Telone®)

1,3-Dichloropropene (Telone®) is a pre-plant soil fumigant used to control nematodes and soil borne insects. In 2000, the greatest use in California was on carrots (789,052 pounds). Telone® is regulated as a restricted material.

Ambient air monitoring was conducted from April 2 to May 4, 1990, at four sites in Merced county. The background site was located at the Air Pollution Control District Office in Merced. Monitoring was scheduled to coincide with expected soil fumigations for sugar beets and sweet potatoes. The results are summarized in Table 45. Maximum positive detections ranged from 3.2 µg/m³ (0.71 ppb) at the background site in Merced to 160.7 µg/m³ (35.4 ppb) at the Hilmar Jr. High School site in Hilmar. Over 35 percent of the total number of samples analyzed (field blanks excluded) were below the MDL (0.1 µg/m³, 0.02 ppb for a 24-hour sample). Ambient air monitoring was again conducted from February 27 to April 28, 1995, at the same background and monitoring sites in Merced County. Monitoring was conducted to confirm mitigation measures developed to reduce emissions of Telone® from soil. The results are summarized in Table 46. Maximum positive detections ranged from 0.19 µg/m³ (0.04 ppb) at the Fire Department site in Dos Palos Y to 7.40 µg/m³ (1.63 ppb) at the Merquin School site in Stevinson. One hundred and twenty of the total number of samples analyzed (field blanks and collocated samples excluded) were below the MDL (0.1 µg/m³, 0.02 ppb for a 24-hour sample).

Ambient air monitoring to confirm mitigation measures developed to reduce emissions from soil was also conducted from May 23 to December 1, 1995 at four sites in Kern County. The background site was located at the ARB air monitoring station in Bakersfield. The results are summarized in Table 47. Maximum positive detections ranged from 2.6 µg/m³ (0.57 ppb) at the background site in Bakersfield to 27.0 µg/m³ (5.95 ppb) at the Rio Bravo School site in Shafter. Of the 494 samples analyzed (field blanks excluded and collocated samples averaged), 86 were below the MDL (0.11 µg/m³, 0.02 ppb for a 24-hour sample). Ambient air monitoring was again conducted from July 1 to August 9, 1996, at the same background and monitoring sites in
Kern County. Monitoring was conducted to determine ambient concentrations during the use of Telone® under DPR’s 1996 revised permit conditions. The results are summarized in Table 48. Maximum positive detections ranged from 2.4 µg/m³ (0.53 ppb) at the Rio Bravo School site in Shafter to 13.0 µg/m³ (2.86 ppb) at the Mountain View School site in Lamont. Eighty one of the 105 samples analyzed (field blanks excluded) were above the MDL (0.1 µg/m³, 0.02 ppb for a 24-hour sample).

Ambient air monitoring was again conducted in 2000 at five sites in Kern County. The background site was located at the ARB air monitoring station in Bakersfield. Monitoring was scheduled to coincide with expected use of Telone® prior to planting carrots. Samples were collected from July 10 to September 1, 2000, and from July 10 to 27, 2000, using evacuated 6 liter Silcosteel® canisters and charcoal tubes, respectively. The results are summarized in Tables 49 and 50. Maximum positive detections for Silcosteel® canister samples ranged from 4,040 ng/m³ (890 ppt) at the Salsepuedes School site in Shafter to 135,000 ng/m³ (29,749 ppt) at the Cotton Research Station site in Shafter. Of the 141 samples analyzed (field blanks and collocated samples excluded), 19 were reported as “detected” (EQL = 51 ng/m³, 11.2 ppt; MDL = 10.25 ng/m³, 2.26 ppt) and 72 were below the MDL. Maximum positive detections for charcoal tube samples ranged from 2,500 ng/m³ (551 ppt) at the Bakersfield background site to 110,000 ng/m³ (24,240 ppt) at the Cotton Research Station site in Shafter. All 71 of the samples analyzed (field blanks and collocated samples excluded) were above the MDL (1.19 ng/m³, 0.26 ppt).

Ambient air monitoring was also conducted at five sites in Monterey and Santa Cruz Counties. The background site was located at the Air Pollution Control District Office in Salinas. Monitoring was scheduled to coincide with expected preplant use of Telone® for a variety of crops. Samples were collected from September 11 to November 3, 2000, and from September 11 to 14, 2000 using evacuated 6 liter Silcosteel® canisters and charcoal tubes, respectively. The results are summarized in Tables 51 and 52. Maximum positive detections for Silcosteel® canister samples ranged from 272 ng/m³ (59.9 ppt) at the Salsepuedes School site in Watsonville to 4,340 ng/m³ (956 ppt) at the Chualar
School site in Chualar. Twenty-five of the 179 samples analyzed (field blanks and collocated samples excluded) were found to be “detected” (EQL = 51 ng/m$^3$, 11.2 ppt; MDL = 10.25 ng/m$^3$, 2.26 ppt), and 113 were below the MDL. Maximum positive detections for charcoal tube samples ranged from 190 ng/m$^3$ (41.9 ppt) at the La Joya School site in Salinas to 3,600 ng/m$^3$ (793 ppt) at the Chualar School site in Chualar. One of the 22 samples analyzed (field blanks and collocated samples excluded) was below the MDL (1.19 ng/m$^3$, 0.26 ppt).

The ARB has not conducted application site monitoring for Telone®. The 1990 ambient air monitoring results in Merced County indicated the presence of unacceptably high ambient concentrations during the peak application period. This resulted in a statewide suspension of the permits of all users for Telone®. Since commercial reintroduction, application site monitoring studies under revised permit conditions have been conducted by registrants.
### Table 45: Summary of 1,3-dichloropropene (Telone®) ambient air monitoring results in Merced County.

Samples (24-hour) were collected from April 2 to May 4, 1990. The Air Pollution Control District Office in Merced was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2nd Highest</th>
<th>Positive&lt;sup&gt;a&lt;/sup&gt;</th>
<th>2nd Highest</th>
<th>Positive&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Mean</th>
<th>Positive&lt;sup&gt;b&lt;/sup&gt;</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Department, El Nido</td>
<td>16.9 µg/m³</td>
<td>3.72 ppb</td>
<td>9.0 µg/m³</td>
<td>1.98 ppb</td>
<td>4.6</td>
<td>1.01 ppb</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td>Fire Department, Dos Palos Y</td>
<td>33.3 µg/m³</td>
<td>7.34 ppb</td>
<td>4.9 µg/m³</td>
<td>1.08 ppb</td>
<td>4.0</td>
<td>0.88 ppb</td>
<td>20</td>
<td>13</td>
</tr>
<tr>
<td>Merquin School, Stevenson</td>
<td>138.6 µg/m³</td>
<td>30.5 ppb</td>
<td>67.2 µg/m³</td>
<td>14.8 ppb</td>
<td>22.2</td>
<td>4.89 ppb</td>
<td>19</td>
<td>16</td>
</tr>
<tr>
<td>Hilmar Jr. High School, Hilmar</td>
<td>160.7 µg/m³</td>
<td>35.4 ppb</td>
<td>72.4 µg/m³</td>
<td>16.0 ppb</td>
<td>24.5</td>
<td>5.4 ppb</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>Merced</td>
<td>3.2 µg/m³</td>
<td>0.71 ppb</td>
<td>1.2 µg/m³</td>
<td>0.26 ppb</td>
<td>0.8</td>
<td>0.18 ppb</td>
<td>20</td>
<td>9</td>
</tr>
</tbody>
</table>

Total 99 64

<sup>a</sup> Mean of collocated samples
<sup>b</sup> Mean of samples above the MDL
<sup>c</sup> Micrograms per cubic meter
<sup>d</sup> Parts per billion
<sup>e</sup> Method Detection Limit = 0.1 µg/m³ (0.02 ppb) for a 24-hour sample
Table 46. Summary of 1,3-dichloropropene (Telone®) ambient air monitoring results in Merced County. Samples (24-hour) were collected from February 27 to April 28, 1995. The Air Pollution Control District Office in Merced was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive&lt;sup&gt;a&lt;/sup&gt;</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Highest Positive&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Mean Positive&lt;sup&gt;b&lt;/sup&gt;</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Department, El Nido</td>
<td>0.22 µg/m³, 0.05 ppb</td>
<td>0.20 µg/m³, 0.04 ppb</td>
<td>0.20 µg/m³, 0.04 ppb</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>Fire Department, Dos Palos Y</td>
<td>0.19 µg/m³, 0.04 ppb</td>
<td>0.16 µg/m³, 0.04 ppb</td>
<td>0.17 µg/m³, 0.04 ppb</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Merquin School, Stevinson</td>
<td>7.40 µg/m³, 1.63 ppb</td>
<td>4.10 µg/m³, 0.90 ppb</td>
<td>1.40 µg/m³, 0.31 ppb</td>
<td>32</td>
<td>14</td>
</tr>
<tr>
<td>Hilmar Jr. High School, Hilmar</td>
<td>0.65 µg/m³, 0.14 ppb</td>
<td>0.41 µg/m³, 0.09 ppb</td>
<td>0.26 µg/m³, 0.06 ppb</td>
<td>32</td>
<td>12</td>
</tr>
<tr>
<td>Merced</td>
<td>0.28 µg/m³, 0.06 ppb</td>
<td>0.18 µg/m³, 0.04 ppb</td>
<td>0.18 µg/m³, 0.04 ppb</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>160</strong></td>
<td><strong>40</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>mean of collocated samples  
<sup>b</sup>mean of samples above the MDL  
<sup>c</sup>micrograms per cubic meter  
<sup>d</sup>parts per billion  
<sup>e</sup>Method Detection Limit = 0.1 µg/m³ (0.02 ppb) for a 24-hour sample
Table 47. Summary of 1,3-dichloropropene (Telone®) ambient air monitoring results in Kern County. Samples (24-hour) were collected from May 23 to December 1, 1995. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2nd Highest</th>
<th>2nd Positivea</th>
<th>Mean</th>
<th>Positiveb</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Highest cµg/m³ dµg/m³</td>
<td>Positive aµg/m³ dppb</td>
<td>Positive aµg/m³ dppb</td>
<td>Positive bµg/m³ dppb</td>
<td>Samples e</td>
<td>MDL f</td>
</tr>
<tr>
<td>Rio Bravo School, Shafter</td>
<td>27</td>
<td>5.95</td>
<td>15</td>
<td>3.31</td>
<td>4.4</td>
<td>0.97</td>
</tr>
<tr>
<td>Almondale School, Rosedale</td>
<td>3.0</td>
<td>0.66</td>
<td>2.2</td>
<td>0.48</td>
<td>0.99</td>
<td>0.22</td>
</tr>
<tr>
<td>Mountain View School, Lamont</td>
<td>8.1</td>
<td>1.78</td>
<td>1.4</td>
<td>0.31</td>
<td>0.86</td>
<td>0.19</td>
</tr>
<tr>
<td>Vineland School, Weed Patch</td>
<td>8.8</td>
<td>0.94</td>
<td>3.7</td>
<td>0.81</td>
<td>1.8</td>
<td>0.40</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>2.6</td>
<td>0.57</td>
<td>2.0</td>
<td>0.44</td>
<td>0.51</td>
<td>0.11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>494</strong></td>
<td><strong>86</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a mean of collocated samples
b mean of samples above the MDL
c micrograms per cubic meter
d parts per billion
e field blanks excluded; collocated samples averaged and used as a single sample
f Method Detection Limit = 0.11 µg/m³ (0.02 ppb) for a 24-hour sample
Summary of 1,3-dichloropropene (Telone®) ambient air monitoring results in Kern County. Samples (24-hour) were collected from July 1 to August 9, 1996. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive 24-hour</th>
<th>24-hour Highest Positive Mean</th>
<th>Mean Positive</th>
<th>Total # of Samples</th>
<th>Total # Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rio Bravo School, Shafter</td>
<td>2.4</td>
<td>0.53</td>
<td>2.2</td>
<td>0.91</td>
<td>14</td>
</tr>
<tr>
<td>Almondale School, Rosedale</td>
<td>2.5</td>
<td>0.55</td>
<td>1.9</td>
<td>0.76</td>
<td>15</td>
</tr>
<tr>
<td>Mountain View School, Lamont</td>
<td>13</td>
<td>2.86</td>
<td>5.6</td>
<td>2.2</td>
<td>19</td>
</tr>
<tr>
<td>Vineland School, Weed Patch</td>
<td>9.3</td>
<td>2.05</td>
<td>8.8</td>
<td>3.0</td>
<td>17</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>3.0</td>
<td>0.66</td>
<td>2.4</td>
<td>0.85</td>
<td>16</td>
</tr>
</tbody>
</table>

* micrograms per cubic meter
* parts per billion
* mean of samples above the MDL
* field blanks and collocated samples excluded
* Method Detection Limit = 0.1 µg/m³ (0.02 ppb) for a 24-hour sample
Table 49. Summary of 1,3-dichloropropene (Telone®) ambient air monitoring results in Kern County. Samples (24-hour) were collected from July 10 to September 1, 2000 using evacuated 6 liter Silcosteel® canisters. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest 2nd Positive ng/m³</th>
<th>Highest 2nd Positive ppt</th>
<th>Mean Positive ng/m³</th>
<th>Positive MDL</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton Research Station, Shafter</td>
<td>135000 29749</td>
<td>121000 26664</td>
<td>8510 1875</td>
<td>22</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Fire Station, Mettler</td>
<td>44300 9762</td>
<td>39400 8682</td>
<td>2263 499</td>
<td>23</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Mountain View School, Lamont</td>
<td>36200 7977</td>
<td>2020 445</td>
<td>1960 432</td>
<td>24</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Walker Monitoring Station, Shafter</td>
<td>4040 890</td>
<td>1650 364</td>
<td>485 107</td>
<td>25</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Sunset School, Weed Patch</td>
<td>14500 3195</td>
<td>8920 1966</td>
<td>1252 276</td>
<td>24</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Bakersfield</td>
<td>6320 1393</td>
<td>3390 747</td>
<td>755 166</td>
<td>23</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>141</strong></td>
<td><strong>69</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a* nanograms per cubic meter  
*b* parts per trillion  
"Detected" results were factored into the average as (MDL+EQL)/2 = 61 ng/m³; "<MDL" as MDL/2 = 10 ng/m³  
*field blanks and collocated samples excluded*  
*Method Detection Limit = 10.25 ng/m³ (2.26 ppt) for a 24-hour sample*
Table 50. Summary of 1,3-dichloropropene (Telone®) ambient air monitoring results in Kern County. Samples (24-hour) were collected from July 10 to 27, 2000 using charcoal tubes. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive 2nd</th>
<th>Mean Positive</th>
<th># of Samples c</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a ng/m³ b ppt</td>
<td>ng/m³ ppt</td>
<td>Samples</td>
<td></td>
</tr>
<tr>
<td>Cotton Research Station, Safter</td>
<td>110000 24240</td>
<td>81000 17849</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Fire Station, Mettler</td>
<td>20000 4407</td>
<td>1800 397</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Mountain View School, Lamont</td>
<td>8300 1829</td>
<td>1300 287</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Walker Monitoring Station, Shafter</td>
<td>4300 948</td>
<td>2300 507</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Sunset School, Weed Patch</td>
<td>8900 1961</td>
<td>5000 1102</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>2500 551</td>
<td>2200 485</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>71</strong> <strong>71</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a nanograms per cubic meter
b parts per trillion
c field blanks and collocated samples excluded
d Method Detection Limit = 1.19 ng/m³ (0.26 ppt) for a 24-hour sample
Table 51. Summary of 1,3-dichloropropene (Telone®) ambient air monitoring results in Monterey and Santa Cruz Counties. Samples (24-hour) were collected from September 11 to November 3, 2000 using evacuated 6 liter Silcosteel® canisters. The Air Pollution Control District Office in Salinas was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2nd Highest Positive</th>
<th>2nd Positive</th>
<th>Mean Positive&lt;sup&gt;c&lt;/sup&gt;</th>
<th># of Samples&lt;sup&gt;d&lt;/sup&gt;</th>
<th># Above &lt;sup&gt;e&lt;/sup&gt;MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chualar School, Chualar</td>
<td>4340 ng/m³ b 956 ppt</td>
<td>2280 ng/m³ 502 ppt</td>
<td>409 ng/m³ 90.1 ppt</td>
<td>31</td>
<td>14</td>
</tr>
<tr>
<td>La Joya School, Salinas</td>
<td>565 ng/m³ 125 ppt</td>
<td>71.3 ppt 15.7 ppt</td>
<td>39 ng/m³ 8.59 ppt</td>
<td>29</td>
<td>7</td>
</tr>
<tr>
<td>Oak Avenue School, Greenfield</td>
<td>1470 ng/m³ 324 ppt</td>
<td>1140 ng/m³ 251 ppt</td>
<td>175 ng/m³ 38.6 ppt</td>
<td>29</td>
<td>14</td>
</tr>
<tr>
<td>Pajaro Middle School, Watsonville</td>
<td>3590 ng/m³ 791 ppt</td>
<td>3020 ng/m³ 666 ppt</td>
<td>304 ng/m³ 67 ppt</td>
<td>31</td>
<td>15</td>
</tr>
<tr>
<td>Salsepuedes School, Watsonville</td>
<td>272 ng/m³ 59.9 ppt</td>
<td>189 ng/m³ 41.6 ppt</td>
<td>39 ng/m³ 8.59 ppt</td>
<td>29</td>
<td>8</td>
</tr>
<tr>
<td>Salinas</td>
<td>351 ng/m³ 77.3 ppt</td>
<td>252 ng/m³ 55.5 ppt</td>
<td>42 ng/m³ 9.26 ppt</td>
<td>30</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>179</strong></td>
<td><strong>66</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> nanograms per cubic meter
<sup>b</sup> parts per trillion
<sup>c</sup> "Detected" results were factored into the average as (MDL+EQL)/2 = 61 ng/m³; "<MDL" as MDL/2 = 10 ng/m³
<sup>d</sup> field blanks and collocated samples excluded
<sup>e</sup> Method Detection Limit = 10.25 ng/m³ (2.26 ppt) for a 24-hour sample
Table 52. Summary of 1,3-dichloropropene (Telone®) ambient air monitoring results in Monterey and Santa Cruz Counties. Samples (24-hour) were collected from September 11 to 14, 2000 using charcoal tubes. The Air Pollution Control District Office in Salinas was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples&lt;sup&gt;d&lt;/sup&gt;</th>
<th># Above &lt;sup&gt;e&lt;/sup&gt;MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chualar School, Chualar</td>
<td>3600 793</td>
<td>1500 331</td>
<td>1500 331</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>La Joya School, Salinas</td>
<td>190 41.9</td>
<td>94 20.7</td>
<td>65 14.3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Oak Avenue School, Greenfield</td>
<td>840 185</td>
<td>700 154</td>
<td>840 185</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Pajaro Middle School, Watsonville</td>
<td>370 81.5</td>
<td>360 79.3</td>
<td>190 41.9</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Salsepuedes School, Watsonville</td>
<td>250 55.1</td>
<td>200 44.1</td>
<td>130 28.6</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Salinas</td>
<td>200 44.1</td>
<td>55 12.1</td>
<td>100 22</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22</strong></td>
<td><strong>21</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>nanograms per cubic meter  
<sup>b</sup>pairs per trillion  
<sup>c</sup>“<MDL” results were factored into the average as = 10 ng/m³  
<sup>d</sup>field blanks and collocated samples excluded  
<sup>e</sup>Method Detection Limit = 1.19 ng/m³ (0.26 ppt) for a 24-hour sample
17. **Endosulfan (I, II)**

Endosulfan (Thiodan®) is an insecticide/acaricide used on a variety of crops. Technical grades used to formulate endosulfan products are mixtures of the two stereoisomers endosulfan I and endosulfan II. In 2000, approximately 144,620 pounds were reported used in California. Endosulfan is regulated as a restricted material.

Ambient air monitoring for endosulfan I and II was conducted from July 29 to August 29, 1996, at four sites in Fresno County. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with expected applications to grapes and cotton. The results are summarized in Tables 53 and 54. Maximum positive detections for endosulfan I ranged from “detected” (EQL = 3.8 ng/m³, 0.20 ppt; MDL = 1.1 ng/m³, 0.058 ppt for a 24-hour sample) at the Fresno background site to 140 ng/m³ (7.43 ppt) at the San Joaquin School site in San Joaquin. Of the 94 samples analyzed (field blanks and collocated samples excluded), 11 were reported as “detected” and 17 were below the MDL. Maximum positive detections for endosulfan II ranged from below the MDL (3.8 ng/m³, 0.20 ppt for a 24-hour sample) at the Fresno background site to 26.0 ng/m³ (1.38 ppt) at the San Joaquin School site in San Joaquin. Of the 94 samples analyzed (field blanks and collocated samples excluded), 29 were reported as “detected” (EQL = 12.0 ng/m³, 0.64 ppt for a 24-hour sample) and 63 were below the MDL.

Application site monitoring for endosulfan I and II was conducted in April 1997 before, during, and for 72 hours after an application to an apple orchard in San Joaquin County. Endosulfan was applied by ground-based rig blower equipment at the rate of 3.0 pounds of active ingredient per acre. The results are summarized in Tables 55 and 56.
Maximum positive detections over the sampling interval for endosulfan I ranged from 290 ng/m$^3$ (15.4 ppt) to 3,800 ng/m$^3$ (202 ppt). Of the 39 samples analyzed (field blanks excluded), 34 were reported as above the EQL (10.0 ng/m$^3$, 0.53 ppt for an 8-hour sample) and 5 were below the MDL (3.1 ng/m$^3$, 0.16 ppt for an 8-hour sample).

