

APPENDIX 1

- a. SUMMARY OF APPLICATION METHOD ADJUSTMENT FACTORS AND METHOD USE FRACTIONS
- b. FIELD FUMIGATION METHODS (FFM), FFM CODE FOR PESTICIDE USE REPORTING, AND EMISSION RATING

**APPENDIX 1a – SUMMARY OF APPLICATION METHOD ADJUSTMENT FACTORS AND
METHOD USE FRACTIONS**

Table A1 - 1. Application Method Adjustment Factors for 2004 - 2007.

Fumigation Method ¹	AMAF					
	1,3-D	Chloropicrin	Methyl Bromide	Metam	Dazomet	Na Tetrathio carbonate
Shallow injection w/ high permeability tarp or no tarp-broadcast	61*	64*	74*	not applicable	not applicable	not applicable
Shallow injection w/ low permeability tarp-broadcast	not applicable	44	48	not applicable	not applicable	not applicable
Shallow injection w/ high permeability tarp or no tarp-bed	not applicable	64*	100*	77*	not applicable	not applicable
Shallow injection w/ low permeability tarp-bed	not applicable	64*	100*	not applicable	not applicable	not applicable
Shallow injection w/ water treatments	41	20	not applicable	21	not applicable	not applicable
Shallow injection w/ soil cap	not applicable	not applicable	not applicable	14	not applicable	not applicable
Deep injection w/ high permeability tarp or no tarp-broadcast	41	64*	74*	not applicable	not applicable	not applicable
Deep injection w/ low permeability tarp-broadcast	not applicable	44	48	not applicable	not applicable	not applicable
Deep injection w/ water treatments	27	20	not applicable	not applicable	not applicable	not applicable
Rotovate/rototill	not applicable	not applicable	not applicable	14	17	not applicable
Sprinkler	not applicable	not applicable	not applicable	77*	not applicable	10
Sprinkler w/ water treatments	not applicable	not applicable	not applicable	21	not applicable	not applicable
Flood	not applicable	not applicable	not applicable	77*	not applicable	10
Drip w/ high permeability tarp or no tarp	29	not applicable	not applicable	9	not applicable	10
Drip w/ low permeability tarp	not applicable	15	not applicable	9	not applicable	not applicable
Non-field soil (structural/post-harvest)	not applicable	100	100	not applicable	not applicable	not applicable

* These are considered "high-emission" fumigation methods and are prohibited within the San Joaquin Valley, Southeast Desert, and Ventura NAAs during May-October.

Table A1 - 2. 1990 frequency of fumigation methods used (method use fractions) in the Sacramento Metro nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D ²	Chloropicrin	Methyl Bromide	Metam ³	Dazomet	Na Tetrathio carbonate ⁴
Shallow injection w/ high permeability tarp or no tarp-broadcast		42	37			
Shallow injection w/ low permeability tarp-broadcast						
Shallow injection w/ high permeability tarp or no tarp-bed		42	36	3		
Shallow injection w/ low permeability tarp-bed						
Shallow injection w/ water treatments						
Shallow injection w/ soil cap				15		
Deep injection w/ high permeability tarp or no tarp-broadcast		16	14			
Deep injection w/ low permeability tarp-broadcast						
Deep injection w/ water treatments						
Rotovate/rototill				2	100	
Sprinkler				55		33
Sprinkler w/ water treatments						
Flood				10		33
Drip w/ high permeability tarp or no tarp				10		34
Drip w/ low permeability tarp				5		
Non-field soil (structural/post-harvest)			13			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² Use of 1,3-D was suspended in early 1990.

³ DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

⁴ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 3. 1990 frequency of fumigation methods used (method use fractions) in the San Joaquin Valley nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D ²	Chloropicrin	Methyl Bromide	Metam ³	Dazomet	Na Tetrathio carbonate ⁴
Shallow injection w/ high permeability tarp or no tarp-broadcast		29	29			
Shallow injection w/ low permeability tarp-broadcast						
Shallow injection w/ high permeability tarp or no tarp-bed		29	29	8		
Shallow injection w/ low permeability tarp-bed						
Shallow injection w/ water treatments						
Shallow injection w/ soil cap				25		
Deep injection w/ high permeability tarp or no tarp-broadcast		42	42			
Deep injection w/ low permeability tarp-broadcast						
Deep injection w/ water treatments						
Rotovate/rototill				3	100	
Sprinkler				60		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp				2		34
Drip w/ low permeability tarp				2		
Non-field soil (structural/post-harvest)						

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² Use of 1,3-D was suspended in early 1990.

³ DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

⁴ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 4. 1990 frequency of fumigation methods used (method use fractions) in the Southeast Desert nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D ²	Chloropicrin	Methyl Bromide	Metam ³	Dazomet	Na Tetrathio carbonate ⁴
Shallow injection w/ high permeability tarp or no tarp-broadcast		50	35			
Shallow injection w/ low permeability tarp-broadcast						
Shallow injection w/ high permeability tarp or no tarp-bed		50	34	10		
Shallow injection w/ low permeability tarp-bed						
Shallow injection w/ water treatments						
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast						
Deep injection w/ low permeability tarp-broadcast						
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				30		33
Sprinkler w/ water treatments						
Flood				50		33
Drip w/ high permeability tarp or no tarp				5		34
Drip w/ low permeability tarp				5		
Non-field soil (structural/post-harvest)			31			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² Use of 1,3-D was suspended in early 1990.

³ DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

⁴ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 5. 1990 frequency of fumigation methods used (method use fractions) in the Ventura nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D ²	Chloropicrin	Methyl Bromide	Metam ³	Dazomet	Na Tetrathio carbonate ⁴
Shallow injection w/ high permeability tarp or no tarp-broadcast		50	49			
Shallow injection w/ low permeability tarp-broadcast						
Shallow injection w/ high permeability tarp or no tarp-bed		50	49	20		
Shallow injection w/ low permeability tarp-bed						
Shallow injection w/ water treatments						
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast						
Deep injection w/ low permeability tarp-broadcast						
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				50		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp				15		34
Drip w/ low permeability tarp				15		
Non-field soil (structural/post-harvest)			3			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² Use of 1,3-D was suspended in early 1990.

³ DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

⁴ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 6. 1990 frequency of fumigation methods used (method use fractions) in the South Coast nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D ²	Chloropicrin	Methyl Bromide	Metam ³	Dazomet	Na Tetrathio carbonate ⁴
Shallow injection w/ high permeability tarp or no tarp-broadcast		50	3			
Shallow injection w/ low permeability tarp-broadcast						
Shallow injection w/ high permeability tarp or no tarp-bed		50	3	20		
Shallow injection w/ low permeability tarp-bed						
Shallow injection w/ water treatments						
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast						
Deep injection w/ low permeability tarp-broadcast						
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				50		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp				15		34
Drip w/ low permeability tarp				15		
Non-field soil (structural/post-harvest)			95			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² Use of 1,3-D was suspended in early 1990.

³ DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

⁴ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 7. 2005 frequency of fumigation methods used (method use fractions) in the Sacramento Metro nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast						
Shallow injection w/ low permeability tarp-broadcast		56.0	11.3			
Shallow injection w/ high permeability tarp or no tarp-bed				21		
Shallow injection w/ low permeability tarp-bed		33.0	6.3			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap				15		
Deep injection w/ high permeability tarp or no tarp-broadcast	99					
Deep injection w/ low permeability tarp-broadcast			11.4			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				45		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	1			9		34
Drip w/ low permeability tarp		11.0		10		
Non-field soil (structural/post-harvest)			70.9			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 8. 2005 frequency of fumigation methods used (method use fractions) in the San Joaquin Valley nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast	2					
Shallow injection w/ low permeability tarp-broadcast		97.0	79.5			
Shallow injection w/ high permeability tarp or no tarp-bed				21		
Shallow injection w/ low permeability tarp-bed			0.6			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap				20		
Deep injection w/ high permeability tarp or no tarp-broadcast	97	1.0				
Deep injection w/ low permeability tarp-broadcast		1.0	16.3			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				35		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	1			14		34
Drip w/ low permeability tarp				10		
Non-field soil (structural/post-harvest)		1.0	3.7			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 9. 2005 frequency of fumigation methods used (method use fractions) in the Southeast Desert nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast						
Shallow injection w/ low permeability tarp-broadcast		88	77.1			
Shallow injection w/ high permeability tarp or no tarp-bed				6		
Shallow injection w/ low permeability tarp-bed			18.9			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast	10					
Deep injection w/ low permeability tarp-broadcast			1.1			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				75		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	90	5		7		34
Drip w/ low permeability tarp		5		12		
Non-field soil (structural/post-harvest)		2	2.9			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 10. 2005 frequency of fumigation methods used (method use fractions) in the Ventura nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast	1					
Shallow injection w/ low permeability tarp-broadcast		67	100.0			
Shallow injection w/ high permeability tarp or no tarp-bed						
Shallow injection w/ low permeability tarp-bed						
Shallow injection w/ water treatments				25		
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast	4					
Deep injection w/ low permeability tarp-broadcast						
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler						33
Sprinkler w/ water treatments				20		
Flood						33
Drip w/ high permeability tarp or no tarp	95			5		34
Drip w/ low permeability tarp		33		50		
Non-field soil (structural/post-harvest)						

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 11. 2005 frequency of fumigation methods used (method use fractions) in the South Coast nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast						
Shallow injection w/ low permeability tarp-broadcast		40	60.9			
Shallow injection w/ high permeability tarp or no tarp-bed				25		
Shallow injection w/ low permeability tarp-bed		36	30.8			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast	2					
Deep injection w/ low permeability tarp-broadcast			0.5			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				20		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	98			5		34
Drip w/ low permeability tarp		24		50		
Non-field soil (structural/post-harvest)			7.8			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 12. 2006 frequency of fumigation methods used (method use fractions) in the Sacramento Metro nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast	3					
Shallow injection w/ low permeability tarp-broadcast		56.0	11.3			
Shallow injection w/ high permeability tarp or no tarp-bed				21		
Shallow injection w/ low permeability tarp-bed		33.0	6.3			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap				15		
Deep injection w/ high permeability tarp or no tarp-broadcast	95					
Deep injection w/ low permeability tarp-broadcast			11.4			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				45		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	2			9		34
Drip w/ low permeability tarp		11.0		10		
Non-field soil (structural/post-harvest)			70.9			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 13. 2006 frequency of fumigation methods used (method use fractions) in the San Joaquin Valley nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast	2					
Shallow injection w/ low permeability tarp-broadcast		97.0	79.5			
Shallow injection w/ high permeability tarp or no tarp-bed				21		
Shallow injection w/ low permeability tarp-bed			0.6			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap				20		
Deep injection w/ high permeability tarp or no tarp-broadcast	97	1.0				
Deep injection w/ low permeability tarp-broadcast		1.0	16.3			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				35		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	1			14		34
Drip w/ low permeability tarp				10		
Non-field soil (structural/post-harvest)		1.0	3.7			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 14. 2006 frequency of fumigation methods used (method use fractions) in the Southeast Desert nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast						
Shallow injection w/ low permeability tarp-broadcast		88.0	77.1			
Shallow injection w/ high permeability tarp or no tarp-bed				6		
Shallow injection w/ low permeability tarp-bed			18.9			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast	16					
Deep injection w/ low permeability tarp-broadcast		0.2	1.1			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				75		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	84	5.0		7		34
Drip w/ low permeability tarp		5.0		12		
Non-field soil (structural/post-harvest)		2.0	2.9			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 15. 2006 frequency of fumigation methods used (method use fractions) in the Ventura nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast						
Shallow injection w/ low permeability tarp-broadcast		67.0	100.0			
Shallow injection w/ high permeability tarp or no tarp-bed						
Shallow injection w/ low permeability tarp-bed						
Shallow injection w/ water treatments				25		
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast	7					
Deep injection w/ low permeability tarp-broadcast						
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler						33
Sprinkler w/ water treatments				20		
Flood						33
Drip w/ high permeability tarp or no tarp	93			5		34
Drip w/ low permeability tarp		33.0		50		
Non-field soil (structural/post-harvest)						

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 16. 2006 frequency of fumigation methods used (method use fractions) in the South Coast nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast						
Shallow injection w/ low permeability tarp-broadcast		40.0	60.9			
Shallow injection w/ high permeability tarp or no tarp-bed				25		
Shallow injection w/ low permeability tarp-bed		36.0	30.8			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast						
Deep injection w/ low permeability tarp-broadcast			0.5			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				20		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	100			5		34
Drip w/ low permeability tarp		24.0		50		
Non-field soil (structural/post-harvest)			7.8			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 17. 2007 frequency of fumigation methods used (method use fractions) in the Sacramento Metro nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast	0.0					
Shallow injection w/ low permeability tarp-broadcast		56.0	11.3			
Shallow injection w/ high permeability tarp or no tarp-bed				21		
Shallow injection w/ low permeability tarp-bed		33.0	6.3			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap				15		
Deep injection w/ high permeability tarp or no tarp-broadcast	99.9					
Deep injection w/ low permeability tarp-broadcast			11.4			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				45		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	0.1			9		34
Drip w/ low permeability tarp		11.0		10		
Non-field soil (structural/post-harvest)			70.9			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 18. 2007 frequency of fumigation methods used (method use fractions) in the San Joaquin Valley nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast	0.3					
Shallow injection w/ low permeability tarp-broadcast		97.0	79.5			
Shallow injection w/ high permeability tarp or no tarp-bed				21		
Shallow injection w/ low permeability tarp-bed			0.6			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap				20		
Deep injection w/ high permeability tarp or no tarp-broadcast	99.3	1.0				
Deep injection w/ low permeability tarp-broadcast		1.0	16.3			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				35		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	0.4			14		34
Drip w/ low permeability tarp				10		
Non-field soil (structural/post-harvest)		1.0	3.7			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 19. 2007 frequency of fumigation methods used (method use fractions) in the Southeast Desert nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast	0.4					
Shallow injection w/ low permeability tarp-broadcast		88.0	77.1			
Shallow injection w/ high permeability tarp or no tarp-bed				6		
Shallow injection w/ low permeability tarp-bed			18.9			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast	0.0					
Deep injection w/ low permeability tarp-broadcast		0.2	1.1			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				75		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	99.6	5.0		7		34
Drip w/ low permeability tarp		5.0		12		
Non-field soil (structural/post-harvest)		2.0	2.9			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 20. 2007 frequency of fumigation methods used (method use fractions) in the Ventura nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast						
Shallow injection w/ low permeability tarp-broadcast		67.0	100.0			
Shallow injection w/ high permeability tarp or no tarp-bed						
Shallow injection w/ low permeability tarp-bed						
Shallow injection w/ water treatments				25		
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast	5.0					
Deep injection w/ low permeability tarp-broadcast						
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler						33
Sprinkler w/ water treatments				20		
Flood						33
Drip w/ high permeability tarp or no tarp	94.9			5		34
Drip w/ low permeability tarp		33.0		50		
Non-field soil (structural/post-harvest)						

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 21. 2007 frequency of fumigation methods used (method use fractions) in the South Coast nonattainment area.

