UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Date: 3/8/04
Chemical: Methyl Parathion
PC Code: 053501
DP Barcode: D298659

Subject: Tier II Aquatic Exposure Assessment for Selected Methyl Parathion Uses (Walnuts, Alfalfa, and Peas) in the California, Oregon, and Idaho: Endangered Species (ES) Consultation Package

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Tier II aquatic exposure assessments for methyl parathion were requested by the Field and External Affairs Division (FEAD) to support an endangered species consultation package for salmon in California, Oregon, Washington, and Idaho. Selected methyl parathion use scenarios included walnuts in California, alfalfa in Oregon, and peas in Idaho.

Tier II PRZM/EXAMS modeling was conducted to estimated the impacts of runoff and spray drift of methyl parathion from a 10 ha field on estimated environmental concentrations in a small, static water body. Standard PRZM/EXAMS exposure scenarios were selected to best represent specific crops in the California, Oregon, and Idaho. The selected scenarios for methyl parathion are shown in Table 1.

Table 1. Requested and Available Modeling Scenarios Used in Tier II Modeling

Requested Exposure Scenario			Best Available Standard Modeling Scenarios		
State	Crop	MLRA	State	Crop	MLRA
California	Walnuts	17	California	Almonds	17
Oregon	Alfalfa	23	Oregon	Wheat	2
Idaho	Peas	9/43	Oregon	Snapbean	2

Surrogate exposure scenarios were selected to represent either the major crop grouping (e.g, almonds in CA to represent walnuts in CA) in a specific state or to represent a regionally-conservative exposure scenario (e.g., snapbean in Oregon to represent peas in Idaho). Major land resource areas (MLRA) were used to match requested and available scenarios (Austin, 1972). The MLRA represents land resource mapping units which are based on agricultural production and land resources within states and regions. They were designed to allow for regional agricultural planning.

Estimated environmental concentrations of methyl parathion are shown in Tables 2-4. The highest EECs are associated with the walnut use. Peak concentrations ranged from 10.10 to 18.2 µg/L from use on walnut. Lower estimated environmental concentrations were found for alfalfa and peas. Methyl parathion loading among the tested scenarios can be explained solely on differences in maximum label application rates. For all crops, aerial spray drift appears to double the peak and chronic estimated environmental concentrations when compared to runoff contributions of methyl parathion.

Table 2: 1 in 10 year Estimated Environmental Concentrations of Methyl Parathion for Walnuts in California (4 applications of 4.48 kg/ha)

Drift Scenarios	Loading Contribution	Estimated Environmental Concentration (µg/L)			
		Peak	4 day average	21 day average	60 day average
No Drift	runoff only	10.10	7.80	3.11	1.13
Ground Spray	runoff +1%drift	10.22	8.40	3.78	1.84
Aerial Spray	runoff + 5% drift	18.20	13.87	6.46	4.06

Table 3: 1 in 10 year Estimated Environmental Concentrations of Methyl Parathion for Alfalfa in Oregon

Drift Scenarios	Loading Contribution	Estimated Environmental Concentration (µg/L)			
		Peak	4 day average	21 day average	60 day average
No Drift	runoff only	1.87	1.54	0.81	0.32
Ground Spray	runoff +1%drift	2.00	1.67	1.05	0.49
Aerial Spray	runoff + 5% drift	3.85	3.19	1.82	1.20

Table 4: 1 in 10 year Estimated Environmental Concentrations of Methyl Parathion for Peas in Idaho

Drift Scenarios	Loading Contribution	Estimated Environmental Concentration (µg/L)			
		Peak	4 day average	21 day average	60 day average
No Drift	runoff only	1.25	0.99	0.55	0.25
Ground Spray	runoff +1%drift	1.25	0.99	0.55	0.25
Aerial Spray	runoff + 5% drift	2.55	1.99	1.08	0.41

Tier II PRZM/EXAMS modeling was conducted using the PE4.V01 shell (August 13, 2003). Environmental fate input parameters for methyl parathion were obtained from the methyl parathion RED and registrant-submitted environmental fate studies (Table 5).

Table 5. PRZM/EXAMS Input Parameters for Methyl Parathion

Parameters	Input Value and Unit	Source of Info/Reference
Label Rates	Walnuts-CA (4.48 kg/ha *4apps) Alfalfa-OR (1.12 kg/ha*2apps) Peas-ID (0.56 kg/ha*2apps)	EPA Reg. No. 4581-393 EPA Reg No. 4581-393 EPA Reg No. 4581-393
Soil Partition Coefficient, Koc	486 L/Kg (Average Koc)	MRID 40999001
Molecular Weight	265 g/mole	RED
Solubility in Water	60 ppm at 25 ^{o}C	RED
Vapor Pressure		
Henry's Law Constant	6.12E-7 atm m3/mole	RED
Hydrolysis $T_{1/2}$	40 days at pH 7	MRID 0013275, 40784501
Aqueous Photolysis $T_{1/2}$	49 hours	MRID 40809701
Aerobic Soil Metabolism $T_{1/2}$	11.25 days (3 X 3.75 days)	MRID: 41735901
Anaerobic Soil Metabolism $T_{1/2}$	12.2 hours	MRID 41735901
Aerobic aquatic metabolism $T_{1/2}$	4.1 days	MRID 0013361, 00128789, 42069601

The environmental fate modeling was conducted to assess relative impact of runoff and spray drift on methyl parathion loading into the standard water body. This process was accomplished using a fixed exposure scenario except for spray drift assumptions. The drift scenarios include a no drift scenario (assumes 100 application efficiency and zero drift), aerial application drift scenario (assumes 95% application efficiency and a drift of 5% of the application rate), and ground application drift scenario (assumes 99% application efficiency and a drift of 1% of the application rate).

Methyl parathion application intervals and timings were obtained from available crop management resources (Table 4).

Tabel 4: Methyl Parathion Application Interval and Timing

Crop-State	Application Interval	Application Timing	Reference
Walnuts-CA	21 days	May 9th	EPA Reg. No. 4581-393 Coates, William. 5/23/03. Tree Topics. UCAL Cooperative Extension. Vol 28 (4). (obtained from internet)
Alfalfa-OR	21 days	May 1st	EPA Reg No. 4581-393 Usual Planting and Harvesting Dates for US Field Crops, December 1997 www.usda.gov/nass/pubs/uph97.htm
Peas-ID	4 days*	July 1st	Bragg. et al., Crop Profile for Dry Peas in Washington. Washington State University Cooperative Extension (obtained from internet)

*-Represents interim re-entry interval for methyl parathion.

References

Austin, Morris E. 1972. Land Resource Regions and Major Land Resource Areas of the United States (exclusive of Alaska and Hawaii). Agricultural Handbook 296. SCS. Washington, DC.

APPENDIX

ALFALFA (Aerial Drift)

stored as methalf1.out
Chemical: methyl parathion
PRZM environment: ORwheatC.txt modified Satday, 12 October 2002 at 16:22:28
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w24232.dvf modified Wedday, 3 July 2002 at 08:06:10
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	3.202	2.648	1.376	0.9446	0.6386	0.1575
1962	3.224	2.697	1.4	0.9773	0.6551	0.1616
1963	6.233	5.266	3.189	1.666	1.115	0.275
1964	3.137	2.586	1.327	0.9206	0.6173	0.1518
1965	3.174	2.64	1.342	0.9716	0.6547	0.1615
1966	3.119	2.559	1.255	0.8727	0.5843	0.1441
1967	3.194	2.63	1.343	0.918	0.6142	0.1515
1968	3.393	2.874	1.58	1.025	0.6872	0.1692
1969	3.047	2.445	1.134	0.8155	0.5607	0.1384
1970	3.147	2.585	1.28	0.8832	0.5906	0.1456
1971	3.16	2.616	1.336	0.9471	0.644	0.1591
1972	3.852	3.141	1.79	1.075	0.7198	0.177
1973	3.096	2.658	1.3	0.8918	0.5983	0.1476
1974	3.167	2.63	1.327	0.9176	0.6148	0.1516
1975	3.281	2.789	1.487	1.016	0.6806	0.1678
1976	3.151	2.606	1.316	0.9218	0.6208	0.1527
1977	3.302	2.756	1.459	0.9809	0.6568	0.162
1978	3.912	3.207	2.04	1.162	0.7785	0.1921
1979	3.26	2.642	1.606	1.02	0.6826	0.1685
1980	3.147	2.601	1.453	1.002	0.6752	0.1661
1981	3.197	2.629	1.513	1.072	0.7256	0.179
1982	3.114	2.551	1.242	0.8592	0.5761	0.1421
1983	3.161	2.56	1.316	0.928	0.6283	0.1551
1984	3.853	3.197	1.637	1.199	0.8134	0.2001
1985	3.24	2.674	1.823	1.239	0.8385	0.2068
1986	3.492	2.855	1.412	0.9601	0.6489	0.1601
1987	3.067	2.477	1.306	0.8723	0.5961	0.1477
1988	3.142	2.593	1.403	0.9581	0.6429	0.1581
1989	3.104	2.535	1.227	0.8513	0.571	0.1408
1990	3.124	2.755	1.37	0.9207	0.6162	0.152