Maximum positive detections for endosulfan II ranged from 48.0 ng/m$^3$ (2.55 ppt) to 200 ng/m$^3$ (10.6 ppt). Of the 39 samples analyzed (field blanks excluded), 3 were “detected” (EQL = 20.0 ng/m$^3$, 1.1 ppt; MDL = 6.2 ng/m$^3$, 0.33 ppt), and 16 were below the MDL.
Table 53. Summary of endosulfan I ambient air monitoring results in Fresno County. Samples (24-hour) were collected from July 29 to August 29, 1996. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest</th>
<th>Positive</th>
<th>2nd Highest</th>
<th>Positive</th>
<th>Mean</th>
<th>Positive&lt;sup&gt;+&lt;/sup&gt;</th>
<th># of Samples&lt;sup&gt;d&lt;/sup&gt;</th>
<th># Above MDL&lt;sup&gt;f&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cantua Creek School, Cantua Creek</td>
<td>35</td>
<td>1.86</td>
<td>29</td>
<td>1.54</td>
<td>14</td>
<td>0.74</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>San Joaquin School, San Joaquin</td>
<td>140</td>
<td>7.43</td>
<td>125</td>
<td>6.63</td>
<td>24</td>
<td>1.27</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Tranquility High School, Tranquility</td>
<td>70</td>
<td>3.71</td>
<td>45</td>
<td>2.39</td>
<td>21</td>
<td>1.11</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Westside School, Five Points</td>
<td>23</td>
<td>1.22</td>
<td>17</td>
<td>0.90</td>
<td>9.3</td>
<td>0.49</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Fresno</td>
<td>Detected&lt;sup&gt;f&lt;/sup&gt;</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>0.78</td>
<td>0.04</td>
<td>19</td>
<td>2</td>
</tr>
</tbody>
</table>

<sup>a</sup>nanograms per cubic meter  
<sup>b</sup>parts per trillion  
<sup>c</sup>"Detected" results were factored into the average as (MDL+EQL)/2=2.49 ng/m³; "<MDL" as MDL/2=0.58 ng/m³  
<sup>d</sup>field blanks and collocated samples excluded  
<sup>e</sup>Method Detection Limit = 1.1 ng/m³ (0.058 ppt) for a 24-hour sample  
<sup>f</sup>Detected = less than the estimated quantitation limit (EQL) of 3.8 ng/m³ (0.2 ppt) but greater than or equal to the MDL
Table 54. Summary of endosulfan II ambient air monitoring results in Fresno County. Samples (24-hour) were collected from July 29 to August 29, 1996. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cantua Creek School, Cantua Creek</td>
<td>Detected</td>
<td>Detected</td>
<td>4.8</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>San Joaquin School, San Joaquin</td>
<td>26.0</td>
<td>13.0</td>
<td>5.4</td>
<td>19</td>
<td>9</td>
</tr>
<tr>
<td>Tranquility High School, Tranquility</td>
<td>Detected</td>
<td>Detected</td>
<td>5.2</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Westside School, Five Points</td>
<td>Detected</td>
<td>Detected</td>
<td>3.0</td>
<td>18</td>
<td>3</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>1.90</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>&lt;MDL</strong></td>
<td><strong>&lt;MDL</strong></td>
<td><strong>1.90</strong></td>
<td><strong>94</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>

*a nanograms per cubic meter  
*b parts per trillion  
"Detected" results were factored into the average as (MDL+EQL)/2=8.16 ng/m³; "<MDL" as MDL/2=1.91 ng/m³  
*d field blanks and collocated samples excluded  
*e Method Detection Limit = 3.8 ng/m³ (0.20 ppt) for a 24-hour sample  
f Detected = less than the estimated quantitation limit (EQL) of 12.0 ng/m³ (0.64 ppt) but greater than or equal to the MDL
Table 55.  Summary of air monitoring results for endosulfan I after an application of endosulfan to an apple orchard (3.0 pounds of active ingredient per acre application rate). Samples were collected in San Joaquin County during April 1997 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval b</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>East</td>
<td></td>
<td></td>
</tr>
<tr>
<td>West</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South - 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South - 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>540</td>
<td>1800</td>
<td>3800</td>
<td>1200</td>
<td>360</td>
<td>490</td>
<td>380</td>
<td>3800</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>290</td>
<td>43</td>
<td>21</td>
<td>10</td>
<td>&lt;MDL</td>
<td>18</td>
<td>3.50</td>
<td>290</td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>530</td>
<td>460</td>
<td>710</td>
<td>430</td>
<td>88</td>
<td>81</td>
<td>56</td>
<td>710</td>
<td></td>
</tr>
<tr>
<td>South - 1</td>
<td>360</td>
<td>440</td>
<td>1200</td>
<td>100</td>
<td>61</td>
<td>340</td>
<td>290</td>
<td>1200</td>
<td></td>
</tr>
<tr>
<td>South - 2</td>
<td>NS</td>
<td>520</td>
<td>1300</td>
<td>140</td>
<td>70</td>
<td>490</td>
<td>300</td>
<td>1300</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>540</td>
<td>1800</td>
<td>3800</td>
<td>1200</td>
<td>360</td>
<td>490</td>
<td>380</td>
<td>3800</td>
<td></td>
</tr>
</tbody>
</table>

*ng/m³ (ppt)

* nanograms per cubic meter (parts per trillion)

b interval 1 = background on 4/7-8/97 from 1700-0530; interval 2 = during application on 4/8/97 from 0530-0845; interval 3 = 4/8/97 from 0845-1040; interval 4 = 4/8/97 from 1040-1440; interval 5 = 4/8/97 from 1440-2245; interval 6 = 4/8-9/97 from 2245-0815; interval 7 = 4/9-10/97 from 0815-0800; interval 8 = 4/10-11/97 from 0800-0800

c Method Detection Limit = 3.1 ng/m³ (0.16 ppt) for an 8-hour sample

d no sample taken
Table 56. Summary of air monitoring results for endosulfan II after an application of endosulfan to an apple orchard (3.0 pounds of active ingredient per acre application rate). Samples were collected in San Joaquin County during April 1997 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval b</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>&lt;MDL</td>
<td>73</td>
<td>91</td>
<td>200</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(3.87)</td>
<td>(4.83)</td>
<td>(10.6)</td>
<td>(3.87)</td>
<td>(0.96)</td>
<td>(1.86)</td>
<td>(2.02)</td>
<td>(10.6)</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>&lt;MDL</td>
<td>48</td>
<td>&lt;MDL</td>
<td>41</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(2.55)</td>
<td>(&lt;MDL)</td>
<td>(2.18)</td>
<td>(1.65)</td>
<td>(Detected)</td>
<td>(0.37)</td>
<td>(&lt;MDL)</td>
<td>(3.98)</td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>&lt;MDL</td>
<td>75</td>
<td>&lt;MDL</td>
<td>31</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(3.98)</td>
<td>(&lt;MDL)</td>
<td>(2.18)</td>
<td>(1.65)</td>
<td>(Detected)</td>
<td>(0.37)</td>
<td>(&lt;MDL)</td>
<td>(3.98)</td>
<td></td>
</tr>
<tr>
<td>South - 1</td>
<td>&lt;MDL</td>
<td>71</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(3.77)</td>
<td>(&lt;MDL)</td>
<td>(2.23)</td>
<td>(Detected)</td>
<td>(1.11)</td>
<td>(1.86)</td>
<td>(3.77)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South - 2</td>
<td>&lt;MDL</td>
<td>95</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>49</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(5.04)</td>
<td>(&lt;MDL)</td>
<td>(3.29)</td>
<td>(Detected)</td>
<td>(2.60)</td>
<td>(2.23)</td>
<td>(5.04)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Maximum Positive | 95 | 91 | 200 | 73 | 18 | 49 | 42 | 200 |
|                  | (<MDL) | (5.04) | (4.83) | (10.6) | (3.87) | (0.96) | (2.60) | (2.23) | (10.6) |

*a nanograms per cubic meter (parts per trillion)

b interval 1 = background on 4/7-8/97 from 1700-0530; interval 2 = during application on 4/8/97 from 0530-0845; interval 3 = 4/8/97 from 0845-1040; interval 4 = 4/8/97 from 1040-1440; interval 5 = 4/8/97 from 1440-2245; interval 6 = 4/8-9/97 from 2245-0815; interval 7 = 4/9-10/97 from 0815-0800; interval 8 = 4/10-11/97 from 0800-0800

c Method Detection Limit = 6.2 ng/m³ (0.33 ppt) for an 8-hour sample
d Detected = less than the estimated quantitation limit (EQL) of 20.0 ng/m³ (1.1 ppt) but greater than or equal to the MDL
e no sample taken
18. **EPTC**

EPTC (Eradicane®) is a pre-emergent herbicide used to control perennial and annual grasses. It is also used to control broadleaf weeds in some vegetable crops. In 2000, more than 323,254 pounds were reported used in California. EPTC is not regulated as a restricted material.

Ambient air monitoring was conducted from October 9 to November 24, 1996, at four sites in Imperial County. The background site was located at the ARB air monitoring station in Calexico. Monitoring was scheduled to coincide with expected applications of EPTC to alfalfa. The results are summarized in Table 57. Maximum positive detections ranged from 110 ng/m$^3$ (14.2 ppt) at the Imperial High School in Imperial to 240 ng/m$^3$ (31.0 ppt) at the Meadows Union School site in Holtville. Thirty-one of the 120 samples analyzed (field blanks and collocated samples excluded) were reported as “detected” (EQL = 72.0 ng/m$^3$, 9.3 ppt; MDL = 22.0 ng/m$^3$, 2.8 ppt for a 24-hour sample) and 70 were below the MDL.

Application site monitoring was conducted in May 1997 before, during, and for 72 hours after an application to a corn field in Merced County. EPTC was applied by ground-based spray equipment at the rate of 5.7 pounds of active ingredient per acre. The results are summarized in Table 58. Maximum positive detections over the sampling interval ranged from 2.50 µg/m$^3$ (3,200 ppt) to 12.0 µg/m$^3$ (1,500 ppt). Of the 34 samples analyzed (field blanks excluded), 11 were below the MDL (0.044 µg/m$^3$, 5.6 ppt for a 12-hour sample).
Table 57. Summary of EPTC ambient air monitoring results in Imperial County. Samples (24-hour) were collected from October 9 to November 24, 1996. The ARB air monitoring station in Calexico was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ng/m³ ppt</td>
<td>ng/m³ ppt</td>
<td>ng/m³ ppt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ag. Commissioner's Office, El Centro</td>
<td>120 15.5</td>
<td>80 10.3</td>
<td>68.0 8.78</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>Fire Department, Heber</td>
<td>200 25.8</td>
<td>170 22.0</td>
<td>82.0 10.6</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>Imperial High School, Imperial</td>
<td>110 14.2</td>
<td>96.0 12.4</td>
<td>67.0 8.66</td>
<td>24</td>
<td>8</td>
</tr>
<tr>
<td>Meadows Union School, Holtville</td>
<td>240 31.0</td>
<td>220 28.4</td>
<td>120 15.5</td>
<td>24</td>
<td>15</td>
</tr>
<tr>
<td>Calexico</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>24</td>
<td>8</td>
</tr>
</tbody>
</table>

*a nanograms per cubic meter
*b parts per trillion
"Detected" results were factored into the average as (MDL+EQL)/2; "<MDL" results not used to calculate the mean
*field blanks and collocated samples excluded
*Method Detection Limit = 22.0 ng/m³ (2.8 ppt) for a 24-hour sample
*Detected = less than the estimated quantitation limit (EQL) of 72.0 ng/m³ (9.3 ppt) but greater than or equal to the MDL
### Table 58. Summary of air monitoring results after an application of EPTC to a corn field (5.7 pounds of active ingredient application rate). Samples were collected in Merced County during May 1997 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>µg/m³ (ppt)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>5.80 (&lt;MDL)</td>
<td>5.60 (&lt;MDL)</td>
<td>11.0 (&lt;MDL)</td>
<td>2.60 (&lt;MDL)</td>
<td>0.87 (&lt;MDL)</td>
<td>11.0 (&lt;MDL)</td>
<td>1500 (&lt;MDL)</td>
</tr>
<tr>
<td>West</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (5.60)</td>
<td>9.00 (5.60)</td>
<td>0.45 (5.60)</td>
<td>0.32 (5.60)</td>
<td>8.40 (5.60)</td>
<td>1100 (5.60)</td>
</tr>
<tr>
<td>North</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>&lt;MDL (8.40)</td>
<td>2.50 (8.40)</td>
<td>0.95 (8.40)</td>
<td>0.26 (8.40)</td>
<td>2.50 (8.40)</td>
<td>3200 (8.40)</td>
</tr>
<tr>
<td>South - 1</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>2.80 (&lt;MDL)</td>
<td>0.53 (&lt;MDL)</td>
<td>8.70 (&lt;MDL)</td>
<td>12.0 (&lt;MDL)</td>
<td>0.6 (&lt;MDL)</td>
<td>0.37 (&lt;MDL)</td>
<td>12.0 (&lt;MDL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South - 2</td>
<td>NS (NS)</td>
<td>2.90 (370)</td>
<td>0.57 (74.0)</td>
<td>9.10 (1200)</td>
<td>11.0 (1400)</td>
<td>0.5 (1400)</td>
<td>0.28 (1400)</td>
<td>11.0 (1400)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;MDL (&lt;MDL)</td>
<td>2.90 (370)</td>
<td>5.80 (750.00)</td>
<td>9.10 (1200)</td>
<td>12.0 (1500)</td>
<td>2.60 (1500)</td>
<td>0.87 (1500)</td>
<td>12.0 (1500)</td>
</tr>
</tbody>
</table>

**Notes:**
- Micrograms per cubic meter (parts per trillion)
- Method Detection Limit = 0.044 µg/m³ (5.6 ppt) for a 12-hour sample.
- No sample taken.
19. Ethoprop

Ethoprop (Mocap®) is a insecticide/nematicide used to control nematodes and a variety of insects when applied to soil. In 2000, the greatest use in California was on potatoes to control nematodes and wireworms (7,968 pounds). Ethoprop is regulated as a restricted material.

Ambient air monitoring was conducted from April 28 to June 4, 1998, at four sites in Siskiyou County. The background site was located at the Lava beds National Monument in Tule Lake. Monitoring was scheduled to coincide with expected applications of ethoprop to potatoes. The results are summarized in Table 59. Maximum positive detections ranged from “detected” (EQL = 1.1 ng/m³, 0.11 ppt; MDL = 0.219 ng/m³, 0.02 ppt for a 24-hour sample) at the Newell School site, School Bus Barn site, and the background site all located in Tule Lake to 3.0 ng/m³ at the Doris School site in Doris. Of the 120 samples analyzed (field blanks and collocated samples excluded), 100 were below the MDL.

Application site monitoring was conducted in May 1998 before, during, and for 72 hours after an application to a potato field in Siskiyou County. Ethoprop was applied and incorporated into the soil by ground-based equipment at the rate of 10.0 pounds of active ingredient per acre. The results are summarized in Table 60. Maximum positive detections over the sampling interval ranged from 39.0 ng/m³ (3.9 ppt) to 210 ng/m³ (21.0 ppt). Of the 33 samples analyzed (field blanks excluded), one was reported as “detected” (EQL = 1.1 ng/m³, 0.11 ppt; MDL = 0.219 ng/m³, 0.02 ppt for a 24-hour sample) and 3 were below the MDL.
Table 59. Summary of ethoprop ambient air monitoring results in Siskiyou County. Samples (24-hour) were collected from April 28 to June 4, 1998. The Lava Beds National Monument in Tule Lake was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>²ng/m³  ³ppt</td>
<td>²ng/m³  ³ppt</td>
<td>²ng/m³  ³ppt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newell School, Tule Lake</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>0.15</td>
<td>0.02</td>
</tr>
<tr>
<td>School Bus Barn, Tule Lake</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>0.29</td>
<td>0.03</td>
</tr>
<tr>
<td>Doris School, Doris</td>
<td>3.0 0.30</td>
<td>Detected</td>
<td>Detected</td>
<td>0.25</td>
<td>0.03</td>
</tr>
<tr>
<td>MacDoel School, MacDoel</td>
<td>2.0 0.20</td>
<td>1.9 0.19</td>
<td>0.42</td>
<td>0.04</td>
<td>24</td>
</tr>
<tr>
<td>Tule Lake</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>0.15</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td>120</td>
<td>20</td>
</tr>
</tbody>
</table>

²nanograms per cubic meter  
³parts per trillion  
⁴"Detected" results were factored into the average as (MDL+EQL)/2 = 0.65 ng/m³; "<MDL" results as MDL/2 = 0.11 ng/m³  
⁵field blanks and collocated samples excluded  
⁶Method Detection Limit = 0.219 ng/m³ (0.02 ppt) for a 24-hour sample  
⁷Detected = less than the estimated quantitation limit (EQL) of 1.1 ng/m³ (0.11 ppt) but greater than or equal to the MDL
### Table 60.
Summary of air monitoring results after an application of ethoprop to a potato field (10.0 pounds of active ingredient per acre application rate). Samples were collected in Siskiyou County during May 1998 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East - 1</td>
<td>&lt;MDL</td>
<td>34.0</td>
<td>47.0</td>
<td>31.0</td>
<td>130</td>
<td>110</td>
<td>80.0</td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(3.40)</td>
<td>(4.70)</td>
<td>(3.20)</td>
<td>(13.0)</td>
<td>(11.0)</td>
<td>(8.00)</td>
<td>(13.0)</td>
</tr>
<tr>
<td>East - 2</td>
<td>NS&lt;sup&gt;d&lt;/sup&gt;</td>
<td>38.0</td>
<td>53.0</td>
<td>28.0</td>
<td>140</td>
<td>120</td>
<td>80.0</td>
<td>140</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(3.80)</td>
<td>(5.30)</td>
<td>(2.80)</td>
<td>(14.0)</td>
<td>(12.0)</td>
<td>(8.0)</td>
<td>(14.0)</td>
</tr>
<tr>
<td>West</td>
<td>Detected&lt;sup&gt;e&lt;/sup&gt;</td>
<td>19.0</td>
<td>40.0</td>
<td>68.0</td>
<td>8.60</td>
<td>21.0</td>
<td>7.00</td>
<td>68.0</td>
</tr>
<tr>
<td></td>
<td>(Detected)</td>
<td>(1.90)</td>
<td>(4.10)</td>
<td>(6.90)</td>
<td>(0.87)</td>
<td>(2.10)</td>
<td>(0.70)</td>
<td>(6.90)</td>
</tr>
<tr>
<td>North</td>
<td>&lt;MDL</td>
<td>39.0</td>
<td>18.0</td>
<td>54.0</td>
<td>NS</td>
<td>21.0</td>
<td>24.0</td>
<td>39.0</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(3.90)</td>
<td>(1.80)</td>
<td>(5.50)</td>
<td>(NS)</td>
<td>(2.10)</td>
<td>(2.40)</td>
<td>(3.90)</td>
</tr>
<tr>
<td>South</td>
<td>&lt;MDL</td>
<td>26.0</td>
<td>45.0</td>
<td>110</td>
<td>87.0</td>
<td>53.0</td>
<td>210</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(2.60)</td>
<td>(4.50)</td>
<td>(11.0)</td>
<td>(8.80)</td>
<td>(5.40)</td>
<td>(21.0)</td>
<td>(21.0)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>Detected</td>
<td>39.0</td>
<td>53.0</td>
<td>110</td>
<td>140</td>
<td>120</td>
<td>210</td>
<td>210</td>
</tr>
<tr>
<td></td>
<td>(Detected)</td>
<td>(3.90)</td>
<td>(5.30)</td>
<td>(11.0)</td>
<td>(14.0)</td>
<td>(12.0)</td>
<td>(21.0)</td>
<td>(21.0)</td>
</tr>
</tbody>
</table>

* nanograms per cubic meter (parts per trillion)

<sup>b</sup> interval 1 = background on 5/11-12/98 from 1700-0830; interval 2 = during application on 5/12/98 from 0830-2015; interval 3 = 5/12/98 from 2015-2345; interval 4 = 5/12-13/98 from 2345-0645; interval 5 = 5/13/98 from 0645-1500; interval 6 = 5/13-14/98 from 1500-1300; interval 7 = 5/14-15/98 from 1300-1100;

<sup>c</sup> Method Detection Limit = 0.219 ng/m<sup>3</sup> (0.02 ppt) for a 24-hour sample

<sup>d</sup> no sample taken

<sup>e</sup> Detected = less than the estimated quantitation limit (EQL) of 1.1 ng/m<sup>3</sup> (0.11 ppt) but greater than or equal to the MDL
20. **Ethyl parathion / Ethyl paraoxon**

Ethyl parathion (Bladan®) is a non-systemic insecticide used on a wide variety of crops to control sucking and chewing insects. It is also used to control nematodes in beets and ornamentals. Ethyl paraoxon is a degradation product of ethyl parathion. Ethyl parathion is no longer registered for use in California, and is listed by regulation as a toxic air contaminant.

