



Department of Pesticide Regulation



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MEMORANDUM

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TO: Gary Patterson, Ph.D.
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SUBJECT: REVISED RISK ESTIMATES FOR KERN COUNTRY METHYL BROMIDE AIR MONITORING IN 2001

This memorandum revises the estimated risks for methyl bromide to Kern County calculated in previous memoranda (Lim, 2002a and 2003). The risks were revised to reflect correction in the 2001 monitored data for two locations (ARB and CRS) provided by the California Air Resources Board (AR) and exposure estimates (Powell, 2004). Since the changes were relatively minor, there were no significant changes to the margins of exposure previously calculated. Using the same methodology as in the previous memoranda, the revised Tables 1 and 2 (Lim, 2002a) and Table 4 (Lim, 2003) are as followed. Tables 1 and 2 also contained changes to the margins of exposure due to the use of 9 ppb and 16 ppb as the reference concentrations for children and adults, respectively as discussed in Lim, 2003.

Table 1. Children MOEs for methyl bromide exposure in Kern County in 2001^a

Site ^a	Monitored days (N)	Daily		1-Week		8-Week
		Maximum 24-hr	95% tolerance limit	Maximum weekly mean	95% tolerance limit	Mean of weekly means
ARB	32	80645	53191	36842	25926	7500
ARV	25	113636	100000	58333	43750	12857
CRS	32	746	973	579	477	361
MET	29	100000	100000	53846	41176	12857
MVS	26	108696	86207	46667	35000	11250
VSD	27	108696	80645	46667	35000	11250

^{a/} Bolded and italicized values reflected changes from previous memoranda (Lim, 2002a). Based on the air concentrations calculated from the ARB monitoring in summer 2001 (Powell, 2002 and 2004). The MOE was the ratio of the NOEL to the exposure. The human-equivalent NOELs of 25 ppm, 7 ppm, and 0.9 ppm were used for calculating the 24-hour, 1 week, and 8-week MOEs (Lim, 2001).



Table 2. Adults MOEs for methyl bromide exposure in Kern County in 2001^a

Site ^a	Monitored days (N)	Daily		1-Week		8-Week
		Maximum 24-hr	95% tolerance limit	Maximum weekly mean	95% tolerance limit	Mean of weekly means
ARB	32	67742	44681	63158	44444	<i>13333</i>
ARV	25	95455	<i>84000</i>	<i>100000</i>	<i>75000</i>	<i>22857</i>
CRS	32	<i>627</i>	<i>817</i>	<i>993</i>	<i>817</i>	<i>643</i>
MET	29	84000	84000	92308	70588	<i>22857</i>
MVS	26	91304	72414	80000	60000	<i>20000</i>
VSD	27	91304	67742	80000	60000	<i>20000</i>

^{a/} Bolded and italicized values reflected changes from previous memoranda (Lim, 2002a). Based on the air concentrations calculated from the ARB monitoring in summer 2001 (Powell, 2002 and 2004). The MOE was the ratio of the NOEL to the exposure. The human equivalent NOELs of 21 ppm, 12 ppm, and 1.6 ppm were used for calculating the 24-hour, 1 week, and 8-week MOEs (Lim, 2001).

Table 4. Adults and children margins of exposure for 8 week methyl bromide air concentrations for year 2000 to 2002 monitoring.^a

Sites	2002 AMBI		2001 ARB		2001 AMBI		2000 ARB	
	Adult	Child	Adult	Child	Adult	Child	Adult	Child
Ventura/Oxnard								
ABD	2105	1184	NA		NA	NA	NA	
SHA1	2759	1552			3200	1800		
PVW	988	556			2857	1607		
UWC	702	405			1951	1098		
ABC	NA	NA			8889	5000		
Monterey/Santa Cruz								
MAQ	1429	804	NA		NA		NA	
BBC	769	433						
WAT	422	237						
FRM	611	344						
CPW	777	437						
SCF	NA							
CHU			2857	1607			2484	1398
LJE			567	319			422	237
MES			290	163			NA	NA
PMS			535	301			208	117
SAL			1159	652			1240	698
SES			1311	738			615	346
OAS			NA	NA			4134	2326
Kern								
ARB	NA		13333	7500	NA		8466	4762
ARV			22857	12857			NA	NA
CRS			643	361			741	417
MET			22857	12857			10948	10714
MVS			20000	11250			17391	9783
VSD			20000	11250			16162	9091
SHA2			NA	NA			2020	1136
Santa Maria								
BLO	NA		NA		2192	1233	NA	
AGCCRS					5714	3214		
EDW					1212	682		
PNT					1720	968		

a/ Bolded and italicized values reflected changes from previous memorandum (Lim, 2003). MOEs from Tables 1 and 2 for 2002, and previous assessments (Lim, 2002a; Lim, 2002b; Reed, 2002, and Lim, 2001). NA=sites not monitored.

References:

- Lim, L., 2001. Evaluation of ambient air concentration of methyl bromide in Monterey, Santa Cruz, and Kern counties. Memorandum to G. Patterson dated February 15, 2001. Medical Toxicology Branch, Department of Pesticide Regulation, California Environmental Protection Agency.
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- Lim, L., 2002b. Risk of methyl bromide exposure in Oxnard/Camarillo and Santa Maria based on the Alliance of the Methyl Bromide Industry monitoring in Fall 2001. Memorandum to G. Patterson dated April 11, 2002. Medical Toxicology Branch, Department of Pesticide Regulation, California Environmental Protection Agency.
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- Reed, N.-M., 2002. Risk of methyl bromide exposure in Monterey and Santa Cruz counties based on the California Air Resources Board monitoring in Fall 2001. Memorandum to G. Patterson dated April 11, 2002. Medical Toxicology Branch, Department of Pesticide Regulation, California Environmental Protection Agency.