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			6.233	5.266	3.189	1.666	1.115	0.275
0.0645161290322581			3.912	3.207	2.04	1.239	0.8385	0.2068
0.0967741935483871			3.853	3.197	1.823	1.199	0.8134	0.2001
0.129032258064516			3.852	3.141	1.79	1.162	0.7785	0.1921
0.161290322580645			3.492	2.874	1.637	1.075	0.7256	0.179
0.193548387096774			3.393	2.855	1.606	1.072	0.7198	0.177
0.225806451612903			3.302	2.789	1.58	1.025	0.6872	0.1692
0.258064516129032			3.281	2.756	1.513	1.02	0.6826	0.1685
0.290322580645161			3.26	2.755	1.487	1.016	0.6806	0.1678
0.32258064516129			3.24	2.697	1.459	1.002	0.6752	0.1661
0.354838709677419			3.224	2.674	1.453	0.9809	0.6568	0.162
0.387096774193548			3.202	2.658	1.412	0.9773	0.6551	0.1616
0.419354838709677			3.197	2.648	1.403	0.9716	0.6547	0.1615
0.451612903225806			3.194	2.642	1.4	0.9601	0.6489	0.1601
0.483870967741936			3.174	2.64	1.376	0.9581	0.644	0.1591
0.516129032258065			3.167	2.63	1.37	0.9471	0.6429	0.1581
0.548387096774194			3.161	2.63	1.343	0.9446	0.6386	0.1575

0.580645161290323	3.16	2.629	1.342	0.928	0.6283	0.1551
0.612903225806452	3.151	2.616	1.336	0.9218	0.6208	0.1527
0.645161290322581	3.147	2.606	1.327	0.9207	0.6173	0.152
0.67741935483871	3.147	2.601	1.327	0.9206	0.6162	0.1518
0.709677419354839	3.142	2.593	1.316	0.918	0.6148	0.1516
0.741935483870968	3.137	2.586	1.316	0.9176	0.6142	0.1515
0.774193548387097	3.124	2.585	1.306	0.8918	0.5983	0.1477
0.806451612903226	3.119	2.56	1.3	0.8832	0.5961	0.1476
0.838709677419355	3.114	2.559	1.28	0.8727	0.5906	0.1456
0.870967741935484	3.104	2.551	1.255	0.8723	0.5843	0.1441
0.903225806451613	3.096	2.535	1.242	0.8592	0.5761	0.1421
0.935483870967742	3.067	2.477	1.227	0.8513	0.571	0.1408
0.967741935483871	3.047	2.445	1.134	0.8155	0.5607	0.1384

0.1	3.8529	3.1914	1.8197	1.1953	0.80991	0.1993	
					Average of yearly averages:		0.16475

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: methalf1
Metfile: w24232.dvf
PRZM scenario: ORwheatC.txt
EXAMS environment file: pond298.exv
Chemical Name: methyl parathion

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	265	g/mol	
Henry's Law Const.	henry	6.12E-7	atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	60	mg/L	
Kd Kd	Kd		mg/L	
Koc Koc	Koc	487	mg/L	
Photolysis half-life	kdp	2.04	days	Half-life
Aerobic Aquatic Metabolism	kbacw	4.1	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0.499	days	Halfife
Aerobic Soil Metabolism	asm	11.25	days	Halfife
Hydrolysis:	pH 7	40	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	1-5	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	21	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC		0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

Alfalfa (Ground Spray)

stored as methylalfal2.out
Chemical: methyl parathion
PRZM environment: ORwheatC.txt modified Satday, 12 October 2002 at 16:22:28
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w24232.dvf modified Wedday, 3 July 2002 at 08:06:10
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.6845	0.5661	0.3421	0.23	0.1608	0.0397
1962	0.6662	0.5573	0.3134	0.2136	0.1432	0.03533
1963	5.089	4.209	2.318	0.9947	0.6648	0.164
1964	0.6274	0.5172	0.3041	0.2052	0.1381	0.03397
1965	0.635	0.5282	0.2685	0.226	0.1552	0.03829
1966	0.6239	0.5118	0.2509	0.1745	0.1169	0.02882
1967	0.689	0.5675	0.3436	0.2176	0.1458	0.03597
1968	0.9129	0.8199	0.5691	0.3168	0.2132	0.05263
1969	0.6094	0.489	0.2268	0.1856	0.1401	0.03471
1970	0.6493	0.5333	0.2882	0.1908	0.1276	0.0315
1971	0.6363	0.5269	0.2815	0.2094	0.1496	0.03714
1972	1.56	1.296	0.8371	0.3996	0.2676	0.06583
1973	0.7725	0.6451	0.3288	0.2112	0.1427	0.03523
1974	0.6335	0.5261	0.2655	0.1835	0.1233	0.03042
1975	1.291	1.063	0.5608	0.3071	0.2055	0.0507
1976	0.6301	0.5212	0.2632	0.1844	0.1259	0.03099
1977	0.7554	0.6306	0.3758	0.2338	0.1566	0.03869
1978	2.037	1.697	1.076	0.4882	0.3282	0.08104
1979	1.413	1.238	0.7215	0.3641	0.2439	0.06029
1980	0.8152	0.6739	0.4122	0.2725	0.1859	0.04572
1981	1.237	1.073	0.5275	0.3667	0.253	0.06248
1982	0.6228	0.5102	0.2485	0.1745	0.1183	0.0292
1983	0.7052	0.571	0.4032	0.267	0.1858	0.04604
1984	1.66	1.383	0.7089	0.4755	0.3284	0.08083
1985	2.864	2.382	1.087	0.5503	0.378	0.09323
1986	1.283	1.05	0.5192	0.2844	0.1972	0.04869
1987	0.7519	0.602	0.3848	0.2263	0.1645	0.04131
1988	0.6291	0.5191	0.3774	0.2398	0.1618	0.03979
1989	0.6207	0.507	0.2455	0.1705	0.1156	0.02855
1990	0.8672	0.7126	0.3709	0.2212	0.1481	0.03653

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			5.089	4.209	2.318	0.9947	0.6648	0.164
0.0645161290322581			2.864	2.382	1.087	0.5503	0.378	0.09323
0.0967741935483871			2.037	1.697	1.076	0.4882	0.3284	0.08104
0.129032258064516			1.66	1.383	0.8371	0.4755	0.3282	0.08083
0.161290322580645			1.56	1.296	0.7215	0.3996	0.2676	0.06583
0.193548387096774			1.413	1.238	0.7089	0.3667	0.253	0.06248
0.225806451612903			1.291	1.073	0.5691	0.3641	0.2439	0.06029
0.258064516129032			1.283	1.063	0.5608	0.3168	0.2132	0.05263
0.290322580645161			1.237	1.05	0.5275	0.3071	0.2055	0.0507
0.32258064516129			0.9129	0.8199	0.5192	0.2844	0.1972	0.04869
0.354838709677419			0.8672	0.7126	0.4122	0.2725	0.1859	0.04604
0.387096774193548			0.8152	0.6739	0.4032	0.267	0.1858	0.04572
0.419354838709677			0.7725	0.6451	0.3848	0.2398	0.1645	0.04131
0.451612903225806			0.7554	0.6306	0.3774	0.2338	0.1618	0.03979
0.483870967741936			0.7519	0.602	0.3758	0.23	0.1608	0.0397
0.516129032258065			0.7052	0.571	0.3709	0.2263	0.1566	0.03869
0.548387096774194			0.689	0.5675	0.3436	0.226	0.1552	0.03829
0.580645161290323			0.6845	0.5661	0.3421	0.2212	0.1496	0.03714
0.612903225806452			0.6662	0.5573	0.3288	0.2176	0.1481	0.03653
0.645161290322581			0.6493	0.5333	0.3134	0.2136	0.1458	0.03597