Ambient air monitoring for ethyl parathion and ethyl paraoxon was conducted from January 7 to 29, 1986, at five sites in Fresno and Tulare counties. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with expected applications of ethyl parathion to deciduous orchards. The results are summarized in Tables 61 and 62. Maximum positive detections of ethyl parathion ranged from 0.02 µg/m³ (1.68 ppt) at the Fresno background site to 0.83 µg/m³ (69.7 ppt) at the Kearny Field Station site in Parlier. Nearly 35 percent of the total number of samples analyzed were below the MDL (0.01 µg/m³, 0.84 ppt for a 24-hour sample). Maximum positive detections of ethyl paraoxon ranged from 0.02 µg/m³ (1.68 ppt) at the Water Pump Station site in Dinuba to 0.04 µg/m³ (3.36 ppt) at the Monte Vista School site in Reedley. Of the 112 samples analyzed, 6 were above the MDL (0.02 µg/m³, 1.68 ppt for a 24-hour sample). Ambient air monitoring for ethyl parathion and ethyl paraoxon was also conducted from January 28 to February 12, 1986 at five sites in Kern and Tulare counties. The background site was located at the ARB air monitoring station in Bakersfield. The results are summarized in Tables 63 and 64. Maximum positive detections of ethyl parathion ranged from 0.02 µg/m³ (1.29 ppt) at the City Works Building site in Delano to 0.09 µg/m³ (7.34 ppt) at the City Hall site in McFarland. More than 73 percent of the total number of samples analyzed were below the MDL. All of the 71 samples analyzed for ethyl paraoxon were below the MDL.
Ambient air monitoring for ethyl parathion and ethyl paraoxon was also conducted from September 29 to October 22, 1986, at five sites in Imperial County. Monitoring was scheduled to coincide with expected applications of ethyl parathion to row crops, such as sugar beets. The results are summarized in Tables 65 and 66. Maximum positive detections for ethyl parathion ranged from 0.01 µg/m³ (0.84 ppt) at the background site in El Centro to 0.15 µg/m³ (12.6 ppt) at the Fire Department site in Calipatria. Nearly 41 percent of the total number of samples analyzed were below the MDL (0.01 µg/m³, 0.84 ppt for a 24-hour sample). All of the 93 samples analyzed for ethyl paraoxon were below the MDL (0.02 µg/m³, 1.68 ppt for a 24-hour sample).
Table 61. Summary of ethyl parathion ambient air monitoring results in Fresno and Tulare counties. Samples (24-hour) were collected from January 7 to 29, 1986. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jefferson School, Sanger</td>
<td>0.19 µg/m³ 16.0 ppt</td>
<td>0.10 µg/m³ 8.40 ppt</td>
<td>0.07 µg/m³ 5.88 ppt</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Kearny Field Station, Parlier</td>
<td>0.83 µg/m³ 69.7 ppt</td>
<td>0.69 µg/m³ 57.9 ppt</td>
<td>0.16 µg/m³ 13.4 ppt</td>
<td>23</td>
<td>22</td>
</tr>
<tr>
<td>Monte Vista School, Reedley</td>
<td>0.41 µg/m³ 34.4 ppt</td>
<td>0.36 µg/m³ 30.2 ppt</td>
<td>0.19 µg/m³ 16.0 ppt</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Community Health Center, Selma</td>
<td>0.28 µg/m³ 23.5 ppt</td>
<td>0.26 µg/m³ 21.8 ppt</td>
<td>0.15 µg/m³ 12.6 ppt</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Water Pump Station, Dinuba²</td>
<td>0.38 µg/m³ 31.9 ppt</td>
<td>0.29 µg/m³ 24.4 ppt</td>
<td>0.12 µg/m³ 10.1 ppt</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Fresno</td>
<td>0.02 µg/m³ 1.68 ppt</td>
<td>0.02 µg/m³ 1.68 ppt</td>
<td>0.02 µg/m³ 1.68 ppt</td>
<td>39</td>
<td>10</td>
</tr>
</tbody>
</table>

Total 112 #Above MDL 73

ᵃ micrograms per cubic meter
ᵇ parts per trillion
ᶜ mean of samples above the MDL
ᵈ Method Detection Limit = 0.01 µg/m³ (0.84 ppt) for a 24-hour sample
ᵉ located in Tulare County
Table 62. Summary of ethyl paraoxon ambient air monitoring results in Fresno and Tulare counties. Samples (24-hour) were collected from January 7 to 29, 1986. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive 2nd</th>
<th>Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>μg/m³</td>
<td>ppt</td>
<td>μg/m³</td>
<td>ppt</td>
<td>μg/m³</td>
</tr>
<tr>
<td>Jefferson School, Sanger</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;NA</td>
</tr>
<tr>
<td>Kearny Field Station, Parlier</td>
<td>0.07</td>
<td>5.88</td>
<td>0.04</td>
<td>3.36</td>
<td>0.05</td>
</tr>
<tr>
<td>Monte Vista School, Reedley</td>
<td>0.04</td>
<td>3.36</td>
<td>0.02</td>
<td>1.68</td>
<td>0.03</td>
</tr>
<tr>
<td>Community Health Center, Selma</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
</tr>
<tr>
<td>Water Pump Station, Dinuba f</td>
<td>0.02</td>
<td>1.68</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.02</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
</tr>
</tbody>
</table>

Total 112 6

*Micrograms per cubic meter
*bParts per trillion
*cMean of samples above the MDL
*dMethod Detection Limit = 0.02 μg/m³ (1.68 ppt) for a 24-hour sample
*eNot Applicable
*fLocated in Tulare County
Table 63. Summary of ethyl parathion ambient air monitoring results in Kern and Tulare counties. Samples (24-hour) were collected from January 28 to February 12, 1986. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>School District Office, Shafter</td>
<td>&lt;MDL &lt;MDL &lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td></td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>North Kern Hospital, Wasco</td>
<td>0.07 5.69</td>
<td>0.02 1.98</td>
<td>0.03 2.72</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>City Hall, McFarland</td>
<td>0.09 7.34</td>
<td>0.07 6.04</td>
<td>0.04 3.53</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>City Works Bldg., Delano</td>
<td>0.02 1.29</td>
<td>0.02 1.29</td>
<td>0.02 1.29</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Intermediate School, Earlimart f</td>
<td>0.06 5.04</td>
<td>0.05 4.16</td>
<td>0.06 5.04</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>0.04 3.36</td>
<td>0.01 0.84</td>
<td>0.02 1.29</td>
<td>30</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td>71</td>
<td>19</td>
</tr>
</tbody>
</table>

* micrograms per cubic meter
b parts per trillion
c mean of samples above the MDL
d Method Detection Limit = 0.01 µg/m³ (0.84 ppt) for a 24-hour sample
e Not Applicable
flocated in Tulare County
Table 64. Summary of ethyl paraoxon ambient air monitoring results in Kern and Tulare counties. Samples (24-hour) were collected from January 28 to February 12, 1986. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>µg/m³</td>
<td>ppt</td>
<td>µg/m³</td>
<td>ppt</td>
<td>MDL</td>
</tr>
<tr>
<td>School District Office, Shafter</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>8</td>
</tr>
<tr>
<td>North Kern Hospital, Wasco</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>8</td>
</tr>
<tr>
<td>City Hall, McFarland</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>7</td>
</tr>
<tr>
<td>City Works Bldg., Delano</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>12</td>
</tr>
<tr>
<td>Intermediate School, Earlimart</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>6</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>71</td>
<td>0</td>
</tr>
</tbody>
</table>

* micrograms per cubic meter
\(^b\) parts per trillion
\(^c\) mean of samples above the MDL
\(^d\) Method Detection Limit = 0.02 µg/m³ (1.68 ppt) for a 24-hour sample
\(^e\) Not Applicable
\(^f\) located in Tulare County
Table 65. Summary of ethyl parathion ambient air monitoring results in Imperial County. Samples (24-hour) were collected from September 29 to October 22, 1986. The Air Pollution Control District Office in El Centro was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodriguez Jr. High School, Heber</td>
<td>0.09 7.56</td>
<td>0.08 6.72</td>
<td>0.03 2.52</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>Meadow Union School, Holtville</td>
<td>0.03 2.52</td>
<td>0.02 1.68</td>
<td>0.02 1.68</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Swing School, Brawley</td>
<td>0.04 3.36</td>
<td>0.03 2.52</td>
<td>0.02 1.68</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Air Pollution Ctrl. Dist. Office, Brawley</td>
<td>0.04 3.36</td>
<td>0.03 2.52</td>
<td>0.02 1.68</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Fire Department, Calipatria</td>
<td>0.15 12.6</td>
<td>0.04 3.36</td>
<td>0.04 3.36</td>
<td>25</td>
<td>15</td>
</tr>
<tr>
<td>El Centro</td>
<td>0.01 0.84</td>
<td>0.01 0.84</td>
<td>0.01 0.84</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>93</strong></td>
<td><strong>55</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a micrograms per cubic meter
*b parts per trillion
*c mean of samples above the MDL
*d Method Detection Limit = 0.01 µg/m³ (0.84 ppt) for a 24-hour sample
Table 66. Summary of ethyl paraoxon ambient air monitoring results in Imperial County. Samples (24-hour) were collected from September 29 to October 22, 1986. The Air Pollution Control District Office in El Centro was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rodriguez Jr. High School, Heber</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Meadow Union School, Holtville</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Swing School, Brawley</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Air Pollution Ctrl. Dist. Office, Brawley</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Fire Department, Calipatria</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>El Centro</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>14</td>
<td>0</td>
</tr>
</tbody>
</table>

Total 93 0

*micrograms per cubic meter

*parts per trillion

*mean of samples above the MDL

*Method Detection Limit = 0.02 µg/m³ (1.68 ppt) for a 24-hour sample

*Not Applicable
21. Fenamiphos

Fenamiphos (Nemacur®) is a systemic insecticide/nematicide primarily used in California to control nematodes in certain fruit, vegetable, and ornamental crops. In 2000, nearly 104,500 pounds were reported used in California. Fenamiphos is regulated as a restricted material.

Ambient air monitoring was conducted from March 31 to May 9, 1997, at four sites in Fresno County. The background site was located at the ARB air monitoring station in Fresno. Monitoring was conducted to coincide with expected applications of fenamiphos to grape vineyards. The results are summarized in Table 67. All of the 116 samples analyzed (field blank and collocated samples excluded) were below the EQL (0.0093 µg/m³, 0.75 ppt for a 24-hour sample).

Application site monitoring was conducted in April 1998 before, during, and for 72 hours after an application to a grape vineyard in Fresno County. Fenamiphos was applied and incorporated into the soil by ground-based equipment at the rate of 6.0 pounds of active ingredient per acre. The results are summarized in Table 68. Of the 39 samples analyzed (field blanks excluded), two were above the EQL (0.0093 µg/m³, 0.75 ppt for a 24-hour sample). Maximum positive detections over the sampling interval were 0.12 µg/m³ (9.67 ppt) and 0.19 µg/m³ (15.3 ppt).
Summary of fenamiphos ambient air monitoring results in Fresno County. Samples (24-hour) were collected from March 31 to May 9, 1997. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive 2&lt;sup&gt;nd&lt;/sup&gt;</th>
<th>Highest Positive Mean</th>
<th>Positive&lt;sup&gt;c&lt;/sup&gt;</th>
<th># of Samples</th>
<th># Above EQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fremont Middle School, Fowler</td>
<td>&lt;EQL  &lt;EQL</td>
<td>&lt;EQL  &lt;EQL</td>
<td>NA  NA</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>American Union School, Fresno</td>
<td>&lt;EQL  &lt;EQL</td>
<td>&lt;EQL  &lt;EQL</td>
<td>NA  NA</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Alvina School, Caruthers</td>
<td>&lt;EQL  &lt;EQL</td>
<td>&lt;EQL  &lt;EQL</td>
<td>NA  NA</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Washington Union High School, Fresno</td>
<td>&lt;EQL  &lt;EQL</td>
<td>&lt;EQL  &lt;EQL</td>
<td>NA  NA</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;EQL  &lt;EQL</td>
<td>&lt;EQL  &lt;EQL</td>
<td>NA  NA</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>116</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

<sup>a</sup> micrograms per cubic meter

<sup>b</sup> parts per trillion

<sup>c</sup> mean of samples above the EQL

<sup>d</sup> Estimated Quantitation Limit = 0.0093 µg/m³ (0.75 ppt) for a 24-hour sample

<sup>e</sup> Not Applicable
Table 68. Summary of air monitoring results after an application of fenamiphos to a grape vineyard (6.0 pounds of active ingredient per acre application rate). Samples were collected in Fresno County during April 1998 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval b</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.12</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.12</td>
</tr>
<tr>
<td>East</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td>West</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td>North</td>
<td>&lt;EQL</td>
<td>0.19</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.19</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)(&lt;EQL)</td>
<td>(15.3)</td>
<td>(&lt;EQL)(&lt;EQL)</td>
<td>(15.3)</td>
<td>(&lt;EQL)(&lt;EQL)</td>
<td>(15.3)</td>
<td>(&lt;EQL)(&lt;EQL)</td>
<td>(15.3)</td>
<td>(&lt;EQL)(&lt;EQL)</td>
<td>(15.3)</td>
</tr>
<tr>
<td>South - 1</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td>South - 2</td>
<td>NS</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.19</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per trillion)
b interval 1 = background on 4/20-21/98 from 1430-0715; interval 2 = during application on 4/21/98 from 0700-1000; interval 3 = 4/21/98 from 1000-1200; interval 4 = 4/21/98 from 1200-1615; interval 5 = 4/21/98 from 1615-2345; interval 6 = 4/21-22/98 from 2345-0830; interval 7 = 4/22-23/98 from 0830-0830; interval 8 = 4/23-24/98 from 0830-0900
c Estimated Quantitation Limit = 0.0093 µg/m³ (0.75 ppt) for a 24-hour sample
d no sample taken
22. **Linuron**

Linuron (Lorox®) is a pre- and post-emergent selective herbicide used on a variety of crops to control annual broadleaf and grass weeds. In California, approximately 65,511 pounds were reported used in 2000, most of which was applied to carrots (50,242 pounds). Linuron is not regulated as a restricted material.

Ambient air monitoring was conducted from August 19 to September 26, 1997, at four sites in Kern County. The background site was located at the ARB air monitoring station in Bakersfield. Monitoring was scheduled to coincide with expected applications of linuron to carrots. The results are summarized in Table 69. Of the 113 samples analyzed (field blanks and collocated samples excluded), 8 were reported as “detected” (EQL = 0.015 µg/m³, 1.5 ppt; MDL = 0.005 µg/m³, 0.49 ppt for a 24-hour sample) and 105 were below the MDL.

Application site monitoring was conducted in September 1997 before, during, and for 72 hours after an application to a carrot field in Kern County. Linuron was applied by ground-based electrostatic spray equipment at the rate of 1.25 pounds of active ingredient per acre. The results are summarized in Table 70. Maximum positive detections over the sampling interval ranged from 0.019 µg/m³ (1.87 ppt) to 0.42 µg/m³ (41.2 ppt). Of the 39 samples analyzed (field blanks excluded), 9 were reported as “detected” (EQL = 0.015 µg/m³, 1.5 ppt; MDL = 0.005 µg/m³, 0.49 ppt for a 24-hour sample) and 6 were below the MDL.
Table 69. Summary of linuron ambient air monitoring results in Kern County. Samples (24-hour) were collected from August 19 to September 26, 1997. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>Mean Positive</th>
<th>2\textsuperscript{nd} Highest Positive</th>
<th># of Samples&lt;sup&gt;c&lt;/sup&gt;</th>
<th># Above MDL&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vineland School, Weed Patch</td>
<td>Detected</td>
<td>NA</td>
<td>Detected</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Fire Department, Mettler</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>&lt;MDL</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Rosedale Union Middle School, Bakersfield</td>
<td>Detected</td>
<td>NA</td>
<td>Detected</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>Bear Mountain School, Arvin</td>
<td>Detected</td>
<td>NA</td>
<td>&lt;MDL</td>
<td>23</td>
<td>1</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>Detected</td>
<td>NA</td>
<td>Detected</td>
<td>23</td>
<td>2</td>
</tr>
</tbody>
</table>

Total 113 8

<sup>a</sup>micrograms per cubic meter

<sup>b</sup>parts per trillion

<sup>c</sup>field blanks and collocated samples excluded

<sup>d</sup>Method Detection Limit = 0.005 µg/m³ (0.49 ppt) for a 24-hour sample

<sup>e</sup>Detected = less than the estimated quantitation limit (EQL) of 0.015 µg/m³ (1.5 ppt) but greater than or equal to the MDL

<sup>f</sup>Not Applicable
Table 70. Summary of air monitoring results after an application of linuron to a carrot field (1.25 pounds of active ingredient per acre application rate). Samples were collected in Kern County during September 1997 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East - 1</td>
<td>Detected&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Detected</td>
<td>Detected</td>
<td>(Detected)</td>
<td>0.16</td>
<td>0.071</td>
<td>0.10</td>
<td>0.25</td>
<td>0.11</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(15.7)</td>
<td>(6.97)</td>
<td>(9.82)</td>
<td>(24.5)</td>
<td>(10.8)</td>
<td>(24.5)</td>
<td></td>
</tr>
<tr>
<td>East - 2</td>
<td>NS&lt;sup&gt;d&lt;/sup&gt;</td>
<td>Detected</td>
<td>Detected</td>
<td>(Detected)</td>
<td>0.16</td>
<td>0.069</td>
<td>0.10</td>
<td>0.23</td>
<td>0.11</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(15.7)</td>
<td>(6.78)</td>
<td>(9.82)</td>
<td>(22.6)</td>
<td>(10.8)</td>
<td>(22.6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt;</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt;</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt;</td>
<td>&lt;MDL&lt;sup&gt;e&lt;/sup&gt;</td>
<td>Detected</td>
<td>0.08</td>
<td>Detected</td>
<td>Detected</td>
<td>0.019</td>
<td>0.019</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(7.86)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(1.87)</td>
<td>(1.87)</td>
</tr>
<tr>
<td>North</td>
<td>&lt;MDL</td>
<td>&lt;MDL&lt;sup&gt;g&lt;/sup&gt;</td>
<td>&lt;MDL&lt;sup&gt;g&lt;/sup&gt;</td>
<td>&lt;MDL&lt;sup&gt;g&lt;/sup&gt;</td>
<td>Detected</td>
<td>0.21</td>
<td>0.06</td>
<td>0.06</td>
<td>0.056</td>
<td>0.25</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(3.34)</td>
<td>(&lt;MDL)</td>
<td>(25.4)</td>
<td>(20.6)</td>
<td>(5.89)</td>
<td>(5.89)</td>
<td>(5.50)</td>
<td>(25.4)</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>Detected</td>
<td>&lt;MDL&lt;sup&gt;g&lt;/sup&gt;</td>
<td>&lt;MDL&lt;sup&gt;g&lt;/sup&gt;</td>
<td>&lt;MDL&lt;sup&gt;g&lt;/sup&gt;</td>
<td>(Detected)</td>
<td>0.19</td>
<td>0.13</td>
<td>0.42</td>
<td>0.15</td>
<td>0.42</td>
</tr>
<tr>
<td></td>
<td>(Detected)</td>
<td>(7.86)</td>
<td>(25.4)</td>
<td>(18.7)</td>
<td>(12.8)</td>
<td>(41.2)</td>
<td>(14.7)</td>
<td>(41.2)</td>
<td>(41.2)</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>(Detected)</td>
<td>0.25</td>
<td>0.21</td>
<td>0.13</td>
<td>0.42</td>
<td>0.15</td>
<td>0.42</td>
</tr>
<tr>
<td>Positive</td>
<td>(Detected)</td>
<td>(7.86)</td>
<td>(25.4)</td>
<td>(20.6)</td>
<td>(12.8)</td>
<td>(41.2)</td>
<td>(14.7)</td>
<td>(41.2)</td>
<td>(41.2)</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> micrograms per cubic meter (parts per trillion)

<sup>b</sup> interval 1 = background on 9/15-16/97 from 1545-0745; interval 2 = during application on 9/16/97 from 0745-1845; interval 3 = 9/16/97 from 1845-2030; interval 4 = 9/16-17/97 from 2030-0030; interval 5 = 9/17/97 from 0030-0830; interval 6 = 9/17/97 from 0830-1545; interval 7 = 9/17-18/97 from 1545-1545; interval 8 = 9/18-19/97 from 1545-1515

<sup>c</sup> Detected = less than the estimated quantitation limit (EQL) of 0.015 µg/m³ (1.5 ppt) but greater than or equal to the MDL

<sup>d</sup> no sample taken

<sup>e</sup> Method Detection Limit = 0.005 µg/m³ (0.49 ppt) for a 24-hour sample
23. **Malathion / Malaoxon**

Malathion is an insecticide used for the control of spider mites and sucking and chewing insects on fruits, field crops, and ornamentals. It is also used for non-cropland insect control. Malaoxon is a degradation product of malathion. In 2000, nearly 489,650 pounds were reported used in California. Malathion is not regulated as a restricted material.

Ambient air monitoring for malathion and malaoxon was conducted from February 23 to March 13, 1998, at four sites in Imperial County. The background site was located at the ARB air monitoring station in Calexico. Monitoring was scheduled to coincide with expected applications to alfalfa. The results are summarized in Tables 71 and 72. Maximum positive detections for malathion ranged from 17 ng/m³ (1.3 ppt) at the School Bus Barn site in Holtville to 90 ng/m³ (6.7 ppt) at the School Bus Barn site in Calipatria. Of the 60 samples analyzed (field blanks and collocated samples excluded), 12 were found reported as “detected” (EQL = 4.0 ng/m³, 0.3 ppt; MDL = 0.81 ng/m³, 0.4 ppt for a 24-hour sample) and one was below the MDL. Maximum positive detections for malaoxon ranged from 9.6 ng/m³ (0.75 ppt) at the Brawley High School site in Brawley to 28 ng/m³ (2.2 ppt) at the Pine School site in Holtville. Of the 60 samples analyzed (field blanks and collocated samples excluded), 32 were found to be “detected” (EQL = 7.9 ng/m³, 0.6 ppt; MDL = 1.57 ng/m³, 0.12 ppt for a 24-hour sample) and 6 were below the MDL.