Fumigation Method ¹	% of Amount Applied					
	1,3-D	Chloropicrin	Methyl Bromide	Metam ²	Dazomet	Na Tetrathio-carbonate ³
Shallow injection w/ high permeability tarp or no tarp-broadcast						
Shallow injection w/ low permeability tarp-broadcast		40.0	60.9			
Shallow injection w/ high permeability tarp or no tarp-bed				25		
Shallow injection w/ low permeability tarp-bed		36.0	30.8			
Shallow injection w/ water treatments						
Shallow injection w/ soil cap						
Deep injection w/ high permeability tarp or no tarp-broadcast						
Deep injection w/ low permeability tarp-broadcast			0.5			
Deep injection w/ water treatments						
Rotovate/rototill					100	
Sprinkler				20		33
Sprinkler w/ water treatments						
Flood						33
Drip w/ high permeability tarp or no tarp	100.0			5		34
Drip w/ low permeability tarp		24.0		50		
Non-field soil (structural/post-harvest)			7.8			

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 22. Application Method Adjustment Factors for 2008.

Fumigation Method	Code	AMAF						
		1,3-D	Chloro-picrin	Methyl Bromide	Metam Na	Metam K	Dazomet	Na Tetrathio-carbonate
Chemigation (Drip System)/Tarpaulin	1209	19	12					
Chemigation (Drip)	1601							10
Chemigation (mini-sprinkler)	1602							10
Day Chemigation (Drip System) Nontarpaulin	1408				9	9		
Day Chemigation (Drip System) Tarpaulin	1407				9	9		
Day Drench	1413				100	100		
Day Nontarpaulin/Shallow/Broadcast or Bed /Two Water Treatments	1405				28			
Day Nontarpaulin/Shallow/Broadcast or Bed/Three Water Treatments	1406				21	21		
Day Power Mulcher	1410				14	14		
Day Rotary Tiller	1409					14		
Day Soil Capping	1411				14	14		
Day Sprinkler/Broadcast or Bed/One Water Treatment	1401				77	77		
Day Sprinkler/Broadcast or Bed/Three Water Treatments	1403				21	21		
Day Sprinkler/Broadcast or Bed/Two Water Treatments	1402				28	28		
Day or Night Flood	1412				77			
Night 4 A.M. Start/Sprinkler/Broadcast or Bed/Two Water treatments	1472				35			
Night Nontarpaulin/Shallow/	1455				13	13		

Broadcast or Bed/Two Water Treatments								
Night Sprinkler/Broadcast or Bed/Two Water Treatments	1452				77			
Nontarpaulin/Deep/Broadcast or Bed	1206	26	64					
Other label method - Methyl Bromide	1190		100	100				
Tarpaulin/Deep/Bed	1208	26						
Tarpaulin/Deep/Broadcast	1207	26						
Tarpaulin/Shallow/Bed	1106							10
Tarpaulin/Deep/Broadcast	1107			48				
Tarpaulin/Shallow/Broadcast – Nobel Plow	1103		44	48				

¹Fumigation methods are described in detail in the memo Barry et al., 2007.

²DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

³DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 23. 2008 frequency of fumigation methods used (method use fractions) in the Sacramento Metro nonattainment area.

Fumigation Method	Code	% of Amount Applied						
		1,3-D	Chloro-picrin	Methyl Bromide	Metam Na	Metam K	Dazomet	Na Tetrathio-carbonate
Chemigation (Drip System)/Tarpaulin	1209	3.0	9.6					
Day Chemigation (Drip System) Nontarpaulin	1408					16.5		
Day Chemigation (Drip System) Tarpaulin	1407				83.2			
Day Rotary Tiller	1409				16.8	83.5		
Nontarpaulin/Deep/Broadcast or Bed	1206	97.0	55.7					
Tarpaulin/Deep/Broadcast	1107			74.8				
Tarpaulin/Shallow/Broadcast – Nobel Plow	1103		34.8	25.2				
Chemigation (Drip System)/Tarpaulin	1209	3.0	9.6					

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 24. 2008 frequency of fumigation methods used (method use fractions) in the San Joaquin Valley nonattainment area.

Fumigation Method	Code	% of Amount Applied						
		1,3-D	Chloro-picrin	Methyl Bromide	Metam Na	Metam K	Dazomet	Na Tetrathio-carbonate
Chemigation (Drip)	1601							97.1
Chemigation (mini-sprinkler)	1602							2.9
Day Chemigation (Drip System) Nontarpaulin	1408				1.3	10.5		
Day Chemigation (Drip System) Tarpaulin	1407				0.1	0.2		
Day Drench	1413					5.1		
Day Nontarpaulin/Shallow/Broadcast or Bed /Two Water Treatments	1405				0.2			
Day Nontarpaulin/Shallow/Broadcast or Bed/Three Water Treatments	1406				9.4	2.4		
Day Power Mulcher	1410				3.5	42.5		
Day Rotary Tiller	1409					5.2		
Day Soil Capping	1411				3.0	1.3		
Day Sprinkler/Broadcast or Bed/One Water Treatment	1401				1.4	7.6		
Day Sprinkler/Broadcast or Bed/Three Water Treatments	1403				14.3	0.7		
Day Sprinkler/Broadcast or Bed/Two Water Treatments	1402				7.7	7.1		
Day or Night Flood	1412							
Night 4 A.M. Start/Sprinkler/Broadcast or Bed/Two Water treatments	1472							
Night Nontarpaulin/Shallow/Broadcast or Bed/Two Water Treatments	1455				58.7	17.4		

Night Sprinkler/Broadcast or Bed/Two Water Treatments	1452				0.3			
Nontarpaulin/Deep/Broadcast or Bed	1206	98.0	19.5					
Other label method - Methyl Bromide	1190		0.4	0.3				
Tarpaulin/Deep/Bed	1208	1.2						
Tarpaulin/Deep/Broadcast	1207	0.9						
Tarpaulin/Shallow/Broadcast – Nobel Plow	1103		80.1	99.7				

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 25. 2008 frequency of fumigation methods used (method use fractions) in the Southeast Desert nonattainment area.

Fumigation Method	Code	% of Amount Applied						
		1,3-D	Chloro-picrin	Methyl Bromide	Metam Na	Metam K	Dazomet	Na Tetrathio-carbonate
Chemigation (Drip System)/Tarpaulin	1209	88.3	100.0					
Day Chemigation (Drip System) Nontarpaulin	1408				57.1			
Day Sprinkler/Broadcast or Bed/Three Water Treatments	1403				34.2			
Day Sprinkler/Broadcast or Bed/Two Water Treatments	1402				1.3			
Night 4 A.M. Start/Sprinkler/Broadcast or Bed/Two Water treatments	1472				7.4			
Nontarpaulin/Deep/Broadcast or Bed	1206	11.7						
Tarpaulin/Deep/Broadcast	1107			37.4				
Tarpaulin/Shallow/Bed	1106							100.0

¹ Fumigation methods are described in detail in the memo Barry et al., 2007.

² DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

³ DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 26. 2008 frequency of fumigation methods used (method use fractions) in the Ventura nonattainment area.

Fumigation Method	Code	% of Amount Applied						
		1,3-D	Chloro-picrin	Methyl Bromide	Metam Na	Metam K	Dazomet	Na Tetrathio-carbonate
Chemigation (Drip System)/Tarpaulin	1209	99.5	89.1					
Chemigation (mini-sprinkler)	1602							100.0
Day Chemigation (Drip System) Nontarpaulin	1408				0.2			
Day Chemigation (Drip System) Tarpaulin	1407				99.8	100.0		
Nontarpaulin/Deep/Broadcast or Bed	1206	0.5	0.1					
Tarpaulin/Shallow/Broadcast – Nobel Plow	1103		10.8	100.0				

¹Fumigation methods are described in detail in the memo Barry et al., 2007.

²DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

³DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

Table A1 - 27. 2008 frequency of fumigation methods used (method use fractions) in the South Coast nonattainment area.

Fumigation Method	Code	% of Amount Applied						
		1,3-D	Chloro-picrin	Methyl Bromide	Metam Na	Metam K	Dazomet	Na Tetrathio-carbonate
Chemigation (Drip System)/Tarpaulin	1209	100.0	63.4					
Other label method - Methyl Bromide	1190		0.9	2.3				
Tarpaulin/Deep/Broadcast	1107		0.5	4.8				
Tarpaulin/Shallow/Broadcast – Nobel Plow	1103		35.2	92.9				

¹Fumigation methods are described in detail in the memo Barry et al., 2007.

²DPR assumes 100% conversion of metam to MITC and percentages are relative to the amount of MITC applied.

³DPR assumes 100% conversion of sodium (Na) tetrathiocarbonate to carbon disulfide and percentages are relative to the amount of carbon disulfide applied.

California Department of Pesticide Regulation
Volatile Organic Compound Regulations
Field Fumigation Methods (FFM), FFM Code for Pesticide Use Reporting, and Emission ratings

Regulation Section	Field Fumigation Method	FFM Code	Emission Rating (%)
6447.3	Methyl Bromide Fumigation Methods (With or without chloropicrin)	1100 series	
6447.3(a)(1)	Nontarpaulin/Shallow/Bed	1101†	100*
6447.3(a)(2)	Nontarpaulin/Deep/Broadcast	1102	74*
6447.3(a)(3)	Tarpaulin/Shallow/Broadcast – Nobel Plow	1103	48
	Tarpaulin/Shallow/Broadcast – Nobel Plow – Strip	1104	74*
	Tarpaulin/Shallow/Broadcast – Closing shoes and compaction roller	1105†	100*
6447.3(a)(4)	Tarpaulin/Shallow/Bed	1106	100*
6447.3(a)(5)	Tarpaulin/Deep/Broadcast	1107	48
	Tarpaulin/Deep/Broadcast – Strip	1108	74*
6447.3(a)(6)	Drip System - Hot Gas	1109	100*
6447.3(a)(3)	Tarpaulin/Shallow/Broadcast – Nobel Plow–with tarp eligible for 60% credit	1143	48
	Tarpaulin/Shallow/Broadcast – Nobel Plow – Strip –with tarp eligible for 60% credit	1144	74*
	Tarpaulin/Shallow/Broadcast – Closing shoes and compaction roller–with tarp eligible for 60% credit	1145	100*
6447.3(a)(4)	Tarpaulin/Shallow/Bed –with tarp eligible for 60% credit	1146	100*
6447.3(a)(5)	Tarpaulin/Deep/Broadcast –with tarp eligible for 60% credit	1147	48
	Tarpaulin/Deep/Broadcast-Strip–with tarp eligible for 60% credit	1148	74*
6447.3(a)(6)	Drip System - Hot Gas –with tarp eligible for 60% credit	1149	100*
	Other label method for Methyl Bromide (with or without chloropicrin)**	1190	---
		-	-
6448.1	1,3-Dichloropropene Fumigation Methods (with or without chloropicrin)	1200 series	
6448.1(d)(1)	Nontarpaulin/Shallow/Broadcast or Bed	1201	65*
6448.1(d)(2)	Tarpaulin/Shallow/Broadcast	1202	65*
	Tarpaulin/Shallow/Bed	1203	65*
6448.1(d)(3)	Nontarpaulin/Shallow/Broadcast /Three Water Treatments	1204	44
6448.1(d)(4)	Tarpaulin/Shallow/Bed/Three Water Treatment	1205	44
6448.1(d)(5)	Nontarpaulin/Deep/Broadcast	1206	26
6448.1(d)(6)	Tarpaulin/Deep/Broadcast	1207	26
	Tarpaulin/Deep/Bed	1208	26
6448.1(d)(7)	Chemigation (Drip System)/Tarpaulin	1209	29
6448.1(d)(5)	Nontarpaulin/Deep/Strip	1210	26
6448.1(d)(5)	Nontarpaulin/Deep/GPS-targeted	1211	26
6448.1(d)(2)	Tarpaulin/Shallow/Broadcast –with tarp eligible for 60% credit	1242	10
	Tarpaulin/Shallow/Bed–with tarp eligible for 60% credit	1243	65*
6448.1(d)(4)	Tarpaulin/Shallow/Bed/Three Water Treatment –with tarp eligible for 60%	1245	44
6448.1(d)(6)	Tarpaulin/Deep/Broadcast –with tarp eligible for 60% credit	1247	10
	Tarpaulin/Deep/Bed–with tarp eligible for 60% credit	1248	26
6448.1(d)(6)	Tarpaulin/Deep/Broadcast-strip –with tarp eligible for 60% credit	1249	21
6448.1(d)(7)	Chemigation (Drip System)/Tarpaulin –with tarp eligible for 60% credit	1259	29
	Other label method for 1,3-Dichloropropene (with or without chloropicrin)**	1290	---
6449.1	Chloropicrin-Fumigation Methods	1100-1300 series	
6447.3(a)(1)	Nontarpaulin/Shallow/Bed	1101†	64*