0.67741935483871			0.6363	0.5282	0.3041	0.2112	0.1432	0.03533
0.709677419354839			0.635	0.5269	0.2882	0.2094	0.1427	0.03523
0.741935483870968			0.6335	0.5261	0.2815	0.2052	0.1401	0.03471
0.774193548387097			0.6301	0.5212	0.2685	0.1908	0.1381	0.03397
0.806451612903226			0.6291	0.5191	0.2655	0.1856	0.1276	0.0315
0.838709677419355			0.6274	0.5172	0.2632	0.1844	0.1259	0.03099
0.870967741935484			0.6239	0.5118	0.2509	0.1835	0.1233	0.03042
0.903225806451613			0.6228	0.5102	0.2485	0.1745	0.1183	0.0292
0.935483870967742			0.6207	0.507	0.2455	0.1745	0.1169	0.02882
0.967741935483871			0.6094	0.489	0.2268	0.1705	0.1156	0.02855

0.1	1.9993	1.6656	1.05211	0.48693	0.32838	0.081019	
						Average of yearly averages:	0.049254

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: methylalfal2
Metfile: w24232.dvf
PRZM scenario: ORwheatC.txt
EXAMS environment file: pond298.exv
Chemical Name: methyl parathion

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	265	g/mol	
Henry's Law Const.	henry	6.12E-7	atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	60	mg/L	
Kd Kd			mg/L	
Koc Koc	487		mg/L	
Photolysis half-life	kdp	2.04	days	Half-life
Aerobic Aquatic Metabolism	kbacw	4.1	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0.499	days	Halfife
Aerobic Soil Metabolism	asm	11.25	days	Halfife
Hydrolysis:	pH 7	40	days	Half-life
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	1-5	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	21	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC		0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

Alfalfa (No Spray Drift)

stored as methylalfal3.out
Chemical: methyl parathion
PRZM environment: ORwheatC.txt modified Satday, 12 October 2002 at 16:22:28

EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w24232.dvf modified Wedday, 3 July 2002 at 08:06:10
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly			
1961	0.1978	0.1637	0.08501	0.05131	0.04134	0.01024			
1962	0.1154	0.09718	0.05158	0.0227	0.01518	0.003769			
1963	4.804	3.945	2.1	0.8274	0.5523	0.1362			
1964	0.1966	0.1567	0.07248	0.02746	0.01831	0.004506			
1965	0.3251	0.2604	0.1216	0.04538	0.03034	0.007497			
1966	8.726e-005		6.855e-005		4.156e-005		2.19e-005	2.203e-005	6.008e-006
1967	0.2103	0.1777	0.09418	0.04293	0.02874	0.007099			
1968	0.5921	0.471	0.3163	0.1418	0.09465	0.02349			
1969	0.3479	0.2693	0.1405	0.05281	0.03533	0.008789			
1970	0.104	0.08546	0.04285	0.01784	0.01192	0.002963			
1971	0.2311	0.1871	0.08407	0.03739	0.02603	0.006662			
1972	1.461	1.216	0.5987	0.2317	0.1546	0.03803			
1973	0.218	0.1801	0.08695	0.04309	0.02879	0.007139			
1974	0.003662		0.002825		0.001822		0.0007059	0.0004708	0.000123
1975	0.7936	0.6535	0.3293	0.13	0.08675	0.02141			
1976	0.02658	0.02101	0.009012		0.003387		0.002272	0.0005595	
1977	0.2283	0.1906	0.1049	0.04709	0.03157	0.007858			
1978	1.91	1.58	0.8357	0.3203	0.2158	0.05328			
1979	1.101	0.9554	0.5005	0.2007	0.1343	0.03326			
1980	0.3955	0.327	0.1889	0.09521	0.06357	0.01564			
1981	1.147	0.9915	0.4894	0.2014	0.1351	0.03336			
1982	0.03532	0.02732	0.01204	0.005863		0.003917	0.0009771		
1983	0.4247	0.3441	0.175	0.1053	0.07553	0.01876			
1984	1.112	0.9292	0.4769	0.2947	0.2072	0.05102			
1985	2.77	2.31	1.054	0.3944	0.263	0.06485			
1986	0.7316	0.5985	0.2961	0.1155	0.08432	0.02085			
1987	0.5052	0.4046	0.1765	0.08429	0.0596	0.01471			
1988	0.341	0.2839	0.1606	0.06202	0.04148	0.01021			
1989	0.02125	0.01656	0.007153		0.002805		0.001873	0.0004705	
1990	0.3061	0.2516	0.1226	0.04663	0.0311	0.007677			

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			4.804	3.945	2.1	0.8274	0.5523	0.1362
0.0645161290322581			2.77	2.31	1.054	0.3944	0.263	0.06485
0.0967741935483871			1.91	1.58	0.8357	0.3203	0.2158	0.05328
0.129032258064516			1.461	1.216	0.5987	0.2947	0.2072	0.05102
0.161290322580645			1.147	0.9915	0.5005	0.2317	0.1546	0.03803
0.193548387096774			1.112	0.9554	0.4894	0.2014	0.1351	0.03336
0.225806451612903			1.101	0.9292	0.4769	0.2007	0.1343	0.03326
0.258064516129032			0.7936	0.6535	0.3293	0.1418	0.09465	0.02349
0.290322580645161			0.7316	0.5985	0.3163	0.13	0.08675	0.02141
0.32258064516129			0.5921	0.471	0.2961	0.1155	0.08432	0.02085
0.354838709677419			0.5052	0.4046	0.1889	0.1053	0.07553	0.01876
0.387096774193548			0.4247	0.3441	0.1765	0.09521	0.06357	0.01564
0.419354838709677			0.3955	0.327	0.175	0.08429	0.0596	0.01471
0.451612903225806			0.3479	0.2839	0.1606	0.06202	0.04148	0.01024
0.483870967741936			0.341	0.2693	0.1405	0.05281	0.04134	0.01021
0.516129032258065			0.3251	0.2604	0.1226	0.05131	0.03533	0.008789
0.548387096774194			0.3061	0.2516	0.1216	0.04709	0.03157	0.007858
0.580645161290323			0.2311	0.1906	0.1049	0.04663	0.0311	0.007677
0.612903225806452			0.2283	0.1871	0.09418	0.04538	0.03034	0.007497
0.645161290322581			0.218	0.1801	0.08695	0.04309	0.02879	0.007139
0.67741935483871			0.2103	0.1777	0.08501	0.04293	0.02874	0.007099
0.709677419354839			0.1978	0.1637	0.08407	0.03739	0.02603	0.006662

0.741935483870968			0.1966	0.1567	0.07248	0.02746	0.01831	0.004506			
0.774193548387097			0.1154	0.09718	0.05158	0.0227	0.01518	0.003769			
0.806451612903226			0.104	0.08546	0.04285	0.01784	0.01192	0.002963			
0.838709677419355			0.03532	0.02732	0.01204	0.005863		0.003917	0.0009771		
0.870967741935484			0.02658	0.02101	0.009012		0.003387		0.002272	0.0005595	
0.903225806451613			0.02125	0.01656	0.007153		0.002805		0.001873	0.0004705	
0.935483870967742			0.003662		0.002825		0.001822		0.0007059	0.0004708	
	0.000123										
0.967741935483871			8.726e-005		6.855e-005		4.156e-005		2.19e-005	2.203e-005	
	6.008e-006										