Application site monitoring for malathion and malaoxon was conducted in February 1998 before, during, and for 72 hours after an application to an alfalfa field in Imperial County. Malathion was applied by airplane at the rate of 1.5 pounds of active ingredient per acre.
The results are summarized in Tables 73 and 74. Maximum positive detections over the sampling interval for malathion ranged from 360 ng/m$^3$ (26.7 ppt) to 2,400 ng/m$^3$ (178 ppt). Of the 39 samples analyzed (field blanks excluded), 2 were reported as “detected” (EQL = 4.0 ng/m$^3$, 0.3 ppt; MDL = 0.81 ng/m$^3$, 0.4 ppt for a 24-hour sample). Maximum positive detections over the sampling interval for malaoxon ranged from 31.0 ng/m$^3$ (2.43 ppt) to 440 ng/m$^3$ (34.5 ppt). Of the 39 samples analyzed (field blanks excluded), 7 were reported as “detected” (EQL = 7.9 ng/m$^3$, 0.6 ppt; MDL = 1.57 ng/m$^3$, 0.12 ppt for a 24-hour sample) and 16 were below the MDL.
Table 71. Summary of malathion ambient air monitoring results in Imperial County. Samples (24-hour) were collected from February 23 to March 13, 1998. The ARB air monitoring station in Calexico was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest 2nd</th>
<th>Positive 2nd</th>
<th>Highest</th>
<th>Positive</th>
<th>Mean</th>
<th>Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Highest</td>
<td>Positive</td>
<td>Highest</td>
<td>Positive</td>
<td>Mean</td>
<td>Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
<td>ppt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brawley High School, Brawley</td>
<td>21</td>
<td>1.6</td>
<td>13</td>
<td>1.0</td>
<td>7.5</td>
<td>0.55</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>School Bus Barn, Calipatria</td>
<td>90</td>
<td>6.7</td>
<td>24</td>
<td>1.8</td>
<td>19</td>
<td>1.4</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>School Bus Barn, Holtville</td>
<td>17</td>
<td>1.3</td>
<td>16</td>
<td>1.2</td>
<td>8.3</td>
<td>0.61</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Pine School, Holtville</td>
<td>36</td>
<td>2.7</td>
<td>32</td>
<td>2.4</td>
<td>22</td>
<td>1.6</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Calexico</td>
<td>25</td>
<td>1.9</td>
<td>14</td>
<td>1.0</td>
<td>5.7</td>
<td>0.42</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60</td>
<td>59</td>
</tr>
</tbody>
</table>

*a nanograms per cubic meter
*b parts per trillion
"Detected" results were factored into the average as (MDL+EQ)/2 = 2.4 ng/m³; ";<MDL" results as MDL/2 = 0.40 ng/m³
field blanks and collocated samples excluded
*Method Detection Limit = 0.81 ng/m³ (0.06 ppt) for a 24-hour sample
Table 72. Summary of malaoxon ambient air monitoring results in Imperial County. Samples (24-hour) were collected from February 23 to March 13, 1998. The ARB air monitoring station in Calexico was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive $^a$ ng/m³</th>
<th>Positive $^b$ ppt</th>
<th>2nd Highest Positive ng/m³</th>
<th>Positive ppt</th>
<th>Mean Positive ng/m³</th>
<th>Positive $^c$ ppt</th>
<th># of Samples$^d$</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brawley High School, Brawley</td>
<td>9.6</td>
<td>0.75</td>
<td>9.3</td>
<td>0.73</td>
<td>4.8</td>
<td>0.38</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>School Bus Barn, Calipatria</td>
<td>14</td>
<td>1.1</td>
<td>8.7</td>
<td>0.68</td>
<td>6.4</td>
<td>0.50</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>School Bus Barn, Holtville</td>
<td>15</td>
<td>1.2</td>
<td>14</td>
<td>1.1</td>
<td>7.1</td>
<td>0.56</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Pine School, Holtville</td>
<td>28</td>
<td>2.2</td>
<td>17</td>
<td>1.3</td>
<td>13</td>
<td>1.0</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Calexico</td>
<td>18</td>
<td>1.4</td>
<td>14</td>
<td>1.1</td>
<td>4.8</td>
<td>0.38</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td></td>
<td><strong>54</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$^a$nanograms per cubic meter  
$^b$parts per trillion  
$^c"Detected"$ results were factored into the average as (MDL+EQL)/2 = 4.7 ng/m³; "$<MDL" results as MDL/2 = 0.80 ng/m³  
$^d$field blanks and collocated samples excluded  
$^e$Method Detection Limit = 1.57 ng/m³ (0.12 ppt) for a 24-hour sample
Table 73. Summary of air monitoring results after an application of malathion to an alfalfa field (1.5 pounds of active ingredient per acre application rate). Samples were collected in Imperial County during February 1998 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
<td>ppt</td>
<td>ng/m³</td>
</tr>
<tr>
<td></td>
<td>Sampling Interval b</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East - 1</td>
<td>10.0</td>
<td>680</td>
<td>1600</td>
<td>550</td>
<td>390</td>
<td>280</td>
<td>820</td>
<td>390</td>
<td>1600</td>
</tr>
<tr>
<td></td>
<td>(0.74)</td>
<td>(50.3)</td>
<td>(118)</td>
<td>(40.7)</td>
<td>(28.9)</td>
<td>(20.7)</td>
<td>(60.7)</td>
<td>(28.9)</td>
<td>(118)</td>
</tr>
<tr>
<td>East - 2</td>
<td>NSc</td>
<td>130</td>
<td>1200</td>
<td>770</td>
<td>390</td>
<td>660</td>
<td>760</td>
<td>350</td>
<td>1200</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(9.63)</td>
<td>(88.8)</td>
<td>(57.0)</td>
<td>(28.9)</td>
<td>(48.9)</td>
<td>(56.3)</td>
<td>(25.9)</td>
<td>(88.8)</td>
</tr>
<tr>
<td>West</td>
<td>9.00</td>
<td>2200</td>
<td>2300</td>
<td>98.0</td>
<td>570</td>
<td>920</td>
<td>16.0</td>
<td>1500</td>
<td>2300</td>
</tr>
<tr>
<td></td>
<td>(0.67)</td>
<td>(163)</td>
<td>(170)</td>
<td>(7.26)</td>
<td>(42.2)</td>
<td>(68.1)</td>
<td>(1.18)</td>
<td>(111)</td>
<td>(170)</td>
</tr>
<tr>
<td>North</td>
<td>11.0</td>
<td>Detectedd</td>
<td>Detected</td>
<td>360</td>
<td>220</td>
<td>570</td>
<td>240</td>
<td>190</td>
<td>360</td>
</tr>
<tr>
<td></td>
<td>(0.81)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(16.3)</td>
<td>(42.2)</td>
<td>(17.8)</td>
<td>(14.1)</td>
<td>(26.7)</td>
<td></td>
</tr>
<tr>
<td>South</td>
<td>9.00</td>
<td>720</td>
<td>2400</td>
<td>440</td>
<td>250</td>
<td>740</td>
<td>600</td>
<td>340</td>
<td>2400</td>
</tr>
<tr>
<td></td>
<td>(0.67)</td>
<td>(53.3)</td>
<td>(178)</td>
<td>(32.6)</td>
<td>(18.5)</td>
<td>(54.8)</td>
<td>(44.4)</td>
<td>(25.2)</td>
<td>(178)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>11.0</td>
<td>2200</td>
<td>2400</td>
<td>770</td>
<td>570</td>
<td>920</td>
<td>820</td>
<td>1500</td>
<td>2400</td>
</tr>
<tr>
<td></td>
<td>(0.81)</td>
<td>(163)</td>
<td>(178)</td>
<td>(57.0)</td>
<td>(42.2)</td>
<td>(68.1)</td>
<td>(60.7)</td>
<td>(111)</td>
<td>(178)</td>
</tr>
</tbody>
</table>

a nanograms per cubic meter (parts per trillion)
b interval 1 = background on 2/23-24/98 from 2000-1930; interval 2 = during application on 2/25/98 from 1330-1530; interval 3 = 2/25/98 from 1530-1730; interval 4 = 2/25/98 from 1730-2130; interval 5 = 2/25-26/98 from 2130-0515; interval 6 = 2/26/98 from 0515-1230; interval 7 = 2/26-27/98 from 1230-1230; interval 8 = 2/27-27/98 from 1230-1000
c no sample taken
d Detected=less than the estimated quantitation limit (EQL) of 4.0 ng/m³ (0.3 ppt) but greater than or equal the MDL of 0.81 ng/m³ (0.06 ppt) for a 24-hour sample
Table 74. Summary of air monitoring results for malaoxon after an application of malathion to an alfalfa field (1.5 pounds of active ingredient per acre application rate). Samples were collected in Imperial County during February 1998 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East - 1</td>
<td>Detected&lt; MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>120</td>
<td>60.0</td>
<td>32.0</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Detected) (&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(Detected)</td>
<td>(9.40)</td>
<td>(4.70)</td>
<td>(2.51)</td>
<td>(9.40)</td>
<td></td>
</tr>
<tr>
<td>East - 2</td>
<td>&quot;NS&quot;</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>26.0</td>
<td>37.0</td>
<td>51.0</td>
<td>22.0</td>
<td>51.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(2.04)</td>
<td>(2.90)</td>
<td>(3.99)</td>
<td>(1.72)</td>
<td>(3.99)</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>Detected</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>Detected</td>
<td>100</td>
<td>60.0</td>
<td>54.0</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>(Detected) (&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(Detected)</td>
<td>(7.83)</td>
<td>(4.70)</td>
<td>(4.23)</td>
<td>(7.83)</td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>Detected</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>31.0</td>
<td>19.0</td>
<td>Detected</td>
<td>31.0</td>
</tr>
<tr>
<td></td>
<td>(Detected) (&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(2.43)</td>
<td>(1.49)</td>
<td>(Detected)</td>
<td>(2.43)</td>
</tr>
<tr>
<td>South</td>
<td>Detected</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>25.0</td>
<td>440</td>
<td>60.0</td>
<td>37.0</td>
<td>440</td>
</tr>
<tr>
<td></td>
<td>(Detected) (&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(1.96)</td>
<td>(34.5)</td>
<td>(4.70)</td>
<td>(2.90)</td>
<td>(34.5)</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>Detected</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>26.0</td>
<td>440</td>
<td>60.0</td>
<td>54.0</td>
<td>440</td>
</tr>
<tr>
<td>Positive</td>
<td>(Detected) (&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(2.04)</td>
<td>(34.5)</td>
<td>(4.70)</td>
<td>(4.23)</td>
<td>(34.5)</td>
<td></td>
</tr>
</tbody>
</table>

*a* nanograms per cubic meter (parts per trillion)

*b* interval 1 = background on 2/23-24/98 from 2000-1930; interval 2 = during application on 2/25/98 from 1330-1530; interval 3 = 2/25/98 from 1530-1730; interval 4 = 2/25/98 from 1730-2130; interval 5 = 2/25-26/98 from 2130-0515; interval 6 = 2/26/98 from 0515-1230; interval 7 = 2/26-27/98 from 1230-1230; interval 8 = 2/27-27/98 from 1230-1000

*c* Detected=less than the estimated quantitation limit (EQL) of 7.9 ng/m³ (0.6 ppt) but greater than or equal to the MDL

*d* MDL = 1.57 ng/m³ (0.12 ppt) for a 24-hour sample

*e* no sample taken
24. Mancozeb

Mancozeb (Dithane®) is a foliar fungicide used to protect a wide variety of crops against diseases such as blight, rust, leaf spot, and downy mildew. In 2000, approximately 611,197 pounds were reported used in California. Mancozeb is not regulated as a restricted material.

Ambient air monitoring was conducted from April 20 to May 7, 1993, at four sites in Kern County. The background site was located at the ARB air monitoring station in Bakersfield. Monitoring was conducted to coincide with expected applications to field crops, primarily potatoes. The results are summarized in Table 75. All of the 46 samples analyzed (field blanks and collocated samples excluded) were below the MDL (0.025 µg/m³ for a 24-hour sample).

Application site monitoring was conducted in May 1993 before, during, and for 72 hours after an application to a potato field in Kern County. Mancozeb was applied by airplane at the rate of 2.0 pounds of active ingredient per acre. The results are summarized in Table 76. Maximum positive detections over the sampling interval ranged from 0.29 µg/m³ to 1.81 µg/m³. Nearly 41 percent of the total number of samples analyzed (field blanks excluded) were below the MDL (0.15 µg/m³ for a 4-hour sample).
Table 75. Summary of mancozeb ambient air monitoring results in Kern County. Samples (24-hour) were collected from April 20 to May 7, 1993. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>aµg/m³ b ppt</td>
<td>aµg/m³ b ppt</td>
<td>µg/m³ b ppt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vineland School, Bakersfield</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Lamont School, Lamont</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Mountain View School, Lamont</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Edison School, Bakersfield</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

|                                  | Total            |                      | Total         | 46           | 0           |

*Micrograms per cubic meter
*bparts per trillion; used here for consistency because mancozeb is a particulate
*Field blanks and collocated samples excluded
*Method Detection Limit = 0.025 µg/m³ for a 24-hour sample
*Not Applicable
Table 76. Summary of air monitoring results after an application of mancozeb to a potato field (2.0 pounds of active ingredient per acre application rate). Samples were collected in Kern County during May 1993 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Interval</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.20</td>
<td>0.05</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>North</td>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.07</td>
<td>0.25</td>
<td>&lt;MDL</td>
<td>0.29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South - 1</td>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.31</td>
<td>0.16</td>
<td>0.15</td>
<td>0.10</td>
<td>1.33</td>
<td></td>
</tr>
<tr>
<td>South - 2</td>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.53</td>
<td>0.27</td>
<td>0.18</td>
<td>0.12</td>
<td>1.81</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>Positive</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.83</td>
<td>0.53</td>
<td>0.27</td>
<td>0.25</td>
<td>0.12</td>
<td>1.81</td>
</tr>
</tbody>
</table>

* µg/m³

* micrograms per cubic meter

b interval 1 = background on 5/3/93 from 1530-1730; interval 2 = during application on 5/4/93 from 0800-0930; interval 3 = 5/4/93 from 0930-1130; interval 4 = 5/4/93 from 1130-1300; interval 5 = 5/4/93 from 1300-1530; interval 6 = 5/4-5/93 from 1900-0730; interval 7 = 5/4-5/93 from 1730-0730; interval 8 = 5/5-5/93 from 0730-0730

c Method Detection Limit = 0.15 µg/m³ (11.1 ppt) for a 4-hour sample
25. Methidathion / Methidaoxon

Methidathion (Supracide®) is a non-systemic insecticide/acaricide used to control sucking and chewing insects on a wide variety of commodities. In 2000, the greatest use in California was on almonds (25,120 pounds). A degradation product of methidathion is methidaoxon. Methidathion is regulated as a restricted material.

Ambient air monitoring for methidathion and methidaoxon was conducted from June 27 to July 25, 1991, at four sites in Tulare County. The ARB air monitoring station in Visalia was the background site. Monitoring was scheduled to coincide with expected applications to orange orchards. The results are summarized in Tables 77 and 78. Maximum positive detections for methidathion ranged from below the EQL (0.03 µg/m³, 2.42 ppt for a 24-hour sample) at the Sunnyside Union School site in Strathmore, the Lincove Field Station site in Exeter, and the background site in Visalia to 0.56 µg/m³ (45.2 ppt) at the Jefferson School site in Lindsay. Of the 81 samples analyzed (field blanks and collocated samples excluded), 74 were below the EQL.

Maximum positive detections for methidaoxon ranged from below the EQL (0.09 µg/m³, 7.26 ppt for a 24-hour sample) at the Exeter Union High site in Exeter, the Lincove Field Station site in Exeter, and the background site in Visalia to 0.11 µg/m³ (8.87 ppt) at the Jefferson School site. Of the 81 samples analyzed (field blanks and collocated samples excluded), 77 were below the EQL.

Application site monitoring for methidathion and methidaoxon was conducted in July 1991 before, during, and for 48 hours after an application to an orange orchard in Tulare County. Methidathion was applied by ground-based spray equipment at the rate of 1.5 pounds of active ingredient per acre. The results are summarized in Tables 79 and 80. Maximum positive detections over the sampling interval for methidathion ranged
from 0.28 µg/m³ (22.6 ppt) to 3.16 µg/m³ (255 ppt). Of the 21 samples analyzed (field blanks excluded), 10 were below the EQL (0.03 µg/m³, 2.42 ppt for a 24-hour sample). Maximum positive detections over the sampling interval for methidaoxon were 0.33 µg/m³ (28.1 ppt) and 0.36 µg/m³ (30.7 ppt). Of the 21 samples analyzed (field blanks excluded), 16 were below the EQL (0.09 µg/m³, 7.26 ppt for a 24-hour sample).
Summary of methidathion ambient air monitoring results in Tulare County. Samples (24-hour) were collected from June 27 to July 25, 1991. The ARB air monitoring station in Visalia was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2nd Positive Mean</th>
<th>Highest</th>
<th>Positive Mean</th>
<th>Highest</th>
<th>2nd Positive</th>
<th># of Samples</th>
<th># Above EQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunnyside Union School, Strathmore</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>1NA</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Jefferson School, Lindsay</td>
<td>0.56</td>
<td>45.2</td>
<td>0.30</td>
<td>24.2</td>
<td>0.16</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Exeter Union High School, Exeter</td>
<td>0.07</td>
<td>5.64</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.07</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Lindcove Field Station, Exeter</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>NA</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Visalia</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>NA</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>81</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

- a micrograms per cubic meter
- b parts per trillion
- c mean of samples above the EQL
- d field blanks and collocated samples excluded
- e Estimated Quantitation Limit = 0.03 µg/m³ (2.42 ppt) for a 24-hour sample
- f Not Applicable
Table 78. Summary of methidaoxon ambient air monitoring results in Tulare County. Samples (24-hour) were collected from June 27 to July 25, 1991. The ARB air monitoring station in Visalia was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2nd Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th>Positive</th>
<th># of Samples</th>
<th># Above EQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunnyside Union School, Strathmore</td>
<td>0.092 µg/m³ 7.42 ppt</td>
<td>&lt;EQL &lt;EQL</td>
<td>0.092 µg/m³</td>
<td>7.42 ppt</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>Jefferson School, Lindsay</td>
<td>0.11 µg/m³ 8.87 ppt</td>
<td>&lt;EQL &lt;EQL</td>
<td>0.11 µg/m³</td>
<td>8.87 ppt</td>
<td>17</td>
<td>3</td>
</tr>
<tr>
<td>Exeter Union High School, Exeter</td>
<td>&lt;EQL &lt;EQL</td>
<td>&lt;EQL &lt;EQL</td>
<td>fNA NA</td>
<td>NA</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Lindcove Field Station, Exeter</td>
<td>&lt;EQL &lt;EQL</td>
<td>&lt;EQL &lt;EQL</td>
<td>NA NA</td>
<td>NA</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Visalia</td>
<td>&lt;EQL &lt;EQL</td>
<td>&lt;EQL &lt;EQL</td>
<td>NA NA</td>
<td>NA</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>81</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( ^a \) micrograms per cubic meter  
\( ^b \) parts per trillion  
\( ^c \) mean of samples above the EQL  
\( ^d \) field blanks and collocated samples excluded  
\( ^e \) Estimated Quantitation Limit = 0.09 µg/m³ (7.26 ppt) for a 24-hour sample  
\( ^f \) Not Applicable
Table 79. Summary of air monitoring results after an application of methidathion to an orange orchard (1.5 pounds of active ingredient per acre application rate). Samples were collected in Tulare County during July 1991 before, during, and for 48 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval</th>
<th>Maximum Positive</th>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
<th>Site 4</th>
<th>Site 5</th>
<th>Site 6</th>
<th>Site 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>Interval 1 = background on 7/10/91 from 1500-1600; interval 2 = during application on 7/10-11/91 from 2330-0900; interval 3 = 7/11/91 from 0900-1100; interval 4 = 7/11/91 from 1100-1500; interval 5 = 7/11/91 from 1500-2130; interval 6 = 7/11-12/91 from 2130-0730; interval 7 = 7/12-13/91 from 0730-0730;</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.33</td>
<td>0.86</td>
<td>1.40</td>
<td>0.82</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(26.6)</td>
<td>(69.3)</td>
<td>(113)</td>
<td>(66.1)</td>
<td>(255)</td>
<td>(37.1)</td>
<td>(255)</td>
<td></td>
</tr>
<tr>
<td>S. W. - 1</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>1.25</td>
<td>0.60</td>
<td>0.30</td>
<td>1.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(101)</td>
<td>(48.4)</td>
<td>(24.2)</td>
<td>(101)</td>
<td></td>
</tr>
<tr>
<td>S. W. - 2</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.28</td>
<td>0.10</td>
<td>&lt;EQL</td>
<td>0.28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(22.6)</td>
<td>(8.06)</td>
<td>(&lt;EQL)</td>
<td>(22.6)</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;EQL</td>
<td></td>
<td></td>
<td></td>
<td>1.40</td>
<td>1.25</td>
<td>3.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>(&lt;EQL)</td>
<td>(26.6)</td>
<td>(69.3)</td>
<td>(113)</td>
<td>(101)</td>
<td>(255)</td>
<td>(37.1)</td>
<td>(255)</td>
<td></td>
</tr>
</tbody>
</table>

*a micrograms per cubic meter (parts per trillion)

b Estimated Quantitation Limit = 0.03 µg/m³ (2.42 ppt) for a 24-hour sample
Table 80. Summary of air monitoring results for methidaoxon after an application of methidathion to an orange orchard (1.5 pounds of active ingredient per acre application rate). Samples were collected in Tulare County during July 1991 before, during, and for 48 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.33</td>
<td>0.26</td>
<td>0.23</td>
<td>0.33</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(28.1)</td>
<td>(22.1)</td>
<td>(19.6)</td>
<td>(28.1)</td>
<td></td>
</tr>
<tr>
<td>S. W. - 1</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.36</td>
<td>&lt;EQL</td>
<td>0.19</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(30.7)</td>
<td>(&lt;EQL)</td>
<td>(16.2)</td>
<td>(30.7)</td>
<td></td>
</tr>
<tr>
<td>S. W. - 2</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.36</td>
<td>0.26</td>
<td>0.23</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(30.7)</td>
<td>(22.1)</td>
<td>(19.6)</td>
<td>(30.7)</td>
<td></td>
</tr>
</tbody>
</table>

* μg/m³ (ppt)

a) micrograms per cubic meter (parts per trillion)
b) interval 1 = background on 7/10/91 from 1500-1600; interval 2 = during application on 7/11/91 from 0900-1100; interval 3 = 7/11/91 from 1100-1500; interval 4 = 7/11/91 from 1500-2130; interval 5 = 7/11/91 from 2130-0730; interval 6 = 7/11-12/91 from 0730-0730;

* Estimated Quantitation Limit = 0.09 μg/m³ (7.26 ppt) for a 24-hour sample
26. **Methomyl**

Methomyl (Lannate®) is a systemic insecticide used to control a broad spectrum of insects for field crops, vegetables, ornamentals, and certain fruit crops. In 2000, the greatest uses were on alfalfa (91,891 pounds) and lettuce (91,805 pounds). Methomyl is regulated as a restricted material.

Ambient air monitoring was conducted from August 3 to 28, 1987, at five sites in Fresno County. The background site was located at the ARB air monitoring station in Fresno. Monitoring was conducted to coincide with expected applications to grapes and alfalfa. The results are summarized in Table 81. All of the 84 samples analyzed (field blanks and collocated samples excluded) were below the MDL (0.02 µg/m³, 3.0 ppt for a 24-hour sample).