6447.3(a)(2)	Nontarpaulin/Deep/Broadcast	1102	64*
6447.3(a)(3)	Tarpaulin/Shallow/Broadcast – Nobel Plow	1103	44
	Tarpaulin/Shallow/Broadcast – Nobel Plow – Strip	1104	64*
	Tarpaulin/Shallow/Broadcast – Closing shoes and compaction roller	1105†	64*
6447.3(a)(4)	Tarpaulin/Shallow/Bed	1106	64*
6447.3(a)(5)	Tarpaulin/Deep/Broadcast	1107	44
	Tarpaulin/Deep/Broadcast – Strip	1108	64*
6447.3(a)(3)	Tarpaulin/Shallow/Broadcast – Nobel Plow–with tarp eligible for 60% credit	1143	7
	Tarpaulin/Shallow/Broadcast – Nobel Plow – Strip –with tarp eligible for 60% credit	1144	7
	Tarpaulin/Shallow/Broadcast – Closing shoes and compaction roller–with tarp eligible for 60% credit	1145†	7
6447.3(a)(4)	Tarpaulin/Shallow/Bed –with tarp eligible for 60% credit	1146	7
6447.3(a)(5)	Tarpaulin/Deep/Broadcast –with tarp eligible for 60% credit	1147	7
	Tarpaulin/Deep/Broadcast – Strip –with tarp eligible for 60% credit	1148	7
6448.1(d)(1)	Nontarpaulin/Shallow/Broadcast or Bed	1201	64*
6448.1(d)(2)	Tarpaulin/Shallow/Broadcast	1202	44
	Tarpaulin/Shallow/Bed	1203	64*
6448.1(d)(3)	Nontarpaulin/Shallow/Broadcast /Three Water Treatments	1204	43
6448.1(d)(4)	Tarpaulin/Shallow/Bed/Three Water Treatment	1205	43
6448.1(d)(5)	Nontarpaulin/Deep/Broadcast or Bed	1206	64*
6448.1(d)(6)	Tarpaulin/Deep/Broadcast	1207	44
	Tarpaulin/Deep/Bed	1208	44
6448.1(d)(7)	Chemigation (Drip System)/Tarpaulin	1209	12
6448.1(d)(5)	Nontarpaulin/Deep/Broadcast/Strip	1210	64
6448.1(d)(5)	Nontarpaulin/Deep/Broadcast/GPS-targeted	1211	64
6448.1(d)(2)	Tarpaulin/Shallow/Broadcast –with tarp eligible for 60% credit	1242	7
	Tarpaulin/Shallow/Bed–with tarp eligible for 60% credit	1243	7
6448.1(d)(4)	Tarpaulin/Shallow/Bed/Three Water Treatment –with tarp eligible for 60%	1245	7
6448.1(d)(6)	Tarpaulin/Deep/Broadcast –with tarp eligible for 60% credit	1247	7
	Tarpaulin/Deep/Bed–with tarp eligible for 60% credit	1248	7
6448.1(d)(6)	Tarpaulin/Deep/Broadcast-strip –with tarp eligible for 60% credit	1249	7
6448.1(d)(7)	Chemigation (Drip System)/Tarpaulin –with tarp eligible for 60% credit	1259	7
	Other label method for Chloropicrin**	1390	---
Regulation Section	Field Fumigation Method	FFM Code	Emission Rating (%)
6450.1	Metam-Sodium and Metam-Potassium Fumigation Methods	1400 series	
6450.1(d)(1)	Sprinkler/Broadcast or Bed/One Water Treatment	1401	77*
6450.1(d)(2)	Sprinkler/Broadcast or Bed/Two Water Treatments	1402	28
6450.1(d)(3)	Sprinkler/Broadcast or Bed/Three Water Treatments	1403	21
6450.1(d)(4)	Nontarpaulin/Shallow/Broadcast or Bed/One Water Treatment	1404	77*
6450.1(d)(5)	Nontarpaulin/Shallow/Broadcast or Bed /Two Water Treatments	1405	28
6450.1(d)(6)	Nontarpaulin/Shallow/Broadcast or Bed/Three Water Treatments	1406	21
6450.1(d)(7)	Chemigation (Drip System) Tarpaulin	1407	9
	Chemigation (Drip System) Nontarpaulin	1408	9
6450.1(d)(8)	Rotary Tiller	1409	14
	Power Mulcher	1410	14
	Soil Capping	1411	14
6450.1(d)(9)	Flood	1412	77*
6450.1(d)(12)	Drench	1413	100

6450.1(d)(7)	Chemigation (Drip System) Tarpaulin –with tarp eligible for 30%	1447	9
6450.1(d)(2)	Night 1A.M. Start/Sprinkler/Broadcast or Bed/Two Water Treatments	1452	77*
6450.1(d)(10)	1A.M. Start/Nontarpaulin/Shallow/Broadcast or Bed/Two Water Treatments	1455	13
6450.1(d)(11)	4A.M. Start/sprinkler/Broadcast or Bed/Two Water Treatments	1472	35
	Other label method for Metam-Sodium and Metam-Potassium**	1490	---
6450.2	Dazomet Fumigation Methods	1500 series	
	Soil incorporation	1501	17
	Surface application – water incorporation	1502	17
	Other label method for Dazomet**	1590	---
6451.1	Sodium Tetrathiocarbonate Fumigation Methods	1600 series	
	Chemigation (Drip)	1601	10
	Chemigation (mini-sprinkler)	1602	10
	Chemigation (flood, basin)	1603	10
	Chemigation (furrow, border)	1604	10
	Chemigation (foggers, jets, misters, other)	1605	10
	Other label method for Sodium Tetrathiocarbonate**	1690	---
6446.1	Methyl Iodide Fumigation Methods***	1700 Series	
	Day Tarpaulin/Shallow/Broadcast	1701	100
	Day Tarpaulin/Shallow/Bed	1702	100
	Day Tarpaulin/Deep/Broadcast	1703	100
	Day Chemigation (Drip)/Tarpaulin	1704	100
	Day Auger-Probe	1705	100

*Method prohibited within the San Joaquin Valley, Southeast Desert, and Ventura nonattainment areas during May 1 – October 31.

**For use only outside of the May 1 – October 31 time period: or areas outside of the nonattainment areas; or for exempted applications (such as described in Sections 6447, 6448, 6449, 6450, and 6451)

***Methyl Iodide is no longer registered. Codes are for applications that were made in 2011 when the chemical was registered for use.

†Method no longer allowed. Codes are for applications that were made before 2015 when the method was allowed.

APPENDIX 2

SUMMARY OF UNADJUSTED PESTICIDE VOC EMISSIONS

APPENDIX 2 – SUMMARY OF UNADJUSTED PESTICIDE VOC EMISSIONS

1. Sacramento Metropolitan Area - NAA 1

TABLE A2-1a: Top ten primary active ingredients contributing to *unadjusted 2014* May–October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 1 May – Oct 2014 emissions
1,3-DICHLOROPROPENE	0.752	38.32
ABAMECTIN	0.120	6.09
PROPANIL	0.094	4.80
POTASSIUM N-METHYLDITHIOCARBAMATE	0.075	3.82
CHLORPYRIFOS	0.059	2.98
TRIFLURALIN	0.054	2.76
BIFENTHRIN	0.050	2.53
HEXYTHIAZOX	0.042	2.14
OXYFLUORFEN	0.040	2.03
THIOBENCARB	0.040	2.02

TABLE A2-1b: Top ten primary active ingredients contributing to *unadjusted 2015* May–October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 1 May – Oct 2015 emissions
1,3-DICHLOROPROPENE	0.104	7.76
METHYL BROMIDE	0.099	7.38
PROPANIL	0.092	6.84
ABAMECTIN	0.082	6.08
PERMETHRIN	0.063	4.68
BIFENTHRIN	0.054	3.99
THIOBENCARB	0.048	3.60
OXYFLUORFEN	0.048	3.57
CHLORPYRIFOS	0.045	3.33
CHLOROPICRIN	0.042	3.15

TABLE A2-1c: Top ten primary active ingredients contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 1 May – Oct 2016 emissions
METHYL BROMIDE	0.126	8.52
PROPANIL	0.122	8.29
1,3-DICHLOROPROPENE	0.080	5.44
ABAMECTIN	0.076	5.12
THIOBENCARB	0.074	5.01
PENOXULAM	0.054	3.67
TRIFLURALIN	0.054	3.63
CHLORPYRIFOS	0.053	3.57
OXYFLUORFEN	0.045	3.06
HEXYTHIAZOX	0.043	2.90

TABLE A2-1d: Top ten primary active ingredients contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the Sacramento Metro NAA (1).

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 1 May – Oct 2017 emissions
METHYL BROMIDE	0.271	17.61
DELTA METHRIN	0.082	5.33
ETHALFLURALIN	0.078	5.08
TRIFLURALIN	0.074	4.79
THIOBENCARB	0.071	4.59
ABAMECTIN	0.071	4.59
BIFENTHRIN	0.053	3.42
PROPANIL	0.051	3.30
1,3-DICHLOROPROPENE	0.043	2.76
OXYFLUORFEN	0.041	2.66

TABLE A2-1e: Top ten pesticide application sites contributing to *unadjusted 2014* May–October (ozone season) VOC emissions in the Sacramento Metro NAA (1).

Application Site	Emissions (tons/day)	Percent of all NAA 1 May – Oct 2014 emissions
ALMOND	0.668	34.02
RICE (ALL OR UNSPECIFIED)	0.276	14.08
WALNUT (ENGLISH, PERSIAN)	0.168	8.56
GRAPES, WINE	0.149	7.58
TOMATOES, FOR PROCESSING/CANNING	0.139	7.09
UNCULTIVATED AGRICULTURAL AREAS*	0.112	5.69
SOIL APPLICATION, PREPLANT-OUTDOOR*	0.097	4.94
STRUCTURAL PEST CONTROL	0.088	4.47
LANDSCAPE MAINTENANCE	0.045	2.29
RIGHTS OF WAY	0.039	1.98

* Treatment of an area prior to a crop being planted.

TABLE A2-1f: Top ten pesticide application sites contributing to *unadjusted 2015* May–October (ozone season) VOC emissions in the Sacramento Metro NAA (1).

Application Site	Emissions (tons/day)	Percent of all NAA 1 May – Oct 2015 emissions
RICE (ALL OR UNSPECIFIED)	0.271	20.17
WALNUT (ENGLISH, PERSIAN)	0.142	10.55
UNCULTIVATED AGRICULTURAL AREAS*	0.135	10.04
TOMATOES, FOR PROCESSING/CANNING	0.132	9.81
GRAPES, WINE	0.126	9.39
STRUCTURAL PEST CONTROL	0.118	8.79
ALMOND	0.100	7.45
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.086	6.40
RIGHTS OF WAY	0.039	2.88
LANDSCAPE MAINTENANCE	0.033	2.46

* Treatment of an area prior to a crop being planted.

TABLE A2-1g: Top ten pesticide application sites contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Application Site	Emissions (tons/day)	Percent of all NAA 1 May – Oct 2016 emissions
RICE (ALL OR UNSPECIFIED)	0.354	24.00
ALMOND	0.148	10.02
WALNUT (ENGLISH, PERSIAN)	0.140	9.48
GRAPES, WINE	0.132	8.91
TOMATOES, FOR PROCESSING/CANNING	0.119	8.03
STRUCTURAL PEST CONTROL	0.117	7.94
UNCULTIVATED AGRICULTURAL AREAS*	0.064	4.36
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.054	3.64
RIGHTS OF WAY	0.044	2.97
LANDSCAPE MAINTENANCE	0.040	2.73

* Treatment of an area prior to determining a crop being planted.

TABLE A2-1h: Top ten pesticide application sites contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Application Site	Emissions (tons/day)	Percent of all NAA 1 May – Oct 2017 emissions
RICE (ALL OR UNSPECIFIED)	0.205	13.31
UNCULTIVATED AGRICULTURAL AREAS*	0.180	11.70
WALNUT (ENGLISH, PERSIAN)	0.162	10.50
STRUCTURAL PEST CONTROL	0.147	9.57
SOIL APPLICATION, PREPLANT-OUTDOOR*	0.134	8.67
TOMATOES, FOR PROCESSING/CANNING	0.122	7.89
GRAPES, WINE	0.117	7.58
ALMOND	0.111	7.20
SUNFLOWER, GENERAL	0.075	4.90
LANDSCAPE MAINTENANCE	0.050	3.23

* Treatment of an area prior to a crop being planted.

TABLE A2-1i: *Unadjusted 2014* May–October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**, by ARB emission inventory classification (tons per day).

NAA 1 - 2014	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.002	0.000
NON-METHYL BROMIDE EMISSIONS	1.871	0.088

TABLE A2-1j: *Unadjusted 2015* May–October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**, by ARB emission inventory classification (tons per day).

NAA 1 - 2015	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.074	0.000
NON-METHYL BROMIDE EMISSIONS	1.124	0.118

TABLE A2-1k: Unadjusted 2016 May–October (ozone season) VOC emissions in the Sacramento Metro NAA (1), by ARB emission inventory classification (tons per day).

NAA 1 - 2016	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.097	0.000
NON-METHYL BROMIDE EMISSIONS	1.233	0.117

TABLE A2-1l: Unadjusted 2017 May–October (ozone season) VOC emissions in the Sacramento Metro NAA (1), by ARB emission inventory classification (tons per day).

NAA 1 - 2017	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.217	0.000
NON-METHYL BROMIDE EMISSIONS	1.122	0.147

2. San Joaquin Valley - NAA 2

TABLE A2-2a: Top ten primary active ingredients contributing to unadjusted 2014 May–October (ozone season) VOC emissions in the San Joaquin Valley NAA (2).

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 2 May – Oct 2014 emissions
1,3-DICHLOROPROPENE	6.972	26.35
POTASSIUM N-METHYLDITHIOCARBAMATE	3.631	13.73
ABAMECTIN	1.498	5.66
METHYL BROMIDE	1.491	5.63
CHLORPYRIFOS	1.404	5.31
METAM-SODIUM	1.362	5.15
HEXYTHIAZOX	0.911	3.45
FENPYROXIMATE	0.879	3.32
GLYPHOSATE, ISOPROPYLAMINE SALT	0.808	3.06
OXYFLUORFEN	0.765	2.89

TABLE A2-2b: Top ten primary active ingredients contributing to unadjusted 2015 May–October (ozone season) VOC emissions in the San Joaquin Valley NAA (2).