0.1	1.8651	1.5436	0.812	0.31774	0.21494	0.053054

Average of yearly averages: 0.0203801702666667

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: methylalfal3
Metfile: w24232.dvf
PRZM scenario: ORwheatC.txt
EXAMS environment file: pond298.exv
Chemical Name: methyl parathion

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	265	g/mol	
Henry's Law Const.	henry	6.12E-7	atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	60	mg/L	
Kd Kd	Kd		mg/L	
Koc Koc	Koc	487	mg/L	
Photolysis half-life	kdp	2.04	days	Half-life
Aerobic Aquatic Metabolism	kbacw	4.1	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0.499	days	Halfife
Aerobic Soil Metabolism	asm	11.25	days	Halfife
Hydrolysis: pH 7	40	days	Half-life	
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	1.12	kg/ha	
Application Efficiency:	APPEFF	1.00	fraction	
Spray Drift	DRFT	0.00	fraction of application rate applied to pond	
Application Date	Date	1-5	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	21	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

SNAPBEAN (Aerial Drift)

stored as methylsnap1.out
Chemical: methyl parathion
PRZM environment: ORsnbeansC.txt modified Satday, 12 October 2002 at 16:20:58
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w24232.dvf modified Wedday, 3 July 2002 at 08:06:10
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	2.899	2.208	1.081	0.4069	0.2713	0.06791
1962	2.214	1.715	0.9111	0.3467	0.2322	0.0651
1963	2.251	1.777	0.9709	0.3757	0.259	0.06639
1964	2.187	1.668	0.8685	0.3268	0.2191	0.05493
1965	2.173	1.645	0.8473	0.3167	0.2112	0.05388
1966	2.205	1.698	0.8955	0.3388	0.2327	0.05934
1967	2.169	1.637	0.8404	0.313	0.2087	0.05879
1968	2.187	1.668	0.8683	0.3856	0.2954	0.07504
1969	2.206	1.7	0.8977	0.3404	0.3266	0.09799
1970	2.168	1.636	0.8393	0.3132	0.2332	0.064
1971	2.176	1.649	0.8512	0.3182	0.3714	0.09782
1972	2.169	1.637	0.8405	0.3134	0.2247	0.05961
1973	2.176	1.649	0.8513	0.3223	0.2324	0.06245
1974	2.208	1.716	0.9324	0.358	0.2388	0.05945
1975	2.194	1.679	0.8786	0.3331	0.2255	0.05692
1976	2.21	1.716	0.9102	0.3492	0.2355	0.0581
1977	2.217	1.72	0.9162	0.3648	0.2585	0.06534
1978	2.161	1.624	0.9024	0.3563	0.2466	0.06112
1979	2.164	1.628	0.8327	0.3103	0.2882	0.0747
1980	2.19	1.672	0.8721	0.3286	0.2191	0.05574
1981	2.211	1.709	0.9061	0.3436	0.2464	0.07995
1982	2.206	1.7	0.897	0.3396	0.2412	0.06149
1983	2.333	1.864	1.112	0.4539	0.3101	0.07674
1984	2.188	1.67	0.8696	0.3268	0.2683	0.07442
1985	2.134	1.578	0.7901	0.2915	0.2	0.05203
1986	2.57	2.007	1.065	0.4074	0.2799	0.07258
1987	3.271	2.541	1.421	0.7039	0.4698	0.116
1988	2.175	1.648	0.8502	0.318	0.2161	0.05549
1989	2.216	1.717	0.9133	0.3495	0.2331	0.05926
1990	2.142	1.592	0.8018	0.2963	0.198	0.05

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			3.271	2.541	1.421	0.7039	0.4698	0.116
0.0645161290322581			2.899	2.208	1.112	0.4539	0.3714	0.09799
0.0967741935483871			2.57	2.007	1.081	0.4074	0.3266	0.09782
0.129032258064516			2.333	1.864	1.065	0.4069	0.3101	0.07995
0.161290322580645			2.251	1.777	0.9709	0.3856	0.2954	0.07674
0.193548387096774			2.217	1.72	0.9324	0.3757	0.2882	0.07504
0.225806451612903			2.216	1.717	0.9162	0.3648	0.2799	0.0747
0.258064516129032			2.214	1.716	0.9133	0.358	0.2713	0.07442
0.290322580645161			2.211	1.716	0.9111	0.3563	0.2683	0.07258
0.32258064516129			2.21	1.715	0.9102	0.3495	0.259	0.06791
0.354838709677419			2.208	1.709	0.9061	0.3492	0.2585	0.06639
0.387096774193548			2.206	1.7	0.9024	0.3467	0.2466	0.06534
0.419354838709677			2.206	1.7	0.8977	0.3436	0.2464	0.0651
0.451612903225806			2.205	1.698	0.897	0.3404	0.2412	0.064
0.483870967741936			2.194	1.679	0.8955	0.3396	0.2388	0.06245
0.516129032258065			2.19	1.672	0.8786	0.3388	0.2355	0.06149
0.548387096774194			2.188	1.67	0.8721	0.3331	0.2332	0.06112
0.580645161290323			2.187	1.668	0.8696	0.3286	0.2331	0.05961
0.612903225806452			2.187	1.668	0.8685	0.3268	0.2327	0.05945
0.645161290322581			2.176	1.649	0.8683	0.3268	0.2324	0.05934
0.67741935483871			2.176	1.649	0.8513	0.3223	0.2322	0.05926
0.709677419354839			2.175	1.648	0.8512	0.3182	0.2255	0.05879
0.741935483870968			2.173	1.645	0.8502	0.318	0.2247	0.0581
0.774193548387097			2.169	1.637	0.8473	0.3167	0.2191	0.05692
0.806451612903226			2.169	1.637	0.8405	0.3134	0.2191	0.05574
0.838709677419355			2.168	1.636	0.8404	0.3132	0.2161	0.05549
0.870967741935484			2.164	1.628	0.8393	0.313	0.2112	0.05493
0.903225806451613			2.161	1.624	0.8327	0.3103	0.2087	0.05388

0.935483870967742			2.142	1.592	0.8018	0.2963	0.2	0.05203
0.967741935483871			2.134	1.578	0.7901	0.2915	0.198	0.05
0.1	2.5463	1.9927	1.0794	0.40735	0.32495	0.096033		
					Average of yearly averages:			0.067086

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: methylsnap1
Metfile: w24232.dvf
PRZM scenario: ORsnbeansC.txt
EXAMS environment file: pond298.exv
Chemical Name: methyl parathion

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	265	g/mol	
Henry's Law Const.	henry	6.12E-7	atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	60	mg/L	
Kd Kd	Kd		mg/L	
Koc Koc	Koc	487	mg/L	
Photolysis half-life	kdp	2.04	days	Half-life
Aerobic Aquatic Metabolism	kbacw	4.1	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0.499	days	Halfife
Aerobic Soil Metabolism	asm	11.25	days	Halfife
Hydrolysis: pH 7	40	days	Half-life	
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	0.56	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	1-7	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	4	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC		0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

SNAPBEAN (Ground Spray)

stored as methylsnap2.out
Chemical: methyl parathion
PRZM environment: ORsnbeansC.txt modified Satday, 12 October 2002 at 16:20:58
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w24232.dvf modified Wedday, 3 July 2002 at 08:06:10
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	1.182	0.9005	0.3985	0.1512	0.1008	0.02591
1962	0.4429	0.3429	0.1822	0.06934	0.04727	0.01982