Application site monitoring was conducted in September 1989 before, during, and for 63 hours after an application to a lettuce field in Fresno County. Methomyl was applied by ground-based spray equipment at the rate of 0.5 pound of active ingredient per acre. The results are summarized in Table 82. All of the 20 samples analyzed (field blanks excluded) were below the MDL (0.08 µg/m³, 6.81 ppt for a 24-hour sample).
Table 81. Summary of methomyl ambient air monitoring results in Fresno County. Samples (24-hour) were collected from August 3 to 28, 1987. The background site was located at the ARB air monitoring station in Fresno.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Health Center, Selma</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Kearny Field Station, Parlier</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>District School Office, Parlier</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>High School Maintenance Yard, San Joaquin</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>High School Gym, Tranquility</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;MDL &lt;MDL</td>
<td>&lt;MDL &lt;MDL</td>
<td>NA NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>84</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a* micrograms per cubic meter  
*b* parts per trillion  
*c* mean of samples above the MDL  
*d* field blanks and collocated samples excluded  
*e* Method Detection Limit = 0.02 µg/m³ (3.0 ppt) for a 24-hour sample  
*f* Not Applicable
Table 82. Summary of air monitoring results after an application of methomyl to a lettuce field (0.5 pound of active Ingredient per acre application rate). Samples were collected in Fresno County during September 1989 before, during, and for 63 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
</tr>
<tr>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td>South - 1</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
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<tr>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td>South - 2</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
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<td>&lt;MDL</td>
</tr>
<tr>
<td></td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
<td>&lt;MDL&lt;</td>
</tr>
<tr>
<td>Positive</td>
<td>&lt;MDL</td>
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<td>&lt;MDL</td>
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<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
</tr>
</tbody>
</table>

* µg/m³ (ppt)

a micrograms per cubic meter (parts per trillion)
b interval 1 = background; interval 2 = during application;
interval 3 = 1 to 3 hours after application (AA); interval 4 = 3 to 7 hours AA; interval 5 = 7 to 15 hours AA;
interval 6 = 15 to 24 hours AA; interval 7 = 24 to 48 hours AA;
interval 8 = 48 to 63 hours AA
c Method Detection Limit = 0.08 µg/m³ (6.81 ppt) for a 24-hour sample
d no sample taken
27. **Methyl bromide**

Methyl bromide (Meth-O-Gas®) is a gaseous fumigant used in the soil and on a wide variety of commodities. In California, the greatest use in 2000 was on strawberries (4,234,905 pounds). Methyl bromide is regulated as a restricted material. Ambient air monitoring was conducted from August 26 to September 18, 1986, at three sites in Monterey County. The background site was located at the Peninsula Hospital in Monterey. Monitoring was scheduled to coincide with expected preplant applications to strawberry fields. The results are summarized in Table 83. A maximum positive of 4.38 µg/m³ (1.13 ppb) was detected at the Aromas School site. Nearly 99 percent of the total number of samples analyzed (field blanks and collocated samples excluded) were below the MDL (4.2 µg/m³, 1.1 ppb for a 4-hour sample).

Ambient air monitoring was also conducted from July 10 to September 1, 2000, at five sites in Kern County. The background site was located at the ARB air monitoring station in Bakersfield. Monitoring was conducted to coincide with expected use of methyl bromide on roses and prior to planting a variety of crops. The results are summarized in Table 84. Maximum positive detections ranged from 869 ng/m³ (224 ppt) at the Fire Station site in Mettler to 55,000 ng/m³ (14,170 ppt) at the Cotton Research Station site in Shafter. Of the 141 samples analyzed (field blanks and collocated samples excluded), 1 was below the MDL (7.1 ng/m³, 1.83 ppt for a 24-hour sample).

In addition, ambient air monitoring was conducted at five sites in Monterey and Santa Cruz counties. The background site was located at the Air Pollution Control District Office in Salinas. Monitoring was scheduled to coincide with the historical preplant use of methyl bromide on strawberries. Samples were collected from September 11 to November 3, 2000, and from September 25 to 28, 2000, using evacuated
6 liter Silcosteel® canisters and charcoal tubes, respectively. The results are summarized in Tables 85 and 86. Maximum positive detections for Silcosteel® canister samples ranged from 7,130 ng/m³ (1,837 ppt) at the Oak Avenue School site in Greenfield to 119,000 ng/m³ (30,659 ppt) at the Pajaro Middle School site in Watsonville. All of the 179 samples analyzed (field blanks and collocated samples excluded) were above the MDL (7.1 ng/m³, 1.83 ppt for a 24-hour sample). All of the 16 of the charcoal tube samples analyzed (field blanks and collocated samples excluded) were below the MDL (28,000 ng/m³, 72.1 ppt for a 24-hour sample).

Application site monitoring was conducted in September 1986 before, during, and for 4 days after an application to a strawberry field in Monterey County. Methyl bromide was injected into the soil at the rate of 194 pounds of active ingredient per acre. The results are summarized in Table 87. Maximum positive detections at each site ranged from 815 µg/m³ (210 ppb) to 3,493 µg/m³ (900 ppb). Nearly 45 percent of the total number of samples analyzed (field blanks excluded and collocated samples averaged) were below the MDL (4.2 µg/m³, 1.1 ppb for a 4-hour sample).

Application site monitoring was also conducted in Fresno County on June 25, 1992 before, during, and after an application to peaches in a commodity fumigation chamber. Methyl bromide was loaded into the chamber at the rate of 2.5 pounds of active ingredient per 1,000 cubic feet. The results are summarized in Table 88. Maximum positive detections over the sampling interval ranged from 63.0 µg/m³ (16.2 ppb) to 14,100 (3,632 ppb). Of the 30 samples analyzed (field blanks excluded), 9 were below the MDL (0.694 µg/m³, 179 ppt for a 12-hour sample).
### Table 83.
Summary of methyl bromide ambient air monitoring results in Monterey County. Samples (4-hour) were collected from August 26 to September 18, 1986. The background site was located at the Peninsula Hospital in Monterey.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest 2nd</th>
<th>Positive Positives</th>
<th>Highest 2nd</th>
<th>Positive Positives</th>
<th>Mean 2nd</th>
<th>Positive Positives</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aromas School, Aromas</td>
<td>4.38</td>
<td>1.13</td>
<td>3.79</td>
<td>0.98</td>
<td>4.09</td>
<td>1.05</td>
<td>48</td>
<td>2</td>
</tr>
<tr>
<td>Elkhorn School, Elkhorn</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>FA</td>
<td>NA</td>
<td>46</td>
<td>0</td>
</tr>
<tr>
<td>Old Corral Flea Market, Prunedale</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>48</td>
<td>0</td>
</tr>
<tr>
<td>Monterey</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>42</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>184</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*micrograms per cubic meter

*bparts per billion

*cmean of samples above the MDL

dfield blanks and collocated samples excluded

*eMethod Detection Limit = 4.2 µg/m³ (1.1 ppb) for a 4-hour sample

fNot Applicable
Table 84. Summary of methyl bromide ambient air monitoring results in Kern County. Samples (24-hour) were collected from July 10 to September 1, 2000 using 6 liter Silcosteel® canisters. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest 2nd Positive</th>
<th>2nd Positive</th>
<th>Highest Mean Positive</th>
<th>Positive # of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton Research Station, Shafter</td>
<td>55000 14170</td>
<td>35500 9146</td>
<td>9020 2324</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Fire Station, Mettler</td>
<td>869 224</td>
<td>844 217</td>
<td>331 85.3</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Mountain View School, Lamont</td>
<td>1890 487</td>
<td>936 241</td>
<td>380 97.9</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Walker Monitoring Station, Shafter</td>
<td>13700 3530</td>
<td>11000 2834</td>
<td>2870 739</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Sunset School, Weed Patch</td>
<td>1350 348</td>
<td>910 234</td>
<td>388 100</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>3870 997</td>
<td>3610 930</td>
<td>692 178</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>141</strong></td>
<td><strong>140</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a* nanograms per cubic meter  
*b* parts per trillion  
*c* "<MDL" results were factored into the average as MDL/2 = 3.6 ng/m³  
*d* field blanks and collocated samples excluded  
*e* Method Detection Limit = 7.1 ng/m³ (1.83 ppt) for a 24-hour sample
Table 85. Summary of methyl bromide ambient air monitoring results in Monterey and Santa Cruz counties. Samples (24-hour) were collected from September 11 to November 3, 2000 using 6 liter Silcosteel® canisters. The Air Pollution Control District Office in Salinas was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2nd Highest</th>
<th>Positive</th>
<th>2nd Highest</th>
<th>Positive</th>
<th>Mean</th>
<th>Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chualar School, Chualar</td>
<td>9360</td>
<td>2412</td>
<td>8360</td>
<td>2154</td>
<td>2520</td>
<td>649</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>La Joya School, Salinas</td>
<td>93300</td>
<td>24038</td>
<td>51100</td>
<td>13165</td>
<td>15200</td>
<td>3916</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Oak Avenue School, Greenfield</td>
<td>7130</td>
<td>1837</td>
<td>3660</td>
<td>943</td>
<td>1600</td>
<td>412</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Pajaro Middle School, Watsonville</td>
<td>119000</td>
<td>30659</td>
<td>86400</td>
<td>22260</td>
<td>28900</td>
<td>7446</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Salsepuedes School, Watsonville</td>
<td>63700</td>
<td>16411</td>
<td>36700</td>
<td>9455</td>
<td>10200</td>
<td>2628</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Salinas</td>
<td>30700</td>
<td>7909</td>
<td>13600</td>
<td>3504</td>
<td>5250</td>
<td>1353</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>179</strong></td>
<td></td>
<td><strong>179</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a nanograms per cubic meter  
*b parts per trillion  
*c mean of samples above the MDL  
*d field blanks and collocated samples excluded  
*e Method Detection Limit = 7.1 ng/m³ (1.83 ppt) for a 24-hour sample
Table 86. Summary of methyl bromide ambient air monitoring results in Monterey and Santa Cruz counties. Samples (24-hour) were collected from September 11 to 14, 2000 using charcoal tubes. The Air Pollution Control District Office in Salinas was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positivec</th>
<th># of Samplesd</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>24-hour ng/m³</td>
<td>ng/m³</td>
<td>ng/m³</td>
<td># of Samplesd</td>
<td># Above MDL</td>
</tr>
<tr>
<td>Chualar School, Chualar</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>2</td>
</tr>
<tr>
<td>La Joya School, Salinas</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>3</td>
</tr>
<tr>
<td>Oak Avenue School, Greenfield</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>2</td>
</tr>
<tr>
<td>Pajaro Middle School, Watsonville</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>3</td>
</tr>
<tr>
<td>Salsepuedes School, Watsonville</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>4</td>
</tr>
<tr>
<td>Salinas</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>2</strong></td>
<td><strong>0</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a nanograms per cubic meter
*b parts per trillion
*c mean of samples above the MDL
*d field blanks and collocated samples excluded
*e Method Detection Limit = 28,000 ng/m³ (72.1 ppt) for a 24-hour sample
f Not Applicable
Table 87. Summary of air monitoring results after an application of methyl bromide to a strawberry field (194 pounds of active ingredient per acre application rate). Samples were collected in Monterey County during September 1986 before, during, and for four days after application.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive(^a)</th>
<th>2(^{nd}) Highest Positive(^a)</th>
<th>Mean Positive(^b)</th>
<th># of Samples(^c)</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>µg/m³</td>
<td>ppb</td>
<td>µg/m³</td>
<td>ppb</td>
<td>µg/m³</td>
</tr>
<tr>
<td>Northwest</td>
<td>815</td>
<td>210</td>
<td>202</td>
<td>52</td>
<td>298</td>
</tr>
<tr>
<td>1-Southeast(^g)</td>
<td>3493</td>
<td>900</td>
<td>1087</td>
<td>280</td>
<td>431</td>
</tr>
<tr>
<td>2-Southeast(^h)</td>
<td>2057</td>
<td>530</td>
<td>427</td>
<td>110</td>
<td>231</td>
</tr>
<tr>
<td>(\text{Total})</td>
<td>(\text{96})</td>
<td>(\text{53})</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)mean of collocated samples  
\(^b\)mean of samples above the MDL  
\(^c\)field blanks excluded  
\(^d\)Method Detection Limit = 4.2 µg/m³ (1.1 ppb) for a 4-hour sample  
\(^e\)micrograms per cubic meter  
\(^f\)parts per billion  
\(^g\)67 meters downwind from the edge of the field  
\(^h\)175 meters downwind from the edge of the field
Table 88. Summary of air monitoring results after an application of methyl bromide to peaches in a commodity fumigation chamber (2.5 pounds of active ingredient per 1000 cubic feet application rate). Samples were collected in Fresno County on June 25, 1992 before, during, and after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval b</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sampler A</td>
<td>&lt;MBL</td>
<td>&lt;DL</td>
</tr>
<tr>
<td>Sampler B</td>
<td>&lt;MDL</td>
<td>696</td>
</tr>
<tr>
<td>Sampler C</td>
<td>&lt;MDL</td>
<td>2,680</td>
</tr>
<tr>
<td>Sampler D</td>
<td>&lt;MDL</td>
<td>63.0</td>
</tr>
<tr>
<td>Sampler E - 1</td>
<td>0.41</td>
<td>14,100</td>
</tr>
<tr>
<td>Sampler E - 2</td>
<td>0.40</td>
<td>13,500</td>
</tr>
</tbody>
</table>

| Maximum       | 0.41 | 14,100 | 221 | 77.0 | 32.0 | 14,100 |
| Positive      | 0.11 | 3,632 | 56.9 | 19.8 | 8.24 | 3,632 |

* a micrograms per cubic meter (parts per billion)

b interval 1 = background from 0600-0630; interval 2 = during venting from 0705-0725; interval 3 = from 0725-0740; interval 4 = from 0740-0755; interval 5 = from 0755-0815

c Method Detection Limit = 0.694 µg/m³ (179 ppt) for a 12-hour sample
28.  **Methyl parathion / Methyl paraoxon**

Methyl parathion (Penncap-M®) is a non-systemic insecticide/acaricide use to control sucking and chewing insects on a variety of crops. In 2000, the greatest use in California was on walnuts (69,235 pounds). The degradation product by oxidation is methyl paraoxon. Methyl parathion is regulated as a restricted material, and has also been listed by regulation as a toxic air contaminant.

Ambient air monitoring for methyl parathion and methyl paraoxon was conducted from May 12 to June 12, 1986, at four sites in Sutter and Colusa Counties. The background site was located at the U.C. Davis campus. Monitoring was conducted to coincide with anticipated applications to rice for the control of tadpole shrimp. The results are summarized in Tables 89 and 90. Maximum positive detections for methyl parathion ranged from 0.387 ng/m³ (0.036 ppt) at the U.C. Davis campus background site to 30.1 ng/m³ (2.80 ppt) at the Maxwell High School site in Colusa County. Nearly 58 percent of the total number of samples analyzed (field blanks excluded) were below the MDL (0.2 ng/m³, 0.02 ppt for a 24-hour sample). Maximum positive detections for methyl paraoxon ranged from below the MDL (0.5 ng/m³, 0.05 ppt for a 24-hour sample) at both sites in Sutter County and the background site to 7.79 ng/m³ (0.771 ppt) at the Maxwell High School site in Colusa County. More than 80 percent of the total number of samples analyzed (field blanks excluded) were below the MDL.

Application site monitoring was conducted in May 1989 before, during, and for 72 hours after an application to a rice field in Sutter County. Methyl parathion was aerially applied at the rate of 1.0 pound of active ingredient per acre. The results are summarized in Table 91. Maximum positive detections over the sampling interval ranged from below the MDL (0.0086 µg/m³, 0.8 ppt for a 24-hour sample) to 0.548 µg/m³ (50.9 ppt). More than 30 percent of the total number of samples analyzed (field blanks excluded) were below the MDL.
Table 89. Summary of methyl parathion ambient air monitoring results in Colusa and Sutter counties. Samples (24-hour) were collected from May 12 to June 13, 1986. The U.C. Davis campus was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive&lt;sup&gt;^c&lt;/sup&gt;</th>
<th># of Samples&lt;sup&gt;^d&lt;/sup&gt;</th>
<th># Above MDL&lt;sup&gt;^e&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ng/m³ b ppt</td>
<td>ng/m³ ppt</td>
<td>ng/m³ ppt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colusa County</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maxwell High School, Maxwell</td>
<td>30.1 2.80</td>
<td>23.7 2.20</td>
<td>8.18 0.76</td>
<td>60</td>
<td>42</td>
</tr>
<tr>
<td>City Hall, Williams</td>
<td>22.6 2.10</td>
<td>20.4 1.90</td>
<td>4.20 0.39</td>
<td>36</td>
<td>26</td>
</tr>
<tr>
<td>Sutter County</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Nicolaus High School, Trowbridge</td>
<td>1.10 0.102</td>
<td>1.09 0.101</td>
<td>0.742 0.069</td>
<td>46</td>
<td>10</td>
</tr>
<tr>
<td>Robbins School, Robbins</td>
<td>0.732 0.068</td>
<td>0.700 0.065</td>
<td>0.42 0.039</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>U.C. Davis</td>
<td>0.387 0.036</td>
<td>&lt;MDL &lt;MDL</td>
<td>0.387 0.036</td>
<td>32</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>211</td>
<td>89</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>nanograms per cubic meter  
<sup>b</sup>parts per trillion  
<sup>c</sup>mean of samples above the MDL  
<sup>d</sup>field blanks excluded  
<sup>e</sup>Method Detection Limit = 0.2 ng/m³ (0.02 ppt) for a 24-hour sample
Table 90. Summary of methyl paraoxon ambient air monitoring results in Colusa and Sutter counties. Samples (24-hour) were collected from May 12 to June 13, 1986. The U.C. Davis campus was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest (^a)ng/m(^3)</th>
<th>Positive (^b)ppt</th>
<th>2(^nd) Highest (^a)ng/m(^3)</th>
<th>Positive (^b)ppt</th>
<th>Mean (^a)ng/m(^3)</th>
<th>Positive (^b)ppt</th>
<th># of Samples(^d)</th>
<th># Above (^e)MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colusa County</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maxwell High School, Maxwell</td>
<td>7.79</td>
<td>0.771</td>
<td>6.91</td>
<td>0.684</td>
<td>0.889</td>
<td>0.088</td>
<td>59</td>
<td>25</td>
</tr>
<tr>
<td>City Hall, Williams</td>
<td>0.963</td>
<td>0.095</td>
<td>0.958</td>
<td>0.095</td>
<td>0.849</td>
<td>0.084</td>
<td>34</td>
<td>15</td>
</tr>
<tr>
<td>Sutter County</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>East Nicolaus High School, Trowbridge</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>46</td>
<td>0</td>
</tr>
<tr>
<td>Robbins School, Robbins</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>37</td>
<td>0</td>
</tr>
<tr>
<td>U.C. Davis</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>32</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>208</strong></td>
<td></td>
<td><strong>40</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)nanograms per cubic meter  
\(^b\)parts per trillion  
\(^c\)mean of samples above the MDL  
\(^d\)field blanks excluded  
\(^e\)Method Detection Limit = 0.5 ng/m\(^3\) (0.05 ppt) for a 24-hour sample  
\(^f\)Not Applicable
Table 91. Summary of air monitoring results after an application of methyl parathion to a rice field (1.0 pound of active ingredient per acre application rate). Samples were collected in Sutter County during May 1989 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>North - 1</td>
<td>&lt;MDL</td>
<td>0.548</td>
<td>0.129</td>
<td>0.103</td>
<td>0.327</td>
<td>0.070</td>
<td>0.052</td>
<td>0.025</td>
<td>0.548</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(50.9)</td>
<td>(12.0)</td>
<td>(9.60)</td>
<td>(30.4)</td>
<td>(6.50)</td>
<td>(4.80)</td>
<td>(2.30)</td>
<td>(50.9)</td>
</tr>
<tr>
<td>North - 2</td>
<td>&lt;MDL</td>
<td>0.479</td>
<td>0.194</td>
<td>0.139</td>
<td>0.300</td>
<td>0.070</td>
<td>0.034</td>
<td>0.030</td>
<td>0.479</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(44.5)</td>
<td>(18.0)</td>
<td>(12.9)</td>
<td>(27.9)</td>
<td>(6.50)</td>
<td>(3.20)</td>
<td>(2.80)</td>
<td>(44.5)</td>
</tr>
<tr>
<td>South 1 - 1</td>
<td>&lt;MDL</td>
<td>0.229</td>
<td>0.199</td>
<td>0.312</td>
<td>0.090</td>
<td>&lt;MDL</td>
<td>0.009</td>
<td>0.034</td>
<td>0.312</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(21.3)</td>
<td>(18.5)</td>
<td>(29.0)</td>
<td>(8.40)</td>
<td>(&lt;MDL)</td>
<td>(0.80)</td>
<td>(3.20)</td>
<td>(29.0)</td>
</tr>
<tr>
<td>South 1 - 2</td>
<td>&lt;MDL</td>
<td>0.153</td>
<td>0.199</td>
<td>0.243</td>
<td>0.109</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.025</td>
<td>0.243</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(14.2)</td>
<td>(18.5)</td>
<td>(22.6)</td>
<td>(10.1)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(2.30)</td>
<td>(22.6)</td>
</tr>
<tr>
<td>South 2 - 1</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>South 2 - 2</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>&lt;MDL</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(NS)</td>
<td>(&lt;MDL)</td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;MDL</td>
<td>0.548</td>
<td>0.199</td>
<td>0.312</td>
<td>0.327</td>
<td>0.070</td>
<td>0.052</td>
<td>0.034</td>
<td>0.548</td>
</tr>
<tr>
<td>Positive</td>
<td>(&lt;MDL)</td>
<td>(50.9)</td>
<td>(18.5)</td>
<td>(29.0)</td>
<td>(30.4)</td>
<td>(6.50)</td>
<td>(4.80)</td>
<td>(3.20)</td>
<td>(50.9)</td>
</tr>
</tbody>
</table>

- a micrograms per cubic meter (parts per trillion)
- interval 1 = background; interval 2 = during application;
  interval 3 = 1 to 3 hours after application (AA); interval 4 = 3 to 7 hours AA; interval 5 = 7 to 15 hours AA;
  interval 6 = 15 to 24 hours AA; interval 7 = 24 to 48 hours AA;
  interval 8 = 48 to 72 hours AA
- Method Detection Limit = 0.0086 µg/m³ (0.8 ppt) for a 24-hour sample
- 250 yards south of the edge of the field
- no sample taken
29. MITC (Methyl isothiocyanate) / MIC (Methyl isocyanate)

MITC is a soil fumigant and a rapid breakdown product of a soil fumigant (metam sodium; Vapam®) used to control fungi, soil insects, weed seeds, nematodes, and bacteria. MITC breaks down in the environment to MIC (methyl isocyanate). In 2000, approximately 12,844,343 pounds of metam-sodium were reported used in California, most of which was applied prior to planting carrots (5,533,254 pounds) and tomatoes (2,716,107 pounds). More than 3,323 pounds of MITC were reported used, most of which was applied to rights-of-way (3,203 pounds). Metam-sodium and MITC are regulated as restricted materials.