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 2 May – Oct 2015 emissions
1,3-DICHLOROPROPENE	8.998	33.90
POTASSIUM N-METHYLDITHIOCARBAMATE	3.290	12.40
METAM-SODIUM	1.599	6.02
METHYL BROMIDE	1.289	4.86
HEXYTHIAZOX	0.859	3.24
FENPYROXIMATE	0.799	3.01
CHLOROPICRIN	0.754	2.84
ABAMECTIN	0.740	2.79
CHLORPYRIFOS	0.715	2.69
BIFENTHRIN	0.602	2.27

TABLE A2-2c: Top ten primary active ingredients contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 2 May – Oct 2016 emissions
1,3-DICHLOROPROPENE	8.612	32.86
POTASSIUM N-METHYLDITHIOCARBAMATE	2.939	11.21
METAM-SODIUM	1.564	5.97
METHYL BROMIDE	1.204	4.60
ABAMECTIN	0.758	2.89
CHLORPYRIFOS	0.754	2.88
GLYPHOSATE, ISOPROPYLAMINE SALT	0.697	2.66
HEXYTHIAZOX	0.687	2.62
CHLOROPICRIN	0.663	2.53
BIFENTHRIN	0.656	2.50

TABLE A2-2d: Top ten primary active ingredients contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 2 May – Oct 2017 emissions
1,3-DICHLOROPROPENE	7.809	28.48
POTASSIUM N-METHYLDITHIOCARBAMATE	3.440	12.54
METAM-SODIUM	1.678	6.12
METHYL BROMIDE	1.107	4.04
ABAMECTIN	1.001	3.65
GLYPHOSATE, ISOPROPYLAMINE SALT	0.913	3.33
CHLORPYRIFOS	0.852	3.11
BIFENTHRIN	0.723	2.63
HEXYTHIAZOX	0.645	2.35
GLUFOSINATE-AMMONIUM	0.637	2.32

TABLE A2-2e: Top ten pesticide application sites contributing to *unadjusted 2014* May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Application Site	Emissions (tons/day)	Percent of all NAA 2 May – Oct 2014 emissions
ALMOND	5.408	20.44
CARROTS, GENERAL	3.926	14.84
SOIL APPLICATION, PREPLANT-OUTDOOR*	3.875	14.65
COTTON, GENERAL	1.277	4.83
TOMATOES, FOR PROCESSING/CANNING	1.147	4.33
ORANGE (ALL OR UNSPECIFIED)	0.963	3.64
GRAPES	0.906	3.42
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.852	3.22
N-OUTDR GRWN TRNSPLNT/PRPGTV MTRL	0.841	3.18
WALNUT (ENGLISH, PERSIAN)	0.837	3.16

* Treatment of an area prior to a crop being planted.

TABLE A2-2g: Top ten pesticide application sites contributing to *unadjusted 2015* May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Application Site	Emissions (tons/day)	Percent of all NAA 2 May – Oct 2015 emissions
ALMOND	5.866	22.10
SOIL APPLICATION, PREPLANT-OUTDOOR*	4.529	17.06
CARROTS, GENERAL	3.918	14.76
WALNUT (ENGLISH, PERSIAN)	1.049	3.95
COTTON, GENERAL	1.029	3.88
TOMATOES, FOR PROCESSING/CANNING	0.977	3.68
GRAPES	0.946	3.56
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.872	3.29
PISTACHIO	0.653	2.46
ORANGE (ALL OR UNSPECIFIED)	0.651	2.45

* Treatment of an area prior to a crop being planted.

TABLE A2-2h: Top ten pesticide application sites contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Application Site	Emissions (tons/day)	Percent of all NAA 2 May – Oct 2016 emissions
ALMOND	6.169	23.54
CARROTS, GENERAL	4.374	16.69
SOIL APPLICATION, PREPLANT-OUTDOOR*	2.463	9.40
COTTON, GENERAL	1.283	4.90
N-OUTDR CONTAINER/FIELD GRWN PLANTS	1.057	4.03
TOMATOES, FOR PROCESSING/CANNING	0.998	3.81
WALNUT (ENGLISH, PERSIAN)	0.842	3.21
ORANGE (ALL OR UNSPECIFIED)	0.802	3.06
PISTACHIO	0.802	3.06
TANGERINE	0.794	3.03

* Treatment of an area prior to a crop being planted.

TABLE A2-2f: Top ten pesticide application sites contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Application Site	Emissions (tons/day)	Percent of all NAA 2 May – Oct 2017 emissions
ALMOND	6.967	25.40
CARROTS, GENERAL	3.939	14.36
SOIL APPLICATION, PREPLANT-OUTDOOR*	2.045	7.46
COTTON, GENERAL	2.042	7.45
GRAPES	1.050	3.83
PISTACHIO	0.974	3.55
WALNUT (ENGLISH, PERSIAN)	0.817	2.98
ORANGE (ALL OR UNSPECIFIED)	0.768	2.80
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.717	2.61
GRAPES, WINE	0.560	2.04

* Treatment of an area prior to a crop being planted.

TABLE A2-2i: Unadjusted 2014 May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**, by ARB emission inventory classification (tpd).

NAA 2 - 2014	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	1.278	<0.001
NON-METHYL BROMIDE EMISSIONS	24.748	0.216

TABLE A2-2k: Unadjusted 2015 May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**, by ARB emission inventory classification (tpd).

NAA 2 - 2015	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	1.130	0.000
NON-METHYL BROMIDE EMISSIONS	25.026	0.228

TABLE A2-2l: Unadjusted 2016 May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**, by ARB emission inventory classification (tpd).

NAA 2 - 2016	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	1.086	0.000
NON-METHYL BROMIDE EMISSIONS	24.760	0.242

TABLE A2-2j: Unadjusted 2017 May–October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**, by ARB emission inventory classification (tpd).

NAA 2 - 2017	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.952	0.000
NON-METHYL BROMIDE EMISSIONS	26.110	0.207

3. Southeast Desert - NAA 3

TABLE A2-3a: Top ten primary active ingredients contributing to *unadjusted 2014* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 3 May – Oct 2014 emissions
METAM-SODIUM	0.111	21.59
CHLOROPICRIN	0.109	21.39
METHYL BROMIDE	0.078	15.18
BENSULIDE	0.017	3.39
GLYPHOSATE, ISOPROPYLAMINE SALT	0.016	3.03
CYPERMETHRIN	0.014	2.81
BIFENTHRIN	0.014	2.76
EPTC	0.010	2.04
PERMETHRIN	0.009	1.71
MEFENOXAM	0.009	1.68

TABLE A2-3b: Top ten primary active ingredients contributing to *unadjusted 2015* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 3 May – Oct 2015 emissions
1,3-DICHLOROPROPENE	0.138	22.82
METAM-SODIUM	0.112	18.65
CHLOROPICRIN	0.066	10.95
CYPERMETHRIN	0.025	4.17
BENSULIDE	0.023	3.78
GLYPHOSATE, ISOPROPYLAMINE SALT	0.022	3.57
ACETIC ACID	0.020	3.39
BIFENTHRIN	0.020	3.35
DAZOMET	0.019	3.12
MEFENOXAM	0.010	1.69

TABLE A2-3c: Top ten primary active ingredients contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 3 May – Oct 2016 emissions
METAM-SODIUM	0.146	30.92
CHLOROPICRIN	0.061	12.84
METHYL BROMIDE	0.044	9.33
CYPERMETHRIN	0.017	3.59
BENSULIDE	0.014	3.05
GLYPHOSATE, ISOPROPYLAMINE SALT	0.014	3.02
DAZOMET	0.014	2.95
GLYPHOSATE, POTASSIUM SALT	0.010	2.16
BIFENTHRIN	0.009	1.81
SULFUR	0.008	1.69

TABLE A2-3d: Top ten primary active ingredients contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 3 May – Oct 2017 emissions
METAM-SODIUM	0.176	36.07
METHYL BROMIDE	0.035	7.08
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.032	6.59
GLYPHOSATE, POTASSIUM SALT	0.027	5.61
GLYPHOSATE, ISOPROPYLAMINE SALT	0.024	4.94
BENSULIDE	0.017	3.50
DISODIUM OCTABORATE TETRAHYDRATE	0.016	3.29
DAZOMET	0.014	2.92
CAPRYLIC ACID	0.008	1.68
BIFENTHRIN	0.008	1.61

TABLE A2-3e: Top ten pesticide application sites contributing to *unadjusted 2014* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Application Site	Emissions (tons/day)	Percent of all NAA 3 May – Oct 2014 emissions
PEPPERS (FRUITING VEGETABLE)	0.116	22.73
STRAWBERRY (ALL OR UNSPECIFIED)	0.110	21.54
ORNAMENTAL TURF (ALL OR UNSPECIFIED)	0.075	14.65
STRUCTURAL PEST CONTROL	0.068	13.20
LANDSCAPE MAINTENANCE	0.021	4.16
CARROTS, GENERAL	0.020	3.81
RIGHTS OF WAY	0.015	2.90
UNCULTIVATED AGRICULTURAL AREAS*	0.013	2.59
LETTUCE, LEAF (ALL OR UNSPECIFIED)	0.012	2.36
POTATO (WHITE, IRISH, RED, RUSSET)	0.011	2.15

* Treatment of an area prior to a crop being planted.

TABLE A2-3g: Top ten pesticide application sites contributing to *unadjusted 2015* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Application Site	Emissions (tons/day)	Percent of all NAA 3 May – Oct 2015 emissions
GRAPES	0.141	23.41
PEPPERS (FRUITING VEGETABLE)	0.092	15.20
STRUCTURAL PEST CONTROL	0.089	14.78
STRAWBERRY (ALL OR UNSPECIFIED)	0.067	11.05
RIGHTS OF WAY	0.032	5.27
LANDSCAPE MAINTENANCE	0.022	3.72
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.022	3.64
LEMON	0.021	3.50
WATERMELONS	0.020	3.28
UNCULTIVATED AGRICULTURAL AREAS*	0.015	2.45

* Treatment of an area prior to a crop being planted.

TABLE A2-3h: Top ten pesticide application sites contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Application Site	Emissions (tons/day)	Percent of all NAA 3 May – Oct 2016 emissions
PEPPERS (FRUITING VEGETABLE)	0.115	24.28
STRAWBERRY (ALL OR UNSPECIFIED)	0.061	12.86
STRUCTURAL PEST CONTROL	0.059	12.53
ORNAMENTAL TURF	0.044	9.36
GRAPES	0.039	8.29
RIGHTS OF WAY	0.035	7.34
LANDSCAPE MAINTENANCE	0.022	4.64
CARROTS, GENERAL	0.022	4.56
LEMON	0.014	2.91
LETTUCE, LEAF (ALL OR UNSPECIFIED)	0.008	1.63

* Treatment of an area prior to a crop being planted.

TABLE A2-3f: Top ten pesticide application sites contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Application Site	Emissions (tons/day)	Percent of all NAA 3 May – Oct 2017 emissions
PEPPERS (FRUITING VEGETABLE)	0.171	35.09
STRUCTURAL PEST CONTROL	0.082	16.86
ORNAMENTAL TURF	0.040	8.27
RIGHTS OF WAY	0.035	7.12
LANDSCAPE MAINTENANCE	0.024	4.90
LETTUCE, LEAF (ALL OR UNSPECIFIED)	0.024	4.83
CARROTS, GENERAL	0.020	4.08
UNCULTIVATED AGRICULTURAL AREAS*	0.016	3.24
ALFALFA (FORAGE - FODDER) (HAY)	0.015	2.97
LEMON	0.010	2.06

* Treatment of an area prior to a crop being planted.

TABLE A2-3i: *Unadjusted 2014* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**, by ARB emission inventory classification (tpd).

NAA 3 - 2014	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.076	0.000
NON-METHYL BROMIDE EMISSIONS	0.367	0.068

TABLE A2-3k: *Unadjusted 2015* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**, by ARB emission inventory classification (tpd).

NAA 3 - 2015	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.001	0.000
NON-METHYL BROMIDE EMISSIONS	0.513	0.089

TABLE A2-3l: *Unadjusted 2016* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**, by ARB emission inventory classification (tpd).

NAA 3 - 2016	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.043	0.000
NON-METHYL BROMIDE EMISSIONS	0.369	0.059

TABLE A2-3j: *Unadjusted 2017* May–October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**, by ARB emission inventory classification (tpd).

NAA 3 - 2017	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.034	0.000
NON-METHYL BROMIDE EMISSIONS	0.372	0.082

4. Ventura - NAA 4

TABLE A2-4a: Top ten primary active ingredients contributing to *unadjusted 2014* May–October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 4 May – Oct 2014 emissions
CHLOROPICRIN	5.665	69.62
METHYL BROMIDE	1.155	14.19
METAM-SODIUM	0.383	4.71
1,3-DICHLOROPROPENE	0.361	4.44
POTASSIUM N-METHYLDITHIOCARBAMATE	0.134	1.64
MINERAL OIL	0.054	0.66
CHLORPYRIFOS	0.038	0.47
ABAMECTIN	0.035	0.43
OXAMYL	0.019	0.23
GLYPHOSATE, ISOPROPYLAMINE SALT	0.015	0.18

TABLE A2-4b: Top ten primary active ingredients contributing to *unadjusted 2015* May–October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 4 May – Oct 2015 emissions
CHLOROPICRIN	4.077	52.32
METHYL BROMIDE	1.870	24.00
METAM-SODIUM	0.976	12.52
1,3-DICHLOROPROPENE	0.338	4.34
POTASSIUM N-METHYLDITHIOCARBAMATE	0.071	0.91
MINERAL OIL	0.064	0.82
CHLORPYRIFOS	0.034	0.44
ABAMECTIN	0.027	0.35
CLARIFIED HYDROPHOBIC EXTRACT OF NEEM OIL	0.022	0.28
NOVALURON	0.016	0.21

TABLE A2-4c: Top ten primary active ingredients contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 4 May – Oct 2016 emissions
CHLOROPICRIN	4.922	72.95
METHYL BROMIDE	0.778	11.53
1,3-DICHLOROPROPENE	0.302	4.48
METAM-SODIUM	0.235	3.48
POTASSIUM N-METHYLDITHIOCARBAMATE	0.086	1.27
MINERAL OIL	0.068	1.00
CHLORPYRIFOS	0.033	0.49
ABAMECTIN	0.020	0.30
CLARIFIED HYDROPHOBIC EXTRACT OF NEEM OIL	0.017	0.25
POTASH SOAP	0.016	0.23