1963	0.4511	0.3561	0.1946	0.07529	0.05896	0.01718
1964	0.4375	0.3337	0.1737	0.06537	0.04481	0.01211
1965	0.4347	0.3289	0.1695	0.06338	0.04227	0.0123
1966	0.4409	0.3396	0.1791	0.06776	0.05226	0.01493
1967	0.4338	0.3274	0.1681	0.0626	0.04174	0.01794
1968	0.7524	0.6266	0.2948	0.132	0.1244	0.03309
1969	1.255	1.003	0.5623	0.2591	0.1769	0.05497
1970	0.4336	0.3271	0.1679	0.06788	0.06712	0.02332
1971	1.52	1.323	0.6466	0.2811	0.2083	0.05789
1972	0.4338	0.3274	0.1681	0.06269	0.05818	0.01884
1973	0.4352	0.3298	0.1703	0.06717	0.063	0.0209
1974	0.4415	0.3541	0.2133	0.0857	0.05716	0.0147
1975	0.4388	0.3359	0.1757	0.06784	0.04878	0.01339
1976	0.4419	0.3511	0.1875	0.07478	0.05258	0.01313
1977	0.4435	0.344	0.1832	0.08708	0.07394	0.0199
1978	0.4671	0.3511	0.2424	0.1117	0.08392	0.02101
1979	0.9886	0.7787	0.3487	0.1424	0.1261	0.03489
1980	0.4379	0.3345	0.1744	0.06571	0.04384	0.01271
1981	0.4739	0.3859	0.2846	0.14	0.09815	0.03574
1982	0.4411	0.3399	0.1794	0.06792	0.06063	0.01705
1983	0.6409	0.501	0.3944	0.1828	0.1296	0.03225
1984	0.6054	0.4806	0.2195	0.1111	0.09612	0.03242
1985	0.4268	0.3156	0.158	0.05829	0.04474	0.01386
1986	0.8002	0.637	0.3213	0.1232	0.09074	0.02608
1987	3.079	2.393	1.033	0.4399	0.2938	0.07265
1988	0.4351	0.3296	0.17	0.0636	0.04664	0.01391
1989	0.4431	0.3434	0.1827	0.07153	0.04773	0.01362
1990	0.4285	0.3184	0.1604	0.05927	0.03996	0.01109

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			3.079	2.393	1.033	0.4399	0.2938	0.07265
0.0645161290322581			1.52	1.323	0.6466	0.2811	0.2083	0.05789
0.0967741935483871			1.255	1.003	0.5623	0.2591	0.1769	0.05497
0.129032258064516			1.182	0.9005	0.3985	0.1828	0.1296	0.03574
0.161290322580645			0.9886	0.7787	0.3944	0.1512	0.1261	0.03489
0.193548387096774			0.8002	0.637	0.3487	0.1424	0.1244	0.03309
0.225806451612903			0.7524	0.6266	0.3213	0.14	0.1008	0.03242
0.258064516129032			0.6409	0.501	0.2948	0.132	0.09815	0.03225
0.290322580645161			0.6054	0.4806	0.2846	0.1232	0.09612	0.02608
0.32258064516129			0.4739	0.3859	0.2424	0.1117	0.09074	0.02591
0.354838709677419			0.4671	0.3561	0.2195	0.1111	0.08392	0.02332
0.387096774193548			0.4511	0.3541	0.2133	0.08708	0.07394	0.02101
0.419354838709677			0.4435	0.3511	0.1946	0.0857	0.06712	0.0209
0.451612903225806			0.4431	0.3511	0.1875	0.07529	0.063	0.0199
0.483870967741936			0.4429	0.344	0.1832	0.07478	0.06063	0.01982
0.516129032258065			0.4419	0.3434	0.1827	0.07153	0.05896	0.01884
0.548387096774194			0.4415	0.3429	0.1822	0.06934	0.05818	0.01794
0.580645161290323			0.4411	0.3399	0.1794	0.06792	0.05716	0.01718
0.612903225806452			0.4409	0.3396	0.1791	0.06788	0.05258	0.01705
0.645161290322581			0.4388	0.3359	0.1757	0.06784	0.05226	0.01493
0.67741935483871			0.4379	0.3345	0.1744	0.06776	0.04878	0.0147
0.709677419354839			0.4375	0.3337	0.1737	0.06717	0.04773	0.01391
0.741935483870968			0.4352	0.3298	0.1703	0.06571	0.04727	0.01386
0.774193548387097			0.4351	0.3296	0.17	0.06537	0.04664	0.01362
0.806451612903226			0.4347	0.3289	0.1695	0.0636	0.04481	0.01339
0.838709677419355			0.4338	0.3274	0.1681	0.06338	0.04474	0.01313
0.870967741935484			0.4338	0.3274	0.1681	0.06269	0.04384	0.01271
0.903225806451613			0.4336	0.3271	0.1679	0.0626	0.04227	0.0123
0.935483870967742			0.4285	0.3184	0.1604	0.05927	0.04174	0.01211

0.967741935483871			0.4268	0.3156	0.158	0.05829	0.03996	0.01109
0.1	1.2477	0.99275	0.54592	0.25147	0.17217	0.053047		
					Average of yearly averages:			0.0242533333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: methylsnap2
Metfile: w24232.dvf
PRZM scenario: ORsnbeansC.txt
EXAMS environment file: pond298.exv
Chemical Name: methyl parathion

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	265	g/mol	
Henry's Law Const.	henry	6.12E-7	atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	60	mg/L	
Kd Kd	Kd		mg/L	
Koc Koc	Koc	487	mg/L	
Photolysis half-life	kdp	2.04	days	Half-life
Aerobic Aquatic Metabolism	kbacw	4.1	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0.499	days	Halfife
Aerobic Soil Metabolism	asm	11.25	days	Halfife
Hydrolysis: pH 7	40	days	Half-life	
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	0.56	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	1-7	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	4	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC		0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

SNAPBEAN (No Drift)

stored as methylsnap3.out
Chemical: methyl parathion
PRZM environment: ORsnbeansC.txt modified Satday, 12 October 2002 at 16:20:58
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w24232.dvf modified Wedday, 3 July 2002 at 08:06:10
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
1961	0.7526	0.5735	0.2374	0.08725	0.0582	0.01541		
1962	0.1579	0.1389	0.09569	0.04972	0.03435	0.008506		
1963	0.1251	0.09715	0.04222	0.0253	0.01924	0.004877		
1964	0.01665	0.01343	0.008592		0.005804		0.00519	0.001401
1965	0.02158	0.01808	0.01276	0.01028	0.007452		0.001902	

1966	0.09264	0.07648	0.03627	0.01785	0.01479	0.003822		
1967	0.1442	0.1199	0.07016	0.04366	0.0311	0.007721		
1968	0.7595	0.6326	0.2976	0.1326	0.09117	0.02261		
1969	1.268	1.013	0.568	0.2617	0.1787	0.04422		
1970	0.3185	0.2692	0.133	0.06855	0.05114	0.01315		
1971	1.536	1.337	0.6532	0.284	0.1931	0.04791		
1972	0.2556	0.2167	0.1138	0.04983	0.0345	0.008651		
1973	0.1925	0.1681	0.09089	0.04916	0.03937	0.01051		
1974	0.09725	0.07505	0.04403	0.01764	0.01177	0.003515		
1975	0.04716	0.03701	0.01684	0.008114		0.008936		0.002504
1976	0.03087	0.02415	0.01065	0.007854		0.006972		0.001882
1977	0.2381	0.1774	0.0843	0.04738	0.03347	0.008537		
1978	0.3759	0.2826	0.1136	0.05915	0.04383	0.01099		
1979	0.9984	0.7865	0.3522	0.1439	0.1003	0.02493		
1980	0.02246	0.01947	0.01318	0.01008	0.007816		0.001952	
1981	0.4787	0.3898	0.2875	0.1414	0.09914	0.02469		
1982	0.1434	0.1138	0.06779	0.03192	0.0231	0.005938		
1983	0.4744	0.4015	0.2362	0.1151	0.08451	0.02113		
1984	0.6113	0.4853	0.2217	0.1122	0.08726	0.02192		
1985	0.06161	0.0536	0.02714	0.01929	0.01653	0.004321		
1986	0.4073	0.3183	0.1399	0.05214	0.04596	0.01446		
1987	3.031	2.356	1.017	0.3747	0.2499	0.06181		
1988	0.06517	0.05145	0.02393	0.01442	0.01373	0.003515		
1989	0.02612	0.02181	0.01259	0.00967	0.00723	0.002207		
1990	0.01863	0.01564	0.01303	0.007124		0.005173		0.001366