Ambient air monitoring for MITC was conducted from July 20 to 30, 1993, at three sites in Kern County. The background site was located at the ARB air monitoring station in Bakersfield. Monitoring was scheduled to coincide with expected applications of metam-sodium in the vicinity. The results are summarized in Table 92. Maximum positive detections ranged from 2.20 µg/m³ (0.74 ppb) at the Richland School District Office site in Shafter to 18.0 µg/m³ (6.02 ppb) at the Vineland School site in Weed Patch. Of the 32 samples analyzed (field blanks and spikes excluded), 4 were below the MDL (0.01 µg/m³, 3.35 ppt for a 24-hour sample).

Application site monitoring for MITC was conducted in March 1993 before, during, and after preplant applications to a tomato field in Contra Costa County. Metam-sodium was applied by ground-based equipment at the rate of 57 pounds of active ingredient per acre. The results are summarized in Table 93. Maximum positive detections of MITC over the sampling interval ranged from 70.5 µg/m³ (23.6 ppb) to 242 µg/m³ (81.0 ppb). Of the 24 samples analyzed (field blanks and spikes excluded), 3 were below the MDL (0.054 µg/m³, 18.1 ppt for a 12-hour sample).
Application site monitoring was also conducted in July 1993 before, during, and for 72 hours after a preplant application to a carrot field in Kern County. Metam-sodium was applied by ground-based equipment at the rate of 155 pounds of active ingredient per acre. The results are summarized in Table 94. Maximum positive detections of MITC over the sampling interval ranged from 200 µg/m³ (67.0 ppb) to 880 µg/m³ (270 ppb). All of the 36 samples analyzed (field blanks excluded) were above the MDL (0.021 µg/m³, 7.03 ppt for a 12-hour sample).

In addition, application site monitoring for MITC and MIC was conducted in August 1995 before, during, and after preplant applications to a carrot field in Kern County. Metam-sodium was applied by ground-based equipment at the rate of 155 pounds of active ingredient per acre. The results are summarized in Tables 95 and 96. Maximum positive detections of MITC over the sampling interval ranged from 19.0 µg/m³ (6.40 ppb) to 250 µg/m³ (84.0 ppb). All of the 33 samples analyzed (field blanks excluded) were above the MDL (0.088 µg/m³, 29.0 ppt for a 12-hour sample). Maximum positive detections of MIC over the sampling interval ranged from 1.80 µg/m³ (0.77 ppb) to 5.80 µg/m³ (2.50 ppb). All of the 35 samples analyzed (field blanks excluded) were above the MDL (0.309 µg/m³, 133 ppt for a 12-hour sample).

Although the data described here were not collected by the ARB due to a request for monitoring of metam-sodium under AB 1807, DPR has accepted these data and will use them in the AB 1807 process.
Table 92. Summary of MITC (methyl isothiocyanate) ambient air monitoring results in Kern County. Samples (24-hour) were collected from July 20 to 30, 1993. The ARB air monitoring station in Bakersfield was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest ( \mu \text{g/m}^3 )</th>
<th>Positive (^b\text{ppb} )</th>
<th>Highest ( \mu \text{g/m}^3 )</th>
<th>Positive (^b\text{ppb} )</th>
<th>Mean ( \mu \text{g/m}^3 )</th>
<th>Positive (^c\text{ppb} )</th>
<th># of Samples(^d)</th>
<th># Above (^a\text{MDL} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Richland School District Office, Shafter</td>
<td>2.2</td>
<td>0.74</td>
<td>0.70</td>
<td>0.23</td>
<td>0.67</td>
<td>0.22</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Mountain View School, Lamont</td>
<td>17.0</td>
<td>5.69</td>
<td>10.0</td>
<td>3.35</td>
<td>5.9</td>
<td>1.97</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Vineland School, Weed Patch</td>
<td>18.0</td>
<td>6.02</td>
<td>12.0</td>
<td>4.01</td>
<td>8.4</td>
<td>2.81</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>6.0</td>
<td>2.01</td>
<td>5.8</td>
<td>1.94</td>
<td>2.1</td>
<td>0.70</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>32</strong></td>
<td><strong>28</strong></td>
</tr>
</tbody>
</table>

\(^a\text{micrograms per cubic meter}\)

\(^b\text{parts per billion}\)

\(^c\text{mean of samples above the MDL}\)

\(^d\text{field blanks and spikes excluded}\)

\(^a\text{Method Detection Limit = 0.01} \mu \text{g/m}^3 \text{ (3.35 ppt) for a 24-hour sample}\)
Table 93. Summary of air monitoring results for MITC (methyl isothiocyanate) after preplant applications of metam-sodium to a tomato field (57.0 pounds of active ingredient per acre application rate). Samples were collected in Contra Costa County during March 1993 before, during, and after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling</th>
<th>Interval b</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>North</td>
<td>&lt;MDL&lt;</td>
<td>1.39</td>
<td>2.63</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.465)</td>
<td>(0.88)</td>
</tr>
<tr>
<td>Southeast</td>
<td>&lt;MDL&lt;</td>
<td>0.064</td>
<td>6.39</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.021)</td>
<td>(2.14)</td>
</tr>
<tr>
<td>Southwest</td>
<td>&lt;MDL&lt;</td>
<td>0.051</td>
<td>12.4</td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.017)</td>
<td>(4.15)</td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;MDL&lt;</td>
<td>1.39</td>
<td>12.4</td>
</tr>
<tr>
<td>Positive</td>
<td>(&lt;MDL)</td>
<td>(0.465)</td>
<td>(4.15)</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per billion)
b interval 1 = background on 3/8/93 from 0900-1130; interval 2 = during applc. 3/8/93 from 1230-1600; interval 3 = 3/8-9/93 from 1600-0600; interval 4 = during applc. 3/9/93 from 0600-1700; interval 5 = 3/9-10/93 from 1700-0630; interval 6 = during applc. 3/10/93 from 0630-1100; interval 7 = during applc. 3/10/93 from 1100-1700; interval 8 = 3/10-11/93 from 1700-0830
c Method Detection Limit = 0.054 µg/m³ (18.1 ppt) for a 12-hour sample
Table 94.  Summary of air monitoring results for MITC (methyl isothiocyanate) after a preplant application of metam-sodium to a carrot field (155 pounds of active ingredient per acre application rate). Samples were collected in Kern County during July 1993 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>3.20</td>
<td>1.50</td>
<td>4.70</td>
<td>2.40</td>
<td>5.80</td>
<td>100</td>
<td>9.00</td>
<td>120</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>(1.10)</td>
<td>(0.50)</td>
<td>(1.60)</td>
<td>(0.80)</td>
<td>(1.90)</td>
<td>(33.0)</td>
<td>(3.00)</td>
<td>(40.0)</td>
<td>(67.0)</td>
<td>(67.0)</td>
</tr>
<tr>
<td>West</td>
<td>3.60</td>
<td>2.30</td>
<td>580</td>
<td>120</td>
<td>1.20</td>
<td>200</td>
<td>94.0</td>
<td>1.20</td>
<td>880</td>
<td>880</td>
</tr>
<tr>
<td></td>
<td>(1.20)</td>
<td>(0.77)</td>
<td>(190)</td>
<td>(40.0)</td>
<td>(0.40)</td>
<td>(67.0)</td>
<td>(31.0)</td>
<td>(0.40)</td>
<td>(290)</td>
<td>(290)</td>
</tr>
<tr>
<td>North</td>
<td>3.20</td>
<td>2.30</td>
<td>26.0</td>
<td>3.90</td>
<td>70.0</td>
<td>800</td>
<td>90.0</td>
<td>51.0</td>
<td>210</td>
<td>800</td>
</tr>
<tr>
<td></td>
<td>(1.10)</td>
<td>(0.77)</td>
<td>(8.70)</td>
<td>(1.30)</td>
<td>(23.0)</td>
<td>(270)</td>
<td>(30.0)</td>
<td>(17.0)</td>
<td>(70.0)</td>
<td>(270)</td>
</tr>
<tr>
<td>South</td>
<td>2.60</td>
<td>6.50</td>
<td>26.0</td>
<td>26</td>
<td>26.0</td>
<td>250</td>
<td>8.10</td>
<td>8.60</td>
<td>430</td>
<td>430</td>
</tr>
<tr>
<td></td>
<td>(0.87)</td>
<td>(2.20)</td>
<td>(8.70)</td>
<td>(8.70)</td>
<td>(8.70)</td>
<td>(84.0)</td>
<td>(2.70)</td>
<td>(2.90)</td>
<td>(140)</td>
<td>(140)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>3.60</td>
<td>6.50</td>
<td>580</td>
<td>120</td>
<td>70.0</td>
<td>800</td>
<td>90.0</td>
<td>120</td>
<td>880</td>
<td>880</td>
</tr>
<tr>
<td></td>
<td>(1.20)</td>
<td>(2.20)</td>
<td>(190)</td>
<td>(40.0)</td>
<td>(23.0)</td>
<td>(270)</td>
<td>(30.0)</td>
<td>(40.0)</td>
<td>(290)</td>
<td>(290)</td>
</tr>
</tbody>
</table>

* microgram per cubic meter (parts per billion)  
* interval 1 = background on 7/27/93; interval 2 = during application on 7/27/93 from 1215-1830;  
* interval 3 = 7/27-28/93 from 1830-0630; interval 4 = 7/28/93 from 0630-1200; interval 5 = 7/28/93 from 1200-1730;  
* interval 6 = 7/28-29/93 from 1730-0700; interval 7 = 7/29/93 from 0700-1300;  
* interval 8 = 7/29/93 from 1300-1800; interval 9 = 7/29-30/93 from 1800-0700
Table 95. Summary of air monitoring results for MITC (methyl isothiocyanate) after preplant applications of metam-sodium to a carrot field (155 pounds of active ingredient per acre application rate). Samples were collected in Kern County during August 1995 before, during, and after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>East</td>
<td>0.46</td>
<td>7.10</td>
</tr>
<tr>
<td></td>
<td>(0.15)</td>
<td>(2.40)</td>
</tr>
<tr>
<td>West</td>
<td>0.53</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
<td>(0.28)</td>
</tr>
<tr>
<td>North</td>
<td>0.53</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>(0.18)</td>
<td>(0.21)</td>
</tr>
<tr>
<td>South - 1</td>
<td>0.24</td>
<td>19.0</td>
</tr>
<tr>
<td></td>
<td>(0.08)</td>
<td>(6.40)</td>
</tr>
<tr>
<td>South - 2</td>
<td>0.44</td>
<td>26.0</td>
</tr>
<tr>
<td></td>
<td>(0.15)</td>
<td>(8.70)</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.53</td>
<td>26.0</td>
</tr>
<tr>
<td>Positive</td>
<td>(0.18)</td>
<td>(8.70)</td>
</tr>
</tbody>
</table>

* µg/m³ (ppb)

a micrograms per cubic meter (parts per billion)

b interval 1 = background 8/23-24/95 from 1900-0730; interval 2 = during applc. 8/24/95 from 1230-1830
interval 3 = during applc. 8/24-25/95 from 1830-0700; interval 4 = during applc. 8/25/95 from 0700-1830;
interval 5 = 8/25-26/95 from 1830-0730; interval 6 = 8/26/95 from 0730-1730;
interval 7 = 8/26-27/95 from 1730-0700

c no sample taken
Table 96. Summary of air monitoring results for MIC (methyl isocyanate) after preplant applications of metam-sodium to a carrot field (155 pounds of active ingredient per acre application rate). Samples were collected in Kern County during August 1995 before, during, and after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>0.50</td>
<td>2.00</td>
<td>2.00</td>
<td>1.00</td>
<td>5.80</td>
<td>3.00</td>
<td>1.70</td>
<td>5.80</td>
</tr>
<tr>
<td></td>
<td>(0.20)</td>
<td>(0.90)</td>
<td>(0.86)</td>
<td>(0.40)</td>
<td>(2.50)</td>
<td>(1.30)</td>
<td>(0.73)</td>
<td>(2.50)</td>
</tr>
<tr>
<td>West</td>
<td>0.20</td>
<td>2.00</td>
<td>1.00</td>
<td>0.80</td>
<td>2.20</td>
<td>1.40</td>
<td>2.20</td>
<td>2.20</td>
</tr>
<tr>
<td></td>
<td>(0.09)</td>
<td>(0.90)</td>
<td>(0.60)</td>
<td>(0.30)</td>
<td>(0.94)</td>
<td>(0.60)</td>
<td>(0.94)</td>
<td>(0.94)</td>
</tr>
<tr>
<td>North</td>
<td>0.40</td>
<td>2.00</td>
<td>2.50</td>
<td>1.00</td>
<td>4.10</td>
<td>2.00</td>
<td>1.00</td>
<td>4.10</td>
</tr>
<tr>
<td></td>
<td>(0.20)</td>
<td>(0.90)</td>
<td>(1.10)</td>
<td>(0.40)</td>
<td>(1.80)</td>
<td>(0.86)</td>
<td>(0.40)</td>
<td>(1.80)</td>
</tr>
<tr>
<td>South - 1</td>
<td>0.50</td>
<td>0.60</td>
<td>1.80</td>
<td>1.00</td>
<td>1.80</td>
<td>0.60</td>
<td>1.80</td>
<td>1.80</td>
</tr>
<tr>
<td></td>
<td>(0.20)</td>
<td>(0.30)</td>
<td>(0.77)</td>
<td>(0.40)</td>
<td>(0.40)</td>
<td>(0.77)</td>
<td>(0.30)</td>
<td>(0.77)</td>
</tr>
<tr>
<td>South - 2</td>
<td>0.30</td>
<td>2.00</td>
<td>2.20</td>
<td>2.30</td>
<td>2.20</td>
<td>1.80</td>
<td>2.20</td>
<td>2.20</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.90)</td>
<td>(0.94)</td>
<td>(0.99)</td>
<td>(0.60)</td>
<td>(0.94)</td>
<td>(0.77)</td>
<td>(0.94)</td>
</tr>
<tr>
<td>Maximum</td>
<td>0.50</td>
<td>2.00</td>
<td>2.50</td>
<td>2.30</td>
<td>5.80</td>
<td>3.00</td>
<td>1.80</td>
<td>5.80</td>
</tr>
<tr>
<td>Positive</td>
<td>(0.20)</td>
<td>(0.90)</td>
<td>(1.10)</td>
<td>(0.99)</td>
<td>(2.50)</td>
<td>(1.30)</td>
<td>(0.77)</td>
<td>(2.50)</td>
</tr>
</tbody>
</table>

\* micrograms per cubic meter (parts per billion)

\(b\) interval 1 = background 8/23-24/95 from 1900-0730; interval 2 = during applc. 8/24/95 from 1230-1830; interval 3 = during applc. 8/24-25/95 from 1830-0730; interval 4 = during applc. 8/25/95 from 0700-1830; interval 5 = 7/25-26/95 from 1830-0730; interval 6 = 8/26/95 from 0730-1730; interval 7 = 8/26-27/95 from 1730-0700
30. Molinate

Molinate (Ordram®) is a selective, postemergent herbicide used primarily to control broadleaf weeds in rice. In 2000, more than 1,025,785 pounds were reported used on rice in California. Molinate is regulated as a restricted material.

Ambient air monitoring was conducted from May 20 to 29, 1992, at two sites in Colusa County. Monitoring was scheduled to coincide with expected applications to rice fields. The results are summarized in Table 97. Maximum positive detections were 0.50 µg/m³ (0.071 ppb) at the Fire Station site in Williams and 1.17 µg/m³ (0.165 ppb) at the Fire Station site in Maxwell. All of the samples analyzed were above the MDL (0.011 µg/m³, 1.55 ppt for a 24-hour sample).

Application site monitoring was conducted in May 1992 before, during, and for 72 hours after an application to a rice field in Colusa County. Molinate was aerially applied at the rate of 5 pounds of active ingredient per acre. The results are summarized in Table 98. Maximum positive detections over the sampling interval ranged from 1.32 µg/m³ (0.19 ppb) to 22.61 µg/m³ (3.19 ppb). Of the 37 samples analyzed (field blanks excluded), 6 were below the MDL (0.022 µg/m³, 3.11 ppt for a 24-hour sample).
Table 97. Summary of molinate ambient air monitoring results in Colusa County. Samples (24-hour) were collected from May 20 to 29, 1992.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive aµg/m³</th>
<th>Positive bppb</th>
<th>2nd Highest Positive µg/m³</th>
<th>Positive ppb</th>
<th>Mean Positive µg/m³</th>
<th>Positive ppb</th>
<th># of Samples d</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Station, Maxwell</td>
<td>1.17</td>
<td>0.165</td>
<td>0.90</td>
<td>0.127</td>
<td>0.724</td>
<td>0.102</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Fire Station, Williams</td>
<td>0.50</td>
<td>0.071</td>
<td>0.48</td>
<td>0.068</td>
<td>0.360</td>
<td>0.051</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Total 10 10

a micrograms per cubic meter
b parts per trillion
c mean of samples above the MDL
d field blanks and spikes excluded

Method Detection Limit = 0.011 µg/m³ (1.55 ppt) for a 24-hour sample
Table 98. Summary of air monitoring results after an application of molinate to a rice field (5.0 pounds of active ingredient per acre application rate). Samples were collected in Colusa County during May 1992 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Sampling Interval</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>North - 1</td>
<td>&lt;MDL</td>
<td>9.17</td>
<td>11.32</td>
<td>22.61</td>
<td>10.14</td>
<td>8.62</td>
<td>2.42</td>
<td>0.35</td>
<td>1.50</td>
<td>0.12</td>
<td>3.28</td>
<td>22.61</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(1.29)</td>
<td>(1.60)</td>
<td>(3.19)</td>
<td>(1.43)</td>
<td>(1.22)</td>
<td>(0.34)</td>
<td>(0.05)</td>
<td>(0.21)</td>
<td>(0.02)</td>
<td>(0.46)</td>
<td>(3.19)</td>
<td></td>
</tr>
<tr>
<td>North - 2</td>
<td>NS</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.59</td>
<td>0.30</td>
<td>NS</td>
<td>0.45</td>
<td>NS</td>
<td>1.32</td>
<td>NS</td>
<td>1.32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(&lt;MDL)</td>
<td>(0.08)</td>
<td>(0.04)</td>
<td>(NS)</td>
<td>(0.06)</td>
<td>(NS)</td>
<td>(0.19)</td>
<td>(NS)</td>
<td>(0.19)</td>
<td></td>
</tr>
<tr>
<td>South - 1</td>
<td>1.65</td>
<td>2.48</td>
<td>0.37</td>
<td>3.97</td>
<td>2.65</td>
<td>2.02</td>
<td>3.41</td>
<td>6.77</td>
<td>6.41</td>
<td>5.98</td>
<td>6.27</td>
<td>6.77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.23)</td>
<td>(0.35)</td>
<td>(0.05)</td>
<td>(0.56)</td>
<td>(0.37)</td>
<td>(0.29)</td>
<td>(0.48)</td>
<td>(0.96)</td>
<td>(0.91)</td>
<td>(0.84)</td>
<td>(0.88)</td>
<td>(0.96)</td>
<td></td>
</tr>
<tr>
<td>South - 2</td>
<td>&lt;MDL</td>
<td>0.45</td>
<td>0.27</td>
<td>&lt;MDL</td>
<td>0.57</td>
<td>0.86</td>
<td>NS</td>
<td>2.62</td>
<td>NS</td>
<td>3.24</td>
<td>NS</td>
<td>3.24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(&lt;MDL)</td>
<td>(0.06)</td>
<td>(0.04)</td>
<td>(&lt;MDL)</td>
<td>(0.08)</td>
<td>(0.12)</td>
<td>(NS)</td>
<td>(0.37)</td>
<td>(NS)</td>
<td>(0.46)</td>
<td>(NS)</td>
<td>(0.46)</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>(0.23)</td>
<td>(1.29)</td>
<td>(1.60)</td>
<td>(3.19)</td>
<td>(1.43)</td>
<td>(1.22)</td>
<td>(0.48)</td>
<td>(0.96)</td>
<td>(0.91)</td>
<td>(0.84)</td>
<td>(0.88)</td>
<td>(3.19)</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

- µg/m³ (ppb)
- *a* micrograms per cubic meter (parts per billion)
- *b* interval 1 = background on 5/18/92 from 0830-1000; interval 2 = during application on 5/18/92 from 1100-1330; interval 3 = 5/18-19/92 from 1330-1530; interval 4 = 5/18/92 from 1330-1530; interval 5 = 5/18/92 from 1530-1800; interval 6 = 5/19-20/92 from 0600-0600; interval 7 = 5/19-20/92 from 1800-0000; interval 8 = 5/20-21/92 from 0600-0600; interval 9 = 5/20-21/92 from 1800-0000; interval 10 = 5/21-22/92 from 0630-0900; interval 11 = 5/21-22/92 from 1800-0900
- *c* Method Detection = 0.022 µg/m³ (3.11 ppt) for a 24-hour sample
- *d* no sample taken
31. **Monocrotophos**

Monocrotophos (Azodrin®) is a contact and systemic insecticide/acaricide used to control sucking, chewing, and boring insects on a wide variety of crops. It is no longer registered for use in California.

Ambient air monitoring was conducted from May 12 to June 9, 1988, at four sites in Fresno County. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with expected applications to cotton. The results are summarized in Table 99. All of the 118 samples analyzed (field blanks and collocated samples excluded) were below the MDL (5.0 ng/m$^3$, 0.55 ppt for a 24-hour sample).