TABLE A2-4d: Top ten primary active ingredients contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 4 May – Oct 2017 emissions
CHLOROPICRIN	5.145	79.36
METAM-SODIUM	0.402	6.20
1,3-DICHLOROPROPENE	0.210	3.25
POTASSIUM N-METHYLDITHIOCARBAMATE	0.194	3.00
MINERAL OIL	0.068	1.05
ABAMECTIN	0.067	1.03
CHLORPYRIFOS	0.038	0.59
THIRAM	0.028	0.43
GLYPHOSATE, ISOPROPYLAMINE SALT	0.017	0.27
CAPTAN	0.017	0.26

TABLE A2-4e. Top ten pesticide application sites contributing to *unadjusted 2014* May–October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Application Site	Emissions (tons/day)	Percent of all NAA 4 May – Oct 2014 emissions
STRAWBERRY (ALL OR UNSPECIFIED)	7.015	86.21
RASPBERRY (ALL OR UNSPECIFIED)	0.589	7.24
LEMON	0.113	1.39
N-OUTDR GRWN CUT FLWRS OR GREENS	0.086	1.06
PEPPERS (FRUITING VEGETABLE)	0.061	0.75
RIGHTS OF WAY	0.039	0.48
AVOCADO (ALL OR UNSPECIFIED)	0.027	0.33
CELERY, GENERAL	0.026	0.32
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.026	0.32
STRUCTURAL PEST CONTROL	0.022	0.27

TABLE A2-4f. Top ten pesticide application sites contributing to *unadjusted 2015* May–October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Application Site	Emissions (tons/day)	Percent of all NAA 4 May – Oct 2015 emissions
STRAWBERRY (ALL OR UNSPECIFIED)	7.044	90.40
RASPBERRY (ALL OR UNSPECIFIED)	0.183	2.35
PEPPERS (FRUITING VEGETABLE)	0.130	1.67
LEMON	0.127	1.63
N-OUTDR GRWN CUT FLWRS OR GREENS	0.074	0.95
STRUCTURAL PEST CONTROL	0.029	0.38
CELERY, GENERAL	0.024	0.31
AVOCADO (ALL OR UNSPECIFIED)	0.021	0.27
CARROTS, GENERAL	0.018	0.23
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.016	0.20

TABLE A2-4g. Top ten pesticide application sites contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Application Site	Emissions (tons/day)	Percent of all NAA 4 May – Oct 2016 emissions
STRAWBERRY (ALL OR UNSPECIFIED)	6.017	89.18
RASPBERRY (ALL OR UNSPECIFIED)	0.142	2.10
PEPPERS (FRUITING VEGETABLE)	0.139	2.06
LEMON	0.126	1.86
N-OUTDR GRWN CUT FLWRS OR GREENS	0.076	1.13
SOIL APPLICATION, PREPLANT-OUTDOOR*	0.036	0.54
STRUCTURAL PEST CONTROL	0.018	0.27
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.017	0.25
AVOCADO (ALL OR UNSPECIFIED)	0.017	0.25
CELERY, GENERAL	0.015	0.23

* Treatment of an area prior to a crop being planted.

TABLE A2-4h. Top ten pesticide application sites contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Application Site	Emissions (tons/day)	Percent of all NAA 4 May – Oct 2017 emissions
STRAWBERRY (ALL OR UNSPECIFIED)	5.716	88.18
RASPBERRY (ALL OR UNSPECIFIED)	0.173	2.67
LEMON	0.119	1.84
N-OUTDR GRWN CUT FLWRS OR GREENS	0.090	1.39
PEPPERS (FRUITING VEGETABLE)	0.083	1.28
AVOCADO (ALL OR UNSPECIFIED)	0.067	1.04
CELERY, GENERAL	0.025	0.39
STRUCTURAL PEST CONTROL	0.025	0.39
LANDSCAPE MAINTENANCE	0.020	0.31
CABBAGE	0.018	0.28

* Treatment of an area prior to a crop being planted.

TABLE A2-4i: Unadjusted 2014 May–October (ozone season) VOC emissions in the Ventura **NAA (4)**, by ARB emission inventory classification (tpd).

NAA 4 - 2014	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.590	<0.001
NON-METHYL BROMIDE EMISSIONS	6.961	0.022

TABLE A2-4k: Unadjusted 2015 May–October (ozone season) VOC emissions in the Ventura **NAA (4)**, by ARB emission inventory classification (tpd).

NAA 4 - 2015	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.981	0.000
NON-METHYL BROMIDE EMISSIONS	5.893	0.029

TABLE A2-4i: Unadjusted 2016 May–October (ozone season) VOC emissions in the Ventura **NAA (4)**, by ARB emission inventory classification (tpd).

NAA 4 - 2016	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.425	0.000
NON-METHYL BROMIDE EMISSIONS	5.951	0.018

TABLE A2-4j: Unadjusted 2017 May–October (ozone season) VOC emissions in the Ventura **NAA (4)**, by ARB emission inventory classification (tpd).

NAA 4 - 2017	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.006	0.000
NON-METHYL BROMIDE EMISSIONS	6.451	0.025

5. South Coast - NAA 5

TABLE A2-5a: Top ten primary active ingredients contributing to unadjusted 2014 May–October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 5 May – Oct 2014 emissions
CHLOROPICRIN	0.137	10.82
METHYL BROMIDE	0.125	9.85
PERMETHRIN	0.106	8.35
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.095	7.47
BIFENTHRIN	0.081	6.43
CYFLUTHRIN	0.068	5.36
DISODIUM OCTABORATE TETRAHYDRATE	0.067	5.31
PIPERONYL BUTOXIDE	0.048	3.81
CYPERMETHRIN	0.043	3.38
FIPRONIL	0.038	2.97

TABLE A2-5b: Top ten primary active ingredients contributing to unadjusted 2015 May–October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 5 May – Oct 2015 emissions
METHYL BROMIDE	0.240	16.28
BIFENTHRIN	0.109	7.38
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.105	7.13
PERMETHRIN	0.104	7.05
DAZOMET	0.098	6.65
CYPERMETHRIN	0.075	5.06
DISODIUM OCTABORATE TETRAHYDRATE	0.067	4.57
D-TRANS ALLETHRIN	0.059	3.97
FIPRONIL	0.046	3.10
METHYL BROMIDE	0.240	16.28

TABLE A2-5c: Top ten primary active ingredients contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 5 May – Oct 2016 emissions
METHYL BROMIDE	0.382	28.81
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.086	6.49
METAM-SODIUM	0.076	5.71
DISODIUM OCTABORATE TETRAHYDRATE	0.069	5.23
BIFENTHRIN	0.059	4.45
CYPERMETHRIN	0.047	3.52
PERMETHRIN	0.042	3.14
PIPERONYL BUTOXIDE	0.041	3.11
CYFLUTHRIN	0.031	2.37
DICHOLOBENIL	0.030	2.23

TABLE A2-5d: Top ten primary active ingredients contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Emissions (tons/day)	Percent of all NAA 5 May – Oct 2017 emissions
CHLOROPICRIN	0.361	23.09
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.242	15.47
METAM-SODIUM	0.122	7.78
DISODIUM OCTABORATE TETRAHYDRATE	0.090	5.72
METHYL BROMIDE	0.065	4.16
BIFENTHRIN	0.049	3.11
DICHOLOBENIL	0.038	2.40
PIPERONYL BUTOXIDE	0.037	2.39
GLYPHOSATE, POTASSIUM SALT	0.037	2.36
CYFLUTHRIN	0.028	1.81

TABLE A2-5e: Top ten pesticide application sites contributing to *unadjusted 2014* May–October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Application Site	Emissions (tons/day)	Percent of all NAA 5 May – Oct 2014 emissions
STRUCTURAL PEST CONTROL	0.694	54.73
STRAWBERRY (ALL OR UNSPECIFIED)	0.191	15.07
LANDSCAPE MAINTENANCE	0.158	12.50
FUMIGATION, OTHER	0.061	4.79
RIGHTS OF WAY	0.052	4.07
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.019	1.50
COMMODITY FUMIGATION	0.015	1.19
ORNAMENTAL TURF	0.007	0.59
CABBAGE	0.007	0.58
ORANGE (ALL OR UNSPECIFIED)	0.007	0.56

TABLE A2-5f: Top ten pesticide application sites contributing to *unadjusted 2015* May–October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Application Site	Emissions (tons/day)	Percent of all NAA 5 May – Oct 2015 emissions
STRUCTURAL PEST CONTROL	0.810	54.97
STRAWBERRY (ALL OR UNSPECIFIED)	0.187	12.72
LANDSCAPE MAINTENANCE	0.154	10.45
RIGHTS OF WAY	0.150	10.20
FUMIGATION, OTHER	0.057	3.89
COMMODITY FUMIGATION	0.019	1.31
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.014	0.98
AVOCADO (ALL OR UNSPECIFIED)	0.009	0.59
POTATO (WHITE, IRISH, RED, RUSSET)	0.008	0.55
PEPPERS (FRUITING VEGETABLE)	0.007	0.50

TABLE A2-5g: Top ten pesticide application sites contributing to *unadjusted 2016* May–October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Application Site	Emissions (tons/day)	Percent of all NAA 5 May – Oct 2016 emissions
STRUCTURAL PEST CONTROL	0.515	38.86
STRAWBERRY (ALL OR UNSPECIFIED)	0.341	25.74
LANDSCAPE MAINTENANCE	0.149	11.22
RIGHTS OF WAY	0.083	6.25
CARROTS, GENERAL	0.070	5.27
FUMIGATION, OTHER	0.058	4.36
COMMODITY FUMIGATION	0.025	1.87
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.013	0.97
PEPPERS (FRUITING VEGETABLE)	0.011	0.86
AVOCADO (ALL OR UNSPECIFIED)	0.007	0.54

TABLE A2-5h: Top ten pesticide application sites contributing to *unadjusted 2017* May–October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Application Site	Emissions (tons/day)	Percent of all NAA 5 May – Oct 2017 emissions
STRUCTURAL PEST CONTROL	0.612	39.15
STRAWBERRY (ALL OR UNSPECIFIED)	0.380	24.30
LANDSCAPE MAINTENANCE	0.189	12.09
CARROTS, GENERAL	0.122	7.80
RIGHTS OF WAY	0.103	6.60
FUMIGATION, OTHER	0.040	2.55
COMMODITY FUMIGATION	0.025	1.62
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.015	0.97
AVOCADO (ALL OR UNSPECIFIED)	0.010	0.67
GRAPEFRUIT	0.009	0.60

TABLE A2-5i: Unadjusted 2014 May–October (ozone season) VOC emissions in the South Coast NAA (5), by ARB emission inventory classification (tpd).

NAA 5 - 2014	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.103	0.000
NON-METHYL BROMIDE EMISSIONS	0.449	0.694

TABLE A2-5k: Unadjusted 2015 May–October (ozone season) VOC emissions in the South Coast NAA (5), by ARB emission inventory classification (tpd).

NAA 5 - 2015	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.159	0.000
NON-METHYL BROMIDE EMISSIONS	0.423	0.810

TABLE A2-5l: Unadjusted 2016 May–October (ozone season) VOC emissions in the South Coast NAA (5), by ARB emission inventory classification (tpd).

NAA 5 - 2016	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.232	0.000
NON-METHYL BROMIDE EMISSIONS	0.428	0.515

TABLE A2-5j: Unadjusted 2017 May–October (ozone season) VOC emissions in the South Coast NAA (5), by ARB emission inventory classification (tpd).

NAA 5 - 2017	Agricultural Applications	Structural Applications
METHYL BROMIDE EMISSIONS	0.065	0.000
NON-METHYL BROMIDE EMISSIONS	0.886	0.613

APPENDIX 3

SUMMARY OF ADJUSTED PESTICIDE VOC EMISSIONS

APPENDIX 3 – SUMMARY OF ADJUSTED PESTICIDE VOC EMISSIONS

1. Sacramento Metropolitan Area - NAA 1

Table A3-1a: Top ten primary active ingredients contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 1 May – Oct 2014 Adjusted Emissions
1,3-DICHLOROPROPENE	0.188	14.33
ABAMECTIN	0.120	9.11
PROPANIL	0.094	7.17
CHLORPYRIFOS	0.059	4.46
TRIFLURALIN	0.054	4.12
BIFENTHRIN	0.050	3.79
HEXYTHIAZOX	0.042	3.19
OXYFLUORFEN	0.040	3.03
THIOBENCARB	0.040	3.02
PENOX SULAM	0.038	2.90

Table A3-1b: Top ten primary active ingredients contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 1 May – Oct 2015 Adjusted Emissions
PROPANIL	0.092	7.714
ABAMECTIN	0.082	6.863
PERMETHRIN	0.063	5.278
BIFENTHRIN	0.054	4.501
THIOBENCARB	0.048	4.060
OXYFLUORFEN	0.048	4.028
CHLORPYRIFOS	0.045	3.758
TRIFLURALIN	0.041	3.482
HEXYTHIAZOX	0.038	3.220
METHYL BROMIDE	0.036	3.034

Table A3-1c: Top ten primary active ingredients contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 1 May – Oct 2016 Adjusted Emissions
PROPANIL	0.122	9.104
ABAMECTIN	0.076	5.628
THIOBENCARB	0.074	5.506
PENOX SULAM	0.054	4.028
TRIFLURALIN	0.054	3.994
CHLORPYRIFOS	0.053	3.919
METHYL BROMIDE	0.051	3.823
OXYFLUORFEN	0.045	3.359
HEXYTHIAZOX	0.043	3.188
BIFENTHRIN	0.042	3.143

Table A3-1d: Top ten primary active ingredients contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 1 May – Oct 2017 Adjusted Emissions
METHYL BROMIDE	0.107	7.81
DELTAMETHRIN	0.082	6.02
ETHALFLURALIN	0.078	5.74
TRIFLURALIN	0.074	5.41
THIOBENCARB	0.071	5.19
ABAMECTIN	0.071	5.18
BIFENTHRIN	0.053	3.86
PROPANIL	0.051	3.73
OXYFLUORFEN	0.041	3.00
HEXYTHIAZOX	0.041	3.00

Table A3-1e: Top ten pesticide application sites contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 1 May – Oct 2014 Adjusted Emissions
RICE (ALL OR UNSPECIFIED)	0.276	20.74
ALMOND	0.227	17.06
WALNUT (ENGLISH, PERSIAN)	0.147	11.06
TOMATOES, FOR PROCESSING/CANNING	0.139	10.45
GRAPES, WINE	0.131	9.81
STRUCTURAL PEST CONTROL	0.088	6.59
LANDSCAPE MAINTENANCE	0.045	3.37
RIGHTS OF WAY	0.039	2.91
UNCULTIVATED AGRICULTURAL AREAS*	0.031	2.33
SOIL APPLICATION, PREPLANT-OUTDOOR*	0.031	2.29

*Treatment of an area prior to a crop being planted.