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly				
0.032258064516129			3.031	2.356	1.017	0.3747	0.2499	0.06181		
0.0645161290322581			1.536	1.337	0.6532	0.284	0.1931	0.04791		
0.0967741935483871			1.268	1.013	0.568	0.2617	0.1787	0.04422		
0.129032258064516			0.9984	0.7865	0.3522	0.1439	0.1003	0.02493		
0.161290322580645			0.7595	0.6326	0.2976	0.1414	0.09914	0.02469		
0.193548387096774			0.7526	0.5735	0.2875	0.1326	0.09117	0.02261		
0.225806451612903			0.6113	0.4853	0.2374	0.1151	0.08726	0.02192		
0.258064516129032			0.4787	0.4015	0.2362	0.1122	0.08451	0.02113		
0.290322580645161			0.4744	0.3898	0.2217	0.08725	0.0582	0.01541		
0.32258064516129			0.4073	0.3183	0.1399	0.06855	0.05114	0.01446		
0.354838709677419			0.3759	0.2826	0.133	0.05915	0.04596	0.01315		
0.387096774193548			0.3185	0.2692	0.1138	0.05214	0.04383	0.01099		
0.419354838709677			0.2556	0.2167	0.1136	0.04983	0.03937	0.01051		
0.451612903225806			0.2381	0.1774	0.09569	0.04972	0.0345	0.008651		
0.483870967741936			0.1925	0.1681	0.09089	0.04916	0.03435	0.008537		
0.516129032258065			0.1579	0.1389	0.0843	0.04738	0.03347	0.008506		
0.548387096774194			0.1442	0.1199	0.07016	0.04366	0.0311	0.007721		
0.580645161290323			0.1434	0.1138	0.06779	0.03192	0.0231	0.005938		
0.612903225806452			0.1251	0.09715	0.04403	0.0253	0.01924	0.004877		
0.645161290322581			0.09725	0.07648	0.04222	0.01929	0.01653	0.004321		
0.67741935483871			0.09264	0.07505	0.03627	0.01785	0.01479	0.003822		
0.709677419354839			0.06517	0.0536	0.02714	0.01764	0.01373	0.003515		
0.741935483870968			0.06161	0.05145	0.02393	0.01442	0.01177	0.003515		
0.774193548387097			0.04716	0.03701	0.01684	0.01028	0.008936		0.002504	
0.806451612903226			0.03087	0.02415	0.01318	0.01008	0.007816		0.002207	
0.838709677419355			0.02612	0.02181	0.01303	0.00967	0.007452		0.001952	
0.870967741935484			0.02246	0.01947	0.01276	0.008114		0.00723	0.001902	
0.903225806451613			0.02158	0.01808	0.01259	0.007854		0.006972		0.001882
0.935483870967742			0.01863	0.01564	0.01065	0.007124		0.00519	0.001401	
0.967741935483871			0.01665	0.01343	0.008592		0.005804		0.005173	0.001366

0.1	1.24104	0.99035	0.54642	0.24992	0.17086	0.042291	
					Average of yearly averages:		0.0135452333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: methylsnap3
Metfile: w24232.dvf
PRZM scenario: ORsnbeansC.txt
EXAMS environment file: pond298.exv
Chemical Name: methyl parathion

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	265	g/mol	
Henry's Law Const.	henry	6.12E-7	atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	60	mg/L	
Kd Kd	Kd		mg/L	
Koc Koc	Koc	487	mg/L	
Photolysis half-life	kdp	2.04	days	Half-life
Aerobic Aquatic Metabolism	kbacw	4.1	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0.499	days	Halfife
Aerobic Soil Metabolism	asm	11.25	days	Halfife
Hydrolysis: pH 7	40	days	Half-life	
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	0.56	kg/ha	
Application Efficiency:	APPEFF	1.00	fraction	
Spray Drift	DRFT	0.00	fraction of application rate applied to pond	
Application Date	Date	1-7	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	4	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC		0.5		
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

Walnuts (Aerial Spray)

stored as methylwal1.out
Chemical: methyl parathion
PRZM environment: CAalmondC.txt modified Satday, 12 October 2002 at 15:30:38
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w23232.dvf modified Wedday, 3 July 2002 at 08:04:22
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	12.06	9.325	4.136	3.61	3.049	0.7656
1962	41.06	32.6	15.85	6.19	4.14	1.839
1963	12.07	9.46	4.171	3.942	3.403	0.8528
1964	12.02	9.39	4.101	3.927	3.344	0.8443
1965	11.91	9.274	3.976	4.027	3.461	0.9063
1966	11.86	9.075	3.816	3.646	3.221	0.829
1967	11.89	9.193	3.893	3.862	3.258	0.805

1968	11.93	9.178	3.941	3.64	3.15	0.7883
1969	11.78	9.018	3.728	3.791	3.247	0.8035
1970	11.71	8.85	3.568	3.581	3.084	0.7846
1971	12.09	9.483	4.204	3.941	3.343	0.8267
1972	11.82	9.025	3.758	3.635	3.144	0.8127
1973	11.67	8.696	3.463	3.333	2.916	0.7345
1974	14.28	10.39	4.404	4.061	3.658	0.9054
1975	11.7	8.801	3.538	3.479	3.014	0.7446
1976	11.63	8.63	3.382	3.333	2.927	0.7212
1977	12.23	9.657	4.405	3.956	3.401	0.8501
1978	11.75	8.927	3.638	3.663	3.171	0.7936
1979	11.77	8.928	3.663	3.566	3.087	0.7869
1980	12.02	9.411	4.113	4.05	3.448	0.8516
1981	11.93	9.123	3.937	3.554	3.092	0.8206
1982	11.9	9.261	3.982	4.051	3.52	0.8995
1983	11.93	9.215	3.941	3.776	3.302	0.8455
1984	11.6	8.61	3.34	3.416	2.932	0.7232
1985	11.96	9.195	3.99	3.575	3.063	0.7727
1986	11.84	9.053	3.786	3.651	3.166	0.7832
1987	11.67	8.741	3.47	3.481	3.129	0.7797
1988	11.86	9.078	3.83	3.602	3.022	0.7891
1989	32.91	24.87	10.17	3.826	3.146	1.409
1990	18.64	14.26	6.683	4.763	3.858	0.9526

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			41.06	32.6	15.85	6.19	4.14	1.839
0.0645161290322581			32.91	24.87	10.17	4.763	3.858	1.409
0.0967741935483871			18.64	14.26	6.683	4.061	3.658	0.9526
0.129032258064516			14.28	10.39	4.405	4.051	3.52	0.9063
0.161290322580645			12.23	9.657	4.404	4.05	3.461	0.9054
0.193548387096774			12.09	9.483	4.204	4.027	3.448	0.8995
0.225806451612903			12.07	9.46	4.171	3.956	3.403	0.8528
0.258064516129032			12.06	9.411	4.136	3.942	3.401	0.8516
0.290322580645161			12.02	9.39	4.113	3.941	3.344	0.8501
0.32258064516129			12.02	9.325	4.101	3.927	3.343	0.8455
0.354838709677419			11.96	9.274	3.99	3.862	3.302	0.8443
0.387096774193548			11.93	9.261	3.982	3.826	3.258	0.829
0.419354838709677			11.93	9.215	3.976	3.791	3.247	0.8267
0.451612903225806			11.93	9.195	3.941	3.776	3.221	0.8206
0.483870967741936			11.91	9.193	3.941	3.663	3.171	0.8127
0.516129032258065			11.9	9.178	3.937	3.651	3.166	0.805
0.548387096774194			11.89	9.123	3.893	3.646	3.15	0.8035
0.580645161290323			11.86	9.078	3.83	3.64	3.146	0.7936
0.612903225806452			11.86	9.075	3.816	3.635	3.144	0.7891
0.645161290322581			11.84	9.053	3.786	3.61	3.129	0.7883
0.67741935483871			11.82	9.025	3.758	3.602	3.092	0.7869
0.709677419354839			11.78	9.018	3.728	3.581	3.087	0.7846
0.741935483870968			11.77	8.928	3.663	3.575	3.084	0.7832
0.774193548387097			11.75	8.927	3.638	3.566	3.063	0.7797
0.806451612903226			11.71	8.85	3.568	3.554	3.049	0.7727
0.838709677419355			11.7	8.801	3.538	3.481	3.022	0.7656
0.870967741935484			11.67	8.741	3.47	3.479	3.014	0.7446
0.903225806451613			11.67	8.696	3.463	3.416	2.932	0.7345
0.935483870967742			11.63	8.63	3.382	3.333	2.927	0.7232
0.967741935483871			11.6	8.61	3.34	3.333	2.916	0.7212