Application site monitoring was conducted on June 14, 1988, before, during, and for 9 hours after an application to a cotton field in Fresno County (unknown application rate). The results are summarized in Table 100. Maximum positive detections over the sampling interval were 110 ng/m$^3$ (12.0 ppt) and 73.0 ng/m$^3$ (8.10 ppt). Of the 12 samples analyzed (field blanks excluded), 4 were below the MDL (5.0 ng/m$^3$, 0.55 ppt for a 24-hour sample).
Table 99. Summary of monochrotophos ambient air monitoring results in Fresno County. Samples (24-hour) were collected from May 12 to June 9, 1988. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive a ng/m³</th>
<th>Highest Positive b ppt</th>
<th>Mean Positive c ng/m³</th>
<th>Positive d ppt</th>
<th># of Samples</th>
<th># Above e MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Department, Tranquility</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>San Joaquin School, San Joaquin</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>West Side Field Station, Five Points</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>Day Care Center, Huron</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>118</td>
<td>0</td>
</tr>
</tbody>
</table>

a nanograms per cubic meter  
b parts per billion  
c mean of samples above the MDL  
d field blanks and collocated samples excluded  
e Method Detection Limit = 5.0 ng/m³ (0.55 ppt) for a 24-hour sample  
f Not Applicable
Table 100. Summary of air monitoring results after an application of monocrotophos to a cotton field (unknown application rate). Samples were collected in Fresno County on June 14, 1988 before, during, and for 9 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval 1</th>
<th>Interval 2</th>
<th>Interval 3</th>
<th>Interval 4</th>
<th>Interval 5</th>
<th>Interval 6</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampler A</td>
<td>&lt;MDL (3.60)</td>
<td>(12.0)</td>
<td>(0.69)</td>
<td>&lt;MDL (3.60)</td>
<td>(12.0)</td>
<td>(0.69)</td>
<td>110</td>
</tr>
<tr>
<td>Sampler B</td>
<td>&lt;MDL (2.90)</td>
<td>(8.10)</td>
<td>(0.71)</td>
<td>&lt;MDL (2.90)</td>
<td>(8.10)</td>
<td>(0.71)</td>
<td>73.0</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;MDL (3.60)</td>
<td>(12.0)</td>
<td>(0.71)</td>
<td>&lt;MDL (3.60)</td>
<td>(12.0)</td>
<td>(0.71)</td>
<td>110</td>
</tr>
</tbody>
</table>

*ng/m$^3$ (ppt)

- nanograms per cubic meter (parts per trillion)
- interval 1 = background; interval 2 = during application from 1140-1310; interval 3 = from 1315-1445; interval 4 = from 1450-1620; interval 5 = from 1630-1800; interval 6 = from 1805-2200
- Method Detection Limit = 5.0 ng/m$^3$ (0.55 ppt) for a 24-hour sample
32. **Naled / Dichlorvos**

Naled (Dibrom®) is a non-systemic insecticide/acaricide used on a wide variety of crops. In 2000, the greatest use in California was on cotton (141,655 pounds). Dichlorvos is a degradation product of Naled. Naled is not regulated as a restricted material.

Ambient air monitoring for naled and dichlorvos was conducted from May 9 to June 6, 1991, at four sites in Tulare County. The background site was located at the ARB air monitoring station in Visalia. Monitoring was scheduled to coincide with expected applications to orange groves. The results are summarized in Tables 101 and 102. Maximum positive detections for naled ranged from less than the EQL (0.04 µg/m³, 2.76 ppt for a 24-hour sample) at the Lincove Field Station site in Exeter to 0.082 µg/m³ (5.27 ppt) at the Jefferson School site in Lindsay. Of the 80 samples analyzed (field blanks and collocated samples excluded), 70 were below the EQL. Maximum positive detections for dichlorvos ranged from less than the EQL (0.02 µg/m³, 2.21 ppt for a 24-hour sample) at the Lincove Field Station site in Exeter to 0.059 µg/m³ (6.53 ppt) at the Kaweah High School site in Exeter. Of the 80 samples analyzed (field blanks and collocated samples excluded), 66 were below the EQL.

Application site monitoring for naled and dichlorvos was conducted in June 1995 before, during, and for 72 hours after an application to an orange grove in Tulare County. Naled was applied by a ground-based air-blast sprayer at the rate of 0.9 pound of active ingredient per acre. The results are summarized in Tables 103 and 104. Maximum positive detections over the sampling interval for naled ranged from 1.04 µg/m³ (66.8 ppt) to 6.30 µg/m³ (405 ppt). Of the 40 samples analyzed (field blanks excluded), 6 were below the EQL (0.007 µg/m³, 0.45 ppt for a 5-hour sample). Maximum positive detections over the sampling interval for dichlorvos ranged from 0.401 µg/m³ (44.4 ppt) to 0.994 µg/m³ (110 ppt). Of the 40 samples analyzed (field blanks excluded), 12 were below the EQL (0.007 µg/m³, 0.77 ppt for a 5-hour sample).
Table 101. Summary of naled ambient air monitoring results in Tulare County. Samples (24-hour) were collected from May 9 to June 6, 1991. The ARB air monitoring station in Visalia was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples&lt;sup&gt;d&lt;/sup&gt;</th>
<th># Above EQL&lt;sup&gt;e&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunnyside Union School, Strathmore</td>
<td>0.065 4.18 µg/m³</td>
<td>0.059 3.79 µg/m³</td>
<td>0.062 3.98 µg/m³</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Jefferson School, Lindsay</td>
<td>0.082 5.27 µg/m³</td>
<td>0.04 2.57 µg/m³</td>
<td>0.061 3.92 µg/m³</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Kaweah High School, Exeter</td>
<td>0.067 4.30 µg/m³</td>
<td>0.054 3.47 µg/m³</td>
<td>0.064 4.11 µg/m³</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>Lindcove Field Station, Exeter</td>
<td>&lt;EQL &lt;EQL µg/m³</td>
<td>&lt;EQL &lt;EQL µg/m³</td>
<td>&lt;NA NA µg/m³</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>Visalia</td>
<td>0.077 4.95 µg/m³</td>
<td>0.062 3.98 µg/m³</td>
<td>0.07 4.50 µg/m³</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>80</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

<sup>a</sup> micrograms per cubic meter  
<sup>b</sup> parts per trillion  
<sup>c</sup> mean of samples above the EQL  
<sup>d</sup> field blanks and collocated samples excluded  
<sup>e</sup> Estimated Quantitation Limit = 0.04 µg/m³ (2.76 ppt) for a 24-hour sample  
<sup>f</sup> Not Applicable
Summary of dichlorvos ambient air monitoring results in Tulare County. Samples (24-hour) were collected from May 9 to June 6, 1991. The ARB air monitoring station in Visalia was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest 2nd</th>
<th>Positive</th>
<th>Highest</th>
<th>Positive</th>
<th>Mean</th>
<th>Positive</th>
<th># of Samples</th>
<th># Above EQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunnyside Union School, Strathmore</td>
<td>0.052 µg/m³</td>
<td>5.76 ppt</td>
<td>0.029 µg/m³</td>
<td>3.21 ppt</td>
<td>0.035 µg/m³</td>
<td>3.87 ppt</td>
<td>16 Samples</td>
<td>3 Above EQL</td>
</tr>
<tr>
<td>Jefferson School, Lindsay</td>
<td>0.025 µg/m³</td>
<td>2.77 ppt</td>
<td>0.024 µg/m³</td>
<td>2.66 ppt</td>
<td>0.023 µg/m³</td>
<td>2.54 ppt</td>
<td>16 Samples</td>
<td>4 Above EQL</td>
</tr>
<tr>
<td>Kaweah High School, Exeter</td>
<td>0.059 µg/m³</td>
<td>6.53 ppt</td>
<td>0.049 µg/m³</td>
<td>5.42 ppt</td>
<td>0.038 µg/m³</td>
<td>4.21 ppt</td>
<td>16 Samples</td>
<td>4 Above EQL</td>
</tr>
<tr>
<td>Lindcove Field Station, Exeter</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>5NA</td>
<td>NA</td>
<td>16 Samples</td>
<td>0 Above EQL</td>
</tr>
<tr>
<td>Visalia</td>
<td>0.029 µg/m³</td>
<td>3.21 ppt</td>
<td>0.028 µg/m³</td>
<td>3.10 ppt</td>
<td>0.027 µg/m³</td>
<td>2.99 ppt</td>
<td>16 Samples</td>
<td>3 Above EQL</td>
</tr>
</tbody>
</table>

*a* micrograms per cubic meter  
*b* parts per trillion  
*c* mean of samples above the EQL  
*d* field blanks and collocated samples excluded  
*e* Estimated Quantitation Limit = 0.02 µg/m³ (2.21 ppt) for a 24-hour sample  
*f* Not Applicable
Table 103. Summary of air monitoring results after an application of naled to an orange grove (0.90 pound of active ingredient per acre application rate). Samples were collected in Tulare County during June 1995 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East - 1</td>
<td>&lt;EQL</td>
<td>3.12</td>
<td>0.34</td>
<td>0.18</td>
<td>0.05</td>
<td>0.11</td>
<td>0.15</td>
<td>0.01</td>
<td>3.12</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(200)</td>
<td>(22.0)</td>
<td>(11.6)</td>
<td>(3.34)</td>
<td>(7.19)</td>
<td>(10.0)</td>
<td>(1.16)</td>
<td>(200)</td>
</tr>
<tr>
<td>East - 2</td>
<td>&lt;EQL</td>
<td>2.93</td>
<td>0.445</td>
<td>0.17</td>
<td>0.02</td>
<td>0.11</td>
<td>0.16</td>
<td>0.02</td>
<td>2.93</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(188)</td>
<td>(28.6)</td>
<td>(11.1)</td>
<td>(1.17)</td>
<td>(7.39)</td>
<td>(10.7)</td>
<td>(1.09)</td>
<td>(188)</td>
</tr>
<tr>
<td>West</td>
<td>&lt;EQL</td>
<td>1.23</td>
<td>0.091</td>
<td>0.016</td>
<td>&lt;EQL</td>
<td>0.865</td>
<td>0.952</td>
<td>0.145</td>
<td>1.23</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(79.0)</td>
<td>(5.85)</td>
<td>(1.03)</td>
<td>(&lt;EQL)</td>
<td>(55.6)</td>
<td>(61.2)</td>
<td>(9.31)</td>
<td>(79.0)</td>
</tr>
<tr>
<td>North</td>
<td>&lt;EQL</td>
<td>6.30</td>
<td>0.847</td>
<td>0.135</td>
<td>0.036</td>
<td>2.16</td>
<td>2.08</td>
<td>0.246</td>
<td>6.30</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(405)</td>
<td>(54.4)</td>
<td>(8.67)</td>
<td>(2.31)</td>
<td>(139)</td>
<td>(134)</td>
<td>(15.8)</td>
<td>(405)</td>
</tr>
<tr>
<td>South</td>
<td>&lt;EQL</td>
<td>0.046</td>
<td>0.068</td>
<td>0.145</td>
<td>0.052</td>
<td>0.450</td>
<td>1.04</td>
<td>0.099</td>
<td>1.04</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(2.96)</td>
<td>(4.37)</td>
<td>(9.31)</td>
<td>(3.34)</td>
<td>(28.9)</td>
<td>(66.8)</td>
<td>(6.36)</td>
<td>(66.8)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;EQL</td>
<td>6.30</td>
<td>0.847</td>
<td>0.180</td>
<td>0.052</td>
<td>2.16</td>
<td>2.08</td>
<td>0.246</td>
<td>6.30</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(405)</td>
<td>(54.4)</td>
<td>(11.6)</td>
<td>(3.34)</td>
<td>(139)</td>
<td>(134)</td>
<td>(15.8)</td>
<td>(405)</td>
</tr>
</tbody>
</table>

*a* micrograms per cubic meter (parts per trillion)

*b* interval 1 = background on 6/5-6/95 from 1900-0600; interval 2 = during application on 6/6/95 from 0630-1130;

interval 3 = 6/6/95 from 1130-1330; interval 4 = 6/6/95 from 1330-1630; interval 5 = 6/6/95 from 1630-1930;

interval 6 = 6/6-7/95 from 1930-0700; interval 7 = 6/7-8/95 from 0700-0700;

interval 8 = 6/8-9/95 from 0700-0700

*c* Estimated Quantitation Limit = 0.007 µg/m³ (0.45 ppt) for a 5-hour sample
Table 104. Summary of air monitoring results for dichlorvos after an application of naled to an orange grove (0.90 pound of active ingredient per acre application rate). Samples were collected in Tulare County during June 1995 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>East - 1</td>
<td>&lt;EQL</td>
<td>0.423</td>
</tr>
<tr>
<td>East - 2</td>
<td>&lt;EQL</td>
<td>0.401</td>
</tr>
<tr>
<td>West</td>
<td>&lt;EQL</td>
<td>0.129</td>
</tr>
<tr>
<td>North</td>
<td>&lt;EQL</td>
<td>0.508</td>
</tr>
<tr>
<td>South</td>
<td>&lt;EQL</td>
<td>0.037</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;EQL</td>
<td>0.508</td>
</tr>
</tbody>
</table>

* µg/m³ (ppt)

**Notes:**
- Table 104 includes a summary of air monitoring results for dichlorvos after an application of naled to an orange grove. Samples were collected in Tulare County during June 1995 before, during, and for 72 hours after application.
- The table presents sampling intervals and maximum positive concentrations.

**Interval Definitions:**
- Interval 1 = Background on 6/5-6/95 from 1900-0600.
- Interval 2 = During application on 6/6/95 from 0630-1130.
- Interval 3 = 6/6/95 from 1130-1330.
- Interval 4 = 6/6/95 from 1330-1630.
- Interval 5 = 6/6/95 from 1630-1930.
- Interval 6 = 6/6-7/95 from 1930-0700.
- Interval 7 = 6/7-8/95 from 0700-0700.
- Interval 8 = 6/8-9/95 from 0700-0700.

**Estimated Quantitation Limit:**
- Estimated Quantitation Limit = 0.007 µg/m³ (0.77 ppt) for a 5-hour sample.
33. **Oxydemeton-methyl**

Oxydemeton-methyl (Metasystox-R®) is a systemic and contact insecticide/acaricide used to control spider mites and other insects on vegetables and some ornamentals. In 2000, the greatest use in California was on broccoli (44,377 pounds) and lettuce (34,193 pounds). Oxydemeton-methyl is regulated as a restricted material.

Ambient air monitoring was conducted from August 14 to September 8, 1995, at four sites in Monterey County. The background site was located at the School Maintenance Yard in Prunedale. Monitoring was scheduled to coincide with expected applications to cauliflower and broccoli. The results are summarized in Table 105. All of the 71 samples analyzed (field blanks and collocated samples excluded) were below the EQL (0.012 µg/m³, 1.19 ppt for a 24-hour sample).

Application site monitoring was conducted in September 1995 before, during, and for 72 hours after an application to a cauliflower field in Monterey County. Oxydemeton-methyl was applied by ground-based equipment at the rate of 0.5 pound of active ingredient per acre. The results are summarized in Table 106. All of the 39 samples analyzed (field blanks excluded) were below the EQL (0.097 µg/m³, 9.63 ppt for a 3-hour sample).
### Table 105. Summary of oxydemeton-methyl ambient air monitoring results in Monterey County. Samples (24-hour) were collected from August 14 to September 8, 1995. The School Maintenance Yard in Prunedale was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive µg/m³</th>
<th>µg/m³</th>
<th>Positive Highest Positive µg/m³</th>
<th>ppt</th>
<th>Mean Positive µg/m³</th>
<th>ppt</th>
<th># of Samples</th>
<th># Above EQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>La Joya School, Salinas</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>NA</td>
<td>NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Chualar School, Chualar</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>NA</td>
<td>NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Dept. of Forestry Station, Soledad</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>NA</td>
<td>NA</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Maintenance Yard, Greenfield</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>NA</td>
<td>NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Prunedale</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>NA</td>
<td>NA</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>71</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

*a micrograms per cubic meter
*b parts per trillion
*c mean of samples above the EQL
*d field blanks and collocated samples excluded
*e Estimated Quantitation Limit = 0.012 µg/m³ (1.19 ppt) for a 24-hour sample
*f Not Applicable
Table 106. Summary of air monitoring results after an application of oxydemeton-methyl to a cauliflower field (0.5 pound of active ingredient per acre application rate). Samples were collected in Monterey County during September 1995 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(NS)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
</tr>
<tr>
<td>Northwest</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
</tr>
<tr>
<td>1Southeast</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
</tr>
<tr>
<td>2Southeast</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
</tr>
<tr>
<td>Southwest</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per trillion)

b interval 1 = background on 9/11-12/95 from 1730-0400; interval 2 = during application on 9/12/95 from 0400-0700; interval 3 = 9/12/95 from 0700-1000; interval 4 = 9/12/95 from 1000-1400; interval 5 = 9/12/95 from 1400-1900; interval 6 = 9/12-13/95 from 1900-0730; interval 7 = 9/13-14/95 from 0730-0730; interval 8 = 9/14-15/95 from 0730-0700
c Estimated Quantitation Limit = 0.097 µg/m³ (9.63 ppt) for a 3-hour sample
d no sample taken
34. Paraquat

Paraquat (Gramoxone®) is a non-selective herbicide used to control broadleaf weeds and grasses. It is also used as a pre-harvest defoliant for cotton and hops. The greatest use in California in 2000 was on cotton (268,477 pounds). Paraquat is regulated as a restricted material.

Ambient air monitoring was conducted from August 31 to November 5, 1987, at four sites in Fresno County. The background sites were located at the ARB air monitoring stations in Fresno and Bakersfield. Monitoring was scheduled to coincide with expected applications to cotton. The results are summarized in Table 107. All of the 318 samples analyzed (field blanks excluded) were below the MDL (0.022 µg/m³ for a 24-hour sample).
### Table 107. Summary of paraquat ambient air monitoring results in Fresno County.

Samples (24-hour) were collected from August 31 to November 5, 1987. The ARB air monitoring stations in Fresno and Bakersfield were the background sites.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Department, Tranquility</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>68</td>
<td>0</td>
</tr>
<tr>
<td>San Joaquin School, San Joaquin</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>56</td>
<td>0</td>
</tr>
<tr>
<td>West Side Field Station, Five Points</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>66</td>
<td>0</td>
</tr>
<tr>
<td>Day Care Center, Huron</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>62</td>
<td>0</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>38</td>
<td>0</td>
</tr>
<tr>
<td>Bakersfield</td>
<td>&lt;MDL NA</td>
<td>&lt;MDL NA</td>
<td>NA NA</td>
<td>28 Total</td>
<td>0</td>
</tr>
</tbody>
</table>

*amicrograms per cubic meter
*bparts per trillion
*cmean of samples above the MDL
*dfield blanks excluded
*eMethod Detection Limit = 0.022 µg/m³ (2.09 ppt) for a 24-hour sample
*fNot Applicable
35. **Permethrin**

Permethrin (Ambush®) is a non-systemic insecticide with contact and stomach action. In 2000, more than 385,581 pounds were reported used in California. Permethrin is not regulated as a restricted material.

Ambient air monitoring was conducted from August 12 to September 19, 1997, at four sites in Monterey County. The background site was located at the Air Pollution Control District Office in Monterey. Monitoring was scheduled to coincide with expected applications of permethrin to lettuce and celery. The results are summarized in Table 108. Of the 115 samples analyzed (field blanks and collocated samples excluded), 6 were reported as “detected” (EQL = 0.015 \(\mu g/m^3\), 0.938 ppt; MDL = 0.005 \(\mu g/m^3\), 0.288 ppt for a 24-hour sample).

Application site monitoring was conducted in July and August 1997 before, during, and for 72 hours after an application to a walnut orchard in Butte County. Permethrin was applied by ground-based spray and blower equipment at the rate of 0.39 pound of active ingredient per acre. The results are summarized in Table 109. Of the 34 samples analyzed (field blanks excluded), 31 were reported as “detected” (EQL = 0.015 \(\mu g/m^3\), 0.938 ppt; MDL = 0.005 \(\mu g/m^3\), 0.288 ppt for a 24-hour sample). The remaining 3 samples were above the EQL at 0.19 \(\mu g/m^3\) (11.9 ppt), 0.48 \(\mu g/m^3\) (30.0 ppt), and 0.57 \(\mu g/m^3\) (35.6 ppt).
Table 108. Summary of permethrin ambient air monitoring results in Monterey County. Samples (24-hour) were collected from August 12 to September 19, 1997. The Air Pollution Control District Office in Monterey was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive $^a$ µg/m³</th>
<th>Highest Positive $^b$ ppt</th>
<th>$^{2\text{nd}}$ Highest Positive µg/m³</th>
<th>Mean Positive $^c$ µg/m³</th>
<th>Positive $^c$ ppt</th>
<th># of Samples $^d$</th>
<th># Above $^e$ MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>County High School, Castroville</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>24</td>
</tr>
<tr>
<td>Chualar School, Chualar</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>24</td>
</tr>
<tr>
<td>Spreckles Union School, Spreckles</td>
<td>Detected $^f$</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>NA</td>
<td>NA</td>
<td>24</td>
</tr>
<tr>
<td>Police Station, Gonzalez</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>NA</td>
<td>NA</td>
<td>24</td>
</tr>
<tr>
<td>Monterey</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NA</td>
<td>NA</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>115</td>
</tr>
</tbody>
</table>

$^a$micrograms per cubic meter  
$^b$parts per trillion  
$^c$mean of samples above the MDL  
$^d$field blanks and collocated samples excluded  
$^e$Method Detection Limit = 0.005 µg/m³ (0.288 ppt) for a 24-hour sample  
$^f$Not Applicable  
$^g$Detected = less than the estimated quantitation limit (EQL) of 0.015 µg/m³ (0.938 ppt) but greater than or equal to the MDL
Table 109. Summary of air monitoring results after an application of permethrin to a walnut orchard (0.39 pound of active ingredient per acre application rate). Samples were collected in Butte County during July and August 1997 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sampling Interval b</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
| East     | Detected           | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detected | Detec | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Detected) | (Dete
36. **Phorate**

Phorate (Thimet®) is a systemic insecticide used to control mites and chewing and sucking insects on fruits, vegetables, cotton, and some ornamentals. In 2000, more than 87,974 pounds were reported used in California, most of which was applied to cotton (32,104 pounds) and corn (30,548 pounds). Phorate is regulated as a restricted material.

Ambient air monitoring was conducted from March 24 to May 2, 1997, at four sites in Fresno County. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with expected applications to cotton. The results are summarized in Table 110. All 120 samples analyzed (field blanks and collocated samples excluded) were below the EQL (0.0093 µg/m³, 0.87 ppt for a 24-hour sample).