Table A3-1f: Top ten pesticide application sites contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 1 May – Oct 2015 Adjusted Emissions
RICE (ALL OR UNSPECIFIED)	0.271	22.70
WALNUT (ENGLISH, PERSIAN)	0.142	11.87
TOMATOES, FOR PROCESSING/CANNING	0.132	11.04
GRAPES, WINE	0.126	10.56
STRUCTURAL PEST CONTROL	0.118	9.89
ALMOND	0.078	6.52
UNCULTIVATED AGRICULTURAL AREAS*	0.068	5.67
RIGHTS OF WAY	0.039	3.24
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.035	2.91
LANDSCAPE MAINTENANCE	0.033	2.77

*Treatment of an area prior to a crop being planted.

Table A3-1g: Top ten pesticide application sites contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 1 May – Oct 2016 Adjusted Emissions
RICE (ALL OR UNSPECIFIED)	0.354	26.33
WALNUT (ENGLISH, PERSIAN)	0.140	10.40
GRAPES, WINE	0.119	8.84
TOMATOES, FOR PROCESSING/CANNING	0.119	8.81
STRUCTURAL PEST CONTROL	0.117	8.71
ALMOND	0.109	8.08
RIGHTS OF WAY	0.044	3.25
LANDSCAPE MAINTENANCE	0.040	3.00
UNCULTIVATED AGRICULTURAL AREAS*	0.037	2.75
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.035	2.57

*Treatment of an area prior to a crop being planted.

Table A3-1h: Top ten pesticide application sites contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the Sacramento Metro **NAA (1)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 1 May – Oct 2017 Adjusted Emissions
RICE (ALL OR UNSPECIFIED)	0.205	15.01
STRUCTURAL PEST CONTROL	0.147	10.79
WALNUT (ENGLISH, PERSIAN)	0.146	10.68
TOMATOES, FOR PROCESSING/CANNING	0.122	8.90
GRAPES, WINE	0.117	8.54
ALMOND	0.111	8.12
UNCULTIVATED AGRICULTURAL AREAS*	0.098	7.15
SUNFLOWER, GENERAL	0.075	5.52
SOIL APPLICATION, PREPLANT-OUTDOOR*	0.065	4.78
LANDSCAPE MAINTENANCE	0.050	3.64

*Treatment of an area prior to a crop being planted.

2. San Joaquin Valley - NAA 2

Table A3-2a: Top ten primary active ingredients contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 2 May – Oct 2014 Adjusted Emissions
1,3-DICHLOROPROPENE	1.783	10.73
ABAMECTIN	1.498	9.01
CHLORPYRIFOS	1.404	8.45
HEXYTHIAZOX	0.911	5.48
FENPYROXIMATE	0.879	5.29
POTASSIUM N-METHYLDITHIOCARBAMATE	0.835	5.02
GLYPHOSATE, ISOPROPYLAMINE SALT	0.808	4.86
OXYFLUORFEN	0.765	4.61
METHYL BROMIDE	0.733	4.41
BIFENTHRIN	0.595	3.58

Table A3-2b: Top ten primary active ingredients contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 2 May – Oct 2015 Adjusted Emissions
1,3-DICHLOROPROPENE	2.270	15.01
HEXYTHIAZOX	0.859	5.68
FENPYROXIMATE	0.799	5.28
POTASSIUM N-METHYLDITHIOCARBAMATE	0.790	5.22
ABAMECTIN	0.740	4.89
CHLORPYRIFOS	0.715	4.73
METHYL BROMIDE	0.608	4.02
BIFENTHRIN	0.602	3.98
GLYPHOSATE, ISOPROPYLAMINE SALT	0.528	3.49
CHLOROPICRIN	0.517	3.42

Table A3-2c: Top ten primary active ingredients contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 2 May – Oct 2016 Adjusted Emissions
1,3-DICHLOROPROPENE	2.169	14.26
ABAMECTIN	0.758	4.98
CHLORPYRIFOS	0.754	4.96
GLYPHOSATE, ISOPROPYLAMINE SALT	0.697	4.58
HEXYTHIAZOX	0.687	4.52
BIFENTHRIN	0.656	4.31
METHYL BROMIDE	0.608	4.00
POTASSIUM N-METHYLDITHIOCARBAMATE	0.553	3.64
FENPYROXIMATE	0.523	3.44
GLUFOSINATE-AMMONIUM	0.509	3.35

Table A3-2d: Top ten primary active ingredients contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the San Joaquin Valley NAA (2).

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 2 May – Oct 2017 Adjusted Emissions
1,3-DICHLOROPROPENE	1.987	11.86
ABAMECTIN	1.001	5.97
GLYPHOSATE, ISOPROPYLAMINE SALT	0.913	5.45
CHLORPYRIFOS	0.852	5.08
POTASSIUM N-METHYLDITHIOCARBAMATE	0.803	4.79
BIFENTHRIN	0.723	4.31
HEXYTHIAZOX	0.645	3.85
GLUFOSINATE-AMMONIUM	0.637	3.80
METHYL BROMIDE	0.546	3.26
MINERAL OIL	0.450	2.68

Table A3-2e: Top ten pesticide application sites contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the San Joaquin Valley NAA (2).

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 2 May – Oct 2014 Adjusted Emissions
ALMOND	4.779	28.42
COTTON, GENERAL	1.277	7.59
SOIL APPLICATION, PREPLANT-OUTDOOR*	1.215	7.22
ORANGE (ALL OR UNSPECIFIED)	0.913	5.43
CARROTS, GENERAL	0.800	4.76
GRAPES	0.788	4.69
TOMATOES, FOR PROCESSING/CANNING	0.662	3.94
WALNUT (ENGLISH, PERSIAN)	0.645	3.84
PISTACHIO	0.610	3.63
GRAPES, WINE	0.584	3.47

* Treatment of an area prior to crop being planted.

Table A3-2f: Top ten pesticide application sites contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the San Joaquin Valley NAA (2).

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 2 May – Oct 2015 Adjusted Emissions
ALMOND	4.315	28.05
SOIL APPLICATION, PREPLANT-OUTDOOR*	1.479	9.61
COTTON, GENERAL	1.029	6.69
CARROTS, GENERAL	0.729	4.74
WALNUT (ENGLISH, PERSIAN)	0.674	4.38
PISTACHIO	0.653	4.24
ORANGE (ALL OR UNSPECIFIED)	0.620	4.03
GRAPES	0.619	4.02
TOMATOES, FOR PROCESSING/CANNING	0.582	3.78
GRAPES, WINE	0.498	3.24

* Treatment of an area prior to crop being planted.

Table A3-2g: Top ten pesticide application sites contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 2 May – Oct 2016 Adjusted Emissions
ALMOND	4.341	28.09
COTTON, GENERAL	1.283	8.31
CARROTS, GENERAL	0.834	5.39
PISTACHIO	0.802	5.19
ORANGE (ALL OR UNSPECIFIED)	0.756	4.90
SOIL APPLICATION, PREPLANT-OUTDOOR*	0.735	4.76
WALNUT (ENGLISH, PERSIAN)	0.662	4.29
TOMATOES, FOR PROCESSING/CANNING	0.559	3.62
GRAPES	0.556	3.60
GRAPES, WINE	0.438	2.84

* Treatment of an area prior to crop being planted.

Table A3-2h: Top ten pesticide application sites contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the San Joaquin Valley **NAA (2)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 2 May – Oct 2017 Adjusted Emissions
ALMOND	4.836	28.48
COTTON, GENERAL	2.042	12.03
PISTACHIO	0.974	5.73
CARROTS, GENERAL	0.733	4.32
ORANGE (ALL OR UNSPECIFIED)	0.732	4.31
GRAPES	0.716	4.22
SOIL APPLICATION, PREPLANT-OUTDOOR*	0.674	3.97
WALNUT (ENGLISH, PERSIAN)	0.662	3.90
TOMATOES, FOR PROCESSING/CANNING	0.473	2.79
GRAPES, WINE	0.450	2.65

* Treatment of an area prior to crop being planted.

3. Southeast Desert - NAA 3

Table A3-3a: Top ten primary active ingredients contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 3 May – Oct 2014 Adjusted Emissions
METHYL BROMIDE	0.037	13.31
BENSULIDE	0.017	6.19
METAM-SODIUM	0.017	6.05
GLYPHOSATE, ISOPROPYLAMINE SALT	0.016	5.54
CYPERMETHRIN	0.014	5.13
BIFENTHRIN	0.014	5.05
1,3-DICHLOROPROPENE	0.012	4.20
EPTC	0.010	3.72
PERMETHRIN	0.009	3.13
MEFENOXAM	0.009	3.06

Table A3-3b: Top ten primary active ingredients contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 3 May – Oct 2015 Adjusted Emissions
1,3-DICHLOROPROPENE	0.043	12.16
CYPERMETHRIN	0.025	7.19
METAM-SODIUM	0.023	6.64
BENSULIDE	0.023	6.52
GLYPHOSATE, ISOPROPYLAMINE SALT	0.022	6.15
ACETIC ACID	0.020	5.85
BIFENTHRIN	0.020	5.78
DAZOMET	0.019	5.38
MEFENOXAM	0.010	2.92
CAPRYLIC ACID	0.007	2.04

Table A3-3c: Top ten primary active ingredients contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 3 May – Oct 2016 Adjusted Emissions
METAM-SODIUM	0.024	8.95
METHYL BROMIDE	0.021	7.78
CYPERMETHRIN	0.017	6.26
BENSULIDE	0.014	5.31
GLYPHOSATE, ISOPROPYLAMINE SALT	0.014	5.27
DAZOMET	0.014	5.15
GLYPHOSATE, POTASSIUM SALT	0.010	3.77
BIFENTHRIN	0.009	3.15
SULFUR	0.008	2.94
MEFENOXAM	0.008	2.83

Table A3-3d: Top ten primary active ingredients contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 3 May – Oct 2017 Adjusted Emissions
METAM-SODIUM	0.074	20.51
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.032	8.89
GLYPHOSATE, POTASSIUM SALT	0.027	7.57
GLYPHOSATE, ISOPROPYLAMINE SALT	0.024	6.67
BENSULIDE	0.017	4.72
METHYL BROMIDE	0.016	4.53
DISODIUM OCTABORATE TETRAHYDRATE	0.016	4.43
DAZOMET	0.014	3.94
CAPRYLIC ACID	0.008	2.27
BIFENTHRIN	0.008	2.18

Table A3-3e: Top ten pesticide application sites contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 3 May – Oct 2014 Adjusted Emissions
STRUCTURAL PEST CONTROL	0.067	23.37
ORNAMENTAL TURF	0.037	12.95
STRAWBERRY (ALL OR UNSPECIFIED)	0.025	8.66
PEPPERS (FRUITING VEGETABLE)	0.022	7.71
LANDSCAPE MAINTENANCE	0.021	7.37
CARROTS, GENERAL	0.020	6.76
RIGHTS OF WAY	0.015	5.15
LETTUCE, LEAF (ALL OR UNSPECIFIED)	0.012	4.18
POTATO (WHITE, IRISH, RED, RUSSET)	0.011	3.80
UNCULTIVATED AGRICULTURAL AREAS*	0.009	2.95

* Treatment of an area prior to crop being planted.

Table A3-3f: Top ten pesticide application sites contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 3 May – Oct 2015 Adjusted Emissions
STRUCTURAL PEST CONTROL	0.089	24.93
GRAPES	0.042	11.89
RIGHTS OF WAY	0.032	8.90
PEPPERS (FRUITING VEGETABLE)	0.023	6.50
LANDSCAPE MAINTENANCE	0.022	6.28
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.022	6.14
LEMON	0.021	5.91
STRAWBERRY (ALL OR UNSPECIFIED)	0.015	4.07
CARROTS, GENERAL	0.014	4.01
LETTUCE, LEAF (ALL OR UNSPECIFIED)	0.014	3.82

Table A3-3g: Top ten pesticide application sites contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 3 May – Oct 2016 Adjusted Emissions
STRUCTURAL PEST CONTROL	0.059	21.45
RIGHTS OF WAY	0.035	12.58
ORNAMENTAL TURF	0.022	8.01
LANDSCAPE MAINTENANCE	0.022	7.95
CARROTS, GENERAL	0.022	7.81
PEPPERS (FRUITING VEGETABLE)	0.019	7.03
LEMON	0.014	4.99
STRAWBERRY (ALL OR UNSPECIFIED)	0.013	4.67
GRAPES	0.009	3.39
LETTUCE, LEAF (ALL OR UNSPECIFIED)	0.008	2.79

Table A3-3h: Top ten pesticide application sites contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the Southeast Desert **NAA (3)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 3 May – Oct 2017 Adjusted Emissions
STRUCTURAL PEST CONTROL	0.082	22.70
PEPPERS (FRUITING VEGETABLE)	0.066	18.28
RIGHTS OF WAY	0.035	9.59
LANDSCAPE MAINTENANCE	0.024	6.60
ORNAMENTAL TURF	0.023	6.31
LETTUCE, LEAF (ALL OR UNSPEC)	0.020	5.64
CARROTS, GENERAL	0.020	5.49
UNCULTIVATED AGRICULTURAL AREAS*	0.016	4.36
ALFALFA (FORAGE - FODDER) (HAY)	0.015	4.01
LEMON	0.010	2.77

* Treatment of an area prior to crop being planted.