0.1	18.204	13.873	6.4552	4.06	3.6442	0.94797		
					Average of yearly averages:			0.86736

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: methylwal1
Metfile: w23232.dvf
PRZM scenario: CAalmondC.txt
EXAMS environment file: pond298.exv
Chemical Name: methyl parathion

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	265	g/mol	
Henry's Law Const.	henry	6.12E-7	atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	60	mg/L	
Kd Kd			mg/L	
Koc Koc	487		mg/L	
Photolysis half-life	kdp	2.04	days	Half-life
Aerobic Aquatic Metabolism	kbacw	4.1	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0.499	days	Halfife
Aerobic Soil Metabolism	asm	11.25	days	Halfife
Hydrolysis: pH 7	40	days	Half-life	
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	4.48	kg/ha	
Application Efficiency:	APPEFF	0.95	fraction	
Spray Drift	DRFT	0.05	fraction of application rate applied to pond	
Application Date	Date	9-5	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	21	days	Set to 0 or delete line for single app.
Interval 2	interval	21	days	Set to 0 or delete line for single app.
Interval 3	interval	21	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF	none	none, monthly or total(average of entire run)	

WALNUTS (NO SPRAY DRIFT)

stored as methylwal2.out
Chemical: methyl parathion
PRZM environment: CAalmondC.txt modified Satday, 12 October 2002 at 15:30:38
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w23232.dvf modified Wedday, 3 July 2002 at 08:04:22
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	0.3706	0.3202	0.1945	0.08269	0.05513	0.01359
1962	43.22	34.32	16.68	6.516	4.358	1.076
1963	0.1809	0.1323	0.09782	0.05248	0.04375	0.01247
1964	0.6939	0.5381	0.3021	0.1303	0.08744	0.02174
1965	3.212	2.314	0.8521	0.3079	0.2053	0.05372
1966	0.865	0.7148	0.4478	0.2105	0.1403	0.03473
1967	0.01768	0.01515	0.008587	0.003659	0.002455	0.0009079
1968	0.4191	0.3501	0.1841	0.07652	0.05101	0.01266
1969	0.06839	0.05965	0.02754	0.009639	0.006426	0.001745

1970	0.4493	0.3879	0.2233	0.1408	0.09387	0.02402				
1971	0.03023	0.02596	0.01482	0.006341		0.004253		0.001204		
1972	1.339	1.064	0.488	0.2386	0.1628	0.04027				
1973	0.3707	0.2929	0.1439	0.08697	0.05872	0.0147				
1974	4.72	3.435	1.291	0.4887	0.3261	0.08156				
1975	0.004521		0.003912		0.002287		0.0009912		0.0006649	0.000276
1976	1.32e-005		1.13e-005		6.388e-006		2.704e-006		1.811e-006	4.454e-007
1977	0.3033	0.2512	0.1306	0.06006	0.04004	0.01014				
1978	0.2756	0.2328	0.1411	0.06055	0.04037	0.01073				
1979	0.9758	0.7645	0.3665	0.1489	0.1004	0.02538				
1980	0.1036	0.08173	0.03682	0.0138	0.009205		0.003926			
1981	1.529	1.202	0.7471	0.3602	0.2409	0.06318				
1982	0.7154	0.5724	0.319	0.1715	0.1187	0.03043				
1983	0.8522	0.7496	0.4579	0.1869	0.1246	0.03107				
1984	0.03475	0.02876	0.01475	0.006044		0.004029		0.001327		
1985	0.5134	0.4335	0.2473	0.1033	0.06889	0.017				
1986	0.0302	0.02546	0.01371	0.005607		0.003748		0.0009243		
1987	0.217	0.1672	0.07491	0.03701	0.02493	0.006246				
1988	2.7	1.989	0.7661	0.2781	0.1903	0.04764				
1989	34.64	26.18	10.71	4.028	2.693	0.6645				
1990	10.7	8.287	3.318	1.199	0.7996	0.1974				

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly				
0.032258064516129			43.22	34.32	16.68	6.516	4.358	1.076		
0.0645161290322581			34.64	26.18	10.71	4.028	2.693	0.6645		
0.0967741935483871			10.7	8.287	3.318	1.199	0.7996	0.1974		
0.129032258064516			4.72	3.435	1.291	0.4887	0.3261	0.08156		
0.161290322580645			3.212	2.314	0.8521	0.3602	0.2409	0.06318		
0.193548387096774			2.7	1.989	0.7661	0.3079	0.2053	0.05372		
0.225806451612903			1.529	1.202	0.7471	0.2781	0.1903	0.04764		
0.258064516129032			1.339	1.064	0.488	0.2386	0.1628	0.04027		
0.290322580645161			0.9758	0.7645	0.4579	0.2105	0.1403	0.03473		
0.32258064516129			0.865	0.7496	0.4478	0.1869	0.1246	0.03107		
0.354838709677419			0.8522	0.7148	0.3665	0.1715	0.1187	0.03043		
0.387096774193548			0.7154	0.5724	0.319	0.1489	0.1004	0.02538		
0.419354838709677			0.6939	0.5381	0.3021	0.1408	0.09387	0.02402		
0.451612903225806			0.5134	0.4335	0.2473	0.1303	0.08744	0.02174		
0.483870967741936			0.4493	0.3879	0.2233	0.1033	0.06889	0.017		
0.516129032258065			0.4191	0.3501	0.1945	0.08697	0.05872	0.0147		
0.548387096774194			0.3707	0.3202	0.1841	0.08269	0.05513	0.01359		
0.580645161290323			0.3706	0.2929	0.1439	0.07652	0.05101	0.01266		
0.612903225806452			0.3033	0.2512	0.1411	0.06055	0.04375	0.01247		
0.645161290322581			0.2756	0.2328	0.1306	0.06006	0.04037	0.01073		
0.67741935483871			0.217	0.1672	0.09782	0.05248	0.04004	0.01014		
0.709677419354839			0.1809	0.1323	0.07491	0.03701	0.02493	0.006246		
0.741935483870968			0.1036	0.08173	0.03682	0.0138	0.009205		0.003926	
0.774193548387097			0.06839	0.05965	0.02754	0.009639		0.006426		0.001745
0.806451612903226			0.03475	0.02876	0.01482	0.006341		0.004253		0.001327
0.838709677419355			0.03023	0.02596	0.01475	0.006044		0.004029		0.001204
0.870967741935484			0.0302	0.02546	0.01371	0.005607		0.003748		0.0009243
0.903225806451613			0.01768	0.01515	0.008587		0.003659		0.002455	0.0009079
0.935483870967742			0.004521		0.003912		0.002287		0.0009912	0.0006649
0.000276										
0.967741935483871			1.32e-005		1.13e-005		6.388e-006		2.704e-006	1.811e-006
4.454e-007										
0.1	10.102	7.8018	3.1153	1.12797	0.75225	0.185816				

Average of yearly averages: 0.0833162215133333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: methylwal2
Metfile: w23232.dvf
PRZM scenario: CAalmondC.txt
EXAMS environment file: pond298.exv
Chemical Name: methyl parathion