Application site monitoring was conducted in August 1997 before, during, and after applications to an Easter lily field in Del Norte County. Phorate was applied and incorporated into the soil by ground-based equipment at the rate of 7.0 pounds of active ingredient per acre. The results are summarized in Table 111. Maximum positive detections over the sampling interval ranged from less than the EQL (0.0093 µg/m³, 0.87 ppt for a 24-hour sample) to 0.08 µg/m³ (7.51 ppt). Of the 39 samples analyzed (field blanks and spikes excluded), 9 were above the EQL.
### Table 110. Summary of phorate ambient air monitoring results in Fresno County. Samples (24-hour) were collected March 24 to May 2, 1997. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive 2nd</th>
<th>2nd Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above EQL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burrel School, Burrel</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Westside School, Five Points</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>San Joaquin School, San Joaquin</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Helm School, Helm</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Fresno</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>24</td>
<td>0</td>
</tr>
</tbody>
</table>

Total: 120

- **a** micrograms per cubic meter
- **b** parts per trillion
- **c** mean of samples above the EQL
- **d** field blanks and collocated samples excluded
- **EQL** Estimated Quantitation Limit = 0.0093 µg/m³ (0.87 ppt) for a 24-hour sample

**Not Applicable**
Table 111. Summary of air monitoring results after applications of phorate to an Easter lily field (7.0 pounds of active ingredient per acre application rate). Samples were collected in Del Norte County during August 1997 before, during, and after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4 Sampling Interval b</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East - 1</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.044</td>
<td>0.017</td>
<td>0.066</td>
<td>&lt;EQL</td>
<td>0.066</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(4.13)</td>
<td>(1.60)</td>
<td>(6.20)</td>
<td>(&lt;EQL)</td>
<td>(6.20)</td>
</tr>
<tr>
<td>East - 2</td>
<td>NS d</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.052</td>
<td>0.018</td>
<td>0.080</td>
<td>&lt;EQL</td>
<td>0.080</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(4.88)</td>
<td>(1.69)</td>
<td>(7.51)</td>
<td>(&lt;EQL)</td>
<td>(7.51)</td>
</tr>
<tr>
<td>West</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.065</td>
<td>0.038</td>
<td>0.065</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(6.11)</td>
<td>(3.57)</td>
<td>(6.11)</td>
</tr>
<tr>
<td>North</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.013</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.013</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(1.22)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(1.22)</td>
</tr>
<tr>
<td>South</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
</tr>
<tr>
<td></td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
</tr>
<tr>
<td>Maximum</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>&lt;EQL</td>
<td>0.052</td>
<td>0.018</td>
<td>0.080</td>
<td>0.038</td>
<td>0.080</td>
</tr>
<tr>
<td>Positive</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(&lt;EQL)</td>
<td>(4.88)</td>
<td>(1.69)</td>
<td>(7.51)</td>
<td>(3.57)</td>
<td>(7.51)</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter (parts per trillion)

b interval 1 = background on 8/26-27/97 from 1730-1730; interval 2 = during application on 8/27/97 from 1730-2000;
interval 3 = 8/27/97 from 2000-2330; interval 4 = 8/27-28/97 from 2330-1430;
interval 5 = during applic. on 8/28/97 from 1430-2300; interval 6 = 8/28-29/97 from 2300-1715;
interval 7 = during applic. on 8/29/97 from 1715-2245; interval 8 = 8/30/97 from 2245-1230
c Estimated Quantitation Limit = 0.0093 µg/m³ (0.87 ppt) for a 24-hour sample
d no sample taken
37. **Propargite**

Propargite (Omite®) is an acaricide with residual killing action. It is used to control mites on a variety of crops. In 2000, more than 1,306,767 pounds were reported used in California, most of which was applied to corn (389,005 pounds) and almonds (298,206 pounds). Propargite is not registered as a restricted material.

Ambient air monitoring was conducted from June 24 to August 4, 1999, at seven sites in Fresno and Kings Counties. The background site was located at the ARB air monitoring station in Fresno. Monitoring was conducted to coincide with expected applications of propargite to cotton and grape vineyards. The results are summarized in Table 112. Maximum positive detections ranged from “detected” (EQL = 23.2 ng/m$^3$, 1.62 ppt; MDL = 4.64 ng/m$^3$, 0.32 ppt for a 24-hour sample) at the Huron School site in Huron and the Stratford School site in Stratford to 1,300 ng/m$^3$ (90.7 ppt) at the Alvina School site in Caruthers. Of the 174 samples analyzed (field blanks and collocated samples excluded), 54 were reported as “detected” and 50 were below the MDL.

Application site monitoring was conducted in July 1999 before, during, and for 72 hours after an application to a grape vineyard in Fresno County. Propargite was applied by ground-based blower spray equipment at the rate of 1.92 pounds of active ingredient per acre. The results are summarized in Table 113. Maximum positive detections over the sampling interval ranged from 290 ng/m$^3$ (20.2 ppt) to 3,500 ng/m$^3$ (244 ppt). Of the 25 samples analyzed (field blanks excluded), one was below the MDL (4.64 ng/m$^3$, 0.32 ppt for a 24-hour sample).
Summary of propargite ambient air monitoring results in Fresno and Kings counties. Samples (24-hour) were collected from June 24 to August 4, 1999. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>Mean Positive</th>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alvina School, Caruthers</td>
<td>1300 90.7</td>
<td>170 11.9</td>
<td>Helm School, Helm</td>
<td>110 7.68</td>
<td>23.0 1.61</td>
<td>22</td>
<td>16</td>
</tr>
<tr>
<td>Helm School, Helm</td>
<td></td>
<td></td>
<td>Huron School, Huron</td>
<td>Detected</td>
<td>Detected</td>
<td>22</td>
<td>14</td>
</tr>
<tr>
<td>Huron School, Huron</td>
<td></td>
<td></td>
<td>School Bus Barn, Kingsburg</td>
<td>65.0 4.54</td>
<td>42.0 2.93</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Kerman High School, Kerman</td>
<td>79.0 5.51</td>
<td>43.0 3.00</td>
<td>Stratford School, Stratford</td>
<td>Detected</td>
<td>Detected</td>
<td>22</td>
<td>19</td>
</tr>
<tr>
<td>Stratford School, Stratford</td>
<td></td>
<td></td>
<td>San Joaquin School, San Joaquin</td>
<td>46.0 3.21</td>
<td>10.0 0.70</td>
<td>22</td>
<td>11</td>
</tr>
<tr>
<td>San Joaquin School, San Joaquin</td>
<td></td>
<td></td>
<td>Fresno</td>
<td>25.0 1.75</td>
<td>13.0 0.91</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>Fresno</td>
<td></td>
<td></td>
<td></td>
<td>Total 174</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a* nanograms per cubic meter  
*b* parts per trillion  
*c* "Detected" results were factored into the average as (MDL+EQL)/2 = 14 ng/m³; "<MDL" results as MDL/2 = 2.3 ng/m³  
*d* field blanks and collocated samples excluded  
*e* Method Detection Limit = 4.64 ng/m³ (0.32 ppt) for a 24-hour sample  
*f"Detected" = less than the estimated quantitation limit (EQL) of 23.2 ng/m³ (1.62 ppt) but greater than or equal to the MDL
Table 113. Summary of air monitoring results after an application of propargite to a grape vineyard (1.92 pounds of active ingredient per acre application rate). Samples were collected in Fresno County during July 1999 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East - 1</td>
<td>61.0</td>
<td>2900</td>
<td>420</td>
<td>NS 360 400</td>
<td>2900</td>
</tr>
<tr>
<td></td>
<td>(4.26)</td>
<td>(202)</td>
<td>(29.3)</td>
<td>(NS) (25.1) (27.9)</td>
<td>(202)</td>
</tr>
<tr>
<td>East - 2</td>
<td>NS 3400</td>
<td>370</td>
<td>1100</td>
<td>370 NS</td>
<td>3400</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(237)</td>
<td>(25.8)</td>
<td>(76.8) (25.8)</td>
<td>(237)</td>
</tr>
<tr>
<td>West</td>
<td>110</td>
<td>530</td>
<td>240</td>
<td>180 110 92.0</td>
<td>530</td>
</tr>
<tr>
<td></td>
<td>(7.68)</td>
<td>(37.0)</td>
<td>(16.8)</td>
<td>(12.6) (7.68)</td>
<td>(37.0)</td>
</tr>
<tr>
<td>North</td>
<td>69.0</td>
<td>&lt;MDL</td>
<td>290</td>
<td>270 130 100</td>
<td>290</td>
</tr>
<tr>
<td></td>
<td>(4.82)</td>
<td>(&lt;MDL)</td>
<td>(20.2)</td>
<td>(18.8) (9.07)</td>
<td>(20.2)</td>
</tr>
<tr>
<td>South</td>
<td>NS</td>
<td>3500</td>
<td>280</td>
<td>470 240 NS</td>
<td>3500</td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(244)</td>
<td>(19.5)</td>
<td>(32.8) (16.7)</td>
<td>(244)</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>110</td>
<td>3500</td>
<td>420</td>
<td>1100</td>
<td>370</td>
</tr>
<tr>
<td></td>
<td>(7.68)</td>
<td>(244)</td>
<td>(29.3)</td>
<td>(76.8) (25.8)</td>
<td>(27.9)</td>
</tr>
</tbody>
</table>

*a ng/m³ (ppt)*

Site 1 = background on 7/13-14/99 from 1115-1115; interval 2 = during application on 7/14/99 from 2020-2140; interval 3 = 7/14-15/99 from 2140-0710; interval 4 = 7/15/99 from 0710-1925; interval 5 = 7/15-16/99 from 1925-0705; interval 6 = 7/16-17/99 from 0705-0710

c no sample taken

d Method Detection Limit = 4.64 ng/m³ (0.32 ppt) for a 24-hour sample
38. **Simazine**

Simazine (Princep®) is a selective herbicide used to control most annual grasses and broadleaf weeds in both cropland and non-cropland sites. In 2000, more than 700,588 pounds were reported used in California, most of which was applied to grapes (295,484 pounds) and oranges (200,288 pounds). Simazine is regulated as a restricted material because of its potential to pollute ground water.

Ambient air monitoring was conducted from February 18 to April 1, 1998, at four sites in Fresno County. The background site was located at the ARB air monitoring station in Fresno. Monitoring was scheduled to coincide with expected applications of simazine to grape vineyards. The results are summarized in Table 114. Low level contamination was observed in almost all laboratory solvent and resin blanks. Results found to be less than the background contamination level of 2.22 ng/m$^3$ (0.27 ppt) but greater than or equal to the MDL (0.88 ng/m$^3$, 0.11 ppt for a 24-hour sample) were reported as “BGrnd”. Results that were less than the EQL (4.21 ng/m$^3$, 0.51 ppt for a 24-hour sample) but greater than or equal to “BGrnd” were reported as “detected”. Maximum positive detections ranged from “detected” at the background site in Fresno to 18.0 ng/m$^3$ (2.2 ppt) at the Fremont Middle School site in Fowler. Of the 120 samples analyzed (field blanks and collocated samples excluded), 27 were reported as “detected”, 67 were reported as “BGrnd”, and 5 were below the MDL.

Application site monitoring was conducted in December 1998 before, during, and for 72 hours after an application to an orange orchard in Tulare County. Simazine was applied by ground-based spray equipment at the rate of 3.6 pounds of active ingredient per acre. The results are summarized in Table 115. Maximum positive detections ranged from 5.3 ng/m$^3$ (0.64 ppt) to 190 ng/m$^3$ (23.1 ppt). Of the 44 samples analyzed (field blanks excluded), 19 were reported as “detected”, and 13 reported as “BGrnd”.
Table 114. Summary of simazine ambient air monitoring results in Fresno County. Samples (24-hour) were collected from February 18 to April 1, 1998. The ARB air monitoring station in Fresno was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>Highest Positive</th>
<th>2nd Positive</th>
<th>Mean Positive</th>
<th># of Samples</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alvina School, Caruthers</td>
<td>4.9</td>
<td>4.8</td>
<td>4.6</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>Central High School West, Fresno</td>
<td>7.7</td>
<td>6.8</td>
<td>5.7</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Fremont Middle School, Fowler</td>
<td>18</td>
<td>6.9</td>
<td>6.7</td>
<td>24</td>
<td>23</td>
</tr>
<tr>
<td>Parlier High School, Parlier</td>
<td>4.4</td>
<td>Detected</td>
<td>4.4</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Fresno</td>
<td>Detected</td>
<td>BGrnd</td>
<td>bNA</td>
<td>24</td>
<td>23</td>
</tr>
</tbody>
</table>

| Total                                   | 120              | 115          |

*a nanograms per cubic meter
b parts per trillion
"Detected", "BGrnd", and "<MDL" results were not factored into the average
field blanks and collocated samples excluded
Method Detection Limit = 0.88 ng/m³ (0.11 ppt) for a 24-hour sample
"Detected" = less than the estimated quantitation limit (EQL) of 4.21 ng/m³ (0.51 ppt) but greater than or equal to the "BGrnd"
"BGrnd" = less than the background contamination level of 2.22 ng/m³ (0.27 ppt) but greater than or equal to the MDL
Not Applicable
Table 115. Summary of air monitoring results after an application of simazine to an orange orchard (3.6 pounds of active ingredient per acre application rate). Samples were collected in Tulare County during December 1998 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>9.30</td>
<td>120</td>
<td>190</td>
<td>Detected</td>
<td>190</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>BGrnd</td>
<td>6.40</td>
</tr>
<tr>
<td></td>
<td>(1.13)</td>
<td>(14.6)</td>
<td>(23.1)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(BGrnd)</td>
<td>(0.78)</td>
<td>(23.1)</td>
</tr>
<tr>
<td>West</td>
<td>6.50</td>
<td>BGrnd</td>
<td>Detected</td>
<td>BGrnd</td>
<td>BGrnd</td>
<td>Detected</td>
<td>BGrnd</td>
<td>14.0</td>
<td>6.00</td>
<td>14.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.79)</td>
<td>(BGrnd)</td>
<td>(Detected)</td>
<td>(BGrnd)</td>
<td>(Detected)</td>
<td>(BGrnd)</td>
<td>(1.07)</td>
<td>(0.73)</td>
<td>(1.07)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>5.30</td>
<td>BGrnd</td>
<td>BGrnd</td>
<td>BGrnd</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>BGrnd</td>
<td>4.80</td>
<td>5.30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.64)</td>
<td>(BGrnd)</td>
<td>(BGrnd)</td>
<td>(BGrnd)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(BGrnd)</td>
<td>(0.58)</td>
<td>(0.64)</td>
<td></td>
</tr>
<tr>
<td>South - 1</td>
<td>6.70</td>
<td>Detected</td>
<td>Detected</td>
<td>BGrnd</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>BGrnd</td>
<td>Detected</td>
<td>6.70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.81)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(BGrnd)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(BGrnd)</td>
<td>(0.81)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South - 2</td>
<td>&quot;NS&quot;</td>
<td>Detected</td>
<td>BGrnd</td>
<td>8.80</td>
<td>Detected</td>
<td>Detected</td>
<td>Detected</td>
<td>4.70</td>
<td>8.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(NS)</td>
<td>(Detected)</td>
<td>(BGrnd)</td>
<td>(1.07)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(0.57)</td>
<td>(1.07)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum</td>
<td>9.30</td>
<td>120</td>
<td>190</td>
<td>Detected</td>
<td>8.80</td>
<td>Detected</td>
<td>Detected</td>
<td>14.0</td>
<td>6.40</td>
<td>190</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>(1.13)</td>
<td>(14.6)</td>
<td>(23.1)</td>
<td>(Detected)</td>
<td>(1.07)</td>
<td>(Detected)</td>
<td>(Detected)</td>
<td>(1.07)</td>
<td>(0.78)</td>
<td>(23.1)</td>
<td></td>
</tr>
</tbody>
</table>

a nanogram per cubic meter (parts per trillion)
b interval 1 = background on 12/18-19/98 from 1545-1345; interval 2 = during application on 12/19/98 from 1400-1615; interval 3 = 12/19/98 from 1615-1715; interval 4 = 12/19/98 from 1715-1915; interval 5 = 12/19-20/98 from 1915-0815; interval 6 = 12/20/98 from 0815-1615; interval 7 = 12/20-21/98 from 1615-0815; interval 8 = 12/21/98 from 0815-1615; interval 9 = 12/21-22/98 from 1615-1615
c "BGrnd" = less than the background contamination level of 2.22 ng/m³ (0.27 ppt) but greater than or equal to the MDL but greater than or equal to the MDL of 0.88 ng/m³ (0.11 ppt) for a 24-hour sample
d "Detected" = less than the estimated quantitation limit (EQL) of 4.21 ng/m³ (0.51 ppt) but greater than or equal to the "BGrnd"
e no sample taken
39. Sodium arsenite (Arsenic III)

Sodium arsenite (Chem Pels C®) is an inorganic arsenical with fungicidal properties. It is also used as a contact herbicide. Sodium arsenite is no longer registered for use in California.

Ambient air monitoring for sodium arsenic was conducted from February 17 to March 20, 1987, at four sites in San Joaquin County. The background site was located at the Agricultural District Office in Lodi. Monitoring was scheduled to coincide with expected applications to Tokay grapes. The results are summarized in Table 116. Maximum positive detections ranged from 6.0 ng/m$^3$ at the background site in Lodi to 76.0 ng/m$^3$ at the Fire Station site in Victor. Of the 44 samples analyzed (field blanks and collocated samples excluded), 17 were below the MDL (1.0 ng/m$^3$ for a 24-hour sample).

Application site monitoring for sodium arsenite was conducted on March 3, 1987, during and for 2 hours after an application of sodium arsenite to a Tokay grape vineyard in San Joaquin County. Sodium arsenite was applied by ground-based compressor equipment at an unknown rate. The results are summarized in Table 117. The only positive detections from the two samplers were 260 ng/m$^3$ and 250 ng/m$^3$. The other two samples analyzed were below the MDL (13.0 ng/m$^3$ for a 1-hour sample).
Table 116. Summary of sodium arsenite (Arsenic III) ambient air monitoring results in San Joaquin County. Samples (24-hour) were collected from February 17 to March 20, 1987. The Agricultural District Office in Lodi was the background site.

<table>
<thead>
<tr>
<th>Monitoring Site</th>
<th>2nd Highest Mean Positive c</th>
<th># of Samples d</th>
<th># Above MDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>County Road Fire Station, Lodi</td>
<td>54 ng/m³ 5.0 ppt</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Micke Grove Park Museum, Lodi</td>
<td>16 NA 12 NA 7.0 NA 8</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Fire Station, Victor</td>
<td>76 NA 14 NA 16 NA 10</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Victor School, Victor</td>
<td>70 NA 6.0 NA 17 NA 8</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Lodi</td>
<td>6.0 NA 3.0 NA 3.0 NA 9</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

| Total                                    | 44 27                          |               |             |

*a nanograms per cubic meter (Arsenic III)*
*b parts per trillion (Arsenic III)*
*c mean of samples above the MDL*
*d field blanks and collocated samples excluded*
*e Method Detection Limit = 1.0 ng/m³ for a 24-hour sample*
*f Not Applicable*
Table 117. Summary of air monitoring results for Arsenic III after an application of sodium arsenite to a Tokay grape vineyard (unknown application rate). Samples were collected in San Joaquin County on March 3, 1987 during and for 2 hours after application.

<table>
<thead>
<tr>
<th>Sampling Site</th>
<th>Sampling Interval</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampler A</td>
<td>1</td>
<td>NSA &lt;MDL</td>
</tr>
<tr>
<td>Sampler B</td>
<td>2</td>
<td>NSA &lt;MDL</td>
</tr>
<tr>
<td>Sampler B</td>
<td>3</td>
<td>NSA &lt;MDL</td>
</tr>
</tbody>
</table>

* nanograms per cubic meter of Arsenic III

b interval 1 = during application from 0650-1250; interval 2 = from 1300-1400; interval 3 = from 1400-1500
c samplers located 20 meters downwind
d no sample analysis
e Method Detection Limit = 13.0 ng/m³ for a 1-hour sample
40. **Ziram**

Ziram (Ziram 76®) is a foliar fungicide used on a wide variety of crops to control such diseases as leaf spot, downy mildew, and rust. In California, the greatest use in 2000 was on almonds (567,538 pounds). Ziram is not regulated as a restricted material.

Application site monitoring was conducted in March 1994 before, during, and for 72 hours after an application to an almond orchard in Butte County. Ziram was applied by a ground-based air blast sprayer at the rate of 4.6 pounds of active ingredient per acre. The results are summarized in Table 118. Maximum positive detections over the sampling interval ranged from 0.146 µg/m³ to 2.26 µg/m³. Of the 36 samples analyzed (field blanks excluded), 19 were below the MDL (0.028 µg/m³ for a 12-hour sample).
Summary of air monitoring results after an application of ziram to an almond orchard (4.6 pounds of active ingredient per acre application rate). Samples were collected in Butte County during March 1994 before, during, and for 72 hours after application.

<table>
<thead>
<tr>
<th>Site</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Sampling Interval b</th>
<th>Interval b</th>
<th>Maximum Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>&lt;MDL</td>
<td>1.69</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.072</td>
<td>dNS</td>
</tr>
<tr>
<td>West</td>
<td>&lt;MDL</td>
<td>0.146</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.051</td>
<td>0.037</td>
</tr>
<tr>
<td>North</td>
<td>&lt;MDL</td>
<td>2.26</td>
<td>0.478</td>
<td>0.299</td>
<td>0.029</td>
<td>0.077</td>
</tr>
<tr>
<td>South - 1</td>
<td>&lt;MDL</td>
<td>0.400</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>0.047</td>
<td>0.038</td>
</tr>
<tr>
<td>South - 2</td>
<td>&lt;MDL</td>
<td>0.400</td>
<td>&lt;MDL</td>
<td>&lt;MDL</td>
<td>NS</td>
<td>0.026</td>
</tr>
<tr>
<td>Maximum Positive</td>
<td>&lt;MDL</td>
<td>2.26</td>
<td>0.478</td>
<td>0.299</td>
<td>0.029</td>
<td>0.077</td>
</tr>
</tbody>
</table>

a micrograms per cubic meter
c Method Detection Limit = 0.028 µg/m³ for a 12-hour sample
d no sample taken