4. Ventura - NAA 4

Table A3-4a: Top ten primary active ingredients contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 4 May – Oct 2014 Adjusted Emissions
CHLOROPICRIN	0.471	33.78
METHYL BROMIDE	0.284	20.37
1,3-DICHLOROPROPENE	0.136	9.74
MINERAL OIL	0.054	3.86
METAM-SODIUM	0.053	3.80
CHLORPYRIFOS	0.038	2.73
ABAMECTIN	0.035	2.51
OXAMYL	0.019	1.35
GLYPHOSATE, ISOPROPYLAMINE SALT	0.015	1.06
NOVALURON	0.015	1.05

Table A3-4b: Top ten primary active ingredients contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 4 May – Oct 2015 Adjusted Emissions
METHYL BROMIDE	0.472	31.26
CHLOROPICRIN	0.388	25.73
1,3-DICHLOROPROPENE	0.093	6.16
METAM-SODIUM	0.089	5.90
MINERAL OIL	0.064	4.23
CHLORPYRIFOS	0.034	2.28
ABAMECTIN	0.027	1.81
CLARIFIED HYDROPHOBIC EXTRACT OF NEEM OIL	0.022	1.46
NOVALURON	0.016	1.09
GLYPHOSATE, ISOPROPYLAMINE SALT	0.013	0.89

Table A3-4c: Top ten primary active ingredients contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 4 May – Oct 2016 Adjusted Emissions
CHLOROPICRIN	0.348	30.44
METHYL BROMIDE	0.204	17.84
1,3-DICHLOROPROPENE	0.136	11.92
MINERAL OIL	0.068	5.92
CHLORPYRIFOS	0.033	2.88
METAM-SODIUM	0.022	1.97
ABAMECTIN	0.020	1.76
CLARIFIED HYDROPHOBIC EXTRACT OF NEEM OIL	0.017	1.50
POTASH SOAP	0.016	1.36
NOVALURON	0.014	1.21

Table A3-4d: Top ten primary active ingredients contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 4 May – Oct 2017 Adjusted Emissions
CHLOROPICRIN	0.329	31.98
1,3-DICHLOROPROPENE	0.114	11.08
MINERAL OIL	0.068	6.60
ABAMECTIN	0.067	6.51
CHLORPYRIFOS	0.038	3.71
METAM-SODIUM	0.036	3.52
THIRAM	0.028	2.70
POTASSIUM N-METHYLDITHIOCARBAMATE	0.021	2.03
GLYPHOSATE, ISOPROPYLAMINE SALT	0.017	1.68
CAPTAN	0.017	1.63

Table A3-4e: Top ten pesticide application sites contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 4 May – Oct 2014 Adjusted Emissions
STRAWBERRY (ALL OR UNSPECIFIED)	1.108	68.41
RASPBERRY (ALL OR UNSPECIFIED)	0.121	7.50
LEMON	0.113	6.98
PEPPERS (FRUITING VEGETABLE)	0.037	2.29
AVOCADO (ALL OR UNSPECIFIED)	0.027	1.66
CELERY, GENERAL	0.026	1.61
STRUCTURAL PEST CONTROL	0.022	1.33
N-OUTDR GRWN CUT FLWRS OR GREENS	0.018	1.12
RIGHTS OF WAY	0.014	0.86
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.012	0.76

Table A3-4f: Top ten pesticide application sites contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 4 May – Oct 2015 Adjusted Emissions
STRAWBERRY (ALL OR UNSPECIFIED)	1.193	71.49
LEMON	0.127	7.60
RASPBERRY (ALL OR UNSPECIFIED)	0.063	3.77
PEPPERS (FRUITING VEGETABLE)	0.054	3.25
STRUCTURAL PEST CONTROL	0.029	1.76
CELERY, GENERAL	0.024	1.44
AVOCADO (ALL OR UNSPECIFIED)	0.021	1.25
N-OUTDR GRWN CUT FLWRS OR GREENS	0.016	0.99
LANDSCAPE MAINTENANCE	0.016	0.94
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.011	0.64

Table A3-4g: Top ten pesticide application sites contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 4 May – Oct 2016 Adjusted Emissions
STRAWBERRY (ALL OR UNSPECIFIED)	0.944	69.12
LEMON	0.123	9.00
PEPPERS (FRUITING VEGETABLE)	0.048	3.53
RASPBERRY (ALL OR UNSPECIFIED)	0.035	2.59
STRUCTURAL PEST CONTROL	0.018	1.32
AVOCADO (ALL OR UNSPECIFIED)	0.017	1.24
CELERY, GENERAL	0.015	1.12
N-OUTDR GRWN CUT FLWRS OR GREENS	0.015	1.09
CABBAGE	0.014	1.00
TOMATO	0.013	0.93

Table A3-4h: Top ten pesticide application sites contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the Ventura **NAA (4)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 4 May – Oct 2017 Adjusted Emissions
STRAWBERRY (ALL OR UNSPECIFIED)	0.760	61.29
LEMON	0.119	9.63
AVOCADO (ALL OR UNSPECIFIED)	0.067	5.44
RASPBERRY (ALL OR UNSPECIFIED)	0.029	2.30
CELERY, GENERAL	0.025	2.05
STRUCTURAL PEST CONTROL	0.025	2.03
PEPPERS (FRUITING VEGETABLE)	0.021	1.72
LANDSCAPE MAINTENANCE	0.020	1.63
CABBAGE	0.017	1.34
RIGHTS OF WAY	0.016	1.27

5. South Coast - NAA 5

Table A3-5a: Top ten primary active ingredients contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 5 May – Oct 2014 Adjusted Emissions
PERMETHRIN	0.106	9.14
METHYL BROMIDE	0.096	8.32
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.095	8.18
BIFENTHRIN	0.081	7.04
CYFLUTHRIN	0.068	5.87
DISODIUM OCTABORATE TETRAHYDRATE	0.067	5.81
PIPERONYL BUTOXIDE	0.048	4.17
CYPERMETHRIN	0.043	3.70
CHLOROPICRIN	0.042	3.61
FIPRONIL	0.038	3.25

Table A3-5b: Top ten primary active ingredients contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 5 May – Oct 2015 Adjusted Emissions
METHYL BROMIDE	0.117	8.78
BIFENTHRIN	0.109	8.15
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.105	7.87
PERMETHRIN	0.104	7.79
DAZOMET	0.098	7.34
CYPERMETHRIN	0.075	5.59
DISODIUM OCTABORATE TETRAHYDRATE	0.067	5.05
D-TRANS ALLETHRIN	0.059	4.39
FIPRONIL	0.046	3.43
CYFLUTHRIN	0.045	3.35

Table A3-5c: Top ten primary active ingredients contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 5 May – Oct 2016 Adjusted Emissions
METHYL BROMIDE	0.154	14.68
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.086	8.19
METAM-SODIUM	0.085	8.06
DISODIUM OCTABORATE TETRAHYDRATE	0.069	6.59
BIFENTHRIN	0.059	5.61
CYPERMETHRIN	0.047	4.44
PERMETHRIN	0.042	3.96
PIPERONYL BUTOXIDE	0.041	3.93
CYFLUTHRIN	0.031	2.99
IMIDACLOPRID	0.029	2.78

Table A3-5d: Top ten primary active ingredients contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 5 May – Oct 2017 Adjusted Emissions
N-OCTYL BICYCLOHEPTENE DICARBOXIMIDE	0.242	21.62
DISODIUM OCTABORATE TETRAHYDRATE	0.090	8.00
METHYL BROMIDE	0.065	5.82
METAM-SODIUM	0.063	5.64
BIFENTHRIN	0.049	4.35
PIPERONYL BUTOXIDE	0.037	3.35
GLYPHOSATE, POTASSIUM SALT	0.037	3.30
CYFLUTHRIN	0.028	2.53
IMIDACLOPRID	0.026	2.37
PERMETHRIN	0.024	2.18

Table A3-5e: Top ten pesticide application sites contributing to *adjusted 2014* May-October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 5 May – Oct 2014 Adjusted Emissions
STRUCTURAL PEST CONTROL	0.694	59.45
LANDSCAPE MAINTENANCE	0.158	13.58
STRAWBERRY (ALL OR UNSPECIFIED)	0.090	7.76
FUMIGATION, OTHER	0.061	5.20
RIGHTS OF WAY	0.052	4.42
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.019	1.63
COMMODITY FUMIGATION	0.015	1.29
ORNAMENTAL TURF	0.007	0.64
CABBAGE	0.007	0.63
ORANGE (ALL OR UNSPECIFIED)	0.007	0.61

Table A3-5f: Top ten pesticide application sites contributing to *adjusted 2015* May-October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 5 May – Oct 2015 Adjusted Emissions
STRUCTURAL PEST CONTROL	0.810	60.63
LANDSCAPE MAINTENANCE	0.154	11.52
RIGHTS OF WAY	0.150	11.25
FUMIGATION, OTHER	0.057	4.29
STRAWBERRY (ALL OR UNSPEC)	0.050	3.75
COMMODITY FUMIGATION	0.019	1.44
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.014	1.08
AVOCADO (ALL OR UNSPECIFIED)	0.009	0.65
POTATO (WHITE, IRISH, RED, RUSSET)	0.008	0.60
PEPPERS (FRUITING VEGETABLE)	0.007	0.55

Table A3-5f: Top ten pesticide application sites contributing to *adjusted 2016* May-October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 5 May – Oct 2016 Adjusted Emissions
STRUCTURAL PEST CONTROL	0.515	48.89
LANDSCAPE MAINTENANCE	0.149	14.11
STRAWBERRY (ALL OR UNSPECIFIED)	0.090	8.52
RIGHTS OF WAY	0.083	7.86
FUMIGATION, OTHER	0.058	5.48
CARROTS, GENERAL	0.054	5.14
COMMODITY FUMIGATION	0.025	2.36
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.013	1.22
AVOCADO (ALL OR UNSPECIFIED)	0.007	0.68
CABBAGE	0.007	0.63

Table A3-5h: Table A3-5f: Top ten pesticide application sites contributing to *adjusted 2017* May-October (ozone season) VOC emissions in the South Coast **NAA (5)**.

Primary AI	Total Product Adjusted Emissions (tons/day)	Percent of All NAA 5 May – Oct 2017 Adjusted Emissions
STRUCTURAL PEST CONTROL	0.612	54.42
LANDSCAPE MAINTENANCE	0.189	16.80
RIGHTS OF WAY	0.103	9.17
FUMIGATION, OTHER	0.040	3.55
STRAWBERRY (ALL OR UNSPECIFIED)	0.039	3.48
CARROTS, GENERAL	0.026	2.29
COMMODITY FUMIGATION	0.025	2.25
N-OUTDR CONTAINER/FIELD GRWN PLANTS	0.015	1.35
AVOCADO (ALL OR UNSPECIFIED)	0.010	0.93
GRAPEFRUIT	0.009	0.84

APPENDIX 4

LIST OF HIGH-VOC, LOW-VOC, AND EXCLUDED NON-FUMIGANT PRODUCTS

Department of Pesticide Regulation
Nonfumigant volatile organic compound (VOC) regulations
Product list (updated December 7, 2018)

The Department of Pesticide Regulation's (DPR's) nonfumigant VOC regulations (California Code of Regulations (CCR) sections 6452.2, 6558, 6577, 6880, 6881, 6883, 6884 and 6886) include sales and use restrictions for certain agricultural use products containing any of the following pesticides as the primary active ingredient provided certain criteria are met.

Primary Active Ingredient	Emission Potential (EP) Threshold (%)
Abamectin	35
Chlorpyrifos	25
Gibberellins	25
Oxyfluorfen	15

If a product contains more than one active ingredient, the primary active ingredient is the one present at the highest percentage in a product. These criteria do not apply to products that contain an active ingredient listed above, but not as the primary active ingredient, including products with one or more active ingredients present at the same percentage.

The emission potential (EP) is an estimate of the product VOC content and is normally determined by the registrant using thermogravimetric analysis, with the test results reviewed and approved by DPR.

Products labeled only for non-agricultural uses are excluded from the proposed regulations. Non-agricultural uses include: a) home use; b) use in structural pest control; c) industrial or institutional use; d) control of an animal pest under the written prescription of a veterinarian; or e) vector control. All other uses are considered agricultural.

DPR classifies products containing any of the four pesticides into three groups:

High-VOC product: a) contains any of the four pesticides as a primary active ingredient; and b) labeled for agricultural use; and c) the EP is greater than the threshold.

Low-VOC product: a) contains any of the four pesticides as a primary active ingredient; and b) labeled for agricultural use; and c) the EP is equal to or less than the threshold.

Excluded product: a) contains any of the four pesticides, but not as a primary active ingredient; or b) labeled only for non-agricultural use.

The nonfumigant VOC restrictions only apply to high-VOC products. Low-VOC products or excluded products have no restrictions.

Department of Pesticide Regulation
 Nonfumigant volatile organic compound (VOC) regulations
 Product list (updated December 7, 2018)

Actively registered products containing **abamectin**. Products are listed in order by EP. Products highlighted in orange indicate a change from the last list. If a product was only recently registered or has an inactive registration it may not appear on the list below. Agricultural products with inactive registrations are considered high-VOC unless they are listed below as low-VOC, formulated as a solid (e.g., powder, granule), or meet the criteria for excluded products.