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	265	g/mol	
Henry's Law Const.	henry	6.12E-7	atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	60	mg/L	
Kd Kd			mg/L	
Koc Koc	487		mg/L	
Photolysis half-life	kdp	2.04	days	Half-life
Aerobic Aquatic Metabolism	kbacw	4.1	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0.499	days	Halfife
Aerobic Soil Metabolism	asm	11.25	days	Halfife
Hydrolysis: pH 7	40	days	Half-life	
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	4.48	kg/ha	
Application Efficiency:	APPEFF	1.00	fraction	
Spray Drift	DRFT	0.00	fraction of application rate applied to pond	
Application Date	Date	9-5	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	21	days	Set to 0 or delete line for single app.
Interval 2	interval	21	days	Set to 0 or delete line for single app.
Interval 3	interval	21	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)

WALNUTS (Ground Spray)

stored as methylwal3.out
Chemical: methyl parathion
PRZM environment: CAalmondC.txt modified Satday, 12 October 2002 at 15:30:38
EXAMS environment: pond298.exv modified Thuday, 29 August 2002 at 15:33:30
Metfile: w23232.dvf modified Wedday, 3 July 2002 at 08:04:22
Water segment concentrations (ppb)

Year	Peak	96 hr	21 Day	60 Day	90 Day	Yearly
1961	2.411	1.865	0.8273	0.7221	0.6098	0.164
1962	42.78	33.98	16.52	6.451	4.314	1.229
1963	2.415	1.893	0.8361	0.7895	0.6813	0.1807
1964	2.404	1.878	0.8201	0.7854	0.6687	0.1863
1965	3.192	2.299	0.8466	0.8054	0.7065	0.2242
1966	2.371	1.815	0.7632	0.7293	0.6441	0.1936
1967	2.378	1.839	0.7785	0.7724	0.6515	0.1617
1968	2.386	1.836	0.7882	0.728	0.63	0.1678
1969	2.356	1.804	0.7455	0.7583	0.6495	0.1621
1970	2.343	1.77	0.7135	0.7162	0.6169	0.1761
1971	2.418	1.897	0.8409	0.7882	0.6686	0.1663
1972	2.364	1.805	0.7516	0.7269	0.6287	0.1948
1973	2.334	1.739	0.6927	0.6666	0.5833	0.1587

1974	5.125	4.012	1.913	1.192	0.9908	0.2463
1975	2.341	1.76	0.7075	0.6959	0.6029	0.1492
1976	2.326	1.726	0.6764	0.6666	0.5853	0.1442
1977	2.446	1.931	0.881	0.7912	0.6801	0.1781
1978	2.35	1.785	0.7275	0.7325	0.6343	0.1673
1979	2.354	1.786	0.7325	0.7132	0.6175	0.1777
1980	2.409	1.887	0.8393	0.8211	0.6971	0.1735
1981	2.415	1.846	0.8303	0.7274	0.6294	0.2147
1982	2.38	1.852	0.7964	0.8101	0.704	0.2042
1983	2.385	1.843	0.7882	0.7552	0.6604	0.194
1984	2.32	1.722	0.6679	0.6833	0.5864	0.1457
1985	2.393	1.839	0.7979	0.715	0.6126	0.1681
1986	2.367	1.811	0.7572	0.7302	0.6332	0.1574
1987	2.334	1.748	0.694	0.6962	0.6258	0.1609
1988	2.673	1.969	0.766	0.7204	0.6043	0.1959
1989	34.3	25.92	10.6	3.987	2.666	0.8133
1990	10.79	8.884	3.992	1.912	1.411	0.3485

Sorted results

Prob.	Peak	96 hr	21 Day	60 Day	90 Day	Yearly		
0.032258064516129			42.78	33.98	16.52	6.451	4.314	1.229
0.0645161290322581			34.3	25.92	10.6	3.987	2.666	0.8133
0.0967741935483871			10.79	8.884	3.992	1.912	1.411	0.3485
0.129032258064516			5.125	4.012	1.913	1.192	0.9908	0.2463
0.161290322580645			3.192	2.299	0.881	0.8211	0.7065	0.2242
0.193548387096774			2.673	1.969	0.8466	0.8101	0.704	0.2147
0.225806451612903			2.446	1.931	0.8409	0.8054	0.6971	0.2042
0.258064516129032			2.418	1.897	0.8393	0.7912	0.6813	0.1959
0.290322580645161			2.415	1.893	0.8361	0.7895	0.6801	0.1948
0.32258064516129			2.415	1.887	0.8303	0.7882	0.6687	0.194
0.354838709677419			2.411	1.878	0.8273	0.7854	0.6686	0.1936
0.387096774193548			2.409	1.865	0.8201	0.7724	0.6604	0.1863
0.419354838709677			2.404	1.852	0.7979	0.7583	0.6515	0.1807
0.451612903225806			2.393	1.846	0.7964	0.7552	0.6495	0.1781
0.483870967741936			2.386	1.843	0.7882	0.7325	0.6441	0.1777
0.516129032258065			2.385	1.839	0.7882	0.7302	0.6343	0.1761
0.548387096774194			2.38	1.839	0.7785	0.7293	0.6332	0.1735
0.580645161290323			2.378	1.836	0.766	0.728	0.63	0.1681
0.612903225806452			2.371	1.815	0.7632	0.7274	0.6294	0.1678
0.645161290322581			2.367	1.811	0.7572	0.7269	0.6287	0.1673
0.67741935483871			2.364	1.805	0.7516	0.7221	0.6258	0.1663
0.709677419354839			2.356	1.804	0.7455	0.7204	0.6175	0.164
0.741935483870968			2.354	1.786	0.7325	0.7162	0.6169	0.1621
0.774193548387097			2.35	1.785	0.7275	0.715	0.6126	0.1617
0.806451612903226			2.343	1.77	0.7135	0.7132	0.6098	0.1609
0.838709677419355			2.341	1.76	0.7075	0.6962	0.6043	0.1587
0.870967741935484			2.334	1.748	0.694	0.6959	0.6029	0.1574
0.903225806451613			2.334	1.739	0.6927	0.6833	0.5864	0.1492
0.935483870967742			2.326	1.726	0.6764	0.6666	0.5853	0.1457
0.967741935483871			2.32	1.722	0.6679	0.6666	0.5833	0.1442
0.1	10.2235	8.3968	3.7841	1.84	1.36898	0.33828		

Average of yearly averages: 0.240143333333333

Inputs generated by pe4.pl - 8-August-2003

Data used for this run:
Output File: methylwal3
Metfile: w23232.dvf
PRZM scenario: CAalmondC.txt
EXAMS environment file: pond298.exv
Chemical Name: methyl parathion

Description	Variable Name	Value	Units	Comments
Molecular weight	mwt	265	g/mol	
Henry's Law Const.	henry	6.12E-7	atm-m^3/mol	
Vapor Pressure	vapr		torr	
Solubility	sol	60	mg/L	
Kd Kd		mg/L		
Koc Koc	487	mg/L		
Photolysis half-life	kdp	2.04	days	Half-life
Aerobic Aquatic Metabolism	kbacw	4.1	days	Halfife
Anaerobic Aquatic Metabolism	kbacs	0.499	days	Halfife
Aerobic Soil Metabolism	asm	11.25	days	Halfife
Hydrolysis: pH 7	40	days	Half-life	
Method: CAM	2	integer	See PRZM manual	
Incorporation Depth:	DEPI	0	cm	
Application Rate:	TAPP	4.48	kg/ha	
Application Efficiency:	APPEFF	0.99	fraction	
Spray Drift	DRFT	0.01	fraction of application rate applied to pond	
Application Date	Date	9-5	dd/mm or dd/mmm or dd-mm or dd-mmm	
Interval 1	interval	21	days	Set to 0 or delete line for single app.
Interval 2	interval	21	days	Set to 0 or delete line for single app.
Interval 3	interval	21	days	Set to 0 or delete line for single app.
Record 17:	FILTRA			
IPSCND	1			
UPTKF				
Record 18:	PLVKRT			
PLDKRT				
FEXTRC	0.5			
Flag for Index Res. Run	IR	Pond		
Flag for runoff calc.	RUNOFF		none	none, monthly or total(average of entire run)