Low-VOC Abamectin Products, EP ≤ 35.0% (21)

Product Name	Registration Number	Registrant	Formulation	EP (%)
Abacide 2	7946-27-AA	J.J. Mauget Co.	Solution/Liquid	0.00
Abacide 2 HP	7946-30-AA	J.J. Mauget Co.	Solution/Liquid	0.00
Wipe Out	90326-1-AA	B & K Distributors	Solution/Liquid	3.00
Epi-Mek SCL	100-1439-AA	Syngenta Crop Protection, Inc.	Other (Liquid Suspension)	3.08
Award II Fire Ant Bait	100-1452-AA	Syngenta Crop Protection, Inc.	Granular/Flake	3.70
Clinch Ant Bait	100-894-ZB	Syngenta Crop Protection, Inc.	Granular/Flake	3.70
Advance 375A Granular Ant Bait	499-370-ZD	BASF Corporation	Granular/Flake	3.70
Ascend Fire Ant Granular Bait	499-370-ZE	BASF Corporation	Granular/Flake	3.70
Willowood Abamectin 0.7SC	87290-36-AA	Willowood, LLC	Aqueous Suspension	4.62
Avert DF Dry Flowable Cockroach Bait	499-294-ZB	BASF Corporation	Dust/Powder	5.55
Divanem	100-1611-AA	Syngenta Crop Protection, LLC	Aqueous Suspension	5.63
Agri-Mek SC Miticide/Insecticide	100-1351-ZA	Syngenta Crop Protection, LLC	Aqueous Suspension	5.63
Willowood Abamectin 0.15LV	87290-68-AA	Willowood, LLC	Liquid Concentrate	7.61
Abamex Miticide/Insecticide	228-734-AA	Nufarm Americas Inc.	Liquid Concentrate	24.10
Minx 2 Miticide/Insecticide	228-736-AA	Nufarm Americas Inc.	Liquid Concentrate	24.10
Abacus V	83100-32-AA-83979	Rotam North America, Inc.	Emulsifiable Concentrate	27.26
Timectin 0.15 EC Ag Insecticide/Miticide	84229-2-AA	Tide International USA, Inc.	Emulsifiable Concentrate	29.75
Timectin 0.15 EC T&O Insecticide/Miticide	84229-1-AA	Tide International USA, Inc.	Emulsifiable Concentrate	29.75
Reaper Clearform	34704-1078-ZA	Loveland Products Inc.	Liquid Concentrate	31.08
Abba Ultra Miticide/Insecticide	66222-226-AA	Makhteshim-Agan of North America	Emulsifiable Concentrate	34.18
Abba Ultra Miticide/Insecticide	5481-621-AA	AMVAC Chemical Corporation	Emulsifiable Concentrate	34.18

Department of Pesticide Regulation
 Nonfumigant volatile organic compound (VOC) regulations
 Product list (updated December 7, 2018)

High-VOC Abamectin Products, EP > 35.0% (13)

Product Name	Registration Number	Registrant	Formulation	EP (%)
Willowood Abamectin 0.15EC	87290-58-AA	Willowood, LLC	Emulsifiable Concentrate	46.70
Abamectin 0.15EC Select	89442-20-AA	Prime Source, LLC.	Emulsifiable Concentrate	46.70
Aracinate	74779-1-AA	Rainbow Treecare Scientific	Other (Liquid)	55.10
Ardent 0.15 EC Miticide/Insecticide	100-896-ZC	Syngenta Crop Protection, Inc.	Emulsifiable Concentrate	55.10
Avid 0.15EC Miticide/Insecticide	100-896-ZD	Syngenta Crop Protection, Inc.	Emulsifiable Concentrate	55.10
Abacus Agricultural Miticide/Insecticide	83100-4-AA-83979	Rotam North America, Inc.	Emulsifiable Concentrate	60.54
Lucid Ornamental Miticide/Insecticide	83100-5-AA-83979	Rotam North America, Inc.	Emulsifiable Concentrate	60.54
Zoro Miticide/Insecticide	67760-71-AA	Cheminova, Inc.	Emulsifiable Concentrate	61.20
Abba 0.15 EC	66222-139-AA	Makhteshim-Agan of North America	Emulsifiable Concentrate	62.62
Quali-Pro Abamectin 0.15 EC	53883-371-AA	Control Solutions, Inc.	Emulsifiable Concentrate	62.62
Reaper 0.15 EC	34704-923-AA	Loveland Products, Inc.	Emulsifiable Concentrate	73.33
Reaper Advance	34704-923-ZA	Loveland Products, Inc.	Emulsifiable Concentrate	73.33
Aim A Abamectin	88050-3-AA	SmartVet USA, Inc.	Solution/Liquid	98.00

Department of Pesticide Regulation
 Nonfumigant volatile organic compound (VOC) regulations
 Product list (updated December 7, 2018)

Actively registered products containing **chlorpyrifos**. Products are listed in order by EP. Products highlighted in orange indicate a change from the last list. If a product was only recently registered or has an inactive registration it may not appear on the list below. Agricultural products with inactive registration are considered high-VOC unless they are listed below as low-VOC, formulated as a solid (e.g., powder, granule), or meet the criteria for excluded products.

Low-VOC Chlorpyrifos Products, EP ≤ 25.0% (18)

Product Name	Registration Number	Registrant	Formulation	EP (%)
Duraguard ME Microencapsulated Insecticide	499-367-ZB	BASF Corporation	Aqueous Concentrate	0.00
Durashield CS Controlled Release Insecticide	499-419-ZC	BASF Corporation	Microencapsulated	0.00
Lorsban 50W In Water Soluble Packets	62719-221-ZA	Dow AgroSciences LLC	Wettable Powder	3.03
CPF 15G	83222-34-AA	Direct Ag Source LLC	Granular/Flake	3.70
Rainbow Fire Ant & Insect Killer	13283-14-ZA	Rainbow Technology Corporation	Granular/Flake	3.70
Andersons Golf Products Insecticide III	9198-167-AA	Andersons, Inc.	Granular/Flake	3.70
Lorsban 75WG	62719-301-AA	Dow AgroSciences LLC	Granular/Flake	3.70
Lorsban 75WG	62719-301-AA-10163	Gowan Company	Granular/Flake	3.70
Lorsban 15G Smartbox	5481-525-AA	Amvac Chemical Corporation	Granular/Flake	3.70
Drexel Chlorpyrifos 15G	19713-505-AA	Drexel Chemical Company	Granular/Flake	3.70
Lorsban 15G Granular Insecticide	62719-34-ZA	Dow AgroSciences LLC	Granular/Flake	5.33
Dursban 50W In Water Soluble Packets	62719-72-ZA	Dow AgroSciences LLC	Wettable Powder	10.80
Warhawk Clearform	34704-1077-AA	Loveland Products, Inc.	Emulsifiable Concentrate	17.89
Drexel Lambdafos Insecticide	19713-671-AA	Drexel Chemical Company	Emulsifiable Concentrate	18.30
Drexel Chlorpyrifos 4E-Ag	19713-520-AA	Drexel Chemical Company	Emulsifiable Concentrate	18.20
Lorsban Advanced	62719-591-AA	Dow AgroSciences LLC	Aqueous Concentrate	18.45
Lock-On Insecticide	62719-79-ZA	Dow AgroSciences LLC	Emulsifiable Concentrate	20.90
Vulcan	66222-233-AA	Makhteshim-Agan of North America	Emulsifiable Concentrate	24.24

Department of Pesticide Regulation
 Nonfumigant volatile organic compound (VOC) regulations
 Product list (updated December 7, 2018)

High-VOC Chlorpyrifos Products, EP > 25.0% (18)

Product Name	Registration Number	Registrant	Formulation	EP (%)
Cobalt Advanced	62719-615-AA	Dow AgroSciences LLC	Emulsifiable Concentrate	37.42
Govern 4E Insecticide	62719-220-AA-55467	Tenkoz Inc.	Emulsifiable Concentrate	50.00
Whirlwind	62719-220-AA-5905	Helena Chemical Company	Emulsifiable Concentrate	50.00
Eraser	62719-220-AA-71058	Independent Agribusiness Professionals	Emulsifiable Concentrate	50.00
Yuma 4E	62719-220-ZA-1381	Winfield Solutions LLC	Emulsifiable Concentrate	50.00
Hatchet	62719-220-ZC	Dow AgroSciences LLC	Emulsifiable Concentrate	50.00
Lorsban-4E	62719-220-ZA	Dow AgroSciences LLC	Emulsifiable Concentrate	51.32
CPF 4E	83222-20-AA	Direct Ag Source, LLC	Emulsifiable Concentrate	50.83
Nufos 4E	67760-28-AA	Cheminova, Inc.	Emulsifiable Concentrate	52.30
Chlorpyrifos 4E Ag	66222-19-AA	Makhteshim-Agan of North America	Emulsifiable Concentrate	52.90
Quali-Pro Chlorpyrifos 4E	66222-19-ZA	Makhteshim-Agan of North America	Emulsifiable Concentrate	52.90
Warhawk	34704-857-AA	Loveland Products, Inc.	Aqueous Concentrate	54.41
Stallion Insecticide	279-9545-AA	FMC Corp. Agricultural	Emulsifiable Concentrate	55.45
Stallion Brand Insecticide	279-9545-ZA	FMC Corporation	Emulsifiable Concentrate	55.45
Cobalt	62719-575-AA	Dow AgroSciences LLC	Emulsifiable Concentrate	68.61
Bolton Insecticide	67760-112-AA	Cheminova, Inc.	Emulsifiable Concentrate	70.39
Bolton Insecticide	279-3581-AA	FMC Corp. Agricultural	Emulsifiable Concentrate	70.39
Duraplex TR Total Release Insecticide	499-405-ZA	BASF Corporation	Pressurized Liquid	100.0

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Actively registered products containing **gibberellins**. Products are listed in order by EP. Products highlighted in orange indicate a change from the last list. If a product was only recently registered or has an inactive registration it may not appear on the list below. Agricultural products with inactive registrations are considered high-VOC unless they are listed below as low-VOC, formulated as a solid (e.g., powder, granule), or meet the criteria for excluded products.

Low-VOC Gibberellins Products, EP ≤ 25.0% (10)

Product Name	Registration Number	Registrant	Formulation	EP (%)
Gibgro 20% Powder	55146-53-ZA	Nufarm Americas Inc.	Dust/Powder	0.00
Pro-Gibb Plus 2x Plant Growth Regulator	73049-16-AA	Valent Biosciences LLC	Soluble Powder	1.15
N-Large 40 SP	57538-22-AA	Stoller Enterprises, Inc.	Soluble Powder	1.15
Falgro 20SP	62097-3-AA-82917	Fine Americas, Inc.	Soluble Powder	1.15
Provide 10 SG	73049-409-AA	Valent Biosciences LLC	Granular/Flake	3.70
Progibb 40% Plant Growth Regulator Water Soluble Granule	73049-1-ZA	Valent Biosciences LLC	Granular/Flake	3.70
Progibb 40PH Post Harvest Plant Growth Regulator Water Soluble Granule	73049-492-AA	Valent Biosciences LLC	Granular/Flake	3.70
X-Pand	57538-63-AA	Stoller Enterprises, Inc.	Liquid Concentrate	4.72
Progibb LV Plus Plant Growth Regulator Solution	73049-498-AA	Valent Biosciences LLC	Other (Liquid)	11.54
Falgro 2X LV	62097-32-AA-82917	Fine Americas, Inc.	Aqueous Concentrate	22.95

High-VOC Gibberellins Products, EP > 25.0% (14)

Product Name	Registration Number	Registrant	Formulation	EP (%)
N-Large Premier	57538-20-AA	Stoller Enterprises, Inc.	Aqueous Concentrate	79.02
Gibbmax	69766-1-AA	Advanced Foliar Nutrients Systems	Other (Liquid)	92.43
Falgro 4L	62097-2-AA-82917	Fine Americas, Inc.	Solution/Liquid	93.82
Florgib 4L	62097-10-AA-82917	Fine Americas, Inc.	Aqueous Concentrate	93.82
Pro-Gibb 4% Plant Growth Regulator Solution	73049-15-AA	Valent Biosciences LLC	Aqueous Concentrate	94.13
Progibb T & O Plant Growth Regulator (PGR) Solution	73049-15-ZA	Valent Biosciences LLC	Aqueous Concentrate	94.13
Gibgro 4LS	55146-62-ZA	Nufarm Americas Inc.	Flowable Concentrate	94.87
Chrysal BVB	72992-10-AA	Chrysal International BV	Aqueous Concentrate	95.30
Fascination Plant Growth Regulator (PGR)	73049-41-ZA	Valent Biosciences LLC	Aqueous Concentrate	95.58
Promalin Plant Growth Regulator Solution	73049-41-AA	Valent Biosciences LC	Aqueous Concentrate	95.58
Fresco	62097-6-ZA-82917	Fine Americas, Inc.	Aqueous Concentrate	95.85
Perlan	62097-6-AA-82917	Fine Americas, Inc.	Aqueous Concentrate	95.85
Novagib 10L	62097-7-AA-82917	Fine Americas, Inc.	Aqueous Concentrate	98.91
Falgro OD	62097-49-AA-82917	Fine Americas, Inc.	Emulsifiable Concentrate	NI

NI = No Information.

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 Product list (updated December 7, 2018)

Actively registered products containing **oxyfluorfen**. Products are listed in order by EP. Products highlighted in orange indicate a change from the last list. If a product was only recently registered or has an inactive registration it may not appear on the list below. Agricultural products with inactive registrations are considered high-VOC unless they are listed below as low-VOC, formulated as a solid (e.g., powder, granule), or meet the criteria for excluded products.

Low-VOC Oxyfluorfen Products, EP ≤ 15% (9)

Product Name	Registration Number	Registrant	Formulation	EP (%)
Galigan H2O	66222-140-AA	Makhteshim-Agan of North America	Aqueous Concentrate	1.64
Nufarm Double O SPC Herbicide	228-632-AA	Nufarm Americas Inc.	Granular/Flake	3.70
Biathlon Ornamental Herbicide	59807-12-AA	OHP, Inc.	Granular/Flake	3.70
Willowood Oxyflo 4 SC	87290-10-AA	Willowood, LLC	Aqueous Concentrate	6.76
Goaltender	62719-447-ZA	Dow Agrosiences LLC	Flowable Concentrate	8.28
Rout Ornamental Herbicide	58185-27-ZA	Everiss NA, Inc.	Granular/Flake	8.60
Pindar GT	62719-611-AA	Dow Agrosiences LLC	Aqueous Suspension	10.60
Cleantraxx	62719-702-AA	Dow Agrosiences, LLC	Aqueous Suspension	10.60
Oxystar 4L	42750-199-AA	Albaugh, Inc.	Emulsifiable Concentrate	10.63

High-VOC Oxyfluorfen Products, EP > 15.0% (8)

Product Name	Registration Number	Registrant	Formulation	EP (%)
Willowood Oxyflo 2 EC	87290-8-AA	Willowood, LLC	Emulsifiable Concentrate	60.00
Oxyfluorfen 2E Herbicide	87290-8-AA-84237	Solera ATO, LLC	Emulsifiable Concentrate	60.00
Goal 2XL	62719-424-AA	Dow Agrosiences LLC	Emulsifiable Concentrate	62.30
Collide Herbicide	70506-295-AA	United Phosphorous, Inc.	Emulsifiable Concentrate	66.08
Oxyfluorfen 2E Herbicide	70506-295-AA-84237	Solera ATO, LLC	Emulsifiable Concentrate	66.08
Galigan 2E Herbicide	66222-28-ZA	Makhteshim-Agan of North America	Emulsifiable Concentrate	66.15
Galigan 2E	66222-28-ZB	Makhteshim-Agan of North America	Emulsifiable Concentrate	66.15
Oxystar 2E	42750-136-AA	Albaugh, LLC	Emulsifiable Concentrate	73.09